THE ARCHITECTURAL REVIEW VOLUME CXXIII NUMBER 732 JANUARY 1958 FIVE SHILLINGS



ar PREVIEW

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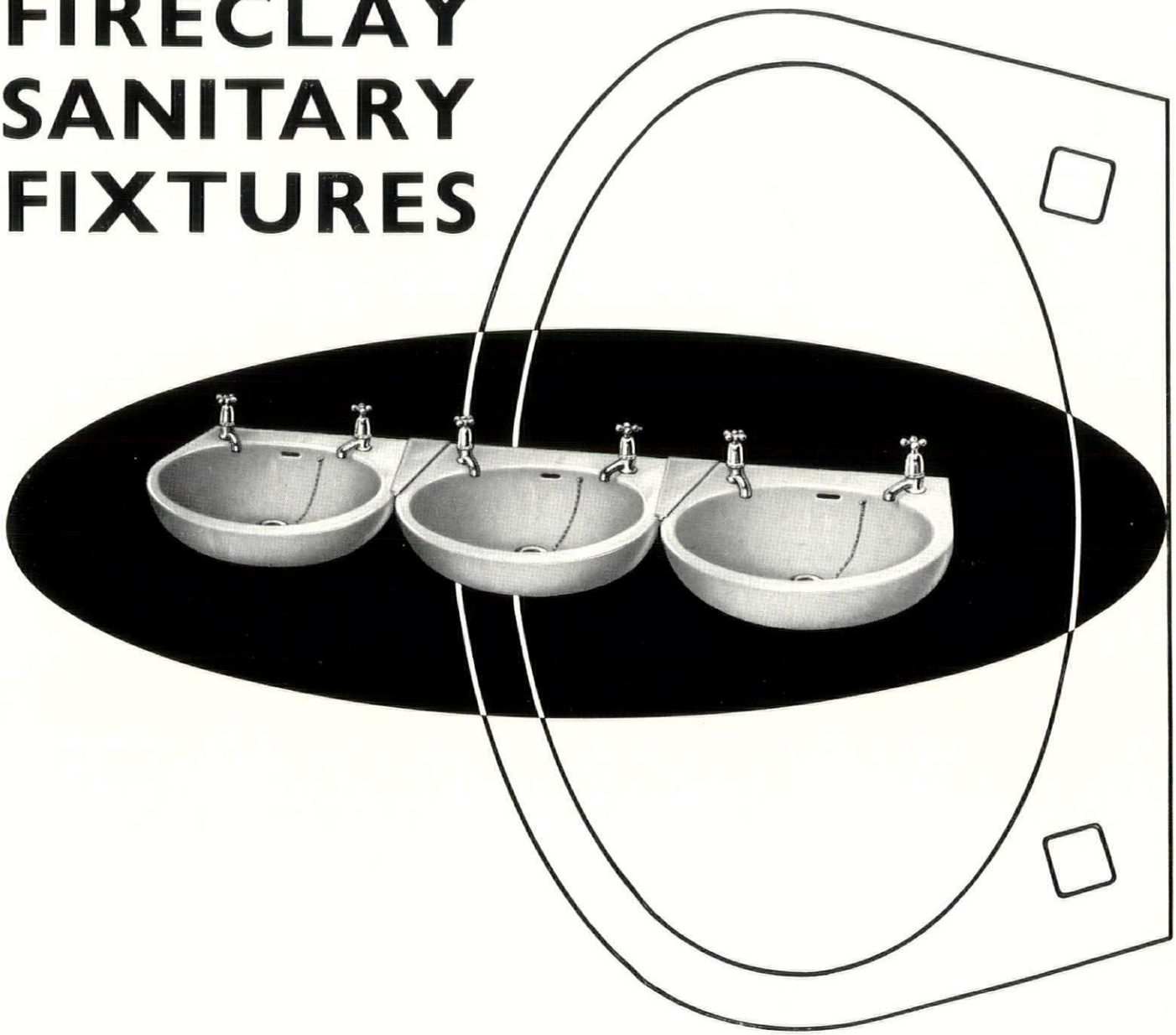

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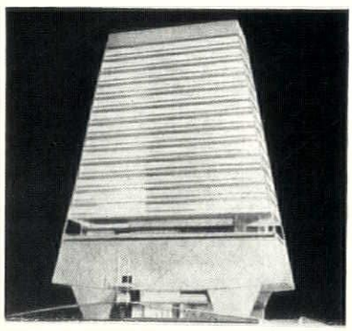
MARGINALIA

Frustrated, Elevated Pyramid

Conceived in a form that is difficult to categorize except as a frustrum of a rectangular pyramid, raised on stilts, the projected Federal Senate building for Rio de Janeiro, by Sergio Bernades and Rolf Huther, is typically Brazilian in the adventurousness of its shape, even if the shape itself, 1, is a newcomer to the Brazilian repertoire. Whatever the reasons for the choice of this total envelope, its structure and the distribution of the accommodation within it is of considerable interest The windowless lower part is, structually, a type of chassis, which collects the loads from the inclined



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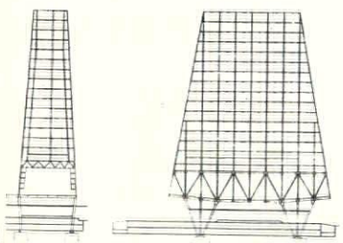


2

stanchions of the upper part on a series of transverse trusses, which transfer them to a pair of giant trusses in the outer skin of the lower part, and thus to the four tapering legs, 2. Within this frame, offices and smaller rooms are contained in the upper part, and the two large assembly halls are suspended between the chassis-members.

S.I.A. Journal

All readers of those professional journals and house magazines that deal with the creative arts are accustomed to frequent changes of format and typography. No editor or editorial committee after all could be expected to resist the temptation of escaping occasionally from the drudgery of drumming up contributors and arguing with printers into the delights of giving the paper a New Look. Changes however are seldom so drastic or so successful as those which have been given to the Fifty-sixth number of the SIA Journal which, under a new editor, is now to appear monthly, unbound, folded, and about four times the size (in page area if not in contents) of its predecessors.

Most members will probably approve of the change, though no doubt objections will come from those who believe that the activities of a professional body should be discreetly recorded in a publication that looks like a Government White Paper, as well as from those librarians who regard books and journals as something to be easily bound, filed and stored rather than looked at or read.

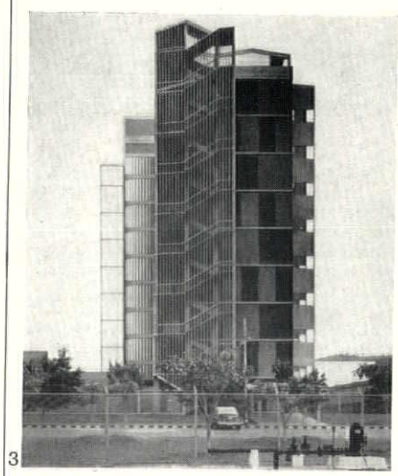
The AR welcomes the News-Sheet Look of an old friend, applauds the air of freshness, urgency and amplitude that it wears, and wishes it a long and prosperous career.

Counter-Attack

A welcome success story in the fight against subtopia comes from Hampstead, where sustained pressure by the residents in a small Victorian street has dissuaded the borough council from cutting down the lime and plane trees, which are the street's principal asset. The story began nearly a year ago when the council decided, for reasons that were not very clear, that the trees must be cut down and replaced with mountain ash and birch. The residents, not convinced by arguments that the trees were unsightly, or too close together, and suspecting that the council was primarily moved by a desire to save the cost of lopping the trees every few years (itself the cause of unsightliness), got up a petition, which 100 of them signed. They followed this up with a deputation to the oddly-named Cemeteries and Open Spaces Committee, to which they presented formidable expert evidence, including copies of Peter Shepheard's article on trees reprinted from the ARCHITECTURAL REVIEW's Counter-Attack issue, and a report on the Tanza Road trees by Miss Sylvia Crowe, FILA. She strongly criticized the proposal to replace the planes and limes by other species, and urged instead an intelligent policy of pruning to remove the unsightly growths caused by indiscriminate lopping. The deputation's principal arguments were summarized by an architect and town planner, Mrs. Ann MacEwen, who lives in Tanza Road. The result was that the committee decided to suspend the death sentence already passed on the trees to enable the matter to be reconsidered. And the final verdict, announced in September, has been a reprieve for all the trees except four limes, which are to be replaced by limes. All of which shows that an appeal to the good sense of a borough council, if supported by sound arguments and expert evidence, can prevent the wholesale destruction of trees now taking place in several parts of London.

School of Architecture, Caracas

There has been speculation for some time about what sort of building for the Faculty of Architecture would crown the remarkable aesthetic enterprise that has produced the University City of Caracas, Venezuela, and the result, 3, is not altogether a surprise. The rest of the campus suggested a programme of advanced, but orthodox modernism, the Architecture Building, designed by Carlos Raul Villanueva, confirms it. At first sight the variously pitched roofs might seem to counter this orthodoxy, but the materials are used in flat planes, like those of constructivist sculpture, not plastically, and the general orthodoxy is underlined by the architect's wholehearted adoption of the standard orthodox-modern programme of the 'integration' of the arts—a programme that manifests itself in the extensive use of exterior polychromy, and the consistent use within the building of the tight geometrical disciplines of the Albers-Max Bill school of abstract composition; 4 is a screen at the entrance of the Textures Studio. As Villanueva has said 'There can be no synthesis without discipline,' and it will be interesting to see how the student body reacts to this consistently disciplined environment; whether they will accept it as a physical order, providing the framework for a liberation of the spirit, or whether they will reject it as a spiritual tyranny, to be broken only by objects of gross physical plasticity, such as Brutalist sculptures and American cars.



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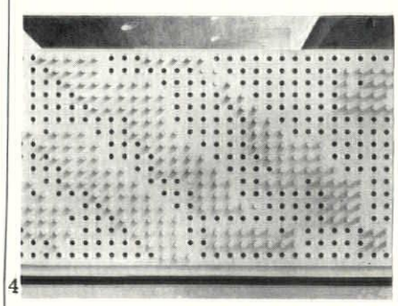

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Victorian Design

The proposal to form a society to do for the buildings and furnishings of the Victorian and Edwardian eras what the Georgian Group does so devotedly for Georgian buildings, will be greeted with some head-shaking by those who still regard an interest in Victoriana as a mere fashionable whim. The founders of the society will have to convince these sceptics that Victorian architecture deserves the serious attention it is now receiving from scholars and that it includes many buildings of permanent intrinsic worth, which ought to be preserved if possible.

It also of course includes a still larger number of buildings of no worth at all, and one of the first problems that will have to be faced is to decide on what basis the good should be weeded out from the bad. Aesthetic merit is not the only possible criterion. There are buildings that most people would agree to be extremely ugly and which yet represent some characteristic trend, some turning-point of taste, important in the history of the period. How highly are such buildings to be valued?

Moreover, the quantity, as well as the bewildering variety, of Victorian buildings is an embarrassment. English towns are largely composed of Victorian buildings. The Georgian Group can reasonably make it its aim to try to safeguard every remaining major building of the period. If this were the aim with Victorian buildings, the redevelopment of our towns would come to a full stop.

The choice of buildings to be safeguarded must be strictly limited. But that does not make it any less necessary for a choice to be made. Such a movement as this was bound to come, and the names of the people supporting it* suggest that the listing of worthwhile buildings and whatever educational and propagandist activities the society may undertake will be responsibly conducted. They will not be inspired simply by nostalgia, nor by the cult of the unfashionable.

If the question be asked whether the time is ripe to treat the buildings and furnishings of so recent a period with the respect we accord to earlier ones, the answer surely is that examples are disappearing more quickly than we realize and that if we wait until Victorian and Edwardian buildings are more widely studied and appreciated, it will then be found that the evidence on which scholarly studies should be based no longer exists.

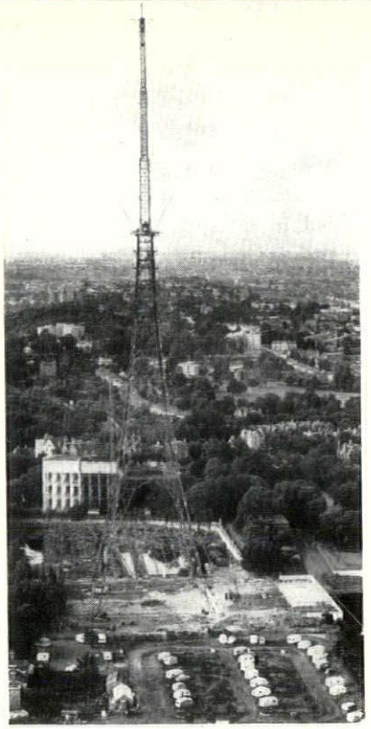
Technologies at Sydenham

The 700-foot mast for television broadcasting which has recently been completed on the northern end of the Crystal Palace site, has added a new and spectacular landmark to the South London scene, 5. The photograph does less than justice to the elegance and ingenuity of its lower structure—no two dimensional medium ever could—but it does draw attention to a sorry admixture of technology and its consequences around the base of the mast. Just beyond it are the last survivors of

*Those present at the inaugural meeting included Lord and Lady Rosse, Lord Esher, Mr. John Betjeman, Mr. H. S. Goodhart Rendel, Mr. Christopher Hussey, Mr. James Lees-Milne, Mr. R. Furneaux Jordan, Mr. Osbert Lancaster, Mr. John Piper, Mr. Oliver Messel, Mr. John Pope-Hennessy, Mr. James Pope-Hennessy, Sir Hugh and Lady Casson, Mr. J. M. Richards. Letters of advice and encouragement were read from Sir Kenneth Clark and Dr. Nikolaus Pevsner.

CORRECTION

On page 348 of the October *Architectural Review* the Colchester Co-operative Society's building was attributed to the C.W.S. chief architect, W. J. Reed, F.R.I.B.A. This was incorrect. The C.W.S. architects' department was merely called in a supervisory capacity and was not responsible for the design of the building. We wish to apologise to Mr. Reed for this error of fact as well as for the inference that the work of his department is not progressive.



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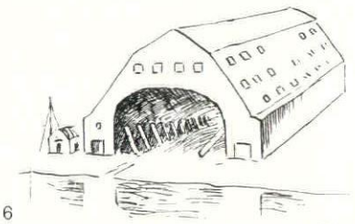
Paxton's original structures, the water towers, carried on their elegant three-dimensional grids of standard prefabricated elements; to the right of the mast is neatly designed contemporary entrance unit to the underground broadcasting sub-station below the mast. The tidy façade that this entrance turns towards the Palace grounds is unfortunately invisible in this view, but the squalor of the waste-land camping-site in the foreground is unfortunately all too visible. The LCC's plans for redeveloping the site should remove this particular blight—but where will the caravans go then?

Van de Velde

With the death at the great age of 94 of Henry Clemens van de Velde, one of the few surviving links with the generation of the pioneers of modern design has parted. Although, like most Belgians of his time, he started his artistic career under French influence, and studied under Carolus Duran, his main contributions to the progress of design were made within the very different world of German progressive art. His earliest Art Nouveau designs, misunderstood in Paris in 1896, were an outstanding success at the Dresden exhibition of the following year. In 1900 began his association with the Folkwangs Museum in Hagen, and two years later he became artistic adviser to the Grand Duke of Saxe-Weimar. In this latter position he undertook that reorganization of art and craft instruction in Weimar on which Walter Gropius later built the Bauhaus. He left Weimar in 1914, because of the War, and subsequently lived mostly in Switzerland, apart from a spell of duty as head of the Institut Supérieure des Arts Décoratifs in Brussels, beginning in 1926. As a reader of Ruskin and Morris, he did much to distribute their ideas of a morally and politically healthy art on the Continent, and in his own mind this ranked far more importantly than the contributions he made to the formal language of Art Nouveau—in the extract of his memoirs that appeared in the AR for September, 1952, he gave his own estimate of their relative importance, an estimate that historians may, or may not, ultimately come to share.

Early American Industrial

When the sketch below, 6, was reproduced in a recent issue with a letter from Mr. Rupert M. S. Kay of Manchester, it should have been made clear that the structure it



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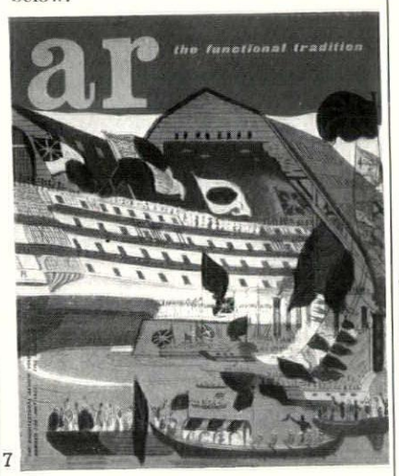
illustrated was at the US Navy Yard at Washington. Built in 1833, it bears a close resemblance to the covered ship-launching slip at Deptford shown on the cover of the AR July issue, 7, below.



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CORRESPONDENCE

The Chinese Dome

To the Editors.

SIRS,—A letter in your issue of January, 1957, from Mr. R. Faudree, of New College, Oxford, concerning the early achievements of the Chinese in the science of vaulting, requires a note of emendation.

The key monument to which Mr. Faudree refers has, as he points out, been published in a fairly careful monograph, with a title that might be translated *The Wall Paintings of the Han Tomb at Wang-tu* (Peking, 1955). Architectural drawings done with an obvious professional skill and a number of good photographs explain the structure of the tomb clearly. Its ground plan one might describe as a cross with two horizontal (east-and-west) arms, elongated in something like the fashion of Fonthill Abbey (to use an analogy close to the hearts of readers of the REVIEW). Each of the seven chambers and the passages between them is covered by a pointed tunnel vault of brick (the bricks being laid lengthwise instead of in the voussoir sense familiar in the West). Nowhere is there any sign of the 'two large pointed domes set on the square and using the squinch,' to which Mr. Faudree refers. Where the Romans might have introduced a cross-vault, at the intersection of the main, north-and-south axis with that of the middle chamber and its two wings, the Chinese masons took the simpler course of keeping the minor vault over the passage well below the springing of the transverse tunnel, to avoid any puzzling complications. As for the 'highly sophisticated technique of stone and brick construction,' this seems to boil down to the fact that the doorways are spanned by stone voussoirs and



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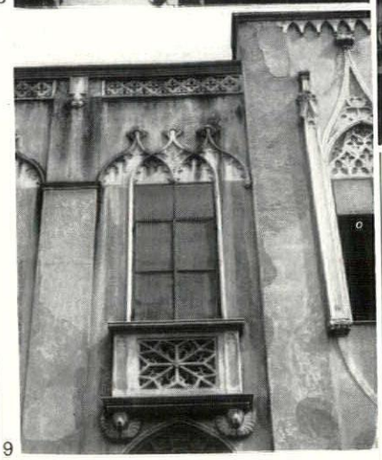

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10
11

Pedrocchino: *four illustrations of Iappelli's early Neo-Gothic Casa Romiati at Padua, referred to in the letter below. 8 and 10, the garden front, details from which are shown in 9 (one of the central bays) and 11 (end pair of bays). The street front has been entirely altered into nineteenth-century Italian classical style.*

lintels, and that the vaults are to some extent—the text is unclear—protected by stone relieving arches.

Recent excavations have shown that later brick tombs with square central chambers are typically covered by cloister vaults. The one exception that I have found is published in the Peking National Library's monthly, *Wen-wu Ts'an-k'ao Tzu-liao*, 1956, pages 42–44. This tomb, found in Chiang-ning-hsien in Kiangsu province and attributed to the 'early Six Dynasties period,' shows a vaulting technique related to the squinch, since it it begins with the corners as a first premise. Instead of the corner pocket to which we are accustomed, however, each squinch system is allowed to expand until it meets its neighbours. Unfortunately the upper part of the vault is too ruinous to show how the resulting dome was worked out; the photographs are indecipherable, and the description is written in a newly-coined jargon which I do not fully understand. The date would presumably be the fourth century AD.

Yours, etc.,
ALEXANDER SOPER.
Bryn Mawr College, Pensylvania.

Pedrocchino

To the Editors.

SIRS,—I have read with much interest your article 'Pedrocchino and some allied problems.' May I take the liberty of drawing your attention to another Neo-Gothic building by Iappelli, the Casa Romiati also at Padua, perhaps planned after his journey to London and therefore of the period 1837–40. This building was briefly illustrated in the article on Iappelli published by Roberto Carta Mantiglia in *L'Architettura* of November-December, 1955. It may be of interest to your readers to see some illustrations of it.

Yours, etc.,
FERDINANDO BELLONI,
Architectural student at the Politecnico of Milan.

House at Watford

To the Editors,

I am disgusted that you printed such a meaningless and ridiculous letter. Mr. Harrison has collected together a series of words, which show no constructive criticism of the design. It is obvious that he just has not looked at the design carefully, nor has he analysed the plan to see if it works, and then to see how the elevations are dictated by the plan form, i.e. do the windows let the right amount of light in at the right place. At a first glance, the house does appear rather curious, but by studying it closely, it becomes obvious that it is a very sensible solution to the problem.

How Mr. Harrison can say that it is worse than the surrounding spec. built houses, I fail to comprehend. The Smithson house definitely appears as a brick box, punched with holes to let in the right amount of light at the right place, and the brickwork dominating, whereas, as the architects point out, the spec. built house is neither a domination of brickwork nor of windows and this produces a very indecisive and anaemic result.

Incidentally has Mr. Harrison seen Vanbrugh Castle, Blackheath where there is a domination of brickwork punched with holes, the shape of those holes coinciding to the shape of the towers, the upper windows relating to the horizontal coping and the lower windows to the scalloping beneath the coping; just as, in the Smithson house, the windows in the southwest elevation coincide with the horizontal eaves, and the windows on the southeast elevation follow the shape of the roof line.

Yours, etc.,
Maidstone, Kent.
K. FAIRBURN.

ACKNOWLEDGMENTS

COVER: Galwey, Arphot. MARGINALIA, pages 1–2, 5, The Times; 8–11, F. Belloni. FRONTISPIECE, above, Toomey, Arphot; below, Galwey Arphot. PREVIEW, page 14, below, page 19, below, page 20, top, page 38, top left, page 43, top and centre, page 65, both and page 71, top, Alfred Cracknell; page 20, remainder, W. F. Middleton; page 23, LCC; page 29, above, Patricia Cain; below, Studio Swain; page 33, above, page 44, top and centre, page 49, bottom left, page 50, top and bottom, page 55, centre and bottom, Sydney W. Newbery; page 37, below, Wallace Heaton; page 38, top right, Larkin Bros.; page 55, top, P.W. & L. Thompson; page 56, top and centre, Mann Bros.; page 71, centre, Thomas Photos. All remaining photos were taken by Galwey, Arphot. COUNTER-ATTACK, page 76, Nairn, Arphot.



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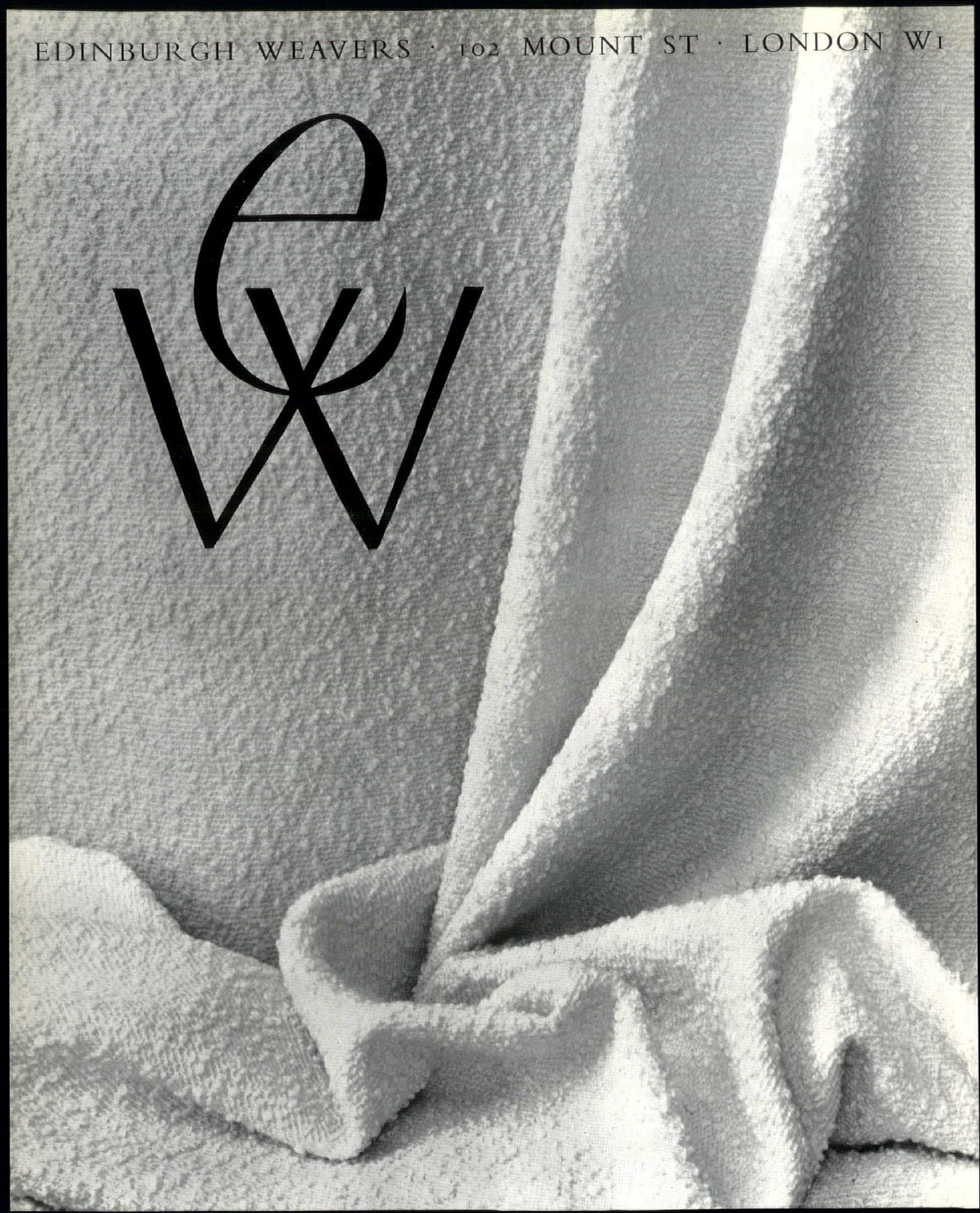

THE ARCHITECTURAL REVIEW

Volume 123 Number 732 January 1958

SPECIAL PREVIEW ISSUE



This Month's Cover shows a model of the terminal buildings now under construction at Gatwick Airport—architects, Yorke, Rosenberg and Mardall. See also pages 48, 49. It is one of seventy-six projects illustrated in this the fifth of the Review's annual preview issues in which readers are given advance news of building in Britain during the coming months.

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10 Entertainments Building: Eastbourne *Westwood, Sons and Partners*
11 Shops and Offices: Basildon *Noël Tweddell*
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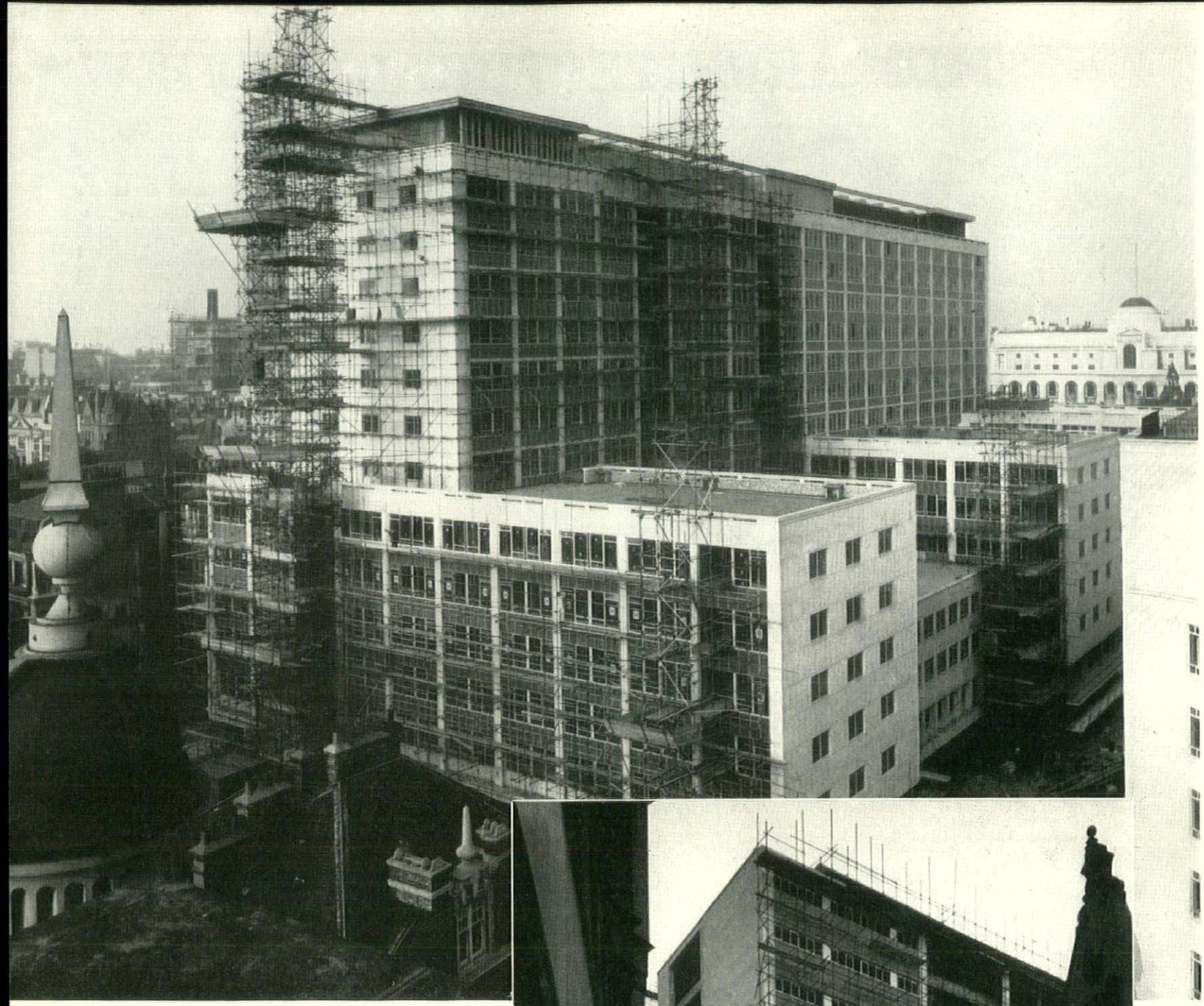
FIVE SHILLINGS





In London and in the provinces new architecture is being increasingly dominated by an almost standardized modern style of design partly brought about by the widespread use of standard components like curtain walling, and partly by the natural process whereby a movement that starts with a number of experiments in form and evolves therefrom a number of accepted clichés, eventually crystallizes into a style. This phenomenon is discussed in the article opposite. Here are two typical illustrations of the process at work in the shape of two large office blocks now under construction in London and Birmingham, each dramatically overtopping the antique or conventional buildings among which it is set and therefore revolutionizing the scale of the urban landscape. Above, Bucklersbury House in the City, by Campbell-Jones and Sons. Right, the 'Big Top,' Birmingham, by Cotton, Ballard and Blow. Both were included as projects in earlier Preview issues of the REVIEW.

FOREWORD

This annual Preview issue of the *Review*, which offers readers a glance ahead at the new buildings about to go up or already in the early stages of construction, presents an obvious opportunity to discover characteristics common to the coming year's buildings and to generalize about the way architecture is going. In some years there is nothing to discover except what is self-evident, and no trends to be observed that a different choice of examples might not seem to reverse; but from a study of this year's projects there does seem to emerge one interesting new tendency, a tendency, moreover, that the examination of an even larger number of projects than are included here confirms rather than contradicts.

This tendency can best be defined as an ability to produce designs of a competent modern character, showing itself in long-established offices presided over by architects who have played no part in the evolution of modern architecture in this country. Only a proportion of the projects illustrated on the following pages conform to this definition, but those that do represent, in the view of the Editors, a phenomenon of such significance that they feel justified in introducing the whole issue with some comments on it. It is only a short while since the output of modern architecture depended almost wholly on the offices—indeed on the individual pencils—of the few architects who had helped to shape it in the nineteen-thirties; and as we saw young architects with the same ideas coming out of the architectural schools we assured ourselves that modern architecture would soon be spread about more widely as a natural result of there being more modern architects, by which we meant more architects—if we were optimistic, a whole generation of them—with something new and personal, as well as modern, to say.

But it does not seem to be working out like that. What we must still call modern architecture (though the term has not quite its former exclusive significance) is certainly spreading, and of course the younger generation is making its contribution; but the new recruits that are making the strongest impact on it are the established firms of architects who have recently gone over to designing in a modern style. We foresaw a long period during which the traditionalists would be fighting a last-ditch battle against the growing numbers of modernists, but this simple picture has become confused by the enthusiasm with which

many of the former have taken to brandishing the weapons—or at least passable imitations of the weapons—previously wielded by the latter. When we complained about big blocks of offices in the City and elsewhere being put into the hands of architects with out-of-date ideas and outmoded aesthetic predilections, we hoped that as a result of so much criticism future commissions of this kind would be given to younger and more enterprising men. Although the standard of design of big city buildings is still far below what it should be, it has improved, but not because younger firms are doing them; in many cases the improved work comes out of the same offices that were responsible for the criticized work.

It may be argued that this is simply the new generation working in another guise; that the apparent change of heart on the part of some busy architects of the older school is the result of more responsibility being given to young men entering their offices. This must partly be so, but it is not the only reason and, even if it were, the architecture that results from their efforts has a recognizable, somewhat standardized, character of its own—typical of a great deal that is being built today—which arises no doubt from the impersonal nature of the process of design. Other reasons are the availability of standard components and systems of construction, like curtain walling, which have made the idiom of modern architecture easy to adopt, as it were, ready-made, and the wide currency given to certain design clichés which possess, for the busy architect, the same advantage.

The outcome of all this is that much modern architecture, and especially that of the well-established office which has suddenly turned modern, relies on a fairly standardized style of design, based on a limited number of accepted elements and forms, which has very little to do with the never-ending search for new forms and modes of expression on which the creative energies of the nineteen-twenties and the nineteen-thirties were engaged. It is not necessarily any the worse for that—architecture cannot feed interminably and exclusively on the fruits of original experiment—but the nature of the problems architecture has now to meet is thereby changed. Modern architecture, as now practised by the many, has largely become what we declared it never would be when it was the artistic creation of the few: a *style*—with its own rules and limitations by which those employing it are strictly bound for the very reason that they are following a fashion, not creating one. The expected struggle against the upholders of traditional styles has become instead a struggle to maintain quality and to ensure that the current style is intelligently used.

In one sense this new situation is more promising than the old one. The battle of the styles was not a battle the perceptive modern architect was very happy about. Too often it compelled him to fight with arguments that his beliefs told him were no longer valid, and it brought him face to face with the imponderabilities of taste: the unanswerable "I know what I like". The critic and the enlightened man in the street must continue, perhaps for a long while, the process of persuading the client, the business-man and the less informed public that they are mistaken when they still pin their faith to the charms of sentimental and historical reminiscence. But the architect is free now to concentrate on more realistic issues like quality and flexibility, and in doing so he has the opportunity of correcting any mistaken impression which the battle of the styles may have created, that the external appearance of a building could be discussed and judged independently of other things, like planning and construction; indeed, that the whole three-dimensional conception was not one and indivisible.

At the moment, however, we are discussing primarily the building as it is seen; in fact,

style, if that is a word we can bring ourselves to use; and especially the efforts, evident in the best work shown on these pages, to ensure that whatever is gained by allowing modern architecture to become, in the hands of most of those who practise it, a style, is not more than offset by loss of the freedom the pioneer modern architects fought for—in short, that we have not jumped from one strait-jacket into another.

A glance at the projects illustrated here shows at any rate that there is no threat of absolute standardization. In spite of the increasing use of curtain walling and similar systems there is an almost bewildering variety of form and structure and plenty of evidence of fertility of invention. Of course these projects do not represent a true cross-section of the work that is being done in the modern style. Among them are designs by several of the architects who have worked in a creative spirit since the early days, and others by younger architects who are carrying on the same tradition. But more typical of the present moment are the designs which it would not be unjust to describe as exercises in the use of certain accepted design routines. The significance of these lies not only in the prominence they have lately attained but in the fact that, owing to the way commissions, especially in the business world, are allocated, routine designs produced in the established offices that have adopted modernism whole tend to occupy the most prominent sites. The controversial new projects with which advanced ideas in architecture are associated in the public mind—the much-discussed skyscraper hotels, tower blocks of offices on riverside sites and the like—are almost invariably of this character—modern in style, but not for that reason alone, as a few years ago they would have been, good architecture.

There is no need to recapitulate here the advantages of a modern style.* It provides the ordinary architect (as distinct from the man of genius, who is always a law to himself) with a tried answer to normal problems to which there is no reason to seek an original solution on each occasion. It makes it more difficult for him to go badly wrong. By furnishing architecture with an easily recognizable vocabulary it also makes it less bewildering to the public, whose interest is alienated when the art becomes too esoteric.

The disadvantages—or rather the dangers—of a modern style are also obvious and have become more so since we acquired one. First, of course, it encourages superficiality; the mere clothing of a building in a fashionable dress. Clichés as building elements and as a standard answer to problems of detail are one thing: whole buildings which are themselves clichés are another. A more insidious danger lies in the fact that ready-made systems of design which appear to make architecture easier in fact make it more difficult because real subtlety of form, and the exercise of the imagination in the play of form, are discouraged.

The modern architect, who knows that he must come to terms with the modern world which has produced among other things the industrialization of building components, by making it serve his purposes and not by becoming its slave, is now faced with three major tasks: to learn to use standard components subtly and imaginatively, to persuade industry to provide components which offer the best possible scope for doing so, and to persuade those who decide about by-laws and planning regulations to provide conditions which permit him to do so. The last is doubly important, because if it can sometimes be justly said that such inventions as the curtain wall go too far towards designing an architect's building for him, it can equally be said that the multiplication of by-laws and regulations tends to do exactly the same.

* See J. M. Richards: 'In Defence of the Cliché'. AR, August, 1953.

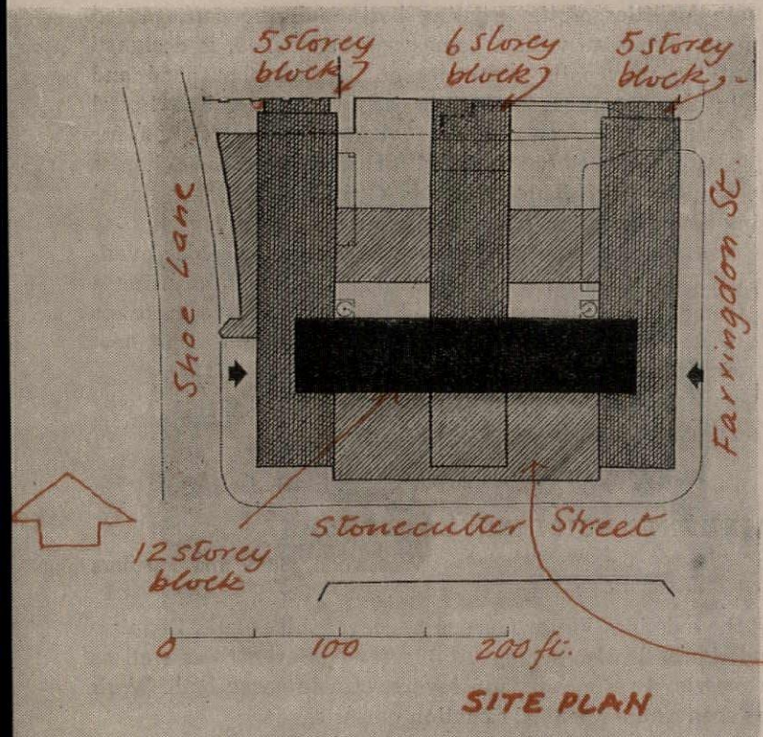
This problem may seem far removed from the question of an emergent modern style with which this foreword began, but the effort to achieve the right, and eschew the wrong, kind of standardization takes many forms. A standard design idiom is not an objective in itself, but a tool with which architecture can be fashioned well or badly. The possession of such a tool at least simplifies our task in one way: we no longer have to exclaim with pleasure that a building is modern; the projects shown on these pages are only a few dozen out of some hundreds that might have been included. We can concentrate on the real values of architecture, remembering that although in the long run quantity assists quality, it does not guarantee it.

the editors

1 PUBLIC BUILDINGS



New telephone building now under construction in the City of London, designed in the chief architect's department of the Ministry of Works. It will house the FLEet telephone exchange.



SITE PLAN

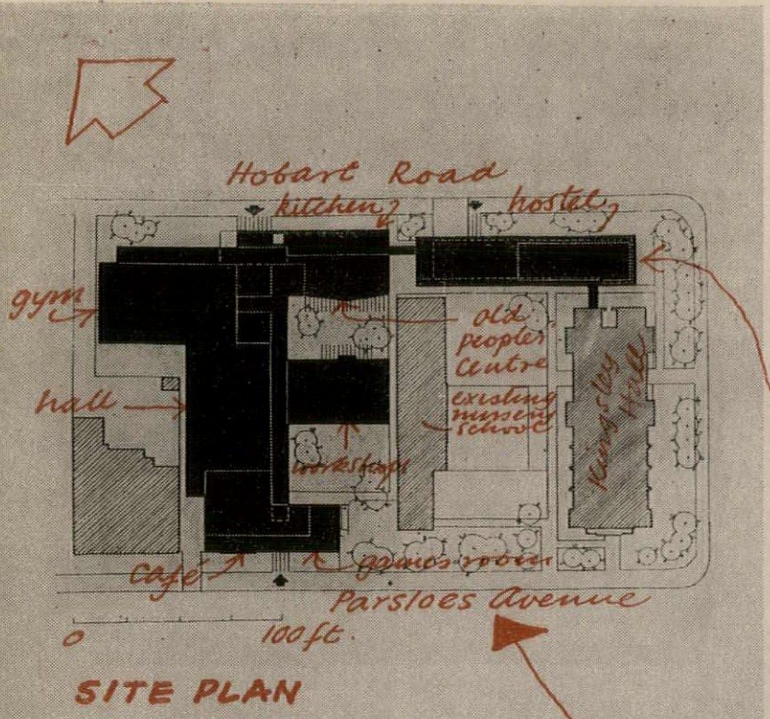
TELEPHONE EXCHANGE: CITY OF LONDON

Ministry of Works

For the new FLEet exchange, to accommodate apparatus, switch-rooms, etc., and telephone managers' offices. The site is in Farringdon Street, E.C.4. Work began last summer.

The plan-shape was determined by Post Office engineering requirements, which included a large cable-chamber at sub-basement level, running the full width of the site, to take all incoming cables, and a large apparatus area serving a number of switch-rooms, each capable of operating independently with its own staff. The basement and ground floor contain apparatus as well as a low-level garage reached from a yard at street level. The main entrance is from Farringdon Street, but there is also a staff entrance in Shoe Lane, 15 ft. higher owing to the slope of the ground, which gives direct on to the first floor where the main apparatus area is planned. The switch-rooms served by this are on the second and third floors. On the second floor there are also conference rooms. The fourth to twelfth floors accommodate the office staff for two telephone managers. A dining-room, with kitchens, for the occupants of the whole building is on the first floor. Lavatory accommodation is planned vertically to utilize internal ducts.

The building has a reinforced concrete frame on a module running in both directions designed to fit Post Office apparatus layout. Floors are of flat slab construction stiffened by the lift towers. External cladding consists of standard slabs with Portland stone facing fitting between concrete columns. These alternate horizontally with hardwood frames containing single-light fixed or horizontally pivoted



SITE PLAN

windows. End walls to the 5-storey wings and the tower block are faced with Derbydene stone with small areas of coloured mosaic.

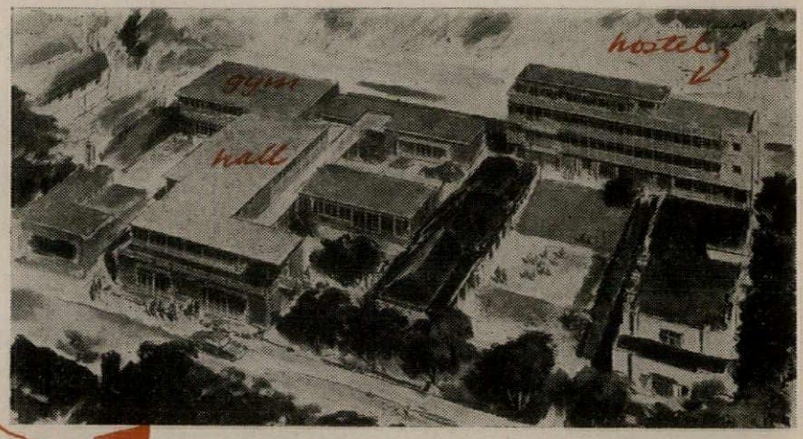
Senior architect in charge: W. S. Frost.

COMMUNITY CENTRE: DAGENHAM, ESSEX

Edward D. Mills and Partners

An extension of Kingsley Hall, which serves an LCC housing estate and consists now of two main (pre-war) buildings, a nursery school and a number of temporary buildings, which latter are to be cleared away. The new buildings, on which work will start early this year, include a centre for old people, workshops, a gymnasium, a hall, a café and a hostel.

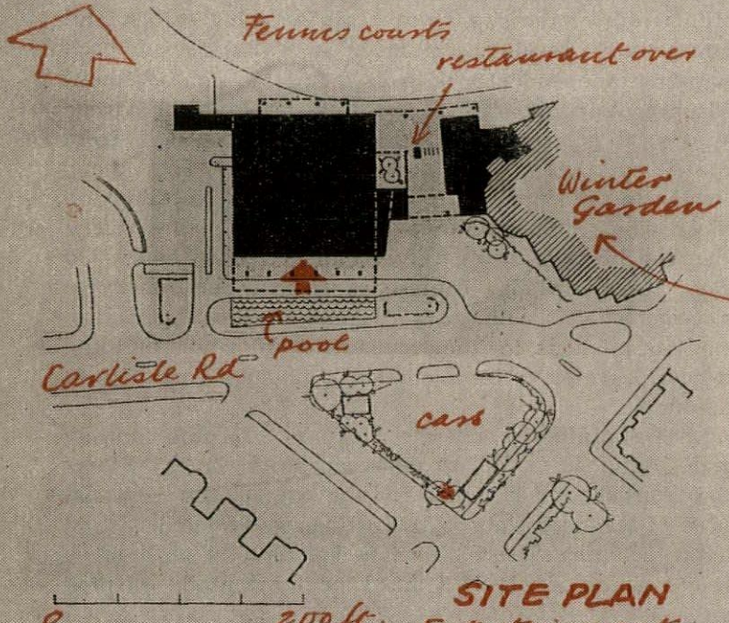
The old people's centre is designed, among other purposes, to give better facilities to an existing old-age pensioners' luncheon club.



The hall has a stage and dressing-rooms for amateur theatrical productions (the present Kingsley Hall Dramatic Group now uses the inadequate facilities of the existing hall), and the café, placed on the main road frontage with a games room attached, is designed to supplement the poor eating facilities of the neighbourhood and to be open in the evenings as well as at lunch-time. The hostel occupies a separate block on the rear road and is designed for young people, especially those working far from their own homes as apprentices in the Dagenham industries. Combined with the hostel are staff living accommodation, offices and a warden's flat.

Since the centre will be built in stages as money becomes available, it has been designed on a unit system of construction, using a light steel frame and infill panels of brick, precast concrete or coloured glass. A new oil-fired boiler in the new buildings will heat the whole group of buildings, old and new.

Quantity surveyor: Leslie W. Clark.



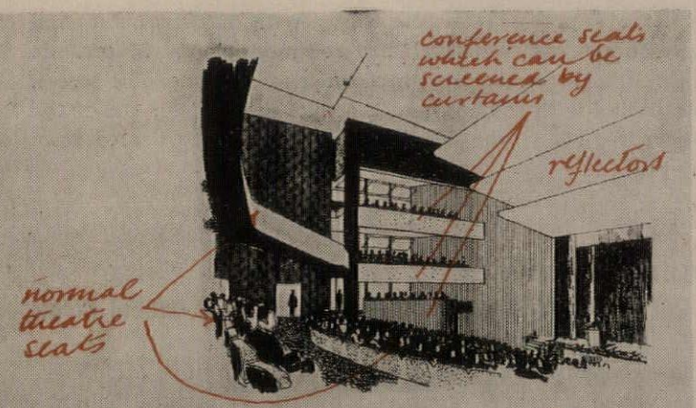
SITE PLAN
Entertainments Building: Eastbourne

ENTERTAINMENTS BUILDING: EASTBOURNE

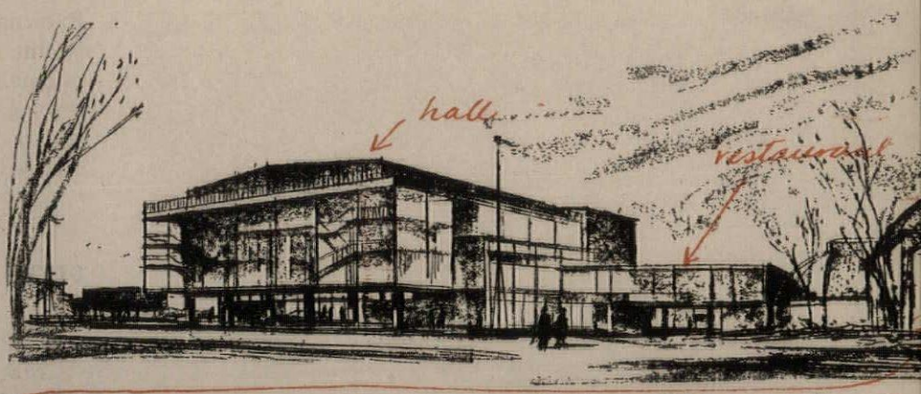
Westwood, Sons and Partners

Adjoining the existing Winter Garden at Devonshire Park. Requirements included a hall, with stage, suitable for conferences as well as plays and concerts, a restaurant and foyers, etc., to serve both. Work will begin as soon as the financial situation permits.

The long axis of the building has been placed across the site so as to utilize the slope of the ground and to bring the main front, containing the foyer, bars, etc., forward where it can be seen from neighbouring streets and attract its own publicity. The restaurant will serve both the new building and the tennis ground behind the



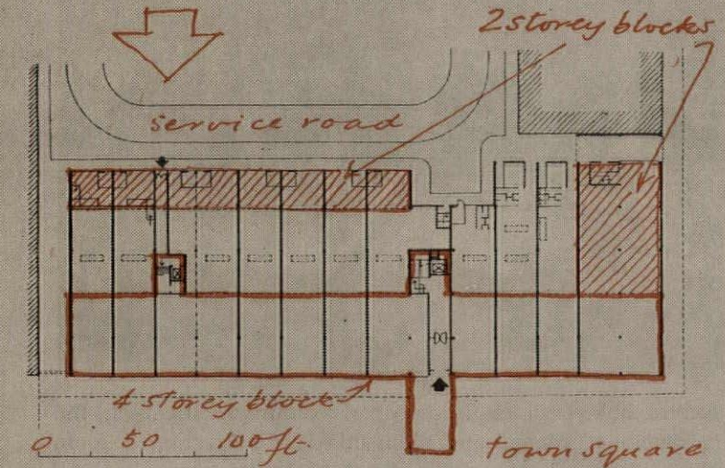
Interior of hall



Winter Garden, and has therefore been placed between the new and old buildings at first-floor level, with access to the tennis courts beneath it. The kitchens are built on to the old building. The multi-purpose hall, which has a raking floor and one gallery, is designed to provide 1,700 seats (plus standing room) when used for conferences, 1,500 when used as a variety theatre, and 1,000-1,250 when used for plays or concerts. The shape of the auditorium was determined by the need, during conferences, for a large number of seats close to the apron stage which can be screened off when the hall is used for other purposes—they therefore occupy wallspace not required as an acoustic reflector—by the fact that a shallow fan shape is unsuitable for concerts and plays and by the demand for a wide proscenium opening.

The structural system is not yet fully worked out but it will be a concrete frame building, permitting the use of natural light and air, which were considered necessary in a conference hall that might be in continuous use for several days.

Consulting engineers: Ove Arup and Partners.

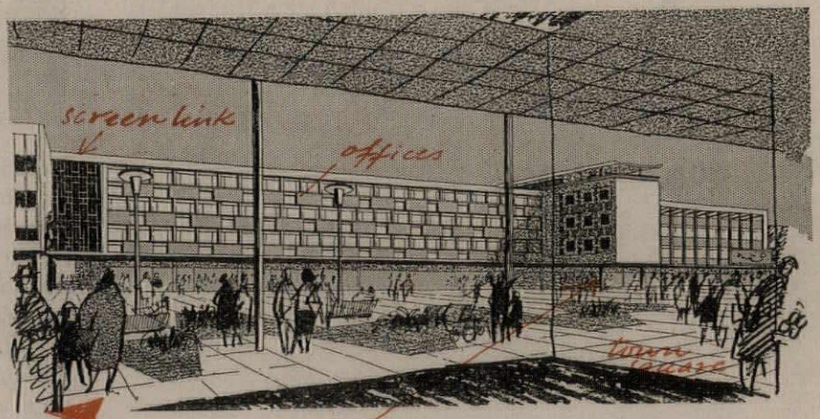


GROUND FLOOR

SHOPS AND OFFICES: BASILDON

Noël Tweddell (Chief Architect, New Town Corporation)

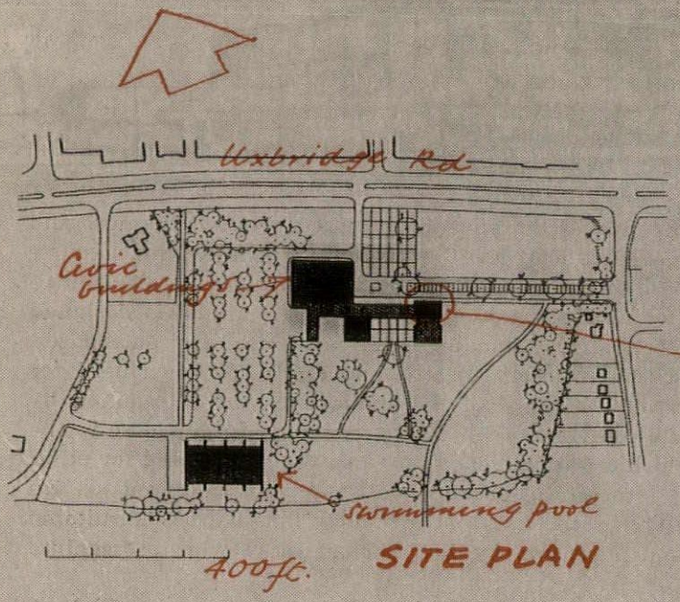
Included among public buildings because of the important position it occupies in the town square in the main town centre—which has been largely redesigned since a preliminary scheme was illustrated in the January preview issue, 1956. The building, of four storeys, is on

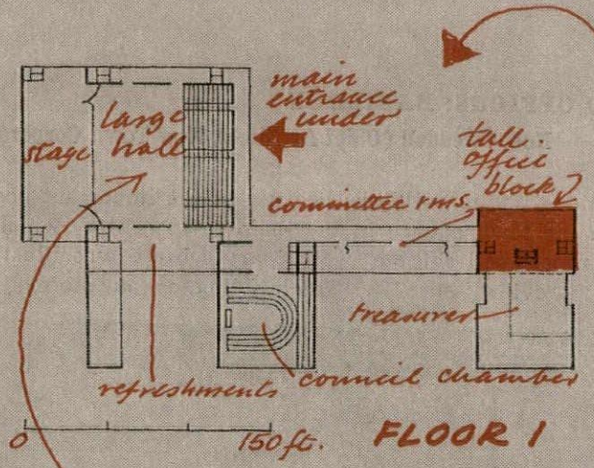


the south side of the town square. Work on the foundations began last October.

The ground floor comprises twelve shops, eight of which have storage and lavatory accommodation at an upper level at the rear. The upper three floors provide 29,500 sq. ft. of offices, including a pavilion projecting 40 ft. into the square. Each floor is designed to allow partitions to be erected at 6 ft. 8 in. centres. There is one passenger and one goods lift.

The building is steel framed on a 20 ft. grid with hollow-pot floors.





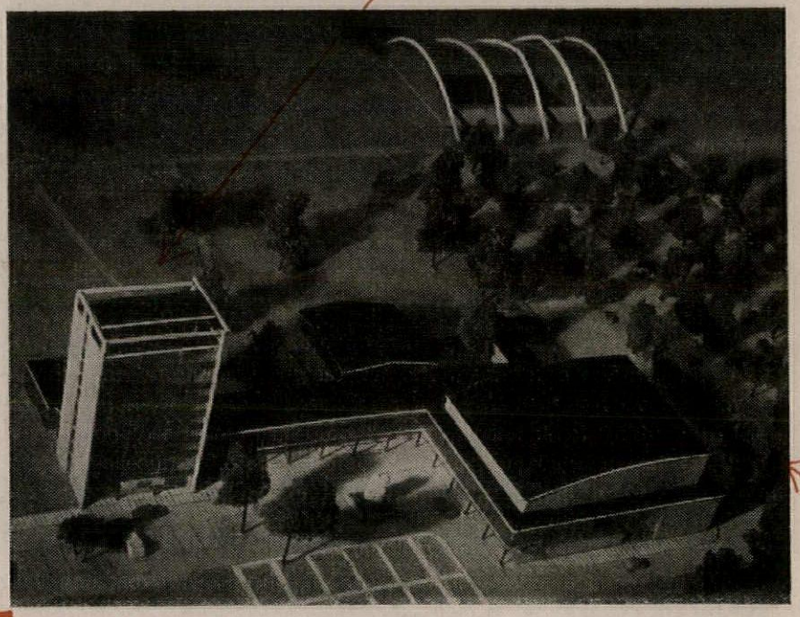
External walls are precast concrete slabs with a terrazzo facing on the town square frontage which has recessed panels in ceramic mosaic. Steel mullions are faced with reconstructed stone. The screen linking the building with the adjacent block at the eastern end of the square is of welded steel tube. The offices are centrally heated from oil-fired boilers.

CIVIC BUILDINGS: HAYES

Clifford Culpin

To serve as a civic centre for Hayes and Harlington, Middlesex. The scheme, which has been approved by the council although a starting date has not yet been fixed, comprises a council suite (council chamber, committee rooms, members' rooms, etc.), large and small halls and council offices. The site adjoins the main Uxbridge Road, and a green strip links it to the existing town-hall park to the south-west. There is parking space for 300 cars to the west of the new building.

The building is planned for construction in three stages, beginning with the offices. These occupy a 10-storey tower, with the treasurer's department (that most often visited by the public) on the ground floor. Adjoining it is a single-storey rates hall. The office block is linked to the lobby of the first-floor council chamber by a range of

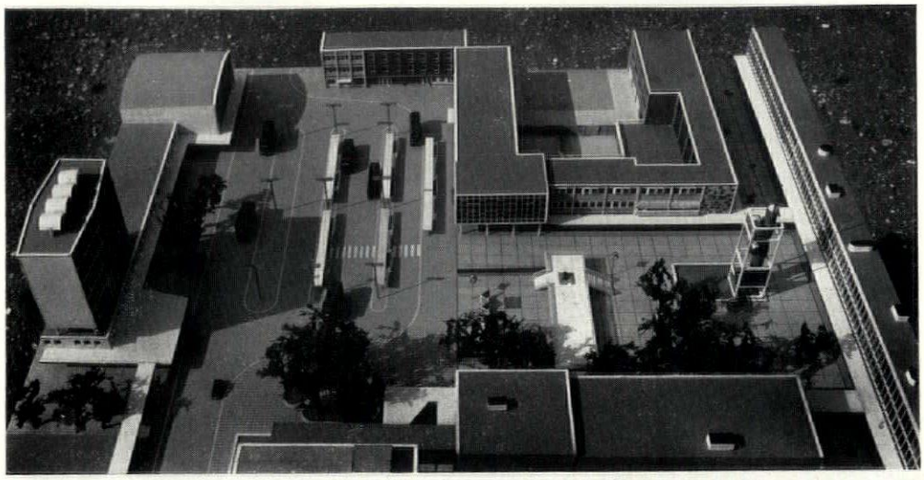


committee-rooms, below which is an open colonnade. Beneath the chamber are members' rooms, and alongside it a refreshment room with kitchens beneath. These, with a caretaker's flat over a row of garages, enclose a small members' courtyard. The two halls with their ancillary accommodation are placed nearer the road, enclosing a paved entrance forecourt. The small hall at ground-floor level seats about 200 and has its own entrance on the north side. The main hall, seating about 1,200, is above. There is ramped fixed seating at the back and movable seating at the front on a floor sprung for dancing. The stage has dressing-rooms and storage space beneath. The refreshment room and kitchen between the hall and the council suite are planned also to serve both halls.

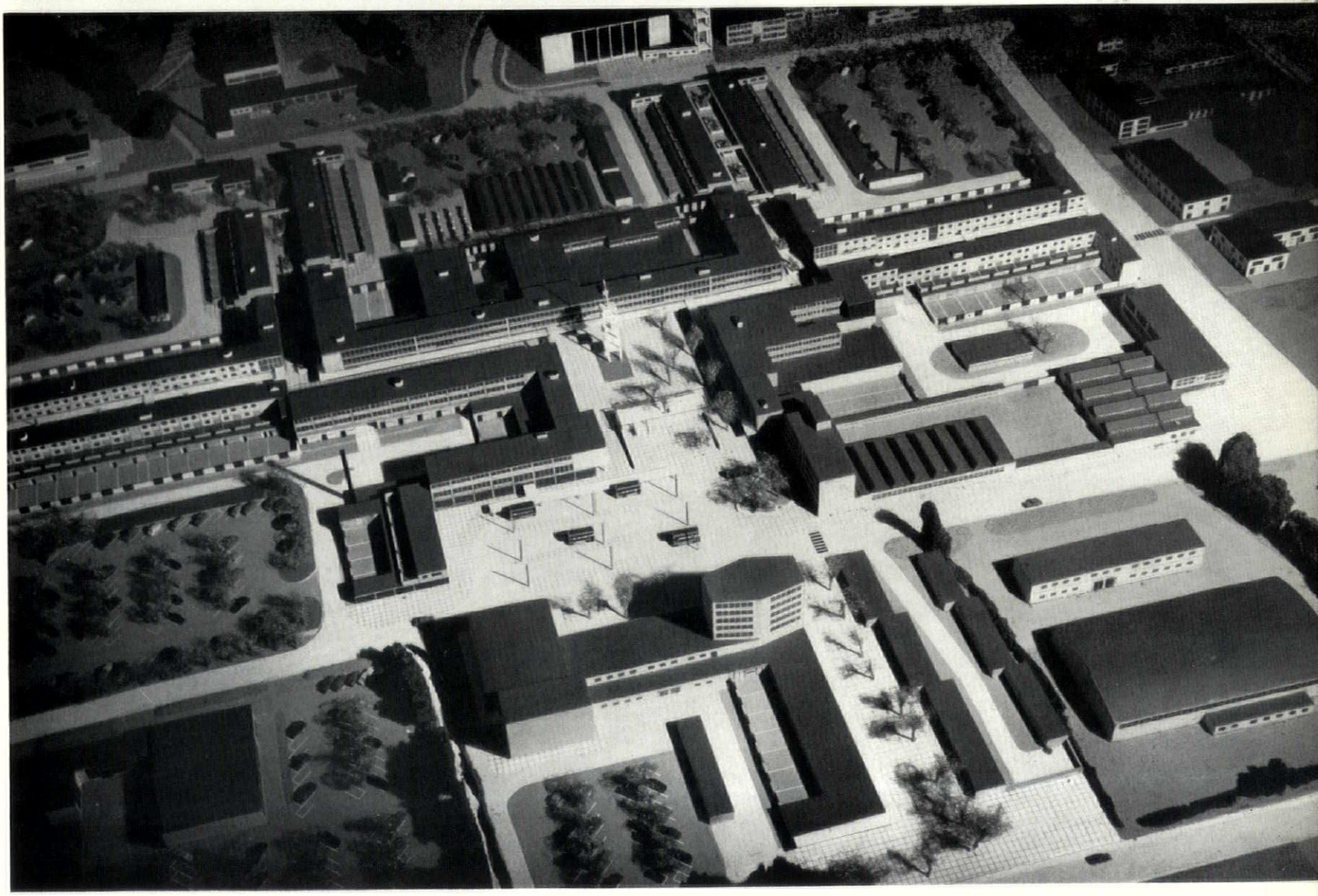
The building is of reinforced concrete frame construction throughout. Cladding materials are not yet decided but a large amount of glass will be used.

Consulting engineers: Ove Arup and Partners.

2 PLANNING SCHEMES



The town centre at Stevenage, by L. G. Vincent, chief architect to the development corporation: left, from the south, with the bus terminus on the left and the town square opening off it: below, from the west, with the main shopping way running across the picture, behind the tower which stands in the main square. See also next page, and description and layout plan on following page.

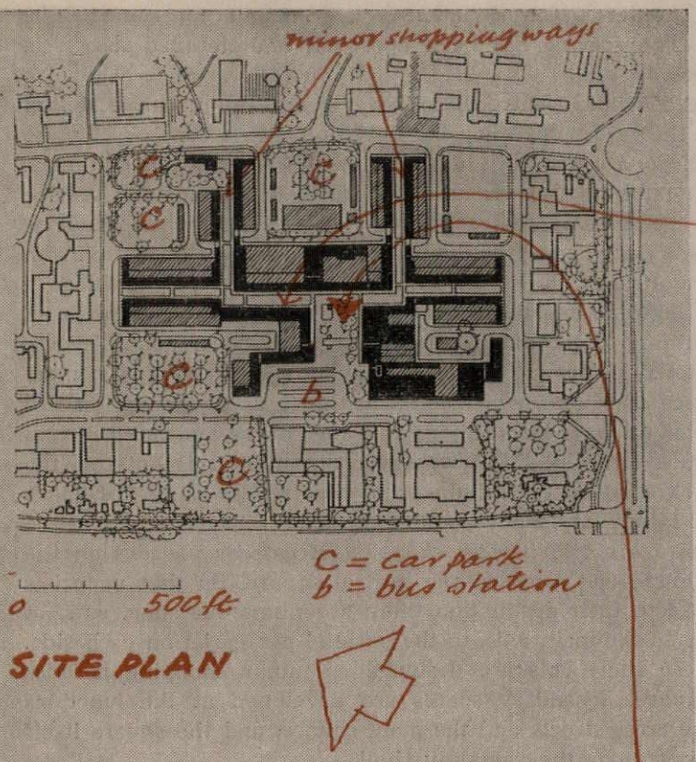


2. PLANNING SCHEMES

Above, town centre at Stevenage by L. G. Vincent, Chief Architect, looking west showing the main square closed at the far end by a raised platform, and the bus terminus beyond. See also the preceding page.

Below, Park neighbourhood centre, Swindon, by Frederick Gibberd, from the north looking into the north pedestrian precinct, with the main square and the south pedestrian precinct beyond.





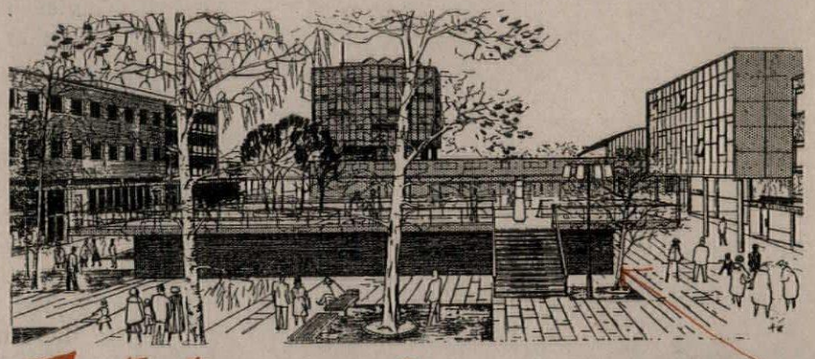
SITE PLAN

TOWN CENTRE: STEVENAGE

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

Phase I of the new town centre (constituting probably the largest all-pedestrian shopping area in Europe). Due for completion next September.

The pedestrian shopping core consists basically of a main north-south shopping way 50 ft. wide, with the town square at right angles to it to the west and two minor shopping ways of 40 ft. wide to the east. A ring road surrounds the central core, off which large car parks are planned at the rear of the shops, giving walking access to any part of the centre. A bus interchange point is situated on the ring road to the west of the town square and buses will arrive and depart here from London and the region as well as locally. The heart of the core, the square, contains a tower and a pool, and several

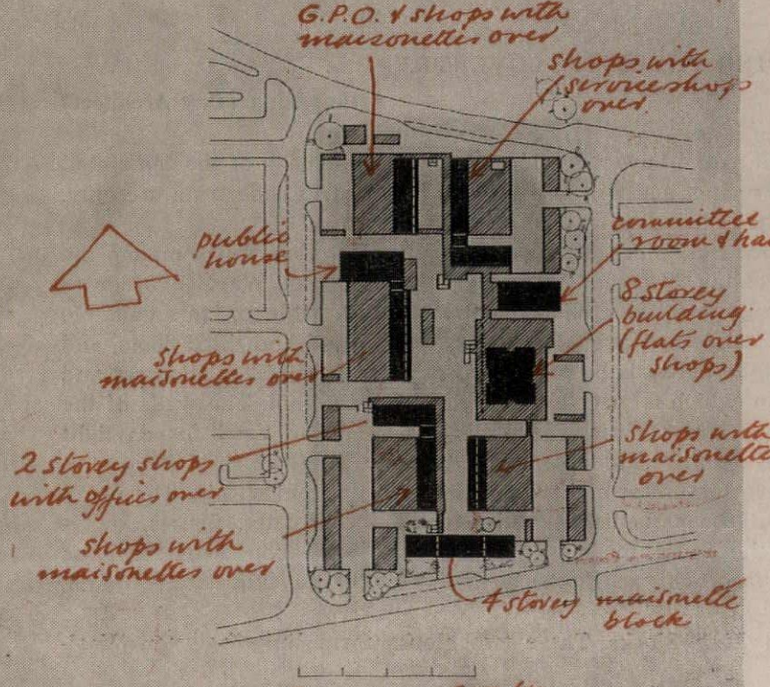


the town square

mature trees have been preserved to soften the hard landscaping. The square is surrounded on three sides by 3-storey shopping units and on the fourth (to the west) is partially closed by a raised platform. From here steps lead from the highest level of the bus terminus to the floor of the main square. Easier changes of level are obtained by ramping. All the furnishings in the square and the rest of the scheme, including seating and circular cycle stands around bollards, have been designed by the architects. Multiple stores are situated in the main square, designed by various architects who have worked in co-operation with the Development Corporation architects. The pedestrian shopping links consist of smaller shops with living accommodation—flats and maisonettes. An open-air market is placed in conjunction with one of the car parks and service roads. A canopy serves the whole of the shopping frontage, with cross canopies at various points to ensure completely dry shopping.

The larger buildings are constructed in a precast concrete frame with in-situ floor slabs and precast reinforced concrete purlins forming the roofs. Infilling walls are of glass and various types of panel, including reconstructed stone, concrete with exposed aggregate and Kentish flint. The 3-storey maisonettes are of cross-wall construction with concrete floors and roofs. The 2-storey blocks are of load-bearing brick. Heat to some of the larger stores and the flats and maisonettes is supplied from a central boiler-house situated in one of the car parks and designed in conjunction with the garages.

Assistant chief architect: L. W. Aked. Senior architect in charge: R. Gorbing.



SITE PLAN Neighbourhood Centre:

NEIGHBOURHOOD CENTRE: SWINDON

Frederick Gibberd

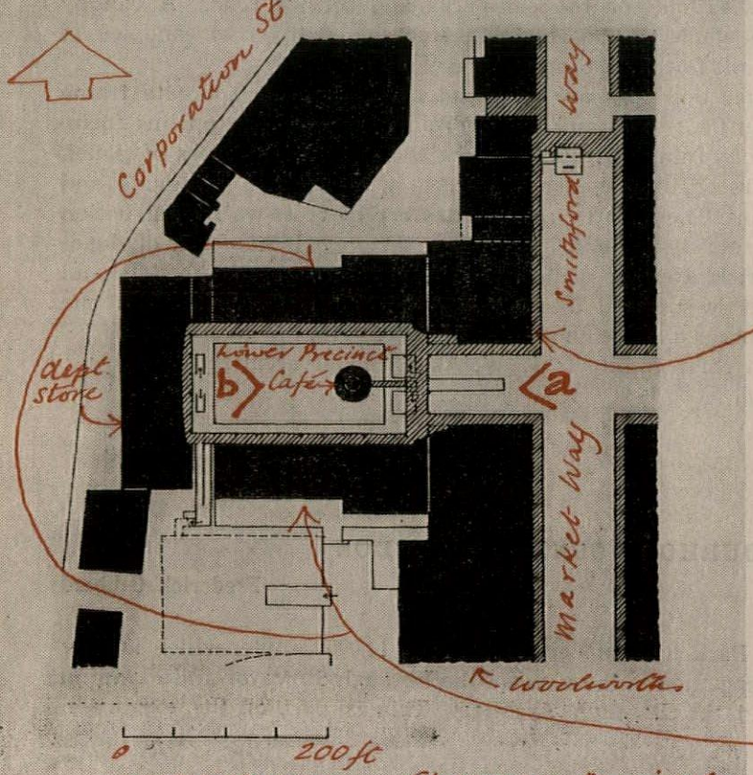
For the Park neighbourhood, of some 14,000 people, which is now under construction to the plans of the Borough Surveyor and Planning Officer and the Borough Architect. This is part of the expansion

programme under which Swindon is accommodating some 20,000 Londoners. The scheme has been approved and detailed design is progressing.

The neighbourhood centre is to have a built-up urban scale, in contrast to the rather open housing development. It consists of some forty-five shops, a community hall, library and other social buildings, including a public house. Associated with it is an area for service industry, a recreation area, a church and a primary school. It is designed as a pedestrian precinct, traffic being totally excluded from the shopping streets. The streets and other spaces are arranged on a closed cellular plan and the buildings are of 3 or 4 storeys with an 8-storey building as the hub. As the neighbourhood is some distance from the town centre, it was felt that it should have a central meeting place or square, which is made the focus of the design. All the precincts and ways lead directly into the square and the principal buildings face on to it. From whatever direction it is entered, the view is always closed by buildings; so that whilst there are views out of the square it is not possible to look through it from the outside. There are two narrow shopping streets or parades on the main axis north and south of the central square. So that motorists can get close to their destination there are numerous short cuts, at right angles to the main axis, to the parallel car parks on each side. Two of these short cuts are designed as minor shopping parades into the square. Secondary spaces are developed at the junctions between the cross streets and the main square, and the square itself is set back in front of the community hall.

The majority of the buildings over the shops are maisonettes and these are approached at first-floor level along what is, in effect, an upper-level pavement. This forms a continuous parade along one side of the precinct. Small 'service shops' (that is shops that provide a service such as a bootmender, oculist and photographer) are placed on the north end of the parade, linked with a café and the hall, which are on the first floor in the central square. Office accommodation is provided on the second floor, also overlooking the square. The first-floor parades are connected to each other by bridges, to give a sense of local enclosure, and are linked to the ground by flights of stairs and the internal stairs of the buildings. The centre is terminated at the south by placing a 4-storey maisonette block across the site. The ground-floor maisonettes in the centre of the block are omitted to give a way through to, and a view of, the school.

All the spaces are paved and provided with seats, flower boxes, sculpture and a fountain.



SITE PLAN Shopping Precinct:

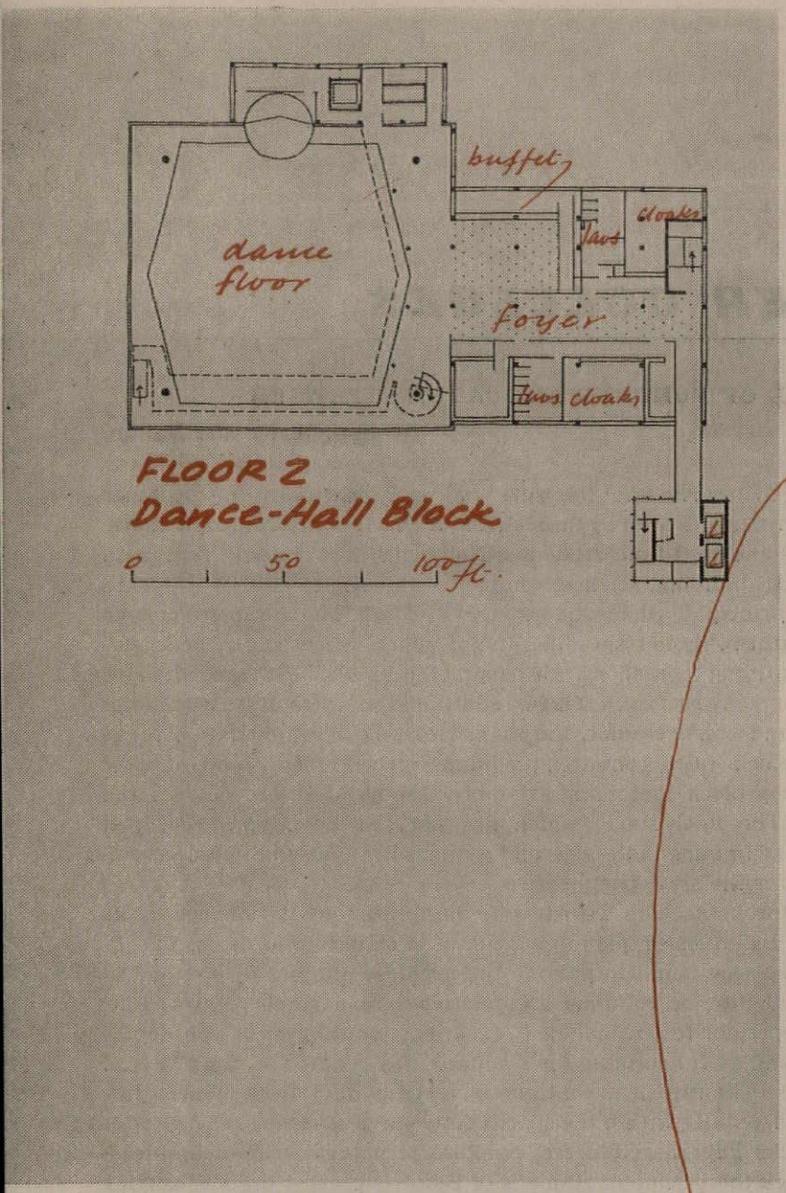
SHOPPING PRECINCT: COVENTRY

Arthur Ling (City Architect)

Known as the Lower Precinct, this is an extension of the completed Upper Precinct and will be similarly confined to pedestrian use only. It consists of five distinct projects, as follows.

1. *Dance-Hall Block,* the fourth 'pavilion' which will complete the main crossing between the precinct and Market Way. In order to gain as much lettable shop floor-space as possible on this valuable site, the dance hall itself is raised to the second and third floors, and main public access is by way of a bridge from a glazed staircase and lift tower which is placed within the cross-precinct. The walls of the dance hall are of brickwork. Since there is no need for daylight inside, they are solid apart from narrow slits which will form a decorative feature at night when they are lit from within. The blank walls will be embellished with a frieze of skeleton figures, representing the dance, made of wrought iron fixed about 9 in. from the wall surface, with neon tube at the back. The starting date is March, 1958.

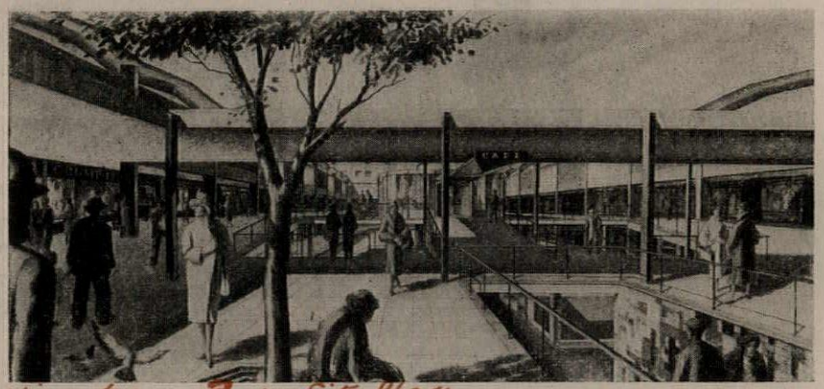
2 & 3. *Link Blocks.* These two blocks form links between Wool-



worths and the dance-hall block, and a department store sited at the termination of the precinct. Each link block contains 20 shop units, 10 units on each of two shopping levels. There is a sharp drop of about 7 ft. in the natural ground level, which has been exploited so that the pavement level between Woolworths and the dance-hall block has the relationship of a mezzanine to the two shopping levels of the link blocks. Two ramps and four staircases connect the two shopping levels. The first link block is nearing completion ; the other will be started during this year.

4. *Departmental Store.* This block will be 4 or 5 storeys high and will close the view down the axis of the precinct. Entrance again is on two levels. There is a public way under this block which connects the lower level of the precinct with Corporation Street. Starting date, some time in 1960.

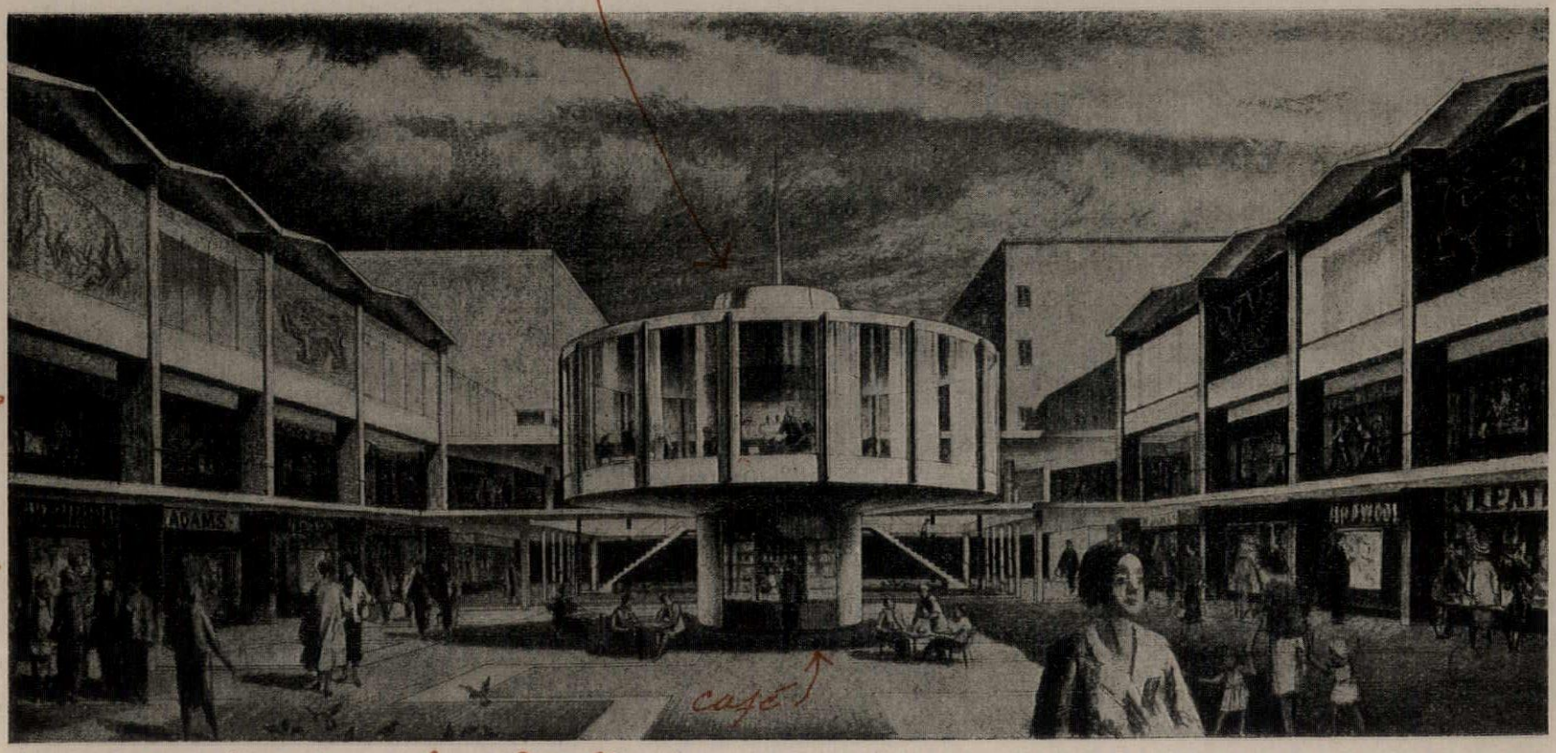
5. *Café.* A circular structure, consisting of a reinforced concrete drum two storeys high containing the kitchen, wash-up and other service accommodation, and two reinforced concrete 'dishes' cantilevered around the drum to form the floor and roof of the café, which is glazed around its periphery. A turret on the roof contains the heating and ventilating plant, etc. Access is by a bridge from the upper shopping level. Work started last October.



View from a on Site Plan.

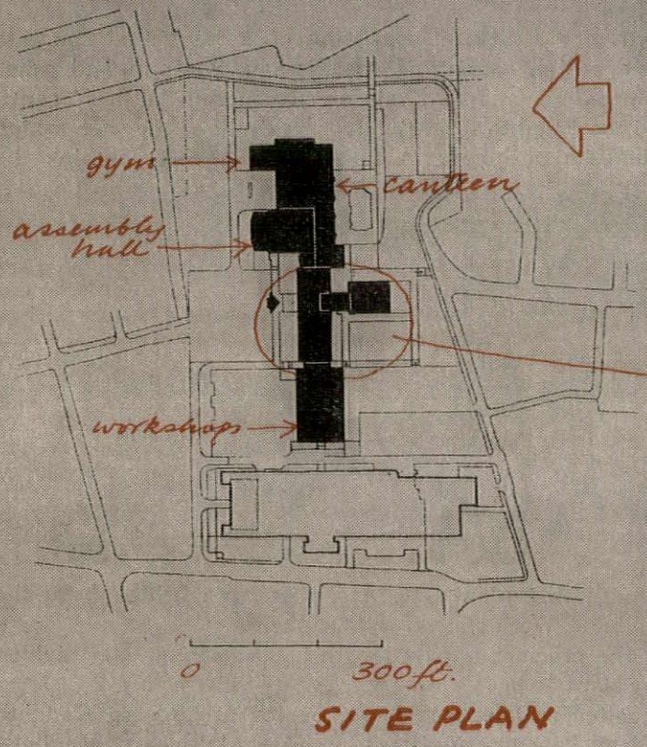
The floor of the precinct is paved with black granite setts divided by lines of grey slabs.

Principal architect: Douglas Beaton. Senior architects: Kenneth Bradley ; William Pearson. Assistant architects: Richard Hindley ; Gordon Youett.



Lower Precinct from b on Site Plan

3 TECHNICAL AND OTHER COLLEGES



SITE PLAN

COLLEGE OF FURTHER EDUCATION: IPSWICH

Johns, Slater and Haward

To serve Ipswich and the surrounding area and bring together departments now scattered through the town. It will eventually house 2,860 full- and part-time students. The main departments deal with engineering, building, science, commerce and social studies, women's subjects (principally domestic science) and art. The complete college is being built in three stages, the first of which, consisting of engineering and building workshops, was completed in 1952. The second stage, now under construction, includes additional single-storey workshops and arts and crafts studios, the main teaching accommodation in an 8-storey block (also containing administrative offices) and another single-storey block containing assembly-hall, gymnasium, canteen and kitchens. The final stage, which has not yet been approved, will contain a swimming-bath, a second gymnasium and additional accommodation for the art department.

The 8-storey block is T-shaped to minimize circulation space. Its layout is based on a planning grid of alternating 6 ft. and 4 ft. bays, which was found to provide the greatest number of economical room sizes. Interior columns are restricted to a single central line, with the corridor to one side of it, creating two different room depths (of 18 ft. and 24 ft.) suitable for standard classrooms and for practical rooms. Services run in a continuous vertical duct from which they spread horizontally within the spaces between floor-beams.

All blocks have a reinforced concrete structural frame. In the 8-storey block the perimeter frame is of 2-storey precast units consisting of mullions, perimeter beams and cills, except on the ground floor of the main elevation where there are open lattice-girders. The centre bay of each end wall is solid to act as a windbrace and is faced with brick. Elsewhere the frame is filled with timber window-wall units, with brick or wired glass panels below the cills. The assembly-hall has a folded slab roof. Infilling of the concrete frame of the assembly-hall block consists mainly of glazed screens and brick panels. The new workshop block has precast concrete columns and beams carrying triangular roof frames, which are glazed on the north slope and clad with light sheeting on the south.

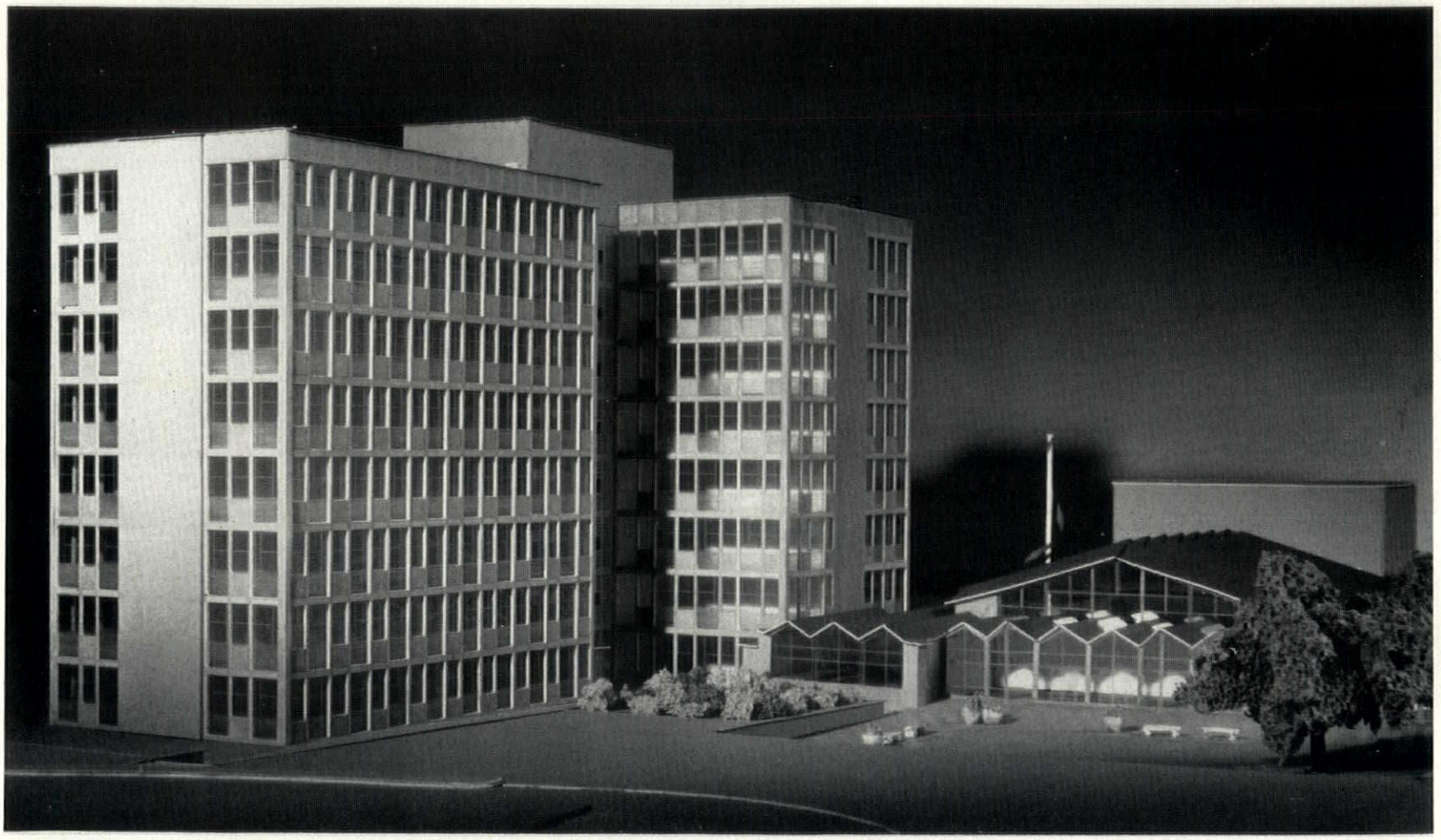
Structural engineer: Felix J. Samuely. Electrical Engineers: Barlow Leslie and Coombes. Services engineers: J. Stinton, Janes and Partners.

TECHNICAL COLLEGE: SCARBOROUGH

Gollins, Melvin, Ward and Partners

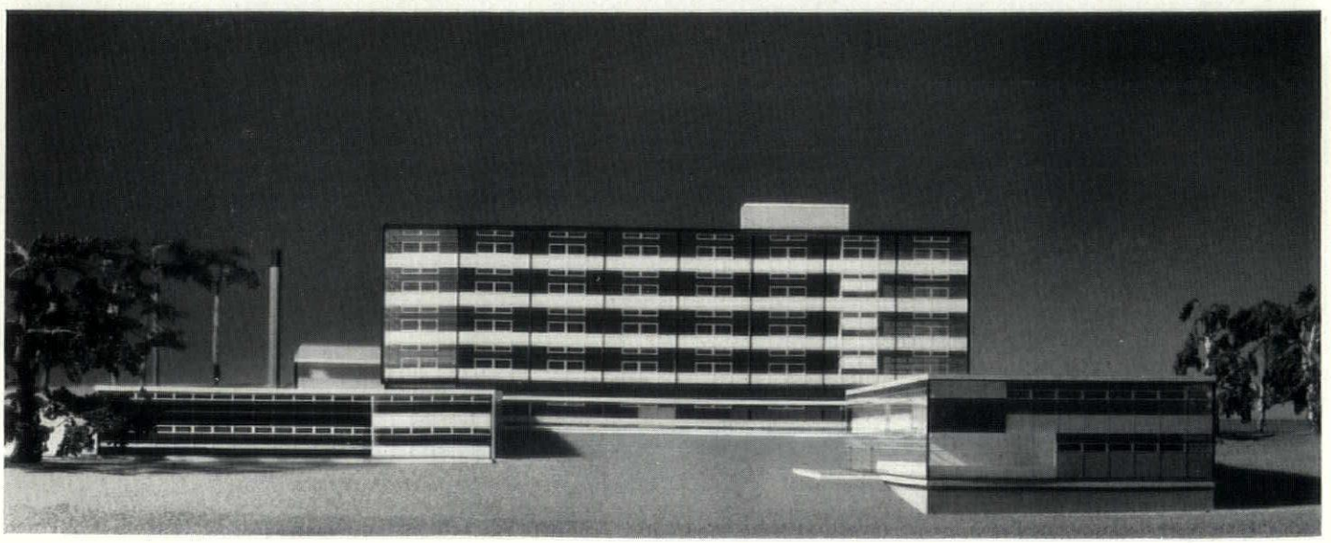
Sited north-west of the town, adjoining the Whitby road, in an area designated for education and hospital purposes. To the south is the Scarborough General Hospital, and to the west fine views of the Yorkshire moors. The college will be built in two stages: the first, approximately three-quarters of the whole, will accommodate 200 full-time students, 1,000 part-time day and evening students, and

[*continued on page* 21



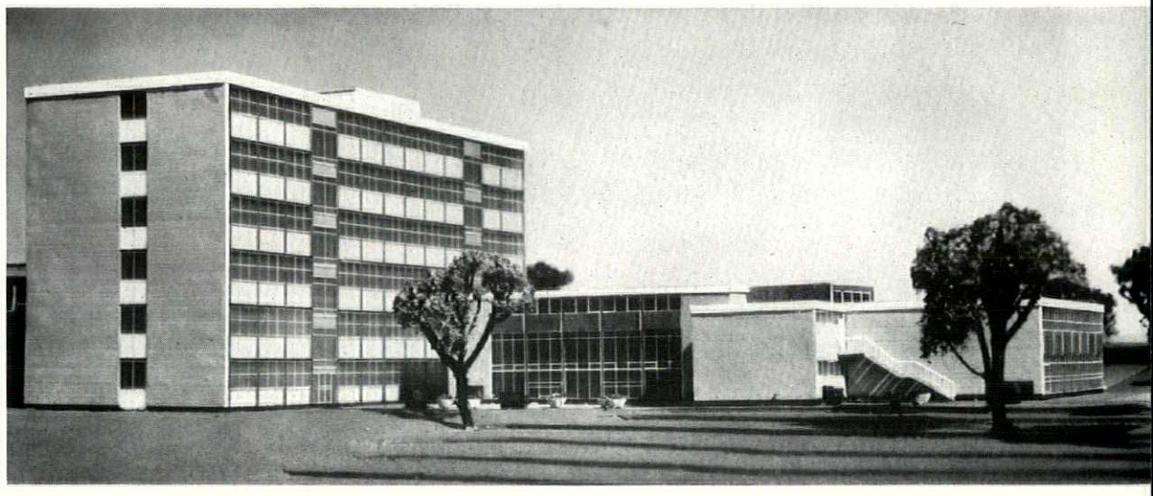
Above, college of further education at Ipswich by Johns, Slater and Haward. On the left is the main teaching block; on the right the single-storey block, with a folded slab roof, containing assembly-hall, gymnasium, canteen and kitchens.

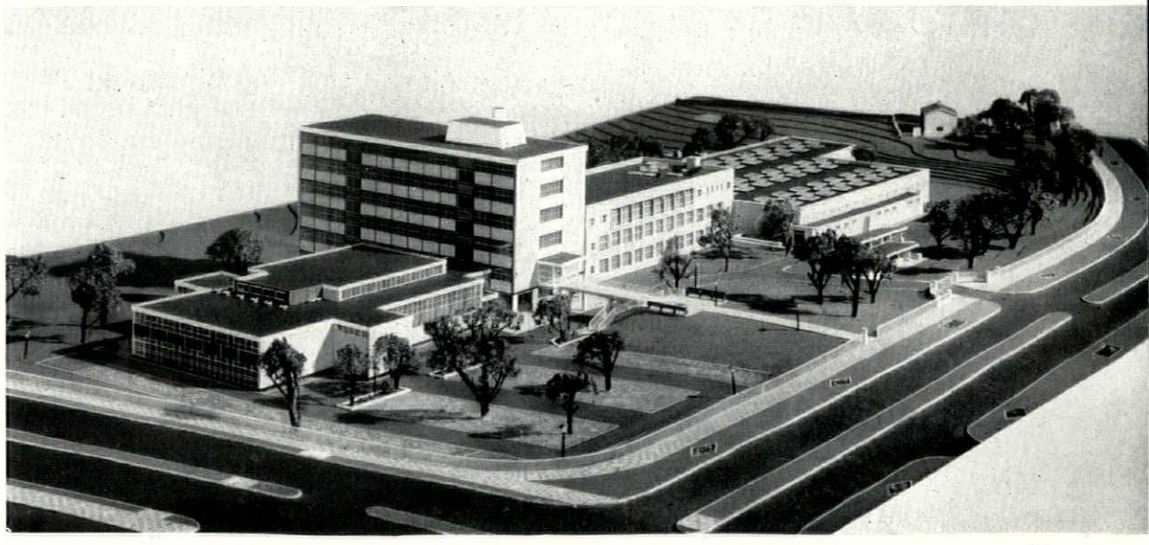
Right, Scarborough technical college by Gollins, Melvin, Ward and Partners: elevation from the east. See also next page and description and layout plan on following page.



Above, Scarborough technical college by Gollins, Melvin, Ward and Partners: from the north-east. The five-storey main teaching block is in the centre, with the other blocks containing workshops, gymnasium, assembly-hall, etc., connected to it at various levels according to the slope of the site. See also preceding page.

3. TECHNICAL AND OTHER COLLEGES





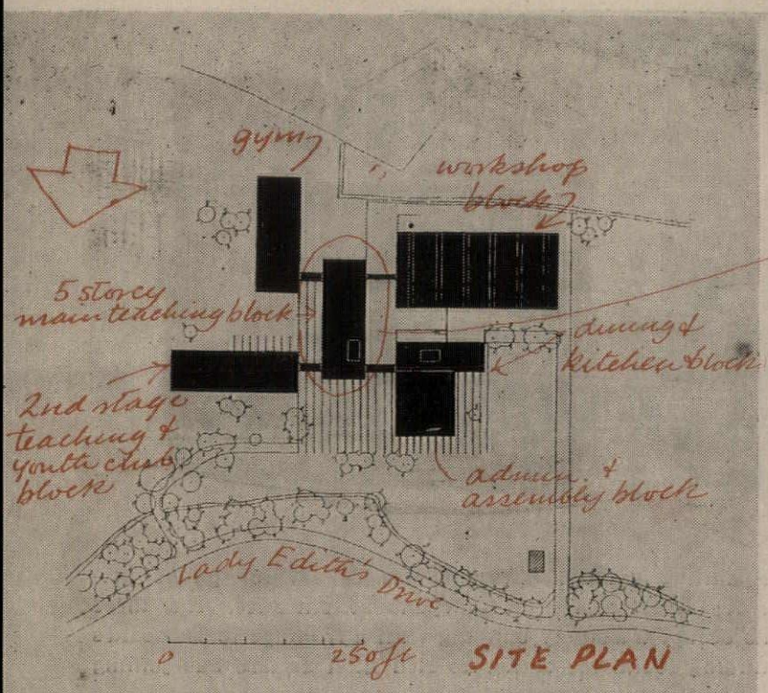
Right, Mansfield college of further education by D. E. E. Gibson (Notts County Architect): top, from the east, showing the six-storey teaching block, and, on the right, the assembly-hall and administrative block to which the gymnasium is attached; bottom, the whole scheme from the north showing also the existing classroom block (to which the new teaching block is connected by a bridge) and the extended workshops.

continued from page 18]

800 evening students. When the second stage is built, the day-load will be increased by about 100 students, and the evening load by about 200. The additional students will be predominantly women. The first stage will start early this year.

The teaching accommodation in the first stage is planned in two blocks: in the 5-storey block, which forms the centre of the plan, lie all the laboratories, classrooms, the library, and the students' common-rooms and cloakrooms; in the single-storey block lying at the back of the tall block and connected, owing to the levels of the site, by a bridge at first-floor level, are the workshops and stores. The gymnasium and changing rooms form another element connected by a covered way, as do the assembly hall, dining-room, administration block and, on the opposite side of the tall building, the future two-storey instalment. The main entrance is in the link between the tall block and the administration wing, enabling students, staff and visitors all to use it without creating problems of circulation.

The structural frame, floors, staircases and roof of the multi-storey building, which is enclosed by curtain walling, is of reinforced concrete. The workshops have an uncased structural steel frame, faced also with a light external wall.



COLLEGE OF FURTHER EDUCATION: MANSFIELD

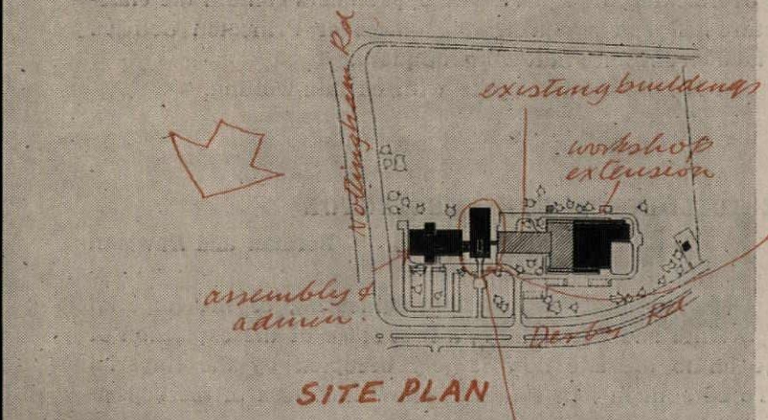
D. E. E. Gibson (Nottinghamshire County Architect)

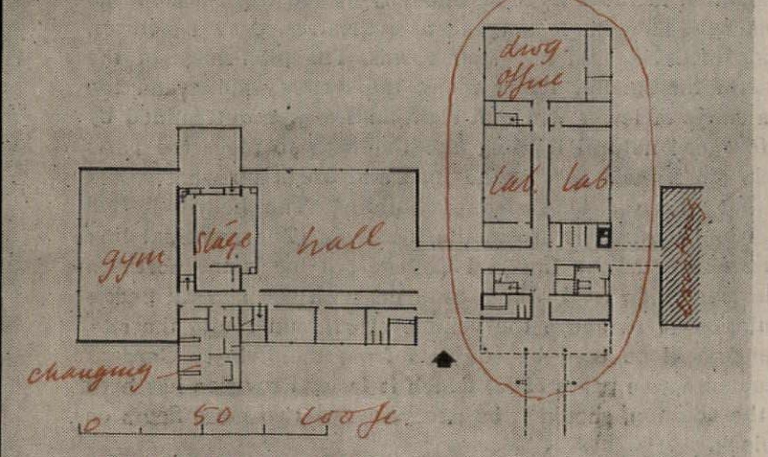
At the south side of the town, at the junction of Nottingham Road and Derby Road. It is being built in three stages, the first two of which, comprising laboratories, refectory and workshops, have already been built. Stage 3, illustrated here and at present under construction, forms the major part of the project and will be completed by the autumn of next year.

Accommodation consists of extensions to the workshop block, a main 6-storey teaching block, an assembly hall, a 2-storey administrative section and a gymnasium. The 6-storey block is connected to the existing building by a link bridge and, due to the slope on the site, the main pedestrian entrance runs over the entrance road on a bridge. The car park is at the front of the building.

The 6-storey block has a precast and in-situ concrete frame with prestressed floor units. The end walls are faced with brick and the two long sides consist of timber frames with metal windows and tile hanging under. The workshop block is steel framed and brick. The assembly hall and gymnasium are steel framed with timber frames, metal windows, hardwood panels and facing brickwork. Heating consists mainly of forced air convectors built between the double-skin corridor walls. All services, including wastes, are in the ceiling space and discharge into a main stack in the vertical duct.

Architect in charge: B. G. Walker. Quantity surveyor: F. Bailey.



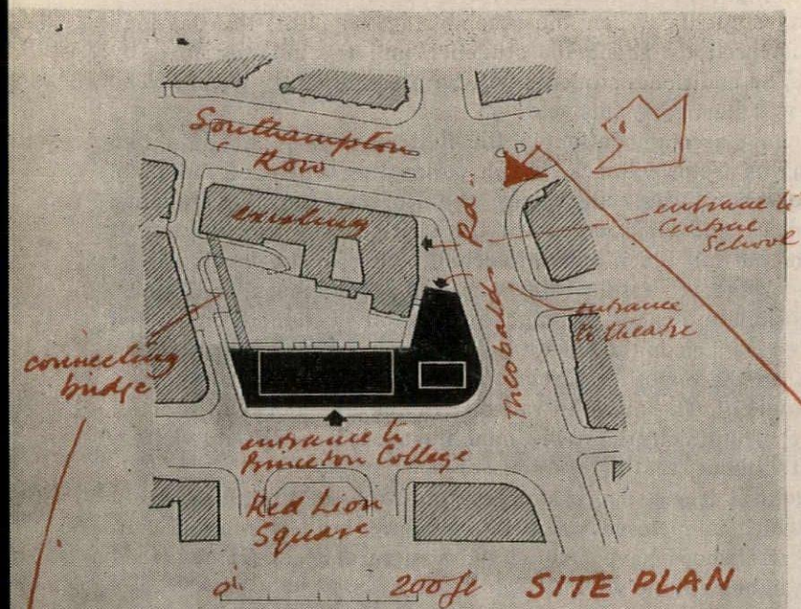


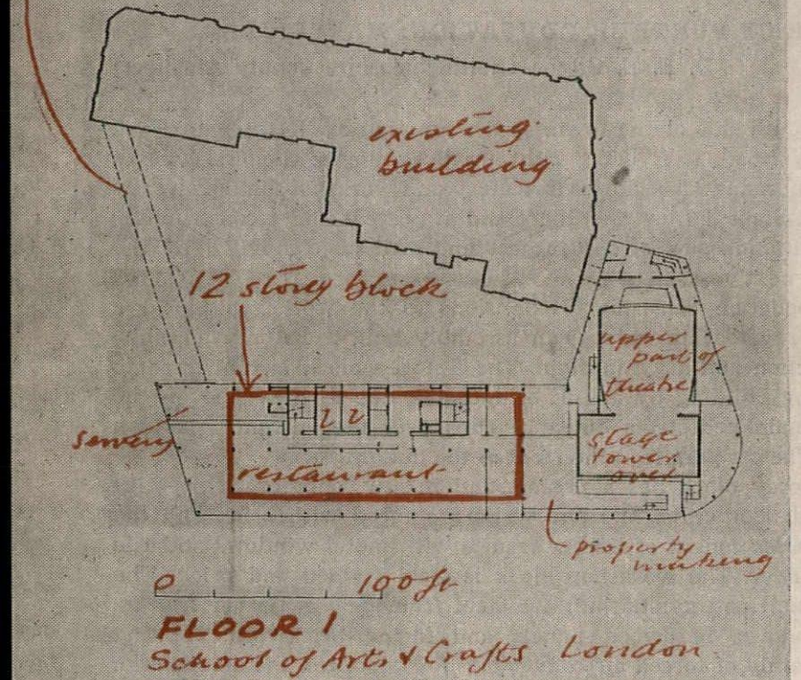
SCHOOL OF ARTS AND CRAFTS: LONDON

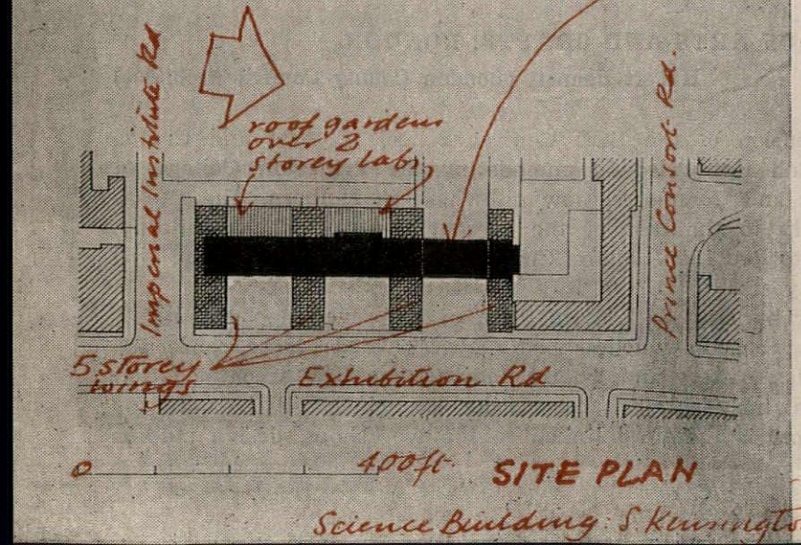
Hubert Bennett (London County Council Architect)

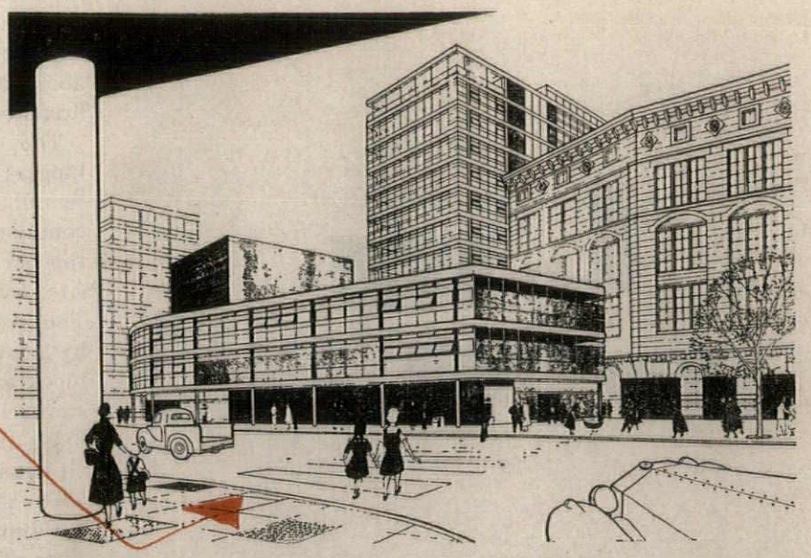
An extension of the LCC Central School of Arts and Crafts, Southampton Row, also accommodating the Princeton College of Languages and Commerce, now elsewhere in Holborn. The site is immediately to the east of the present Central School building, facing on to Red Lion Square. Construction has just begun and will take three years.

The new building will house three of the seven departments of the Central School, which is badly overcrowded: those concerned with textiles, pottery and theatre and costume. The accommodation for the last includes a theatre seating 380, which will be used for teaching and is therefore linked to the workshops, design studios









and scene-painting gallery, but will also be let for public performances. It therefore has an independent entrance. The three departments occupy a 3-storey building with a frontage to Theobald's Road, continuing round the corner to Red Lion Square and joining the main new 12-storey building which forms the new west side of the square. The new building is connected to the old by two enclosed bridges. There are car parks in the courtyard between the two and underneath the new building. On the first floor is a students' restaurant overlooking the square. The upper floors contain the classrooms, lecture-hall and administrative offices of Princeton College, which has its own entrance in Red Lion Square.

Construction is reinforced concrete with curtain-walling.

SCIENCE BUILDING: SOUTH KENSINGTON

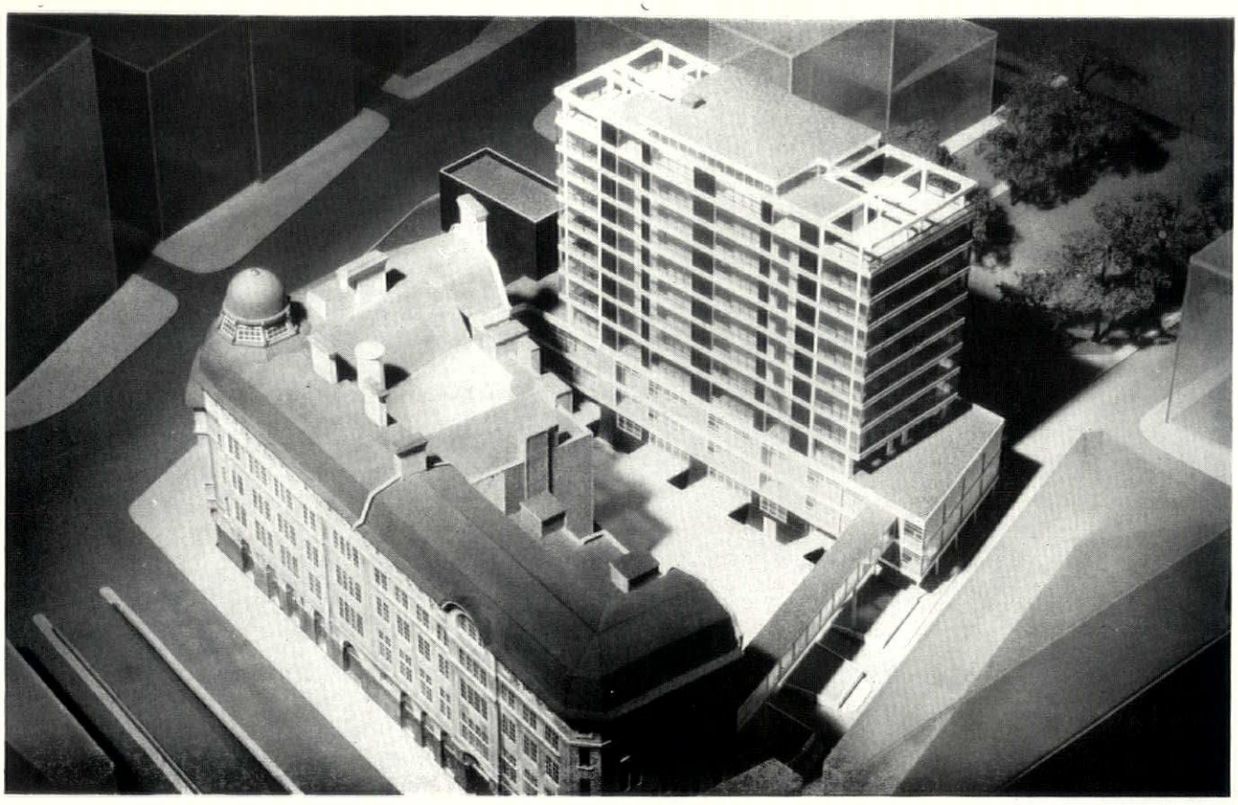
Norman and Dawbarn

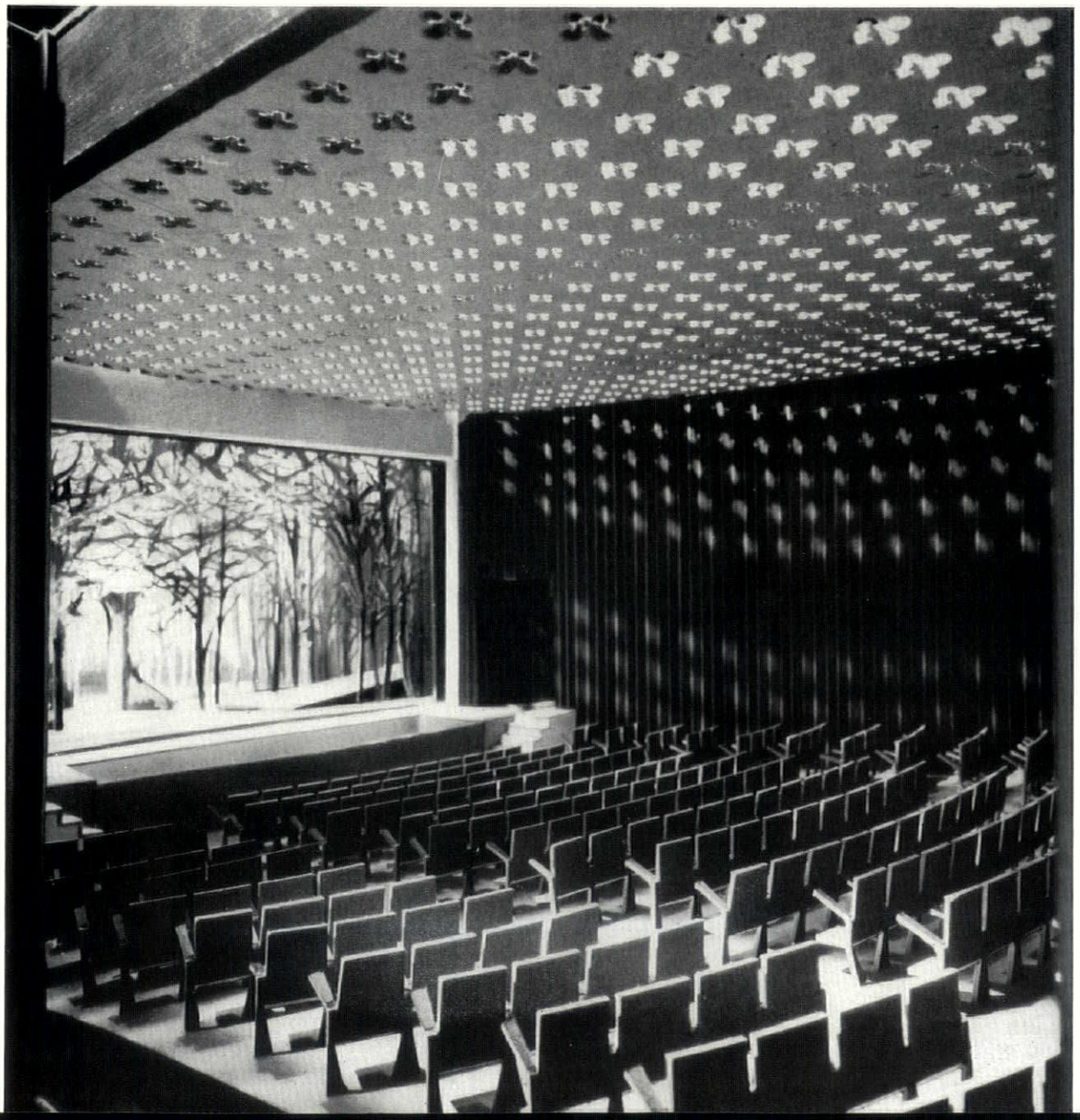
For the Department of Mechanical Engineering of the Imperial College of Science and Technology; a first stage of the expansion of the college on to the site now largely occupied by the Imperial Institute. To be built in four stages to allow the work of the department, which is at present housed on the site of the new building, to continue. The first stage will be completed in August next year; the other three will follow on at intervals.

Accommodation includes large and heavily-loaded workshops, large laboratories with medium loading, lecture theatres, drawing offices, library and small research and staff rooms. The plan-shape of the building, with the smaller rooms along the 9-storey spine and the larger in a series of lower wings at right-angles, was determined by the need for good natural lighting and the wish to place the parts of relatively small scale nearest the road and break up what would otherwise have been a long slab of building. The heavily-loaded laboratories and workshops are in the basement. The principal link with the remainder of the Imperial College scheme is the northern entrance in Exhibition road, which connects with the general pedestrian circulation 15 ft. above the vehicle circulation round the site. This entrance will be used by students from the Princes Gardens halls of residence (see pages 57-58) which it faces. Provision has been made for the addition, should it be necessary, of two more floors on the main block.

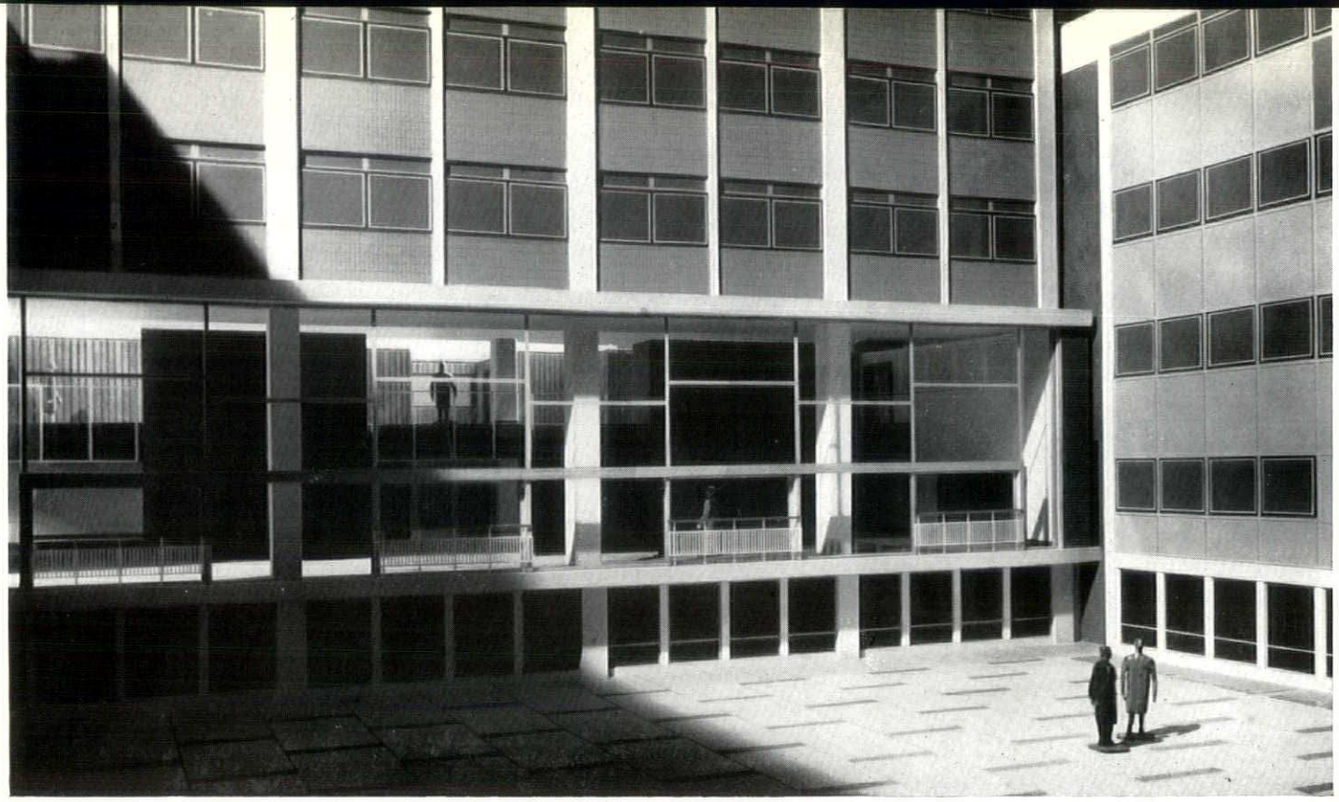
Structural frames are of steel and reinforced concrete, with reinforced concrete infill panels faced with tiles and a mosaic facing to the columns. Services run in a 5-ft. high duct between basement and the main concrete raft, from which rise a series of vertical ducts alongside the central corridor of the main block with

[*continued on page 25*

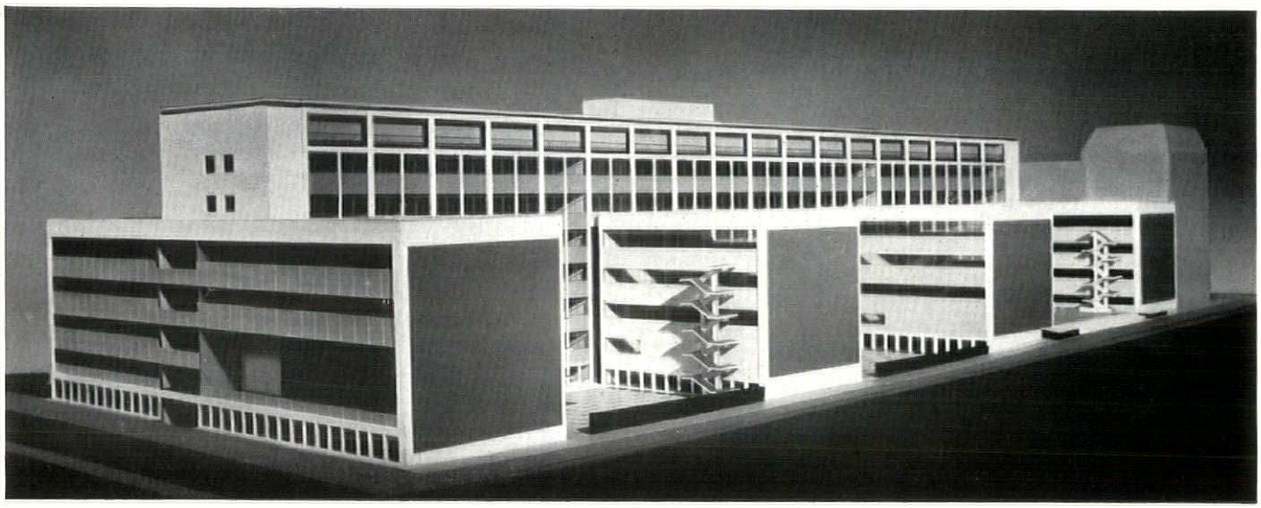




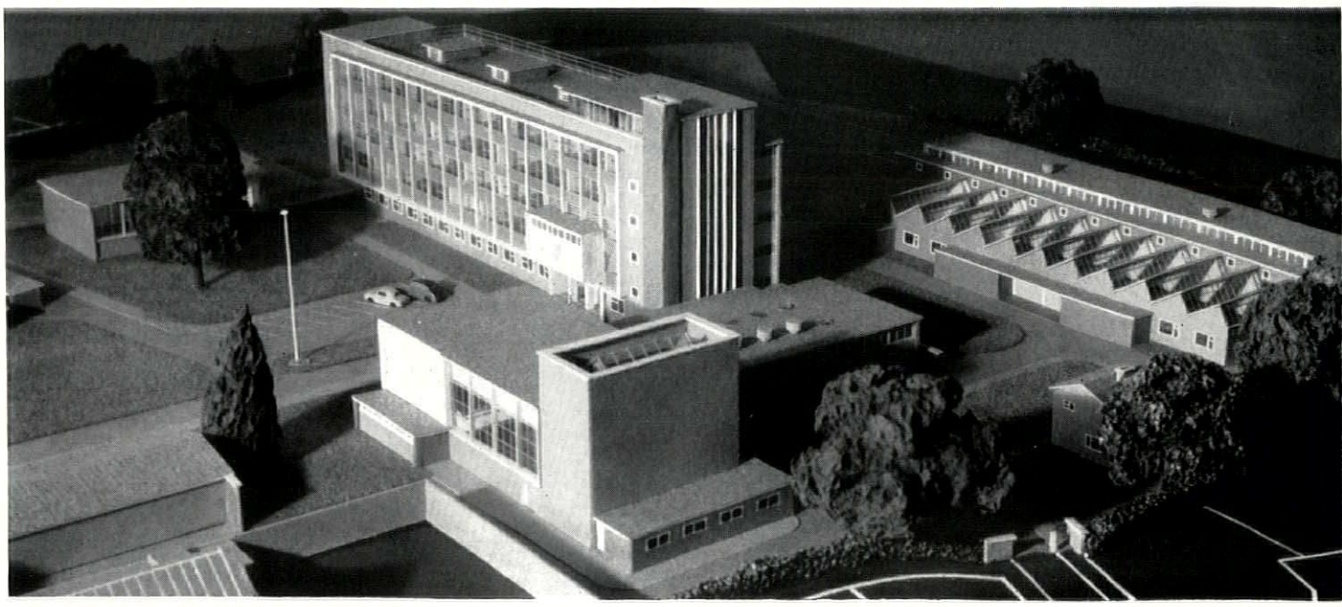
New building for the Central School of Arts and Crafts and Princeton College, by the L.C.C. Architect's Department: top, from the direction of Southampton Row, looking over the present Central School building (by W. R. Lethaby) at the twelve-storey block, the upper floors of which house Princeton College and the far side of which forms the west side of Red Lion Square; bottom, interior of the theatre in the lower block at the corner of Theobalds Road, for the use of the theatre and costume department of the school and for public performances.



Science building at South Kensington, by Norman & Dawbarn: below, showing the layout of the building with a nine-storey spine and lower wings at right-angles enclosing paved courts; left, the lower part of the façade of the spine building from inside one of the courts. It has still to be decided whether the external stairs shown may not be put inside.



Below, Southgate technical college by the Middlesex County Architect. The main teaching block is in the background with the assembly-hall block in front of it and the workshops on the right.



3. TECHNICAL AND OTHER COLLEGES

continued from page 22

horizontal ducts above corridors at each level. The entire top floor is used for water-storage and electrical and ventilation plant.

TECHNICAL COLLEGE: SOUTHGATE

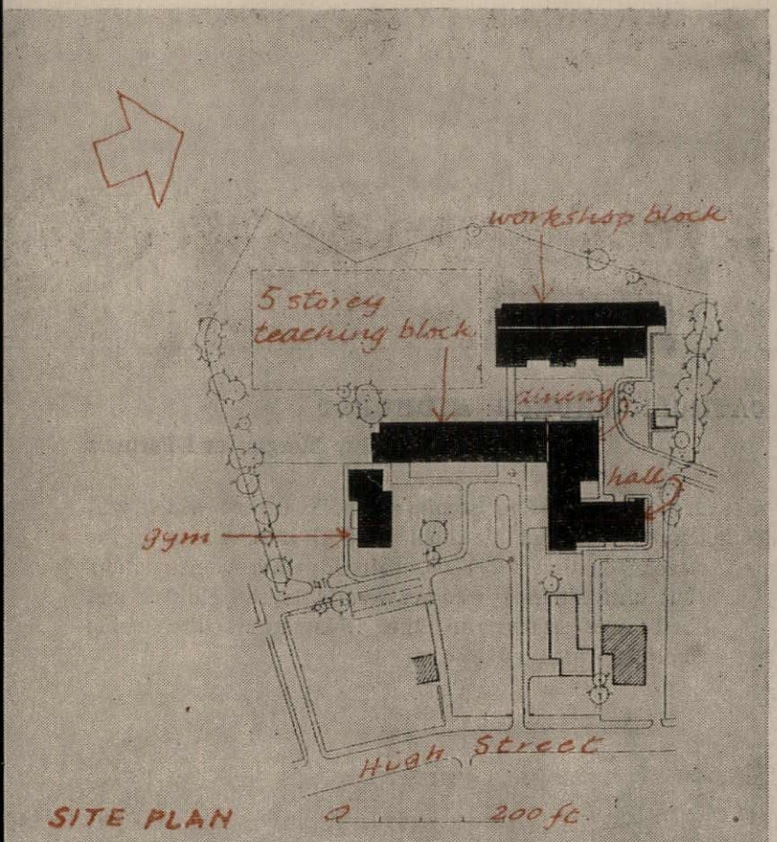
C. G. Stillman (Middlesex County Architect)

In the grounds of a derelict mansion which is to be demolished. It houses departments of mechanical and electrical engineering, science, commerce and domestic economy, and also provides a library, dining-room and hall (to serve also as a public hall) and a gymnasium. A youth employment bureau is housed within the college and a corner of the site adjoining the High Street has been reserved for a future county branch library. Work is expected to begin late next year.

In the main central 5-storey teaching block administration, library, youth employment bureau and common-rooms occupy the ground and part of the first floors. A single-storey hall and dining block is attached, and a covered way leads to the gymnasium and workshop blocks. The latter is mainly single storey with 2-storey 'heavy' laboratories ranged along its length. Car and cycle parks open off the internal road system. A separate service entry and yard are provided from a cul-de-sac, with caretaker-lodge adjacent.

The main block has an in-situ concrete frame and slabs, cladding above ground floor being full-height curtain-walling between exposed columns at 11 ft. centres. Part of the workshop block is similar, but it has a steel roof frame and patent glazing over the single-storey portion. Lower storeys and end features are faced in brick.

Group architect: G. F. Holden. Assistant architect: C. W. Pearce. Structural engineers: Taylor, Whalley and Spyra. Mechanical services engineers: Harding, McDermott and Partners.



COLLEGE OF FURTHER EDUCATION: WELWYN

Louis de Soissons, Peacock, Hodges and Robertson

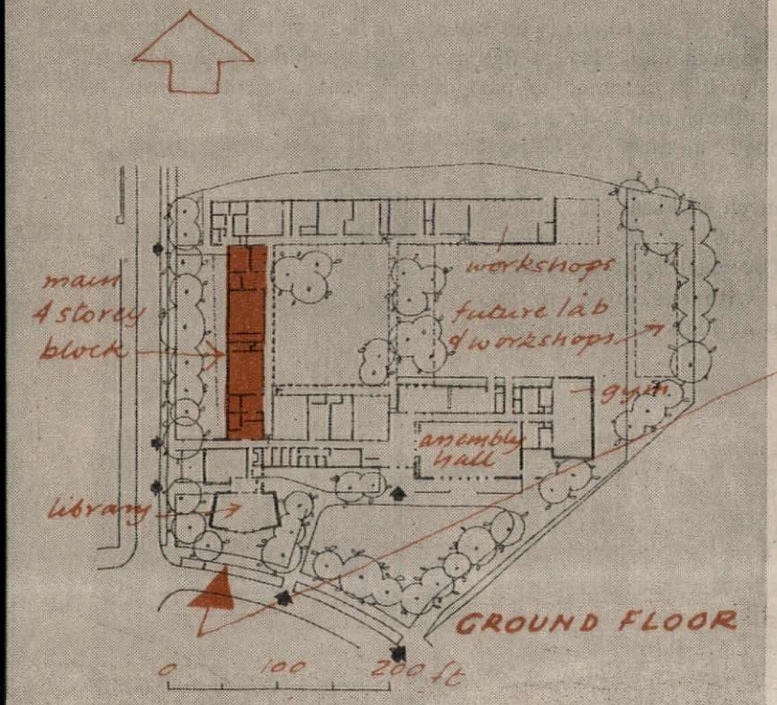
Planned round a quadrangle on a site containing good trees, as many as possible of which are retained. No starting date is yet fixed.

The main 4-storey block consists of the normal classrooms plus special rooms for chemistry, biology, domestic science, dressmaking book-keeping, geography, etc., and tutorial rooms, prep. rooms, stores, etc. A single-storey block at the north end contains pottery room,

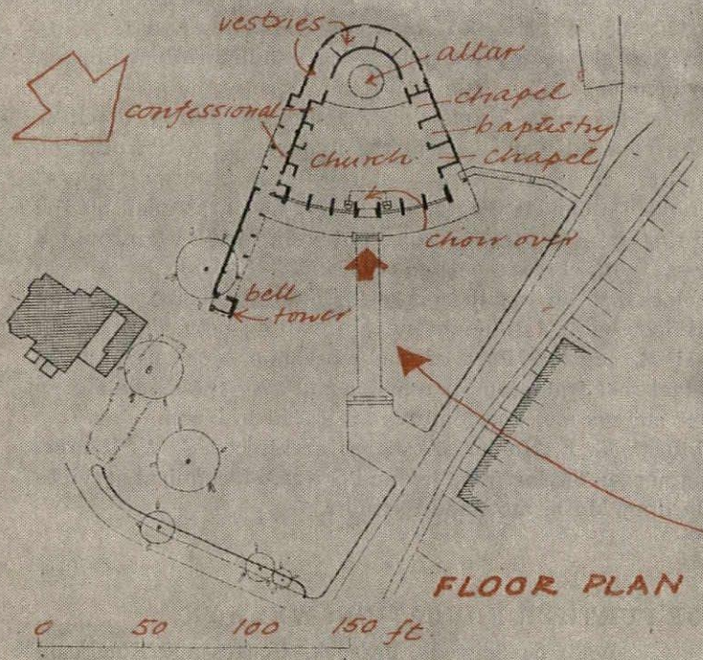


drawing office, the physics, radio, electrical and mechanical engineering departments and a large workshop of 3,000 sq. ft. The south wing contains a youth employment centre, the college administration, staff and students' common-rooms, an assembly hall to seat 600, dining-room, kitchen, etc. At the end of this wing is the gymnasium with changing-rooms etc., which can also be used as dressing-rooms for stage performances. At the south-west corner of the site is the county branch library, attached to which is the college reference library, accessible both from the county library and the first floor of the 4-storey block.

The building has a reinforced concrete frame with steel floor beams and concrete floors. External brick walls either as infill or load bearing. Roofs are copper. Windows have sawn slate infill below.



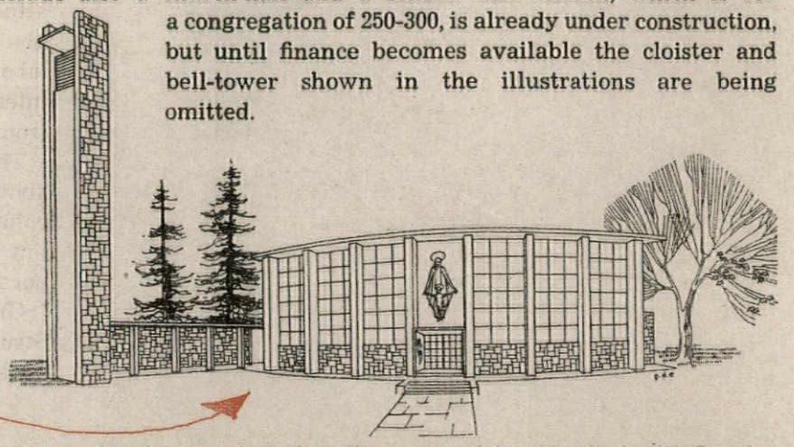
4 CHURCHES



ROMAN CATHOLIC CHURCH: MIDHURST

Guy Morgan and Partners

Part of a future comprehensive Roman Catholic centre which will include also a church-hall and a school. The church, which is for a congregation of 250-300, is already under construction, but until finance becomes available the cloister and bell-tower shown in the illustrations are being omitted.



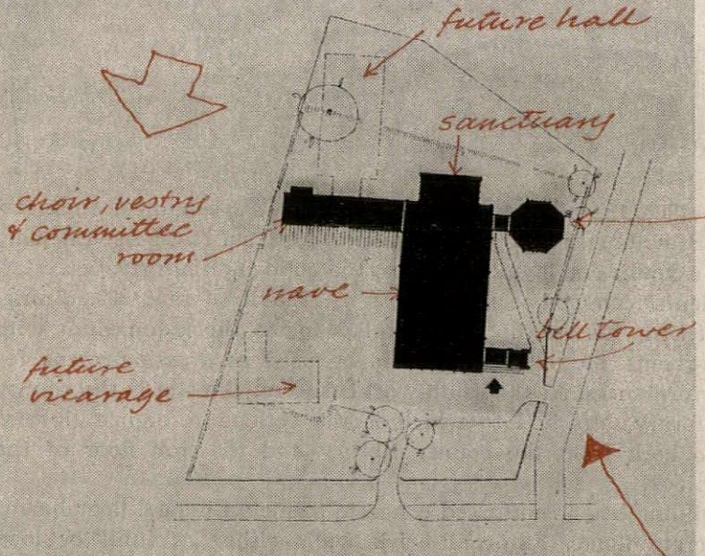
External walls are of random Sussex sandstone backed with London stock bricks. The flat roof is steel framed with stepped plywood suspended ceiling. Heating is by an under-floor off-peak electrical installation.

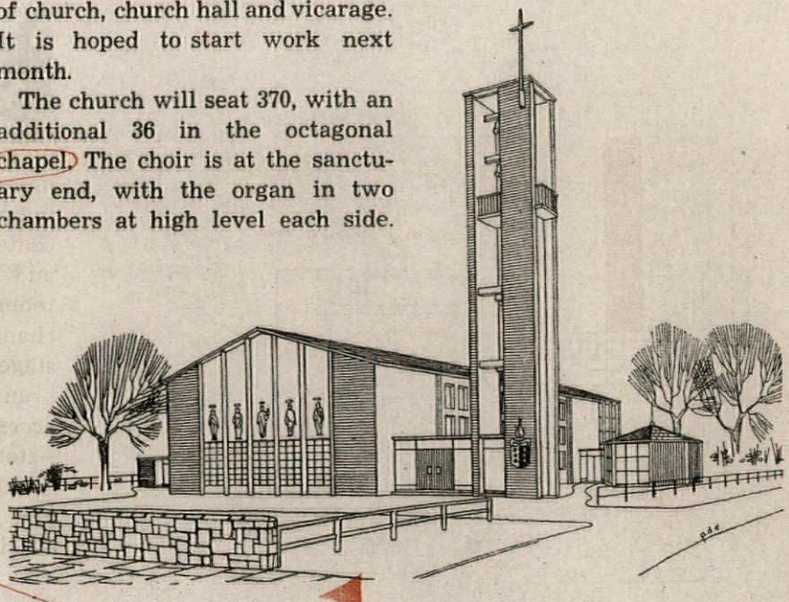
CHURCH: RUBERY, NEAR BIRMINGHAM

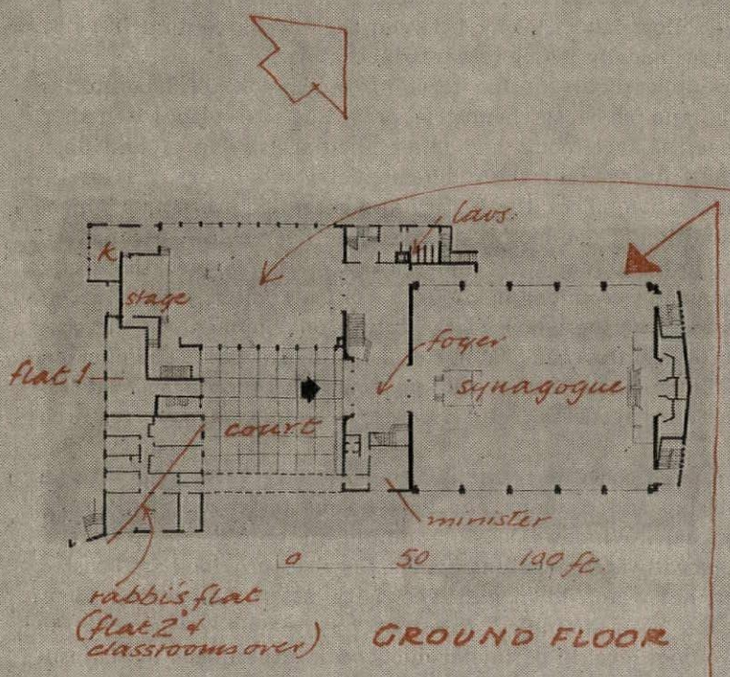
Lavender, Twentyman and Percy

The church (of St. Chad) is on the site of an existing smaller one. A timber church hall, also on the site, is to remain for the present, but the church is designed as part of an eventual group consisting of church, church hall and vicarage. It is hoped to start work next month.

The church will seat 370, with an additional 36 in the octagonal chapel. The choir is at the sanctuary end, with the organ in two chambers at high level each side.







Construction consists of reinforced concrete piers supporting a folded slab roof. The tower is supported by three concrete fins. The chapel has a concrete roof on load-bearing brick walls, and the vestry block a timber roof on load-bearing brick walls. The nave window walls consist of non-load-bearing precast concrete blocks, pierced with chamfered openings for the windows. These have teak surrounds in a grid of stone mullions and transomes. Other walls are faced with brick and black slate. Roofs are covered with copper. Five pieces of metal sculpture are proposed on the elevation facing the main road.

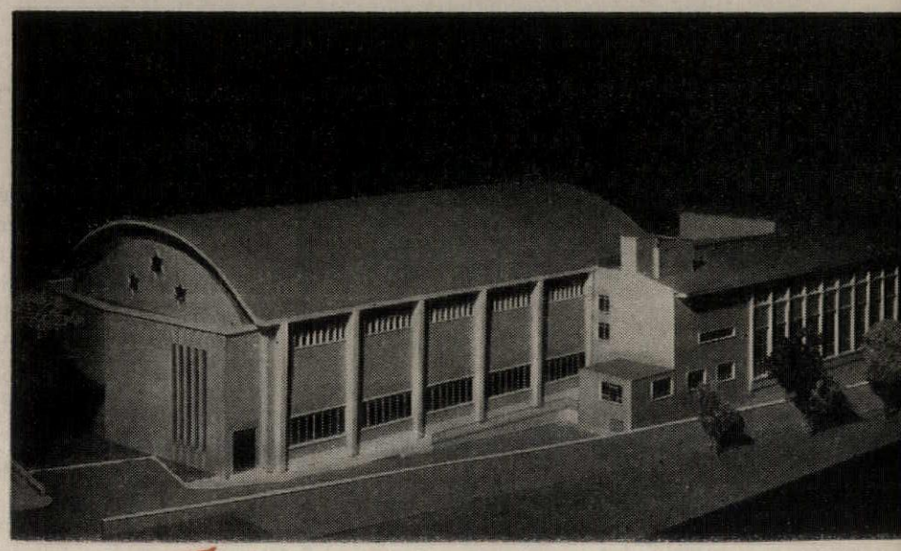
SYNAGOGUE: ST. JOHN'S WOOD

T. P. Bennett and Son

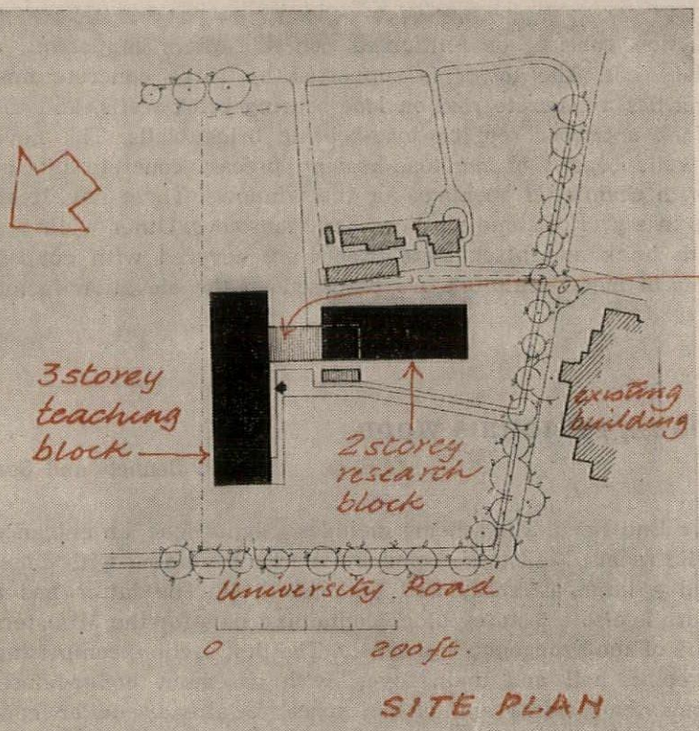
In Grove End Road. The scheme includes a synagogue, an entrance foyer, Guild rooms, Ministers' rooms and a school building with classrooms and a large assembly hall underneath it. The latter has a stage. There is also a 3-storey block containing flats for the Ministers and officers of the synagogue and school. The first section, comprising the classrooms, hall and main foyer, with basement boiler-house, plant rooms, fuel stores and cloaks space, is already under construction.

The main construction is a reinforced concrete frame with stone, artificial stone, and brick cladding, with decorative panel infill. The apron between the classroom windows and the hall windows is treated with mosaic, while a decorative wrought iron grille is proposed for the arched opening between the foyer and the synagogue proper. Roofs, throughout, whether pitched or vaulted, are to be covered with sheet copper, and the whole building, excepting the flats which are treated independently, has a plenum system of ventilation and heating.

Quantity surveyors: Gardiner and Theobald.



5 UNIVERSITY BUILDINGS



SITE PLAN

CHEMISTRY BUILDING: LEICESTER

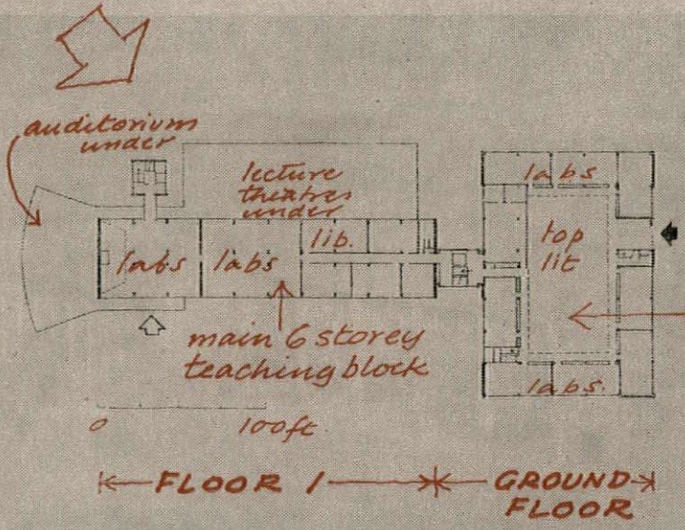
Architects' Co-Partnership (in association with J. L. Martin)

The first building of a programme of development on a new site adjoining the existing university buildings. The layout plan for the development is by Professor J. L. Martin. The building consists of two separate blocks. The first, which principally contains teaching laboratories, has just started; the second, containing research laboratories, will follow later. A link between the blocks contains service rooms used principally by the research laboratories.

The two upper floors of the teaching block contain laboratories for general and physical chemistry, providing 350 places, together with storage, balance-rooms and other ancillaries. The ground floor contains the entrance hall, the radio chemistry laboratory, professors' and administrative offices, the library and three lecture rooms which, with the addition of one lecture room on the floor below, provide 260 places. The lower ground floor contains central stores, workshops and cloakrooms, and accommodation for a central boiler plant and oil fuel tanks to serve the whole of the future development on the site. Ventilation machinery and water storage are in a plant chamber on the roof. The research block is on two floors and provides 75 laboratory places for readers, lecturers, research fellows and research students.

The reinforced concrete frame is on a 20-ft. structural grid with an in-situ flat slab and columns, and edge-beams faced externally with vitreous mosaic. Windows are aluminium in hardwood subframes. Heating generally is from ceiling panels. Services provided are boosted cold water, hot water, town gas, electricity, steam and waste. Their provision has been simplified as far as possible by accommodating them above floor level in perimeter ducts with direct feeds to peninsular benches. Vertical services are accommodated in two main ducts adjacent to the staircases.

Consulting structural engineers: Ove Arup and Partners.



PHYSICS BUILDING: NEWCASTLE

Basil Spence and Partners

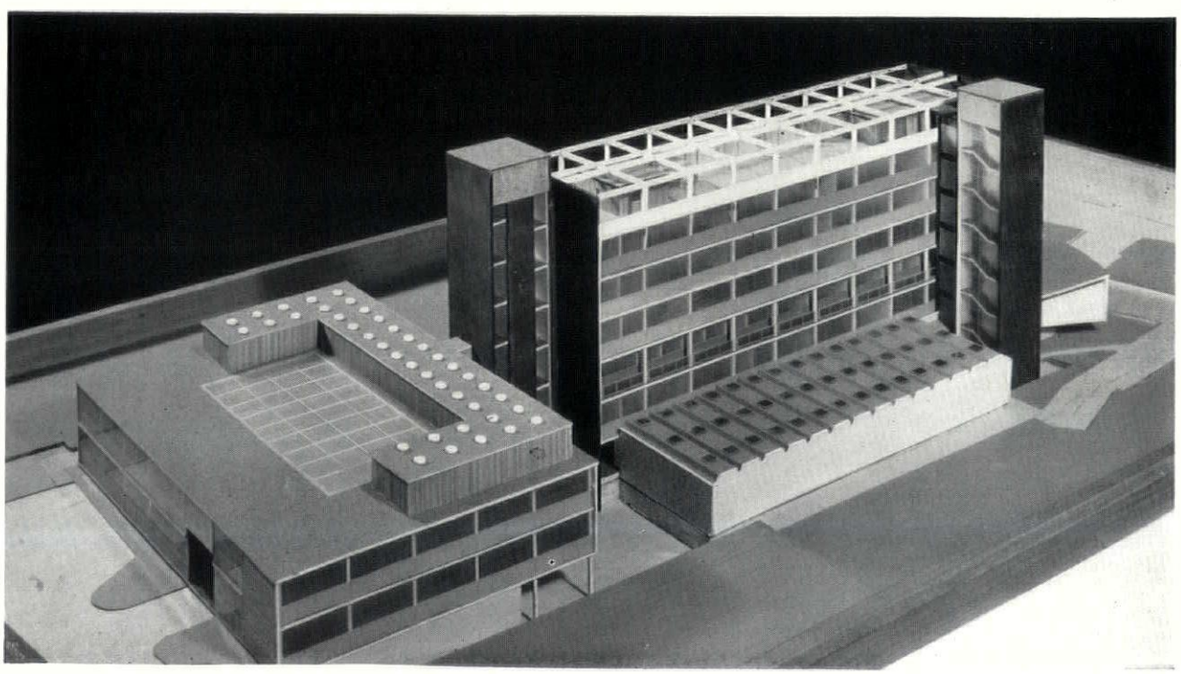
For Durham University. On the steeply sloping site between the Haymarket and College Avenue at present occupied by the Corporation tram and 'bus depot, and including Nixon Place. The building comprises a main 6-storey teaching block linked by a service stairway and lift well to a 3-storey and basement research block. Work on the site began late last year and will take from three to four years to complete.

A fully equipped auditorium to seat 360, wedge-shaped in plan projects from the south gable of the teaching block at the lower end of the site. There are three other main lecture theatres, one of which seats 260 and the other two 150 each. A library, common-rooms, and administrative offices are also provided in the teaching block, which

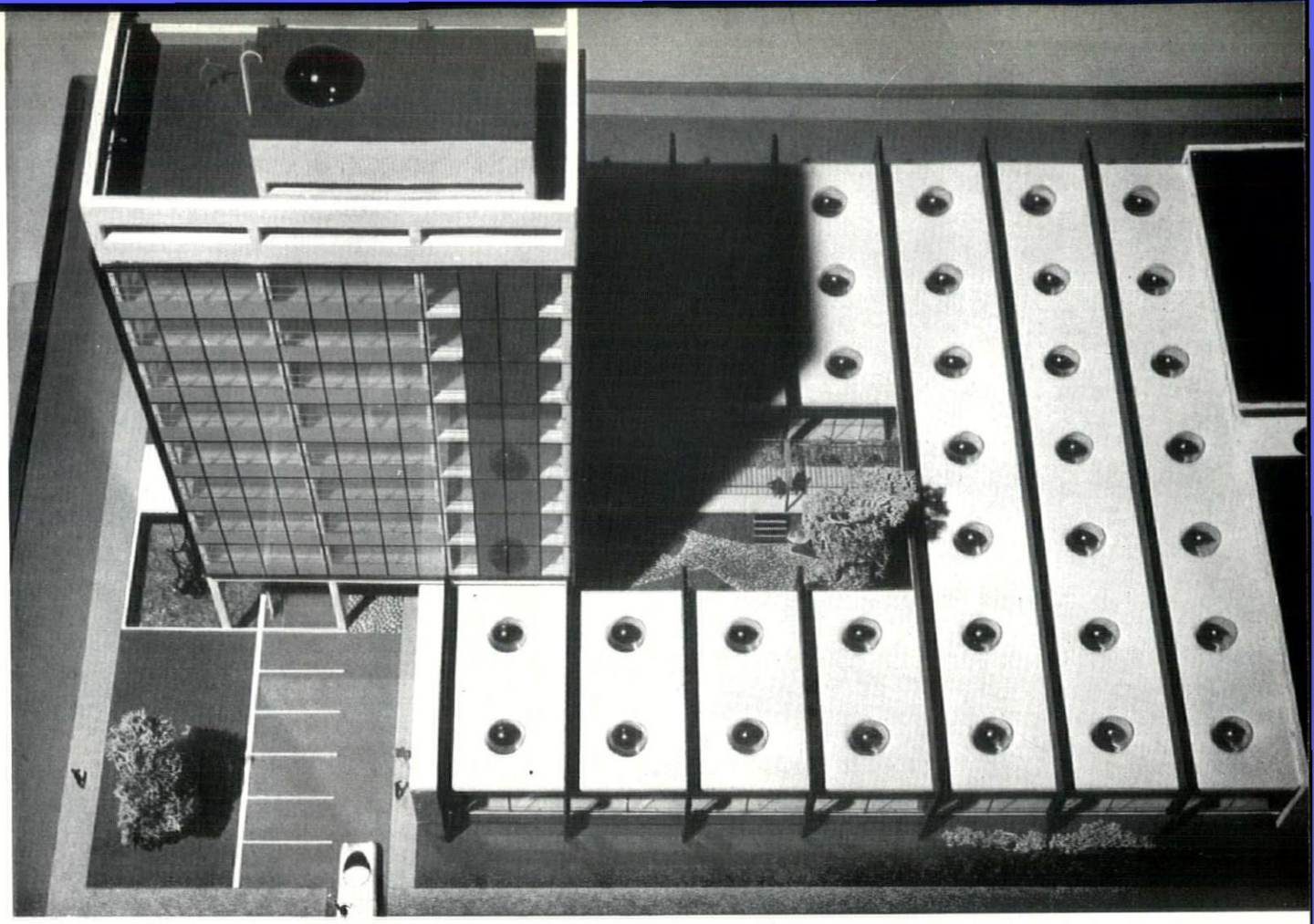
[*continued on page 31*



Above, chemistry building, Leicester University, by the Architects' Co-Partnership: the teaching block with the two-storey research block on the right.

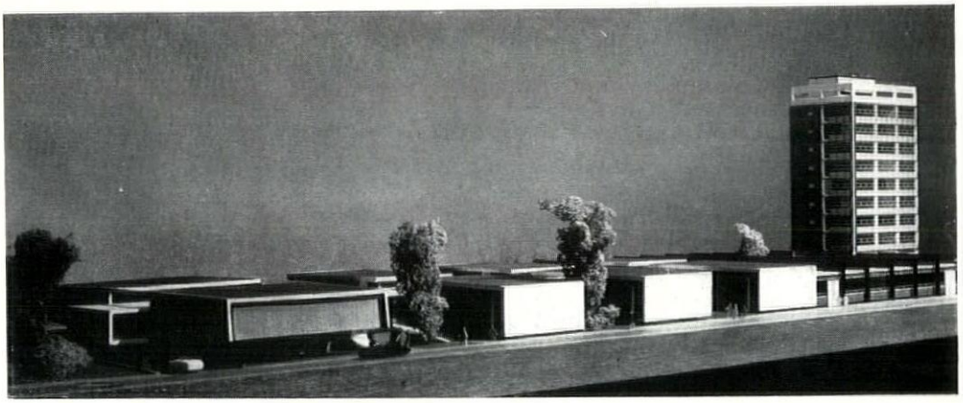


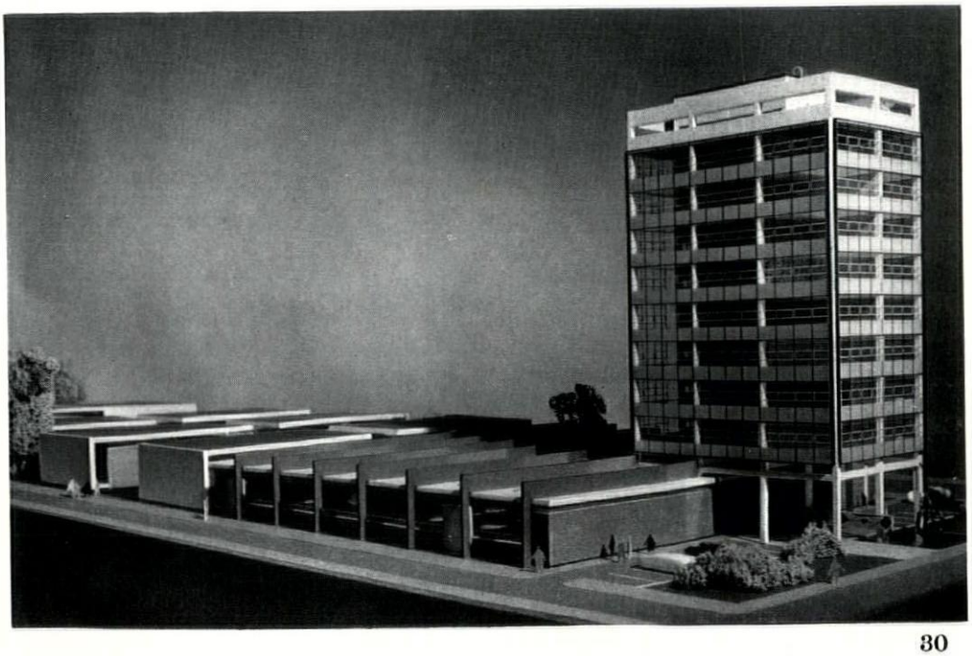
Right, physics building at Newcastle for Durham University, by Basil Spence and Partners. On the left is the research block with its top-lit central hall; on the right the six-storey teaching block. The auditorium attached to the far end of the latter can just be seen.



5. UNIVERSITY BUILDINGS





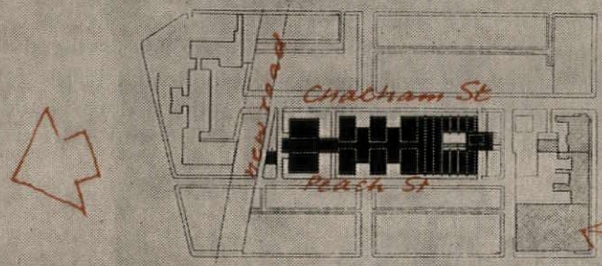


Physics building, Liverpool University, by Basil Spence and Partners: top, looking down on the roofs of the laboratories, showing the garden courtyard at the foot of the nine-storey tower; right, the range of single-storey lecture-theatres and laboratories, terminating in the tower, from either end; above, the tower at night.

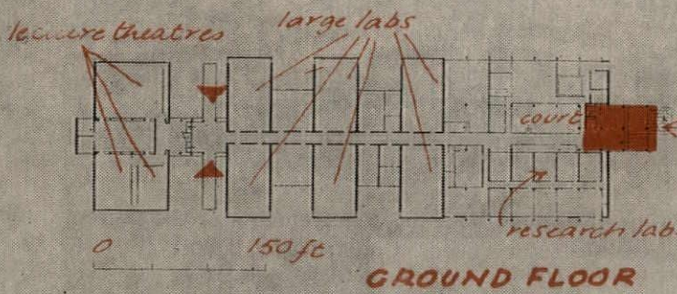
continued from page 28

is entered from the east side. The research block, which is likely to be built as a second phase of the scheme, consists of a large central hall two storeys high, surrounded by sixteen standard research rooms on two floors, some of which are sub-divided into two smaller rooms. The central hall has a glass roof, and a floor capable of taking the heaviest loadings for experimental equipment. In this block also are an anechoic chamber for experiments in acoustics, workshops and stores.

The building has a reinforced concrete frame capable of carrying an additional floor, and on the high block this frame will be constructed in the first stage to contain visually the pent-house accommodation on the roof, which includes staff rooms, caretaker's flat, and tankage, etc. Probable finishing materials are dark Welsh slate for the main gables and riven green Westmorland slate for the horizontal sweep of the curved auditorium gable. Elsewhere buff Welsh brick to match those already in use in the University is used, and the side faces are infilled with black metal window frames containing white framed opening lights and blue-grey mosaic-faced precast concrete spandrel panels.



SITE PLAN Physics Building: Liverpool



GROUND FLOOR

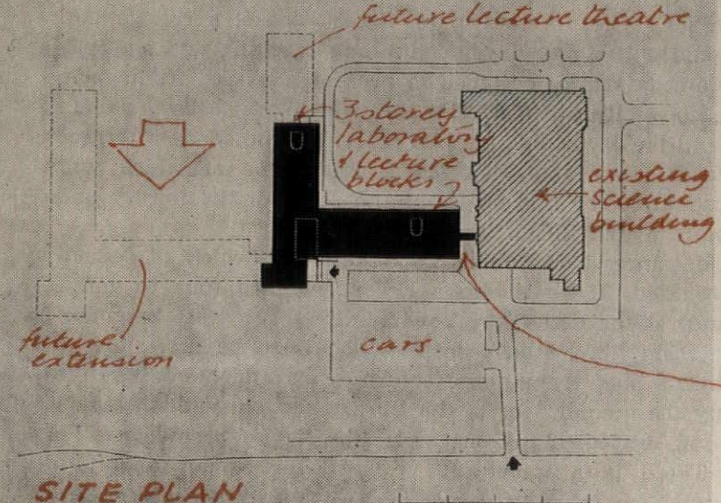
PHYSICS BUILDING: LIVERPOOL

Basil Spence and Partners

In the university area, adjoining the school of architecture. The site was previously covered by slum dwellings and several streets have been closed in the replanning. Work began last August and will be finished towards the end of next year.

The building provides lecture theatres, teaching and research laboratories, classrooms and staff rooms, in a range of single-storey buildings except for the staff rooms, classrooms and some of the smaller teaching laboratories which are in a 9-storey tower, placed at one corner of the plan with a small courtyard at its base. The block of lecture theatres contains three auditoria, two on one side and one on the other side of a service area. The students' entrance, with a glass-walled hall, is between these theatres and the main teaching laboratories, of which there are six large and four small. There is a separate sunk boiler-house.

The lecture-theatre block is of reinforced concrete with a roof of prestressed beams spanning the length of the building. The flank walls are faced with Derbydene marble and the end walls with glass mosaic. The theatre walls are lined with timber. The teaching laboratories are in load-bearing brick with roofs of woodwool slabs carried on lattice-steel beams. The end walls are faced with Derbydene marble and the side walls with grey-brown facing bricks carried through to form the inner walls of the smaller laboratories. These have glass mosaic panels beneath the windows. The research laboratories are reinforced concrete with grey-brown brickwork below the windows and a south wall of re-used granite setts. The tower has a reinforced concrete frame with columns at 20 ft. centres clad with precast panels faced with glass mosaic. The exposed frame and roof structure are bush-hammered.



SITE PLAN Science Building: Durham

SCIENCE BUILDING: DURHAM

Easton and Robertson

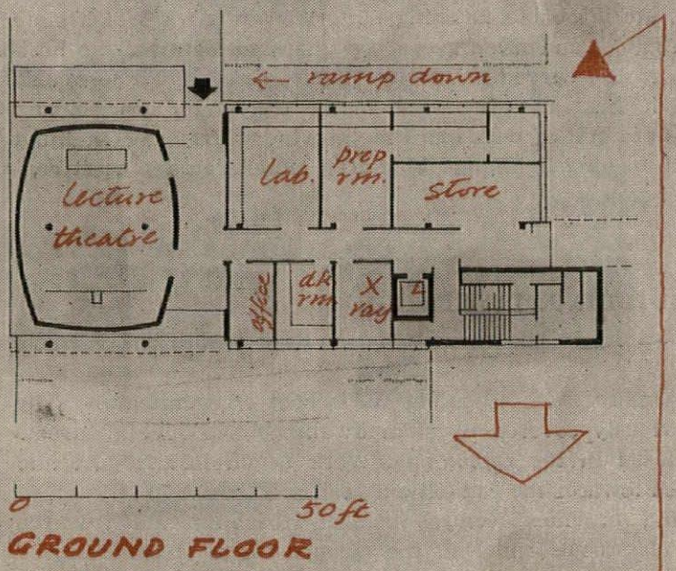
The site faces Durham Cathedral and Castle on the other side of the river. The building provides new teaching and research laboratories for the Departments of Chemistry and Geology, and is connected by a bridge to the existing science building. Construction will begin next July and will take two and a half years.

The departments are divided by floors, with chemistry teaching on

the ground floor, chemistry honours and research on the second, and geology on the third floor. The elevations are designed for flexible partition spacing on a 4 ft. 6 in. module, and to give the maximum daylighting to the laboratories. Distribution of equipment is by lift from a central store to the various departments.

The building has a steel frame, with stanchions at 18 ft. centres, carrying hollow-pot floors spanning both ways.

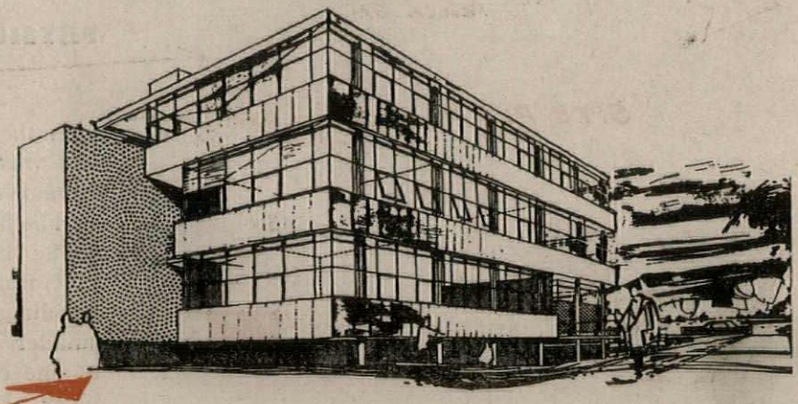
Engineers: R. T. James and Partners. Consulting engineers: A. H. Barker and Partners. Quantity Surveyors: Hamilton H. Turner and Son.



METALLURGY BUILDING: OXFORD

Basil Ward (of Ramsey, Murray, White and Ward)

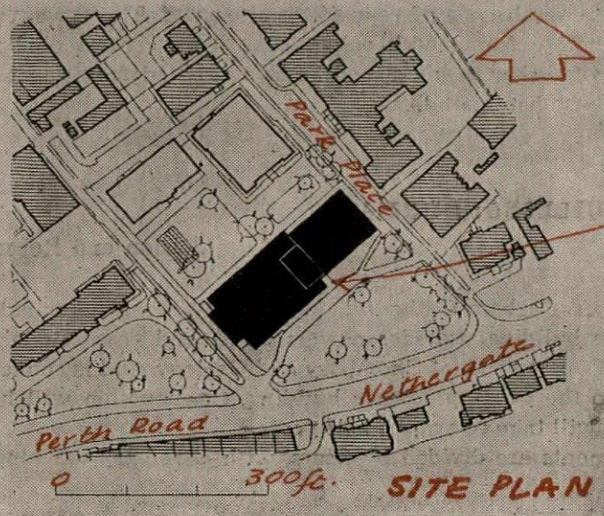
The new building for the Department of Metallurgy is the first within the general plan for developing the Keble Road triangle for university purposes. Accommodation provided in the 3-storey building includes laboratories, research rooms, workshops and a lecture



theatre and is designed to meet both the requirements of the present department and possible future needs. Construction is just about to start.

The structure is reinforced concrete with solid reinforced concrete floor slabs. External infilling is of light-weight construction comprising insulation blocks clad with facing panels, between continuous strip windows.

Architect in charge: George P. Buzuk.



LIBRARY, HALL, ETC.: DUNDEE

Robert Matthew and Johnson-Marshall

For Queen's College: a library for 134,358 books, a college hall seating 850 and a 12-storey tower containing teaching and administrative accommodation, all designed to present a unified frontage to the existing university precinct. The site, which overlooks the main Perth road and the Firth of Tay, is at present occupied by a terrace of converted Regency and Victorian houses, some of which will remain in use while the first stages of the scheme (the library and tower) are built. Work will start this spring.

The main entrances lead to a central foyer from which all departments are reached. There is also a lower entrance (due to a fall in the ground) at the east end, allowing direct access at basement level to the main library book-stack, which is to be accessible to students. Library staff rooms, two lecture-rooms and administrative offices occupy the ground floor of the library section, with the main reading room, periodical room and librarians' room on the first floor. There is a gallery to the reading room and two

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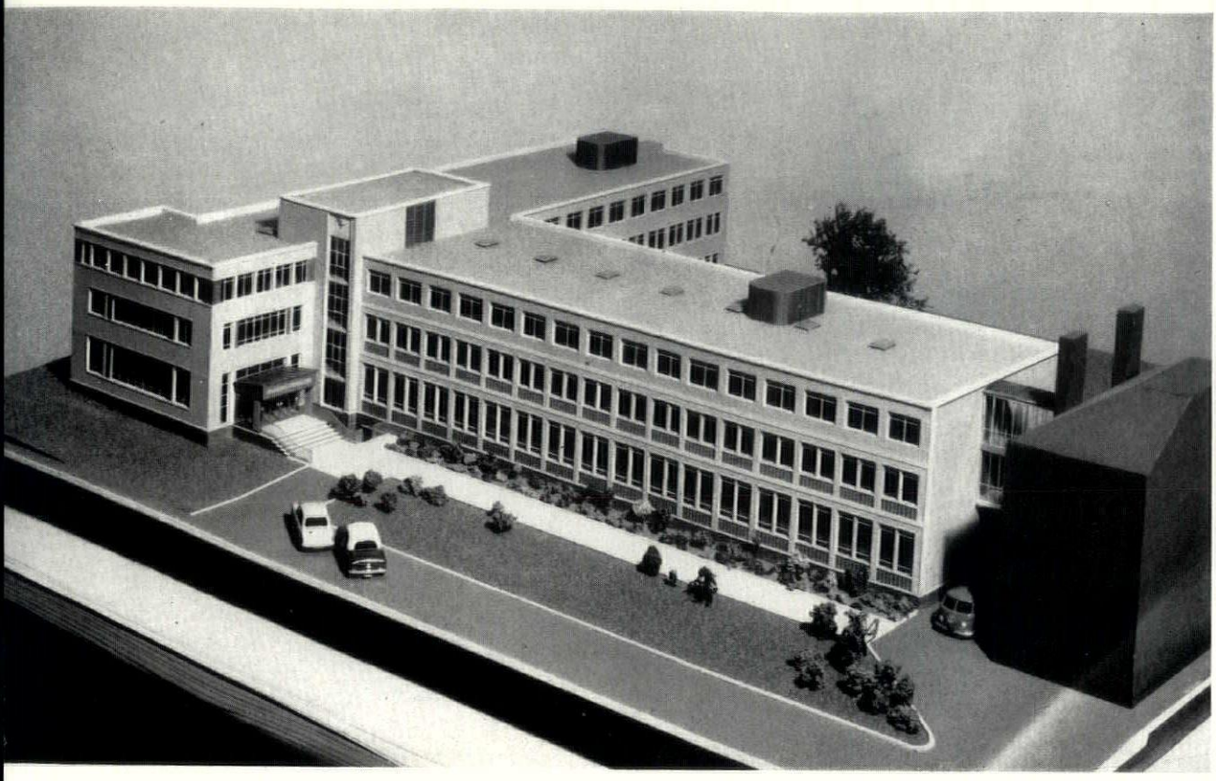
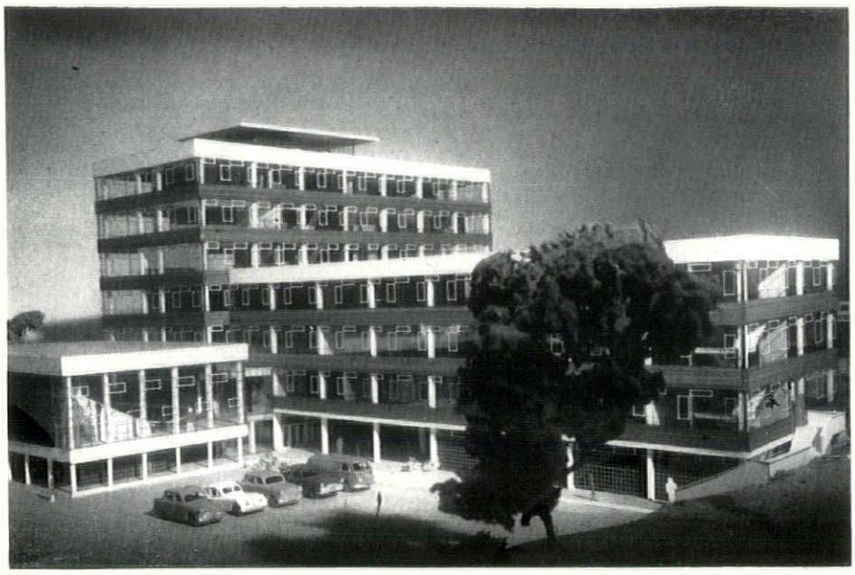
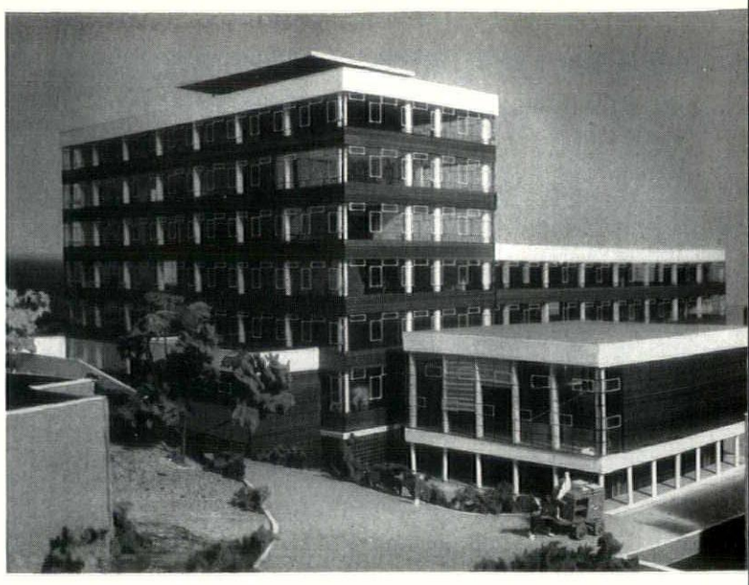


Left, science building for Durham University by Easton and Robertson, showing on the right the connection by bridge to the existing science building.

Below, buildings for Queen's College, Dundee, by Robert Matthew and Johnson-Marshall. The tower, placed between the hall and library wings, contains offices and teaching accommodation with staff rooms at the top.

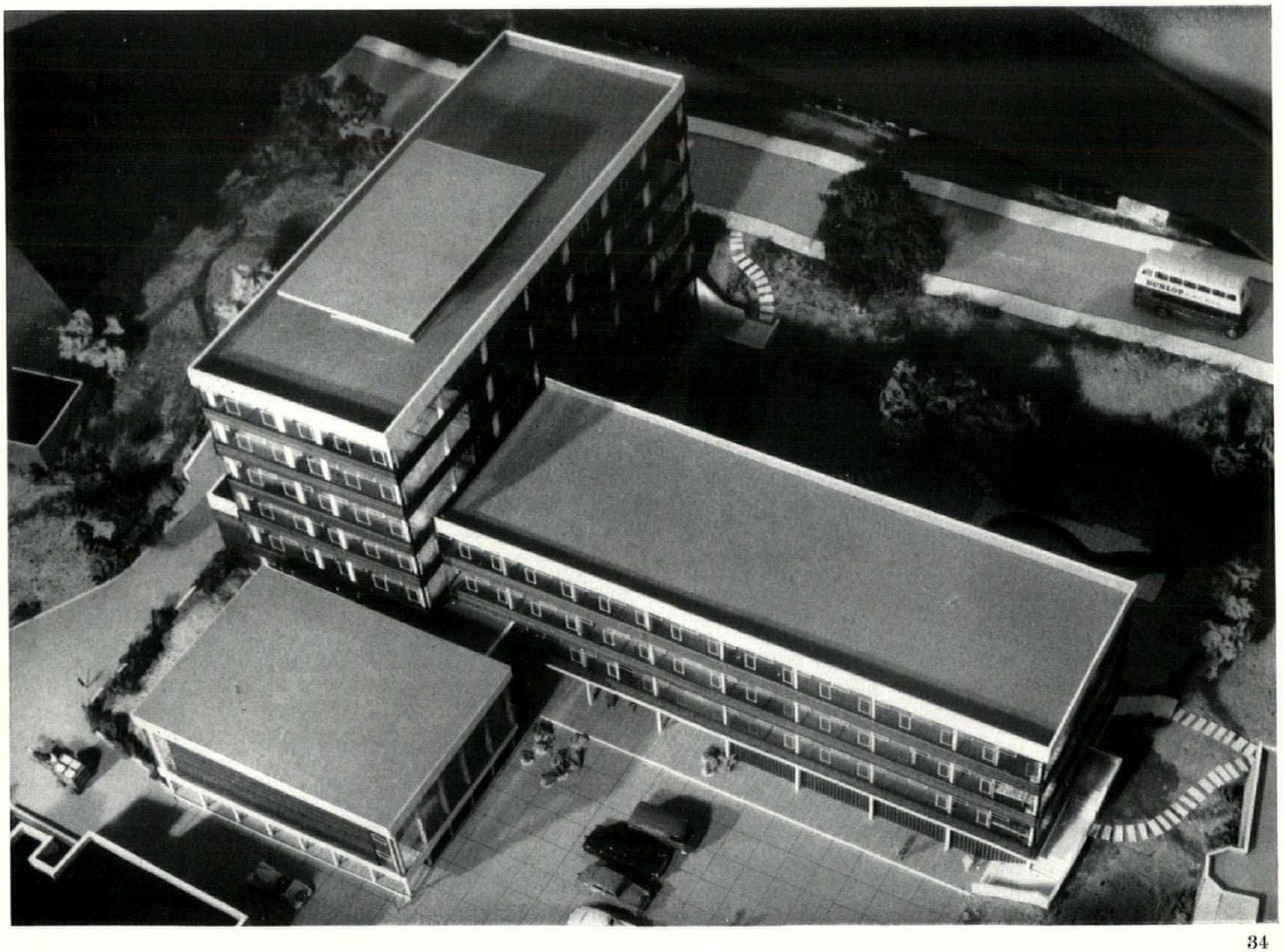






5. UNIVERSITY BUILDINGS

Chemistry building, Birmingham University, by Playne and Lacey: above, from ground level; below, from the air. The 7-storey main block has a 4-storey research block at right-angles and a separate wing containing a lecture hall raised above a service ground-floor storey.



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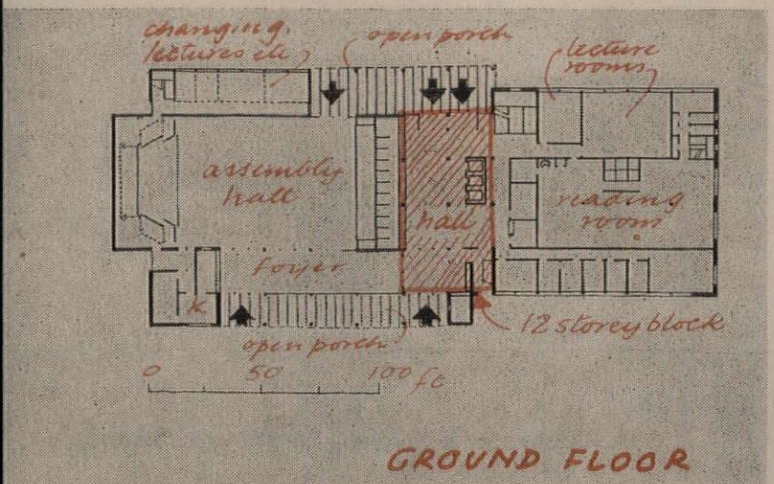


GROUND FLOOR

more lecture-rooms at this level. In the lower block each floor, beginning with the third, houses a separate department. The first floor is taken up with a gallery surrounding the entrance hall and administrative offices and the second with three lecture-rooms linked with those in the library wing. The third floor houses the mathematics department, the fourth is the senate floor, the fifth has general offices, the sixth the departments of languages and education, the seventh that of psychology, the eighth that of law and the ninth that of geology. The tenth is the staff-club floor (making the most of the view) with common-room, dining-room and kitchen, and the eleventh has staff cloakrooms, kitchen staff-rooms, motor-rooms and tanks. The college hall has a foyer separating it from the main entrance hall. It has a level floor except for a small number of raked fixed seats at the back. There is a stage with flexible wings and cyclorama.

The structural frame is reinforced concrete on a 20 ft. grid with concrete beamed floors and roofs and structural reinforced concrete walls enclosing stairs and lifts. External walls are natural freestone with panels of vertical timber boarding. Timber windows are double-glazed. The projecting library window has a faience surround.

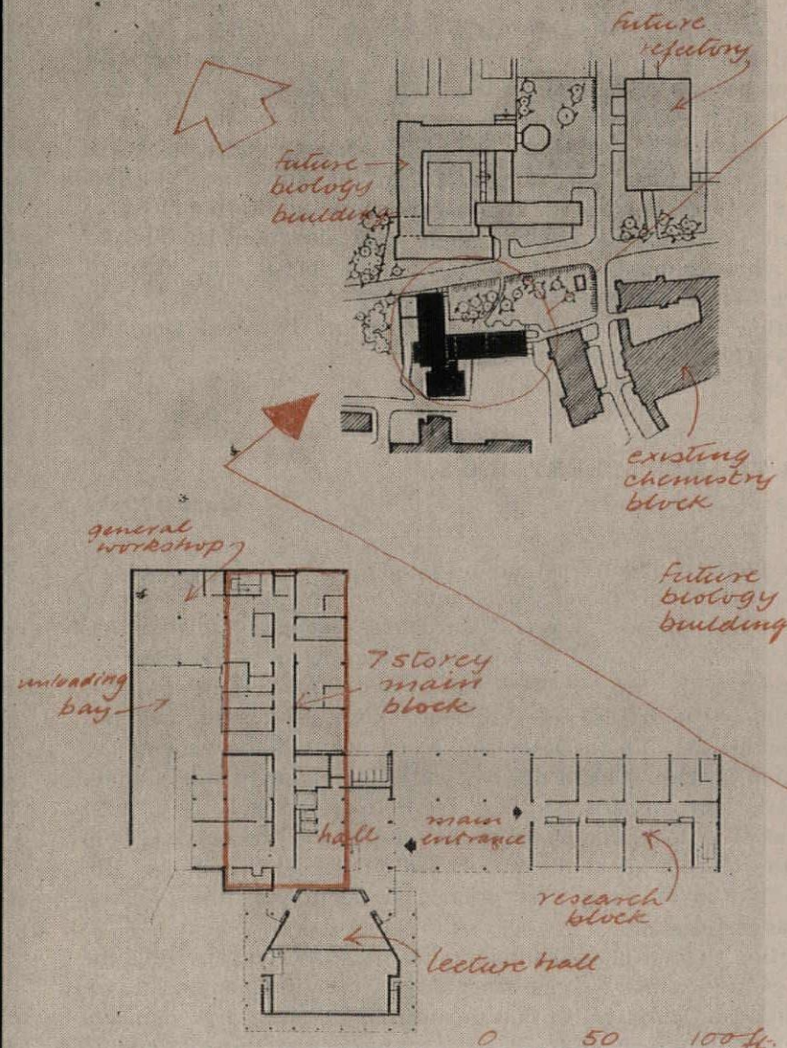
Senior architect: T. R. Spaven. Assistant architect: J. R. Latimer. Structural engineers: F. A. Macdonald and Partners. Heating and electrical engineers: Mackenzie and Moncur. Quantity surveyor: W. J. R. Christie.

CHEMISTRY BUILDING: BIRMINGHAM

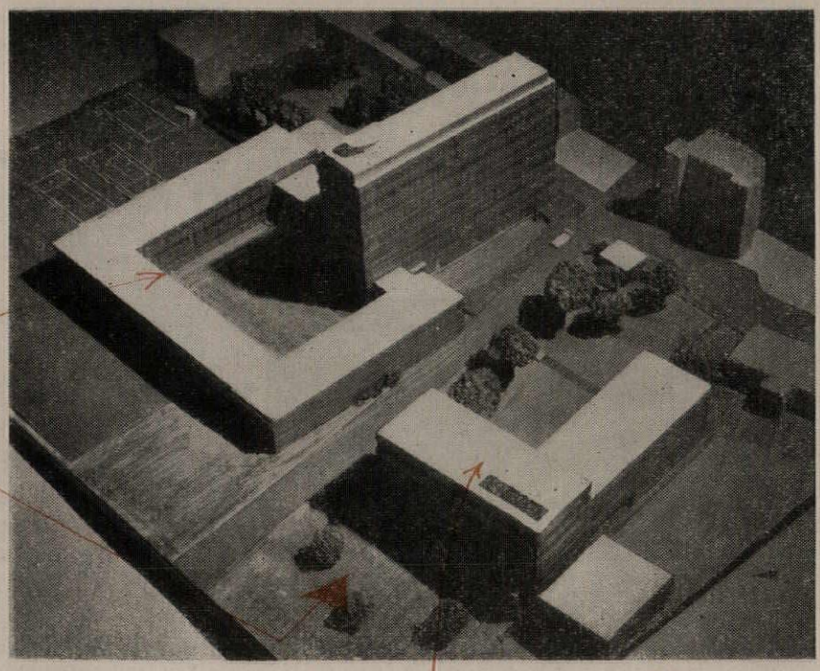
Playne and Lacey

One of the buildings forming part of the large development scheme for Birmingham University prepared by Sir Hugh Casson. No starting date has been fixed.

It adjoins the present chemistry wing of the original university quadrant but occupies a site 20 ft. lower, the approaches to the new building being on three different levels. There are three blocks,



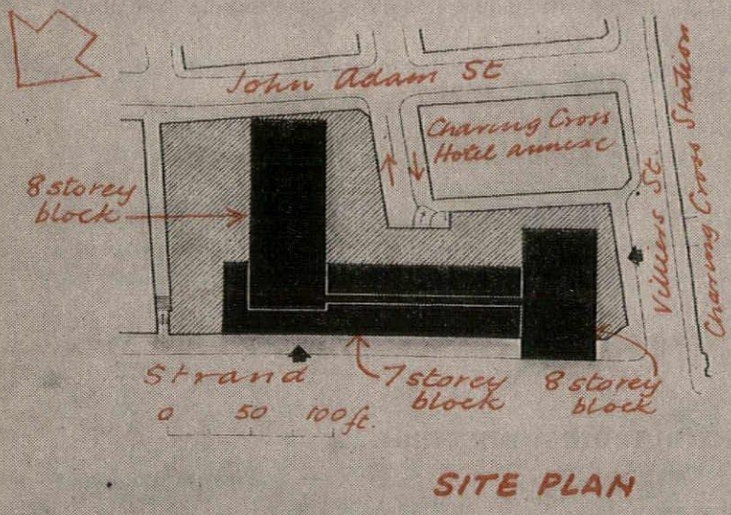
GROUND FLOOR



linked to form a rough T-plan: a 7-storey main block, a 4-storey research block and a lecture-hall for 400 students with service and plant-rooms beneath it.

The building is of reinforced concrete frame construction with external facings of brick.

6 OFFICE BUILDINGS



SITE PLAN

STRAND, LONDON

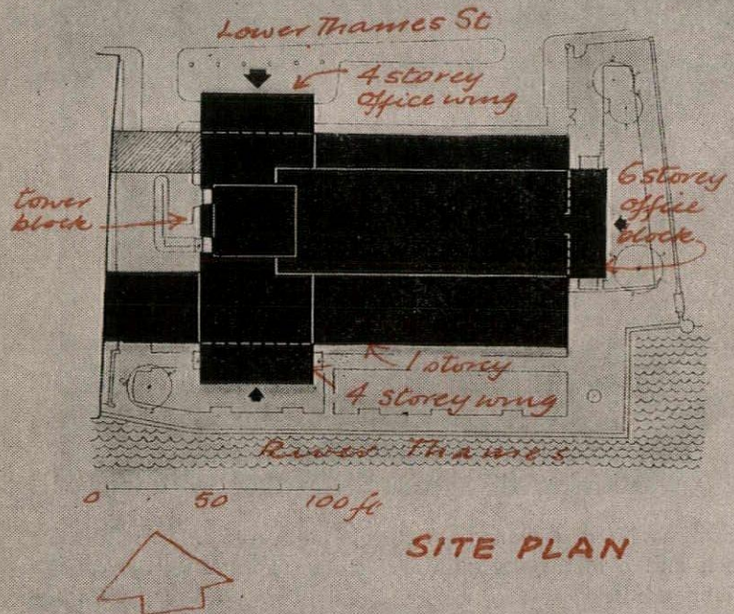
Trehearne & Norman, Preston and Partners

Arising from the redevelopment of the sites south of the Strand immediately east of Charing Cross Station, and from the LCC's Strand widening scheme. The part of Buckingham Street between John Adam Street and the Strand will be closed and Villiers Street widened by 14 ft. Work began on the site last November. It is expected to be complete towards the end of next year.

The building provides 43,000 sq. ft. of shops and 84,000 sq. ft of offices. The existing pub (St. Martin's Tavern) is being rebuilt and enlarged. In the basement is garage space for 60 cars, reached by a ramp from John Adam Street. Two unloading areas, with turntables and lifts, provide access for goods to the shops and offices. Roof structures are hidden behind screens to give a level skyline.

The building is of reinforced concrete flat beam construction with hollow-pot floors. Columns along the main elevations, up to second-floor level, are faced with precast terrazzo. Above they are faced with Portland stone with alternating stone and ceramic window-panels. The block cantilevered over the Strand at the junction of Villiers Street has columns faced with vitreous mosaic with alternating stone and vitreous glass mosaic window-panels. Rear elevations have reconstructed stone column casings, ceramic mosaic panels and areas of brickwork. Windows are metal casements.

Consulting engineers: R. Travers Morgan and Partners. Quantity surveyors: Cyril Sweett and Partners.



SITE PLAN

LOWER THAMES STREET, E.C.3

Brian O'Rorke

For the General Steam Navigation Company. The site, on Brewer's Quay, is next to the Tower Steps and Pier west of the Tower of London. Before the war it was a warehouse belonging to the company, which was destroyed by bombing. Planning consent to the redevelopment of the site for offices was at first refused, but on appeal it was allowed with fairly severe restrictions as to site coverage, height and set back on the river side to ensure that the view of the Tower from up river should not be spoilt. The shape of the building has been largely dictated by these restrictions, as well as by considerations of outlook. The wings at the west end of the building help to hide the blank wall of the warehouse on the adjoining site. Site work started in February last year. Construction of the building proper has just begun.

In addition to their normal shipping business the company runs the Eagle Steamer summer service from Tower Pier to Thames Estuary resorts and the Continent, so that during the summer large numbers of passengers are dealt with. This department is at the east end of the building with ticket windows under a loggia. Tower Dock has been filled in and there will be direct access to Tower Pier. The entrance for the main offices is from Lower Thames Street. The ground

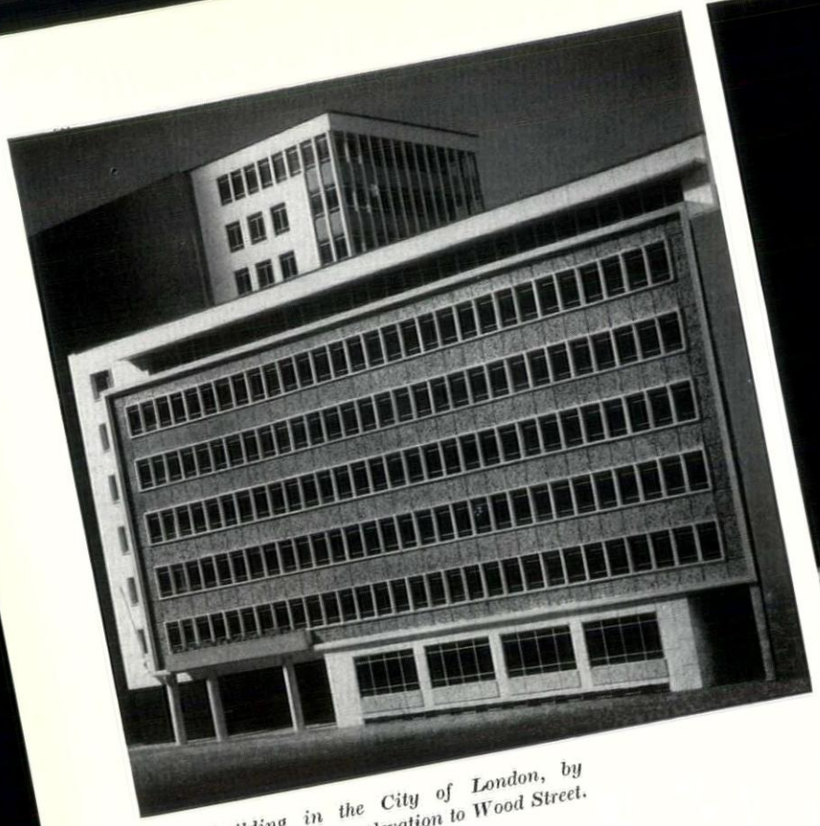
[*continued on page 39*



The Strand, London, showing redevelopment from the corner of Villiers Street eastwards with shops and offices, by Trehearne & Norman, Preston and Partners.



Shipping offices in Lower Thames Street, by Brian O'Rorke: the river front.



Office building in the City of London, by T. P. Bennett & Son: elevation to Wood Street.



Office building in Manchester, by Arthur Bailey, showing the curved frontage facing Oxford Street.

6. OFFICE BUILDINGS

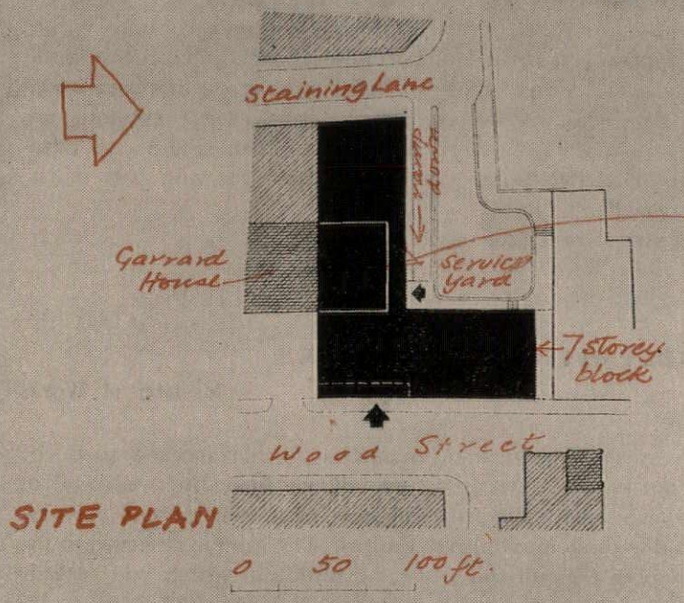


Right, office building on a factory site at Crawley, by Edward D. Mills and Partners. The covered way connects the ground floor offices.

continued from page 36]

floor is largely open, with counters for the shipping departments. The central areas have clerestory lighting. The remainder of the floors are offices. The top floor has a large staff recreation room and small gymnasium. The basement has a large garage area.

Construction is steel frame with concrete floors (cast-in heating panels), and facings of Portland stone and curtain walling designed to allow maximum flexibility of office partitioning. The main foundations, consisting of 3 ft. diameter deep-bored piles, are taken to a depth of between 50 ft. and 60 ft. below basement level.



CITY OF LONDON

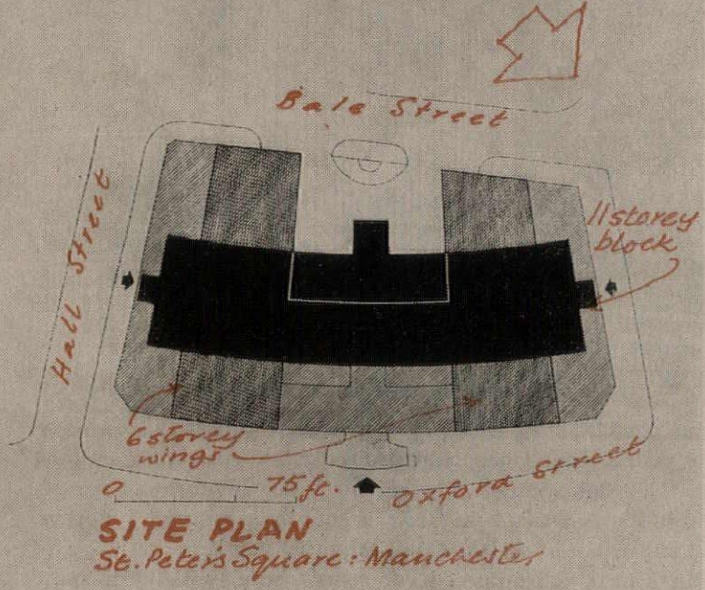
T. P. Bennett and Son

In Wood Street: a new head office for the Nestlé Co. Construction started last September.

An L-shaped block, for the most part seven storeys high but with a tower which lines up with the main block of the adjoining building, Garrard House. Between the wings is a service yard from which a ramp leads down to a basement car park. The top floor of the front block contains a laboratory, and the eighth floor of the tower a caretaker's flat. Otherwise the whole building is planned as offices, totalling 54,500 sq. ft.

Construction is reinforced concrete with slab floors giving ceilings without beams. Perimeter columns are at 3 ft. 6 in. centres. The main facing materials are granite and Portland stone on the Wood Street elevation and brick on the rear elevation. The tower block has vertical strip windows with Portland stone between. There are four lifts and a letter-elevator. Lift-halls are artificially ventilated.

Quantity surveyors: Gardiner and Theobald.



ST. PETER'S SQUARE, MANCHESTER

Arthur Bailey (Ansell and Bailey)

On a prominent island site facing the Lutyens war memorial and the Vincent Harris central library and town-hall extension. Part of the site was previously occupied by the Princes Theatre. This is a speculative office building eleven storeys high with a car park in the basement. The heights and positions of the main and wing blocks were determined by rights of light and town-planning restrictions. The curved frontage to Oxford Street is echoed throughout the building with columns and beams concentric and radial to the curve. Carcase work and cladding are due to be completed shortly but the interior will not be finished until late this year, when tenants' requirements are known.

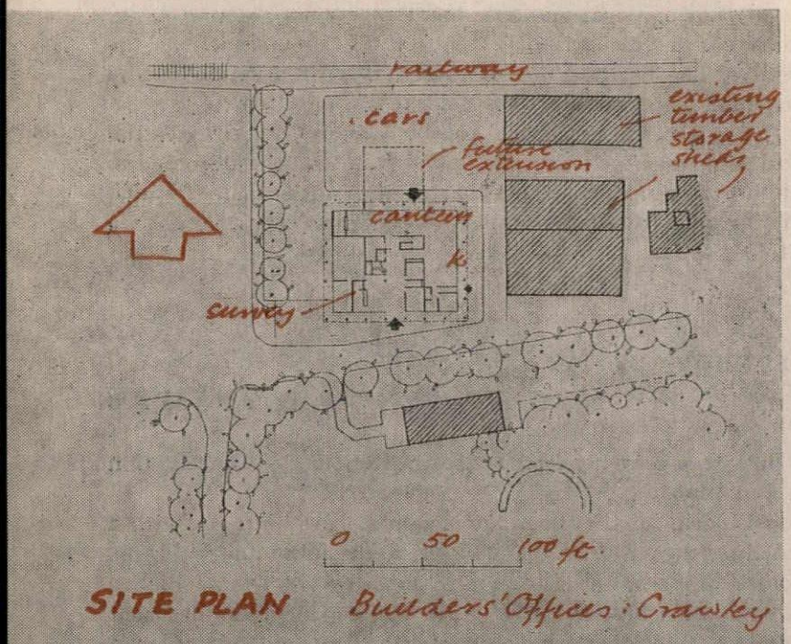
The building has a reinforced concrete frame with solid slab floors. Spans and column sizes were designed to minimize variation in window openings, only ten sizes being used for 600 frames. The building is faced with Portland stone. Copings are of reconstructed stone and window cills of slate. There are four passenger lifts, two serving the five lower floors only.

Consulting engineers: Scott and Wilson, Kirkpatrick and Partners.

BUILDERS' OFFICES: CRAWLEY

Edward D. Mills and Partners

Part of a factory development scheme illustrated in the AR Preview issue, 1955, but since then changes in the plan of the area of the new town in which the factory is situated have necessitated a new design (illustrated here) for the office block. The builders are James Longley



SITE PLAN Builders' Offices: Crawley

and Co. The offices adjoin the works entrance of the existing factory, which is near the new Crawley railway station. Site work will begin early this year.

There are three floors, of which the ground contains a canteen, a social room and the surveying department, the former being planned as a self-contained unit that can be used after office hours. A set-back provides a covered way round the ground-floor offices. The first floor contains the accounts department and other offices and the second the directors' suite (including board-room), the drawing office and the estimating department. On top is a roof garden. Services (including printing and photographic dark-rooms), lavatories and a large entrance hall occupy an artificially lit central core.

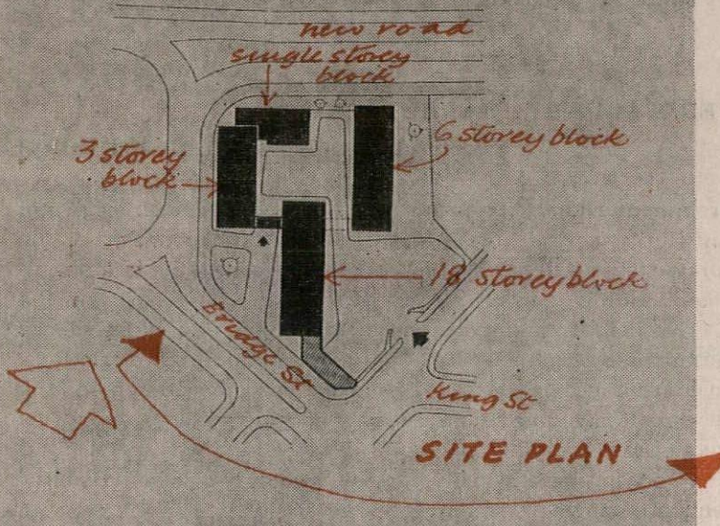
Construction consists of precast reinforced concrete columns with a floor slab composed of an in situ perimeter beam and precast infilling providing a flat ceiling. External infill panels are of precast concrete faced with clay brickettes. Exposed surfaces of columns are covered with tile mosaic. Windows have timber frames and steel opening lights. Internal partitions, apart from those forming part of the central core, are demountable.

Consulting structural engineer: H. Kaylor.

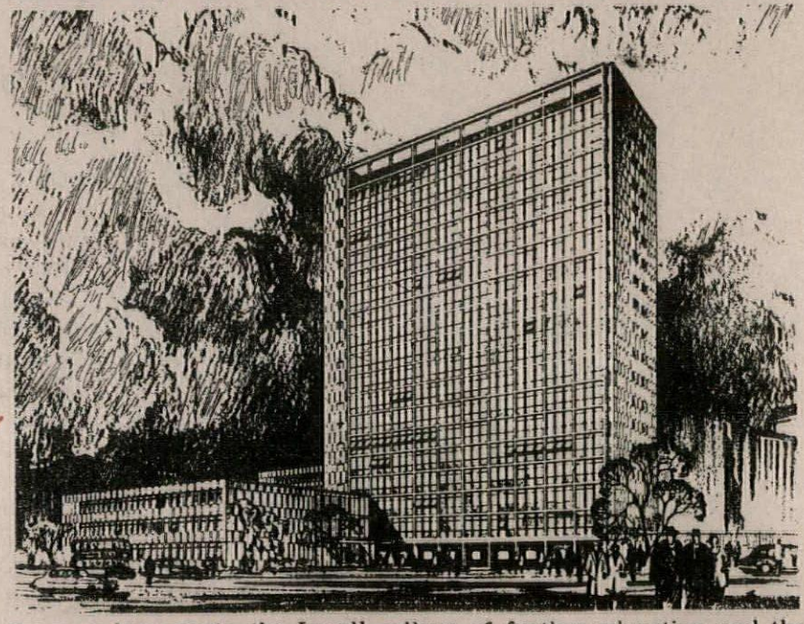
GOVERNMENT OFFICES: MANCHESTER

Ministry of Works

To rehouse various Government departments that are now scattered about Manchester. The site, in Bridge Street near the west end of Deansgate, backs on to the proposed new civic centre road crossing the Irwell and is convenient also to Salford. The area is reserved in the development plan for cultural and civic building, which will include



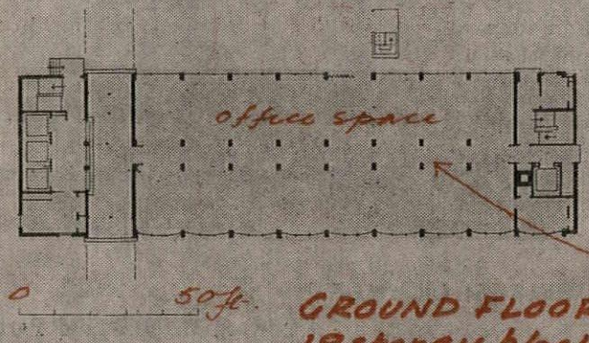
SITE PLAN



the new law courts, the Irwell college of further education and the independent television studios. The offices take the form of an 18-storey tower block and two other blocks of 6 storeys and 3 storeys. Construction began a year ago, and will take two years.

The buildings have a reinforced concrete frame, with twin spine columns on either side of a centre corridor. The end towers have concrete walls faced with Portland stone, which is used as permanent shuttering. Standard movable partitions are used internally. Cladding is of Portland stone with window panels of coloured glass. Ground floor openings on the west elevation are filled with glass bricks.

Senior architect in charge: E. H. Banks. Senior engineer (responsible for heating and water supply): C. W. Cook. Consulting structural engineers: Travers, Morgan and Partners.



GROUND FLOOR 18 storey block

PICCADILLY, W.1

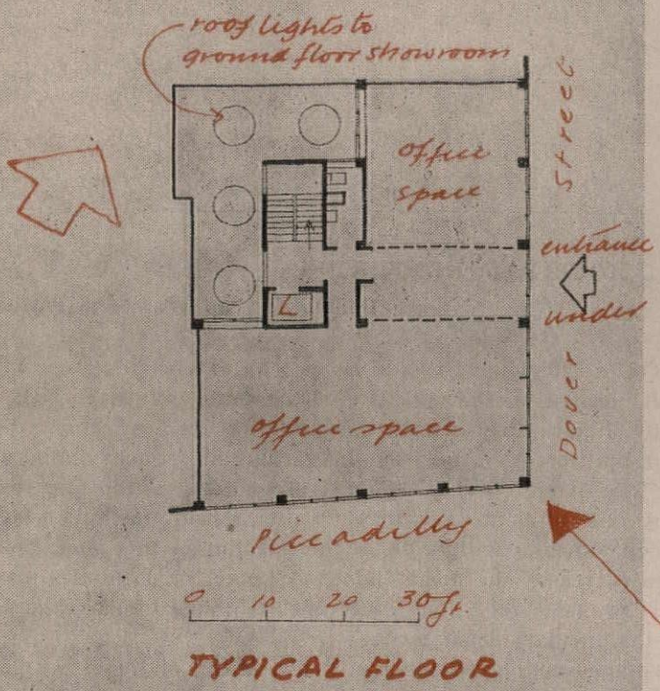
Ernö Goldfinger

At the corner of Piccadilly and Dover Street, on a site at present occupied by three much-altered late eighteenth-century houses, two of which are joined together, entered from Dover Street. The new building is planned for one, two or three shops or showrooms on the ground floor and something over 1,600 sq. ft. of office space on each of five upper floors. No starting date has yet been fixed.

The office entrance remains in Dover Street, with stairs rising 4 ft. from street level to a lift and staircase hall. Only one staircase is required as there is escape from the upper floors over neighbouring buildings. The upper part of the office windows is recessed to form a 'photobolic screen' which throws the light further into them.

Construction is a reinforced concrete frame with thin reinforced concrete carrying walls enclosing lift-shaft and staircase. Cladding is grey granite.





TYPICAL FLOOR

MAYFAIR, W.1

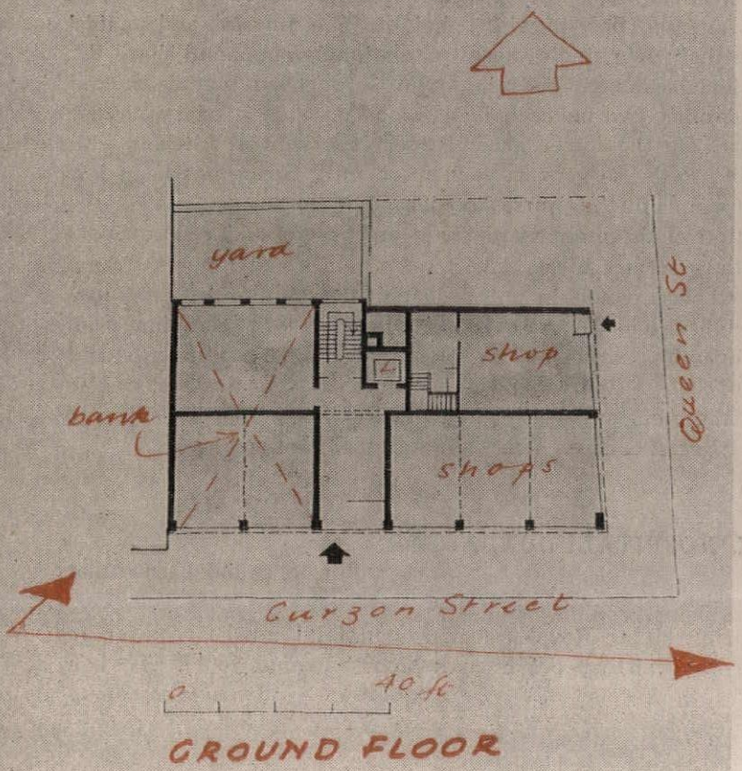
Bridgwater and Shepheard

On the corner of Curzon St. and Queen St., for Messrs. Jackson-Stops and Staff. The site was occupied by three Georgian houses, which were destroyed by bombing. Already under construction.

The building has a slightly greater volume than the floor-space index of 3½ for this area would normally permit because of the size of the previous buildings. The basement is mainly for storage; on the ground floor are shops and a bank; on the first, second and third floors offices, and on the top floor two flats. Tall windows reaching to the ceiling, with splayed reveals, are designed to give even distribution of light inside the offices.

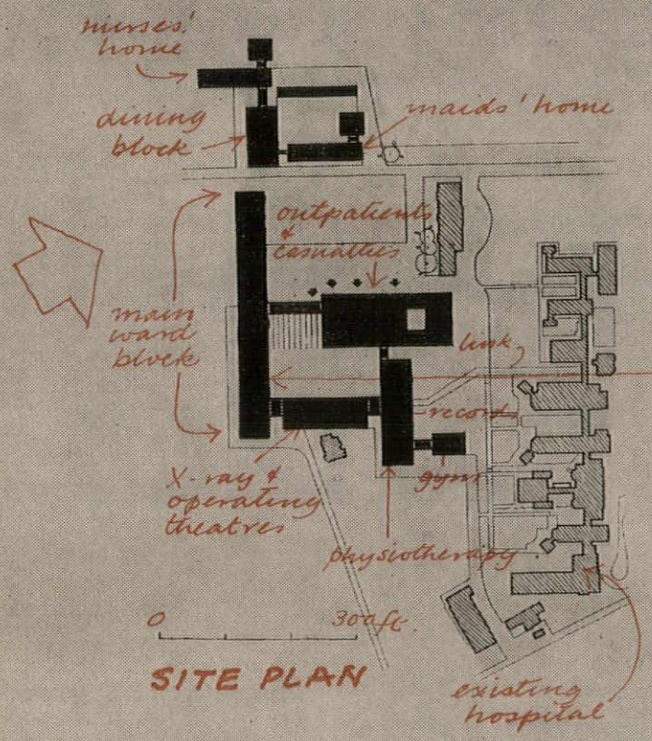
Ground floor and basement are of reinforced concrete frame construction. Upper floors have 14½ in. brick walls supporting concrete floors. The penthouse flat is in timber with a copper roof. Ground-floor walls are faced with green Vert Stella marble and upper floors with London stocks. Windows are steel with external reveals plastered and painted. Heating is by ceiling-panels embedded in the concrete.





GROUND FLOOR

7 HOSPITALS



SITE PLAN

GENERAL HOSPITAL: KETTERING

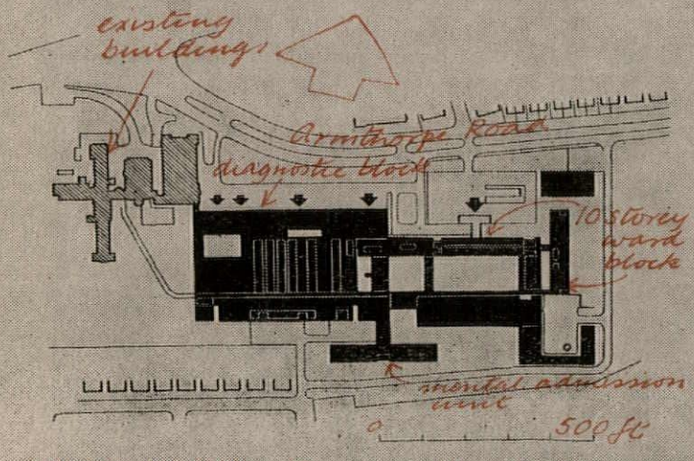
Gollins, Melvin, Ward and Partners

For the Oxford Regional Hospital Board: an extension of the existing general hospital on the outskirts of the town, which consists of single-storey 19th-century wards incapable of modernization, a 4-storey block built between the wars and various subsequent temporary structures. The extension is being built in two stages, the first stage (comprising one accident-ward for 40 patients and the bulk of the ancillary departments) will begin in the autumn of this year, being preceded in March by the maids' home. A home for 45 nurses forms part of the second stage, along with the main ward block and the balance of the ancillary departments.

The first-stage ancillary departments (consisting of the X-ray, out-patients', casualty, operating, physiotherapy, records and pharmacy departments) and the accident-ward occupy a low building, varying between one and three floors in height, sited between the existing hospital and the future ward block, to both of which it is connected by covered ways. When the ward block is built the better of the old buildings will be converted to administration and the rest demolished.

The levels of the site and the present dangerous approach from the main road required a new access, which leads direct to the new main hospital entrance and to the out-patients' and casualty departments. Thence a ground-floor corridor leads to the X-ray, records and pharmacy, all departments which must be easy of approach by the public. The accident-ward and operating suite (which will be eventually extended to four theatres) are on the first floor. On the lower ground floor lies the physiotherapy department, an arrangement which facilitates the planning of the gymnasium as a separate building of more than average floor-to-ceiling height. The nurses' and maids' homes have their own single-storey recreational rooms and share the centrally placed canteen. The eight wards proposed for the second stage are planned two on each floor on either side of the staircase and lift core. On the lower ground floor is a central kitchen with access by lift to the servery in each ward unit. Space has been left on the site for four further nurses' homes.

Construction of the main ward block and the 2- and 3-storey part of the ancillary service block consists of a reinforced concrete frame with external wall panels in prefabricated metal units. Internal partitions in lightweight concrete block follow a 5 ft. planning grid. Floors are beamless concrete slabs. The single-storey out-patients' and casualty block has a lightweight steel frame, steel lattice roof beams and metal-frame curtain walling. The maids' home has load-bearing brick walls, precast concrete floors and a timber roof.



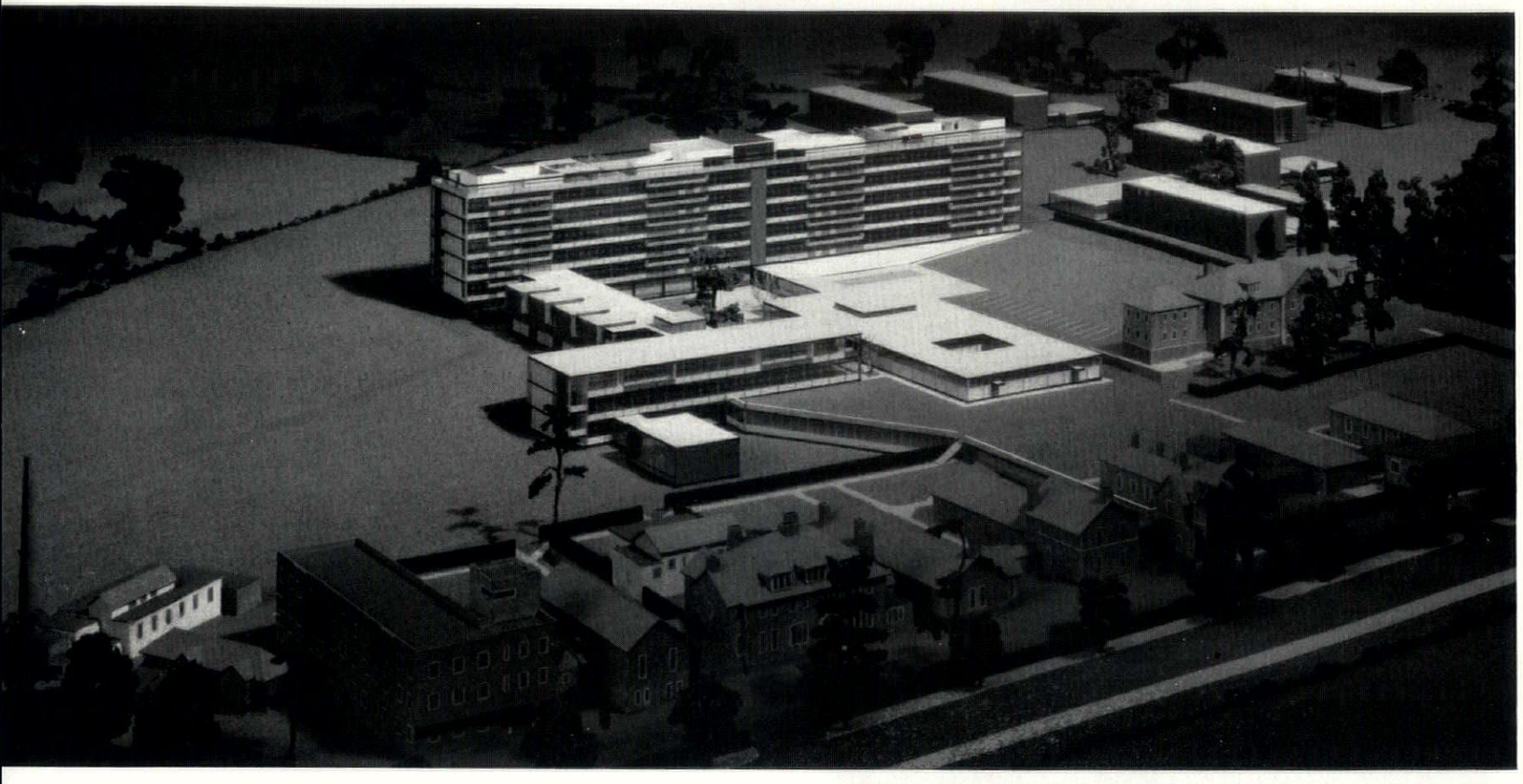
SITE PLAN General Hospital, Doncaster

GENERAL HOSPITAL: DONCASTER

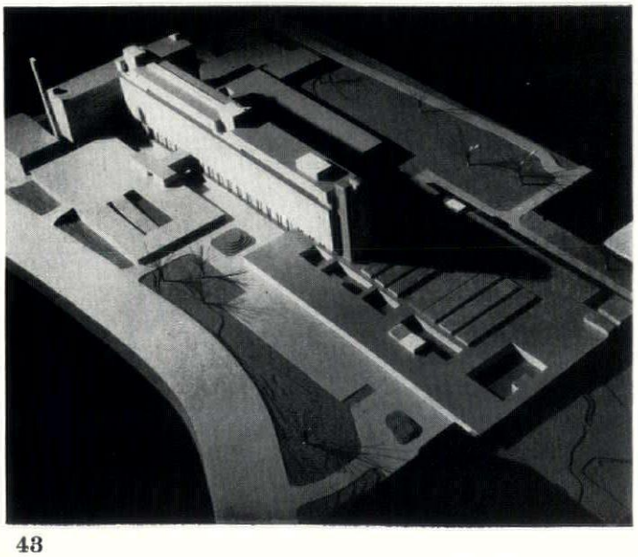
Pite, Son and Fairweather

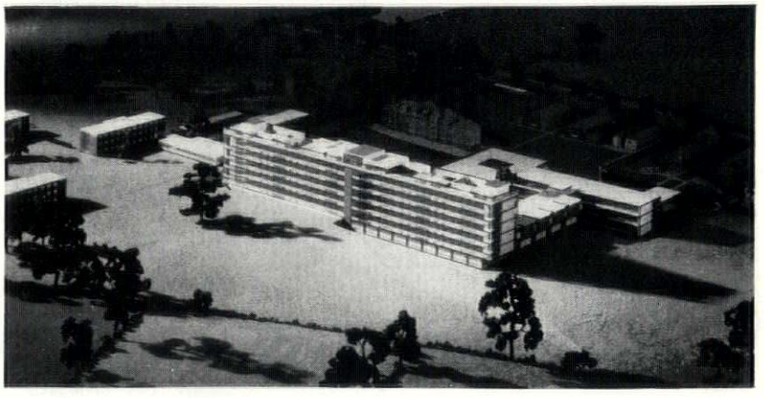
An extension of the Royal Infirmary, on land newly acquired to the east of the existing buildings, which provided 150 beds when

[*continued on page 45*

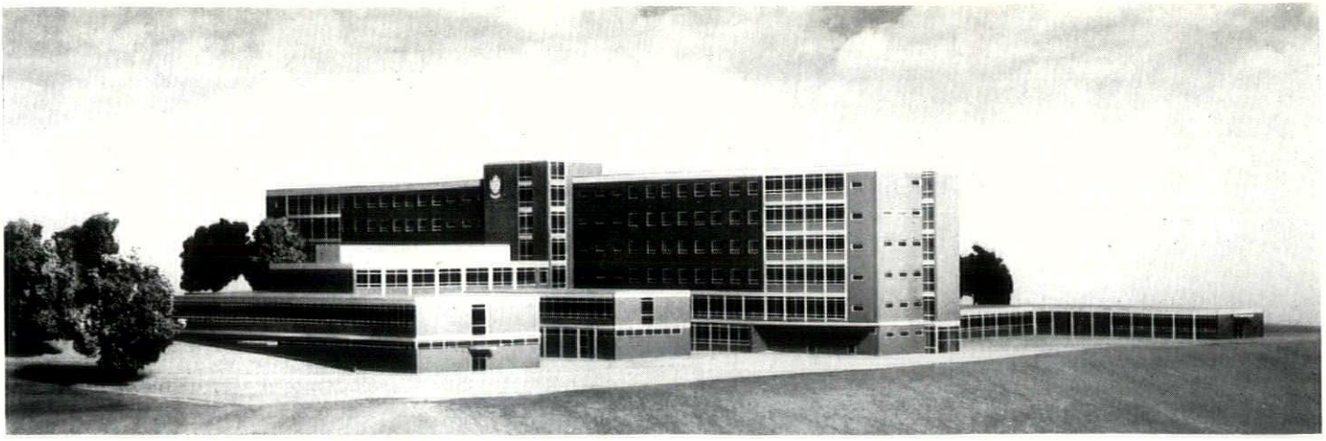


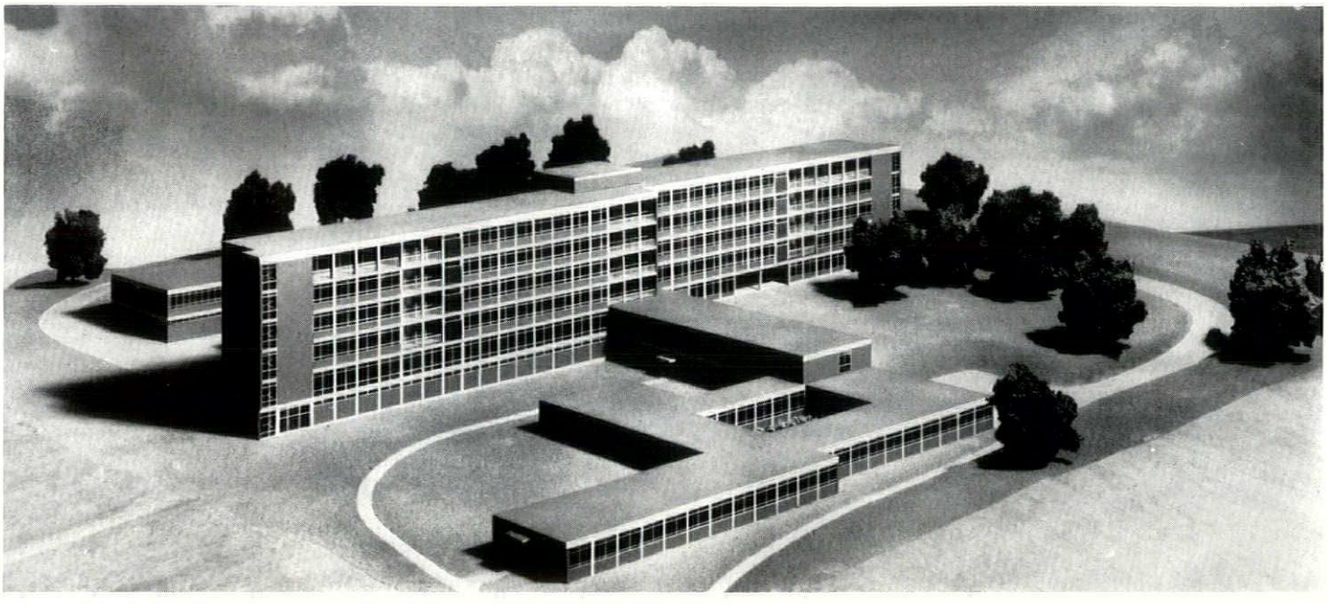
Below, general hospital Doncaster, by Pite, Son and Fairweather, from the west. The 10-storey T-shaped ward block is seen beyond the low diagnostic block.





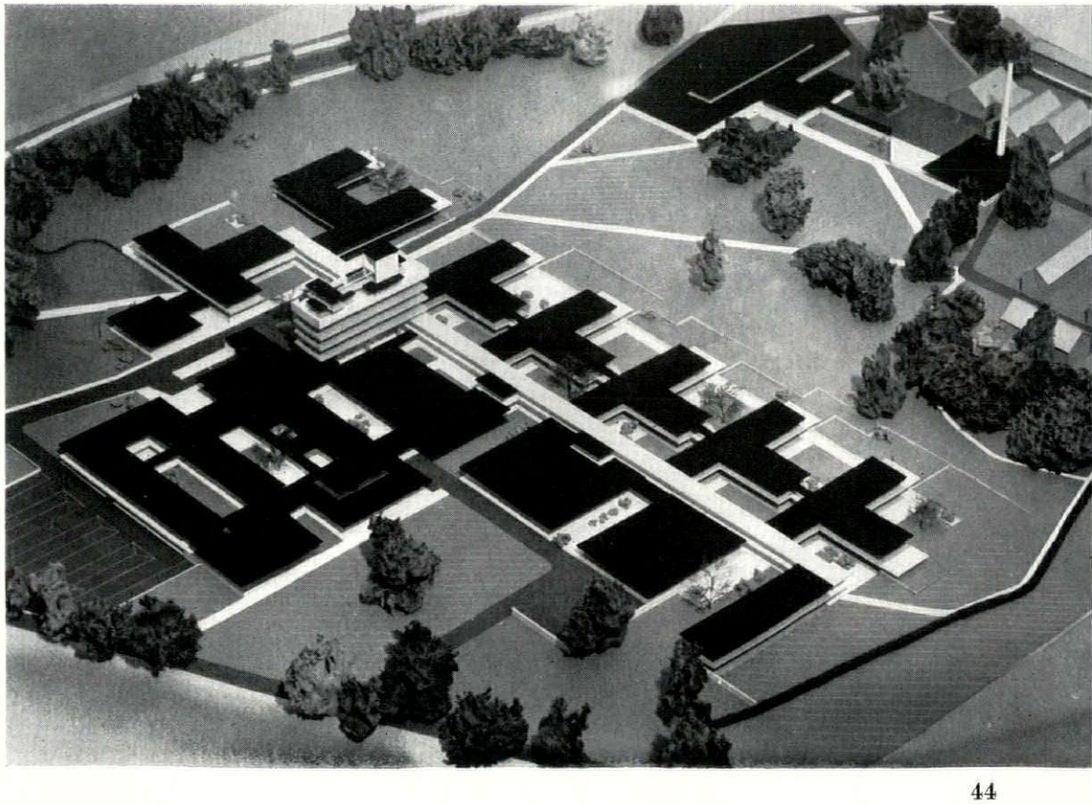
New buildings for Kettering Hospital, by Gollins, Melvin, Ward and Partners: top, from over the roofs of the existing buildings, showing the main ward block with the ancillary departments in front of it, connected to it by covered ways. Immediately above, the main ward block from the other side.





Hospital in Harlow new town, by Easton and Robertson: top, from the north-west; bottom, from the south-west, showing the main ward block with the physiotherapy department, ante-natal clinic and maternity wing in front of it.

7. HOSPITALS



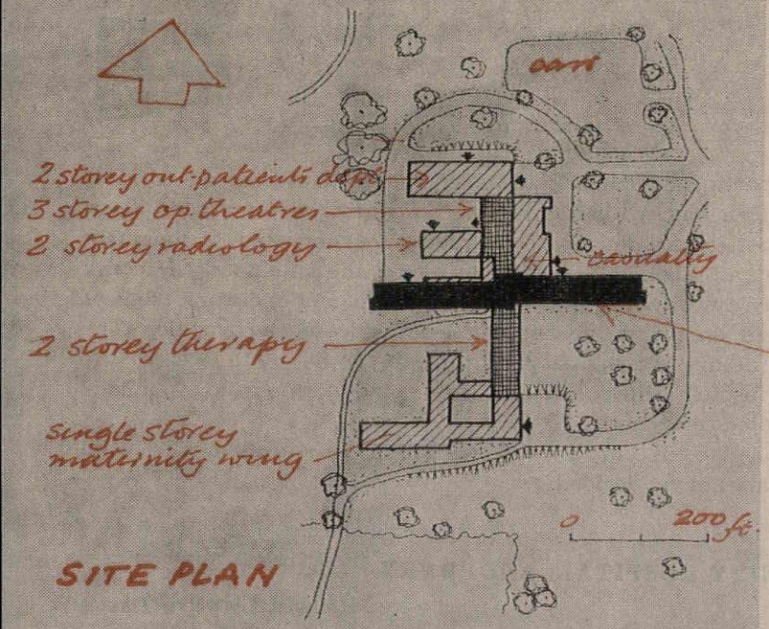
Hospital at Wythenshawe, Manchester, by Powell and Moya, showing the identical two-storey, L-shaped wards linked by a corridor leading to a central high block containing the administration department and with the operating theatres on its opposite (north) side.

continued from page 42

built in 1926 and to which another 184 beds were added during the war in temporary hutted wards. The new buildings provide 485 beds, and ancillary departments in a separate diagnostic block which will be common to the new and old buildings. The latter are replanned and the accommodation up-graded, providing 123 beds (making 608 in all), the remaining space in the original buildings being adapted for other purposes. The chest clinic (part of the diagnostic block) will begin in March, followed by the main wing of the new ward block, remainder of the diagnostic block and four of the six operating theatres. The second wing of the ward block, the remaining operating theatres and the adaptation of the existing buildings will follow.

The T-shaped ward block is 10 storeys high with offices, stores, etc. on the lower levels and the main kitchen and dining-rooms on the top floor. The sloping ground has made it possible to plan three independent levels of circulation (for visitors and administrative staff, for patients and nurses and for goods and services) each with entrances from ground level. The diagnostic block contains out-patients', casualty, pathology and X-ray department, a chest clinic and the main dispensary. Between it and the ward blocks are the six operating theatres with the central sterilizing department beneath. Adjoining are the boiler-house, workshops, stores, etc.

The buildings are of reinforced concrete frame construction, the ward blocks being faced with precast exposed-aggregate concrete slabs and the diagnostic block with brick.



GENERAL HOSPITAL: HARLOW

Easton and Robertson

For the North-East Metropolitan Regional Hospital Board. The site adjoins the new town centre and has a park-like character which is preserved. The approach is from a by-road and access to all the patients' departments is from the forecourt, except for the maternity cases who have a separate entrance. The first stage, comprising out-patients, casualty and radiology departments, will begin in March this year and be completed within two and a half years.

The buildings consist of a 5- and 6-storey ward block built across the natural fall on the site, flanked by low buildings housing out-patients, casualty and radiology, operating theatres and service departments to the north ; and physiotherapy, ante-natal clinic and maternity wing to the south. The fall in the ground provides horizontal circulation for patients and services at different levels. A small nurses' home will be built later on the south boundary of the site and a few houses for senior staff on the east side. A separate boiler-house for the whole site development is planned to the north.

The structure is a reinforced concrete frame with brick cladding in two tones to the main block. The lower blocks have panel infilling to the framework. Windows are metal, with slate cills.

Associate architect: W. G. Plant (architect to the North-East Metropolitan Regional Hospital Board). Quantity surveyors: Hamilton H. Turner and Son. Consulting engineers: R. T. James and Partners ; G. H. Buckle and Partners.

GENERAL HOSPITAL: WYTHENSHAWE

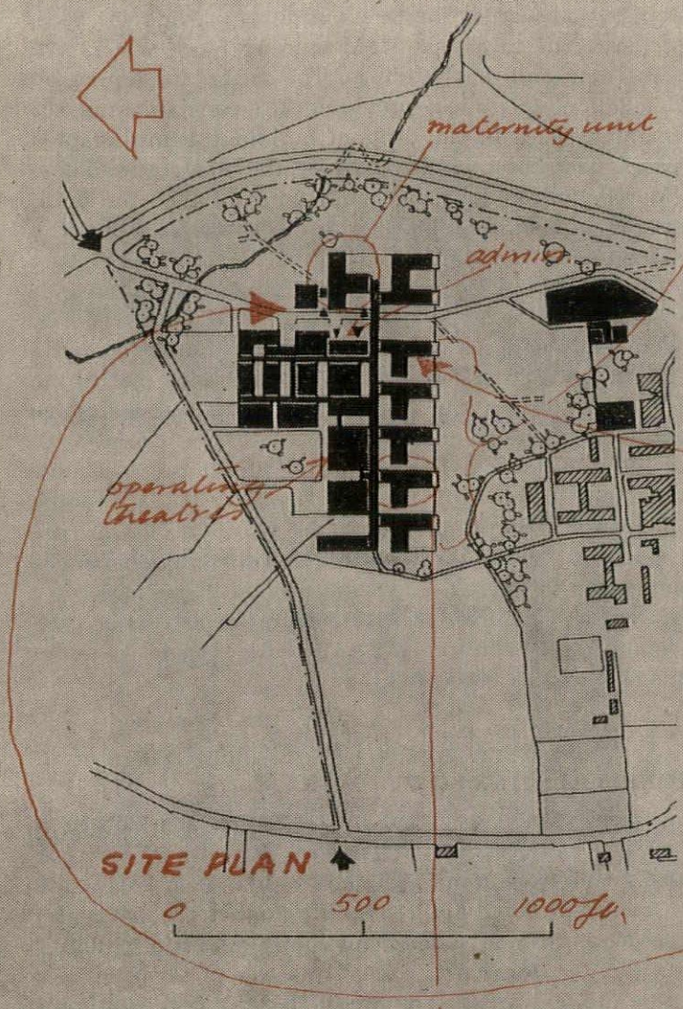
Powell and Moya

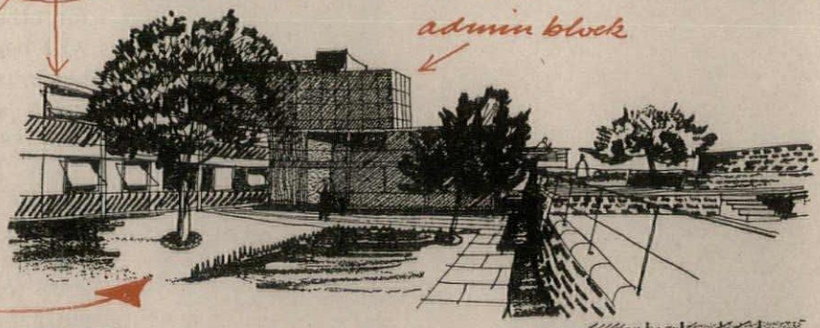
For the Manchester Regional Hospital Board: a new hospital with 496 beds, replacing a hutted hospital and adjoining the existing Baguley Hospital which some of the new departments (out-patients, pathology, central sterilizing department and bulk stores) will also serve. The new laundry will probably serve the whole of the South Manchester group of hospitals. A 60-bed maternity unit, which is part

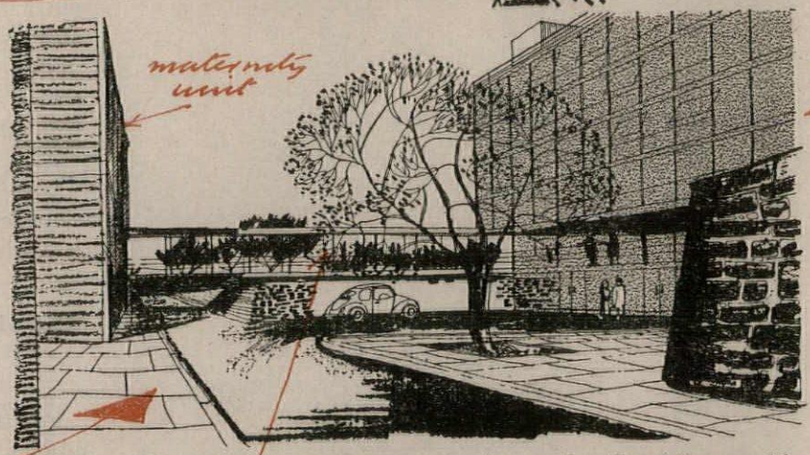
of the new hospital, has been planned so that it can be built as an independent first stage. The site, being on the edge of the Wythenshawe estate, has open views in several directions and many good trees. Work will begin at the end of this year or the beginning of next.

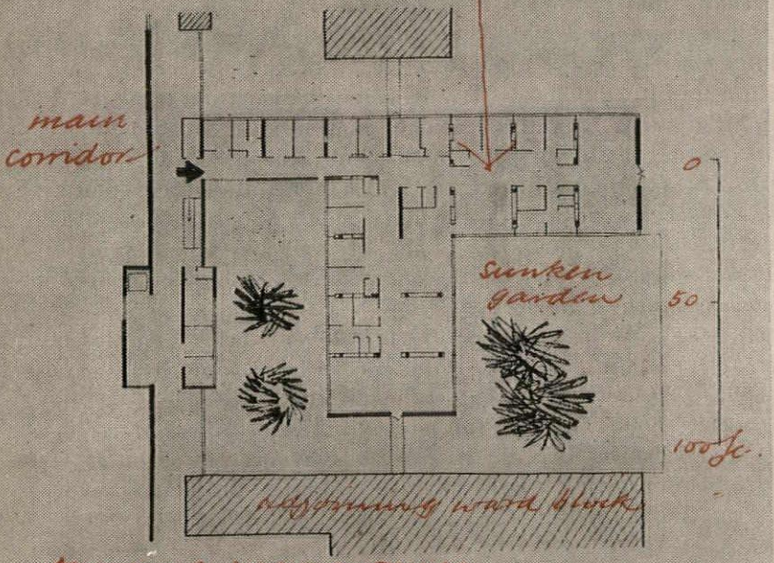
The wards have been planned as a number of L-shaped, 2-storey blocks, linked to a main corridor running east to west. The administration department occupies a tower on the north side of the corridor at its eastern end, with the visitors' entrance on its ground floor. Further east, across the approach road and connected to the main building by a bridge, are the maternity unit, the ante-natal clinic and the children's wards. The medical departments and operating theatres are planned on two levels on the north side of the corridor. The service buildings are in a separate group to the south (nearer the Baguley Hospital which they also serve) and with the new laundry form a walled compound.

The project being only in a sketch stage, structural methods and materials are not yet decided.









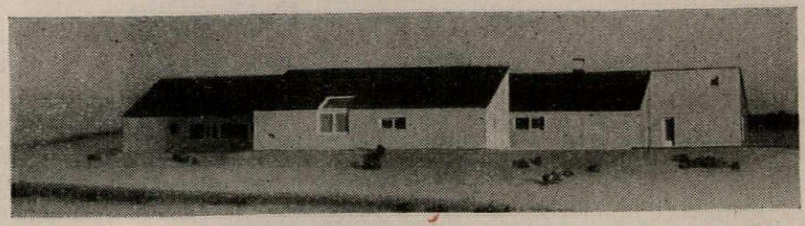
typical WARD PLAN
General Hospital: Wythenshawe

MATERNITY HOSPITAL: ALDERNEY

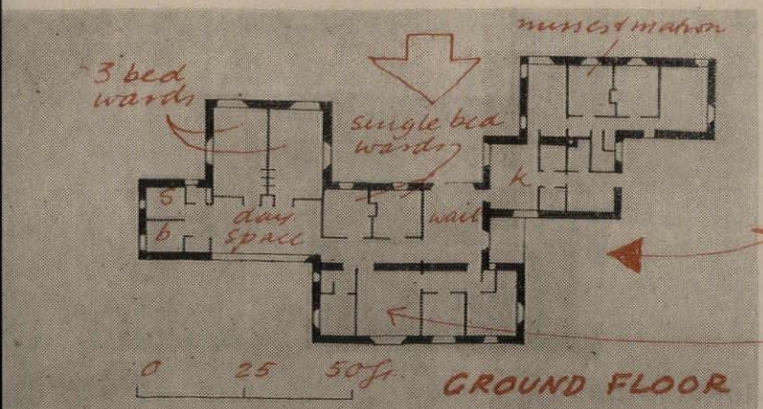
Richard Llewelyn Davies

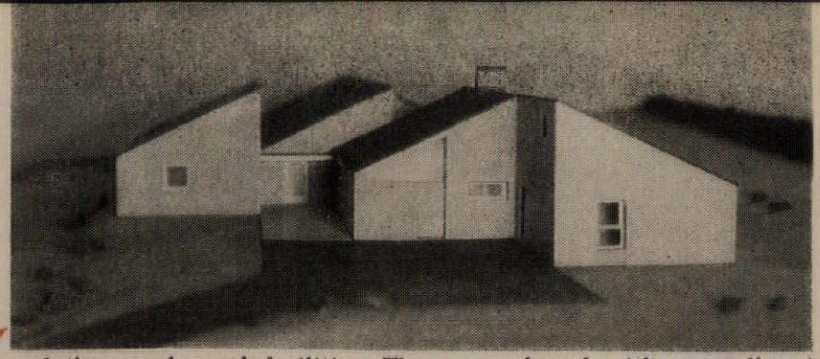
The present hospital on the island is in a converted public house and is inconvenient and poorly equipped. The new building is being paid for out of funds made available to the Mignot Memorial Trust by the Nuffield Provincial Hospitals Trust. Except in the summer holiday season, the hospital is mainly for maternity cases. Work started in April, 1957, and should be completed in April this year.

The site is extremely exposed and slopes upwards to the south. To the north there is an extensive view. The building has eight beds in two 3-bed wards and two single-bed wards. There is a day space



View of hospital at Alderney from the north





and the usual ward facilities. These are shared with a small out-patient department and there is also a combined operating theatre and delivery room. There is accommodation for a matron and two nurses.

Construction is local stone salvaged from a nearby derelict chapel. External walls are of cavity construction with an inner leaf of 3 in. locally produced concrete blocks. The roof is of slate and the larger rooms extend up into the roof-space. The hospital is centrally heated from an oil-fired boiler.

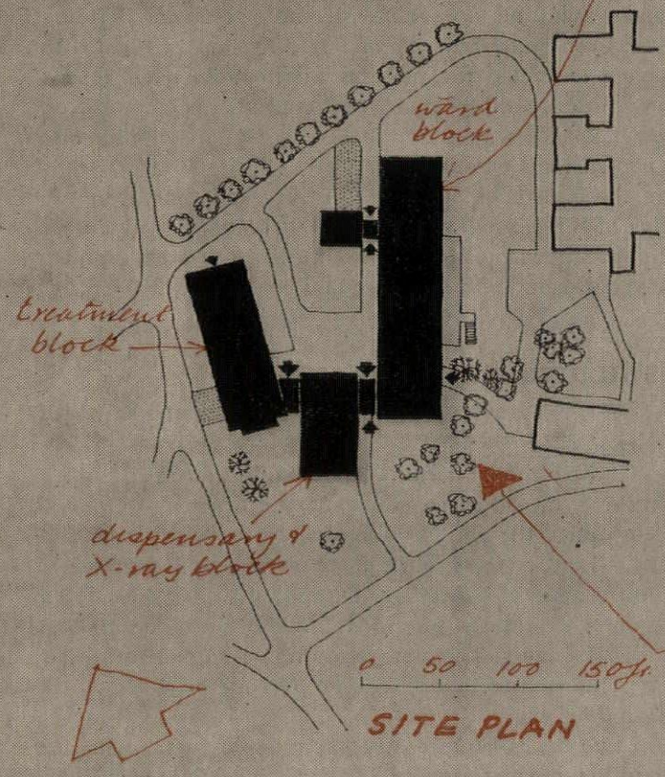
Executive architect: Derek Bowes. Quantity surveyors: Davis, Belfield and Everest.

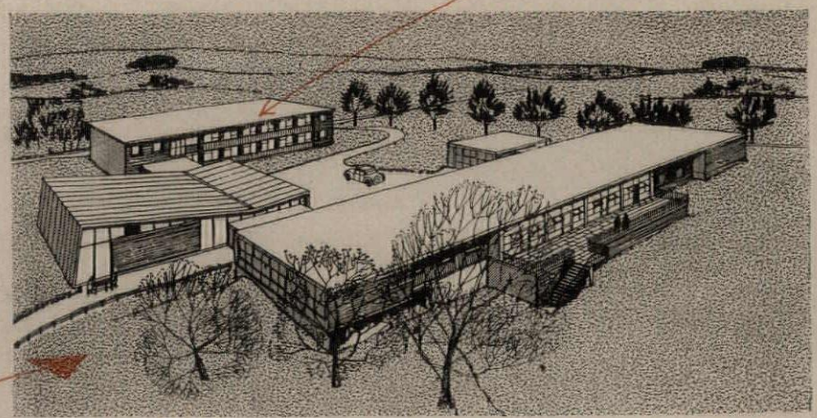
HOSPITAL AND TREATMENT CENTRE: DURHAM

S. W. Milburn and Partners

Part of Prudhoe and Monkton mental hospital. The new building, which comprises a single-storey ward unit, X-ray block, dispensary, and 2-storey treatment centre, forms the second stage in the extension of the sick quarters of this hospital, which is now being doubled in size to accommodate 1,200 patients. Work is about to begin.

Because of the necessity of co-ordinating the medical services in one central area, the building has had to be planned on a steeply sloping and somewhat restricted site adjacent to the existing buildings, and advantage has been taken of the falls to provide storage space under the lower part of the block. The ward unit, which is for male patients, provides two 10-bed wards, one 6-bed ward, and six single-bed wards, as well as the usual day space and treatment rooms. A waiting-room with a bed and separate toilet facilities is provided for parents visiting critically ill patients. The central section of the building includes the X-ray department and, on the opposite side of the central corridor, the dispensary. The 2-storey treatment block fronts on to the main drive and will also be used by out-patients. On the



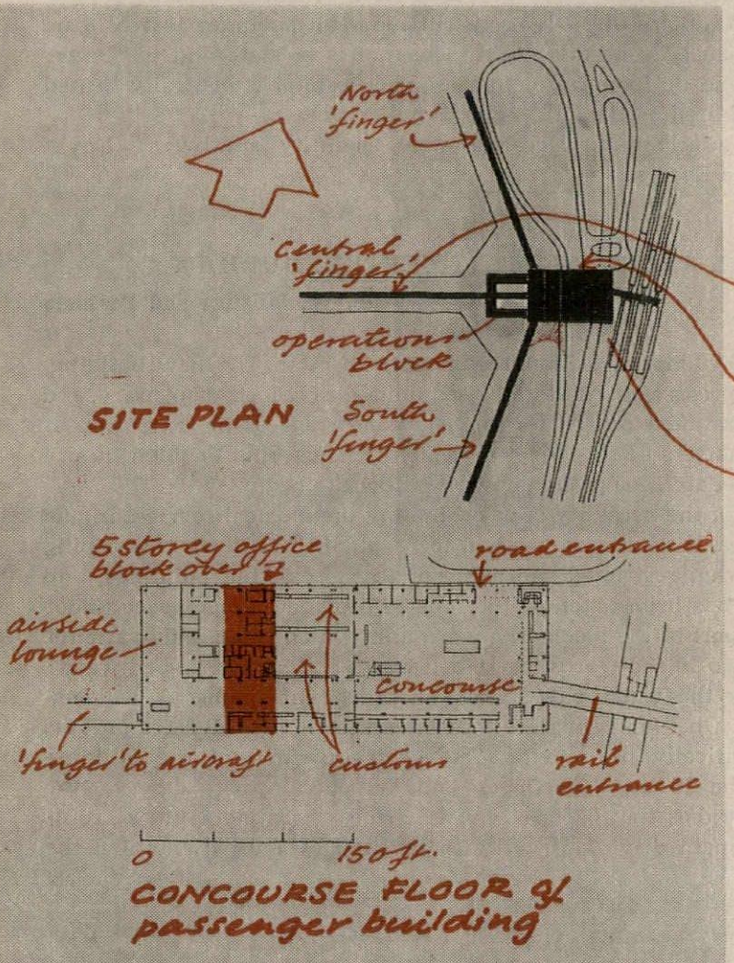


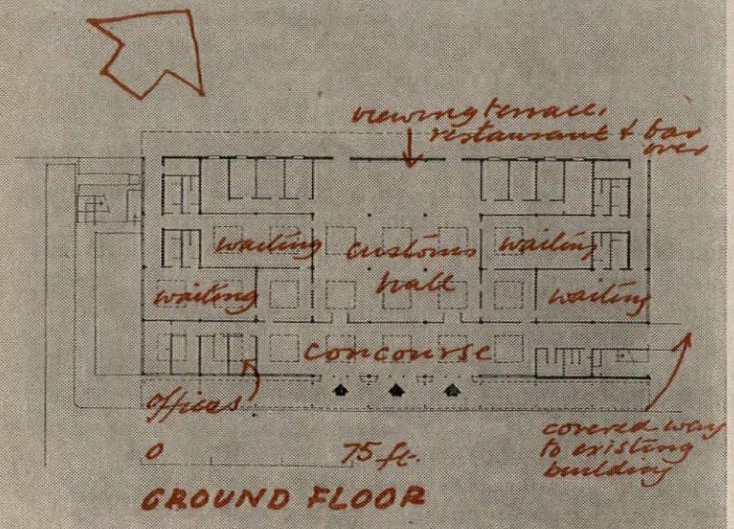
ground floor are consulting rooms, special treatment, dental and ophthalmic rooms. Upstairs are the staff, records, and psychologists' rooms as well as the bio-chemical and pathological departments.

Construction is brick with light buff brick facings and reinforced concrete floors. Windows are metal in timber sub-frames with panels of Westmorland slate between the ground and first floor windows of the treatment block.

Associate architect: P. H. Knighton (architect to the Newcastle Regional Hospital Board). Quantity surveyors: Thomas Barrett, Sons and Partners.

8 AIRPORTS





TERMINAL BUILDING: GATWICK

Yorke, Rosenberg and Mardall

For the enlarged airport so that it can serve as an alternative to London Airport. It consists of a passenger building raised above the roadway, which passes beneath it, a single-storey quadrangular operations building containing meteorological and other offices, crews' quarters, etc., and (passing over the latter) a 900-ft. long 'finger' or enclosed footway by which passengers reach the aircraft. Two other fingers, leading from the corners of an extension to the passenger building, can be added later. Above the passenger building is a 5-storey office block. The building is now under construction.

The passenger building is reached by a high-level road entrance in the form of a raised platform and by a bridge from the railway station which is now being reconstructed. These take passengers direct into the main concourse. At concourse level are also some offices, customs halls for incoming passengers, immigration hall and airside waiting hall. On the floor above are more offices, lounge, restaurant and kitchen. There is no outgoing customs hall, checking being done at airline ticket counters. Baggage is moved to and from the airside baggage handling area beneath the passenger building by mechanical conveyor belts. The 'finger' is two storeys high with a roof-terrace above to which the general public will have access. On the lower level are assembly areas, customs offices, etc., and on the other the passenger footway which is divided longitudinally into a customs and a non-customs passage.

Construction of the passenger building is reinforced concrete, with cladding consisting of R.S.J. mullions on a 10 ft. grid, hardwood frames and glazing. The operations block and the 'finger' are steel framed. The latter has steel decks and glazed screen and central walls.

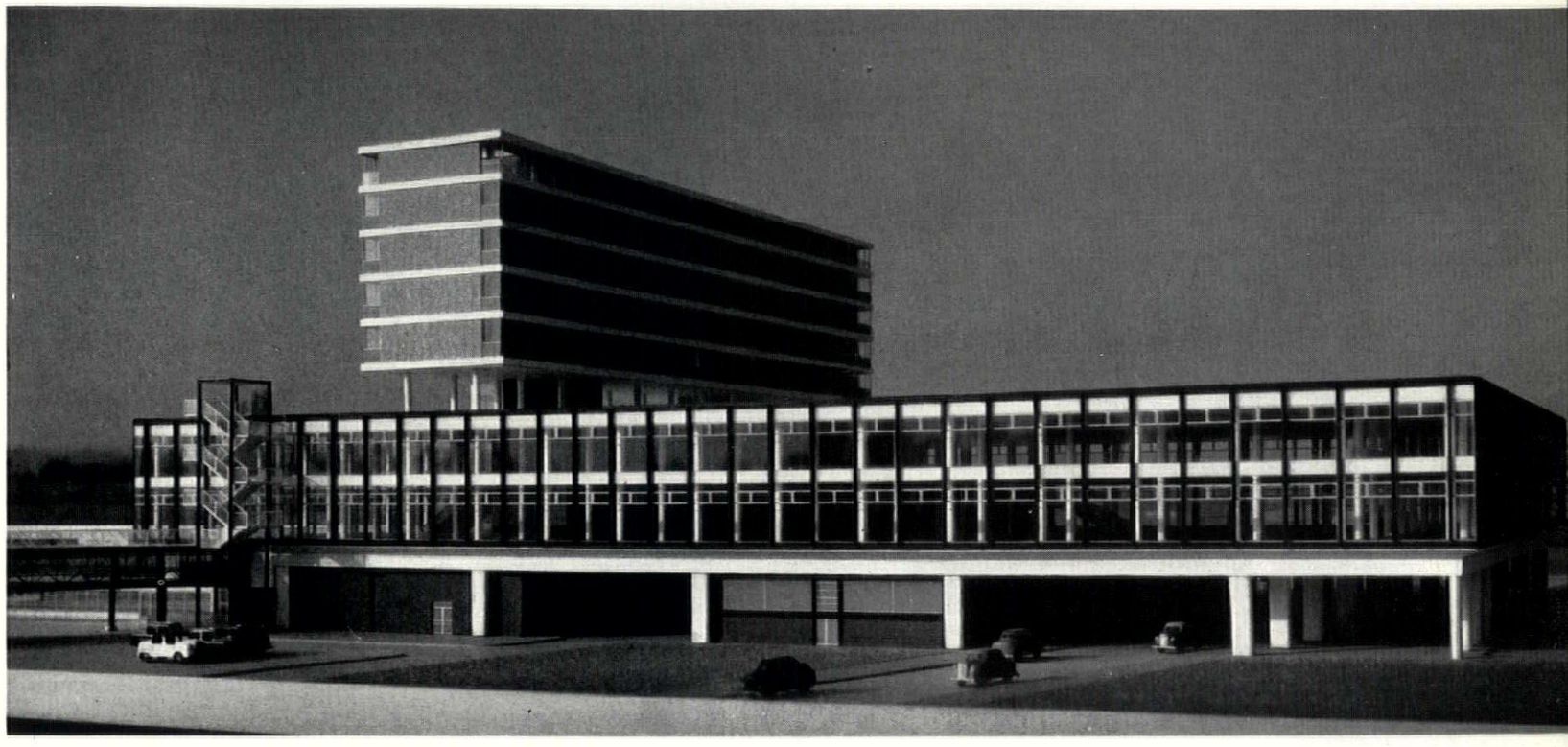
PASSENGER BUILDING: BIRMINGHAM

Norman and Dawbarn

An extension of the Elmdon Airport terminal building, designed by the same architects in 1937. The shape of the recently extended parking apron determined the oblique line of the new building. Existing offices are cleared out of the ground floor of the old building and the area made into a general concourse, extending under one of the two concrete canopies originally provided for the embarkation and disembarkation of passengers. The new building, designed for international traffic, is connected to this concourse by covered ways. Work will probably begin this year.

It is planned on two floors as an easily expandable rectangle, with the passenger-handling area at ground level. Ground-floor partitions (except those of the cloakroom areas) are demountable so that methods of passenger handling can be changed with the minimum disturbance. On the first floor are a viewing-gallery, restaurant and bar.

The structure is a reinforced concrete frame with timber curtain-walling.



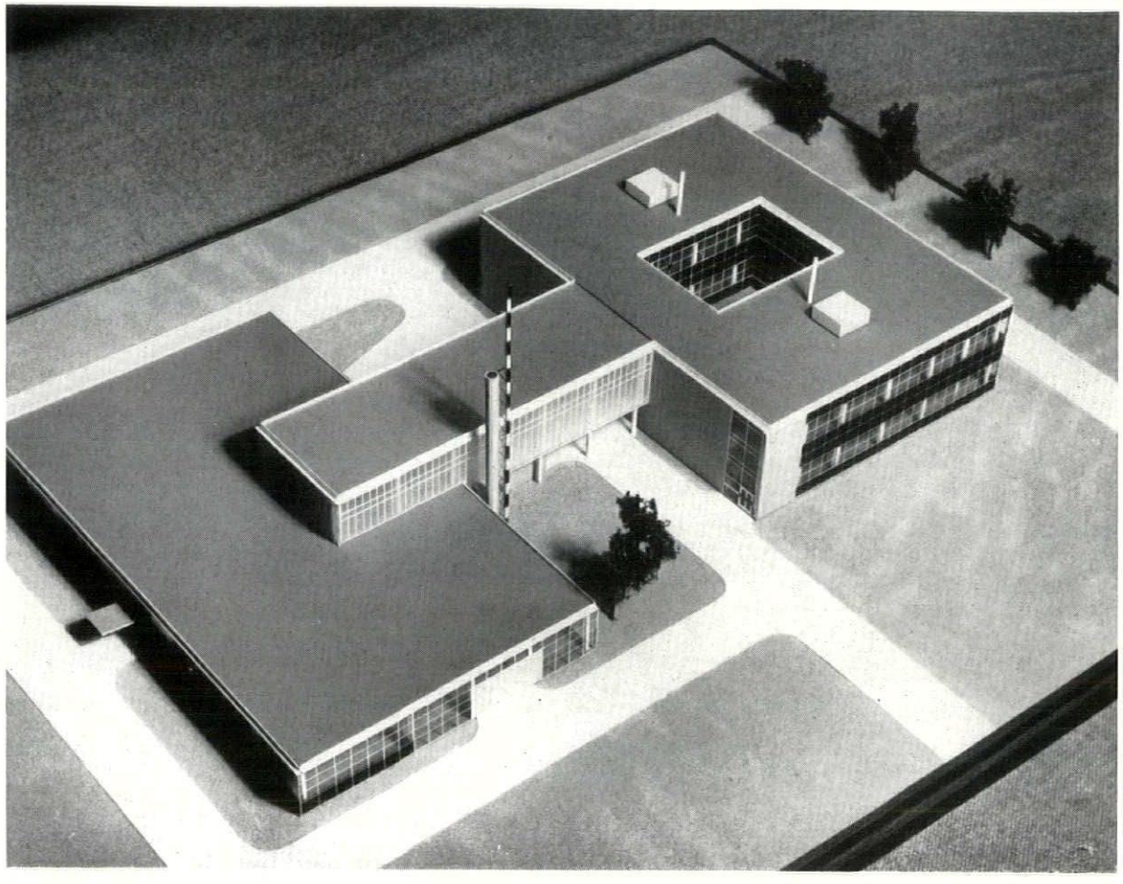
Terminal buildings for Gatwick Airport, by Yorke, Rosenberg and Mardall (see also the cover of this issue). Above, the passenger building with the five-storey office block rising above it. Right, the whole group from above showing the high-level vehicular approach.



Below, new passenger building at Elmdon Airport, Birmingham, by Norman and Dawbarn: an extension of the existing terminal building by the same architects, which is seen in the background.

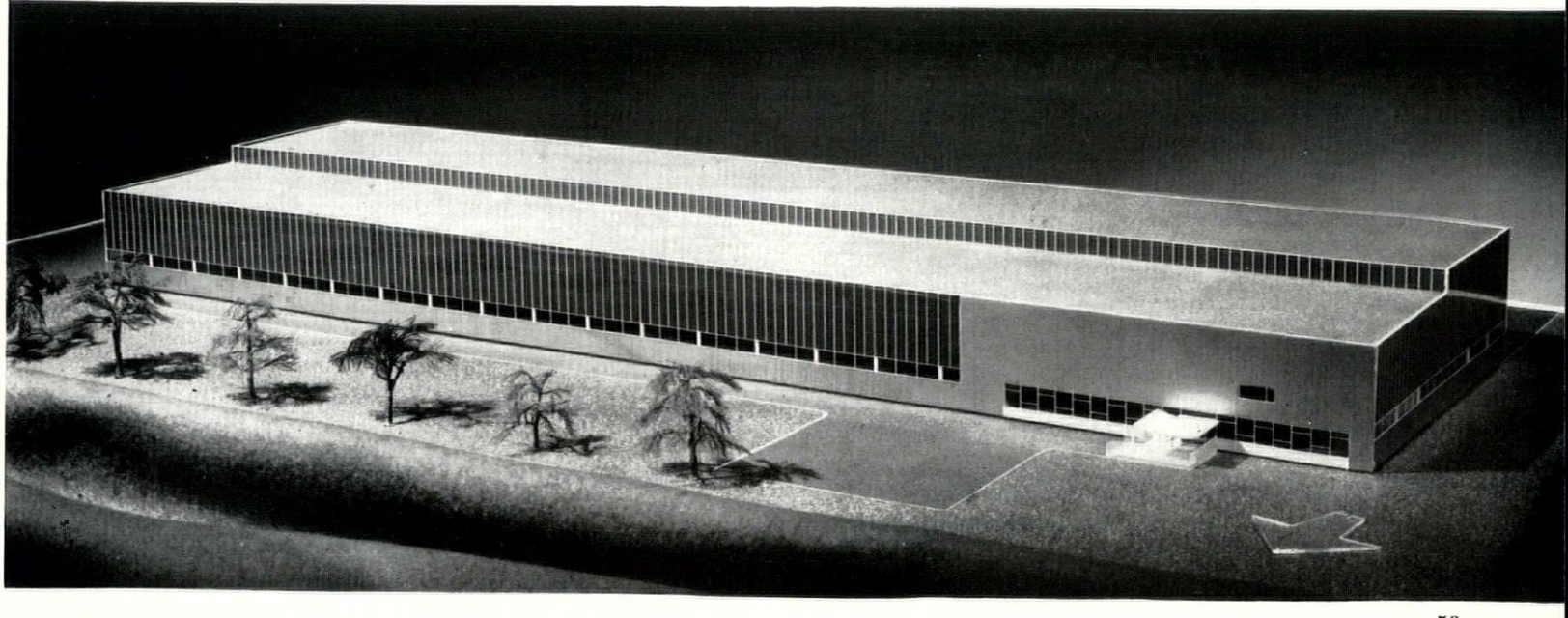


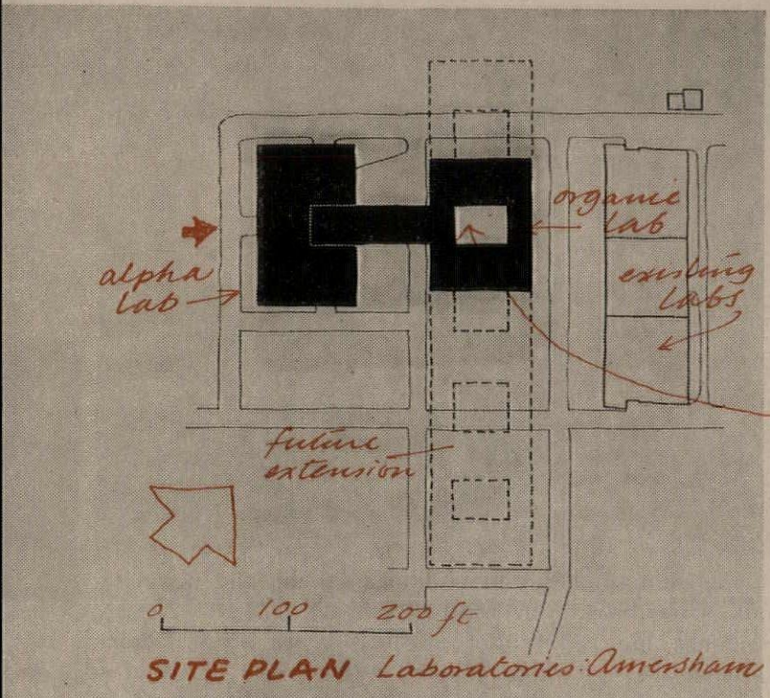
9 INDUSTRIAL BUILDINGS



Radio-chemical laboratories at Amersham for the Atomic Energy Commission by Jefferiss Mathews. On the left is the alpha laboratory and on the right the organic laboratory. They are linked by a plant-room which serves them both.

Below, factory at Wokingham by Yorke, Rosenberg and Mardall.





SITE PLAN Laboratories: Amersham

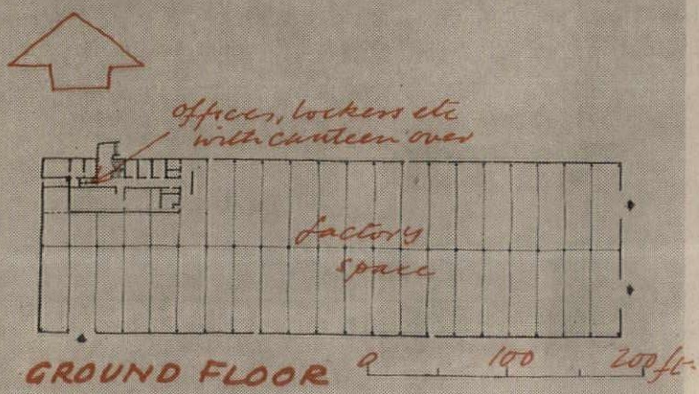
LABORATORIES: AMERSHAM

Jefferiss Mathews (J. Douglass Mathews and Partners)

For the Atomic Energy Commission's Radio-Chemical Centre: two separate laboratories, one of 15,000 sq. ft for organic production (radio-active work with organic compounds) and one, of 11,500 sq. ft., for alpha production (chemical work with radium and similar materials); also a plant-room to serve both laboratories. The site is an open one, approached from White Lion Road through existing development from which the new buildings will be screened by trees and a hedge. It is hoped to begin construction next month.

The organic laboratory consists of four main laboratories planned on two floors round a central court so that they can be extended when necessary on the east and west. Ancillary laboratory space is on the south and the main entrance and stairs on the north. An escape stair at the south-east corner will also serve the future extension. The alpha laboratory is all on one floor. The working space surrounds a central area within a heavy concrete screen inside which radio-active operations are carried out. Ancillary laboratories and the main entrance are on the south side. The plant-room links the two blocks at first-floor level over the central service road. On its east side are the main extract ventilation stack and a 75 ft. exhaust mast.

Both laboratory blocks have reinforced concrete precast columns and beams on a 4 ft. module. The alpha block has curtain-wall cladding on all sides; the organic block on three sides with the fourth side of brick. Mullions are aluminium. The walls of the plant-room are patent glazing. The organic block is a completely sealed air-conditioned building except for the opening lights in the offices on the south side. Services run between the first floor or roof structures and a false ground-floor ceiling.



GROUND FLOOR

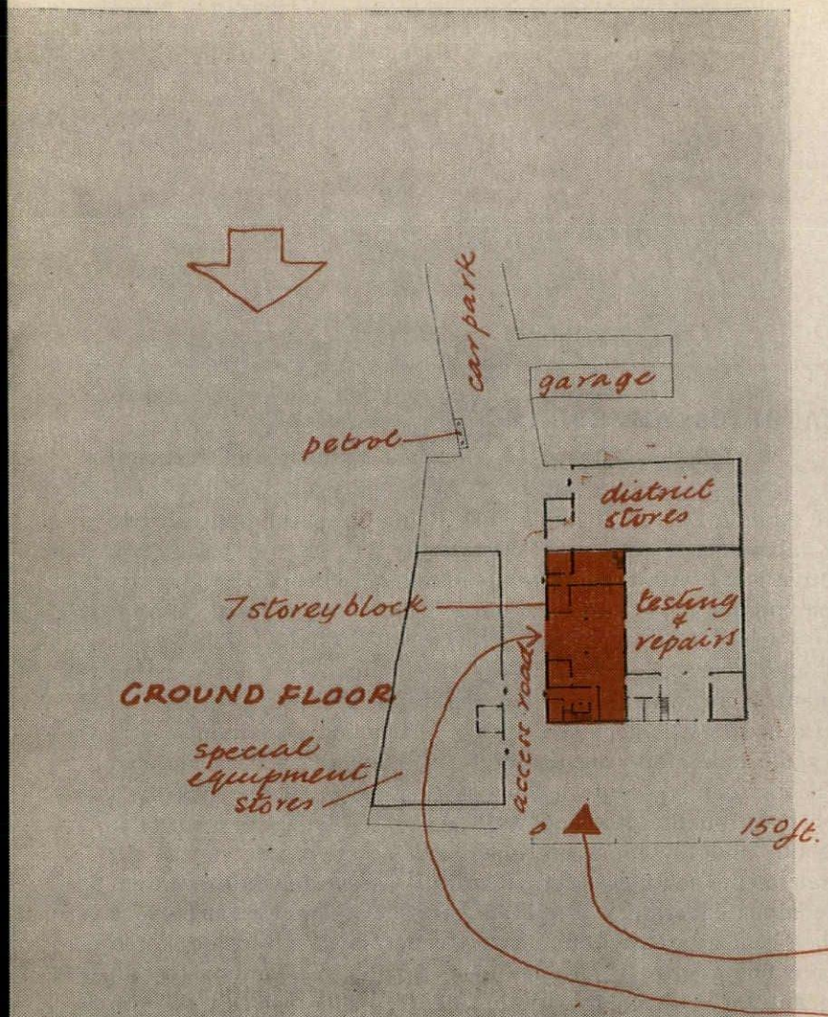
FACTORY: WOKINGHAM

Yorke, Rosenberg and Mardall

The site is an industrial estate. The requirement was for separate machine and assembly bays, each served by cranes spanning 60 ft. at different working heights. Construction will begin shortly.

The above requirements produced a basic structural grid of 63 ft. by 20 ft. To reduce the internal volume there is a suspended ceiling immediately below the roof trusses, and all services are concealed in the void above. External walls are designed to be dismantled and re-used as further production bays are added.

The main structure consists of box or broad flange stanchions and lightweight trusses. External walls are aluminium panels insulated with glass silk up to a height of 7 ft. 6 in., clear glazing for 4 ft. above this and patent glazing with roughcast ceramic glass above this to the eaves. Roofing is reinforced gypsum slats with bituminous felt and granite chippings. Space-heating is oil fired. There is an extract fan system for ventilation in the summer months.

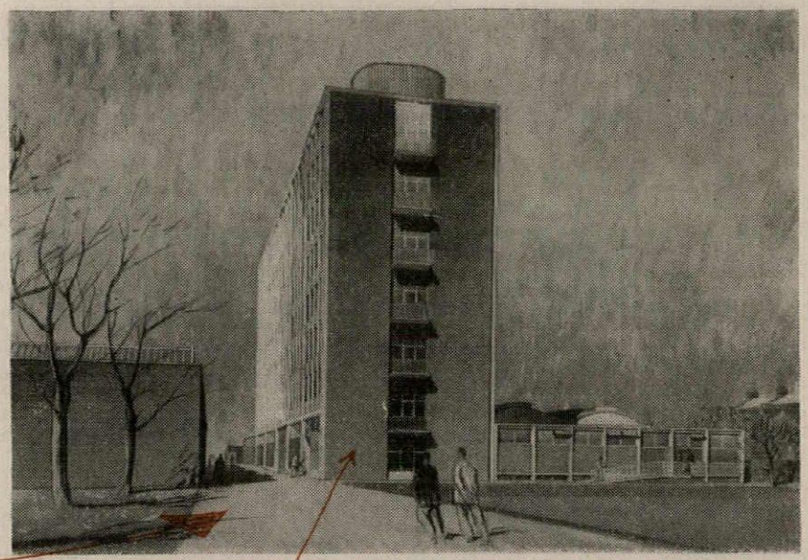


STORES, CANTEEN AND OFFICES: BEXLEYHEATH

Arthur Bailey (Ansell and Bailey)

For the London Electricity Board, on a site already partly occupied by electrical installations and part of which is reserved for future transformer equipment. The new buildings accommodate several stores departments, a meter-testing department, petrol supply and building stores, and provide a canteen to serve the whole area and offices. Work began last September.

Planning was influenced by the large amount of motor traffic that will be brought on to the site: the arrival of equipment in bulk from manufacturers and its subsequent redistribution. The accommodation is planned in single-storey buildings around the perimeter, with one multi-storey block in the centre.



The multi-storey block is in reinforced concrete with brick cladding. The storage departments have steel frames (giving clear spans of up to 76 ft.) with brick cladding, except for the meter-testing and storage department which is reinforced concrete with a shell-concrete roof. This department only is artificially ventilated by a plenum system.

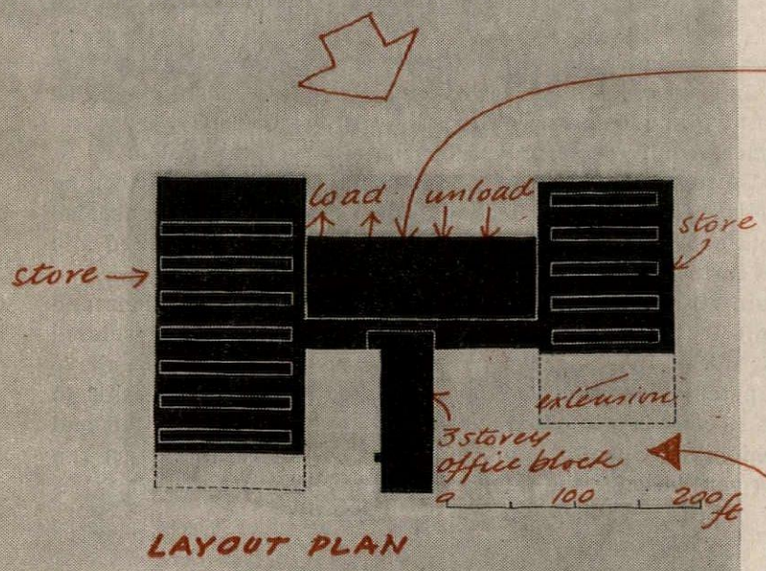
SUPPLIES DEPOT: CHELMSFORD

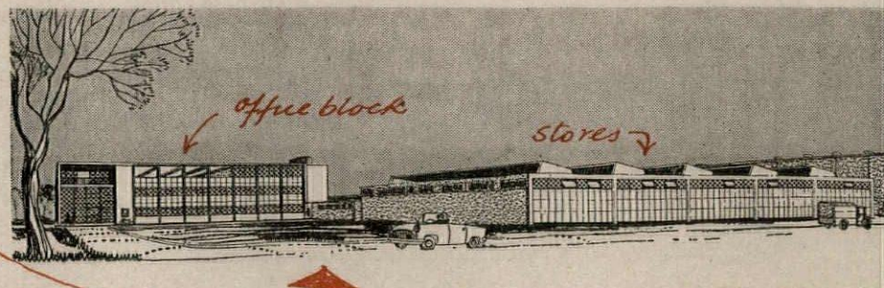
H. Conolly (Essex County Architect)

To house the headquarters staff of the Essex County Supplies Department, which deals with the purchasing and distribution of the equipment, furnishings and food supplies for all county council buildings. On a 3-acre site on the Widford industrial estate. It is hoped to start building this year.

There is a central 3-storey office block and central single-storey receiving and despatch area. On either side are large stores, a printing shop, and a garage for transport vehicles. Allowance has been made for possible future extensions of the stores. There is a canteen and caretakers' flat on the top floor of the office block. A roof garden between them allows space for possible extensions.

The buildings have a precast reinforced concrete frame sup-





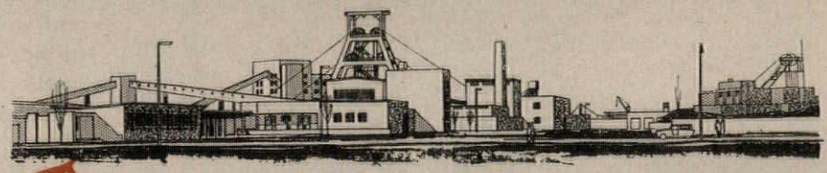
porting a light roof. Monitors running east and west provide light for the whole of the single-storey area. This lighting is supplemented by high-up windows to some of the stores. External walls are mainly brick but exposed aggregate concrete slabs are used along the street front, and glass walling in the offices.

Deputy County Architect: D. Senior. Assistant County Architect: K. D. Box. Assistant Architect: R. F. S. Fenton.

COLLIERY BUILDINGS: BLYTH, NORTHUMBERLAND

Watson and Coates

For the National Coal Board: required for the modernization of the Bates Colliery, which was started 80 years ago but still has coal available at some distance from the original shaft. This will be worked from a new shaft. The pit-head buildings are being constructed in three stages. The first (comprising engine-house and canteen) is already complete. The second (comprising the heapstead, coal-preparation plant, central boiler-house, stores and workshops) has just started. The third comprises offices, lamp-rooms and explosive stores. New



pithead baths (by another architect) are also already in existence.

The new buildings, though separate structures, are grouped together as far as possible. The southern part of the site has been planned as the 'clean' side and is separated from the working side by a belt of trees and grass. The buildings on this side are of brick, to fit in with the existing pithead paths. The other buildings are steel framed clad with asbestos.

Engineers: Mott, Hay and Anderson.

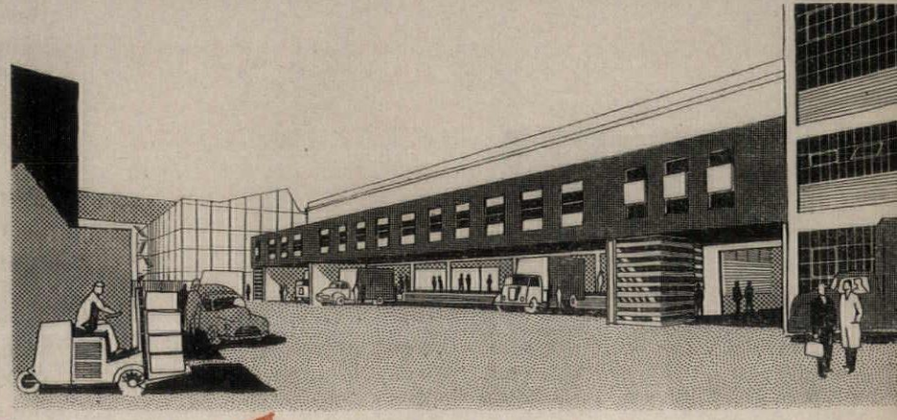
WAREHOUSE AND OFFICES: BATTERSEA

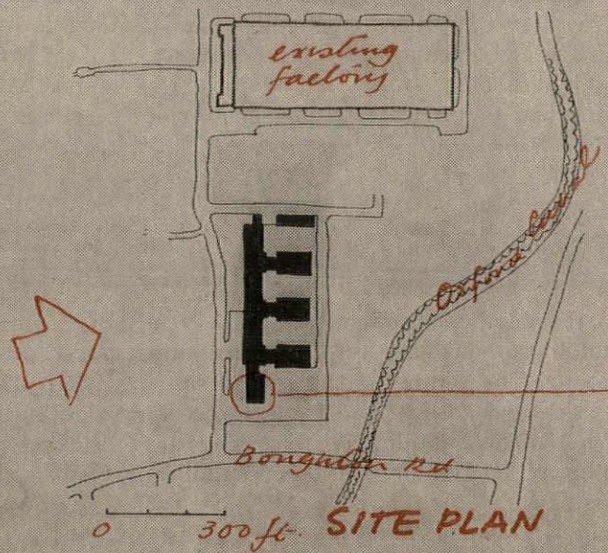
J. M. Austin-Smith and Partners

A 3-storey warehouse for the storage of paint together with ground-floor loading bays, with offices over. Construction began a year ago.

The new building connects at all floor levels with an existing paint factory, to permit filled tins to go direct into the warehouse for storage, and then by vertical chutes to loading bays at ground-floor level. Full production of the existing factory had to be maintained and two vital roads to the rear of the new warehouse are being kept open through the building during its construction.

Heavy loading of the upper floors and the low bearing capacity of the river-side site necessitated use of concentrations of bored reinforced concrete piles to depths of 50 ft. beneath all columns.





The narrowness of the road to which the loading bays face led to the elimination of all but four columns on the street façade to permit easy access for lorries. The front and rear walls to the office block at first-floor level consist of reinforced concrete girders spanning along the road frontage to a maximum width of 92 ft. between columns, with a 20 ft. cantilever at one end. The structural frame is reinforced concrete and the main warehouse floors are of precast concrete trough units resting on in situ filler beams. The rear elevation is brick infill panels and the main walls of the front are of in situ concrete with an exposed granite aggregate. There are white tile or porcelain enamelled infill panels above and below the windows.

Partner in charge: Geoffrey Salmon. Engineers: F. J. Samuely, and G.K.N. Reinforcement. Quantity surveyors: Young and Brown.

RESEARCH LABORATORY: RUGBY

W. S. Hattrell and Partners

For the British Thomson-Houston Company. The 10-acre site is immediately to the north of, and adjoins, the company's head office and works. The building replaces the existing laboratories which are in older buildings and in dispersed temporary accommodation. Some of the latter, adjacent to the site of the new building, will continue to be used for some time in conjunction with it, as construction is phased over a period of years. It is hoped to begin work on the first stage early this year.

The buildings consist of laboratories and laboratory offices in a 360-ft. long 3-storey block with an administrative unit at the east end containing main entrance hall, lecture room, library, conference rooms and offices. A car park lies directly behind. Eventually three wings running north will join the main block, each of the junctions being identical in plan and containing staircase, lavatories, cloakroom and main vertical service ducts. The service entrance is at the west end of the main block, with sub-station and generating plant house, all main services being distributed through a walkway duct running under all laboratory blocks.

The building is of reinforced concrete frame construction with columns at 4 ft. centres. Windows are double.

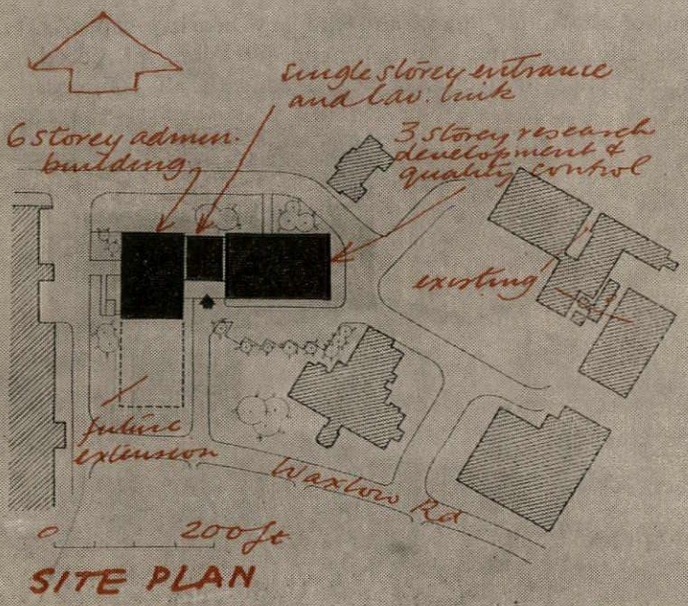
OFFICES AND LABORATORIES: HARLESDEN

J. Douglass Mathews and Partners

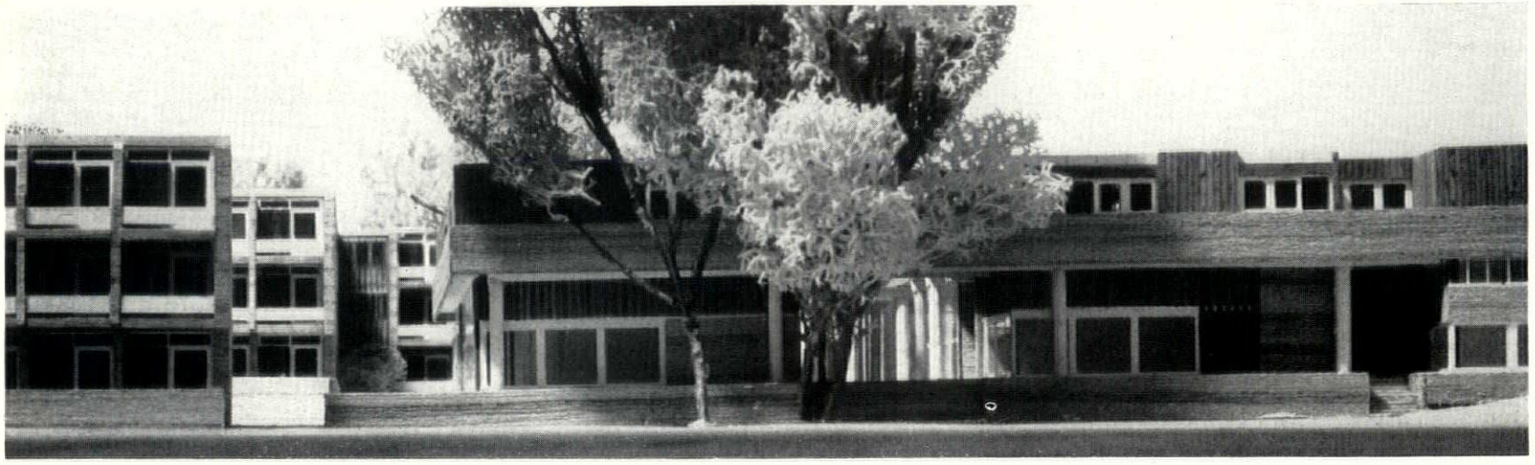
A headquarters administrative building, with research and development laboratories, for the H. J. Heinz company on a site adjoining the company's factory, but with independent traffic circulation. The site is an open area at present laid out as gardens between the existing factory building and a canteen building. The company's playing-fields are on the north. It is hoped to begin work this summer.

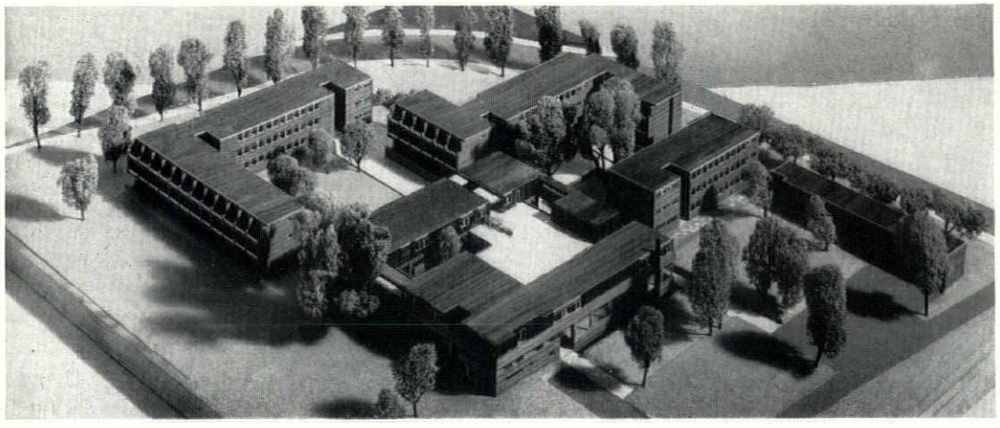
The layout of the scheme has been reviewed since the model illustrated was made, and the present proposal is that the laboratories, occupying two storeys, should be superimposed on the four storeys of offices. A seventh floor will contain a directors' suite (with board-room, dining-room, kitchen, etc.) and the ventilating plant, and this will be crowned by a penthouse containing lift-motors and tanks. The 6-storey block has a central core containing lifts, stairs and lavatories with private offices on two sides of it and large general open spaces at the ends. The laboratory floors are similarly planned to give maximum flexibility, with small laboratories on either side of the central core and large laboratories at the ends.

The block has a reinforced concrete frame with two-way floor slabs beneath which is a false ceiling. The main module is 8 ft. External cladding is glass, curtain wall mullions and transomes are anodized aluminium. It is intended that the block shall be air conditioned.

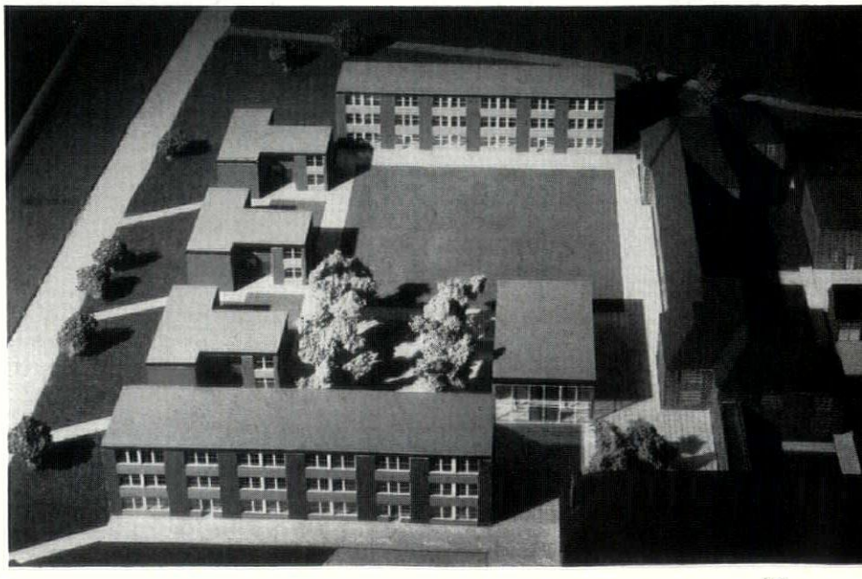


10 HOSTELS

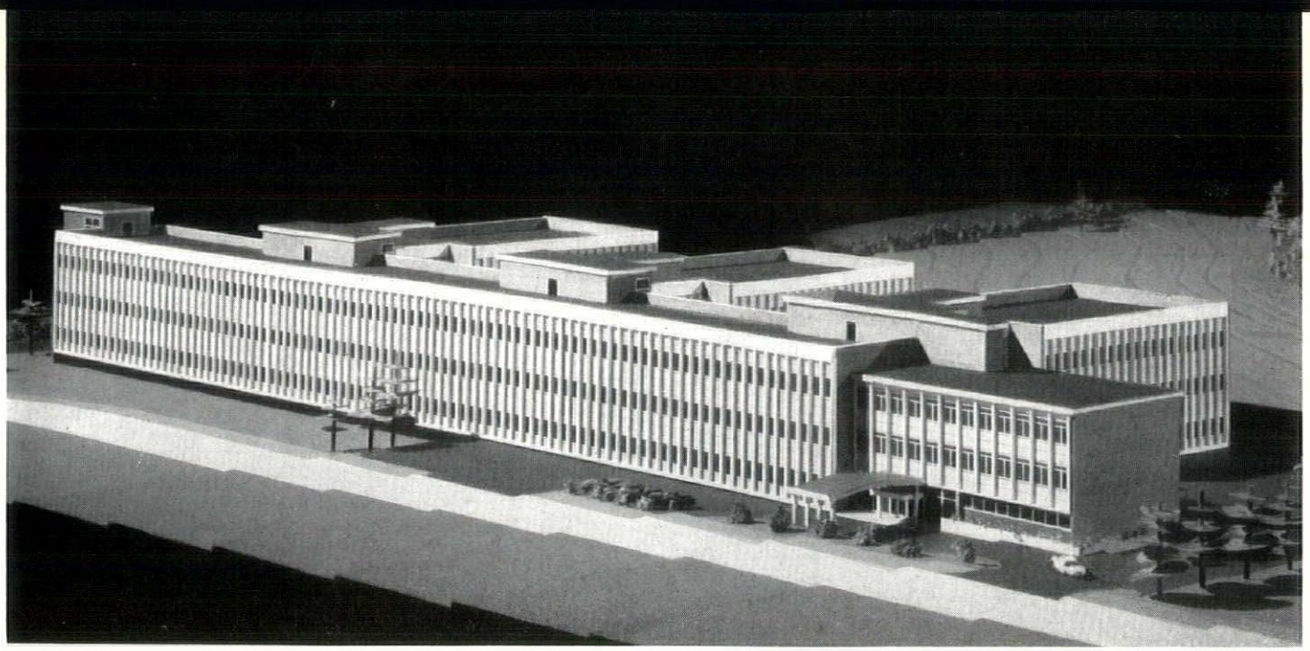




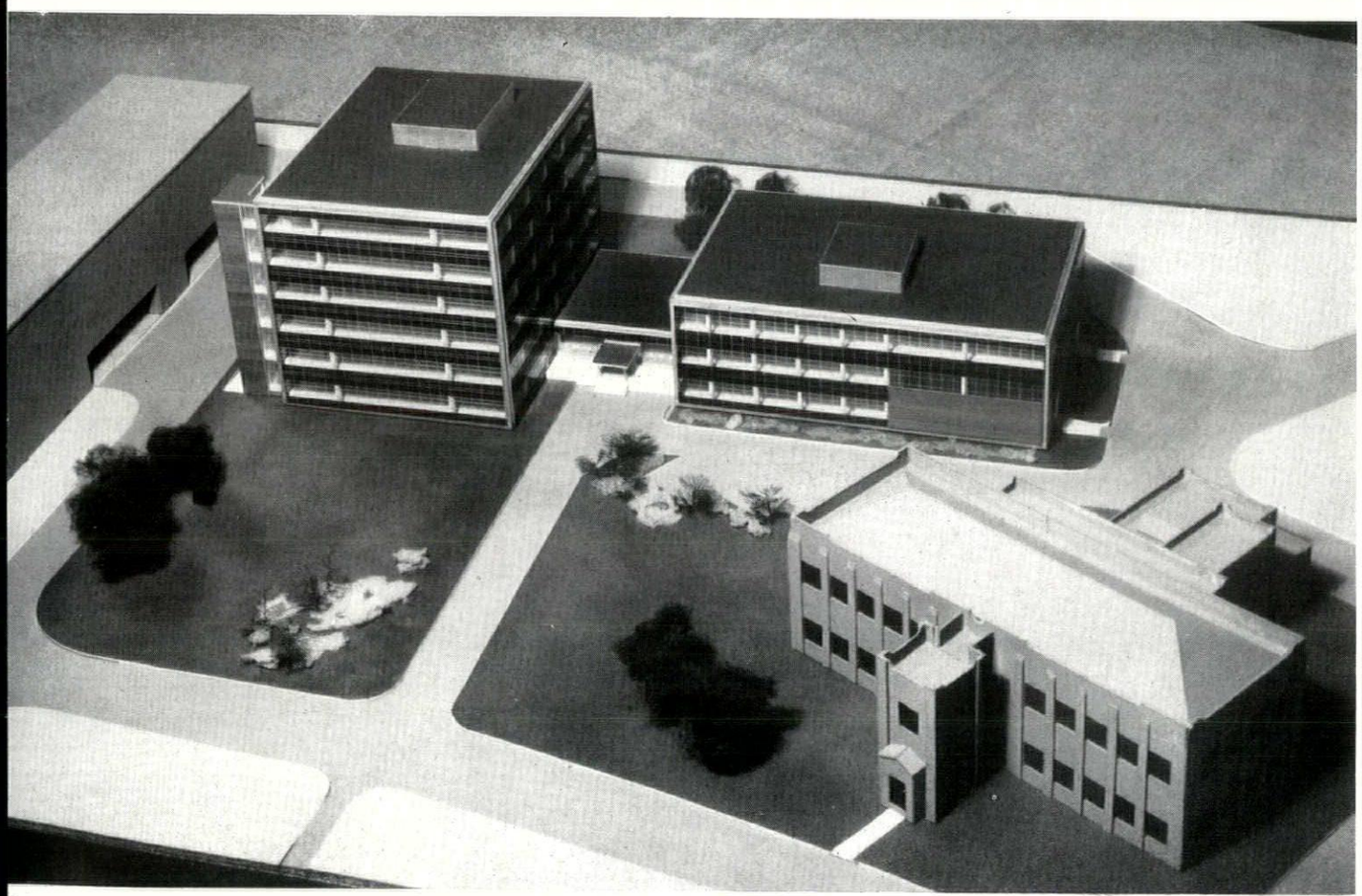
Hostel for women students of the University of Leicester, by J. L. Martin in association with Trevor Dannatt. Left, from above, showing the residential blocks surrounding two courtyards, separated by social buildings and approached through a third. Above, from ground level, looking into one of the courtyards from the south.



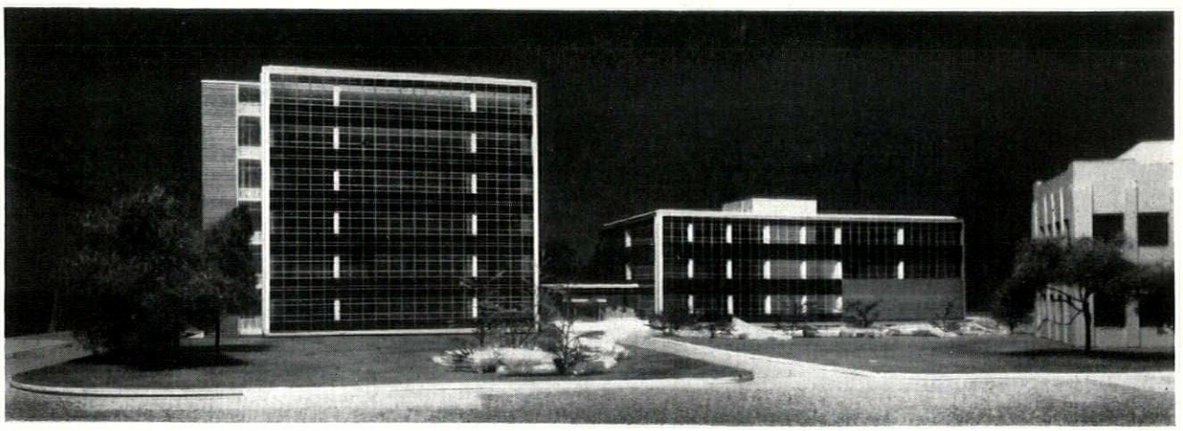
Buildings for Cranfield College of Aeronautics, by Stillman and Eastwick-Field. The low block in the centre is the common-room; the others contain study-bedrooms.

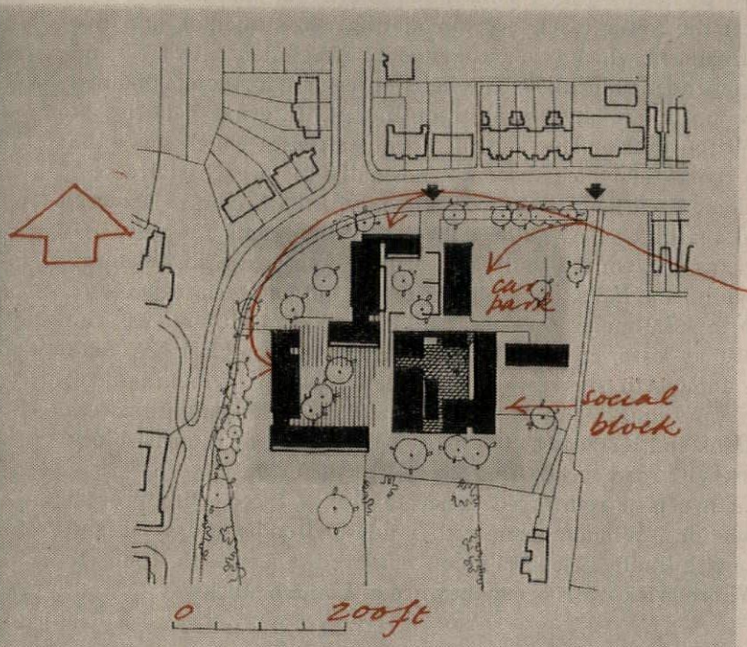


Left, research laboratories at Rugby, by W. S. Hattrell and Partners. The lower wing at the right-hand (east) end of the main block contains administrative offices.



Offices and laboratories at Harlesden, by J. Douglass Mathews and Partners. Above, showing the two blocks situated between the existing factory (left) and canteen building (right). Right, the new blocks from the south. The office block (left) and the laboratory block are linked by a common entrance. Since this model was made, an alternative arrangement with the laboratories above the offices has been worked out—see notes on facing page.





SITE PLAN

WOMEN'S HOSTEL: LEICESTER

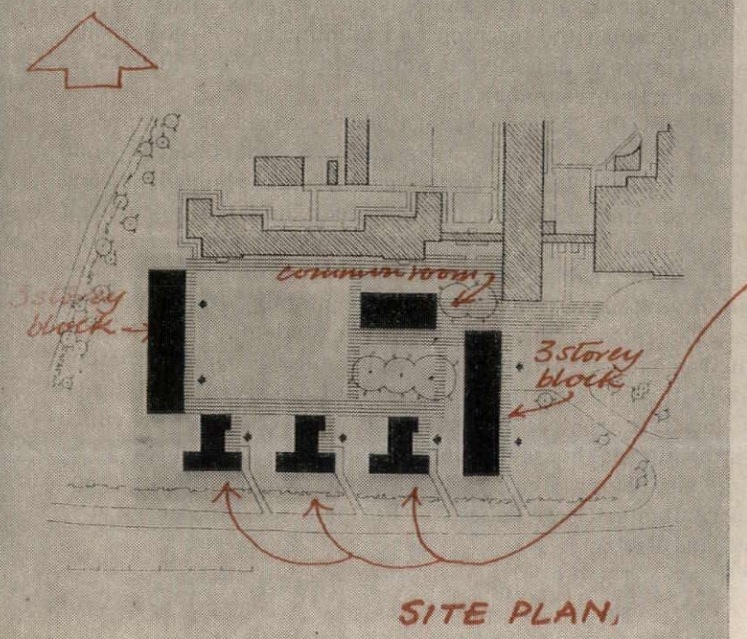
J. L. Martin in association with Trevor Dannat

A hall of residence for women students at Leicester University, accommodating 162 students in residence and with dining space for 230, allowing students living in adjacent university houses to dine in hall. The site is at Knighton, an inner suburb within reasonable distance of the faculty buildings. Work will begin this year.

Three 3-storey residential blocks containing study-bedrooms of various types enclose two linked courtyards of which a 2-storey social block forms the fourth sides. The east-west wings have rooms with balconies facing south, and bathrooms, etc., facing north. The north-south wings have rooms facing both east and west, with bathrooms, etc., at either end of a central corridor. Staircases, service rooms, ironing rooms, etc., are disposed so as to break corridors into short lengths with changes of direction and variations of lighting. The social block has an open internal court beyond the entrance hall on the axis of the pedestrian approach through the first courtyard. On the west side of the court are the junior common-room and the library; on the east the dining-hall and senior common-room. The upper floor of this block contains residential accommodation for senior members and a warden's flat. Over the service side are residences for the bursar and senior staff. There are also recreation rooms opening on to a first-floor terrace. A separate 2-storey block houses domestic staff.

The residential blocks are of load-bearing brick cross-wall construction with concrete floors. The social block, requiring larger spaces, has a concrete frame for the lower storey and load-bearing block walls above. All roofs are timber.

Consulting engineers: Lawrence Kenchington and Partners. Quantity surveyors: Monk and Dunstone.



SITE PLAN

BEDROOMS AND COMMON-ROOM: CRANFIELD

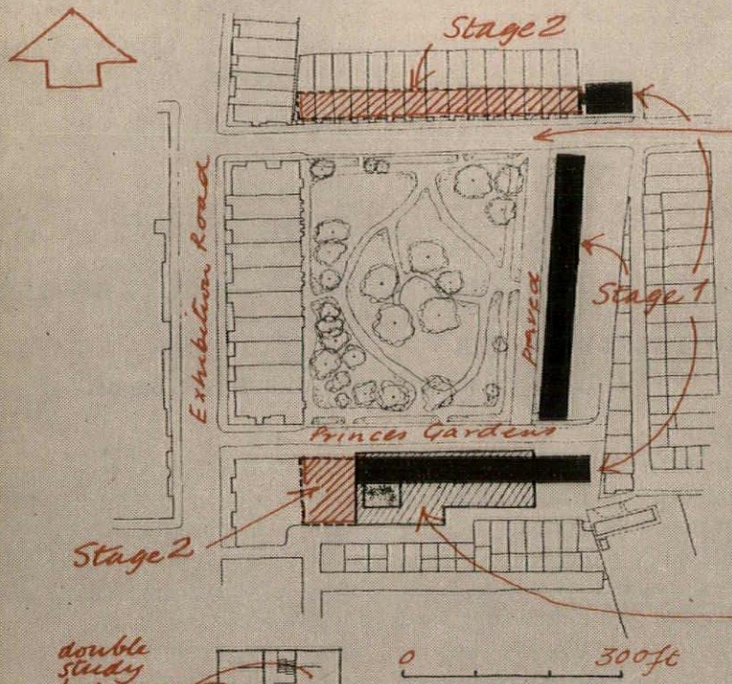
Stillman and Eastwick-Field

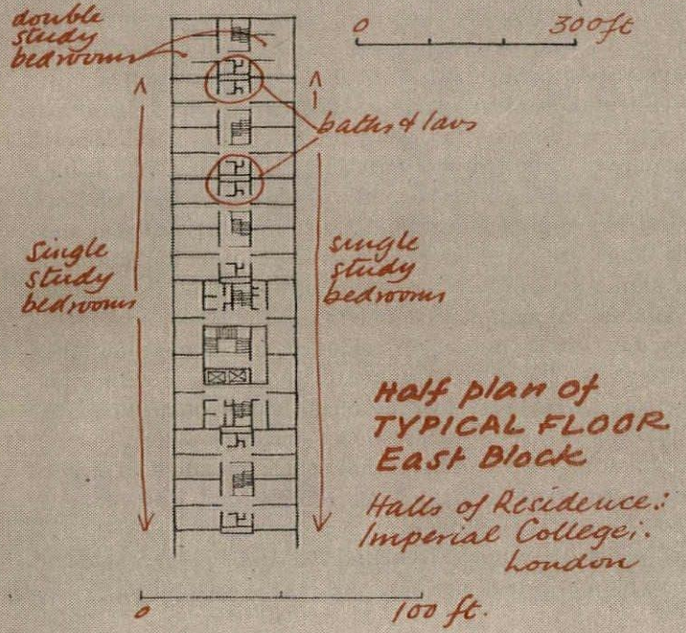
Extensions to Lanchester Hall at Cranfield College of Aeronautics. The scheme provides 120 study-bedrooms and a common-room for 250 students on a site adjoining the existing (Georgian style) buildings. Construction will start this spring.

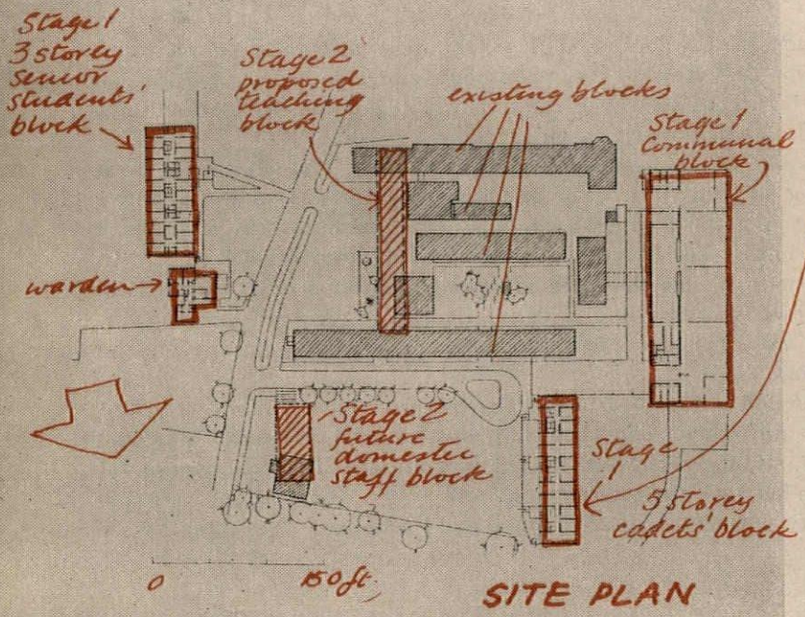
The rooms are in two 3-storey blocks facing east and west, each containing 42 study-bedrooms, and a row of three T-shaped 2-storey blocks, each with 12 study-bedrooms. The common-room occupies a separate block. Each study-bedroom has an area of 150 sq. ft. In the two main blocks they are arranged in groups of 7, each group with its own staircase and a utility room, 2 w.c.s, bath and shower. There is an emergency fire exit between the two groups on the upper floors.

Construction is load-bearing brick with precast concrete floors. Cill walls are untreated cedar boarding backed by brickwork. Windows are wood, sliding vertically. Partition walls are brick to give sound insulation between the rooms.

Quantity surveyors: Harry Trinick and Partners.







HALLS OF RESIDENCE: IMPERIAL COLLEGE, LONDON

Richard Sheppard and Partners

In Princes Gardens, South Kensington, across Exhibition Rd. from the Imperial Institute site, where the Imperial College of Science is in process of expansion. The halls are planned on three sides of the existing square. Traffic will continue to use the north side (linking Exhibition Rd. with Ennismore Gardens) but it is hoped to close the other roads and preserve the quiet atmosphere with the help of the existing lawns and trees. The halls on the east and south sides will comprise the first stage. No starting date has yet been fixed.

There are thirteen 8-storey halls altogether, four on the east side and four on the south (each accommodating 108 students), and five on the north side of which two accommodate 108 students, two 140 and one (an independent block) 70. The halls on each side, though planned as separate units, are structurally continuous. Internal galleries at ground- and fourth-floor levels connect the staircases which serve the bed-sitting rooms, of which there are normally 24 to each staircase—eight per floor. Each floor is self-contained, with bathroom or shower, w.c. and a small store. At gallery level there are flats for wardens, common-rooms, etc. On the south side of the square, in a single-storey building behind the halls, are a dining-room and cafeteria capable of serving up to 1,800 meals, a snack bar, lounges and club-rooms. The kitchens are at lower ground level with access from Princes Gate Mews. On the north side is a sports section, with swimming-pool, rowing-tank and squash and fives courts ; also a club-room with access to the gardens and terraces at the back. At the back of the east block is a car park with road access from the south.

The structure is a reinforced concrete frame faced with precast concrete sections. Window panels to study-bedrooms are steel and hardwood with infill below cills of coloured glass with concrete backing. Where brick walls occur they are of London stocks.

SCHOOL OF NAVIGATION: WARSASH, HANTS

Richard Sheppard and Partners

A department of Southampton University. It is at present contained in a straggle of first- and second-war barrack blocks, on rising ground on the east shore of Southampton Water.

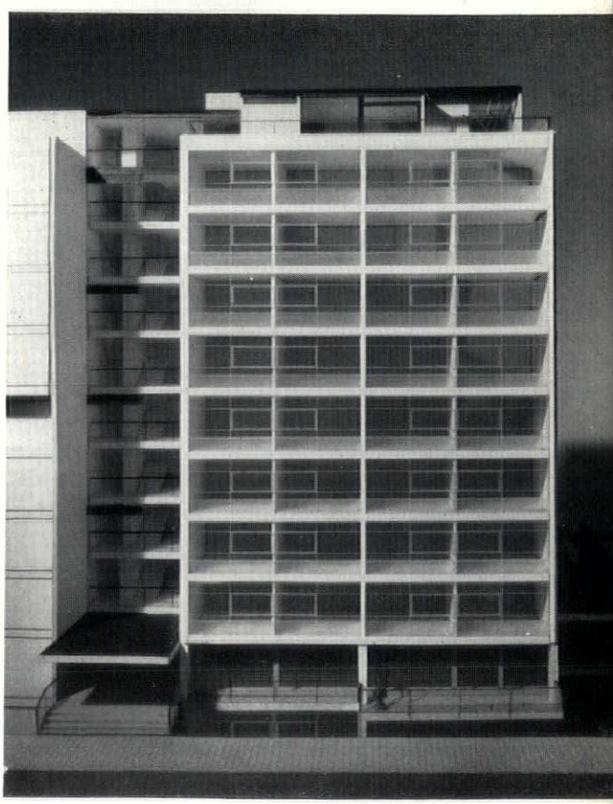
The existing buildings are structurally sound, and the requirement was to retain as many of them as possible, and to build on the limited land around them quarters for 130 cadets, 70 Merchant Navy short-course students, dining-halls and common-rooms to accommodate the cadets, staff and guests, and 180 senior students, and domestic staff quarters ; also to replan the teaching and administrative accommodation as far as possible within the existing buildings. Work on the first stage will start early this summer.

The planning of the 5-storey cadets' block consists of groups of different sized 'cabins' for one, two and six cadets, each group forming a duty watch. The six-berth 'cabins' are planned as long narrow rooms running right through the block, and the block itself is subdivided into three completely self-contained 'houses', each with three floors of cadets' 'cabins', one floor containing common-rooms and oilskin and drying-rooms, and one floor containing the divisional officer's flat. The roofs of this and the senior students' block will be used for instrument instruction, lookout posts and radar observation.

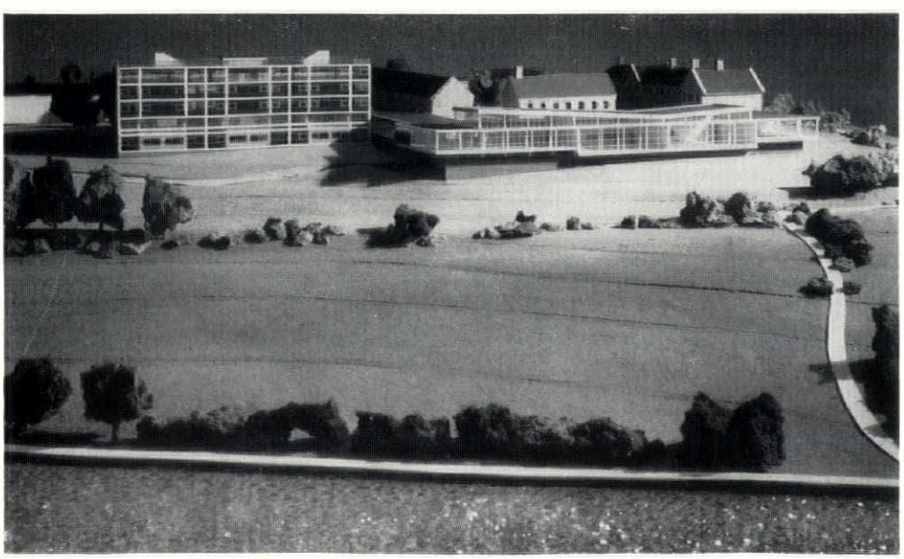
Structurally, the block consists of a series of cross walls at alternating 11-ft., and 22-ft., centres, forming a strong façade pattern which emphasizes the internal house divisions.

Consulting engineers: Clarke Nicholls and Marcel. Heating and electrical consultants: Oscar Faber and Partners. Quantity surveyors: E. C. Harris and Partners.

Halls of residence for the Imperial College of Science, South Kensington, by Richard Sheppard and Partners: above, the whole scheme from the north, showing the existing square enclosed on three sides by the ten-storey hostels, planned vertically with gallery floors at ground and fourth floor levels; right, detail of the Princes Gardens front of the smaller north-east block.



Below, new buildings at the School of Navigation at Warsash, also by Richard Sheppard and Partners: on the left a five-storey cadets' block; on the right (with the existing buildings beyond) the communal block.

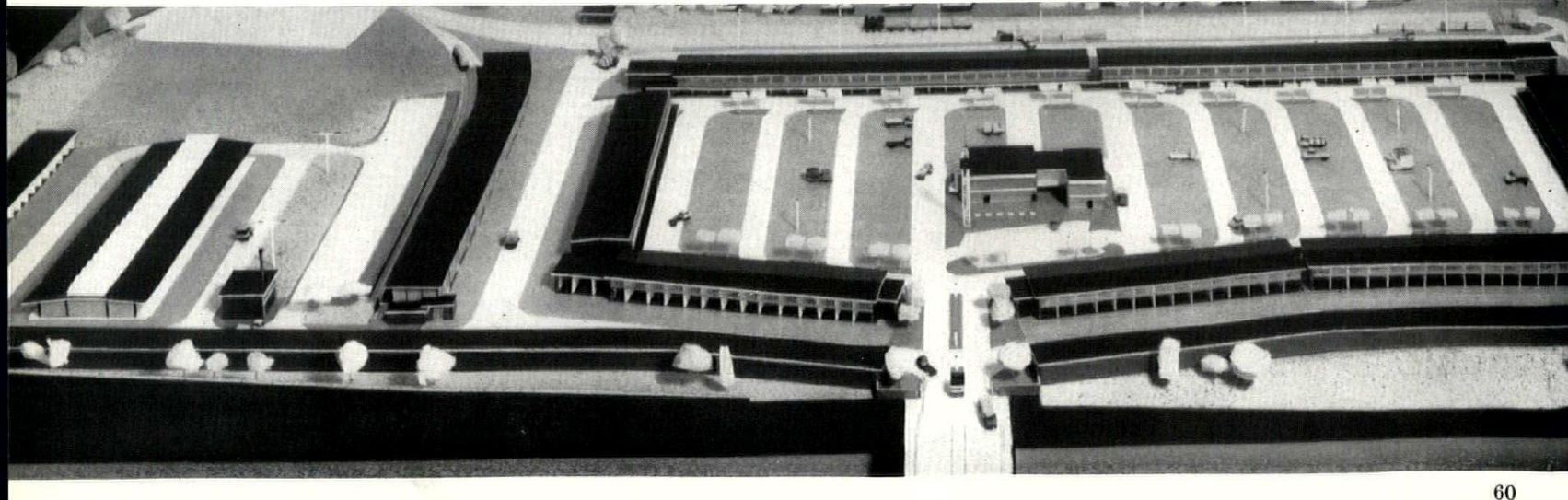


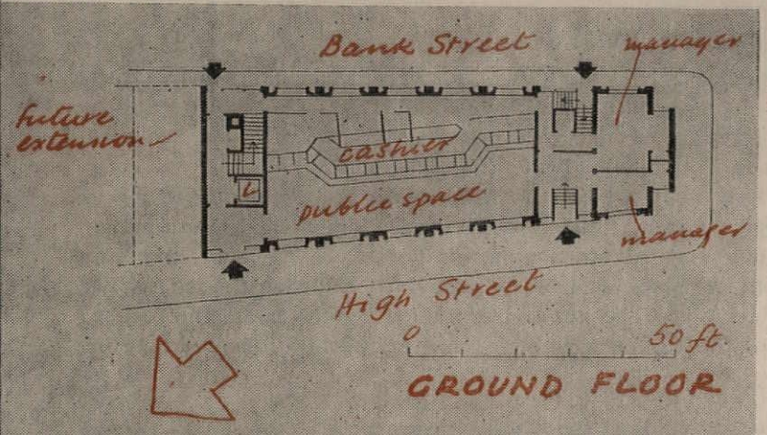
11 COMMERCIAL BUILDINGS



Right, bank building in the High Street at Maidstone, by William Holford and Partners, showing use of Kentish flint, dressed stone and dark purple-blue bricks.

Below, wholesale market at Sheffield, also by William Holford and Partners.





BANK: MAIDSTONE

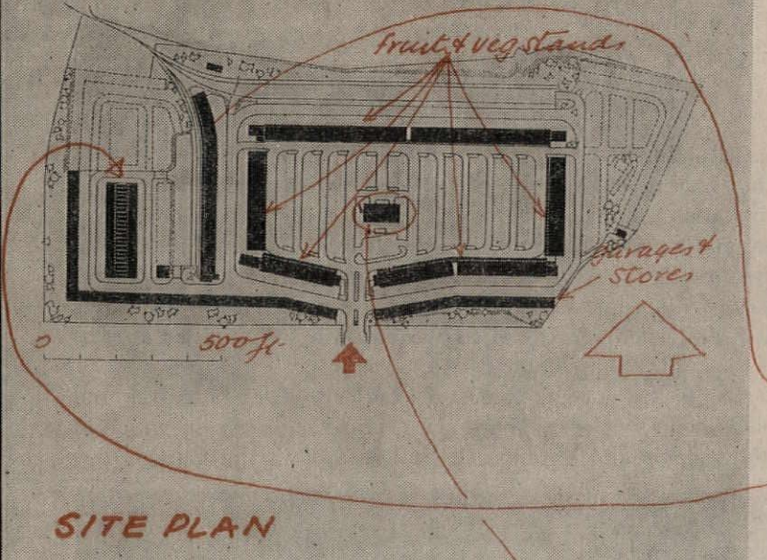
William Holford and Partners

For Barclays Bank, whose building in the High Street at present occupies a confined site between this broad thoroughfare and the narrow Bank Street to the south. A further widening of the High Street will reduce the width of the building plot to 25 ft. at the west end, where it faces the bridge and the road from London. The new bank will occupy the whole of the wedge-shaped site from this point for a distance of about 105 ft. up the hill. Work is expected to start this summer.

The building accommodates the usual type of banking hall, with managers' rooms adjacent, machine-room above and strong-rooms below. In addition there are the offices and directors' rooms of Barclay's local head-office, and accommodation for the Trustee Department on the third floor.

The narrow but commanding site was thought to demand decisive modelling and fairly strong contrasts of colour. The traditional Kentish flint is therefore used for walling, together with light-coloured dressed stone, and dark purple-blue bricks. Window frames are copper-bronze. The black-and-white theme is carried into the roof structures also, which incorporates flues, lift overruns and tanks.

Quantity surveyors: Grimwade and Ainsley.



SITE PLAN

WHOLESALE MARKET: SHEFFIELD

William Holford and Partners

On a site about 1½ miles from the city (east of the Nunnery Colliery and between the Darnall railway sidings and the Rotherham by-pass) to which the city of Sheffield is moving the wholesale markets for fruit, vegetables and fish from the present congested Castlefolds site in the centre. Site work started last November and building will begin about July next year after a consolidation period required by the difficult nature of the ground.

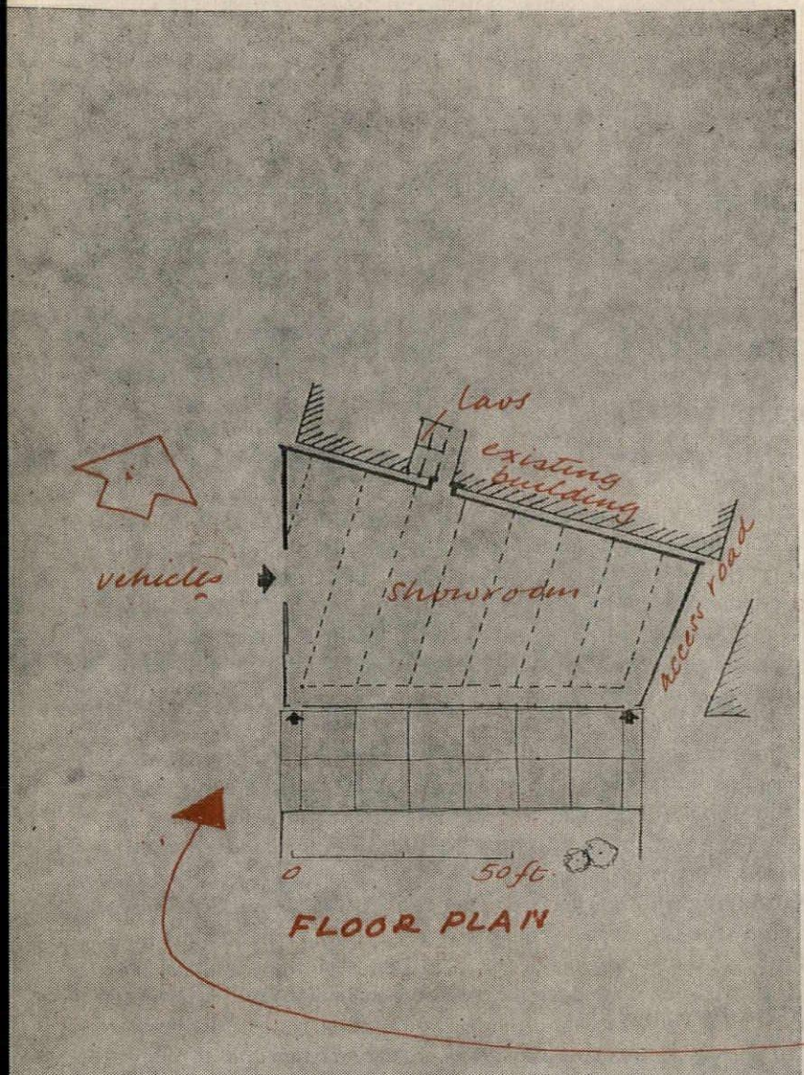
There are 135 fruit and vegetables units, to be occupied by about 80 firms—some taking two or more units. A separate banana-ripening shed is provided with a railway spur alongside so as to allow unloading directly from truck to shed. The fish market is likewise a separate building, consisting of 41 stands, to be occupied by about 20 firms. This is also served by its own railway siding and platform, and the wholesalers pick up from this to deliver the fish to their own stands.

Circulation is one-way: the retailers park *inside* the rectangle of stands and as the retailers go the rounds deliveries are carried direct to their vans. The wholesalers circulate round the *outer* perimeter of the stands and deliver at the rear. All road traffic is controlled from a gatehouse at the main entrance. On the north side of the site a low-level railway siding serves the fruit and vegetable wholesalers and the wagons can also act as short-term storage space. In the centre is an administrative block with a restaurant, three banks, a shop, and

a number of offices. A clock-tower stands in front of it. The lines of garages are intended not only to house the wholesalers' vehicles, but to provide additional storage space for goods not required in the stands, and for crates returned empty.

To reduce costs, structures (except the central building) are more or less standardised, with light steel frames, aluminium roof decks, cavity walls of brick and precast slabs, and roller-shutter doors.

Partners responsible: W. M. Shennan and George Gardiner. The scheme prepared in collaboration with S. L. Womersley, Sheffield City Architect, and M. O. Garner, Sheffield Markets Superintendent. Quantity surveyors: Dansken and Purdie.



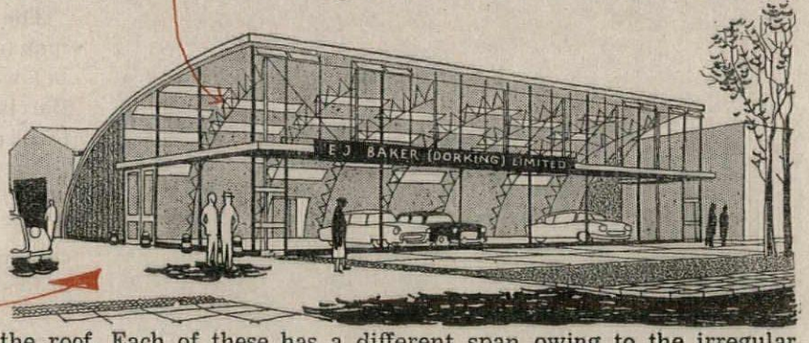
MOTOR SHOWROOMS: STAINES

Westwood, Sons and Partners

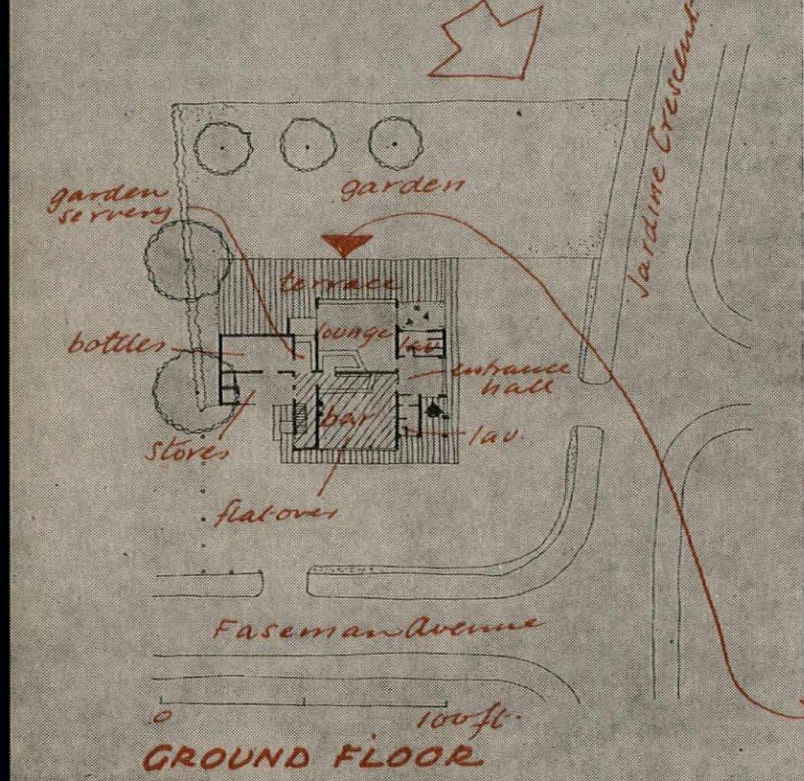
On an irregular site, at the east end of the town on the main London road. Construction began in October.

The design is based on the need for the cars displayed to be clearly seen, requiring large unobstructed windows and the minimum of reflections. Vertical, not sloping, windows were, however, asked for.

The frontage is spanned by a single lattice girder carried on two tubular stanchions. The girder is stiffened by the projecting canopy and carries the curved members (each a quarter-ellipse) supporting



the roof. Each of these has a different span owing to the irregular shape of the site. The roof is covered with aluminium and perspex sheets, lighting the interior strongly to reduce reflections. The ceiling is of sprayed asbestos to give a jointless surface.



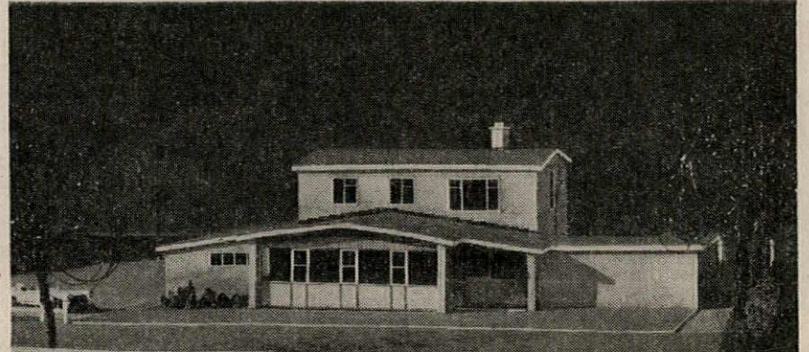
PUBLIC HOUSE: COVENTRY

W. S. Hattrell and Partners

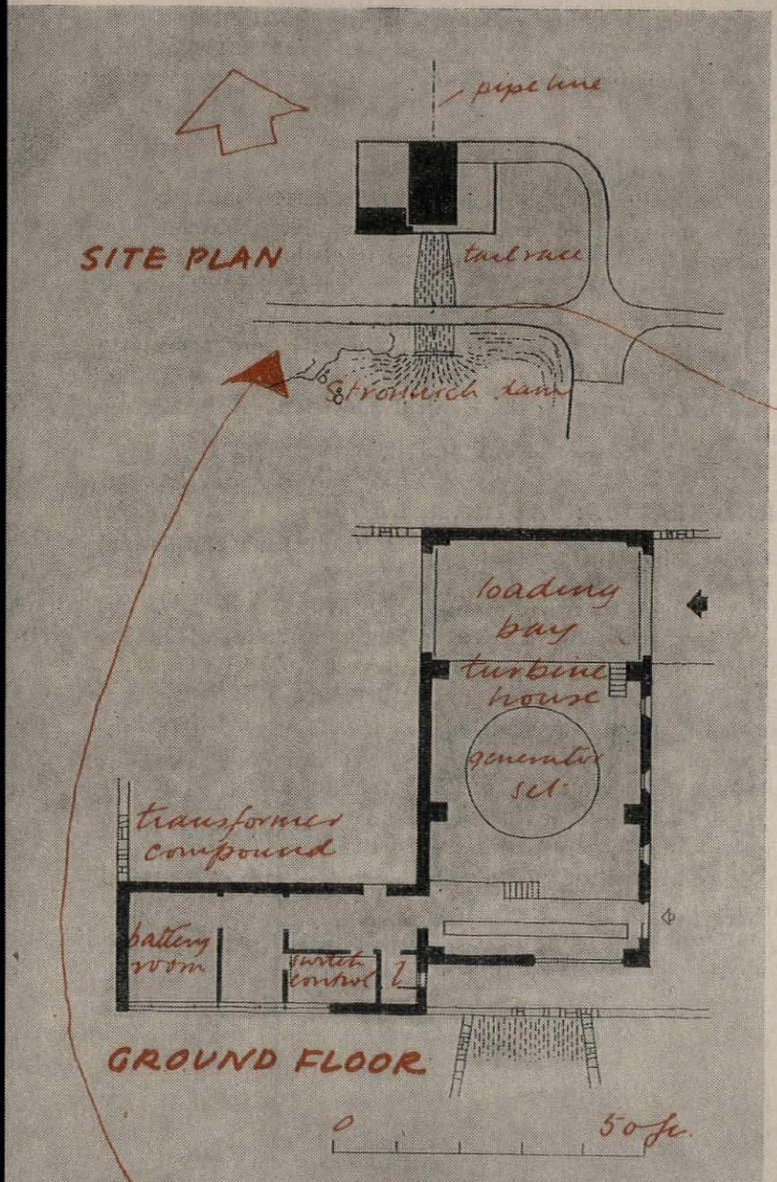
For Bass, Ratcliff and Gretton, in the new district centre at Tile Hill, on the western edge of the city. Work begins early this year.

Accommodation comprises basement cellar and heating chamber; bar, lounge and bottled goods store on the ground floor, and manager's flat on the first floor. As there are only two public rooms, it was possible to provide a large entrance lobby, from which the lavatories are reached. A garden servery is combined with the off-sales department.

Construction is the normal domestic kind with timber trusses and a green bituminous felt roof. There are vertical sliding sash windows in the public rooms and an exposed timber roof in the lounge.



12 POWER STATIONS



HYDRO-ELECTRIC STATION, CASHLIE, PERTHSHIRE

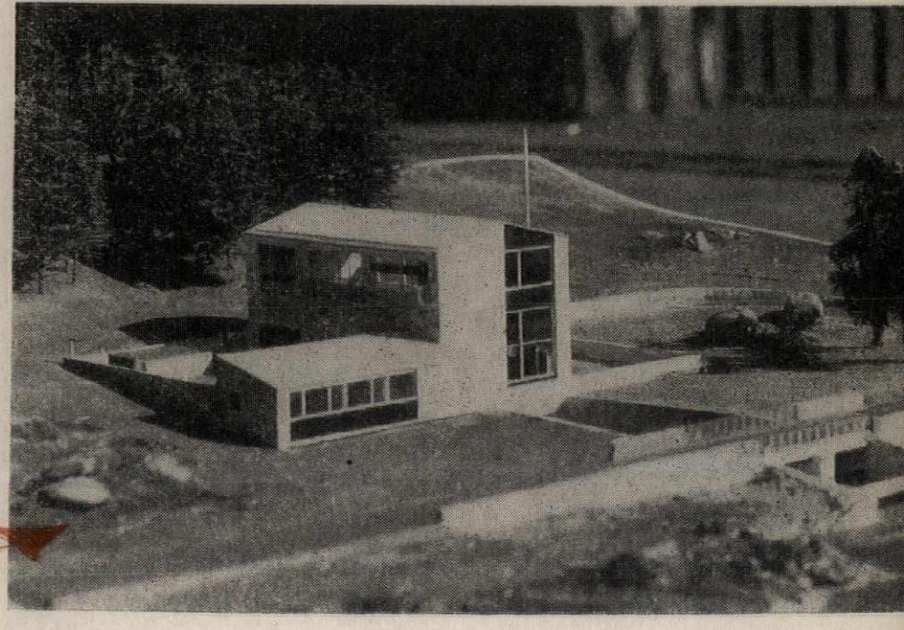
Robert Matthew and Johnson-Marshall

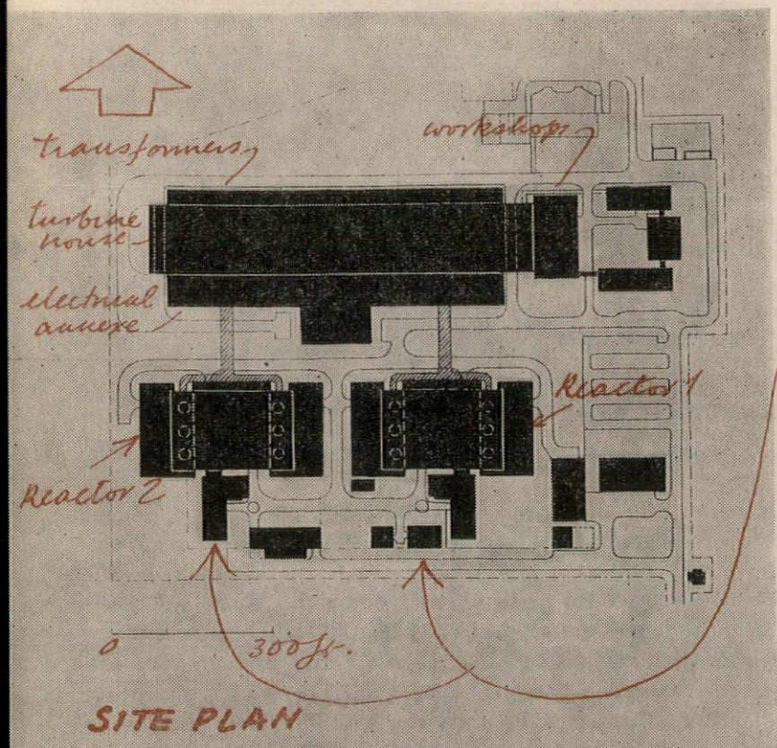
For the North of Scotland Hydro-Electric Board: preliminary design for the third of three stations comprising the Killin section of the Breadalbane power project, the other two, at Glen Lochay (see AR January preview issue, 1956) and Lubreoch being in a more advanced stage. Work on the foundations has already begun.

The site is on the north side of a reservoir and immediately upstream from the Stronuich dam in Glen Lyon. The water, providing an average output of 23 million units per annum, flows through a 2½ mile tunnel and a 1,100 ft. steel pipe from the Giorra dam. A public road crosses the tail-race between the station and the reservoir. The pipe-line descends the hill north of the station, passing between two conifer plantations which will be extended to screen it. The turbine-house (containing 11 kW. turbine with overhead crane) and loading bay are placed centrally on the axis of the pipe-line and the tail-race that discharges water into the reservoir. Lower blocks contain control and equipment rooms and there is an open transformer compound surrounded by a high stone wall.

The concrete for the tail-race is poured behind a permanent shuttering of stonework. The external walls of the buildings are of rough light-coloured stone quarried near the site, backed by an inner skin of concrete. Internally the walls above the crane-rails and the ceiling are lined with hardwood. The remainder of the walls are painted concrete. Windows are timber with aluminium opening sections. The entrance door to the loading bay is teak.

Senior architect: T. Spaven. Assistant architect: R. Thurgarland. Consulting civil engineers: James Williamson and Partners. Consulting mechanical and electrical engineers: Merz and McLellan. Quantity surveyors: Phillips, Knox and Arthur.





SITE PLAN

ATOMIC POWER STATION: HINKLEY POINT

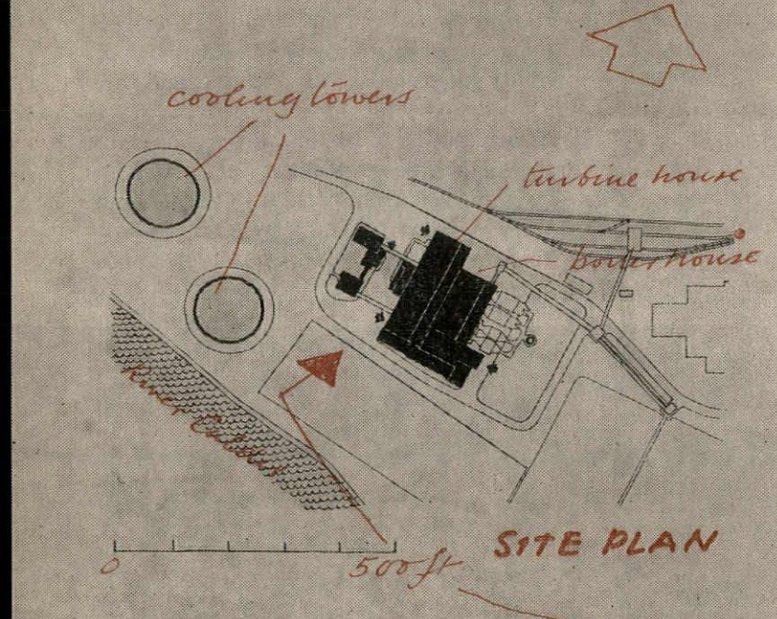
Frederick Gibberd

For the Atomic Energy Authority: the largest nuclear power station so far projected, with an output of 500 mW. The reactors are of the gas-cooled graphite moderated type. The site, of 25 acres, is on the south shore of the Bristol Channel. Site-work has already begun.

There are two reactors, each consisting of a 24-sided core of graphite blocks with a lattice of vertical channels containing the uranium fuel, all enclosed in a spherical pressure vessel 67 ft. in diameter. This is of 3 in. mild steel plates, welded on the site. Each reactor is connected to six heat exchangers (the steam-raising units), three on either side, enclosed within a glazed screen-wall. The generating plant consists of six hydrogen-cooled turbo-alternators. These are placed in a long turbine hall, parallel to the pair of reactors, with a workshop block at one end. On the far side of this, surrounding a garden, are the administration, welfare and canteen buildings.

Cladding materials throughout are aluminium sheeting and glazing with vitreous enamelled infill panels; as transparent an effect as possible has been aimed at. The architect is also the landscape consultant. Planting and the reshaping of parts of the site by the use of spoil is being carried out in consultation with the county planning officer.

The station as a whole designed by the atomic power projects group formed by English Electric, Babcock and Wilson and Taylor Woodrow, in consultation with the Central Electricity Authority.



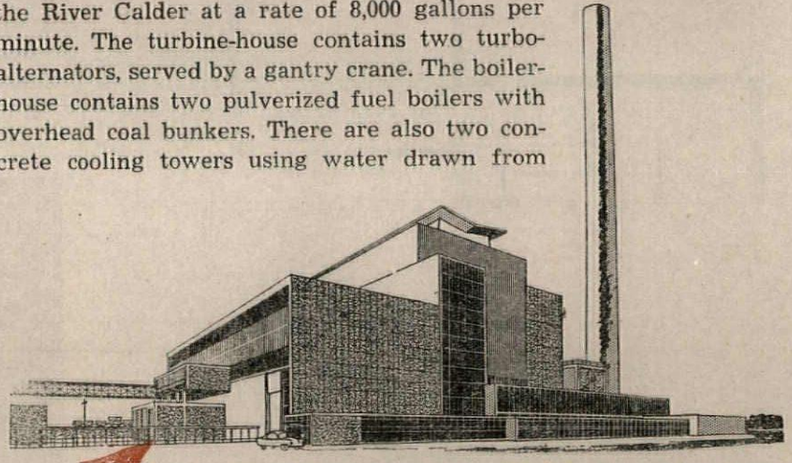
SITE PLAN

COAL-FIRED STATION: PADIHAM, LANCS

Cruikshank and Seward

For the North West, Merseyside and North Wales division of the Central Electricity Authority. Known as Padiham B, it adjoins the existing Padiham A power station. It will have 240,000 kW. capacity. The first generator will be in commission by 1961.

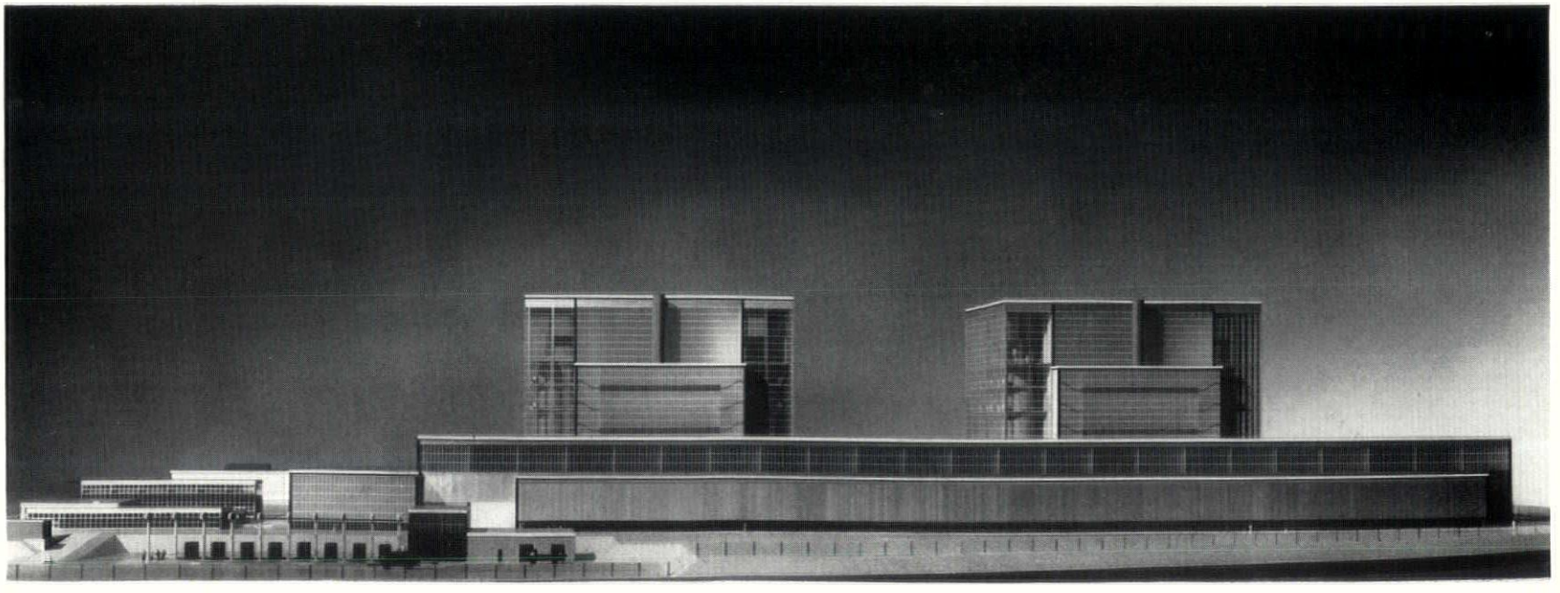
The site consists mainly of riverside meadows subject to flooding. This will be dealt with by an embankment and a drainage system including two pumps, each of which will pump surface water into the River Calder at a rate of 8,000 gallons per minute. The turbine-house contains two turbo-alternators, served by a gantry crane. The boiler-house contains two pulverized fuel boilers with overhead coal bunkers. There are also two concrete cooling towers using water drawn from the river at a new pump-house sited near the A station. Administration, control room, laboratories and canteen form a separate group to the east, reached by a covered way and overhead bridge.



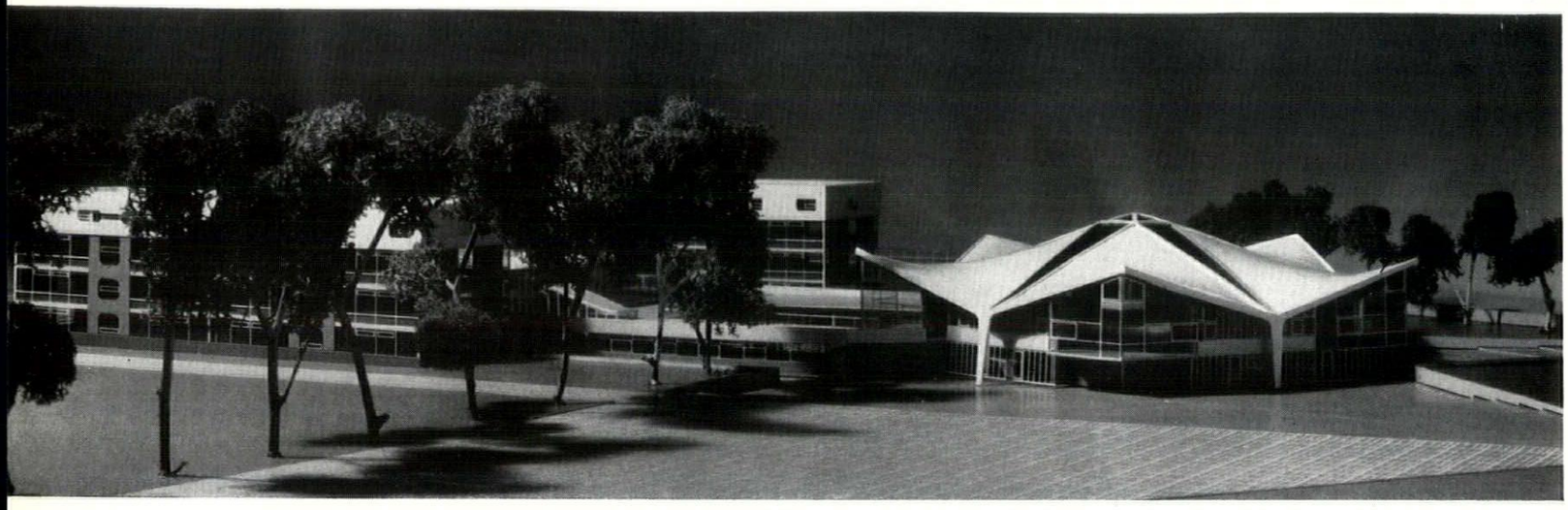
Walls of the main buildings are solid, moulded concrete blocks up to a height of 36 ft. Above this they are clad in ribbed aluminium sheeting on a steel frame. The ends of the turbine-house and coal-bunker bays are faced with exposed-aggregate precast slabs. Its west wall consists of a large window, framed by patent glazing and containing a proportion of coloured obscured glass.

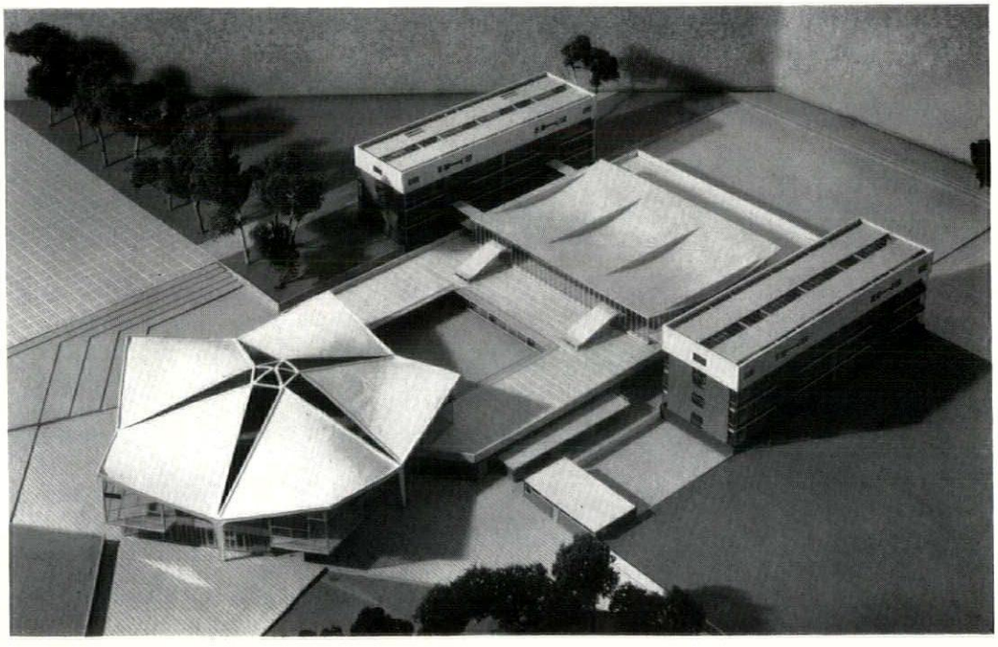
Consulting civil engineer: C. S. Allott.

Atomic power-station at Hinkley Point, Somerset, by Frederick Gibberd. Above, from the south, showing the heat exchangers, clad in clear glazing, on either side of the two reactors. Behind them is the turbine hall. Below, in elevation from the north (the side facing the Bristol Channel).

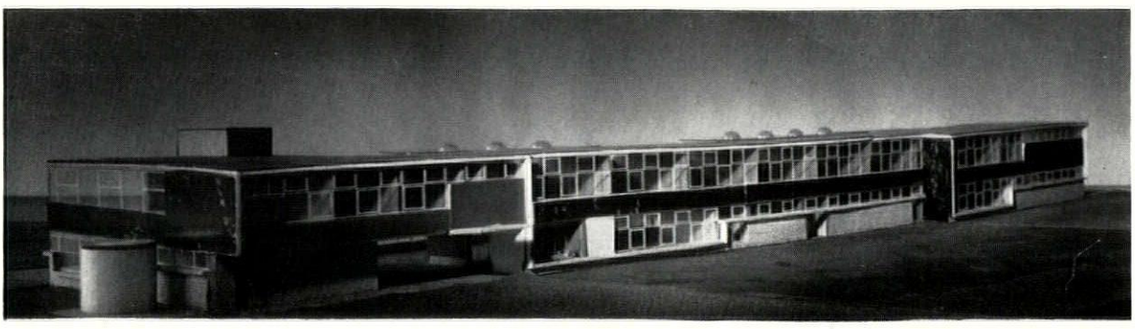


13 SCHOOLS

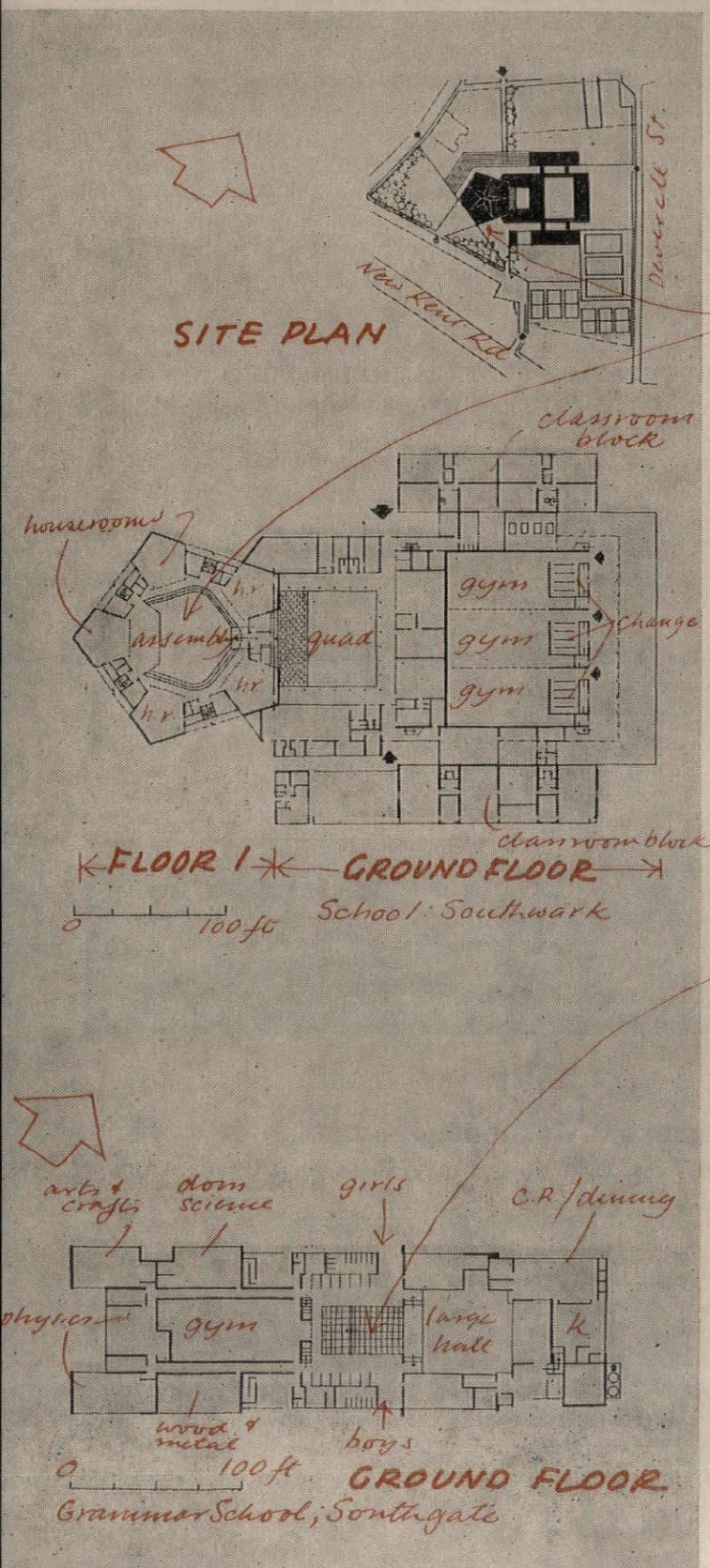




Comprehensive school at Southwark, by Chamberlin, Powell and Bon: above, the pentagonal assembly-hall and (behind the trees) the four-storey classroom block; right, the symmetrical layout from above.



Left, Southgate grammar school, by Raglan Squire and Partners, in collaboration with C. G. Stillman, Middlesex County Architect.



GIRLS' COMPREHENSIVE SCHOOL: SOUTHWARK

Chamberlin, Powell and Bon

For the London County Council. To accommodate 1,250 girls (on the house system) on a site north of the New Kent Road which forms part of a slum-clearance area and is surrounded by LCC housing of various periods. The buildings are sited in relation to the axis of post-war blocks of flats. Construction will begin this summer.

The buildings consist of a 4-storey classroom block, a 4-storey practical block, a pentagonal assembly hall surrounded by five house-rooms, and three gymnasia (en-suite, with folding partitions between and with changing-rooms adjoining an open-air play area). Round a central quadrangle are the staff-rooms, library, kitchen and main entrance hall. In the classroom block the rooms are back-to-back and served by two staircases, elminating a central corridor. Geography and history-rooms on the top floor are top-lit.

Construction is load-bearing brickwork and steel, with suspended concrete floors and roofs. The assembly-hall roof is composed of five concrete hyperbolic paraboloids separated by roof-lights.

GRAMMAR SCHOOL: SOUTHGATE

Raglan Squire and Partners (with C. G. Stillman, Middlesex County Architect)

A three-form entry mixed grammar school for 540 pupils, including 90 sixth-form pupils. Work will start early this year.

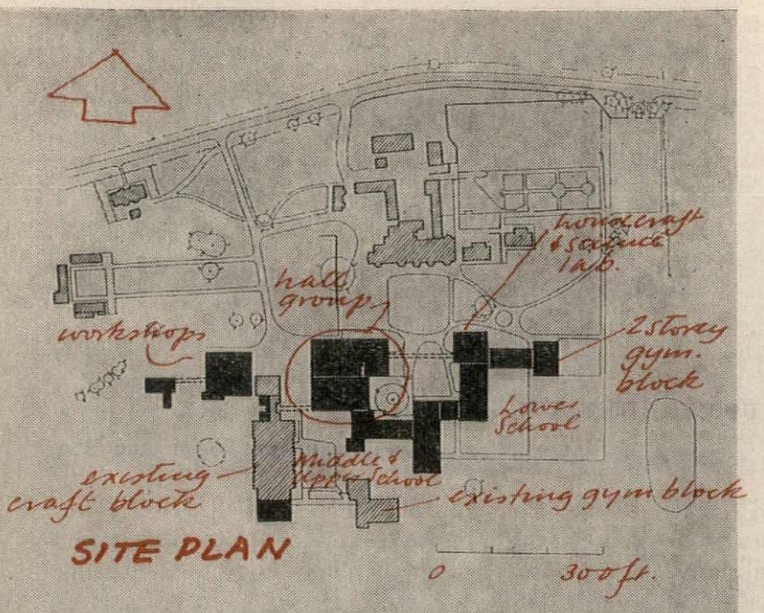
The first floor, in which the main teaching accommodation occupies approximately two-thirds of the area and the remainder is laboratories, is symmetrical in plan. The ground floor is nearly so. It consists of two large double-height elements (hall and gymnasium) separated by an internal courtyard around which a continuous glazed gallery at first-floor level forms the main circulation system of the school, giving access to most of the class and practical accommodation. The hall and gymnasium are lit and ventilated by glass domes, but the hall also has one end opening into the internal courtyard.

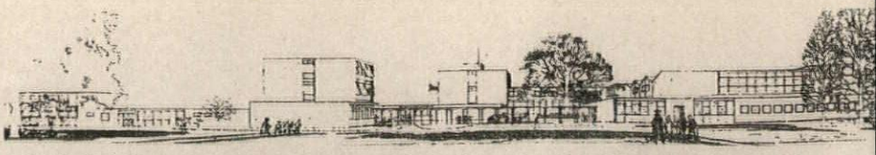
Structurally, the building consists of two ranges of reinforced concrete portal frames, closed at one end and linked together across the large, high elements by a stressed-skin plywood roof. Floors are reinforced concrete slabs. Cladding is timber, bolted back to the main structure, with infill panels faced with coloured glass.

COMPREHENSIVE SECONDARY SCHOOL: TADCASTER

A. W. Glover (West Riding County Architect)

A 7-form entry school for 1,200 pupils serving a large rural area in the plain of York. Since the children come from long distances the accommodation had to allow for a 100 per cent demand for school meals. The site is the well planted grounds of a Victorian mansion

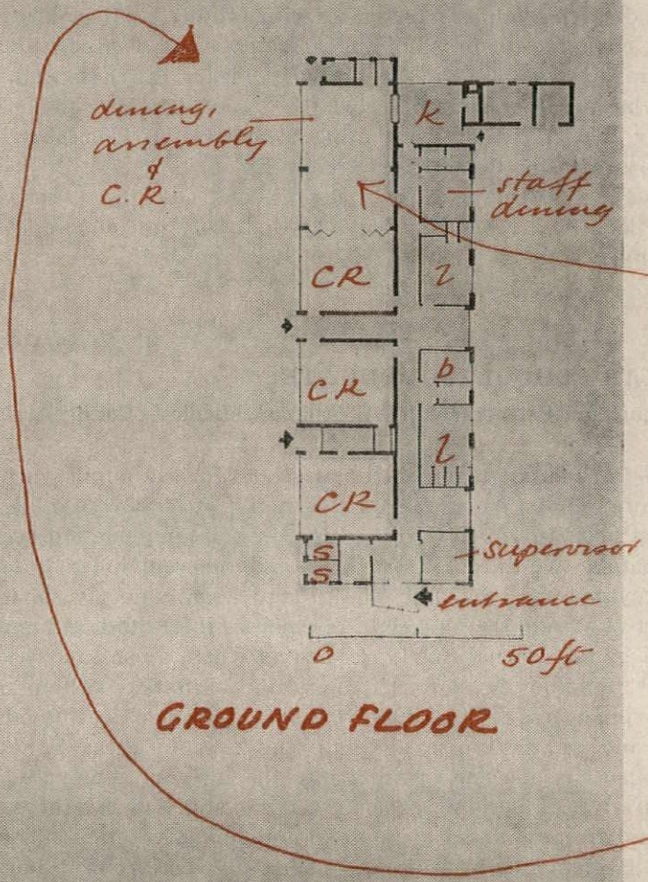




which is being used for teaching while the school is building and will eventually become a house for boarders. A gymnasium and practical rooms have already been built to supplement the teaching accommodation in the mansion. Work on the new school began last summer.

The new buildings surround a quadrangle of which the original mansion forms one side. The school is organized educationally into Lower and Upper School and Sixth Form, and socially into house units. Each school occupies a separate 3-storey block with a house-room on each floor. The Sixth Form is separately accommodated over the library. Specialist teaching accommodation (science, handicrafts, housecraft, music, engineering and rural studies) is common to all except for a small amount for the use of the Lower School only for elementary studies. The Lower and Upper Schools have separate gymnasia. A large hall can accommodate the whole school on speech days, and provide space for 1,500 meals taken in two sittings.

The buildings are of frame construction with a timber cladding system using plywood panels. Solid walls are faced with brick.



JUNIOR OCCUPATION CENTRE: CHELMSFORD

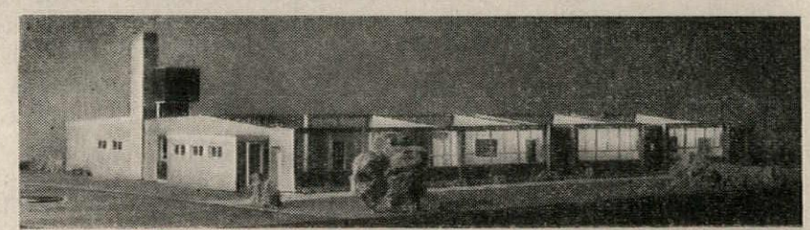
H. Conolly (Essex County Architect)

To accommodate 68 mentally-handicapped children; conceived as a standard design for use on other sites in future. This (the first) is now under construction.

There are four classrooms, the fourth one being combined with the dining room-assembly hall. By using a folding partition, classroom No. 3 can be added to these rooms to form one large assembly hall, 55 ft. by 21 ft. The kitchen deals mainly with cooked meals which are brought to the centre each day in heated containers.

The building is constructed of brick-bearing walls with 'lattice' roof beams, compressed straw boards and three layers of roofing felt.

Deputy County Architect: D. Senior. Assistant County Architect: K.D. Box. Principal assistant architect: J. F. Ward. Assistant in charge: W. S. Coates.



GIRLS' SECONDARY SCHOOL: GRAVESEND

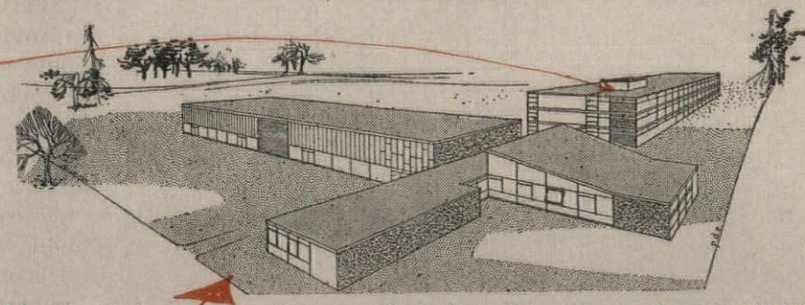
Elie Mayorcas (with E. T. Ashley Smith Kent County Architect)

A 4-form entry (five-year course) secondary school for 660 pupils. The site is mainly open with a fall to the north and interesting views of the river. Work will begin in May.

Two main rectangular blocks, at right angles, are linked by the pupils' entrance. The teaching block faces east and west, and the communal block north and south. The latter contains an assembly hall, gymnasium, small hall, kitchen, cloakroom and changing-rooms, etc. These serve both gymnasium and assembly hall, with easy access to the stage for dramatic performances. The small hall can also be used for dining, allowing a reduction in area of the dining-room

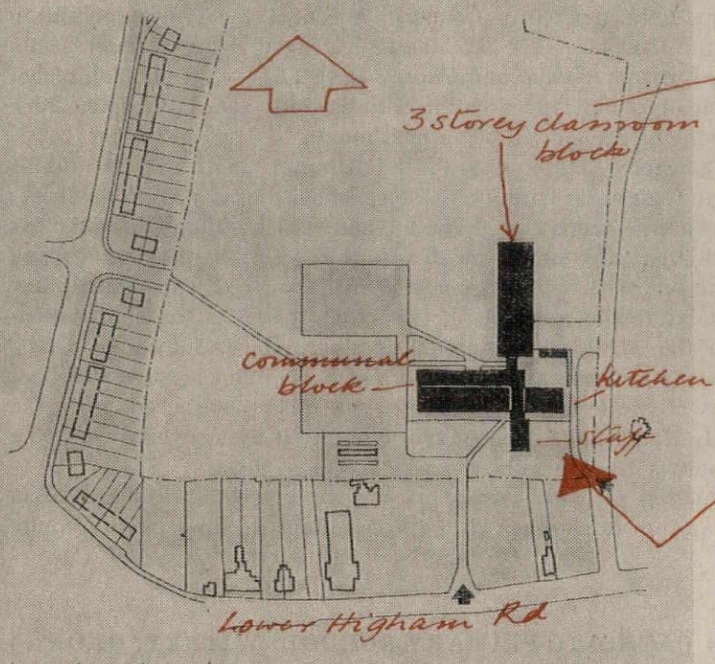
which also forms part of the general circulation and provides an extension to both the halls by the use of sliding-folding screens.

The structure is a light steel frame, with exposed concrete perimeter beams at floor levels, faced with self-coloured asbestos sheets.



Metal windows have glass panels below the cills, backed by lightweight concrete. External cladding is either brick panels, glazed tiling, or cedar boarding.

Assistant architects: L. E. Tatum, A. M. Graham, M. Hichisson, P. Robson, J. P. G. Moore, D. A. Hatcher and A. Gough. Quantity surveyors: Thurgood, Son and Chidgey. Services engineers: W. E. Fretwell and Partners.

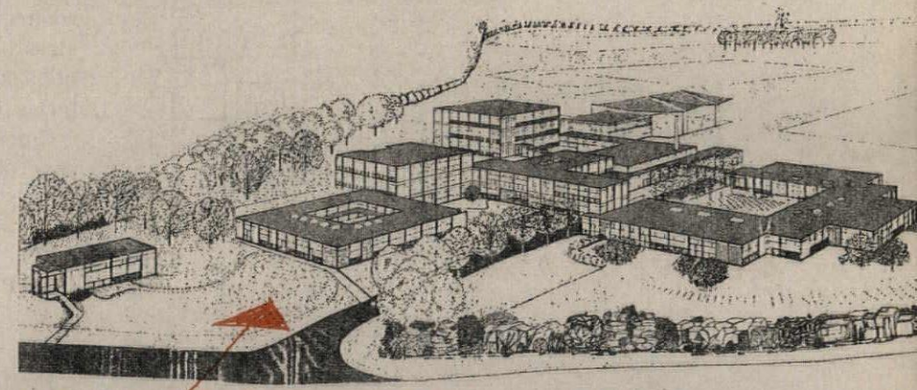


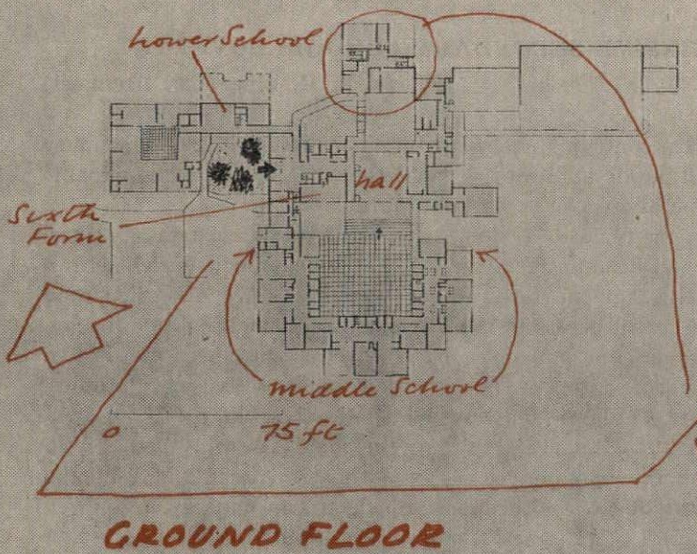
GRAMMAR SCHOOL: ARNOLD, NOTTS

Ministry of Education (with D. E. E. Gibson, Notts County Architect)

A 4-form entry mixed grammar school, with a sixth form of 120, accommodating 720 pupils altogether. It shares a 34-acre site with a girls' secondary modern school. Construction begins in March.

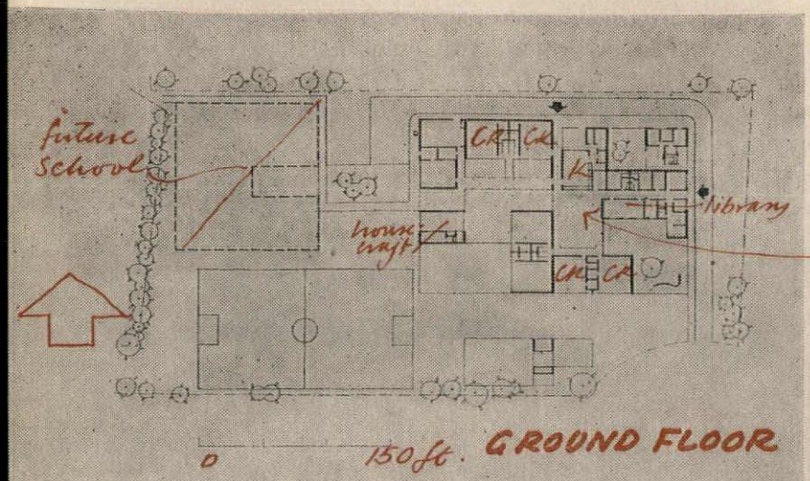
Educationally the school has some experimental features. It is divided into three parts: Lower School (first and second years),





Middle School (third, fourth and fifth years) and Sixth Form (sixth, seventh and eighth years). The Lower School provides a general course, and there are eight forms of 30 pupils each. At the beginning of the third year each pupil, according to ability and aptitude, enters one of six courses, and the Middle School is organized into six separate houses, each for 60 boys and girls. Each house has a house-room in which the pupils also dine, a group-room for 20 pupils and studies for housemaster and mistress. Cloakroom and kitchen are shared between two houses. The three kitchens are supplied by trolley from a central store. The Sixth form has its own common-room, tutorial rooms and studies planned round the library. In a central block are library, reading-room, assembly-hall, music rooms and administration. A separate science block contains a general laboratory for Lower School classes, five specialist laboratories for the Middle School and Sixth Form and a lecture room.

The building has a structural frame of precast and pre- and post-tensioned concrete (evolved in collaboration with the research and development department of John Laing & Son and the consulting engineer, A. J. Harris). The structural grid is 40 in. Cladding is of timber faced panels.



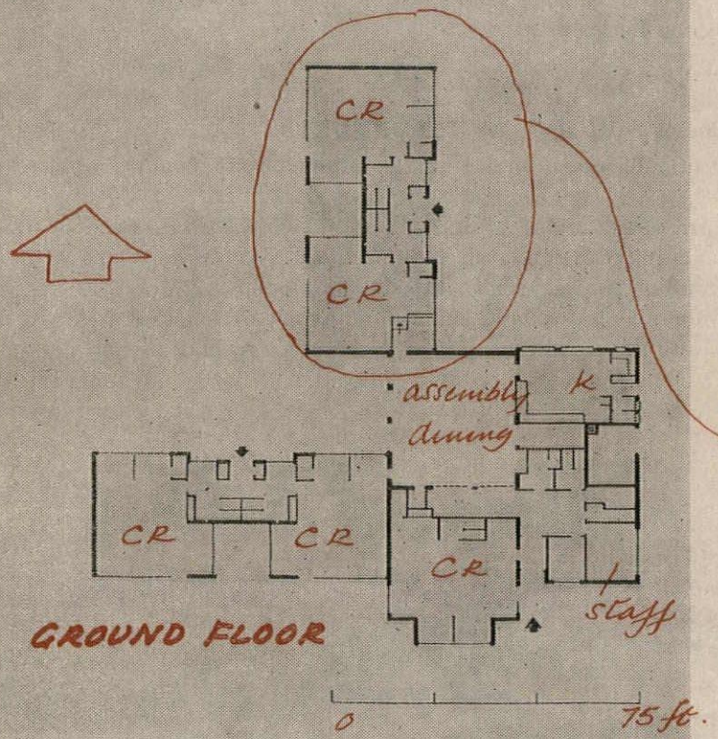
SPECIAL SCHOOL: ROEHAMPTON

James Cubitt and Partners

For the London County Council: a school for delicate children (providing 180 places for boys and girls aged 5-16), sharing a site between Luttrell Avenue and Putney Park Lane with another school for physically handicapped children to be built at a later date. Work on the Delicate School will begin next month.

A single-storey building with the assembly hall in the middle. The main entrance, with access for school buses, is on the east: nearby is a caretaker's house. The kitchen, which adjoins the assembly hall, will eventually supply meals also to the Physically Handicapped School, to which it will be connected by a covered way. The library is also next to the assembly hall so that it can be used as a rest-room for the whole school as well as a secondary study area. Classrooms have their own lavatories and a bed and blanket store. Practical rooms (woodwork and housecraft) will also be shared with the Physically Handicapped School and joined to it by a covered way. The boiler-house will serve both schools.

Construction is load-bearing brick with projecting timber fascia and aluminium fascia over glazed areas. Roof decking is aluminium.

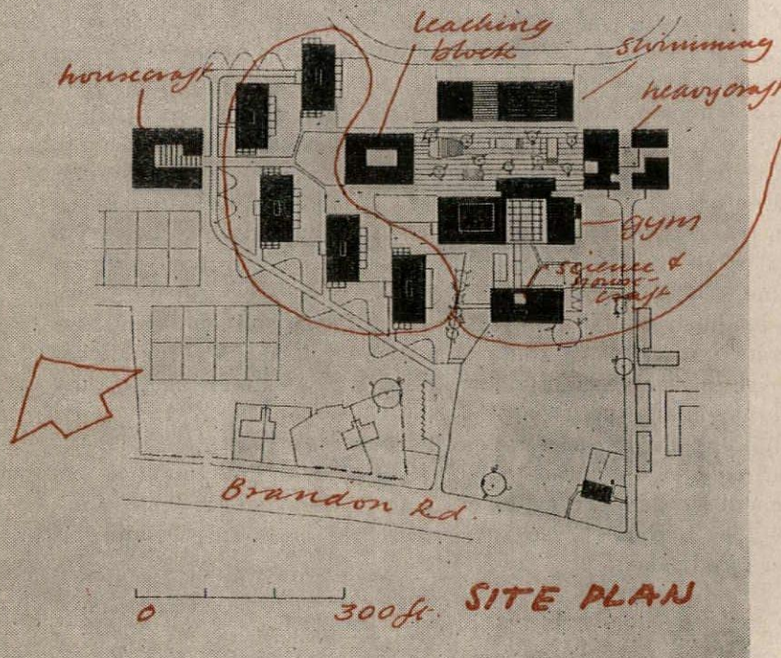


ROMAN CATHOLIC PRIMARY SCHOOL: WITNEY, OXON

Booth, Ledeboer and Pinckheard

For the archdiocese of Birmingham, on an open site bordering the suburban fringe of the town. Construction will begin very shortly. Later on a convent will be built on an adjacent site for the nuns who will staff the school. To be built in two stages: first three classrooms, assembly hall, kitchen, staff rooms, etc.; secondly two more classrooms. Each classroom group is designed as a separate unit, domestic in scale, with its own front door, cloakroom space and lavatories. Each has outdoor teaching and garden areas.

Construction consists of load-bearing cavity brick external walls, concrete block internal partitions, concrete floors and timber roofs.



COMPREHENSIVE SECONDARY SCHOOL: COVENTRY

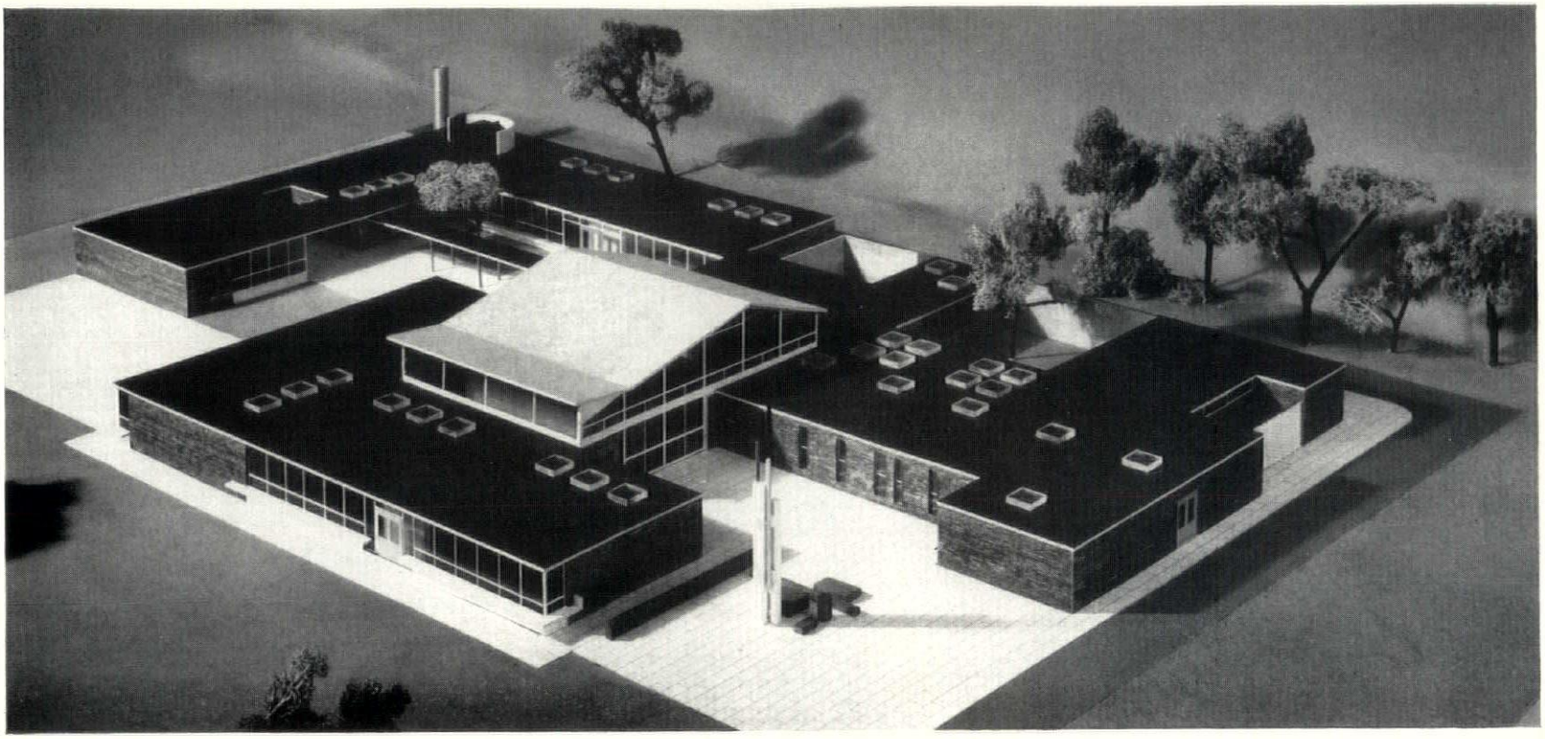
A. G. Ling (City Architect)

First (3-form entry) instalment of a 10-form entry secondary school for 510 pupils at Binley, east of the city. It had to be capable of separate operation. Works starts in March.

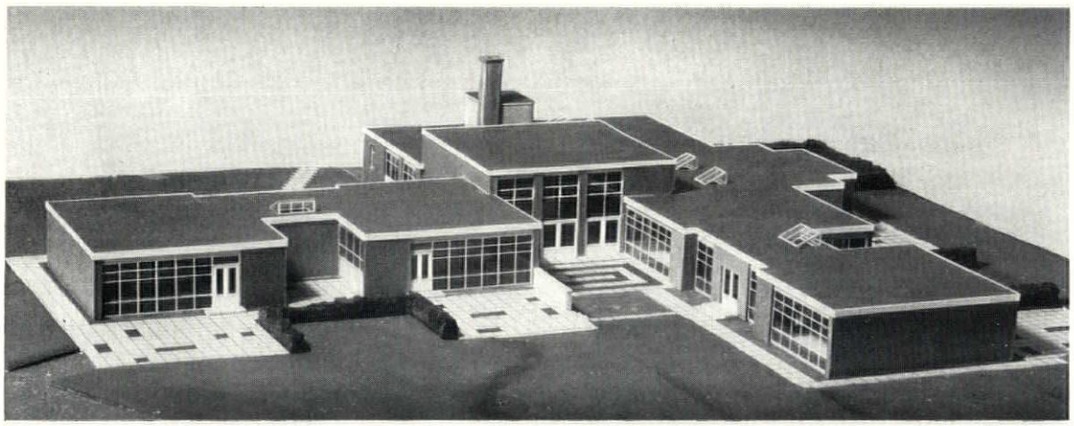
Planned on the 'house' system, each with its own common-rooms, dining-room and headmaster. Five 2-storey house-blocks (each with a garden in front that can be used for teaching) have a service road behind giving direct access to the kitchens. Each contains two houses, one for boys and one for girls, each with a dining-common room served by the same kitchen. On the first floor are classrooms, studies, staff rooms, etc. The main teaching block, 4 storeys high, has an open court at second-floor level and adjoins the main assembly block, with hall, gymnasium, changing-rooms, etc. The first instalment of the scheme consists of two of the house-blocks (four houses), a 2-storey science-housecraft block, a single-storey heavycraft block and one hall for assembly and gymnasium, together with changing-rooms.

The structure (designed to combat mining subsidence) consists of a pin-jointed steel frame on a thin slab foundation, with external walls of concrete slabs, hanging tiles and boarding. Roofs and floors are of timber joists spanning between steel beams. Windows are timber.

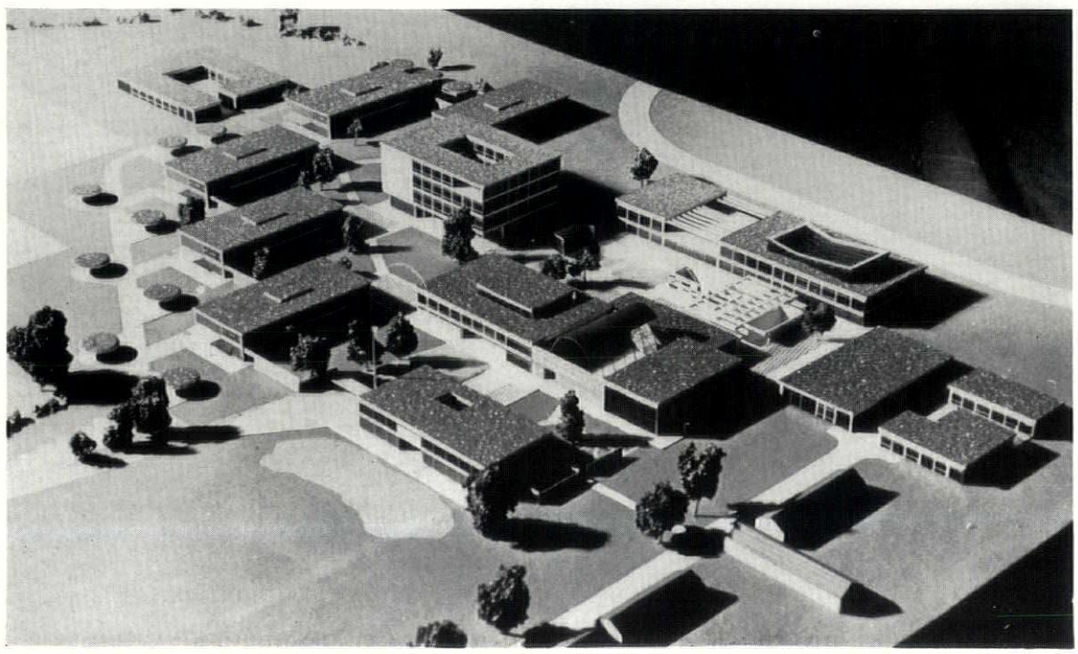
Principal schools architect: W. Kratchmer. Architect in charge: J. W. Davidson.



Above, school for delicate children at Roehampton, by James Cubitt and Partners. The accommodation is planned in a number of wings grouped round a central assembly-hall.

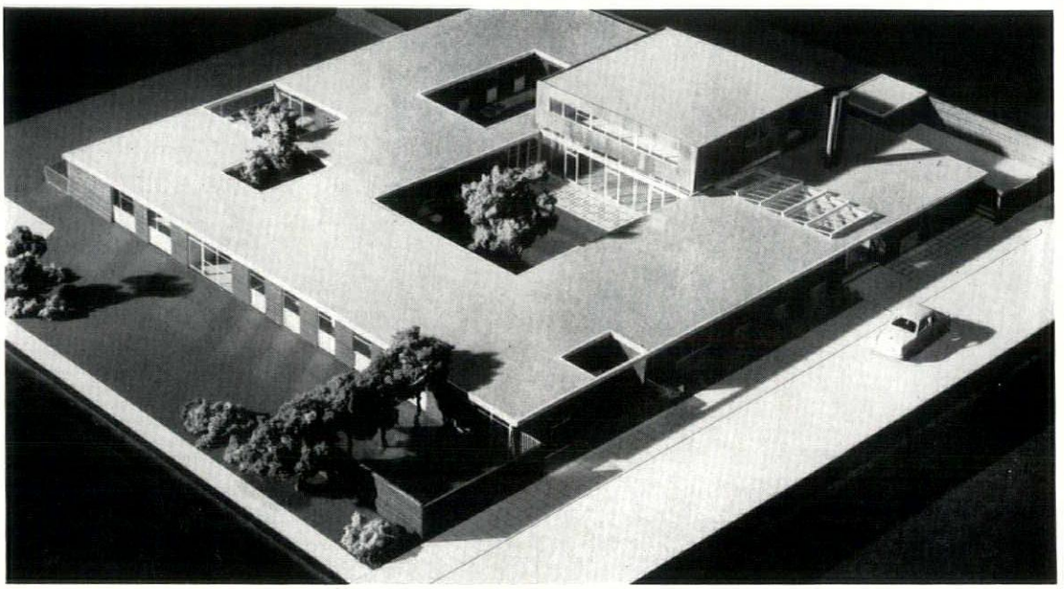


Left, Roman Catholic primary school at Witney, Oxon, by Booth, Ledeboer and Pinckheard.

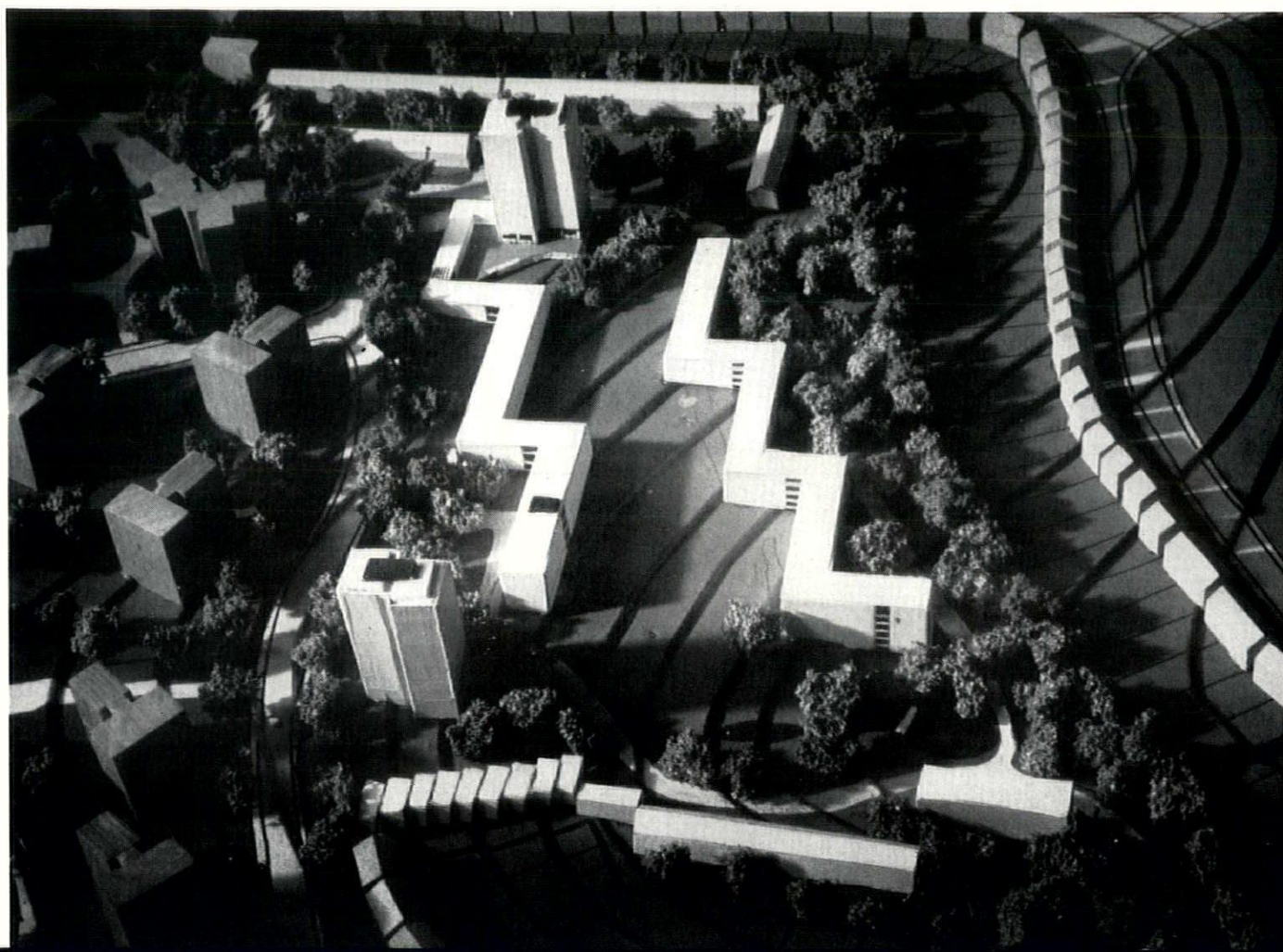


Left, comprehensive school at Binley, Coventry, by the City Architect. The identical buildings on the left are the house-blocks. They form a circle round the four-storey teaching block.

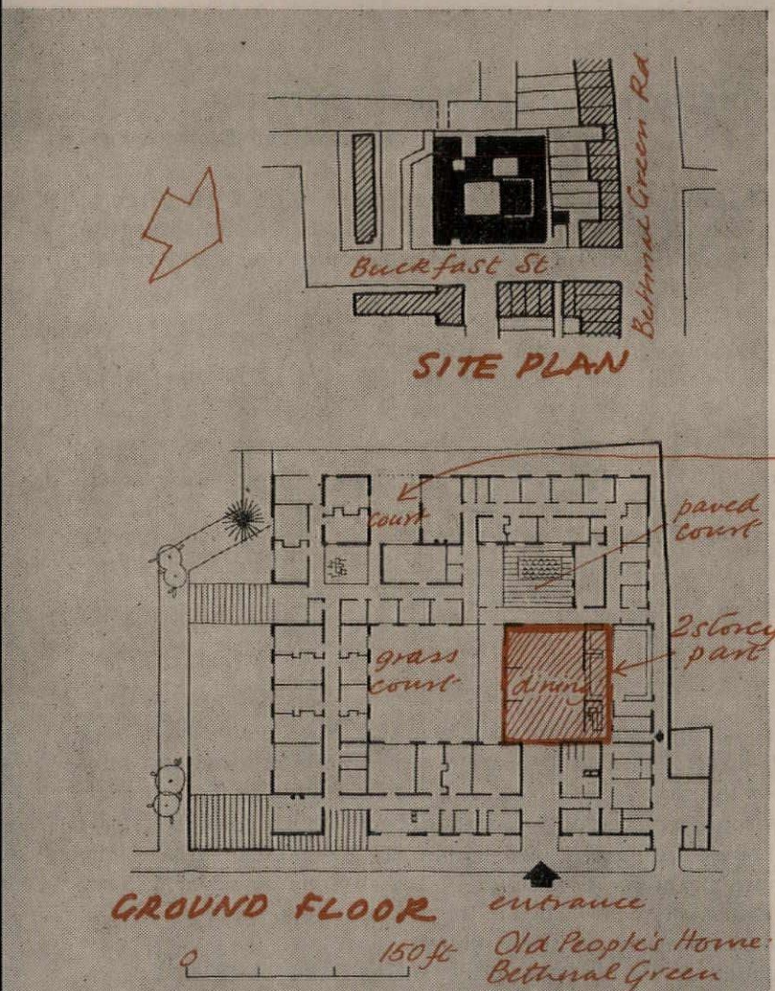
14 HOUSING



Old people's home on the L.C.C.'s Hereford Street housing estate, Bethnal Green, showing the planning round three internal courts.



Housing at West Hill, Wandsworth, by Clifford Culpin, on a site adjoining the L.C.C.'s Ackroydon estate. There are flats in two point-blocks, maisonettes and terrace housing along the north and south boundaries.



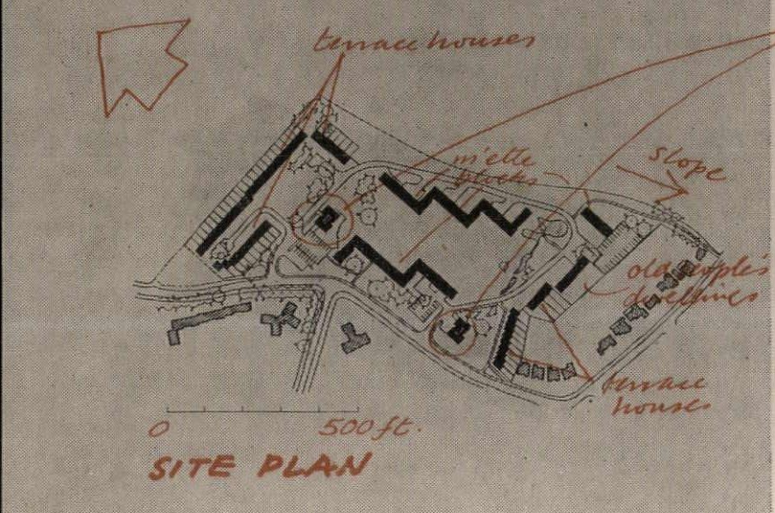
OLD PEOPLE'S HOME: BETHNAL GREEN

Hubert Bennett (London County Council Architect)

Part of the LCC Hereford Street housing estate. The adjacent site to the south is occupied by a 2-storey terrace of old people's flats. It is hoped to start work next July and finish by September, 1959.

Accommodation is provided for 53 old people in single, 2-bed and 4-bed rooms. Self-contained quarters for the matron, assistant matron and two assistants are on the first floor. The building is mainly single-storey to avoid stairs and lifts and the need for pile foundations (the site is covered by 10 ft. of made-up ground). The entrance hall is large enough to provide some sitting space and leads directly into the dining-room. From here, a large grassed court is seen beyond a terrace facing south and the paved court and pool—slightly obscured by screens—to the west. A small, luxuriantly planted court lies in the south-west corner of the building, and the bedrooms and sitting-rooms of the old people are dispersed round these three courts. Service rooms, the kitchen and the boiler-room are on the north side with access to the service yard.

The 3 ft. deep strip foundations of the single storey part of the home carry load-bearing external and spine walls. Internal partitions are of clinker block. The 2-storey block has a steel frame. Infill panels under windows have an external facing of roughcast glass. Other cladding materials are facing bricks on the ground floor and vertical cedar boarding on the first.



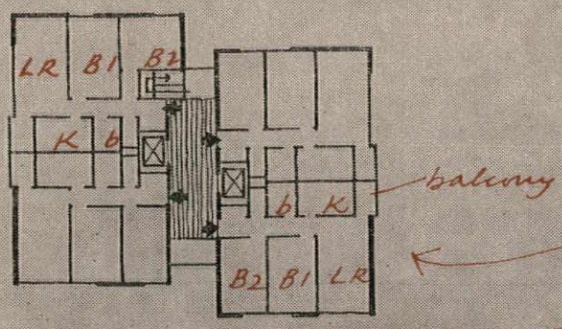
FLATS AND HOUSES: WANDSWORTH

Clifford Culpin

At West Hill, for the borough council. The site, known as Edgecombe Hall, forms the eastern boundary of a large area of new development, including the LCC's Ackroydon Estate. The 12½ acres are beautifully landscaped with fine trees. There is a long grass slope, with a fall to the south and ornamental ponds at the lower end. At the highest point is the existing Victorian house which will make way for one of the two 14-storey blocks. The scheme has not yet received formal approval, but it is hoped to begin construction in March.

A density of 100 persons per acre provides 315 dwellings, consisting of flats, maisonettes and terrace houses. At the northern end a nursery school will be built later. The centre section of the scheme takes advantage of the sloping ground. Two long staggered terrace blocks are arranged in such a way that a person entering the block at its highest end can walk through on the level to find himself four floors up at the extreme southern end. This almost eliminates the need for staircases and there is only one lift, at the southern end of the eastern block. Living-rooms overlook the grassed, sloping area in the centre of the site. The 14-storey point blocks have four 2-bedroom flats on each floor and four 1-bedroom flats at the top.

The staggered terrace blocks are of load-bearing brick construction.



TYPICAL FLOOR
Point Block
Flats & Houses
Wandsworth

0 25ft



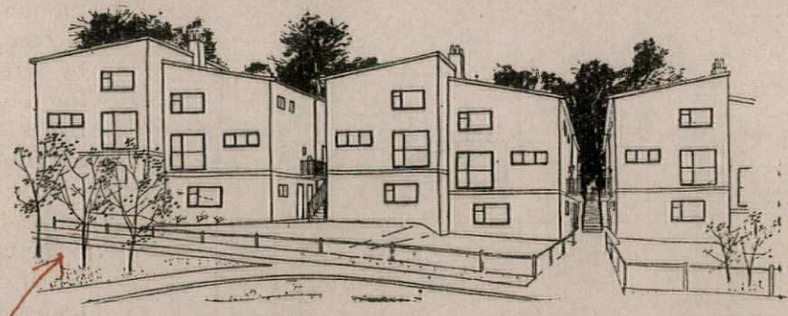
The point-blocks have a precast concrete frame with brick panel infilling. The terrace housing is of brick cross-wall construction with timber and asbestos front and back panels.

HOUSES, MAISONETTES AND FLATS: HATFIELD

Stillman and Eastwick-Field

In the Oxlease area of the new town. 146 dwellings (42 large 3-bedroom houses, 56 small 3-bedroom houses, 24 3-bedroom maisonettes and 24 single-room flats) and 42 garages are provided on a 10-acre site. Work is expected to begin this summer.

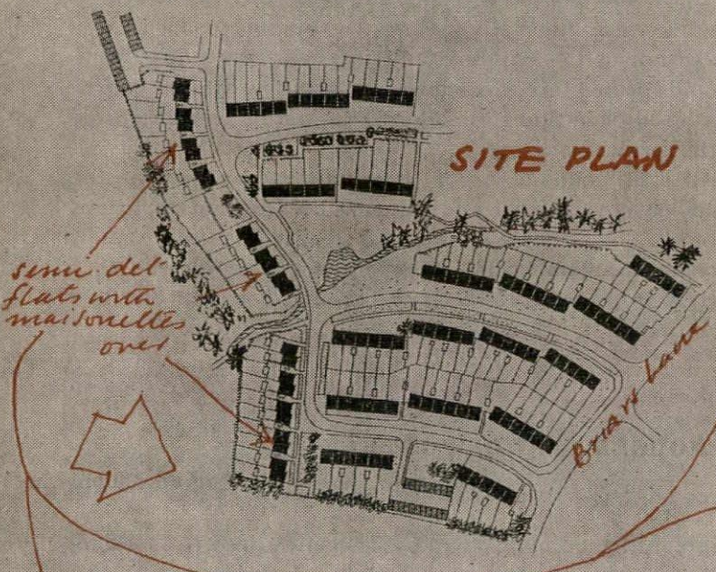
The majority of the houses are arranged in terraces set along the contours. These consist of small 3-bedroom houses, and large 3-bedroom houses which extend over the tunnels at first-floor level. The

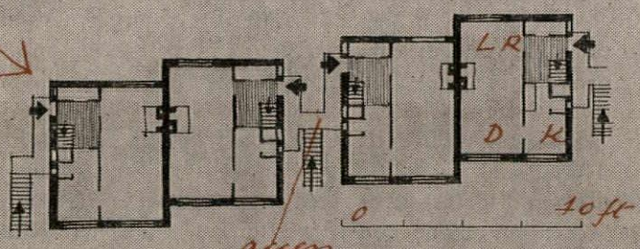


ground-floor plans of both types are identical. Each house has a back door with direct access to a separate store, fuel store and space for dustbins at the rear. Where back access is available without tunnels there are some terraces of five large 3-bedroom houses. The stores in these houses are incorporated within the ground-floor area. Along the southern boundary is a series of linked semi-detached 3-storey blocks with single-room flats on the ground floor and 3-bedroom maisonettes above, reached by an external staircase.

Construction is load-bearing brick (using both black and white facing bricks), with timber roofs covered with a new concrete slate which can be laid to a low pitch.

Assistant architect: David Brain. Quantity surveyors: Davis, Belfield and Everest.





access gallery

FLOOR 1 3 storey maisonette blocks Hatfield

FLATS AND HOUSES: CAMBRIDGE

Eric Lyons

In Hills Road, on a site owned by Jesus College. The approach lies through Nos. 45 and 47, Hills Road, two obsolete Victorian houses, one of which still retained a well planted garden of 3½ acres. Some of its features, including as many of the trees as possible, are preserved. A 15-storey tower block (the tallest private-enterprise residential building in England), 2-storey and 3-storey blocks of flats and terrace houses, provide altogether 161 dwellings. It is hoped to begin work shortly and complete it by the spring of next year.

The layout takes the form of a series of quadrangles with pedestrian approach only, but with parking and garage facilities near the main



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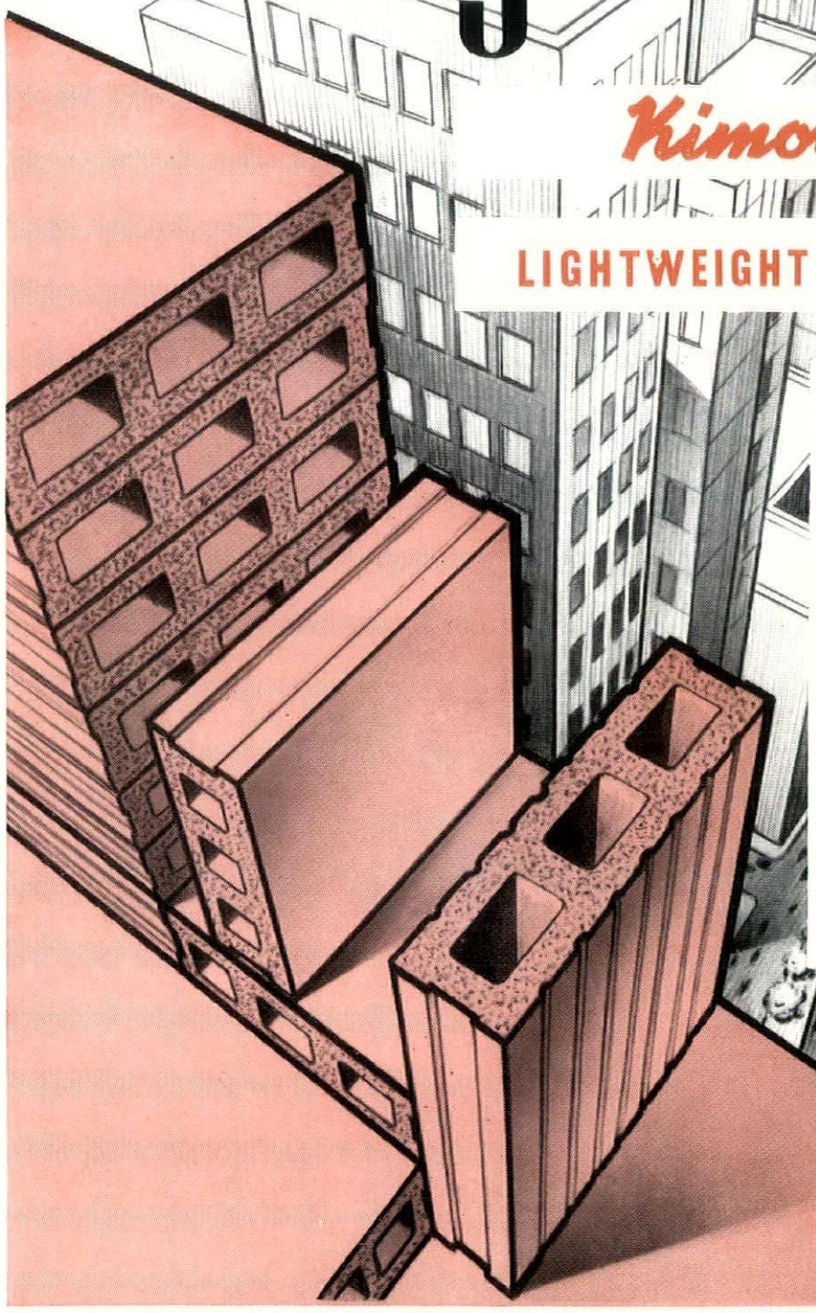

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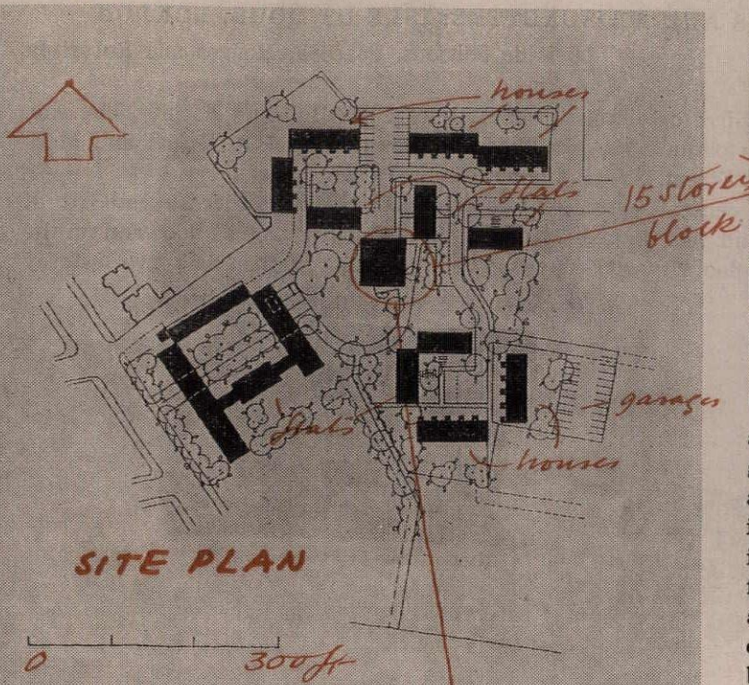
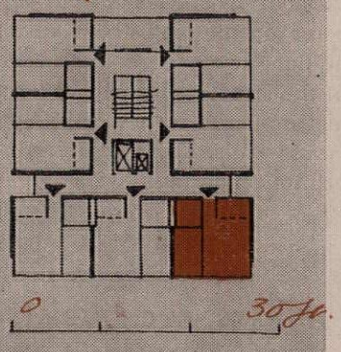
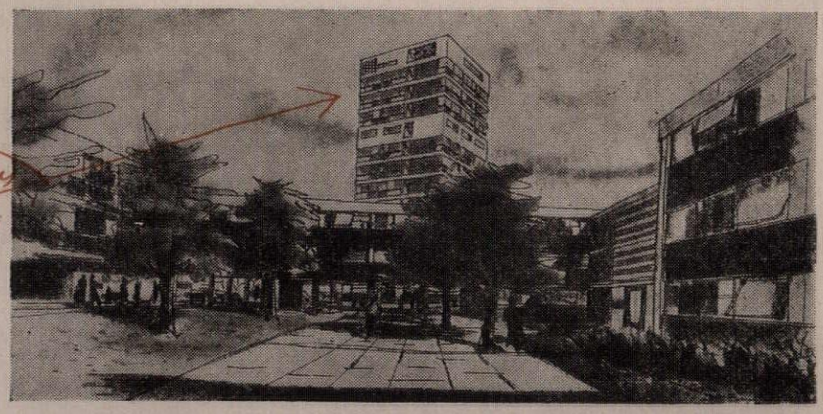






access road. The first quadrangle (of 3-storey flats) has an open ground floor in places, leading through to the other blocks. Beyond approach only, but with parking and garage facilities near the main it, at the top of a ramp, is the 15-storey tower, 135 ft. high, containing large single-room flats, with maisonettes on the fifth and ninth floors. The roof is laid out as a viewing platform and may also have a restaurant. South and east of the tower, arranged in squares and culs-de-sac, are 2-storey blocks of flats and houses, which can also be approached from Tenyson Road or by footpath from Station Road.

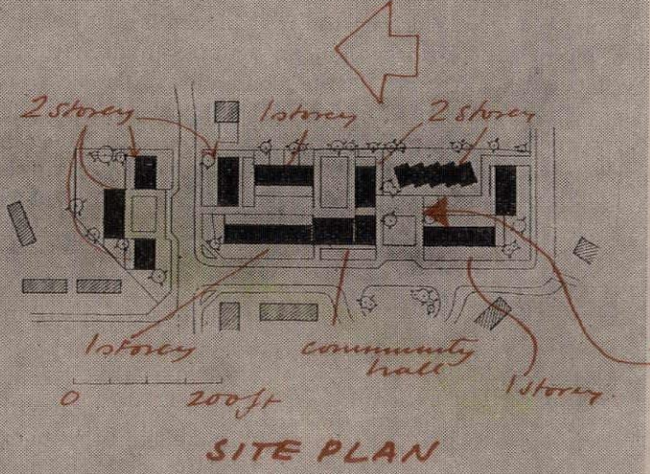
The tower has a reinforced concrete frame faced with stone or a stone-aggregate rendering and largely filled in with glazed screens. The smaller block are of brick cross-wall construction with a reinforced concrete first floor, timber roof and variously clad infillings including tile-hanging.

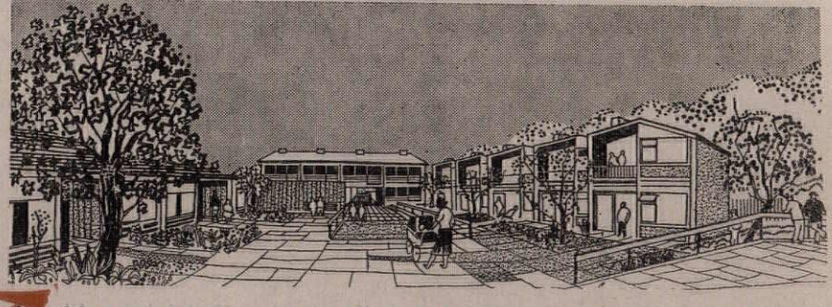
OLD PEOPLE'S HOUSING: CRAWLEY

J. M. Austin-Smith and Partners

On a site of about two acres sloping down over 400 ft. from south to north. 58 dwellings are provided, consisting of bedroom, living-room, kitchen and bathroom, in 1- and 2-storey blocks. A community room will be built later. Construction will begin this spring.

To create a self-contained atmosphere and to exploit the existing slope, the dwellings have been grouped to form a series of inter-related open courts at contrasting levels. The original path across the site has been kept to allow access through the site (and interest for





the old people) to the surrounding population. The flats in the 2-storey blocks have a bed recess off the living-room, this additional area being encouraged by the Ministry of Housing's method of subsidy.

The structure consists of cross-walls with 11 in. cavity 4½in. load-bearing walls. Staircases and upper floors are in precast concrete. The low-pitched roofs are covered with aluminium. Cladding on front and rear elevations is Douglas Fir weatherboarding. It is hoped that an all-electric floor-heating system may be possible if running costs can be kept commensurate with the present pensions.

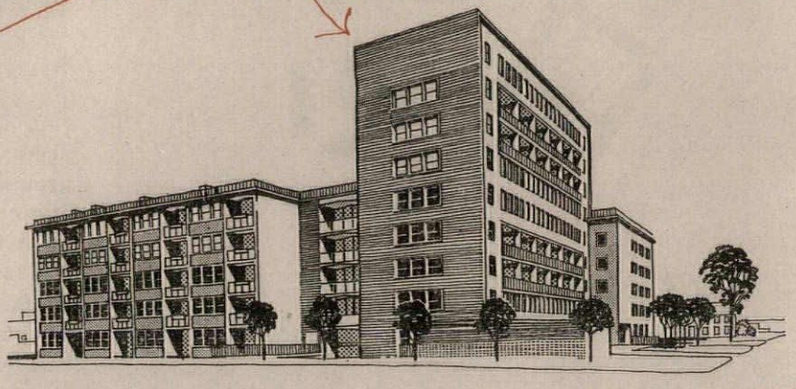
Partner in charge: Geoffrey Salmon. Quantity surveyors: Young and Brown.

FLATS AND MAISONETTES: ISLE OF DOGS, LONDON

Louis de Soissons, Peacock, Hodges and Robertson

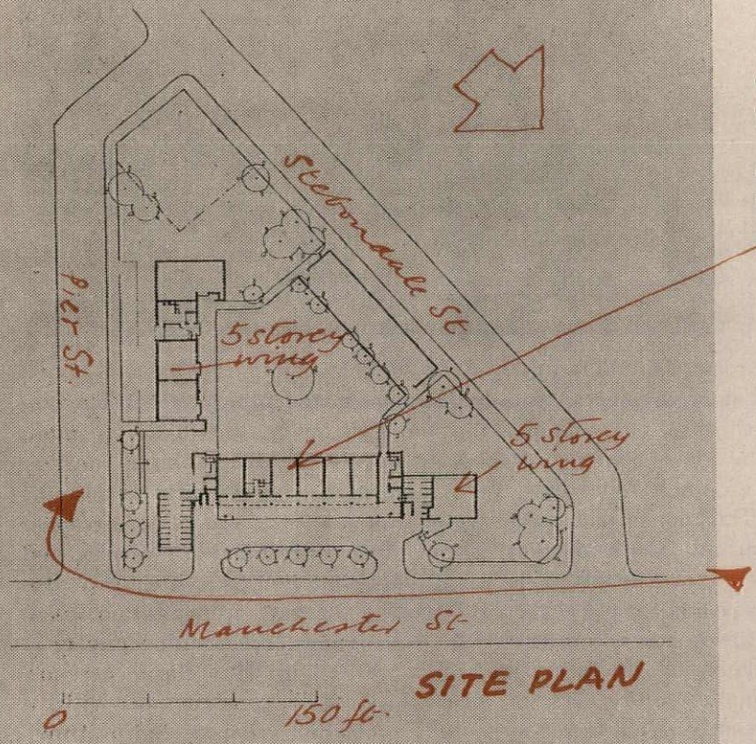
Fifty-five dwellings for the Isle of Dogs Building Society. The site, of approximately 1½ acres, is at the corner of Pier Street and Manchester Street. No starting date has yet been fixed.

The central 9-storey block, planned with a staircase and lift at each end, has six bed-sitting room flats on the ground floor and on the upper floors twenty-four two-bedroom maisonettes. The two 5-storey



wings contain sixteen one-bedroom flats, five 3-bedroom flats and four 4-bedroom flats. Gas-heated drying cabinets are provided in drying-rooms opening off the staircases: one to every seven flats. At ground-floor level there are twenty-seven pram sheds accessible both from the street and under cover from the staircase halls.

The construction of both blocks is a reinforced concrete frame with concrete cross-walls. Facing materials are buff-coloured facing bricks and mineralite rendering.



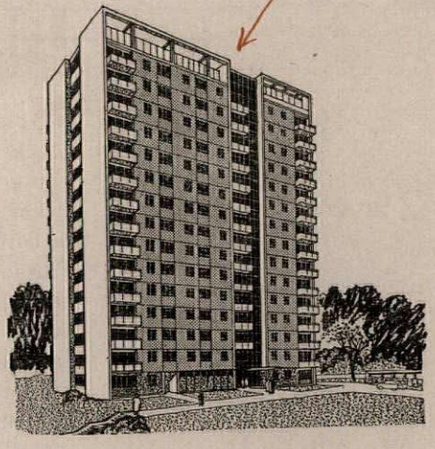
SITE PLAN

FLATS, HOUSES, ETC.: BIRMINGHAM

A. G. Sheppard Fidler (City Architect)

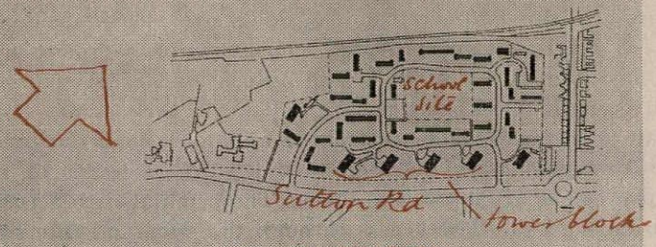
On the Lyndhurst estate, Erdington. The site, of some 37½ acres, contained 19 Victorian houses together with some back land between their gardens and the railway. The widening of the road and the provision of sites for a primary school, old people's home, shopping centre, club, pub and open space left 25 acres for housing, on which 740 dwellings are planned. Work on the first blocks is just beginning.

There is a mixture of 2-storey houses, 4-storey maisonettes, and multi-storey flats, with a few old people's bungalows. The flats are in tower blocks, including one of 15 storeys, the tallest in Birmingham. It stands on a plateau on the southern end of the site. The others, of 11 storeys, are spaced along the Sutton Road frontage. All tower blocks are identical in plan, with six dwellings per floor. Two 2-bedroom penthouse flats occupy the roof of each block with a screened drying area for tenants. Bathrooms are internal.

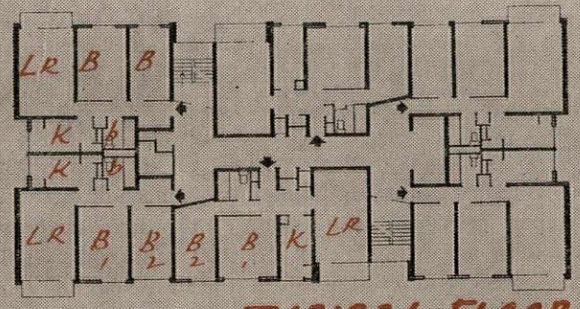


The flats are of concrete frame construction with infill panels of brick to external flank walls and no-fines concrete to gable walls.

Deputy City Architect: J. R. Sheridan-Shedden. Principal architect (Housing): H. E. Buteux. Group architect: H. H. E. Lea.



SITE PLAN



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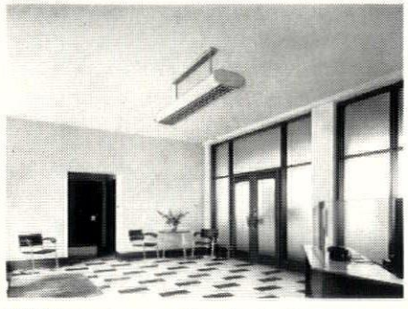





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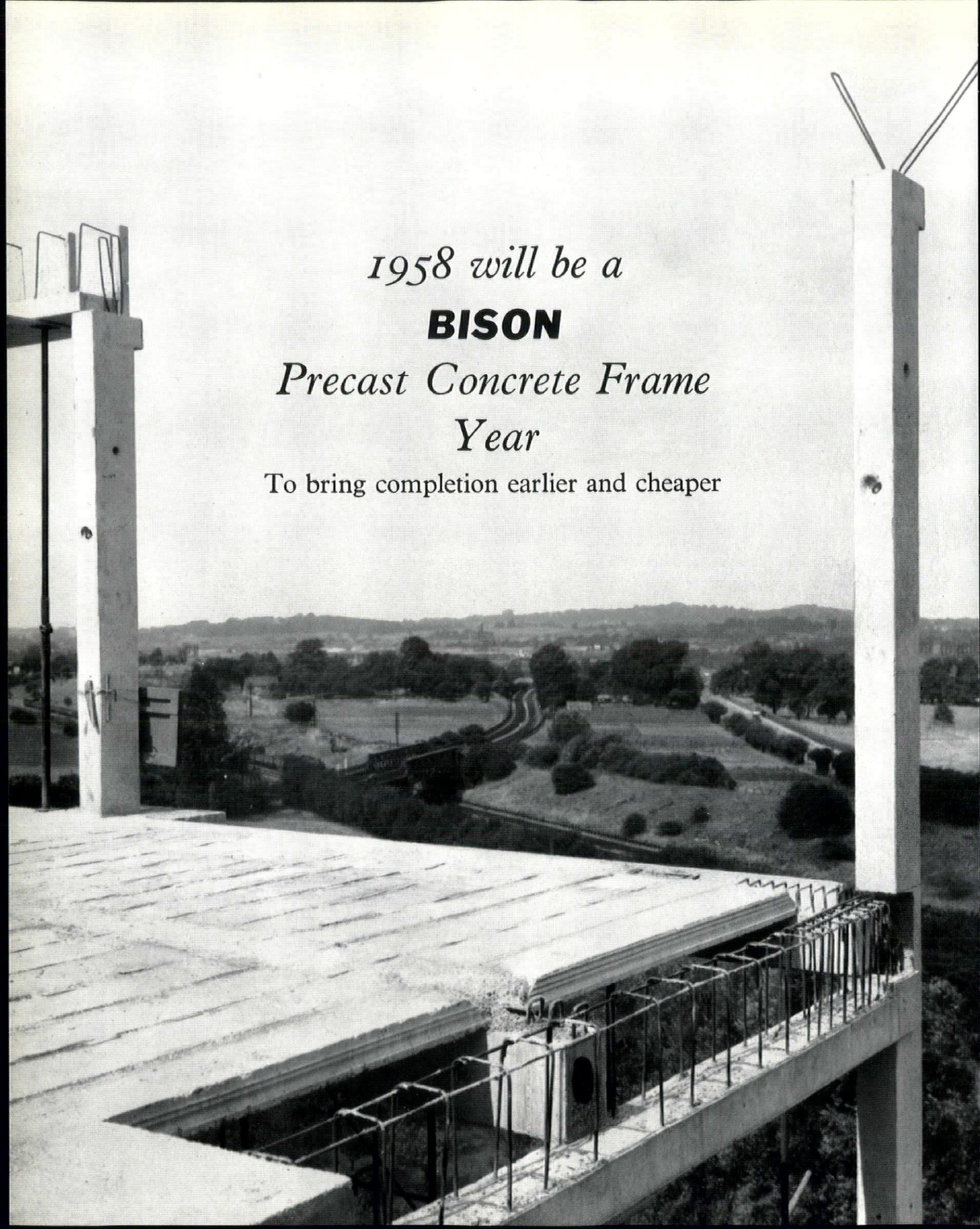
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COUNTER-ATTACK

1 OLD POOLE

The old town of Poole is virtually an island some 200 *acres in extent. Its land connections to the NE are restricted to two level crossings and a a bridge links it to the mainland to the SW.* As a port, in the days before modern deep draught vessels, it enjoyed a monopoly of trade to Newfoundland and the Channel Islands and it is this prosperity which has been responsible for the numerous sturdy and gracious eighteenth-century houses and public buildings which form the backbone of the structure of the town.

With the decline of ocean-going shipping in the nineteenth century and the expansion of the South Coast as a residential area, Poole developed a new and industrial character. At this time much of the eighteenth-century residential pattern of terraces with large gardens was destroyed by the building of workers' houses in their gardens, thus creating slum conditions.

Today new industries are developing, and we can see a pattern in which the island, isolated to some extent by the railway from the main bulk of the population, is encircled by industry at the salt water perimeter, its diameter being the High Street, the shopping street. On either side of this are residential pockets, now abandoned by many of the old families for the less compromised avenues and drives of Parkstone and Branksome.

The undoubted tendency is for Old Poole to change its character and use. On the one hand an increasing industrialization of the area at the expense of houses is threatened, and secondly the construction of new shopping areas outside the old town and on the heavily populated side of the level crossings is putting the shopping centre in jeopardy.

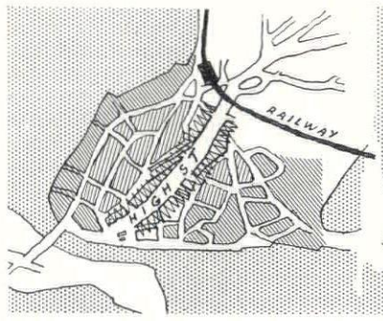
At this point in the town's history the County Planning Officer of Dorset stepped in with a development plan for Poole Old Town. And a very good plan it is too. May it bear comment?

Briefly the plan aims to halt the decay and slow death of the old town and to pump back life into the town centre. The comment we make here is based not on this principle but on the technique of achieving the ends. The question is: will it achieve them?

The official plan proposes to get vehicular access to Old Poole by the construction of a new bridge over the railway and from thence a new road to link with the old bridge to the mainland at the south-west.

1, *the town centre today showing the railway cutting off the town from the main centre of population inland.* 2, *diagrammatic sketch of the County Planning officer's proposals.*

1



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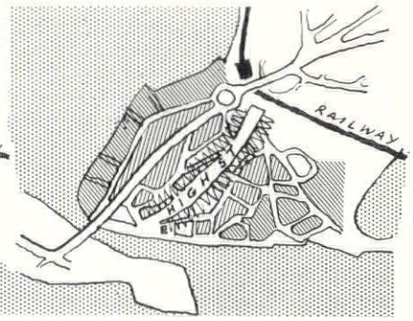

INDUSTRY. *At one end of Poole is a gas works,* 3, *and dominating the other is the power station,* 4. *In between these two lies a varied assortment of factories, warehouses and light industry.*

3



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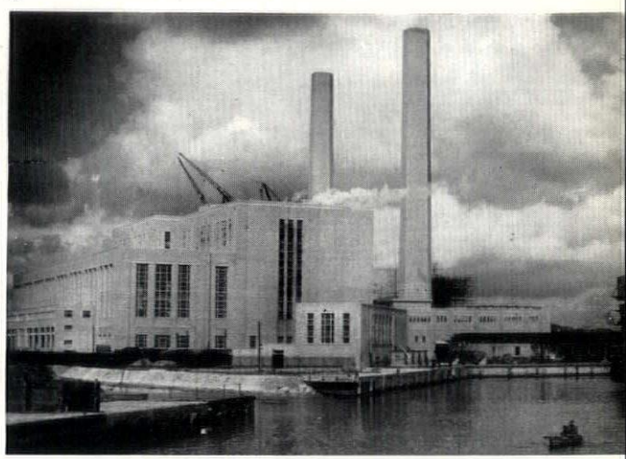
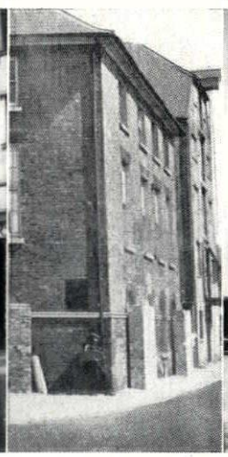


THE QUAY. *Lined with mills, warehouses and public buildings,* 5–7, *the quay at Poole has a simple, unpretentious and businesslike quality enlivened by eighteenth-century gems such as the Customs House.*

5



6



7



SHOPPING. 8, *a shopping street in the old town showing its character of concentration and business.* 9, *a new shopping 'centre' and bus station combined just outside the old town.*

8

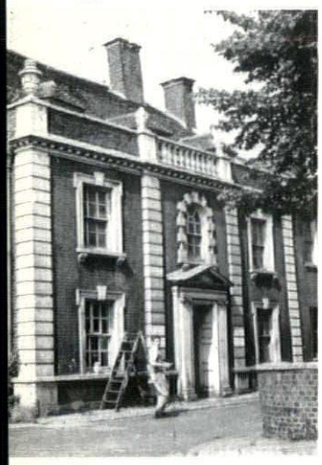


9



HOUSING. 10–12, *typical views of eighteenth- and early nineteenth-century houses and streets in Old Poole.*

10



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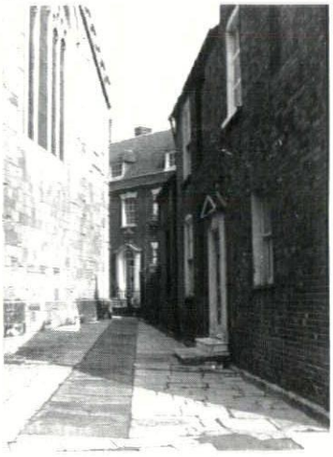

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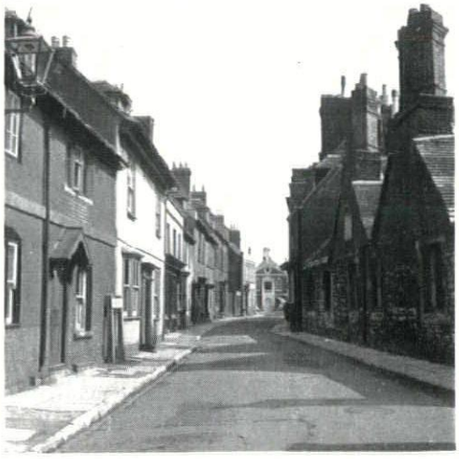
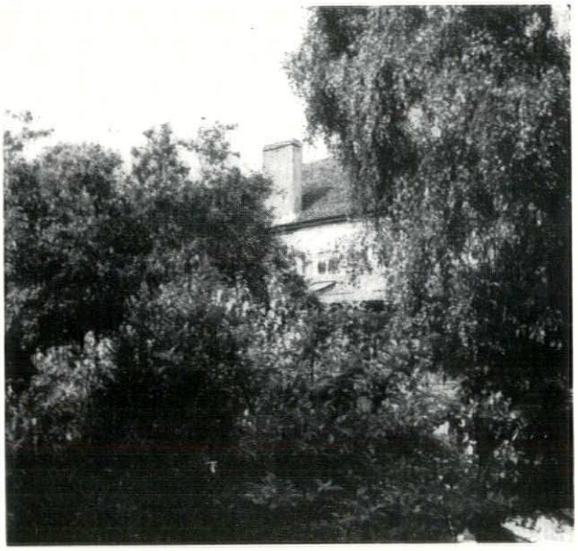


GARDENS. *The few existing old walled gardens,* 13 *and* 14, *should be the model for the new development.*

13



14

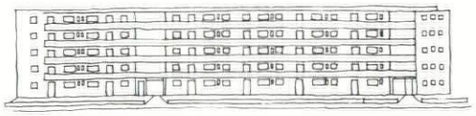


THE NEW POOLE. 15, *an imaginary drawing showing the sort of character which could be achieved by a concentration of activities: the busy shopping street beyond which lies a rehabilitated (not refrigerated) residential area and beyond that, across the water, industry.*

15



This new road is to carry short-distance through traffic and will not be a service or development road. It will feed the High Street and the island. The High Street is to become a shopping precinct and through traffic will be eliminated by permanently blocking the existing level crossing. Rehousing of workers is encouraged for those with jobs locally and a wholesale



Elevation of proposed new flats.

clearance of back gardens will open up the many listed buildings and houses to form a garden precinct.

The basic idea of regenerating Old Poole is admirable, but the plan as proposed—particularly the antiquarian precinct and the proposed reduction of population on the island—might in fact have the opposite effect. Old Poole would become a museum piece instead of a living entity. This however could be prevented by a very slight shift of emphasis.

A certain amount of industry—roughly what is there already—has to be around Poole Quay. It can approximately be served, as it is now, by people living on the island. Any reduction in population and increase in industry will create a pattern like London in miniature of long journeys to work and congested roads.

The people on the island enjoy living there: enjoy the sense of belonging to somewhere with character, and the nearness of the shops, work and quayside. If the slum property was improved or replaced they would enjoy it much more. If the slums were cleared and the back gardens recreated (some of them still remain, e.g. the Rectory garden) the proposed precinct would be part of a live town, not something carefully preserved but sterile. The houses which would have to come down could easily be replaced by terrace family houses instead of flats. Extra industry, unless it had to be near the quay, could do as the Loewy factory has done, and be dispersed throughout the rest of the borough close to its workpeople. By this means new centres could be created which could in time and with care be just as individual as Old Poole is now.

At the same time what draws the tourists to Poole is firstly the Quayside and secondly the unique character of the shops they pass on the way there. To close the High Street to motor traffic might well stop the tourist trade; surely once one through bridge has been built there is no need to close *both* level crossings. Similarly, the need for shops is not north of the railway but south of it.

Gordon Cullen

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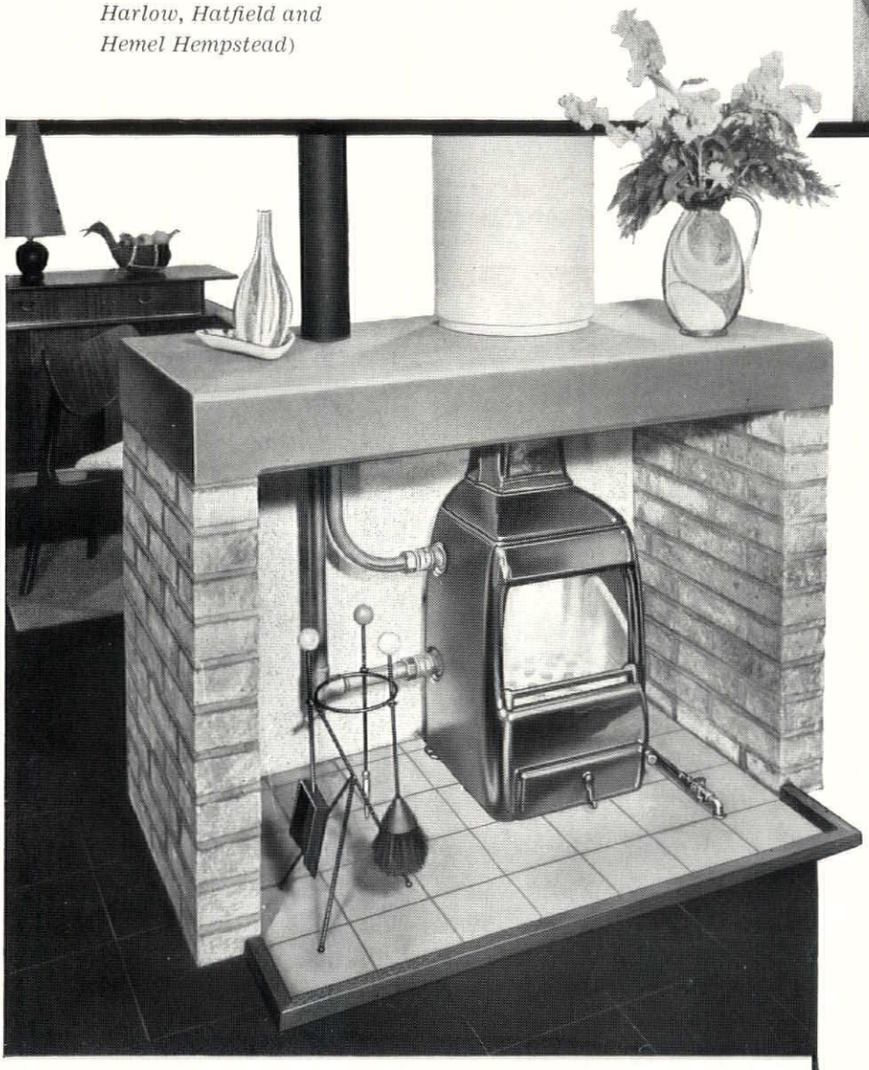

The illustration shows how effectively the Parkray 2 smoke-consuming convector fire can be used to divide living and dining areas in a modern, open-plan room.
The design makes the most of the free flow of convected warm air which supplements radiant heat from the open fire and also flows through a vent at the back of the fireplace to warm the dining area.
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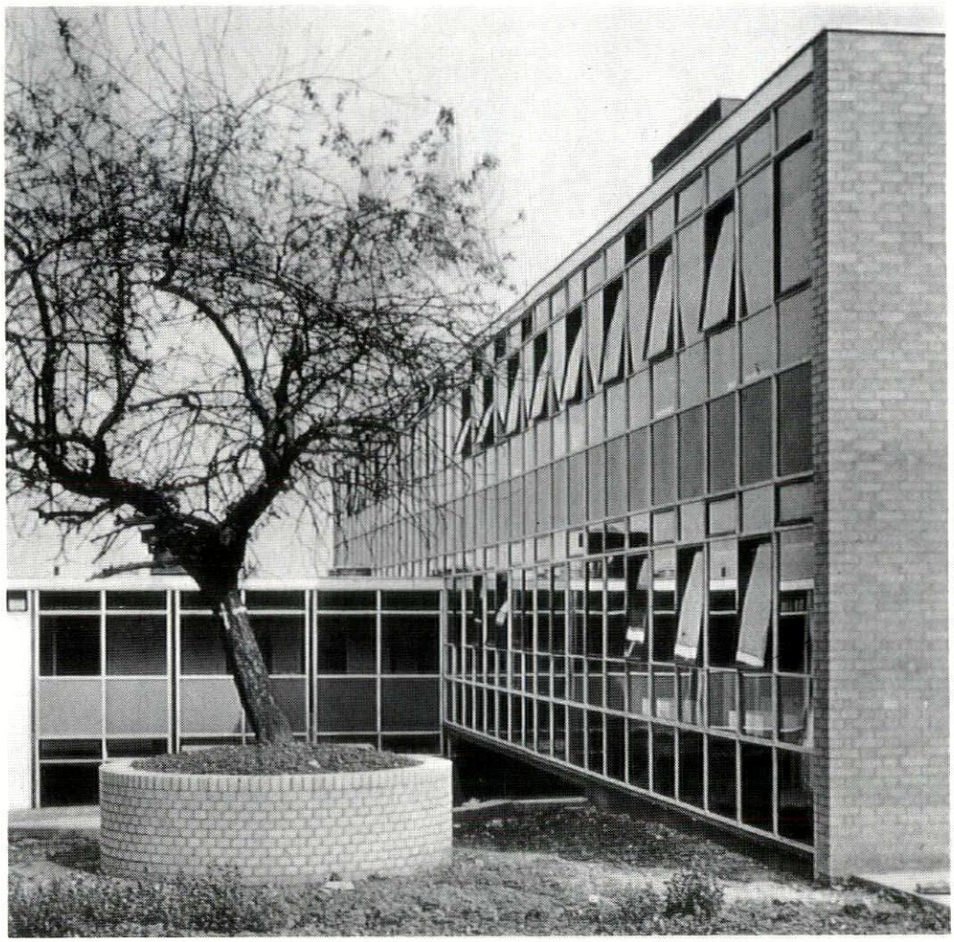

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2 ROAD IMPROVEMENTS

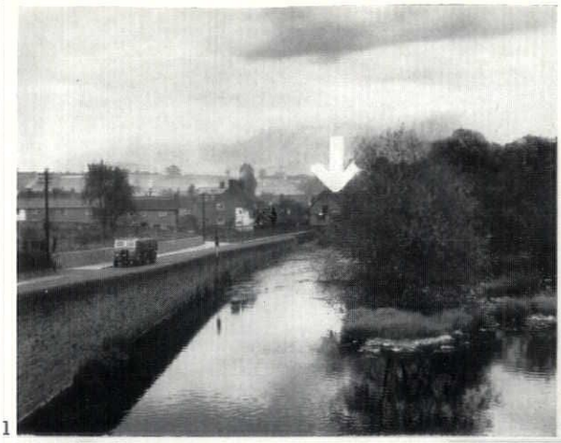
Gordon Cullen's article in the December REVIEW *applied to street lighting what might be called the only rule of the Counter-Attack Bureau: that places alter circumstances, and that what may be admirable in one place may be impossible in another.* Here are a set of cases about road improvements, a subject similarly bedevilled by rule-of-thumb solutions. In this case the automatic reaction is to widen and simplify, without noticing first that a number of alternative solutions are possible and second that traffic flow is not always the greatest need, even in road engineer's terms; for example declining towns may need more traffic moving more slowly, provided that they don't thereby become national bottlenecks. National and local traffic needs and solutions are entirely different things. Obviously, Rochester and Staines Bridge and Warrington must be by-passed; but equally there is no need to rebuild Louth or Norwich so that local traffic can get home five minutes earlier. A relief road is essential through Christchurch Meadows, Oxford, but would be fatal through Westgate Fields, Chichester—and so on. The following cases exemplify the technique. Once you love your town—as did the Viennese street lighting engineer in the December AR (page 293)—the result is easy; but as there's little love lost in local government these days, in any sense, the technique will have to do in lieu.

First, the case where in principle the Ministry of Transport is right and the preservationists wrong—at *Ludlow*, *Salop*, where the outcry is against a proposed new bridge, 1 (site arrowed on photograph), to duplicate the mediaeval Ludford Bridge* 200 yards downstream of it, combined with widening at the top of the market place where ten feet off the Tolsey (a moderate c15 timber-framed building) is needed to overcome an undoubted bottleneck caused by a crossroads at the top of a 1 in 7 slope both ways, 2. Traffic north to south on A49 is moderate and steady—South Wales to Lancashire—there is no effective one-way route and a by-pass, unlikely anyway, would most likely run west of the town and remove the unique relationship with the hills beyond. If the crossroads were sealed off by blocking both side roads, the change could benefit both town and traffic. The centre would be permanently saved from explosion—and as it is a local market there is no fear that trade will go elsewhere, which is just the opposite case to that of Old Poole, while pedestrians could use King Street, 3, in safety.

Yet the County Surveyor and the MOT are taking several ells where they only need a few feet, for they now propose to demolish the *whole* of the Tolsey, 'tracing the outline after demolition on the road in some contrasting material.' Half of a half-timber house with a glass wall across the end to show the structure could be something to see; the 'outline traced in some contrasting material' is a pathetic gesture to misunderstood amenity that will deserve the sneers it is likely to receive in Ludlow.

At Ludlow all of the town that matters is to one side of the through road; at **Louth, Lincs,** it isn't; a different problem, hence a different solution, and one not to be found by looking up a reference in a book of standards. The traffic problem is similar to Ludlow's in a smaller degree: steady through traffic along A16 in and out of Grimsby, which probably will be relieved by the new flyover over Lincoln's notorious level crossings which will reroute the traffic clear of Louth. There is also very sporadic heavy east-to-west

*If a replacement isn't forthcoming soon it will decide the issue on its own account through being knocked into the Teme by a passing lorry.



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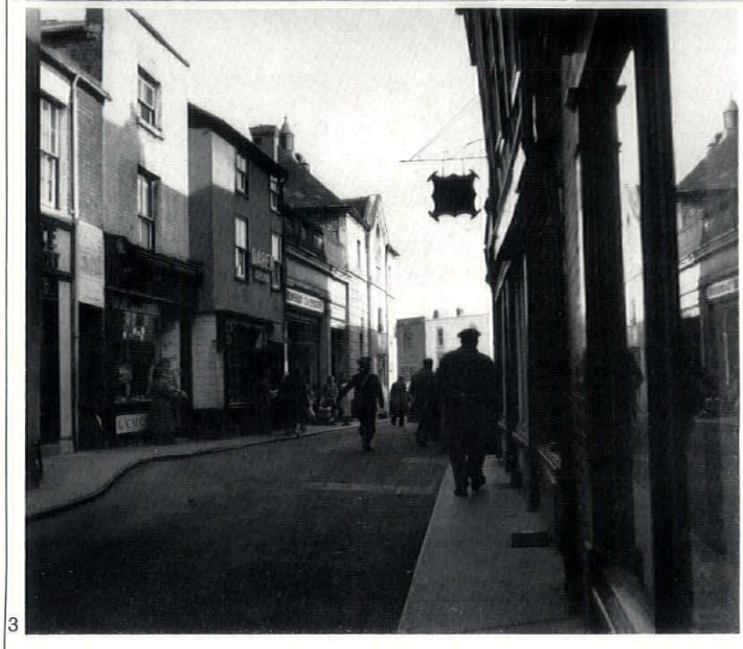

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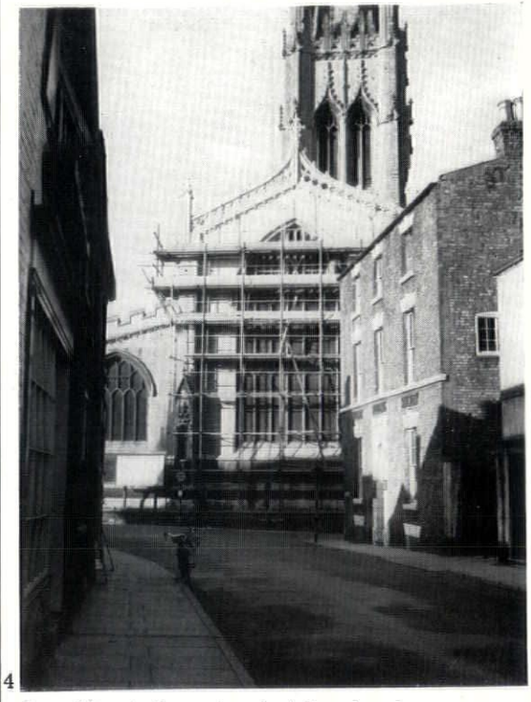
Ludlow: 1, *the Teme downstream of Ludford Bridge. The view is taken from the parapet of the bridge and the arrow shows the approximate site of the proposed new bridge.* 2, *the central crossroads looking up one of the* 1*-in-*7 *slopes; Tolsey on the left.* 3, *King Street with its inadequate pavements; if it were closed to through traffic pedestrians could use it in comfort.*



4

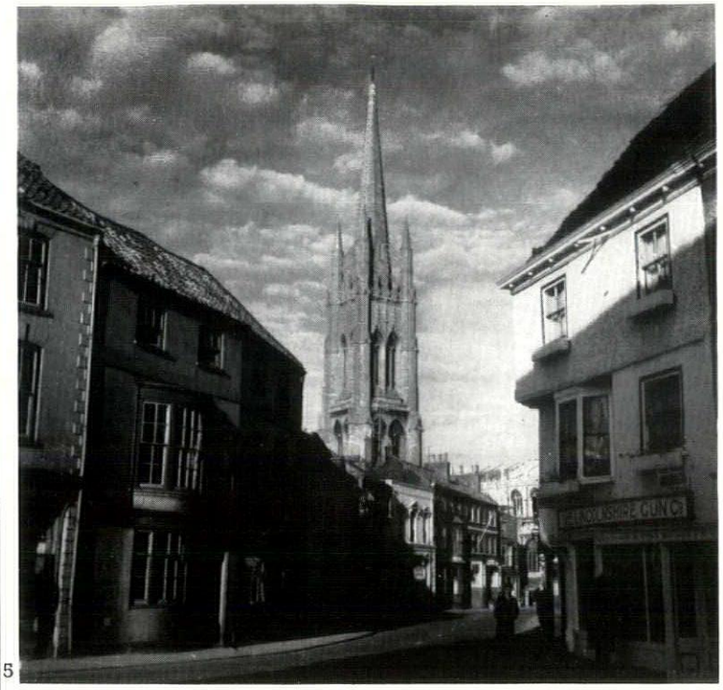
Louth: 4, *the east end of the church seen from the town centre. The proposed dual carriageway would run across the foreground.*

traffic to Skegness. The Ministry of Transport proposal includes, though it is difficult to credit, a 74-ft. carriageway which would cut off the church, 4, and the best street of Louth—Westgate—from the rest of the town. Clearly, that is inadmissible. Clearly also, if two big lorries meet in today's Upgate, 5, they block it. The solution is one-way working in the centre, with south-to-north traffic going through Upgate and north-to-south traffic running by the station, where an alternative road is all but ready, 6. The one-way sections can be very short, to ease local traffic problems, with a psychological diversion on to the alternative at the north end, by arranging differing angles of join. The holiday traffic can be dealt with by partial diversion and special one-day arrangements as used in south-east England last summer. This threat is in its early stages and fortunately the residents are determined to oppose it.

In these two cases the Class I and II road system—and hence the Ministry of Transport—is involved. In fact the worst results often occur when local officials apply the national standards out of hand to small-scale problems; just as the worst street lighting results are produced by borough engineers mesmerized by the recommended lighting heights. At **Stoke Ferry, Norfolk,** A134 carries little traffic, like the other South Norfolk roads, and south-east of the village there is a ten-mile fast stretch to Brandon. The centre of Stoke Ferry is simply a T-shaped road junction, 7, and the building on the corner (arrowed) is due to come down. In fact this bottleneck is the only thing which prevents traffic roaring through the village, having been given its head in the open country around. What it needs is to be reinforced, not removed, otherwise road safety will be reduced, not increased: the maps 8 and 9, show what is needed, incidentally illustrating the point that the local layout rather than the MOT grading should sometimes dictate which road should have priority. In fact there is almost as much traffic turning down Wretton road to the sugar beet factory at Wissington as runs straight through on the main road. With this solution there might also be some hope of making a town centre out of Stoke Ferry's bedraggled small market place.

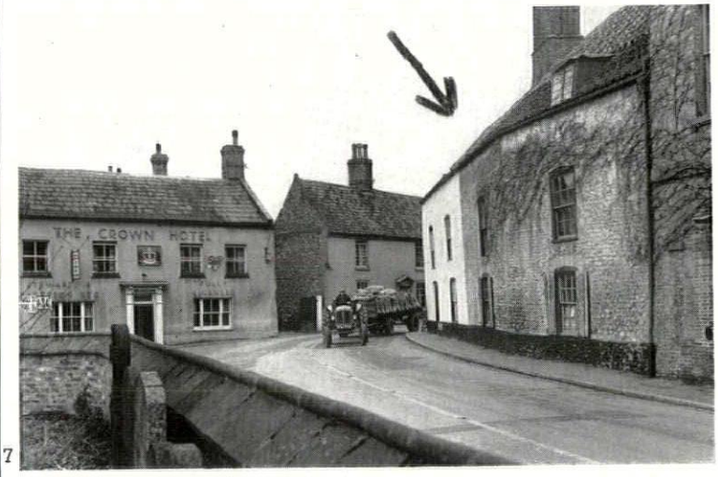
Finally, the motor car is not an evil in itself. This might seem not worth saying were it not for the implications of the proposals for **Poole, Dorset,** described in more detail by Gordon Cullen on page 77. Visitors go to see the Quay via the High Street and they go by car. To make the High Street into a pedestrian precinct will simply sterilize it and make it impossible to regenerate except as a mixture of industrial zone and museum. It wants all the cars it can get, and as few restrictions on them as possible; car parking where you like as long as you like.

Cars are there to be used, and not only by their owners as means of transport, but by the town planners as a psychological aid in town making. If there's a traffic block you start noticing the shops, which is what the town-maker wants; if you go into a precinct you get such a fright in the way of road surfaces and widths that you aren't likely to go back on wheels, and so on. It is up to you; not compulsion but a rational choice, a quality which we used to be proud to call British. If there is no choice—Queensferry, the Aust ferry, Notting Hill Gate—then clearly wholesale replacement and improvement is the only solution. But very few cases are as bad as this, and until they get to this state the possibilities are endless. **Ian Nairn**

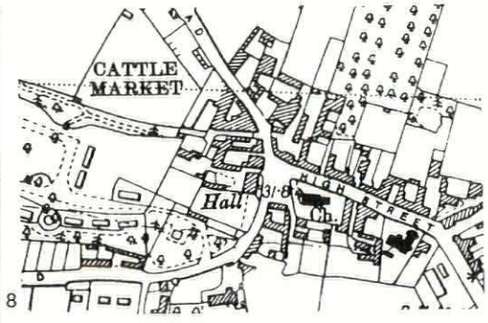


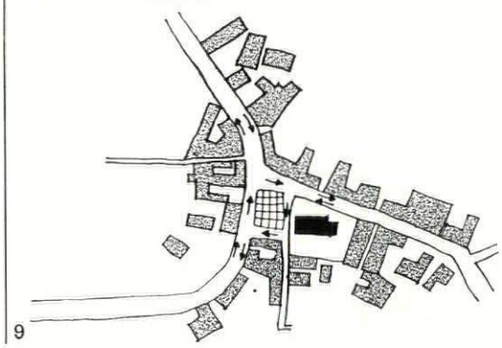


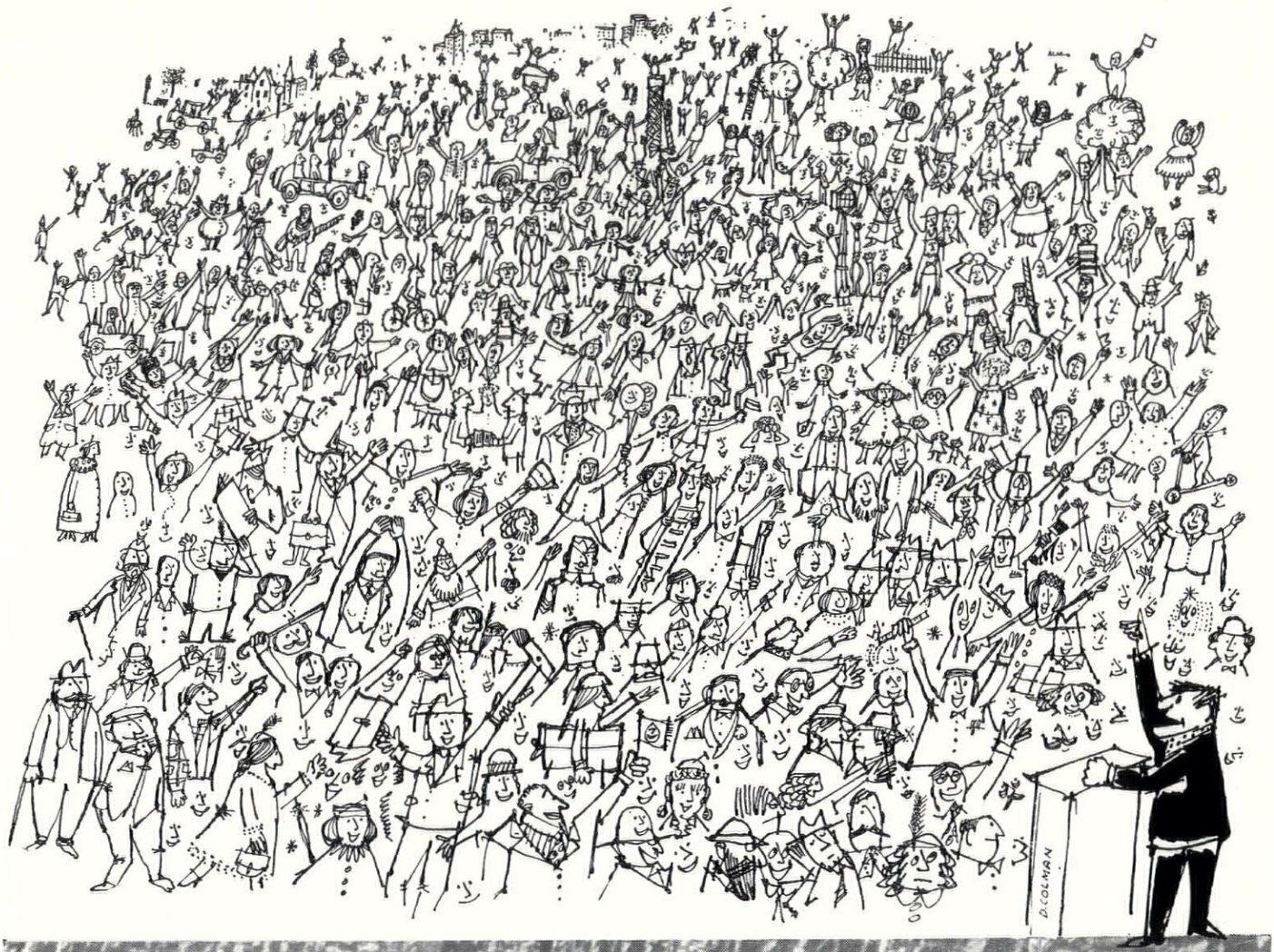
Louth cont.: *5, Upgate today: obviously too narrow for a double line of heavy traffic. 6, part of the new road north of the station which only needs joining up with A16 (about ¼ mile) to provide an inner relief road.*



Stoke Ferry: *7, the centre of the small town. The arrowed building is to be demolished. 8, plan of the town centre as it is. 9, the town centre as it could be if road safety were increased by slowing up the traffic, not accelerating it; the central island acts not as a roundabout but as a tiny town square.*







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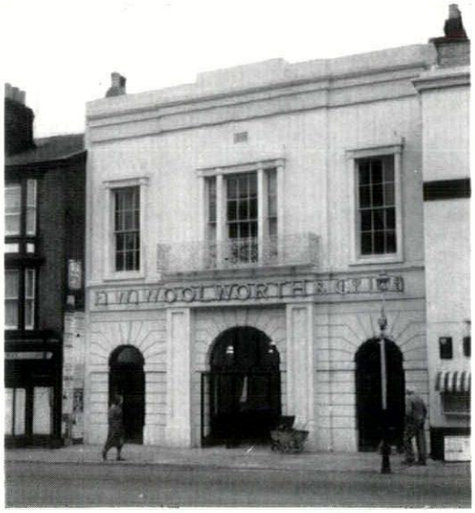

1

39. Honiton, Devon (*Area Planning Office*). Planning control so often fails that it is a pleasure to report such a resounding success as this. Woolworth's took over Honiton's Grecian Corn Exchange, and the planning authority made a condition that the front wasn't to be altered. The result is completely successful from the town's point of view, 1, and just as much of an advertisement for Woolworth's as their more familiar treatment. *When* the system works—or is made to work by efforts of local officers—it can work very well indeed.

40. Hampstead, London (*Borough Council*). Hampstead is about to consider the design of a Civic Centre on a large block to the east of Swiss Cottage, a project which could be the most important British public building since the Festival Hall. It is feared that the architect may be decided in committee and that the architecture may be Neo Georgian. Surely this is a case for either an open competition—which might well attract an international entry—or a short list of widely differing designs on which the whole borough could vote (there is no question in Hampstead of public apathy about architecture).

If the design is to 'keep in keeping' with the surroundings there is no possible alternative to a modern design, because all of the buildings around the site have been designed in the most modern style of their time, whatever their intrinsic merit. The series starts with the Swiss Cottage itself; to the west of the site are the thirties—modern—Odeon, and flats by Robert Atkinson, to the south-west are flats by Louis de Soissons and schools by Edward Mills (AR, January, 1954) and to the south are two special schools by the LCC (AR, January, 1957) which are models of sensitive and up-to-date design.



2

41. SOS: Heath near Wakefield, Yorks W.R. Heath, a mile east of Wakefield, is a splendid village fallen on evil days with industrial sprawl. But three fine houses remain—two are Georgian, one by James Paine, 2, and one by Carr of York; the third is a strange Elizabethan house in the same style as Barlborough and Hardwick Hall. If no private owner can be found to keep them up, could a local industrialist or the CEA or NCB take them on as office space or prestige headquarters? At the moment Heath is a desperate oasis in a bleak industrial area: it could be one of the showplaces of the West Riding.

42. The Circus, Bath (*Bath City Council and Ministry of Transport*). A well-known view, 3, with something missing—a Keep Left sign. In this case it is because all approach roads are

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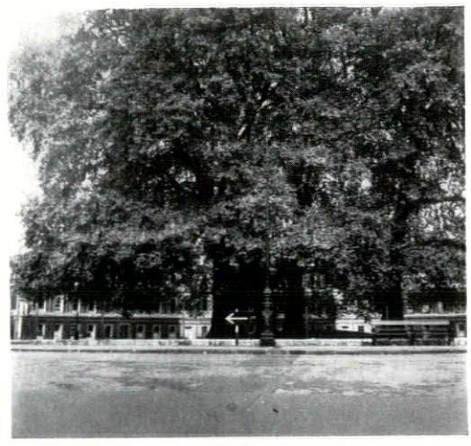

3

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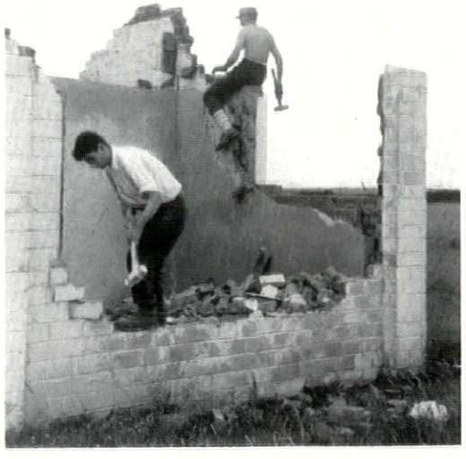
continued from page 82]

equipped with 'Turn Left One Way Only' signs before reaching the Circus; as the approach roads are architecturally less important than the Circus itself, this is a considerable improvement and reflects a lot of credit on the Bath City Engineer for finding a tiny chink of flexibility in our absurdly cumbersome traffic sign legislation. The photograph shows perfectly that an arrow, being a visual instruction, can fit even into an architectural set piece, whilst 'keep left,' being a literary one, gives the viewer no choice; he is back in the world of the form and the memorandum. If the Ministry lawyers are so worried about visual signs, why not bring a test case to see if non-verbal signs are valid?

43. Hampstead, London (*LCC*). Tree felling on the boundary of the newly built Kynaston School was reported to the Bureau; it investigated and found that although this was true everything had been done to make the best of the situation. Peter Shepheard, landscape architect for the school, said that they knew from the start of the scheme that these trees were to be felled for road widening, but he had not expected it to happen so soon. He had tried to persuade the LCC to save them, but without success. He did, however, succeed in getting the LCC to provide £300 to plant extra large trees (30 feet) along the school boundary. A lot of cases do in fact turn out like this and we include it to show what could be called the negative side of the Bureau's fact-finding job.

44. Derelict Camps. As long as the present system for the derequisition of Service buildings continues, with compensation quite inadequate for their clearance, such clearance will rarely be done. Many local authorities, with philosophic lethargy, have taken that as that. This summer, however, Pembrokeshire County Council has set a more vigorous precedent. They accepted the offer of voluntary work made by six Cambridge students, and paid their expenses (travel, food, insurance) in the clearance of a prize eyesore at Soldier's Rock, overlooking Milford Haven and inside the National Park. A dozen buildings were reduced to rubble, thirteen acres of land and a fine view were redeemed for the National Park; the cost to the County Council was £60. The leader of the six, Michael Dower, is now seeking sites all over England for similar treatment next year, and volunteers to do the job. He may be contacted either through Counter-Attack or at 35 Belsize Square, London, NW3.



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45. Kingsdown, Bristol (*City Council*). The character of Kingsdown is unique: an eighteenth-century suburb built vertically instead of horizontally, terraced up a steep hillside with enormous southward views over the whole of the city centre. Some of it is slum and will have to come down; the residents fear that it will come down piecemeal without any overall plan and then be replaced by schemes of flats which will ignore the townscape problem completely. The first step to a true remaking of Kingsdown, which should be in the nature of skin-grafting, not amputation, is a worked-out proposal by the City for the whole area—a supplementary Development Plan—so that the whole area can be discussed by both sides, if necessary at a public inquiry. This overall scheme has been promised but has not yet appeared, and meanwhile the first clearance orders are going forward. There isn't much time left.

46. Fareham, Hants (*Borough Engineer and Architectural Assistant*). A gift of £200 to provide a municipal clock isn't a likely source of visual pleasure in 1957. In fact, that sum produced the delightful example shown here, 5 and 6, designed by P. B. Hollins in the Borough Engineer's office (particularly delightful because it is not just 'good design' *à la* contemporary furniture shops: it has individuality of exactly the same sort as made the local Georgian houses so much better than the pattern books). There was considerable opposition, as a monumental clock was wanted, but the design went forward promoted by the Borough Engineer, K. E. Trask. The clock mounting serves also as a 25-ft. street lamp and was originally intended to have a paved street island and two concrete bollards; the

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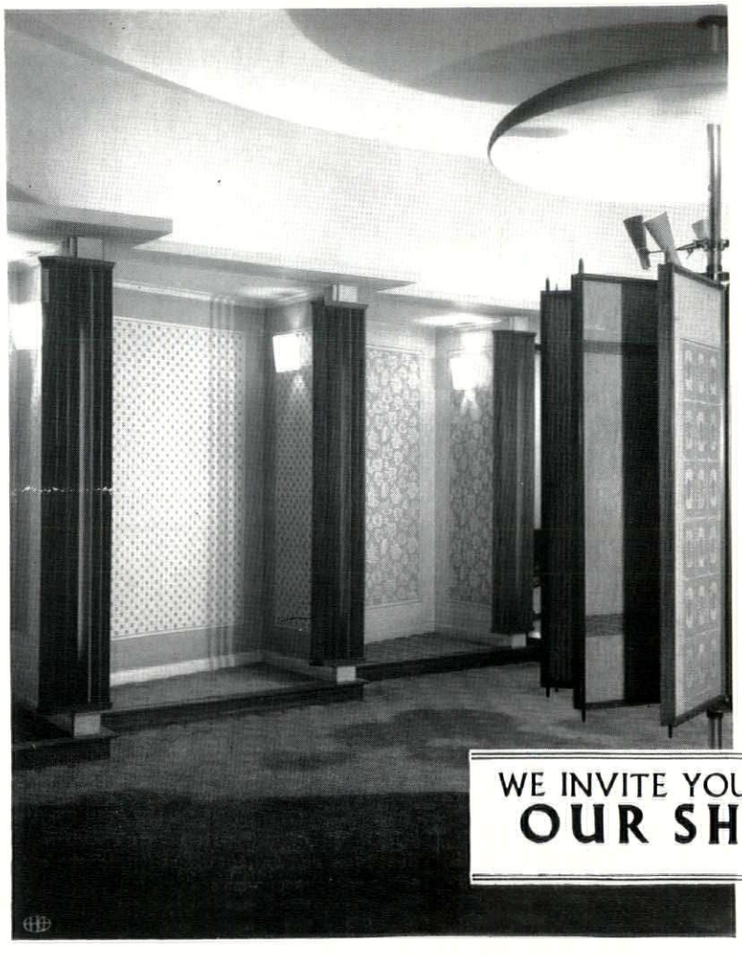

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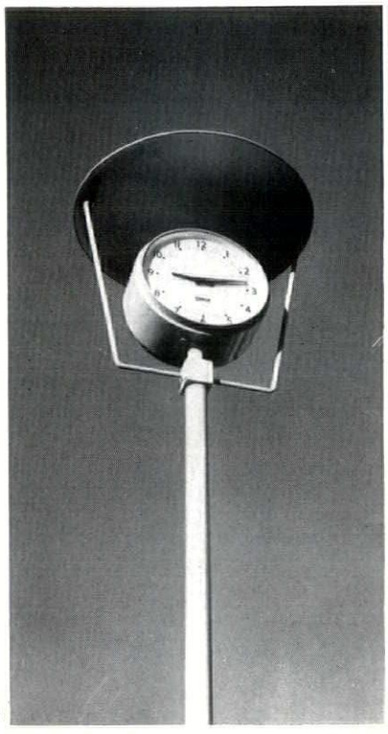
continued from page 84]

Ministry of Transport, however, insisted on the standard street island and bollards.

Another instance of Mr. Trask's handiwork, jointly with the Hampshire County Surveyor, can be seen in the simple but careful detailing of the widening of A27 at the east end of the town; we seem to be forced to malign Borough Engineers so often that we are only too pleased to do the opposite whenever possible.

5 and 6, the new clock in the High Street at Fareham.



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6

CONTRACTORS etc

Telephone Exchange, City of London. *Architect:* Ministry of Works. *General contractors:* Messrs. Terson Ltd.

Town Centre, Stevenage *Architect:* L. G. Vincent. *General contractors:* Harry Neal Ltd.

Church, Midhurst. *Architect:* Guy Morgan and Partners. *General contractors:* Y. J. Lovell & Son. *Sub-contractors: Stone:* Messrs. Stoneman. *Electrical:* A. H. Cornwall & Sons. *Windows:* Luxfer Ltd. *Steelwork:* Boulton & Paul Ltd.

Synagogue, St John's Wood. *Architect:* T. P. Bennett & Son. *General contractors:* A. Roberts & Co. *Reinforcement:* G.K.N. Reinforcements Ltd. *Heating and ventilation:* Rosser & Russell Ltd. *Facing bricks:* H. J. Greenhams Ltd.

Offices, City of London. *Architects:* T. P. Bennett & Son. *General contractors:* Sir Robert McAlpine & Son. *Sub-contractors: Lifts:* Otis Elevator Co. *Heating and ventilation:* Matthew Hall & Co. *Electricity:* Matthew Hall & Co. *Granite facing:* Cooper Wettern Co. *Portland stone:* Bath & Portland Stone Firms Ltd. *Facing bricks:* Henry J. Greenham (1929) Ltd.

Offices, Knightsbridge. *Architect:* Guy Morgan. *General contractors:* Taylor Woodrow (Constn.) Ltd. *Sub-contractors: Heating and plumbing:* Ellis (Kensington) Ltd. *Electrical:* Troughton & Young Ltd. *Lifts:* Otis Elevator Ltd. *Windows:* Crittall Ltd. *Granite:* Fenning & Co.; Anselm Odling & Co.; Brookes Ltd. *Portland stone, sprinklers, drenchers and steel roller:* Portland Stone Co. *Shutters:* Mather & Platt Ltd.

Offices, Manchester. *Architect:* Ministry of Works. *General contractors:* J. Gerrard & Sons. *Sub-contractors: Portland stone:* South Western Stone Co. *Metal windows and doors:* George Wragge. *Terrazzo:* Hulme & Potts. *Asphalt floors:* Davies Bros. *Glazed walling:* Proderite Ltd. *Felt roofing:* Limmer & Trinidad Co. *Steelwork:* Peers Ltd.

Builders' Offices, Crawley. *Architect:* Edward D. Mills. *General contractors:* James Longley & Co.

St. Peter's Square, Manchester. *Architect:* Arthur Bailey. *General contractors:* H. Fairweather & Co. *Sub-contractors: Heating, hot water and ventilation:* Rosser & Russell Ltd. *Metal windows, pavement and roof lights:* Luxfer Ltd. *Stonework:* William Moss & Sons. *Lifts:* J. & E. Hall Ltd. *Fire protection:* Atlas Sprinkler Co. *Piling:* The Cementation Co. *Electrical installations:* Troughton & Young Ltd. *Asphalt:* The General Asphalte Co. *Terrazzo:* Conways (Tiles & Terrazzo) Ltd. *Collapsible gate:* Roller Shutters Ltd. *Copper slots and cramps:* G. Harrison & Son. *Lightning conductors:* J. W. Gray & Son. *Artificial stone:* Girlings Ferro-Concrete Co. *Car turntables:* Francis Theakston (1933) Ltd. *Wrot iron work:* Broakes & Co. (1925); Culford Art Metal Co. *Sanitary fittings:* John Bolding & Son.

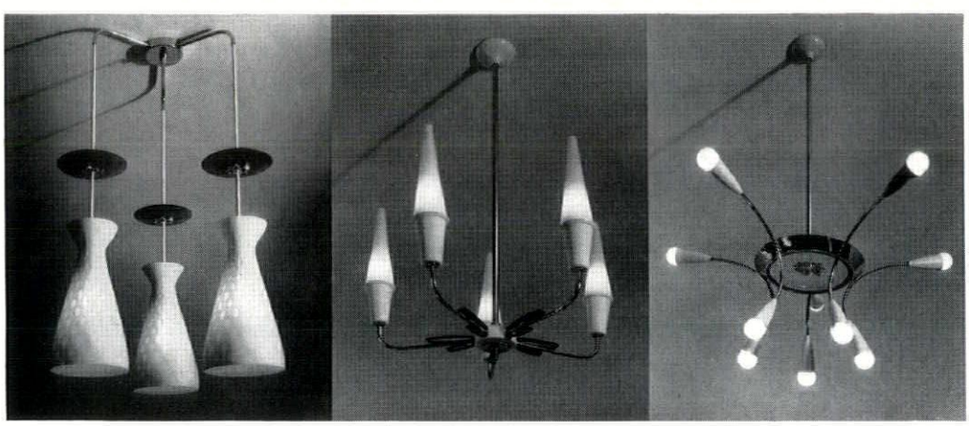
Stores, Bexleyheath. *Architect:* Arthur Bailey. *Contractor for foundations:* J. Gerrard & Sons. *Steel construction:* Redpath Brown & Co.

Colliery, Blyth. *Architects:* Watson and Coates. *General contractors:* Holland, Hannen & Cubbitt.

Physics Building, Liverpool. *Architect:* Basil Spence. *General contractors:* Holland, Hannen & Cubitt Ltd.

Correction

John Crosley and Sons were omitted from the contractors to the House at Beaulieu, AR, October, 1957; they supplied the carpets, which were dyed specially.



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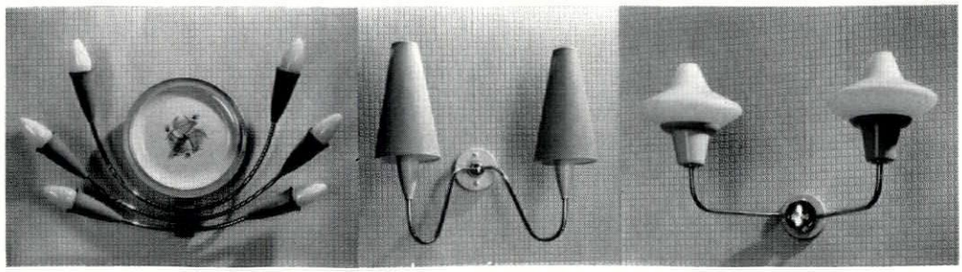

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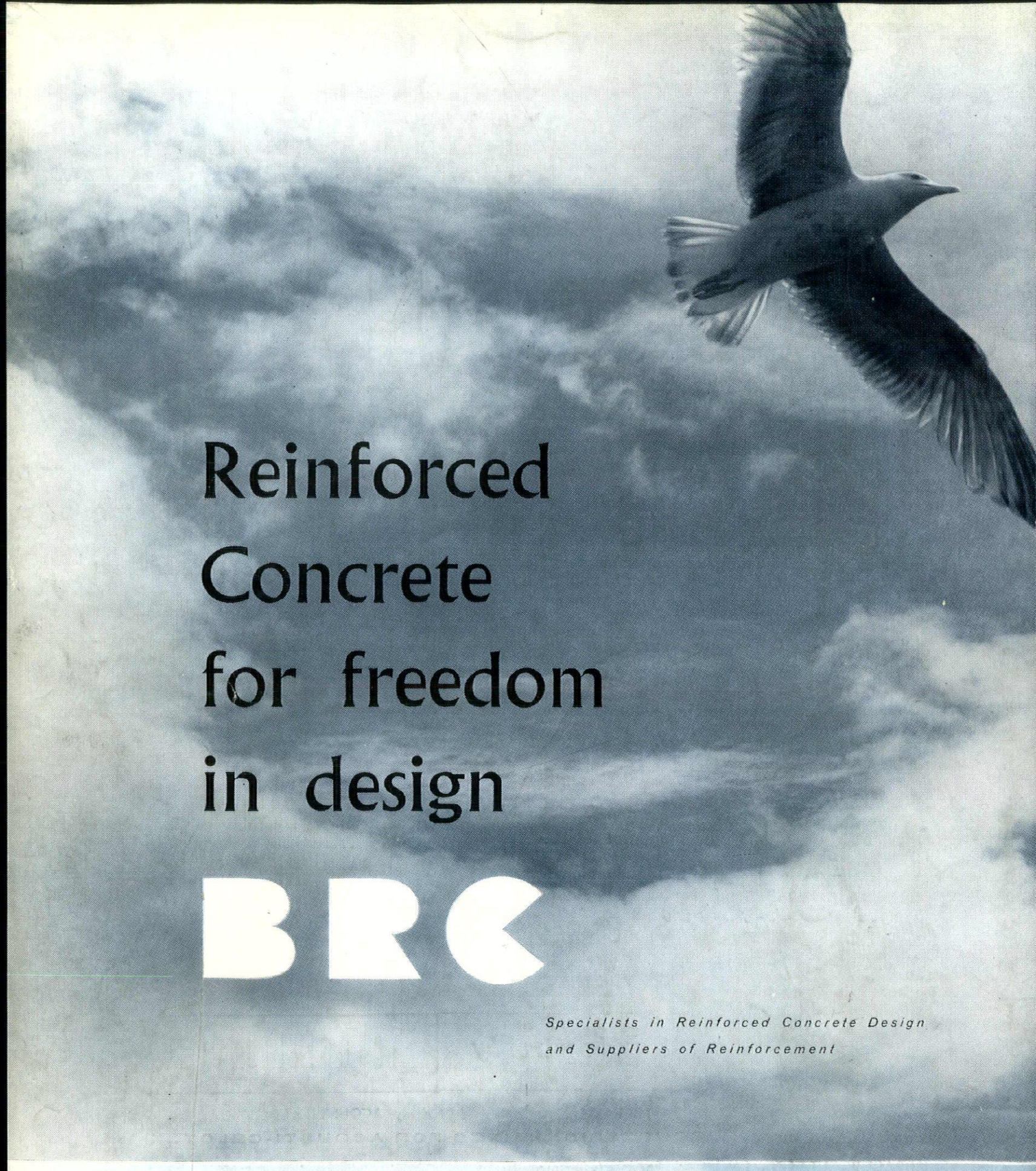

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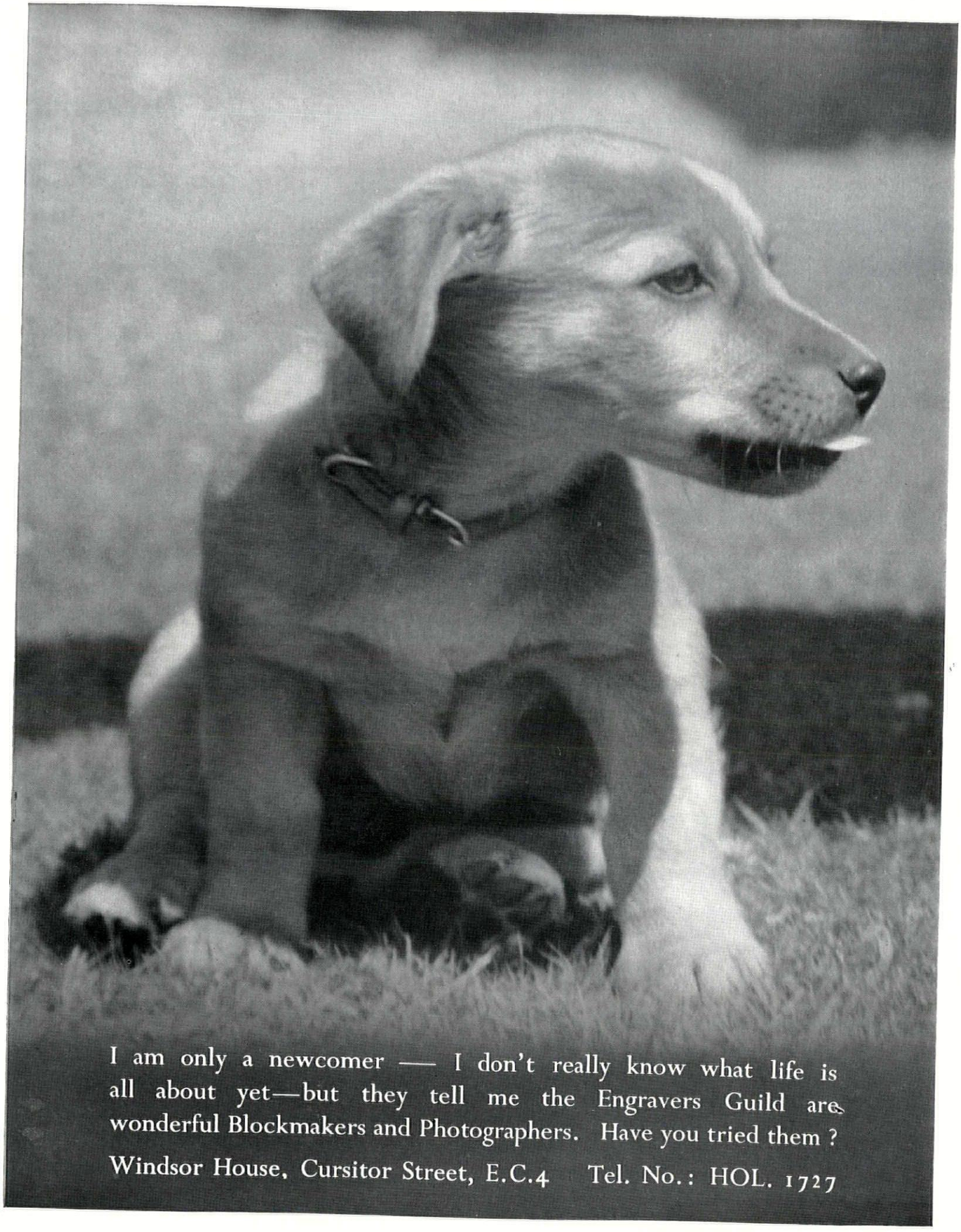
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MARGINALIA

Adam Restored

The process of recovering, or restoring, the original Adam interiors of Home House in Portman Square, London (now occupied by the Courtauld Institute of Art), has been carried a stage further by the completion of the work in the Etruscan Room, 1. This was one of the bare handful of eighteenth-century rooms with Etruscan decoration (i.e. based upon the colours of Greek vases, and the motifs of Roman mural art) still surviving, and although apparently painted out, Adam drawings for the original decoration existed in the Soane collection. However, when the



1

walls were examined, no trace of these decorations could be found, and it seems likely that only the ceiling, apses, fireplace and frieze (all of which have been returned to their pristine splendour) were ever carried out to his designs. The work of restoration was executed by, and under the direction of, the Institute's technical department, and the expense defrayed by a grant from the Pilgrim Trust.



2

High Rise in Rhodesia

Designed after on-the-spot research into hot-climate office-blocks in Caracas and Milan, the new office-tower for Rhodesian Selection Trust in Salisbury, Southern Rhodesia, is the work of a local firm of architects, D'Arcy Cathcart and Son, in collaboration with Dennis Lennon. The preliminary model, 2, shows what is—by now—the normal grouping of the main elements of accommodation into a low block housing entrance facilities, double-deck car-parking, etc., and a slim tower rising eighteen storeys to house the actual offices. This tower is the most interesting and innovating part of the design, being conceived plan-wise as a split X, with the stair and lift tower inserted between the two halves, thus permitting a more-or-less north and south presentation of the longer walls of each arm, which are glazed, and a short blank wall toward the westering afternoon sun.



3



4

Car-wash Canopy

To provide cover for the various service bays and other facilities required for a drive-in car-cleaning station in Pasadena, Cal., the Pasadena architectural partnership of Whitney Smith and Wayne Williams (AR, May, 1957) recently devised a canopy structure of I-section steel uprights, connected at roof-height by steel angles crossing one another to make a diamond interlace (as viewed in end-elevation). A few of the bays in this structure were left open to the sky, but most were roofed in with steel decking to create the three-dimensional pattern of slanted planes seen in 3. The basic geometry of the structure ensures that any one plane will be pitched in the opposite slope to any of its neighbours, and thus creates a sun-shade with excellent inherent ventilation characteristics, and a strong eye-catching quality as well.

Highlights at Nolan's

The process of 'de-modernizing' pubs—that is, removing from them the genteel and institutional modifications of the Thirties and early Forties—is one that should spread, though its beginnings are very slow as yet. However, an admirably bold move in the right direction has been made in Dublin, where Sam Stephenson has de-modernized a ripely Victorian house on St. Stephen's Green, 4, without actually re-Victorianizing it. Not only has he clearly drawn heavily on the general proposals consistently advanced by the AR, but he has also paid his respects to the local Irish vernacular art of diapering, the creation of illusionistic rustication by means of paint-work, which Osbert Lancaster dubbed *Celtic Highlights* (AR, January, 1948). Even this he has done without slavish revivalism, for it is thought that there are no vernacular examples of such gilding of the lily as to illusionistically highlight an actual three-dimensional projection (as happens all down the quoining) nor of diapering directly on brickwork, without the interposition of a coat of plaster.

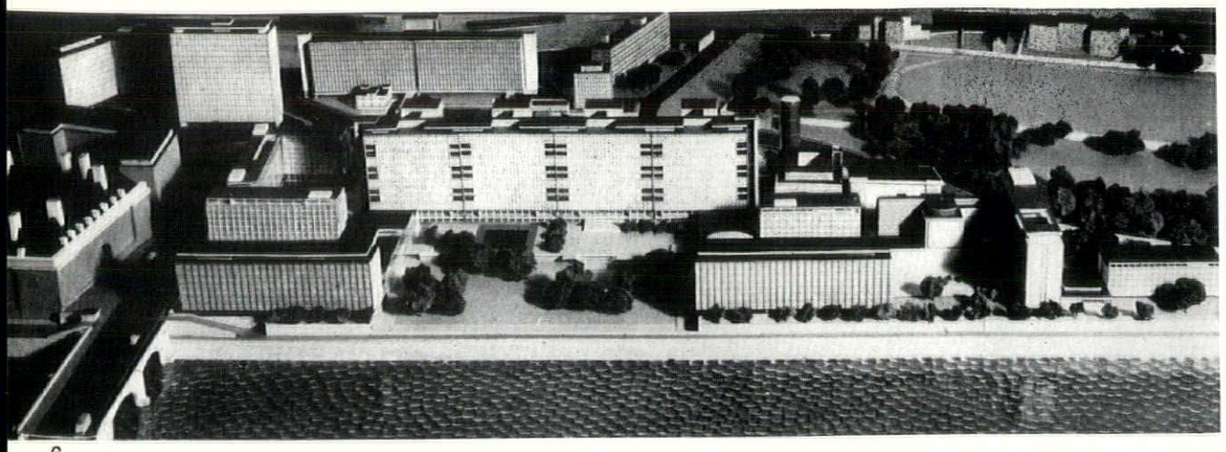
Levitation in Ciment Fondu

The application of statuary directly to a wall surface, without framing or visible corbels under its feet, can be relied upon to give an illusion of gravity defied, as Baroque designers like the Asam brothers knew to their (aesthetic) advantage. The effect has not been much exploited in recent architectural sculpture (one



5

thinks of the Epstein in Cavendish Square, or the Lipchitz on the Ministry of Education in Rio, both of which eschew it) but a figure symbolizing the liberating effects of education, 5, by Ben Franklin, on a new school in Leicestershire, makes full use of it. The group, which is in



6

ciment fondu, with the main figure twelve feet high, is the second of three Franklins commissioned by the Leicestershire Education Authority—an example of sustained artist-patron relationship rare in the annals of recent public patronage.

St. Thomas's Hospital

The progressive revelation of more and more weaknesses in the basic fabric of St. Thomas's Hospital, London, and of inadequacies in the foundations, has led the Governors to abandon their proposals for reconstructing the existing bomb-damaged buildings, in the manner set out in Sir William Holford's studies for the Hospital, and to adopt instead a scheme prepared by W. Fowler Howitt, for a complete rebuilding. The new proposals, which Mr. Howitt has worked out with Sir William Holford, who remains honorary consultant to the hospital, retain only three of the earlier buildings, and call for the creation of a single large ward block, parallel to the Embankment and set well back from the Thames, 6, involving the diversion of Lambeth Palace Road. Ancillary services will be grouped in low buildings at the foot of this main block, and the only other high slabs will be the staff-houses, standing well forward toward the river, framing a green court with views across to the Houses of Parliament.

CORRESPONDENCE

Pleasure Gardens at Bomarzo

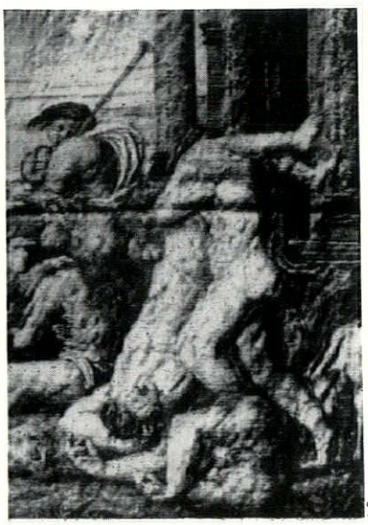
To the Editors,

SIRS,—I was much interested in Mr. Davidson's explanation of Bomarzo as put forward in his letter published in the AR of October. I feel, however, that the problem of the sex of the figure which is thrown down by the Giant finds its best explanation in the story of the madness of Attic and the festival of Cybele, the Magna Mater (Ovid, Fasti IV 237–44)

ille etiam saxo corpus laniavit acuto,
longaque in immundo pulvere tracta coma est,
voxque fuit 'merui! meritas do sanguine poenas.
a! pereant partes, quae nocuere mihi!
a! pereant' dicebat adhuc, onus inguinis aufert,
nullaque sunt subito signa relicta viri.
venit in exemplum furor hic, mollesque ministri
caedunt jactatis vilia membra comis.

Such an orgy was probably the subject of one of the reliefs (and the subsequent tapestry copies, now in Vienna, 7) in Fontainebleau after designs by Rosso Fiorentino (cf. Sven Löngren in Figura I). Since Ovid's Fasti were much less popular than his Metamorphoses and few illustrated editions exist it seems not at all unlikely that the inventor of this scene took another illustration from Ovid as his prototype. I have pointed out in *Bomarzo II* that there are a number of features pointing to the Florentine ambiente. A recent attribution by M. Calvesi (*Scritti in Onore di L. Venturi, Roma* 1956) to Ammannati would fit in well then. Calvesi has also found close resemblances to 'enchanted woods' in the two Tassos. In Torquato following Bomarzo, in Bernardo as a source: in the *Sacro Bosco* the hero searching for his beloved is tested. But was that its programme, are there more than odd coincidences? Perhaps, however, Bernardo was the adviser of this conceit, which was recently interpreted as a labyrinth, *tout simple* (G. R. Hocke, *Die Welt als Labyrinth*, Hamburg 1957).

Yours, etc.,
S. LANG.



7

Crystal Palace Garden

To the Editors.

SIRS,—We should like to support your correspondent Joan Higgins who asks for the preservation of the Paxton Garden at The Crystal Palace. In your sister publication, *The Architects' Journal*, we once suggested the retention of what is known as Sandow's Gymnasium which is partly built of what we believe to be the same 'curtain walling' of cast iron as was used in the Palace itself.

This structure we discovered when we were given facilities to see the grounds prior to our preparing a scheme in which we envisaged a permanent exhibition there of a steam roundabout, a coal cart, a chariot milk cart, a hand milk cart, a horse hearse and a canal boat, etc.; particularly things with a South London affiliation.

We have not in mind a stuffy collection, but selective articles which would complement the delightful modern structure proposed for the site.

Yours, etc.,
BARBARA JONES and
GEOFFREY DUNN.

Bromley, Kent.

New Brutalism

To the Editors.

SIRS,—Could we please hear from the Editors of the REVIEW as to why so many pages in this cultured publication are devoted to the 'New Brutalism'? It is an architecture of lazy minds and barren spirits, far from the intellectual dignity and emotional richness represented by most examples and articles found in the REVIEW.

The House at Watford, Herts, illustrated in the September issue, is a shocking piece of architectural illiteracy in plan, construction, and appearance. Its pretentious casualness is so vulgar that it was with relief that we could turn to the quiet fantasy and simple casualness of the Hastings fishermen storehouses a few pages further on in the same issue.

Your influence on student minds may result in great harm, if it has not already done so, unless critical searchlights are directed upon the seductive arguments which claim that the conscious, educated casualness of the New Brutalists is related to the spontaneous quality of anonymous architecture. Let us have more good back-country builders' houses or storehouses, and fewer far-fetched pieces of nonsense—especially if they cannot claim even rugged charm or whimsey!

Yours, etc.,
FRED LASSERRE.

School of Architecture,
University of British Columbia.

George Basevi

To the Editors.

SIRS,—I am collaborating in writing a Biography of George Basevi (1794–1845), architect and pupil of Sir John Soane.

I should be grateful for any information on Basevi and in particular should be interested to hear from any of his descendants. Letters, drawings and other material will be handled with great care and returned without delay.

Yours, etc.,
MICHAEL DONELAN.

102 Belgrave Road,
London, SW1.

INTELLIGENCE

The BBC has asked three sculptors to submit models for a piece of sculpture to be placed in the new Television Centre at White City in West London. They are H. B. Huxley-Jones, Maurice Lambert and David McFall. The sculpture will occupy the centre of a circular garden, 150 feet in diameter, approached by a colonnade 90 feet wide and 22 feet high.

The National Smoke Abatement Society has become the National Society for Clean Air. Formed in 1929, the Society started the survey of air pollution that is now nation-wide and conceived the successful idea of smokeless zones, and were the first to advocate the prior approval of industrial plant as an essential part of a policy to prevent new sources of pollution. A vast amount of work still needs to be done; to reach the target of smokeless 'black areas' within fifteen years means an average of 300,000 acres of smoke control areas each year. For 1957, the first year of the Act, the total is 489 acres and schemes prepared for 1958 amount so far to less than 10,000 acres.

ACKNOWLEDGMENTS

The photographs of the Branch Library at Beaconsfield (December AR, page 410) were by John Pantlin, who also took those of the Laboratories at Welwyn (October AR, page 263) previously credited to Brazier.

The two four-colour half-tone blocks of Pinehurst Laboratories, Current Architecture, pages 129 and 130, are used by kind permission of Stewart & Grey, Ltd.

MARGINALIA, pages 87–88: 1, Kerry Downes; 3, Deegan-photo. FRONTISPIECE, page 90: University of Toronto. BISHOP BERKELEY, pages 91–93: 1, National Museum of Ireland; 5, Massachusetts Historical Society. COVENTRY CHURCHES, pages 94–101, Galwey, Arphot. ADAM MISCELLANY, pages 102–109: 3, 4, 5, McCormick. MEXICAN THEATRES, pages 110–113, Guillermo Zamora. TROWBRIDGE, pages 114–117, Nairn and Cullen, Arphot. OFFICES IN ALBEMARLE STREET, pages 118–123: 1, 3, Toomey, Arphot; 2, Erno Goldfinger; 4–12, Galwey, Arphot. FATEHPUR SIKRI, pages 124–128: page 125, Courtauld Institute of Art; 1–4, University of Toronto; 5, Government of India Press Information Office. CURRENT ARCHITECTURE, pages 129–132: Warehouse and Offices in Nottingham, John Pantlin; Pub in Crawley New Town, A. C. K. Ware for Whitbread & Co. Ltd. MISCELLANY, pages 133–142: Exhibitions, 1, Arts Council; 2, Augustin Dumoge; 3, Ernest Brown & Phillips Ltd., Leicester Galleries; 4, Beaux Arts Gallery; Whitby Churches, Galwey, Arphot. Functional Tradition, 1–5, 7, 9–11, Eric de Maré; 6, John Piper; 8, J. M. Richards. Counter Attack, Nairn, Arphot. Nervi, 1–4, Gherardi-Mascetti. SKILL, pages 143–156: Interiors, Thomas de la Rue showrooms, John Maltby for D.R.U.; Holborn showroom, Henry C. Brewer; U.S.A.F. Officers Club, John Maltby for Heal's Contracts Ltd. Design Review: Necchi sewing machine, COID; Braun mixer, Marcel Braun; Gio Ponti chair, Conran & Co.; Race seating, Carbonora. Lettering Techniques: 1, Desmond Tripp Ltd.; 2, Hobbs, Offen & Co. Ltd.; 3, John Harris; 4, Helen Simpson, Arphot; 6–10, Drakard & Humble Ltd.; 11, Galwey, Arphot.

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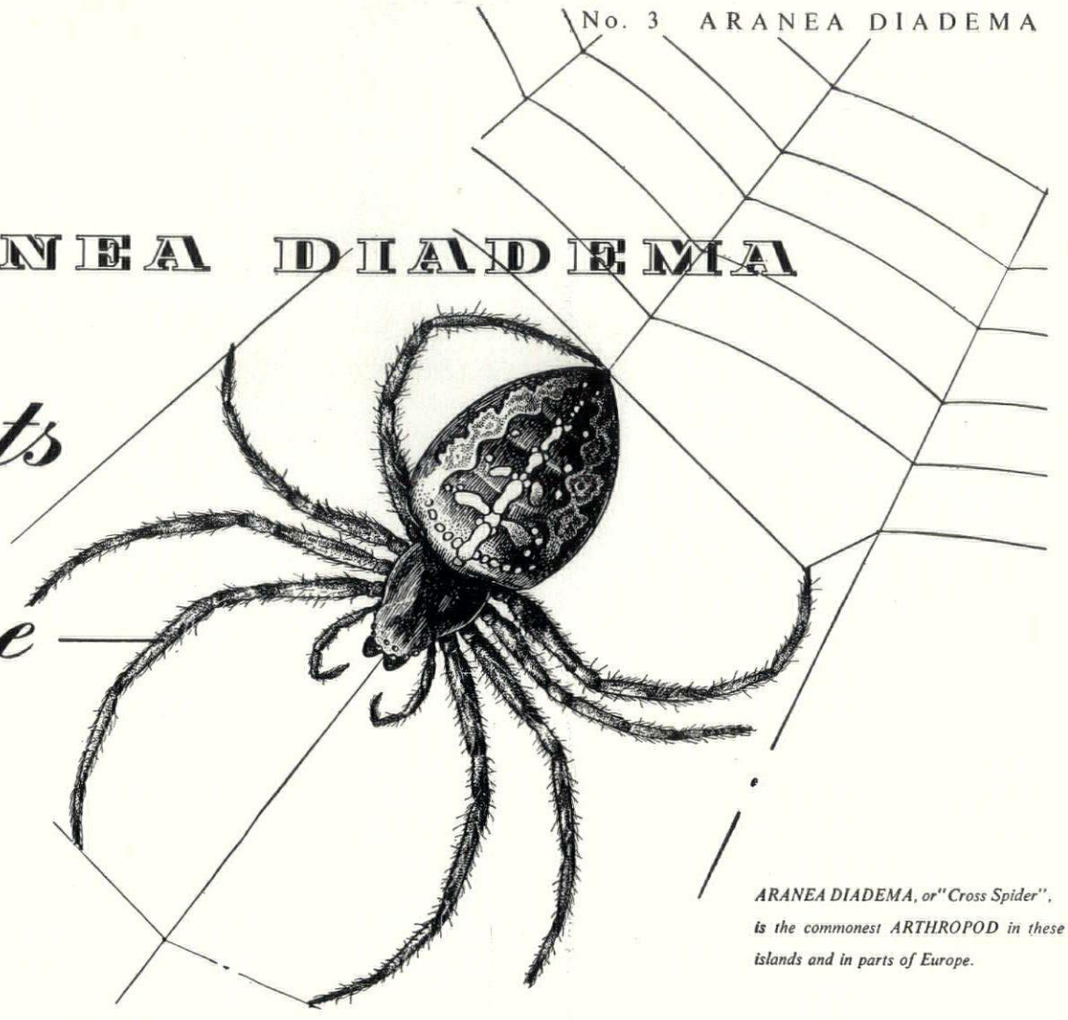

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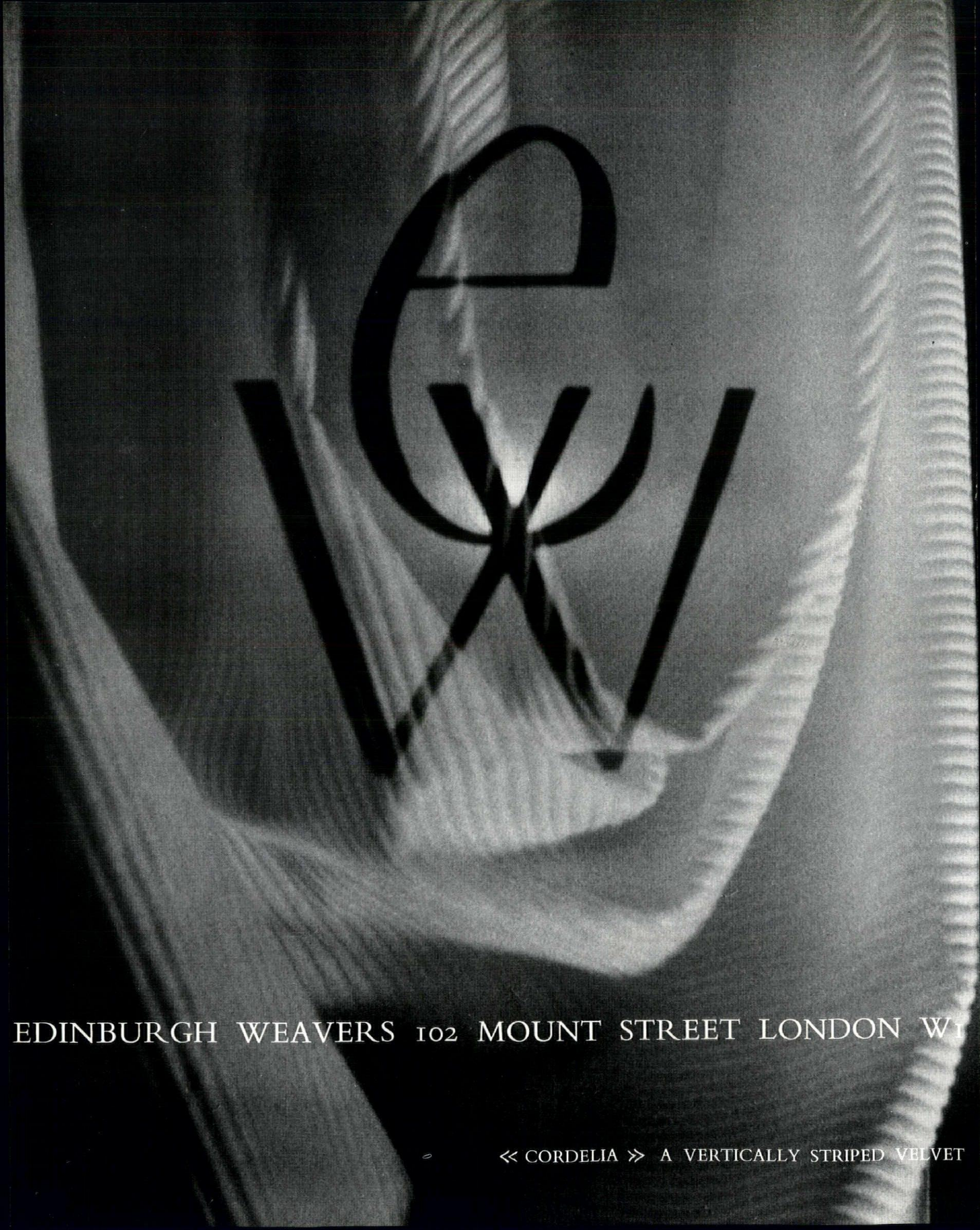

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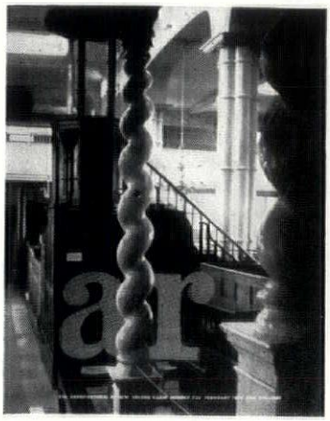

The Cover looks from the altar of St. Mary's, Whitby, through a three-dimensional space-cage of ecclesiastical equipment rare nowadays in English parish churches, where furnishings are seldom more than pew-high and the rest of the space remains uninterrupted clear up to the rafters. This mariners' church, fitted out like a ship's cabin or a chandler's store, is one of the few that still retains its full inventory of eighteenth-century liturgical tackle, and is described by Kenneth Rowntree on page 136.

87 **Marginalia**

90 **Frontispiece**

91 **Bishop Berkeley** *by Marcus Whiffen* Though he is among the best known of English eighteenth-century philosophers, Bishop Berkeley is little known for his interest in architecture and architectural theory. Yet he stood close to the circle of Lord Burlington; he designed at least one house, laid out an ideal town-plan for the Bermudas, and uttered in print opinions that anticipate those of the Adam Brothers by some forty years. But his views were not all Adamitic, as Mr. Whiffen shows—like the Burlington connection he opposed Baroque extravagance, but he also opposed Shaftesbury's free-thinking, and in the third dialogue of his *Alciphron* (where he discusses architecture) as part of his attack on Shaftesbury, he produces an extremely relativistic or functional theory of aesthetics, opposed to the absolute values of the Platonic tradition. This, Mr. Whiffen suggests, raises an important query, for Burlingtonian theory is generally regarded as Shaftesburian in extraction and Platonic in intention, but may prove to be less of either when the Berkeley connection has been properly appraised.

94 **Three Coventry Churches:** *Architects, Basil Spence and Partners*

102 **A Robert Adam Miscellany** With our general view of the eighteenth-century undergoing an extensive overhaul (as in Mr. Whiffen's article on Berkeley) our view of the Adam Brothers is also undergoing extensive modification—and the changes are being hastened by a steady supply of new information on their background and connections. In this collection of Adam studies, John Fleming chronicles the celebrated journey to Spalatro, and the part played by Clerisseau in preparing the plates of Diocletian's palace—a vexed question on which some unpublished drawings from the Hermitage, Leningrad, shed fresh light; T. C. Barker supplies a note on the commercial activities of John Adam, the least known of the Brothers; John Harris discusses the Baroque origins of the transparent portico at Osterley, and shows Robert Adam's version to have been preceded by knowledge of one by Talman; and M. J. Chandler produces the documents concerning the Adams' authorship of the square of houses at Frederick's Place, in the City of London.

110 **Theatre in Mexico City:** *Architect, Alejandro Prieto*

114 **Trowbridge** *by Gordon Cullen* Unlike Gloucester, which is a text-book example of a town based on a Roman crossing, with two major roads passing at right angles straight through its centre, Trowbridge in Wiltshire presents an entirely different pattern of traffic movement. In this fourth and last Townscape study undertaken in conjunction with Bristol University, Mr. Cullen demonstrates how the circulation pattern of the town is indeed circulatory as well as serpentine, with distributive arteries feeding the traffic into the still areas between and controlled vistas into public open spaces, and one major still area in the very heart of the town, already pierced by pedestrian ways, that could be developed into a new kind of central precinct.

118 **Offices in Albemarle Street, W.1:** *Architect, Ernö Goldfinger*

124 **Fatehpur Sikri** *by Jaqueline Tyrwhitt* Although it may appear to Western eyes to exhibit the kind of accidental planning that develops in the passage of time, Fatehpur Sikri, the ideal capital city of Akbar the Great, was completed in a single building-campaign of only four years, on a clear site. It seems certain, therefore. that the quality of its planning is deliberate, and Miss Tyrwhitt shows that while it may lack the perspective vistas which are still so often synonymous with planning in European minds, it appears to have been consciously designed to be viewed panoramically, by a perambulating viewer, much as were the Palaces and temples of Peking.

129 **Current Architecture**

Miscellany

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149 **Techniques: Small Scale Lettering,** *by John Sharp*

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Authors: *John Fleming* has published articles in *Country Life*, *The Burlington Magazine*, *The Connoisseur* and *Vogue*. His book on Scottish country houses open to the public was published in 1954. Now he is working on a full-length study of William Adam and his sons, based largely on unpublished MSS material. He is also engaged on a long-term project for a history of Italian sculpture from Bernini to Canova. *T. C. Barker* was formerly research fellow of Aberdeen University and became lecturer in economic history at the London School of Economics in 1954. *John Harris* was born in 1931. In 1951 spent a year in France studying the architecture and decoration of seventeenth century French chateaux. Since joining the staff of the RIBA library in 1956, he has been cataloguing the designs of Inigo Jones and Webb; preparing material for a work upon William Talman; and carrying out research for the Lincolnshire volume of the *Buildings of England*. *Michael J. Chandler* qualified after the war as a librarian and has been, since 1947, Assistant Deputy Keeper of the Records in the Corporation of London Record Office.

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THE ARCHITECTURAL REVIEW

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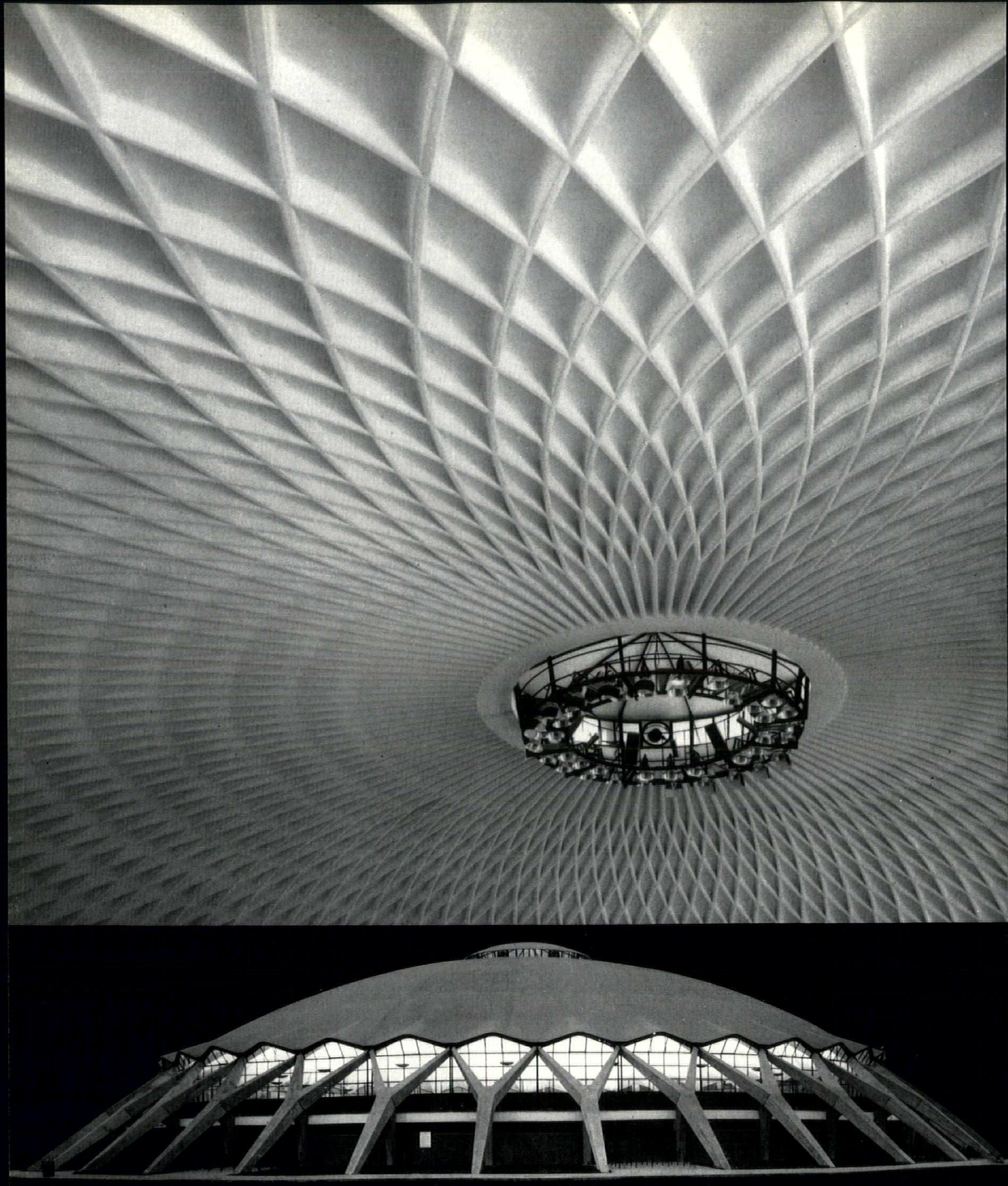
FIVE SHILLINGS



Most recent of the many notable concrete vaults designed by Pier Luigi Nervi, the Palazetto dello Sport is intended to house the indoor sections of the Rome Olympic Games, and is described and illustrated in Miscellany.

Marcus Whiffen

BISHOP BERKELEY

'But the ancients, who, from a thorough consideration of the grounds and principles of art, formed their idea of beauty, did not always confine themselves strictly to the same rules and proportions; but, whenever the particular distance, position, elevation, or dimension of the fabric or its parts seemed to require it, made no scruple to depart from them, without deserting the original principles of beauty, which governed whatever deviations they made.' Who is speaking? Many people, I expect, would guess Robert Adam. And indeed Robert Adam did write, in the Preface to Part I of the *Works*: 'The great masters of antiquity were not so rigidly scrupulous, they varied the proportions as the general spirit of their composition required.' And in the Preface to Part II he wrote that the proportion of columns 'depends upon the situation of these columns, whether they make parts of outside, or inside decoration, whether they stand insulated, or engaged, whether raised much above the eye, or level with it.' However, whereas Adam, treating 'of freedom in the use of entablatures,' maintained that 'a latitude in this respect, under the hand of an ingenious and able artist, is often productive of great novelty, variety, and beauty,' our author, in the sentence immediately following that quoted, continues: 'This latitude or licence might not, perhaps, be safely trusted with most modern architects, who in their bold sallies seem to act without aim or design, and to be governed by no idea, no reason, or principle of art, but pure caprice, joined with a thorough contempt of that noble simplicity of the ancients, without which there can be no unity, gracefulness, or grandeur in their works.' Unity, gracefulness and grandeur *versus* novelty, variety and beauty: clearly the historical context is different. Adam protested against the dull

pedantry of 'the race of those reptile artisans who have crawled about and infested this country for many years':[1] our author is protesting against the 'caprice' of the Baroque. In fact he was writing more than forty years before the first part of the *Works in Architecture of Robert and James Adam* saw the light; and his name was George Berkeley.

[1] In a letter to Lord Kames, quoted by A. T. Bolton, *The Architecture of Robert and James Adam*, London, 1922, I, pp. 50-54, from A. F. Tytler. *Memoirs . . . of Lord Kames*, Edinburgh, 1806, II, p. 50.

Bishop Berkeley—for so one thinks of him, though he was not consecrated Bishop of Cloyne until 1734—was born in 1685 and educated at Trinity College, Dublin, of which institution he was elected a Junior Fellow in 1707 and co-opted Senior Fellow in 1717. His three most celebrated works were published during his tenure of the Junior Fellowship—*An Essay towards a New Theory of Vision* in 1709, *A Treatise concerning the Principles of Human Knowledge* in 1710, and *Three Dialogues between Hylas and Philonous* in 1713. In October of the latter year, 1713, he left for his first continental tour, as chaplain to the Earl of Peterborough, who was bound, as Ambassador Extraordinary, for the coronation of the King of Sicily. As things turned out, Berkeley got no further than Leghorn this time; he was ten months abroad. No doubt this tour helped to form his taste in the arts, but it was of minor importance compared with the tour that he made as tutor-companion to George Ashe, the invalid son of the Bishop of Clogher. This lasted from the autumn of 1716 to the autumn of 1720. A part of the journal that he kept survives and has been published, and we can accompany him as he finds Italian gardens 'not so spruce and trim as those in France and England' but 'nobler and . . . much more agreeable,' as he visits the Pantheon, which 'the eye is never weary with viewing,' as he admires Bernini and Titian and, more surprisingly, Perugino. ('His drapering every one knows to be of little *gout*, and he knew nothing of the chiaro-oscuro. But for sweetness, grace, and beauty there is enough in this piece [the Barberini Holy Family] to render it admirable.') We can agree—again perhaps with raised eyebrows—when he says that 'the ancients had indifferent statuaries as well as the moderns,' and those of us who are not classical archaeologists can sympathize when he finds certain ancient ruins 'pretty unintelligible.' Then we can accompany him from Rome into Calabria, a *terra incognita* to the English of his generation, and from Rome to Naples and the Island of Ischia and back. Alas! we cannot accompany him on a part of his travels to which he refers in a letter written to his friend John Percival, Earl of Egmont, from Rome in July, 1718. Egmont is going to build a house, and Berkeley tells him that one of the causes of his longing to return to England is a wish to 'have a part in the contrivance of it'—

> 'For you must know I pretend to an uncommon skill in architecture, as you will easily imagine when I assure your Lordship there is not any one modern building in Rome that pleases me, except the wings of the Capitol built by Michel Angelo and the colonnade of Bernini's before St. Peter's. The Church itself I find a thousand faults with, as indeed with every other modern Church here. I forget the little round one in the place where St. Peter was beheaded built by Bramante, which is very pretty and built like an ancient temple. This gusto of mine is formed on the remains of antiquity that I have met with in my travels, particularly in Sicily, which convince me that the old Romans were inferior to the Greeks, and that the moderns fall infinitely short of both in the grandeur and simplicity of taste.'[2]

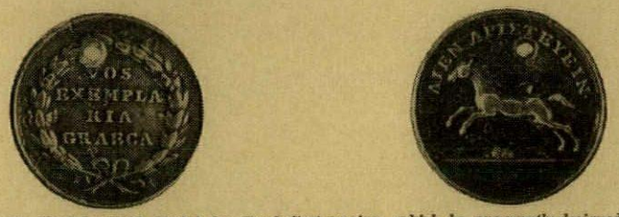
There is a seasoning of banter in the earlier part of that passage, but the man who was to institute the award of the Berkeley Gold Medal for Greek at Trinity College, Dublin, was surely in earnest about his enthusiasm for the Greek remains in Sicily. He had spent the winter of 1717–18 on that island, to which his first continental tour should have taken him but never did. Perhaps the journal he kept there contained comments on the temples at Girgenti. Perhaps it was a milestone in the history of European taste.[3] Almost certainly we shall never know for it would seem that it was lost at sea, in the Bay of Naples.

On his return to England apparently, though they could have met in Italy, Berkeley met Lord Burlington. Warton says that Pope introduced them, and that Berkeley gained Burlington's friendship 'by his profound and perfect skill in architecture.' In 1721 Berkeley's *Essay towards Preventing the Ruin of Great Britain* appeared. In it he mentions with approval the familiar Burlingtonian programme of 'the building a parliament house, courts of justice, royal palace, and other public edifices, suitable to the dignity of the nation,' but is inclined to think that it must wait upon better times; 'yet it come so properly into a discourse of public spirit that I could not but say something of it.' He also urges the founding of an Academy. This was to be a politico-literary institution rather than an academy of all the arts. (However, Berkeley's episcopal establishment at Cloyne was to be like nothing so much as a small version of the private academy maintained by Burlington in Piccadilly.)[4]

[2] Benjamin Rand, *Berkeley and Percival*, Cambridge, 1914, pages 171–172.

[3] His visit to Girgenti would have preceded that of D'Orville by nine years, and the publication of the temples by Pancrazi by fourteen. (See N. Pevsner and S. Lang, 'Apollo or Baboon,' *The Architectural Review*, civ, page 273.

[4] A contemporary wrote: 'Painting and music are no longer strangers to Ireland, nor confined to Italy. In the episcopal palace at Cloyne the eye is entertained with a great variety of good paintings, as well as the ear with concert of excellent musick. There are here some pieces of the best masters, as a Magdalen of Sir Peter Paul Rubens, some heads by Van Dyck and Kneller, besides several good paintings performed in the house, an example so happy that it has diffused itself into the adjacent gentlemen's houses, and there is at present a pleasant emulation raised in this country, to vie with each other in these kind of performances.' (Charles Smith, *The Antient and Present State of the County and City of Cork*, Dublin, 1750, I, page 146; quoted by A. A. Luce, *The Life of George Berkeley, Bishop of Cloyne*, London, 1949, page 179.) Berkeley took the painter John Smibert to America.



1. *Above, the Berkeley Gold Medal for Greek-first version, which he apparently designed himself.*

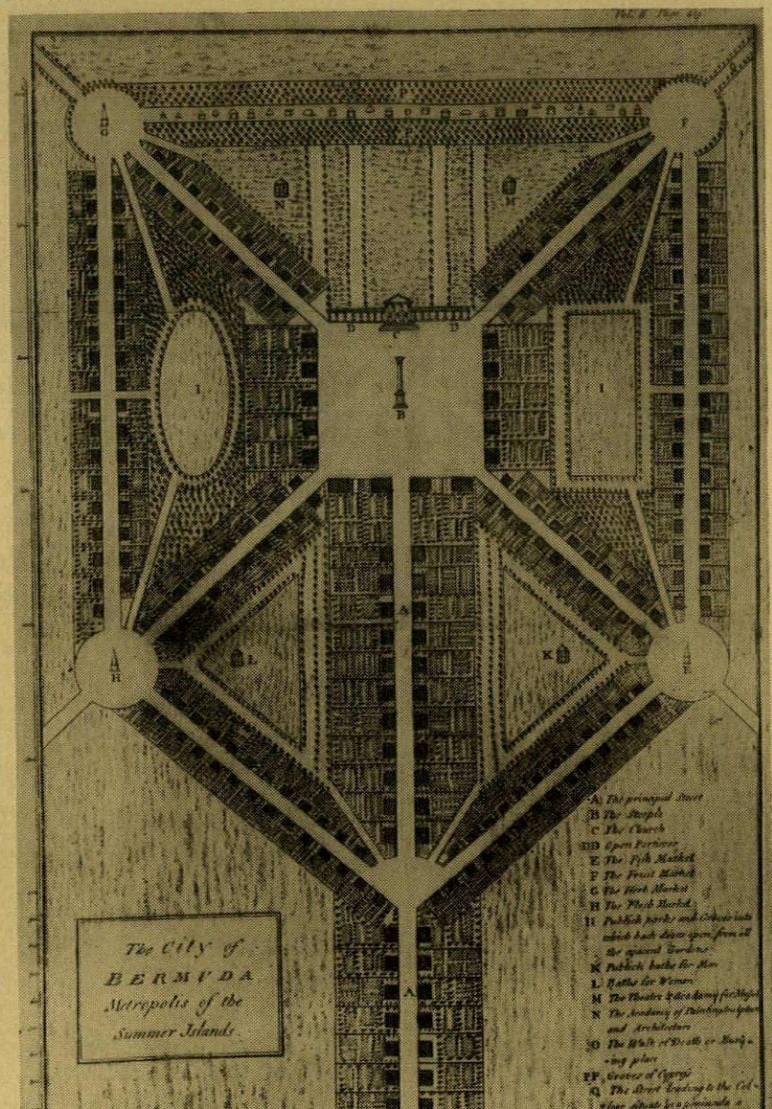
In 1722 Berkeley was consulted by Speaker Connolly about his vast new mansion, Castletown, outside Dublin. He did not make a design of his own for it, because (he tells Egmont) 'several have been made by several hands' and 'I do not approve of a work conceived by many heads.'[5] So he need not take much of the blame for what Mr. Summerson has characterized as the 'three-storey, thirteen window front of stupendous monotony.'[6]

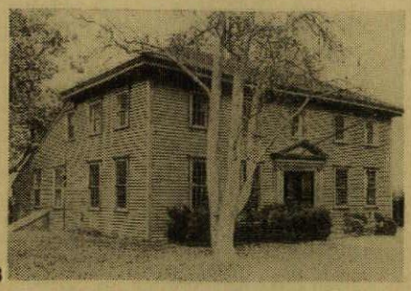
It was in 1722, also, that Berkeley conceived the idea of the college in Bermuda, the scheme to which the next ten years of his life were to be dedicated and which took him to live, for two years and eight months, at Newport, Rhode Island. This is

[5] Rand, *op. cit.*, page 197.

[6] *Architecture in Britain* 1530–1830, London, 1954, page 228.

2. *Below, plan for the city of Bermuda with communal gardens prefiguring those of the twentieth-century garden city.*





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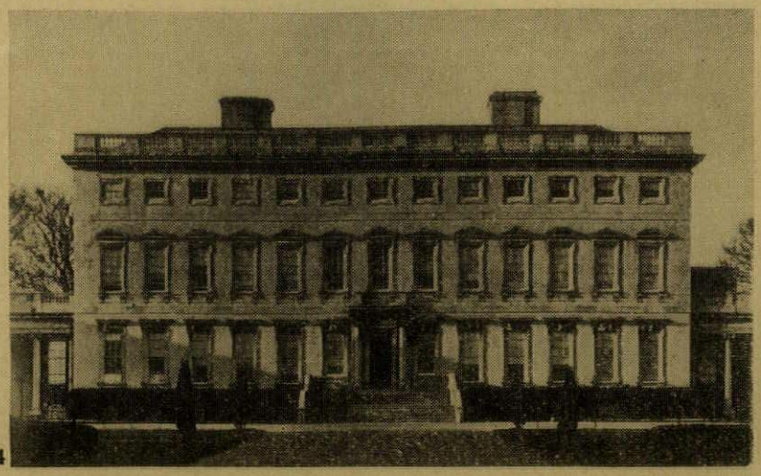

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3. *Whitehall at Newport, Rhode Island; a house that Berkeley built for himself and where he lived for two years and eight months while working on the plans for Bermuda. It was here that he wrote* Alciphron. 4. *Castletown, Dublin, Speaker Connolly's mansion upon the design of which Berkeley was consulted in* 1722, *though he made no designs for it.*

not the place to re-tell the story of St. Paul's College, Bermuda; suffice it to say that never can so much practical sense and worldly wisdom, attributes which Berkeley possessed in good measure, have been expended on a project which geography made so obviously impossible of realization. But the project does have considerable interest for the architectural historian. As everyone knows, neither the college, nor the town which was to be founded nearby—much as under Governor Nicholson of Virginia the town of Williamsburg had been founded near the College of William and Mary—got as far as architecture, any more than Berkeley got as far as Bermuda. Berkeley did, however, draw plans for both. As described by Berkeley's widow, the college plan, with its 'academical circus' of fellows' houses, its residential circus outside that, and its circus of shops and artificers' dwellings outside that again, seems to have been in some ways a forerunner of Ledoux's Ville de Chaux, as well as Jefferson's University of Virginia. In looking at the plan for the town published in the 1784 edition of Berkeley's *Works*, one is aware first of the sources of the design. The general layout recalls French garden plans, but perhaps was more directly inspired by the planning of Baroque Rome; the church, with an ambiguity typical of the architecture of the Burlingtonian circle, may be regarded either as a classical temple, or as a Corinthian version of St. Paul's, Covent Garden; the column in front of it, called 'the steeple,' is reminiscent of the idea James Gibbs never put into execution at St. Mary-le-Strand; the cemetery, or 'Walk of Death,' was of course suggested by the tomb-lined *viae* out of Rome, which Berkeley knew so well. But note, in addition to these tributes to the past, the communal gardens behind the houses. In England the communal garden did not in actual practice move out of the centre of the square, where it was islanded by carriage roads, until the 1830's.[7] And Berkeley's treatment of it prefigures even later developments in the garden cities and garden suburbs of the twentieth century.

The house that Berkeley built for himself near Newport and called Whitehall is perhaps his only executed work of architecture. Whitehall incorporates an earlier house; presumably the device of the half-false front door was forced upon Berkeley by the irregularity of its plan. The principal feature of the exterior is the Ionic doorcase, with its pulvinated frieze—very correct in the English Palladian fashion and utterly unlike the 'builders' Baroque' of the doorways of Richard Munday's Newport buildings, Trinity Church, designed four years before, and Colony House, designed ten years afterwards. However, Whitehall's main interest for us at present is an extrinsic one. It was here that Berkeley wrote *Alciphron* (published in 1732), from which I quoted at the beginning of this article.

Alciphron is a series of seven dialogues. Its purpose is sufficiently indicated by its sub-title: 'an apology for the Christian religion against those who are called free-thinkers.' Apart from a tribute to Lord Burlington in the second dialogue,[8] all the mention of architecture is in the third dialogue, sections 8 and 9. This third dialogue, in the words of its latest editor,[9] is an 'examination of the utility of free-thinking as represented at its highest (by Shaftesbury), namely, as the disinterested love of virtue, as altruism without religion.' How does architecture come into the argument? Well, Alciphron, the free-thinker, has been enthusing about the beauty of virtue. 'Is there upon earth,' he asks, 'a human mind without the idea of order harmony, and proportion?' Euphranor, his gentleman-farmer host, replies: 'O Alciphron, it is my weakness to be lost in abstractions and generalities, but a particular thing is better suited to my faculties, I find it easy to consider and keep in view the objects of sense: let us therefore try to discover what their beauty is; and so, by the help of these sensible things, as a scale or ladder, ascend to moral and intellectual beauty.'

The 'purity and serenity' of Berkeley's prose, the certainty and the precision with which his argument moves from one position to the next, the occasional flash of controlled wit—these are things that can only be experienced by reading the whole dialogue. Here I must confine myself to indicating some specially significant parts. Early on, Alciphron, who has said 'that beauty consisted in a certain symmetry or proportion pleasing to the eye,' is led to agree that proportion is 'different in different kinds of things.' 'The proportions of an ox would not be beautiful in a horse.'[10] At once we see the tendency of Euphranor's—and Berkeley's—argument: towards a functional aesthetic that shall be analogous to the functional ethic of Christianity with its system of rewards and punishments. Employing what I think may be recognized as an adaptation of a paragraph in Palladio's first book for his own purposes,[11] Euphranor gets Alciphron to admit that 'parts . . . in true proportions must be so related, and adjusted to one another, as that they may best conspire to the use and operation of the whole.' If that is so, then 'proportions are not, strictly speaking, perceived by the sense of sight, but only by reason through the means of sight,' and 'beauty is an object, not of the eye, but of the mind.' 'The beauty, therefore, or symmetry of a chair cannot be apprehended but by knowing its use, and comparing its figure with that use; which cannot be done by the eye alone, but is the effect of judgment. It is, therefore, one thing to see an object, and another to discern its beauty.' This was an important position for Berkeley, because one of his ultimate objectives was the disproof of a moral sense that needs must know the highest when it sees it.

So much for section 8. Section 9 illustrates the argument rather than develops it further—as indeed it hardly allows of further development. Euphranor first takes the subject of doors. 'The architects judge a door to be of a beautiful proportion when its height is double of the breadth.' However, make the breadth double the height and the door is no longer beautiful—because men walk upright. 'But if in any other part of the universe there should be supposed rational animals of inverted stature, they must be supposed to invert the rule for proportion of doors.' There follows a charming disquisition on dress, and then we return to architecture for the rest of the section. I can allow myself only one more excerpt, which follows a passage on the classical orders that looks back to Palladio and (dare one suggest?) forward to the Abbé Laugier:[12]

> 'And if we consider the graceful angles in frontispieces, the spaces between the columns, or the ornaments of their capitals, shall we not find that their beauty riseth from the appearance of use, or the imitation of natural things, whose beauty is originally founded on the same principle? which is, indeed, the grand distinction between Grecian and Gothic architecture, the latter being fantastical, and for the most part founded neither in nature nor in reason, in necessity nor use, the appearance of which accounts for all the beauty, grace, and ornament of the other.'

The passage that I quoted first follows soon after this; it is spoken by Crito, a 'gentleman of distinguished merit and estate, who lives in great friendship with Euphranor.'

It is now generally recognized that in the eighteenth century British writers played a leading part in the overthrow of the Renaissance tradition in aesthetic theory, with its postulate of a universal harmony in the works of nature that could be expressed in mathematical terms and which it was the business of the artist to reproduce. Hogarth, Hume and Burke are the names most often cited, and no doubt properly. However, Berkeley's attack on this tradition—which Hogarth, Hume and Burke all undoubtedly knew—has some special claims on the historian's attention: it preceded the others referred to by some years, it formed part of a general attack on the ethical theory of the third Earl of Shaftesbury, who was one of the last great upholders of the Renaissance tradition in the aesthetic sphere, and it was written by a personal friend of Lord Burlington. Can it be that the philosophy of the Burlingtonian circle and of English Palladianism was not so overwhelmingly Platonic and Shaftesburian as we are apt to think?

[7] See H.-R. Hitchcock, *Early Victorian Architecture in Britain*, New Haven, 1954, page 487.

[8] 'Crito . . . observed that he knew an English nobleman who in the prime of life professeth a liberal art, and is the first man of his profession in the world; and that he was very sure that he had more pleasure from the exercise of that elegant art than from any sensual enjoyment within the power of one of the largest fortunes and most bountiful spirits in Great Britain.'

[9] T. E. Jessop.

[10] *Cf.* William Hogarth, *The Analysis of Beauty*, London, 1753, page 15: 'Fitness of parts also constitutes and distinguishes in a great measure the characteristics of objects: as, for example, the race-horse differs as much in quality, or character, from the war-horse, as to its figure, as the Hercules from the Mercury.' Also Richard Payne Knight, *An Analytical Inquiry into the Principles of Taste*, London, 1805, page 169: 'The same relative dimensions, which make one animal beautiful, make another absolutely ugly.'

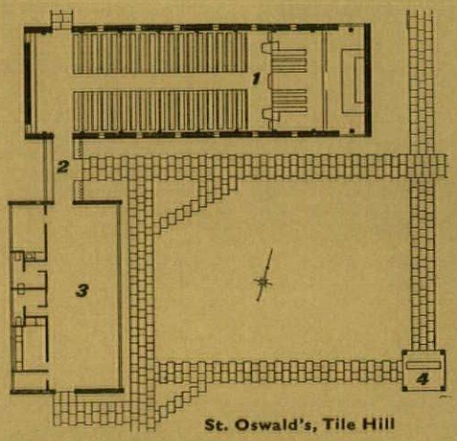
[11] 'Euphranor: And, to make the proportons just, must not those mutual relations of size and shape in the parts be such as shall make the whole complete and perfect in its kind?' *Cf.* Palladio (Ware's translation): 'Beauty will result from the form and correspondence of the whole, with respect to the several parts, of the parts with regard to each other, and of these again to the whole; that the structure may appear an entire and compleat body. . . .'

[12] I do not know that Laugier had read Berkeley's *Alciphon*, though it would be surprising if he had not. There is much in Laugier's naturalism and rationalism that must come *direct* from Palladio: for instance, he gives the same 'natural' reason as Palladio does for the tapering of columns, and both object to broken pediments for the same reason.

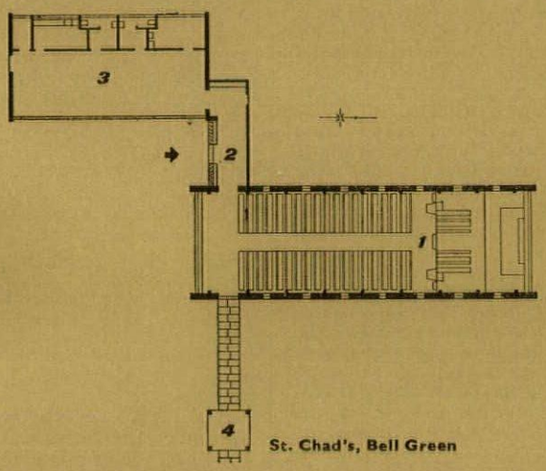


5. *Portrait of Bishop Berkeley.*

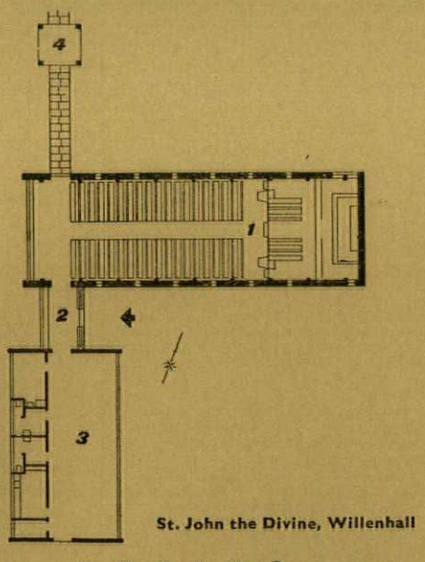
THREE CHURCHES AT COVENTRY



St. Oswald's, Tile Hill



St. Chad's, Bell Green



St. John the Divine, Willenhall

1, nave 3, church hall
2, porch 4, bell tower

The churches at Tile Hill, Bell Green and Willenhall were built to meet the new housing needs of Coventry. The cost of all three churches was met within the war damage grant for one church which had been bombed in the city centre. Basically the churches are reduced to four elements: nave, porch, church hall and bell tower and are arranged in different groupings on each site. The construction of the nave is based on an r.c. frame with a roof pitch of 14°. These frames are spaced at 10-ft. centres and the nave comprises eight full bays and two half bays at each end, making a total of 90 ft. The walls are 'No-Fines' concrete with a thickness of 1 ft. 5 in. and the same shuttering is used at each church. Precast concrete surrounds fixed in the shutter are used for the small windows in the north and south walls. The roof is framed in timber between the concrete frames and covered with aluminium on roofing felt, and insulation is provided below by the fibre board ceiling. A 6-in. over-site slab on hard core with a bituminous damp-proof membrane and a 2½-in. screed to take the electric heating cables is used for the ground floor.

The porch is a small timber structure with hard wood louvres and glazed doors on the entrance side and opposite are cupboards backed by vertical cedar boarding. Brick end walls with constellated beams supported on tubular columns form the construction of the church hall. The long walls are clad with timber frames, glass and cedar boarding infill while the roof is framed on roofing felt and fibre board. Fair-face sand-lime bricks form the partitions, and the floor is constructed in a similar way to that of the church but with a 1½-in. screed and heating is provided by electric convectors.

The bell tower is a simple reinforced concrete frame consisting of 12-in. square vertical members with horizontal beams and a concrete roof supported by a cross-member which also takes a bell fixing. Some of the panels have an infill of 8-in. by 2-in. cedar slats supported at each end by brass rods with a pattern of stove enamelled metal trays screwed between at random. Two aluminium scaffold poles form the Cross on the tower.

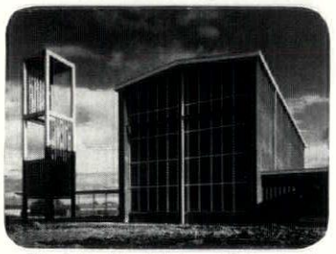
The external finishes on the walls of the nave are rendered with a colour stone aggregate, with the timber gutter and windows painted white and steel crosses black. Inside, the walls are painted white, and the concrete frame is untreated. The fibre board ceiling is painted in three colours, the pattern varying in each church. Generally the concrete tiles on the floor are black, with a mottled black aisle having a number of tiles reflecting the main colour on the ceiling. Along the north and south walls are electric heating panels.

African meranti is used for the entrance doors with aluminium door furniture. Large windows have ⅞-in. reeded glazing and clear glass is used on north and south windows. In the church hall the white sand and lime bricks are painted with a mauve mortar and left fair-faced, while the end walls are reddish brown sand-faced brick externally, with sand-lime internally. Ceilings are citron yellow with white cover strips, steel columns dark grey, timber frames pale grey with white opening lights and beads; boards are of varnished plywood with hardwood frames.

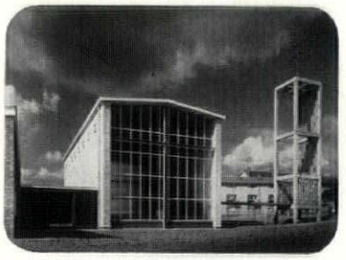
This is an example of collaboration from the outset between the architect and the contractors, the church being designed round the 'No-Fines' system of shuttered concrete. All details were discussed and agreed on beforehand in order to satisfy the cost stipulation.



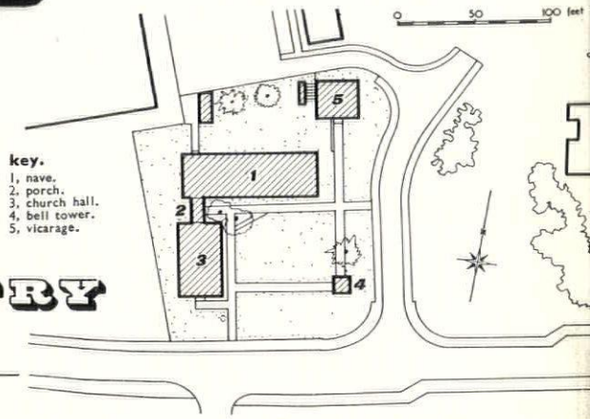
St. Oswald's, Tile Hill



St. John the Divine, Willenhall



St. Chad's, Bell Green

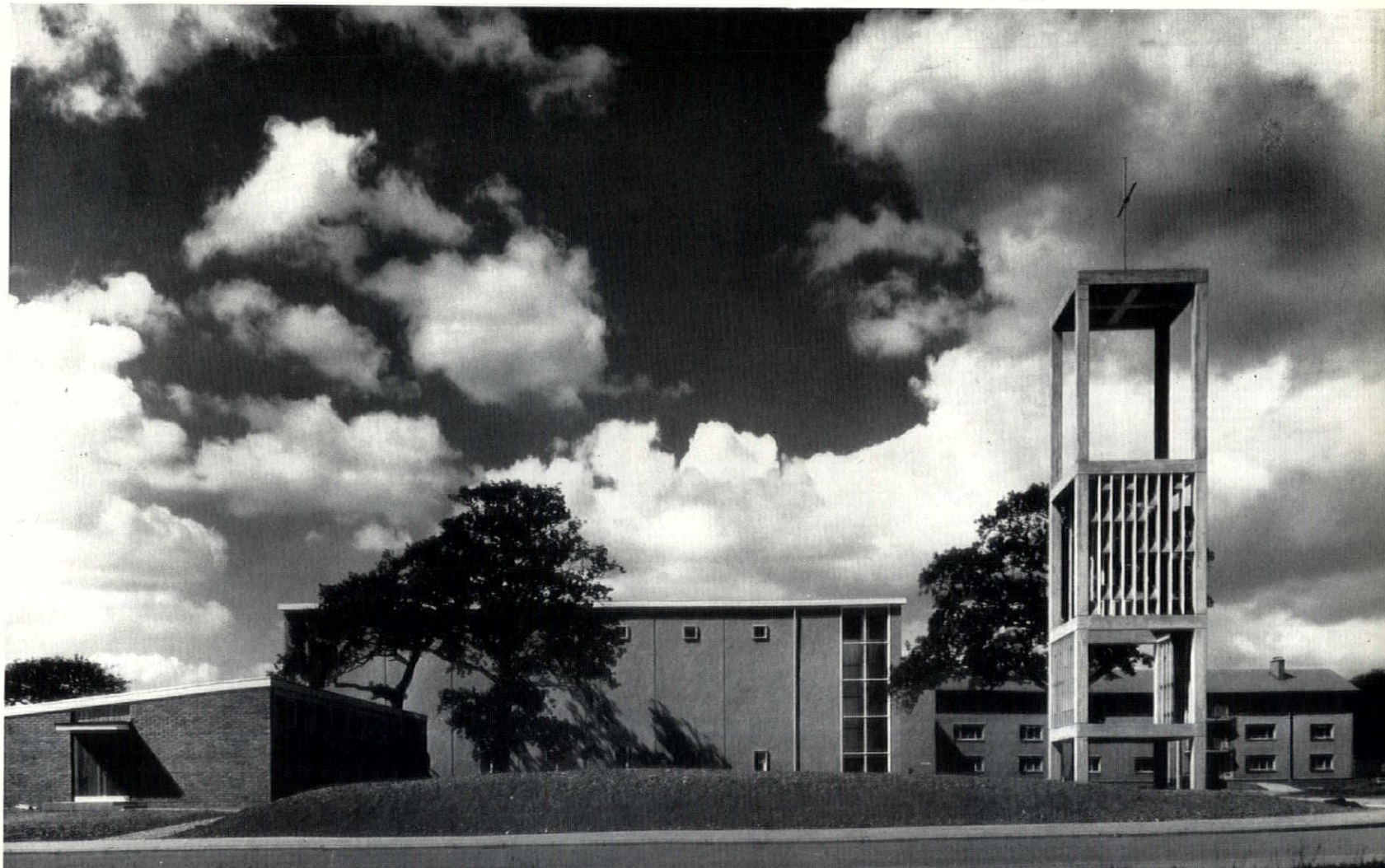


THREE CHURCHES AT COVENTRY

ARCHITECTS | **BASIL SPENCE AND PARTNERS**

St. Oswald's, Tile Hill

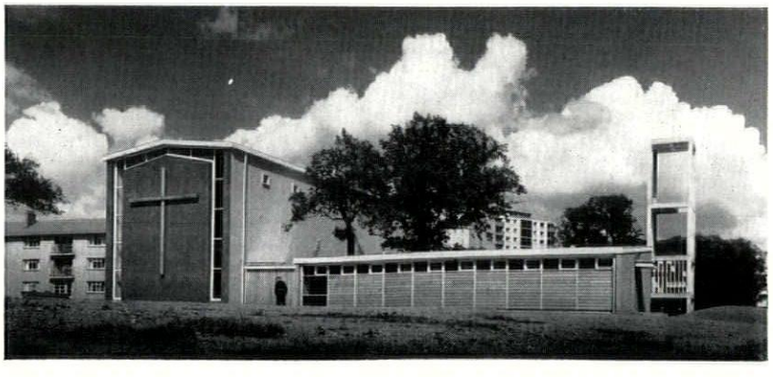
1, St. Oswald's, Tile Hill, from the South, with the church hall on the left, and the free-standing bell-tower to the right.



2

2, the interior of St. Oswald's, looking toward the altar wall, which is lit by strip windows each occupying half of the last structural bay on either side. The mass-concrete walling is made flush on the exterior, but on the inside the portal frames stand proud of the wall and create both a legible structure and regular architectural rhythm of a sort familiar in Gothic parish churches.

This site is about four miles west of Coventry centre near the road to Berkswell. It is approximately rectangular within fifty yards of three 12-storey point blocks of the Tile Hill neighbourhood centre (illustrated in AR, July, 1956, pages 24-32). The three mature oak trees on the site have been preserved, and there is a slight fall in level from north to south.



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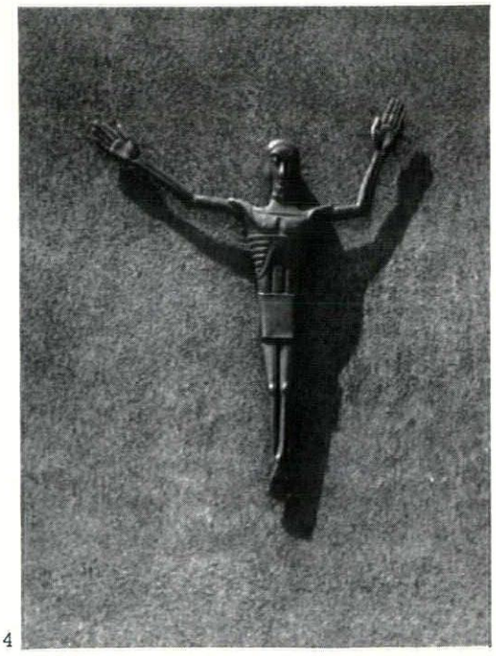
3, the west end of St. Oswald's, showing the back wall of the church hall and of the porch that links it to the church proper.



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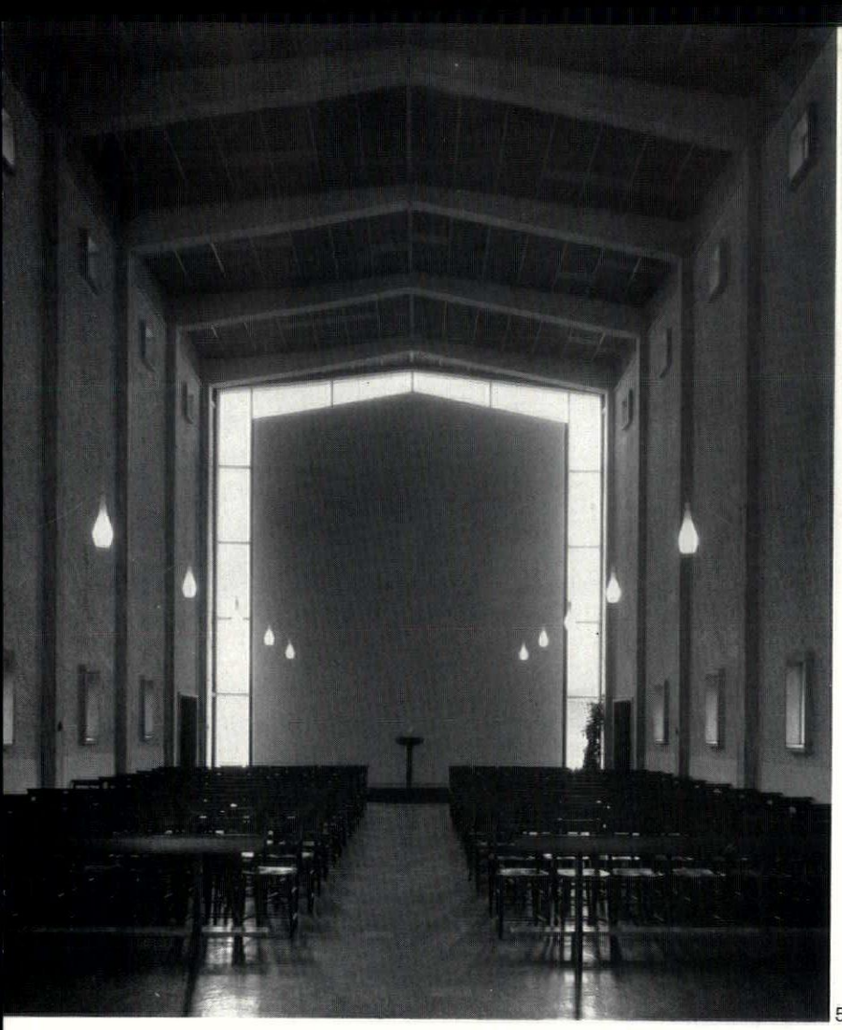
4, a crucifixion in repoussé bronze by Carroll Sims, mounted externally on the east wall to be seen from the road.



5

ST. OSWALD'S, TILE HILL

5, the font silhouetted against the west wall.
6, the altar-wall hanging.
7, the detailing of the choir stalls, which are similar in all three churches.

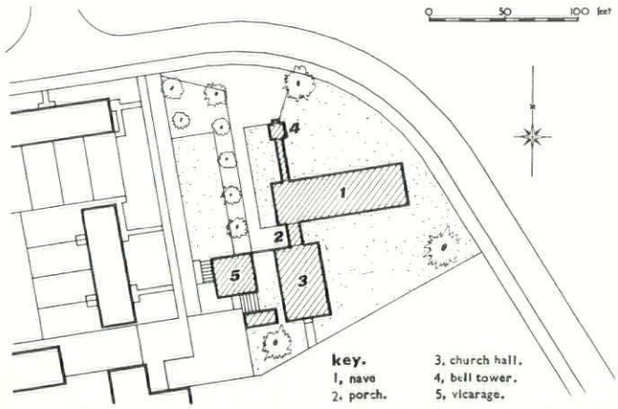
6



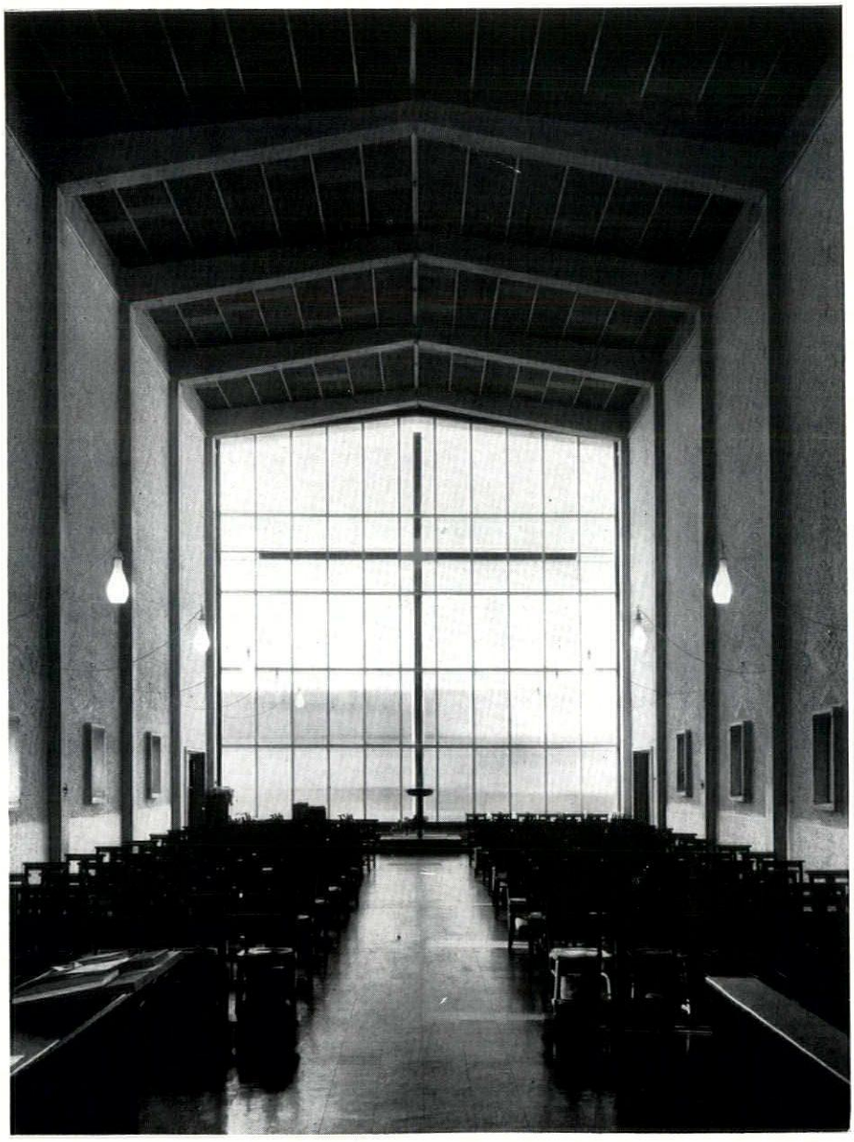
7



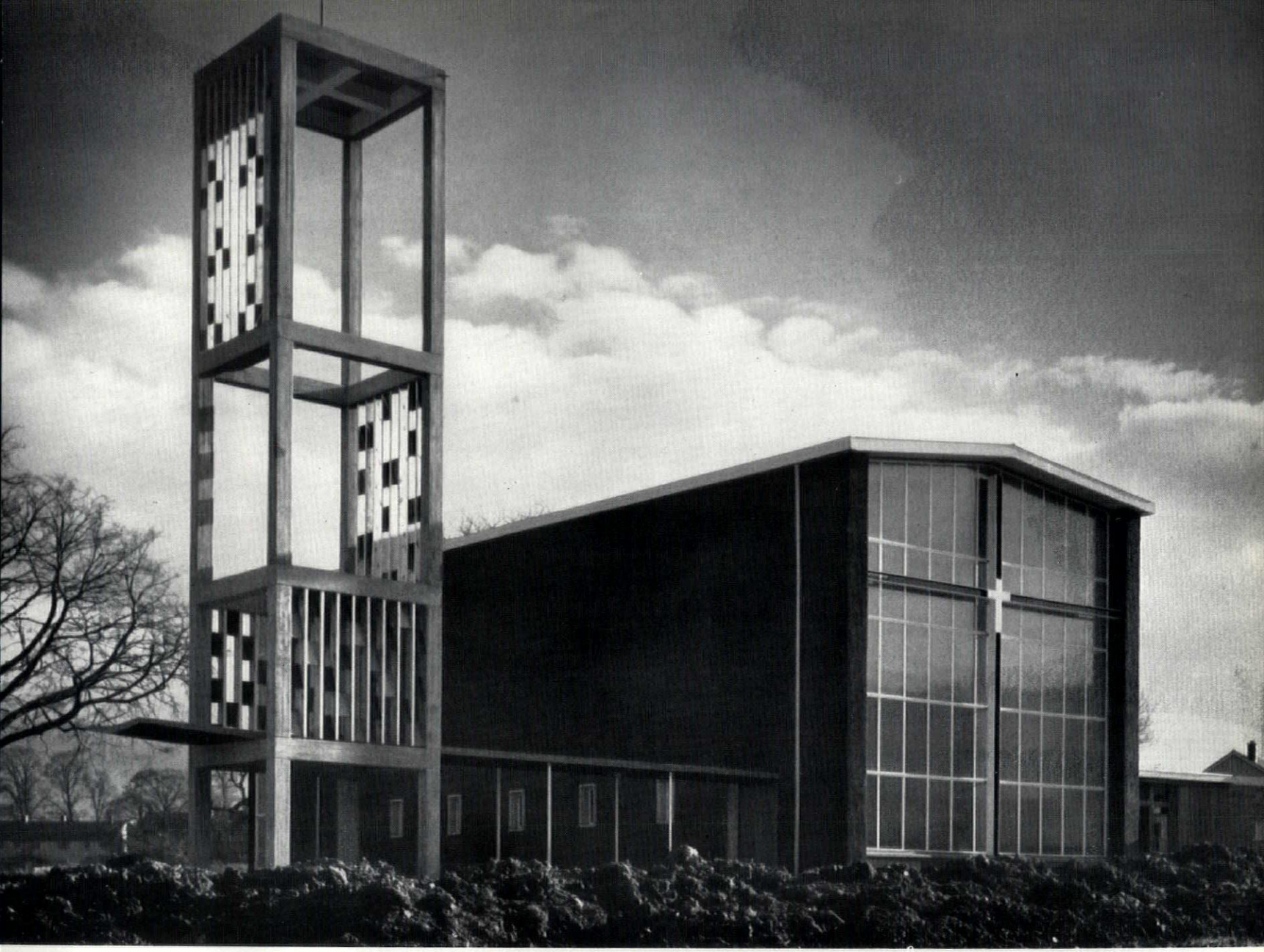
St. John the Divine, Willenhall



This site is two and a half miles S.E. of the centre of Coventry, near the main London road. It is roughly triangular in shape, with the main road leading to the neighbourhood centre sweeping round in a wide curve. The site forms one side of the main square of the neighbourhood centre and the ground falls towards the north-west.



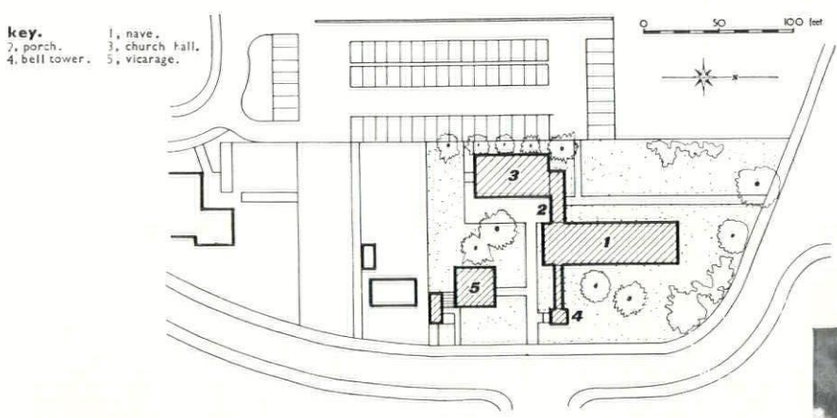
8. the West end at St. John the Divine. Willenhall, is entirely glazed, the fenestration being braced by the external cross of RSJ's (seen also in 9, opposite). The extra light thus provided eliminates the need for 'clerestorey' windows like those at Tile Green, and only the lower range are provided here.
9, on the facing page, the Bell-tower at St. John's shows clearly how the infill slats and panels are used to give sufficient visual substance to what might otherwise have been too stark a structure. Here, as at Bell Green, the tower is not completely free standing, for its lowest storey forms the entrance to a covered way leading to the west end of the church.
10, the chancel of St. John's is lit on the south side by five small square windows that throw bars of light across the altar-wall, and by a tall strip window, like those at Tile Hill, on the North. This view also shows the marked contrast of the relatively massive forms of the altar, communion rail and other woodwork and the very fine-drawn quality of the metal appointments.





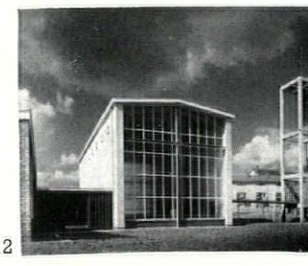
11

St. Chad's, Bell Green



11, St. Chad's, Bell Green, seen here from the south by night (and by day in 12, below) clearly shows the four basic standard elements in this view, including the entrance porch between the church and the church-hall at the left, and the additional element of a covered walk-way to the bell-tower at the right. The cross on top of the tower is of scaffold tubes.

Situated two miles N.E. of central Coventry, near the road to Bulkington, this site will form part of the Bell Green neighbourhood centre. It stands at the focus of three roads and there is a considerable fall in level from south-east to north-west.



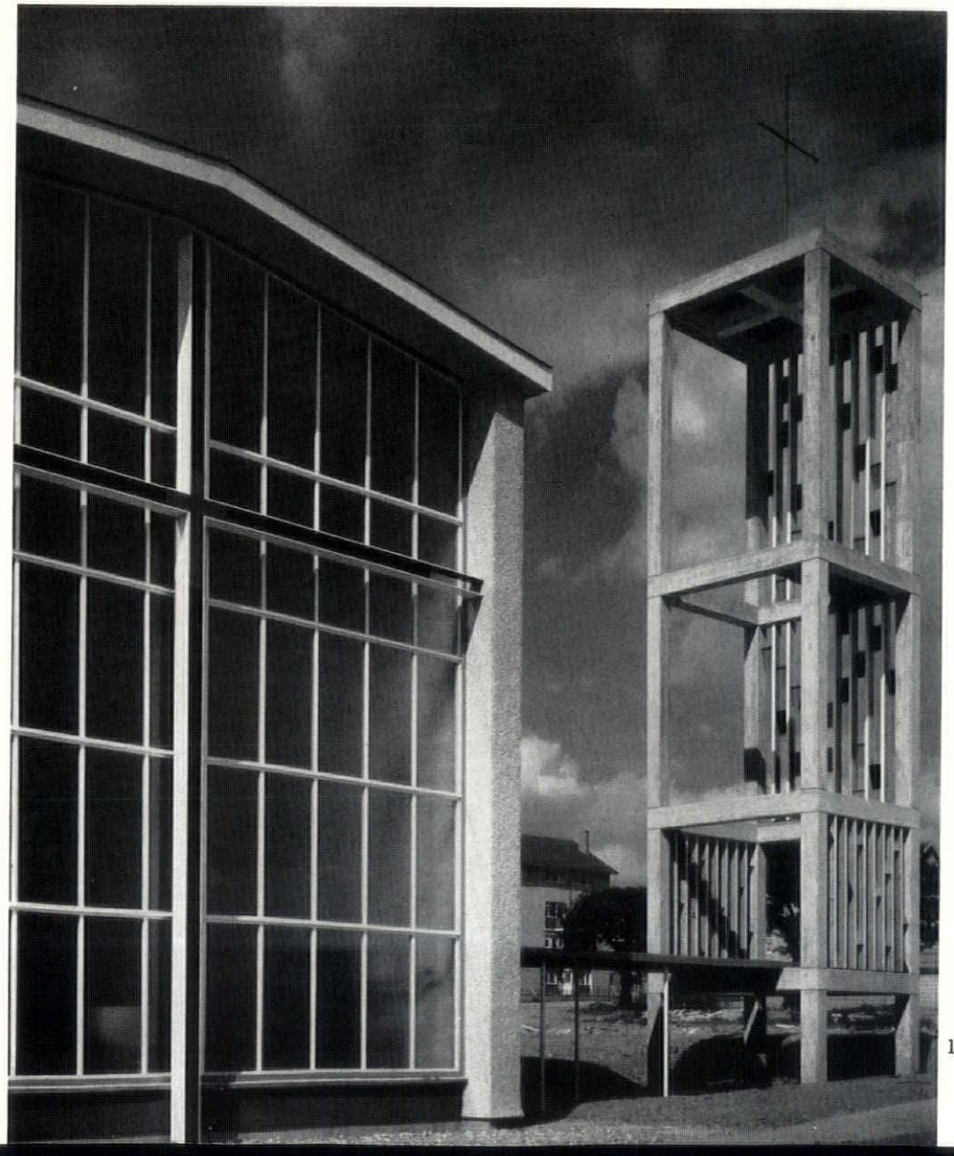
12

13, St. Chad's is not normally orientated and its liturgical east is, in fact, to the north; neither of its gable ends therefore faces morning or evening light. For the sake of better illumination both have been glazed, and a row of small windows provided in a clerestorey position.
14. the Tower at Bell Green is on the side nearer the main road, and also faces down another road opposite. hence the infilling of its two upper storeys is concentrated on that side, facing the approaching congregation.



13

ST. CHAD'S, BELL GREEN



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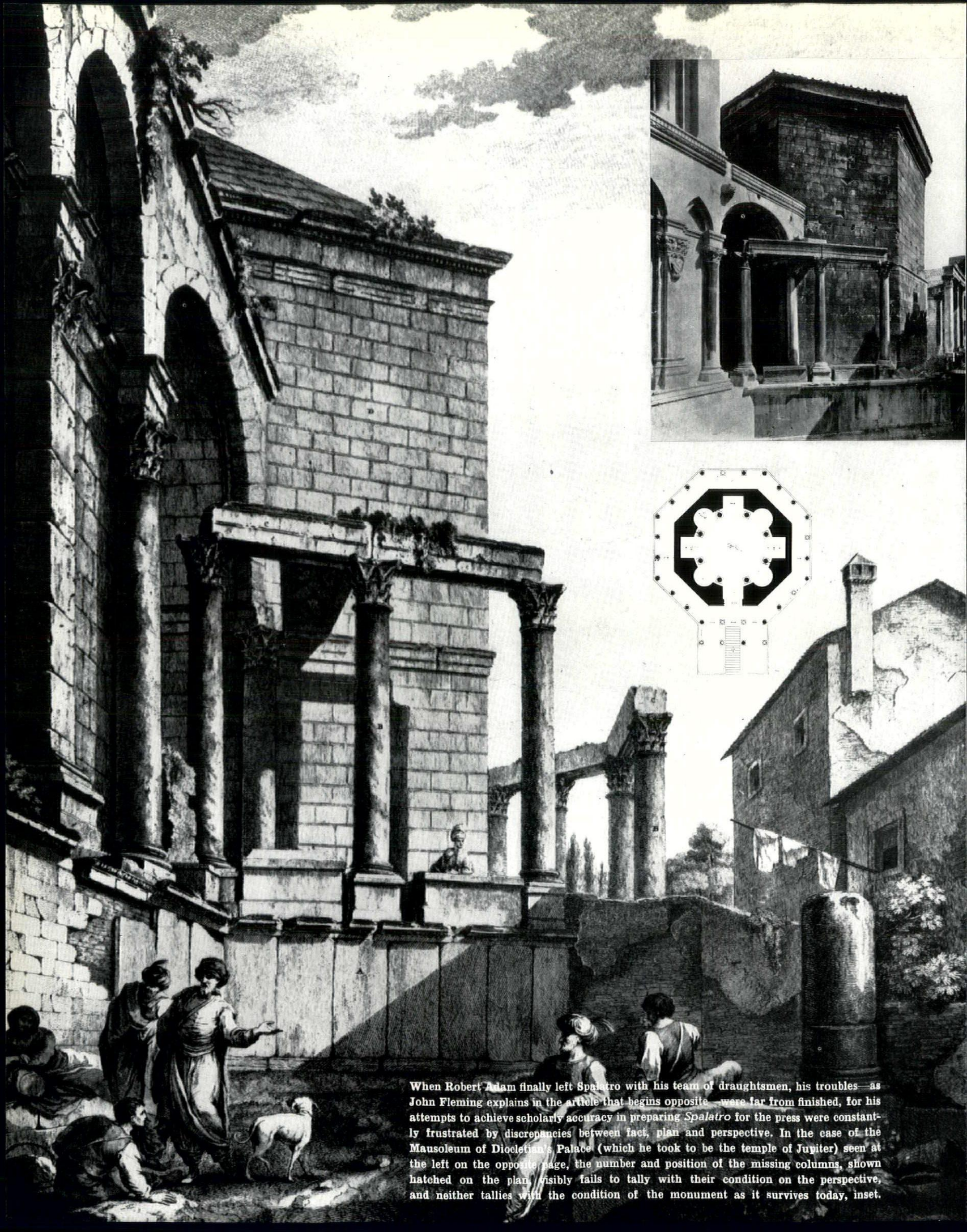
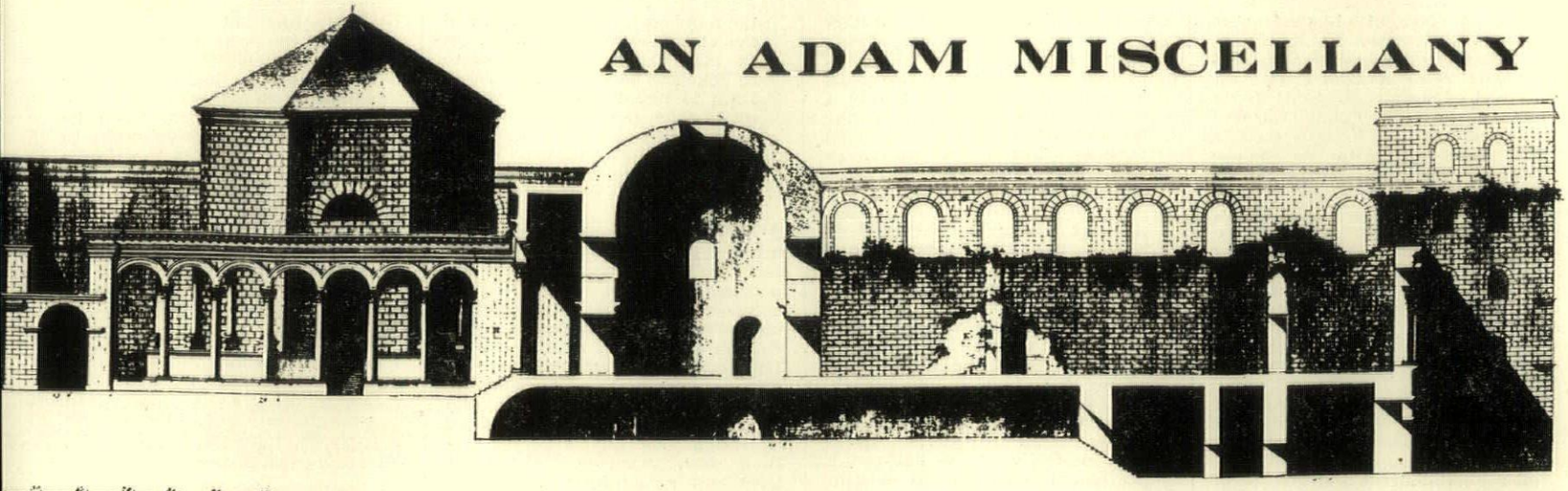


When Robert Adam finally left Spalatro with his team of draughtsmen, his troubles—as John Fleming explains in the article that begins opposite—were far from finished, for his attempts to achieve scholarly accuracy in preparing *Spalatro* for the press were constantly frustrated by discrepancies between fact, plan and perspective. In the case of the Mausoleum of Diocletian's Palace (which he took to be the temple of Jupiter) seen at the left on the opposite page, the number and position of the missing columns, shown hatched on the plan, visibly fails to tally with their condition on the perspective, and neither tallies with the condition of the monument as it survives today, inset.

AN ADAM MISCELLANY



The Palace from South to North

THE JOURNEY TO SPALATRO*

by John Fleming

In October, 1754, Robert Adam set off from Edinburgh on the Grand Tour and spent the next three years travelling and studying in Italy to prepare for the day when he would return home and launch himself as an architect in London. As astute as he was ambitious, the canny young Scot soon realized that the surest as well as the quickest way to establish his reputation in England would be by publishing some imposing folio. This would introduce him with a 'great puff,' he observed, 'conducive to raising all at once one's name and character.'† At Paris, in November, 1754, he was already looking out for engravers, seeking advice from Cochin,[1] who 'recommended a Mr. Babile[2] as a good man to do any ornaments for our books, etc., as having a genteel taste in that way.' And as soon as he reached Rome in the spring of 1755 he plunged into the world of architectural literature and polemics, hobnobbing with Piranesi, Robert Wood and his old Edinburgh friend Allan Ramsay, whose recently published *Dialogue on Taste* was to play an important part in the Graeco-Roman controversy.[3] The ingenious Mr. Wood, still basking in the fame of his *Ruins of Palmyra*, began by overawing the young Robert with his learning and then flattered him with friendly advice and encouragement, as did also the ebullient Piranesi who immediately offered to dedicate one of his engravings to him. Nothing, however, could affect Robert's shrewd estimate of his own capabilities and he was well aware that he would be unable to carry out any archaeological project unaided. Fortunately he had discovered at Florence a highly trained and knowledgeable architect and antiquary, Charles Louis Clérisseau,[4] whom he brought to Rome, installed in his palatial apartment above the Spanish Steps and adopted as his *cicerone* and drawing-master. He then acquired, at Rome, a staff of assistant draughtsmen—no fewer than six, some Italian and some French—whom Clérisseau trained and supervised.

Having thus marshalled his forces, the question of a suitable subject for a great folio presented itself. The first idea, which came to him 'in conversation with Wood and Ramsay,' was for a new and revised edition of Desgodetz's *Edifices antiques de Rome*[5]—to be adorned with fresh plates and corrected measurements printed in red ink!—'which lets them know the error,' he wrote (July 4, 1755):

> and this with a smart preface, a clever print of the author's head and an allegorical print in the way of Palladio and some remarks added to those of Desgodetz in different characters, could not fail to be of great authority and introduce me into England with an uncommon splendour. They could not miss to admire one who knew all the antiquities to an inch.

Not content with one ambitious project, however, he embarked simultaneously on two more: Hadrian's Villa at Tivoli and the Baths of Diocletian and Caracalla. He spent days clambering over the Baths with Piranesi and Clérisseau, 'haranguing and contriving the different uses of the different chambers, courts and halls,' and decided they would provide an excellent opportunity 'for examining and correcting on the spot' Lord Burlington's *Fabbriche Antiche* of 1730 in which Palladio's drawings of the Roman *thermae* were published.[6] Needless to say he 'found Palladio most faulty in many things and very unjust in his measurements, not so much in his plans as in the sections and elevations of which he has been very negligent and done many things by fancy where there were remains enough to point out the truth.'[7] His book on the Baths would be a great improvement on Palladio, he thought, and 'though I say it that should not, will be a most glorious work to which your Palmyras and Balbecks are less than nothing and vanity.'

These three projects, which incidentally provided a first-rate curriculum in architectural theory, kept Robert fully occupied during his first year at Rome; but eventually he began to realize the immensity of the task he had set himself. 'My project of Desgodetz,' he told his brother James on September 11, 1756, 'I was obliged to throw up, or lay aside, which you will. It was a work of years and I found retarded more material studies such as that of Hadrian's Villa and the Baths of Caracalla and Diocletian which are in a very prosperous way and I daresay will please you and take with the public.' His remaining six months at Rome were therefore devoted to these works and, by dint of steady application, he succeeded in completing them before his departure in the spring of 1757.

Meanwhile he had been considering further literary projects, this time of a more advanced, archaeological nature, and in a letter of July 24, 1756, he proposed examining Venice, Vicenza and Pola;[8] and then, on October 23, 1756, he mentioned, for the first time in his surviving correspondence, his intention of visiting Dalmatia. Only lack of money, he said, prevented him from going farther afield—to Calabria, Sicily and Greece, even to Egypt and the Holy Land[9]—and it is clear, from this and other letters, that the attraction of Spalatro lay in its easy accessibility from Venice rather than the style or structural qualities of this great monument of late Imperial Roman architecture. Despite his laudatory remarks in the preface to the book it would be a mistake to impute to Robert any preference for this period of classical architecture. His choice of Spalatro was made solely for practical reasons, it being the only unpublished site of major importance which he could afford to visit.[10] His first choice would have been Greece, 'that glorious country';

> to view the temples of Athens, of Thebes and of Sparta; the field of Marathon and the straits of Thermopylae, . . . to be where harangued Demosthenes, where fought Epaminondas and where Pericles counselled.

And in all this we may feel the influence of his friend Gavin Hamilton, that *éminence grise* of the neo-Classical movement,[11] who encouraged Robert, as he had Stuart and Revett almost ten years earlier, to go to Greece. Robert describes a dinner *chez* Hamilton at the Villa Lante on the Janiculum in March, 1757, when they 'talked of Arts and Sciences, of Greece and the Grecian islands which, if I had the cash, I would go and see with pleasure.' If only he could take Clérisseau and two draughtsmen, he said, 'we would finish very tolerable work to rival Stuart and Revett's in three months time and return home laden with laurel.' But it was not to be.

† Clerk of Penicuik Papers (by kind permission of Sir John Clerk). Unless otherwise cited all quotations are from this source. Spelling, capitalization and punctuation have been modernized.

[1] Charles-Nicolas Cochin (1715–1790). Robert had an introduction to his assistant John Ingram.

[2] Pierre-Edme Babel (1720–1761), engraved plates for the *Nouveau Vignole* (1747), Jeurat's *Traité de la Perspective* (1750) and Blondel's *Architecture Francaise* (1752–6).

[3] Published anonymously in the spring of 1755 as *The Investigator No.* 332. It appears to be extant only in the second edition of 1762. Ramsay thought it was directly responsible for Piranesi's *Della Magnificenza ed Architettura dei Romani* (1761). See M. Atholl Forbes: *Curiosities of a Scots Charter Chest* 1600–1800 (Edinburgh, 1887), p.199. See also John Fleming: *Allan Ramsay and Robert Adam in Italy* (The Connoisseur, March, 1956).

[4] Charles Louis Clérisseau (1721–1820). For a brief account of his relations with Robert Adam see John Fleming: *Robert Adam the Grand Tourist* (The Cornhill Magazine, Summer, 1955).

[5] Antoine Baruty Desgodetz: *Edifices antiques de Rome*: first published at Paris 1682, reissued 1695. An English edition was published at London by G. Marshall, 1771–1795; and an Italian edition by C. Fea at Rome, 1822. In 1843 G. Valadier published at Rome his *Aggiunte e correzioni all'opera sugli edifizi antichi di Roma dell'architetto Antoine Desgodetz.*

[6] In September, 1755, he asked David Wilson, bookseller in the Strand, to send him 'Lord Burlington's book of the Diocletian and Caracalla Baths' but Wilson could 'by no means find (it) for me.' He therefore had the family copy sent from Edinburgh to Rome.

[7] Letter to John Adam (November 26, 1756). Blair Adam Papers, quoted by kind permission of Capt. Charles Adam, RN.

[8] No further mention is made of Pola but plans of the Amphitheatre, Triumphal Arch and Temple of Diana at Pola which are inscribed in Robert's hand 'measured on the spot July, 1757' (RIBA Library, Vol. 2/2B sheet 11), confirm that he went there on his way to Spalatro. Clérisseau also made drawings of the antiquities there and James Adam proposed having these engraved (August, 1760) for publication in book form. James Adam made an unsuccessful expedition to Pola in September, 1760.

[9] Unfortunately he does not say what he hoped to see in Egypt but it may be assumed that the classical remains would be the main objective. He may also have intended investigating Ancient Egyptian Architecture which, according to the somewhat Darwinian theories then prevalent, was believed to have been the precursor of Greek Doric. A taste for Egyptian Architecture as a style would have been very *avant-garde* in 1757. (See S. Lang and N. Pevsner: 'The Egyptian Revival.' THE ARCHITECTURAL REVIEW, Vol. 119, 1956.)

[10] On March 30, 1757, he described it as 'Domitian's Palace at Spalatro.'

[11] Gavin Hamilton (1730–1797). For his role in the early history of Neo-Classicism see Ellis K. Waterhouse in *Proceedings of the British Academy*, Vol. XL. Robert saw Hamilton in London in October, 1754, and it seems likely that he was then advised by Hamilton to go to Greece, for he wrote to his family (December 18, 1754) 'as to going to Greece, I may assure you I have not the most distant prospect or imagination of such a journey nor do I think the advantage of it would in any way answer the expense of time, money and hazards of it.'

* Spalatro—this is Adam's own spelling: it was usually spelt 'Spalato,' and is now known as Split.

He must content himself with Spalatro. And second-best though it might be as a subject for his next folio, he was reassured by the approval of such cognoscenti as Sir James Gray and Count Gazola[12] who recommended him to read 'a book delle Antichita de Salone vicino a Spalatro, composta da autore delle Comp. di Giesu.'[13]

In his last letter from Rome, dated April 24, 1757, Robert announced his intention 'to put over my trip into Dalmatia with all expedition.' Clérisseau and two draughtsmen, Agostino Brunias[14] and another known as 'Liegeois,' were to accompany him and he had equipped himself with a special trunk

> of a most enormous magnitude, a-purpose to contain all my drawings, sketches and studies; books necessary on the road; with all my habiliments and utensils of war. It is the astonishment and admiration of all who see it and cost me 7 good zecchins, which is about 3 guineas and a half.

On July 1 he announced his arrival at Venice and immediately called on Consul Smith to 'obtain allowance from the Republic for my digging at Spalatro, . . . and to procure me letters for Governors, etc.' Fortune seemed to be smiling on him—'as if God was always puzzling his old noddle how to oblige me,' he said—for he now heard that his countryman, General William Graeme, of Bucklivie,[15] who was Commander in Chief of the Venetian Land Forces, would be reviewing his troops at Spalatro and, remarked Robert cannily, 'I daresay he will desire me to live with him whilst there and eat every day at his table.' On the day he wrote this letter, July 6, 1757, he had chartered a ship and, as he explained to his perhaps rather apprehensive family, had instructed the skipper to 'coast it all the way and lie ashore every night;' and was busy

> laying up stores of wine, bread, tea, sugar, tongues, hams and other necessaries for gentlemen voyagers and expect to have a very pleasant trip of it. It is true the weather is rather too hot, but our boat is to have a double canvas over it so that we shall be in a kind of room all the way and we carry beds and sheeting and other apparel.

But Robert was undaunted, spurred on by the thought that 'this jaunt to Dalmatia with my four people, makes a great puff even in Italy and cannot fail doing much more in England.

'The 11th of last month I set sail from Venice,' he wrote to his brother James from Spalatro on August 6:

> I arrived the 22nd in good health, as were also my fellow travellers. Since that time till this day I have been employed in considering the antiquities of this place, which I hope will prove a work very acceptable to the public as it is different from all other things yet published. I have met with many stoppages in my operations here by means of a wrong-headed Governor, but General Graeme took my part with great warmth and I hope now all difficulties are removed and that in 8, 10 days or at most a fortnight, I shall be ready to depart for Venice with all my operations in my pocket. The people are vastly polite, everything vastly cheap, a most wholesome air and glorious situation. Beef sells at one half-penny per pound weight, fowls at 2½d. each and a hare at 3d. And indeed all eatables are cheap in proportion, so that for £50 per annum 10 people may live like princes. It will cost me nevertheless some cash, as I have had to hire furniture from the Jews to furnish my house, which was nothing but bare walls, as there are no Inns, nor furnished lodgings to let here—for love nor money. We have a company of Comedians from Venice and have a play every evening. I dine with the General almost every day, who encloses this letter in some he is sending express to Venice. I just take this opportunity to assure you all of my welfare and to let you know that I shall write you more at length on my return to Venice. I must have done. God bless you all eternally and may the Saving Grace of the Madonna be on you all. I forgot to tell you that they have carried the Madonna in procession 8 days through the streets for love of rain which has not yet come. And all the Comedies and other diversions have been stopped during that Holy Ceremony. The ladies here are generally very handsome, with fine complexions, and dress well. But it is difficult to see them, not being time of the Carnival.

His hopes of returning in under a fortnight, with all his operations in his pocket, proved over sanguine for he did not leave Spalatro until August 23, reaching Venice on September 11.

We may surmise that Clérisseau and the draughtsmen were then set to work immediately on preparing 'finished drawings' for the projected book—but this must remain a surmise for all Robert's letters to his family written between August 5 and November 17 have unfortunately disappeared. (They were probably returned to him next year when he was collecting material for the text of *The Ruins of Spalatro*.) From two brief notes to his London agents,[16] however, we learn that Robert spent the last weeks of September and the first two of October in sight-seeing at Venice, Verona and Vicenza, from where he and the two draughtsmen began the first lap of their long journey to London. Clérisseau returned to Venice to supervize the engraving of the Spalatro drawings.

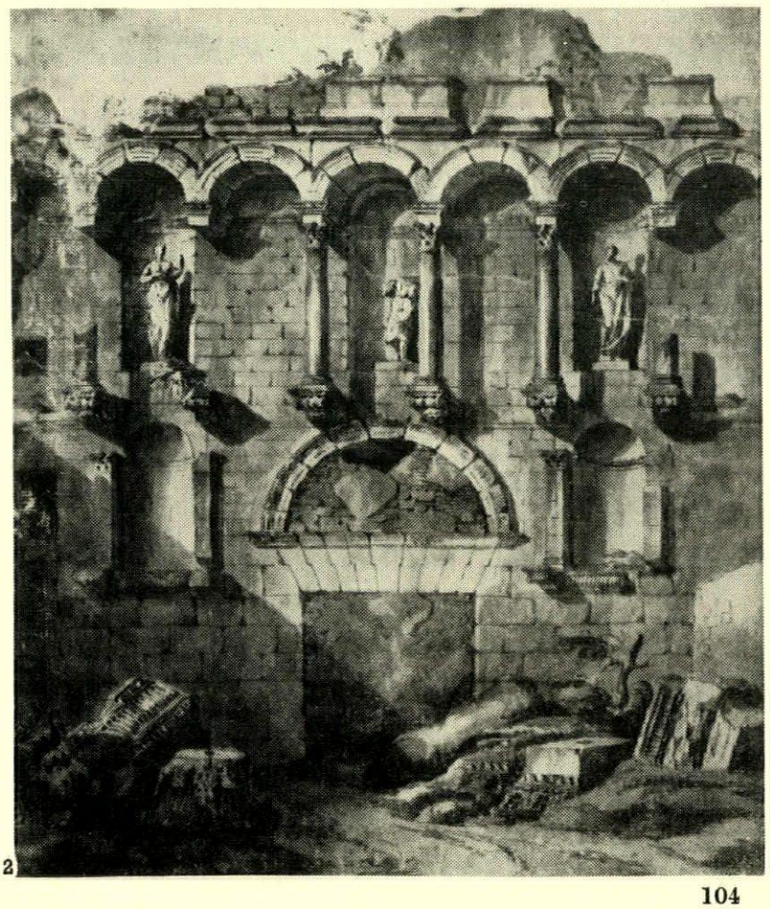
Not all the drawings were to be engraved at Venice, however, for in a letter from Augsburg (November 17) Robert remarked on:

> the numbers of engravers . . . and the cheapness of their work. As we may sometime have work to be done and books to be published I am to reconnoitre these youths with some exactitude, which I don't look upon as a useless piece of knowledge as I have no notion of paying £20 in England for what will be done as well here for 20 shillings.

A month later he proposed spending a week or two at Amsterdam 'in order to finish what drawings are not yet completed, which may be necessary to show in England. I mean those of my Dalmatian trip.'[17] And on January 17, 1758, he was at London. 'I was very lucky at the Custom House at Harwich,' he reported, 'where the Collector, who is a virtuoso and lover of drawings, by seeing mine let me pass everything free, which otherwise must have cost me at least £10 or £12 sterling.'

Two sets of finished drawings for *The Ruins of Spalatro* appear to have been made—few if any of them by Robert. (His conception of his role as leader of the expedition is indicated by his remark, quoted above, that he had been 'employed in considering the antiquities' of Spalatro.) The original set was largely, perhaps entirely, drawn by Clérisseau[18] and the duplicates perhaps also by Clérisseau or, more probably, by Brunias and Liegeois.[19] Very few of either set can now be traced. There are five among the vast collection of Clérisseau's drawings in the Hermitage at Leningrad.[20] A drawing of the Porta Aurea[21] is in the RIBA Library.[22]

These were no doubt among the hundreds of drawings proudly displayed to James Adam when he came down from Edinburgh to London in January, 1758, to welcome Robert home. A remark in James's first letter from London (February 1)—'Bob designs to make his first work the Ruins of Spalatro'—reveals that he still hoped to publish his Baths, Hadrian's Villa and even the Desgodetz.[23] As regards Spalatro he



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[12] Sir James Gray (d. 1773), Envoy Extraordinary to the King of Naples and the Two Sicilies, 1753–61. With his brother, General Gray, secretary of the Society of Dilettantes, he was instrumental in forwarding Stuart's expedition to Greece. Conte Gazola, of Naples, was closely connected with the discovery and publication of Paestum. See S. Lang: *The Early Publications of the Temples at Paestum* (J. of the Courtauld and Warburg Institutes, Vol. XIII (1950).

[13] *Illyricum Sacrum*, by D. Farlato (Venice, 1751), contains four chapters on Diocletian and ends with a section, *Marmora Salonita*, by Francesco Antonio Zacharia. Robert bought a copy in Italy. James Adam remarked (June 25, 1758) that Robert expected 'much information from Illirica Sacra.'

[14] Agostino Brunias (Brunais or Brunace). Painter and prizewinner at the Accademia di S. Luca, 1754. See Thieme-Becker; and Edwards: *Anecdotes of Painters* (1805), page 65. I hope to deal with him more fully in my forthcoming book on the Adams.

[15] General Graeme (d. 1767). Robert met him at Tournay in 1754. Graeme was appointed to Venice in 1756. See Louisa G. Graeme: *Or and Sable: A Book of the Graemes and Grahams* (1903), 427, 428, 430. His correspondence with Lord Bute (Bute Papers at Mount Stuart, Cardiff Public Library and British Museum) unfortunately contains no reference to Robert Adam at Spalatro.

[16] Letters to Messrs. Innes & Clerk of September 23, 1757, from Venice (*Guildhall Library MSS.* 3070, *SR.*21.6) and of October 12, 1757, from Vicenza (*National Library of Scotland MSS.* 590, *No.* 1606).

[17] The Liegeois had gone to Liége to see his family and was to rejoin Robert and Brunias at Amsterdam—hence Robert's wish to go there in order to finish the Spalatro drawings.

[18] Clérisseau's authorship of all the perspective views and perhaps other drawings as well is revealed in Adam correspondence of 1760 quoted below.

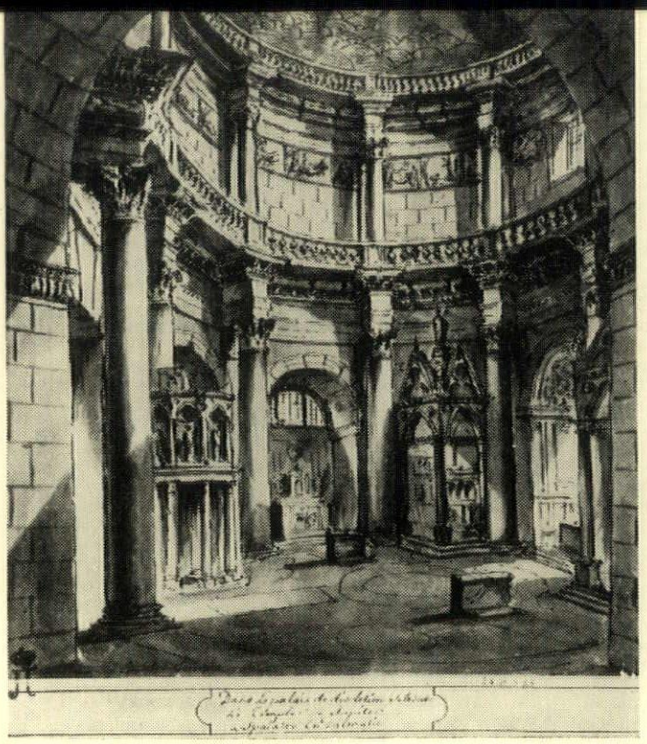
[19] Several architectural paintings and drawings by Brunias were included in the Adam sale at Christie's in 1785, when they were described as being 'in the style of Clérisseau.'

[20] These are for Plates XX, XXII and XLII of *The Ruins of Spalatro*. Two other drawings, depicting the interior of the court and the interior of the Temple of Jupiter, were not engraved. I am greatly indebted to Thomas J. McCormick Jnr. for this information. He has examined the Clérisseau drawings at Leningrad and has most generously allowed me to reproduce three of his photographs of them.

[21] Engraved as plate XII in the book.

[22] RIBA Library No. B5/4. Sepia ink, pen and wash. It differs slightly from the engraving by Santini. See *RIBA Journal* (13 April 1929), p.437. A drawing in the Witt Collection (No. 3186) is attributed to Clérisseau and described, erroneously, as "View of the Palace of Diocletian, Split." See *Handlist of the Drawings in the Witt Collection* (1956), p.136.

[23] The Hadrian's Villa project was not pursued. The history of the other two projects may be summarized. November, 1758, Robert told Clérisseau to instruct Zucchi to go ahead with engraving for the Degodetz. July, 1760, James Adam reported from Venice that Zucchi had done 'two capitals of Desgodetz that are, I think, the most perfect things I ever saw in that style.' At same date James proposed engraving drawings of the *thermae* for publication in two volumes at 3 guineas each. Robert stopped this (July 24, 1757), reporting that Mrs. Irvine (wife of the Pretender's physician) had issued Proposals for a book on the Roman Thermae and had obtained only 30 subscriptions. Robert recommended Desgodetz. Paul Sandby had told him 'that's the book. Every clap of men want it. Only think of the tribe of architects, carpenters, joiners, &ca., about London who would wish to read Desgodetz if he was in English, and can read no French. Haydon said to me, when he was puzzling at Desgodetz, that a man that translated that book into English would make his fortune.' Robert projected an edition in French, English and Italian. The project was later abandoned, perhaps on hearing of G. Marshall's edition



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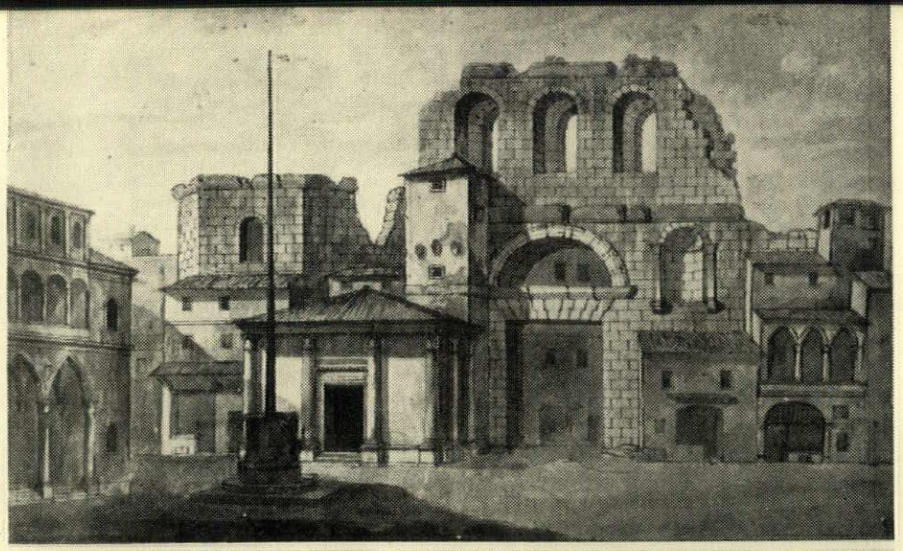

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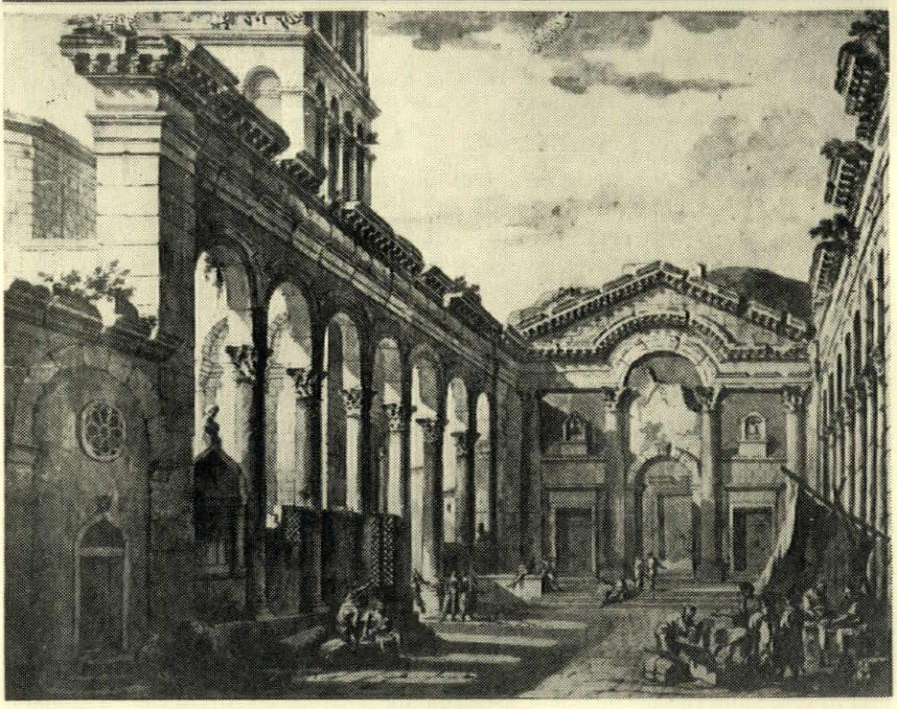

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Of the numerous drawings apparently prepared by Clérisseau for Robert Adam's Spalatro, *but never credited to him in the book when it was published, one—of the Porta Aurea* 2*—is among those from his hand in the RIBA library, and five are among the vast body of Clérisseau material in the Hermitage, Leningrad. Three of these are published here for the first time: a small sketch of the interior of the Temple of Jupiter (actually the Mausoleum)* 3*, including the rustication that caused so much later dispute; and two larger and more carefully prepared drawings, of the Porta Ferrea,* 4*, and the great Atrium,* 5.

was confronted with an immediate and somewhat awkward problem. As James put it (February 1):

> 'tis necessary to have an introduction wrote, giving a history of the place, its commerce and inhabitants, likewise some sketch of the life of Diocletian the builder of the place. This task he (Robert) finds himself unequal to, both from want of languages to consult the best authorities and from want of time. However he would not wish to let the world know that this was done by anybody but himself. In casting around to think who could best conceal it, Mr. Drysdale occurred as a proper hand.[24] The great objection was his indolence and that he would not undertake it and 'tis on this score we should wish to have your (his sister Nelly's) opinion. If you thought he would apply so long as to do as small a thing of that kind, either for love or money, I should write him about it and send him all Bob's remarks and authorities and I should think he could be repaid by a genteel present of £50 or £60 value, besides Bob's interest in any future events.

His misgivings about John Drysdale evidently proved correct, perhaps fortunately, for Robert later prevailed upon his cousin William Robertson, the eminent historian and inspirer of Gibbon, to write the text.[25] 'I cannot express my surprise and admiration for Willie's preface,' confessed Robert on November 1, 1759:

> it is beautifully said and in a few words contains the full sense of what would have taken many pages from any other historian of this age but himself. If anything can make me think more highly of his abilities than I did from his History, it is the masterly penning of my preface. I have made bold to mark on the margin of it some observations, which I think it will be necessary to consider. They are mostly in points of fact.

Robertson's collaboration is of the greatest importance, for it extended far beyond the mere wording of the Preface. His lucidity, his scholarly detachment and, above all, his passion for scrupulous accuracy and constant recourse to documentary evidence, were to influence Robert profoundly. Henceforward, any tendency on the part of Clérisseau, the draughtsmen or the engravers to stray from the measurements and other archaeological evidence collected on the site, was to be severely curbed by Robert. And already in November, 1759, Robertson's influence may be felt in Robert's comments on his rivals:

> I am not for praising the taste of W(oo)ds work. The greatest connoisseurs here are of my own private opinion that Taste and Truth, or as W(illi)e terms it, Accuracy, are not the characteristics or qualifications of these works. They are as hard as iron and as false as hell.

And he concludes by begging James to 'send Willie (Robertson) a present of 10 dozen of Maxwell's best claret on my account.'

But this is to anticipate. In the early spring of 1758 the principal task was to 'push on,' as Robert said, with engraving the plates and by the autumn Michael Angelo Rooker had been commissioned, together with Paul Sandby who was to put in the 'Rusticks.' This promising arrangement soon came to grief. 'Sandby has lately quite dispirited me,' said Robert (September 5, 1758), 'by telling me that Rooker was such an idle worthless fellow that he would do nothing and that he was going to leave him directly, for that now the plays begin he will never work an hour in a fortnight.' (Rooker was a scene-painter at the Haymarket Theatre.) He was able to give a more encouraging report on December 12, however:

> the front is near finished by Paton and the figures by P. Sandby. The inside of the Temple of Bacchus by Paton and the front to the sea and in ruins near finished by Walker.

Meanwhile engraving was going ahead at Venice under Clérisseau's supervision and on September 5, 1758, Robert sent James, then at Edinburgh, 'the last proof which Clérisseau sent me of Spalatro. Look at it and return it,' he wrote, 'I think it best you should show it to few

though this was not published until 1771. Many engravings were made for the Adam edition of Desgodetz and the Adam firm's accounts for 1772 (Blair Adam Papers) contain the entry: 'By Work of Desgodetz for the cost of it—£817 4s. 7d.' (probably an estimate, and an exaggerated one, for the accounts were drawn up for the benefit of creditors, following the Adelphi disaster). Lot 108 in the Final Sale of the Effects of Robert Adam in 1821 contained 'A set of 14 prints of Roman Antiquities, intended by Mr. Adam as a work correcting that of Desgodetz (unpublished).' Lots 109–129 contained '138 ditto.' An undated book-list, probably of 1823, advertised as shortly to be published 'Architectural Remains in Rome, Pola ad Naples, from drawings made by Clérisseau, under the direction of the late Robert Adam, Esq., F.R.S., F.S.A., Architect to the King.' These were to include, *inter alia*, 'Several drawings of Corinthian Columns, Entablatures, &ca., which were collected by Mr. Adam for elucidating the history of the most elegant of the orders of Architecture, and for correcting the errors of Desgodetz.' (See A. T. Bolton in *Trans. Bibliographical Society*, Vol. XIV, 1915–17, pages 306–7.) Clérisseau mentions the Desgodetz project on page 13 of his introduction to his *Antiquités de la France*, Vol. 1 (1778).

[24] John Drysdale (1718–1788), Scottish Divine, married Robert's sister Mary Adam.

[25] William Robertson (1721–1793). Leapt to fame on the publication of his *History of Scotland* in February, 1759. He wrote the Preface, Dedication and Proposals for *The Ruins of Spalatro*. He may also have helped with the descriptions of the plates. He stayed with Robert at Lower Grosvenor Street in September, 1760, which James described as an opportunity 'very favourable for getting the finishing stroke put to the Preface, &ca.'

people as it needs some corrections.' Disquieting news arrived from Venice in November, however. Bartolozzi was becoming truculent in his demands for money[26] and even Clérisseau was threatening to move to Florence, where the living was cheaper, and leave the Venetian engravers to their own devices. Robert instructed his agent at Venice, the Scottish merchant Mr. Duff, to pacify them and expedite matters—'and as soon as I hear something certain about the plates,' he told James,

> I shall send you the paper of Proposals[27] but till then wont have a farthing from anybody. Nor can I begin laying the specimens before the people here till I have a perspective view to put amongst the geometrical.

The Ruins of Spalatro seems to have remained in this somewhat unsatisfactory state until James left London for Venice in May, 1760, undertaking, as from that date, the main responsibility of seeing the book through the press. His first reports were encouraging. At Paris he made a useful contact with the bookseller Praulte[28] and as soon as he reached Venice, on about June 25, he sent Robert his first Progress Report. A few of the copper-plates were already on their way to London, he wrote, and Clérisseau reckoned that 'we shall get all finished in about 3 months' provided they both stay on at Venice and keep an eye on the engravers.[29] James decided to have more plates engraved at Venice than had been originally intended. 'Let Bob know,' he wrote (July 2, 1760), 'that I have given the two sections and front of the Vestibulum to Zucchi, that his price is 30 zecchins for each of the sections and 20 for the front. I should like to know how this is by what would have been demanded at London. I think 'tis high but there is no comparison of the work.'[30] At the same time he returned proofs of the plates engraved at London with Clérisseau's criticism and notes for re-touching. Clérisseau thought them 'better than expectation, but not near so well as his Abbé's,[31] which he says will appear very different printed on good paper with English ink.'[32]

Simultaneously, on July 24, Robert sent James a Progress Report from London. The plates of six perspective views had already been despatched from Venice, thirty-one of various kinds were still in the Venetian engravers' hands and ten other subjects remained outstanding. 'On the other side,' he wrote, 'I give you the state of the plates in England' and he listed nine as finished and five as half-finished, which, he pointed out,

> with the 47 on the other side makes 61 plates in all which is more than bargained for. I really think it very possible to get the whole done by next winter but am afraid it would be impossible to get them all printed off and ready to deliver, besides that we must see how subscriptions go upon the proofs being thrown in to stirr up the public . . . Before any new publication I should wish for a Truce and Cessation (of the war), as everybody complains of the frequency of these works. A Peace will also turn men's minds more to the Arts and works of Merit. I am persuaded that if Stuart had to begin his subscriptions (now), as he has happily for himself ended them, he would not procure 100 in London. . . . If the frontispiece could be done by Piranesi it would be showy and make a puff here.

James replied to this letter on August 20, 1760:

> I have considered the list of your plates and am really glad to see this weighty business draw so near to a conclusion. . . . As to the frontispiece being done by Piranesi, Clérisseau assures me that we cannot trust to him for that he has always refused to work for others. . . . I am now getting the Proposals printed in Italian and have got some of the connoisseurs here engaged to hand them about among the nobility.[33] I think you are right to delay publication of Spalatro till winter after next. It both gains time for subscriptions and for printing off the plates, without encroaching too much on the patience of the public.[34]

James was somewhat premature with his self-congratulations in having brought 'this weighty business so near to a conclusion,' for it was only at this stage, when it became possible to make up a 'dummy' of the book, that certain alarming discrepancies and inaccuracies were revealed—the result, one may suspect, of Clérisseau's weakness for imaginary reconstructions and additions[35]—and

James was soon engulfed in a fresh series of complications, writing rather querulously (August 5, 1760):

> There is a difficulty with respect to the Spalatro Plan . . . 'tis the great height of those windows of the exterior wall that are supposed to have lighted Diocletian's bedchamber and the private Caenatio. In short, the height to the top of those rooms, which must have been 46ft. is a thing almost impossible to imagine, because it raises them higher than the roofs of the Cryptoporticus, Basilica &ca. &ca. If therefore there was no row of windows in the exterior wall lower than those now mentioned, let us rather suppose the Cubiculum of Diocletian and his Caenatio to have been, like the others, lighted from the roof and that these arches or windows above served only as a continuation of those that were supposed to light the high gallery that surround the Palace. By this means we shall save a great appearance of improbability and shall with great ease, by means of a door in the end of our gallery, continue our walk round the Palace overhead of the Cubiculum of Diocletian, the Caenatio and Cryptoporticus—which, for the sake of the walk, I would suppose all of the same height. I am fully persuaded if Bob will look upon the Plan and Sections he will perfectly understand me. There will, however, be something to alter in the description because I remember the Cubiculum and Caenatio were both mentioned as lighted from the side.[36]

Later, on September 24, he wrote to London about further discrepancies and his proposed corrections:

> I send enclosed a half of the geometrical Ruins of the Marine Wall, which Clérisseau and I have fully considered and are of the opinion that any alteration that is made on it might be done on this plate and not on the View, it being a pity to alter it, whereas this can't suffer. Some corrections are made on it by Clérisseau and the arches are made a little more complete to answer those of the view. The columns of the Venetian Window are also restored, which can have no very bad effect because if they are not there now, they have been there and should future travellers ever critize 'tis easy to suppose they were there in Bob's time.[37]

Robert, with his Robertsonian passion for accuracy, can hardly have been reassured by such cavalier treatment of his archaeological labours. His comments are not recorded but his feelings may be judged, perhaps, by his approach to another problem which now began to raise its ugly head—the question of how, or rather whether, Clérisseau's contribution to *The Ruins of Spalatro* should be acknowledged. As little credit as possible should be given him, thought Robert, who had been exceedingly annoyed to read, in a letter from Consul Smith, of 'those very fine drawings done by Mr. Clérisseau under your eye.' The wretch had been showing the Spalatro drawings to 'all the English he could lay hands on,' said Robert, 'by which means they spread it abroad in England and Mr. Chambers and Mr. Milne and all of them may, and I don't doubt but do, give it out that all the drawings are Clérisseau's—and how can it be otherwise when he wishes it should be known?' The only remedy was to print *Robert Adam delint* under every plate. James at first agreed—'I can't see why you should not, especially as three-fourths of the people who see the book will imagine that you did the whole and the remaining fourth cannot but know that you did some of them'—but later he changed his mind. 'My reasons are these,' he wrote to his sister Betty :

> First it is known to the world, by his own Preface, that C(lérissea)u was carried there by him, and those English who know C(lérissea)u must guess the reason and must be sensible that most of these views were done by him. Bob confessing of this is much more honest and much more candid than to seem to desire the reputation which is due to another.

In the event all names were omitted from the plates except those of the engravers and Clérisseau's share in the work was successfully concealed by relegating his name to the list of foreign subscribers and to a brief mention in the Preface as 'a companion on the voyage.'

James left Venice in November, 1760, having instructed Mr. Duff to forward the ten remaining plates to Rome as soon as they were ready. As might have been expected, the engravers applied themselves less ardently to the burin when James was no longer there to goad them and it was not until the end of May, 1761, that the plates reached Rome, 'to get a little re-touch of the gravers here,'[38] wrote James, before they were forwarded on to London. At last, on August 7, he reported that every plate was satisfactorily finished and that he was making up a final and corrected *dummy*, 'put in its proper order, with the dimensions and explanations.'[39] On February 4, 1762, it was brought to Robert's house in Lower Grosvenor Street by Lord Gormanston; but Robert's delight soon turned to dismay as he thumbed eagerly through its pages. 'I am much puzzled and much perplexed by this same Book of Spalatro,' he wrote to James. Needless extravagancies, such as a 'Table of contents' had been introduced; the plates were sub-titled in French as well as English ('as there is to be no French edition,' he remarked, 'this would look absurd'); the whole lay-out was mismanaged; there were obvious inaccuracies in some of the

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[26] Advance payments were evidently made for James wrote (July 18, 1760) 'tis impossible to get Bartolozzi to do anything. In the meantime we have his note for the money and are considering ways and means of recovering it.' It was decided he should pay 'his debt (being 50 zecchins)' in making pastel copies of paintings by Balestra and others which James thought would 'sell to advantage in London.'

[27] I have been unable to find a copy of these Proposals. See also footnote 32.

[28] A French edition was contemplated. James reported (July 15, 1760) 'Clérisseau had some time ago a letter from Mariette of Paris about some antiquities, &ca. He concludes by desiring to be informed when his friend's work of Spalatro will be finished and hopes there will be a French edition of it as the expectations of the learned there are great. He is persuaded Mr. Wood had no reason to regret his having translated his Palmyra and Balbec into their language.' Mariette remained a faithful protagonist of *The Ruins of Spalatro*: see his letter of 1765 (Bottari-Ticozzi: *Raccolta di Lettere* (1822), Vol. V, page 426.)

[29] Santini 'is turned out a capricious creature that must have a person over him to keep him to work' (James Adam: June 25, 1760). 'The first day I was a little dry to him, but when I found him inclined to proceed I changed my tone and became more mild . . . since which time he has continued in perfect subjection and is inclined to dispatch whatever is given him. Zucchi is likewise close at work.' (James Adam: July 18, 1760.)

[30] This seems excessive. Felice Polanzani charged 12 zecchins for engraving Nogari's *Philosopher* in 1743. (*Jahrb. der Preuss. Kunstsammlungen* Vol. LII, 1931 (Beiheft), p. 59.)

[31] The abbé was Paolo Santini (1729–1793), 'prete della chiesa di Santa Maria Formosa.' See G. Moschini: *Dell'Incisione in Venezia* (Venice 1924) p. 156. Santini is now remembered only for his *Atlas Universel* published at Venice in 1776.

[32] The paper for *The Ruins of Spalatro* was bought at Rome. The watermark would appear to correspond with Heawood's No. 1592 (Rome 1739).

[33] No copy of these Proposals appears to have survived. Consul Smith, who published Stuart and Revett's Proposals in 1753, no doubt published Robert's as well. They would have been printed by the firm of Giambattista Pasquali which Smith financed. It was presumably to these Proposals that Gradenigo referred on '19 Febraio 1760 M.V. (i.e. 1761) Roberto Adam, Inglese . . . esibisce un Libro stampato, che fù ben inciso dimostrante le *rovine del Palazzo dell'Imperatore Diocleziano esistenti nella Città di Spalato nella Dalmazia*, il qual Volume si vende dà Gio Batt. Albrizj Libraro per sei Zecchini e contiene 60 stampe in foglio Imperiale.' (N. H. Pietro Gradenigo: *Notizie d'Arte*. ed Lina Livan [Venice 1942] p. 71). The Biblioteca Correr at Venice possesses a pamphlet of 32 pages in quarto, containing an Italian translation of the text of *The Ruins of Spalatro*, to which is added a dedication *A Sua Eccellenza / Giacomo Foscarini/di Sua Eccellenza / Sebastiano Cavalier*. This dedication is signed by Francisco Egidi. The pamphlet bears the same date as the London edition and refers to 61 plates. The printer's name is not given.

[34] As an advertisement Robert proposed selling the engraved perspective views separately but James suggested (August 13, 1761) that these be sold in pairs for wall-decoration, as in a Print Room—'the whole may be so adjusted as to adorn the side of a dressing-room extremely well. You ought to finish a side of your little red room in this way to show the public the effect.' He proposed charging 2s. or 2s. 6d. per print. This may be the origin of this charming form of eighteenth-century interior decoration.

[35] Robert had already had occasion to curb Clérisseau's fancy (August 24, 1760): 'By Clérisseau's last letter I see he wants to do something to the inside of the Imperial Apartments but I am afraid that is pushing the joke too far. In a ground plan the smallest bit above ground gives hints, but when no walls remain except in one spot, it would be absurd to suppose they were all remaining.'

[36] The engraving and text appear to have been emended as James suggested. See Plate XVIII (the walls break up in the middle and the vaults are omitted) and page 11 of the *Description* where the Cubiculum is said 'to have been particularly contrived for excluding light and noise,' while the Caenatio is said to have 'enjoyed benefit of the setting sun.'

[37] Plate VIII by Walker appears to have altered, as James suggested, to agree with Plate VII by Santini.

[38] James brought Domenico Cunego and Antonio Zucchi to Rome. The 'acqueduct and Jove's Temple' were being engraved at Rome by Cunego in May, 1761.

[39] James wrote to Robert (March 7, 1761): 'If you wish me to do anything in the explication of the plates you must give me all the materials, both what we collected before I left you and what you yourself remember of the constructions, &c.' He suggested it would be better if Robert and William Robertson collaborated over the 'explications.'



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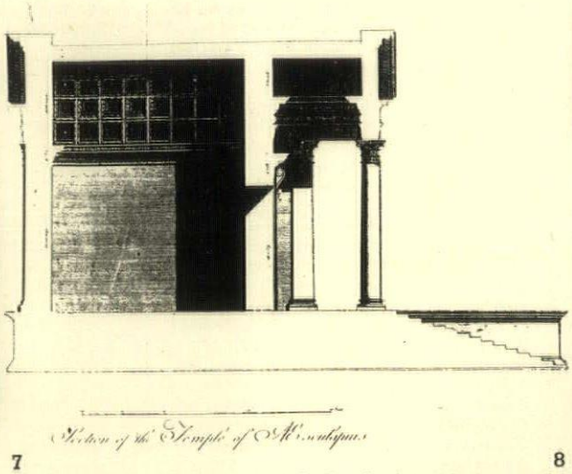

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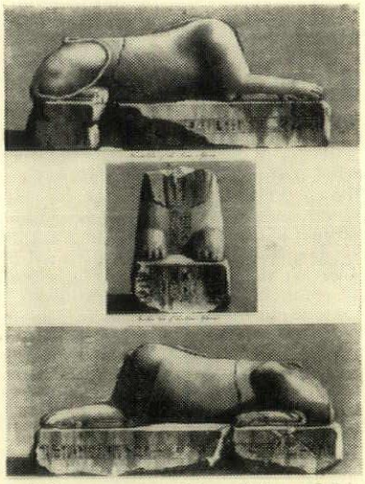

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Clérisseau proved unreliable, rather than grossly inaccurate: the discrepancies between perspective, 6, and section, 7, of the Temple of Aesculapius extend beyond the mere matter of steps, but complaints about the hieroglyphics on the sphinx, 8, were unfounded and they can be read.

plates and, worst of all, there were not enough of them, for 60 plates in folio had been promised to the subscribers and James had only produced 56. Robert exercised all his ingenuity in juggling with the plates to make them spin out to 60 folio sheets, but confessed himself defeated. 'If you could fall on any device to supply this deficit, I should be much obliged to you,' he remarked sarcastically to James.

> If there had been any altars or any other ornaments, we could have tickled up 4 plates in a few days, or some basreliefs would have done very well. But I am afraid these are things scarcely to be ventured on inventing—what say you?

Is this sarcasm too—or was his passion for accuracy waning? If the latter, it soon revived. 'Clérisseau has been very thoughtless in his views,' he went on relentlessly:

> if you look at the steps of the Temple of Aesculapius you will see they are so large and so high that in place of 15 steps he could not have ten. Then he says it was of brick encrusted with marble, whereas it really is of stone, like Jupiter's, both outside and inside and no brick about it. You will also observe that in the view of the outside of Jupiter's Temple he has made columns remaining in the outside of the octagon that do not remain and are marked faint in the plan.[40]

Not even the general view of Spalatro escaped his criticism:

> I cannot see how you have supposed the right road from Salona to Spalatro to be atop of the acqueduct, as there was a fine level though rocky road all the way between the town and the Palace, so that I can conceive no reason for this conjecture. Besides the road would have been too narrow.[41]

It was only too clear that much of the detail had been invented by Clérisseau in a very unscholarly spirit. Plate LV, for example. 'From whence take you your authority for the sphynx holding a head or image of Jupiter in his hand?' Robert demanded, 'because I shall be asked the question. Are the hieroglyphics real ones on the other sphynx (that not of my acquaintance) or are they imaginary ones? as they have published a book on the explication of these diabolical characters and may prove to be a falsity.'[42]

Faced by such grave problems, he thought it hardly worth mentioning the apparently haphazard appearances and reappearances of the *Rusticks*. 'As you have shown the Rusticks in the inside of the Temple of Jupiter and in the general section, it will look odd that they are not inserted in the large sections, where they ought to have been'—but he decided to 'let them go as they were, without putting in the Rusticks . . . which would now be very troublesome.' Finally he turned to James's suggestion for the frontispiece: an engraved portrait of the King. Robert remarked scornfully that he and his sisters were 'of one mind in thinking it would appear very vulgar, as it is not, nor has not been, the fashion with books of consequence.'

Thus the correspondence between London and Rome was to drag on intermittently until the autumn of 1762.[43] James reconsidered the layout during the summer and revised his Explanations. He showed the whole book in manuscript to Winckelmann and must have been highly flattered by the great man's opinion of it, for Winckelmann wrote to his friend Volkmann on June 18, 1762, that 'there will soon be published a magnificent work in English, containing accurate drawings of the Palace of the Emperor Diocletian in Salona. . . . The comment in English has been given me for checking. It has been thought out with great intelligence and taste.'[44] And again writing to Usteri (July 4, 1762) he said that the text was 'much as I would have attempted to write it.'[45] But the glow suffused by the great Winckelmann's approval must have been sadly cooled by news of the imminent publication of *The Antiquities of Athens*, with a dedication to George III. James heard of it from Sir Robert Strange, the famous engraver, who was then at Rome, and wrote to his sister Jenny (June 12, 1762):

> I can't say I like this sort of forestalling much. I wish we had been first. If you remember I wrote you on this head some time ago. However I am far from saying this interferes with our project, because why not two of these to the Protector of the Arts? and perhaps there may be something cleverer in the one than in the other—which I should be extremely desirous of.

The Antiquities of Athens appeared later that year and its immediate success may account for the despondent note sounded in the last reference to *The Ruins of Spalatro* in the surviving Adam letters. Writing to James from London on December 21, 1762, Betty Adam said:

> Bob is perfectly sick of all publications, especially by subscription, as he has fully experienced by his own work that people look upon it as picking their pockets, which to be sure is not an agreeable way for a gentleman to make money. These things are at present a drug and he does not think that they are likely to have soon a greater relish for them.

Astute and businesslike as ever, Robert allowed the acclaim which greeted *The Antiquities of Athens* to subside before bringing out his *magnum opus*, so that when it finally appeared, in 1764, it took its place, calmly and without question, alongside the folios of Stuart and Revett and of Robert Wood. No doubt it advanced the reputation of the already flourishing Adam firm, though Gibbon, for one, was sceptical of its scholarship.[46] Whether its author considered it to have been a profitable venture may be questioned. A revealing and disheartening entry appears in the Adam firm's accounts in July, 1772, when the financial position following the Adelphi disaster was being examined—'By Spalatro for Balance of that account, being the value of plates and copies on hand: £659 15s. 0d.'[47]

[40] Compare Plate LVIII which shows 9 steps and Plate XL which shows 15 steps. The text was amended to read 'The walls of this Temple are built of Freestone. . . .' For Jupiter's Temple see Plates XXVI and XXVII which do not agree.

[41] The *Description* contains the following words, presumably interpolated by Robert—'This acqueduct is vulgarly supposed to have been a Highway leading from Salona to Spalatro: But besides the Remains of the Conduit for Water, which is yet observable in many Places, it is too narrow ever to have served for any other Purpose than that of an Acqueduct, as it is not above Eight Feet wide over the Walls.'

[42] The sphinx holding a head of Jupiter was presumably that shown on Plates LV and LVI. The sphinx with hieroglyphics is that shown on Plate LX. The book on hieroglyphics to which Robert referred was presumably *De Inscriptione quadam AEgyptiaca taurini inventa et characteribus AEgyptiis* published at Rome in 1761.

[43] The last copper-plate arrived in London at the end of August, 1762.

[44] J. J. Winckelmann: *Briefe* (ed. Rehm & Diepolder: Berlin 1952–57) Vol. II p. 237.

[45] *ibid.* p. 248.

[46] 'But there is room to suspect that the elegance of his designs and engraving has somewhat flattered the objects which it was their purpose to represent.' (*Decline and Fall*, Chapter XII.)

[47] Blair Adam Papers. This is probably an exaggerated estimate. The accounts were prepared for the benefit of creditors after the Adelphi disaster.

THE ABERDEEN QUARRIES

by T. C. Barker

There has been a tendency to dismiss John Adam as a man of little importance, not to be mentioned in the same breath with his two younger brothers, Robert and James. Bolton, for instance, came to the conclusion that his 'greatest interest and occupation' lay in developing the family acres at Blair Adam, near Kinross.[1] Swarbrick has pointed out, however, that John Adam undertook various public works in Scotland and during the years 1767–72 was employed to build the Jamaica Street Bridge over the Clyde at Glasgow.[2] I have now found in the Aberdeen Town Records evidence of yet another of his activities and suggest that he may well emerge as a man of considerably greater stature than is at present supposed.

On March 27, 1766, Aberdeen Town Council considered an application from John Adam, describing himself as an architect of Edinburgh, for a 21-year lease of stone in the Bay of Nigg to the south of the town. Adam informed the Council that he had the opportunity to be supplied from elsewhere but preferred Aberdeen stone, as he had already 'another branch of business of the same nature carrying on at this place [Aberdeen].' His application was successful and on July 1 of the following year, 1767, he took a further lease of stone in the vicinity, in this second case for four years.

Why did he take these leases? Where was the stone to be used?

In the first half of the eighteenth century, a considerable coastwise trade had developed between Aberdeen and London, and an Aberdeen-sponsored concern calling itself the London Shipping Company had been formed to take advantage of this

[1] A.T. Bolton, *The Architecture of Robert and James Adam* (1922), vol. I, p. 5.

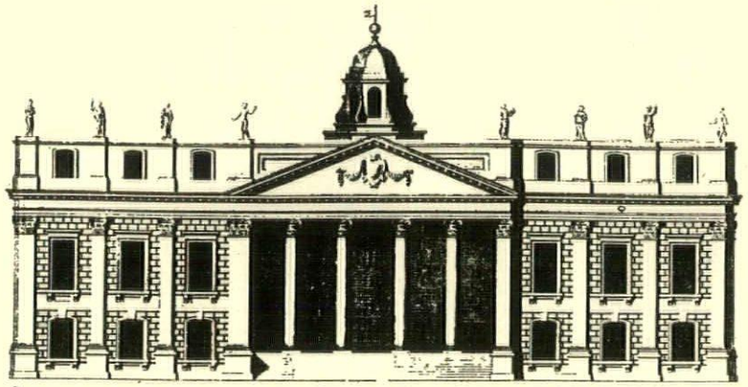
[2] John Swarbrick, *Robert Adam and his Brothers* (1916), p. 219.

growing volume of trade. Vessels returning to London carried cargoes such as woollen stockings and salmon, but in general these back freights were insufficient and stone had to be taken aboard as ballast. On February 23, 1771, for instance, Aberdeen Town Council resolved that John Adam should 'afford the Town of Aberdeen's shipping plying the London trade such quantity of stones as they may incline to take on board at the usual freight paid by him to others. And that the said shipping shall have the same dispatch in loading and unloading as is given to any other ships which may be under contract or charter party with him.'

There was a growing market in London for this stone, which was almost as hard as granite though not actually granite itself. The early 1760s saw the first attempts by the local authorities to pave the London streets,[3] and these slabs of stone were ideal for the purpose. The stone from John Adam's quarries was indeed used for paving. On March 29, 1773, Aberdeen Town Council heard a letter read from Messrs. John Adam and Company, seeking permission to allow their 'paving and street stones' to lie on the quay for a longer period of time than was stipulated in the local by-laws. So John Adam emerges as a stone merchant selling some of the fine-grained silvery paving stones to London. However the document just quoted sounds as if the concern was unable to dispose of its paving stones as quickly as it would have liked. Might not this difficulty have arisen from the Adams' financial straits after the debacle of their grandiose Adelphi scheme? By the time of the next reference to John Adam in the minutes of Aberdeen Town Council, on March 17, 1774, the paving stone business was certainly in trouble. A Mr. Campbell of London—possibly the Archibald Campbell mentioned in the Commons' *Journals* as clerk to the Adams[4]—had then the right to John Adam's lease. Five years later, on August 17, 1779, John Adam himself wrote offering payment of outstanding debts and renouncing his lease. On this last occasion he wrote from the family seat at Blair. But his retirement there after the failure of the Adelphi gamble ought not to be allowed to obscure his earlier activities.

[3] M. Dorothy George, *London Life in the Eighteenth Century* (1925), pp. 99-100; Henry Hamilton, article on the Granite Industry in *Further Studies in Industrial Organization* (1948); John Summerson, *Georgian London* (1945), p. 105.

[4] *Journals of the House of Commons*, May 27, 1773, Vol. XXXIV, p. 339.



9

THE TRANSPARENT PORTICO

by John Harris

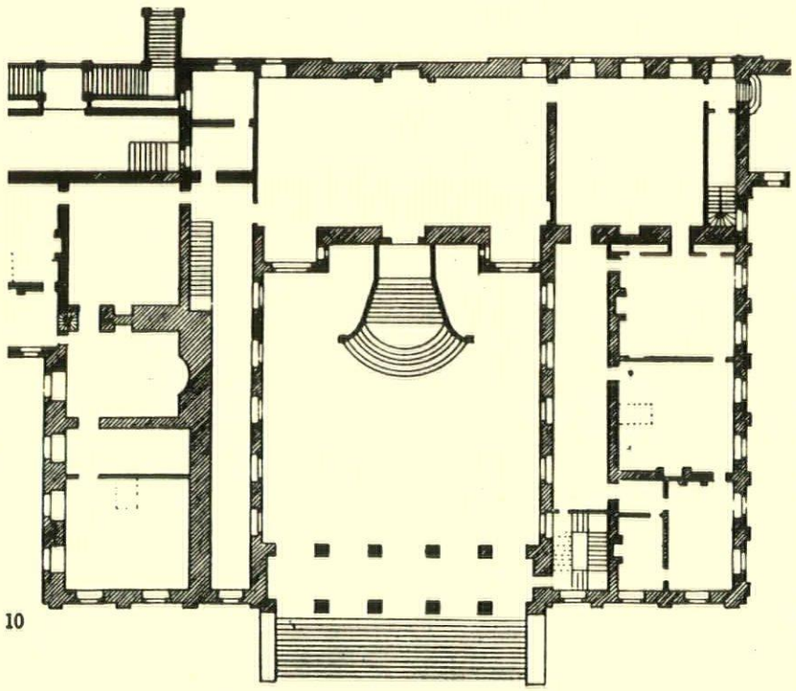
The portico at Osterley Park is quoted as an example of Adam's genius in inserting a feature of apparent Neo-Greek elements into one side of a traditional Jacobean courtyard house to provide dramatic effect. There can be no doubt of the romanticism implicit in the contrast of two styles of architecture or that the portico's visual line is Grecian. To Horace Walpole, one of the earliest literary commentators on the new house, it was 'as noble as the Propyleum at Athens.' The grand entrance to the Court of the Sun at Palmyra is but a portico breaking a length of wall with an ascent of steps. There the similarity with Osterley ceases. None of the details from Osterley can find a prototype from Robert Wood's *Ruins of Palmyra*, published in 1753. The essential difference between the two porticoes is in Adam's integration of an outer with an inner space.

As another source for Adam's idea the Portico of Septimus Severus in Rome has been suggested, available to him in Desgodetz's *Edifices Antiques*, 1682. The order is there a fluted Corinthian and the double screen is part of a free-standing temple, not integrated as at Osterley.

The responsibility for the invention rests in fact with William Talman, who placed a portico in exactly the same context across the entrance to the courtyard of Witham Park, Somerset, 9, which he rebuilt for Sir William Wyndham. The house was engraved in the second volume of *Vitruvius Britannicus*, 1717, where plates 91–92 are 'associative' to Talman's Dyrham Park designs. Colen Campbell in his descriptive preface states that 'when the whole design is finished there will be abundance of State and Accomodation . . . a Front to the Gardens with a Composite Hexastyle, which makes a beautiful portico to the court Anno 1717.' Possibly Campbell was mistaken in believing the portico to have faced the gardens; for the plan, 10, shows it as an entrance front with a flight of stairs to piano-nobile level directing one beneath a portico narrower than that at Osterley and up a central flight of stairs to the main Hall. Lack of evidence precludes one from affirming whether the house had previously possessed a courtyard plan and was therefore broken into by Talman in this Baroque manner. There was no question of contrasting old with new and giving it a romantic effect. Veneration for the past was not absent from Talman's mind, but here his façade is a pilastered composite order against a channelled stone face. The pediment is set into the height of the attic storey which seems to the eye to be capped by the cupolaed lanthorn that in fact rose above the Hall on the other side of the court.

A preliminary sketch for the first floor plan is in the Victoria and Albert Museum, 11,[1] and is basically the same as the engraved one. The

[1] E.118—1940, reproduced by courtesy of Victoria and Albert Museum. With E.107, 161, 163 these sheets have been attributed to the School of Vanbrugh but are indubitably of Talman's manner of sketching, quite apart from the fact that they are in John Talman's portfolios of work. The question of Vanbrugh's participation at least *in theory* will be discussed in a future publication.



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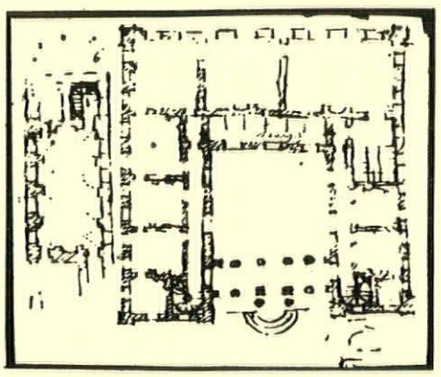


11

Adam's transparent portico at Osterley Park was not a complete invention: William Talman had proposed a similar portico giving on to a courtyard for Witham Park in Somerset, a house with which Adam himself was connected in 1762. An elevation, 9, *and plan,* 10, *of Talman's scheme were published in* Vitruvius Britannicus, *in 1717, but the preliminary sketch,* 11, *appears to date back to the beginning of the century.*

approach is in a tentative stage of development with an insignificant semi-circle of steps rising to where the two central columns of the portico have been doubled. It is possible to date this early plan by the associative sketches on the same sheet. Two are of Dorchester House, Weybridge, for Lord Portmore of before 1702 and others are contemporary with Talman's Hampton Court 'Trianon' scheme of c. 1699–1700. Perhaps the years between c. 1700 and 1717 are the period of Talman's responsibility at Witham, or else it may have terminated earlier, or later, at his death in 1719.

Talman's idea was in theory exactly reproduced at Osterley. The widths of the porticoes nearly correspond, but in depth Witham's 15 feet is much less than the 36 feet at Osterley. This illustrates the screen effect of the former as opposed to the more subtle spatial relationships of the latter, according with Adam's Neo-Classical ideas of planning. The surprise element at Witham is the deception of the cupola rising above the portico wing, that upon progression into the courtyard would be dramatically revealed above the Hall. This element of deceit is Baroque and not uncommon to Talman's practice.

Work on the house must have continued after 1719 and the completion was possibly due to James Gibbs. The Ashmolean Museum possesses an elevation[2] in his hand similar to that in *Vitruvius Britannicus* but with the addition of some typical Gibbsian modifications.

In 1762 Sir Charles Wyndham sold Witham to Alderman Beckford of Fonthill who in that year employed Adam to draw out plans for a new house. The engravings in *Vitruvius Britannicus*[3] refer to this as having been built but Collinson[4] describes the entrance front as having '2 semi-circular columns of fine proportion and elegance, one on each side of the door, which reared their rich and lofty capitals almost to the top of the edifice,' and this does not correspond with Adam's designs. In any case the new house, begun on a different site, remained unfinished until both houses were demolished by William Beckford later in the century.

The early designs for Osterley, dated 1761, have an attached portico to the hall front, proving the screen portico to have been an afterthought, occasioned by Adam's visit to Witham in 1762. As an elevational element it is not unlikely that the Portico of Septimus Severus was the source for Talman's Witham façade.

[2] Gibbs Coll., Vol. IV, 22.

[3] *Vitruvius Britannicus*, Vol. V, plates 38–42

[4] J. Collinson, *History of Somerset*, 1791, 11, 234.

FREDERICK'S PLACE

by M. J. Chandler

New attribution to the work of the Brothers Adam becomes rarer by necessity, as the research of their achievement goes on. Yet Frederick's Place in the City of London can now definitely be added to the list of minor work. In spite of many alterations, inside and out, traces of the Adam work of—as Mr. A. T. Bolton called it—the Adelphi-type remain.

The basis for this attribution are several drawings in Sir John Soane's Museum, firstly for a 'Ceiling' for a drawing room in vol. 13 no. 103 and secondly designs for chimney pieces in a dining room, drawing room, two dressing rooms and a bedroom in vol. 24 no. 49–53. These drawings were made for 'The Great House' in Frederick's Place. A few drawings of no. 6 Frederick's Place, for a house built by John Adam and his brothers on behalf of a Mr. Whitmore, are now in the RIBA Library to which they were given by the present owners. From a few newly found documents it can now be proved that the Brothers Adam laid out and built the entire close.

The sources are the *Journals* of the Commissioners of Sewers for the City (vol. 10 1775, p. 244–5) in the Corporation of London Records Office in which in an entry for October 10, 1775, a petition of four Adams are recorded.

'Pet. Adam Compound for Paving

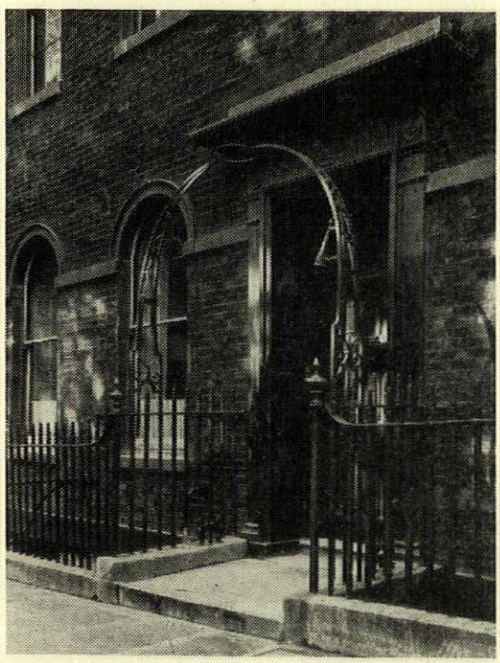
The Petition of John, Robert, James and William Adam Architects was read setting forth that they have converted the scite of the Ground whereon the late Excise Office stood into a Square and have erected thereon eight capital Dwelling houses and praying to be permitted to compound with this Court for paving the said Square.'

This petition was duly granted and it was ordered:

'That the Surveyor do measure the said Square and report the expence to be paid by the Petitioners, And that when the same is paid into the Chamber of London the said Square be new paved under the direction of the Surveyor.'

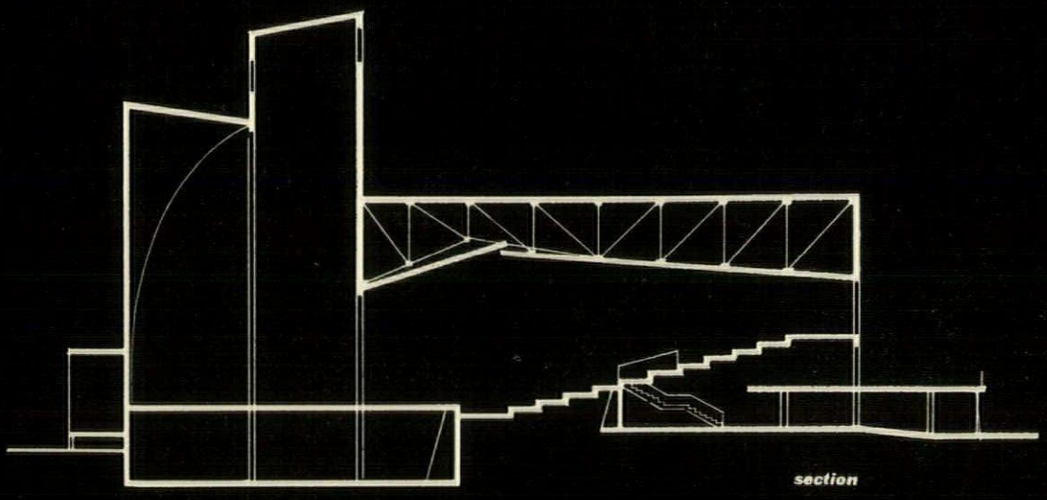
The Surveyor accordingly reported on July 2, 1776 (Journal 11 (1776), p. 142–3) that 'the quantity of paving to be made in Frederick's Place in the Old Jewry and the increase of the width of the Street in front thereof' was 412 yards, which amounted at 3s. per yard to the sum of £61.16.0. Orders were again given that the work should be carried out when the money was paid into the Chamber.

From these documents it becomes certain that the Adam Brothers did lay out Frederick's Place and built all the houses there.



12, *the doorcase and front railings of one of the houses in Frederick's Place, laid out by the Adam Brothers in* 1775.

Alejandro Prieto's boldly-modelled new theatre on the Avenida de los Insurgentes, Mexico City, has acquired an especial interest over and above its striking virtues as a work of architecture, for its main street facade has provided the wall-space for the last major public exercise of the genius of Diego Rivera, the Mexican painter who did more than anyone else to create a visual image of the energies and aspirations of the Mexican Revolution, and died last November at the age of seventy-one.



section

lower floor

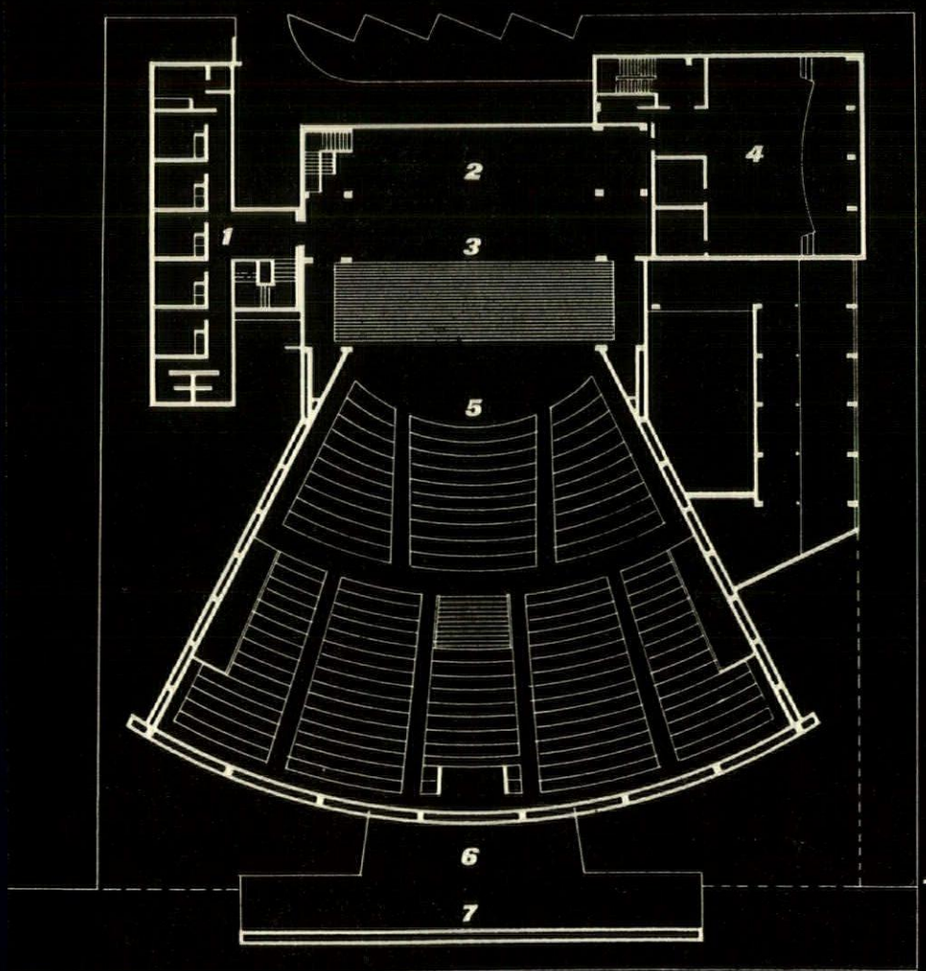
1. rehearsal room entrance.
2. parking area.
3. stage door.
4. dressing rooms.
5. shops.
6. machinery.
7. garden.
8. cloakrooms—men.
9. cloakrooms—women.

auditorium floor

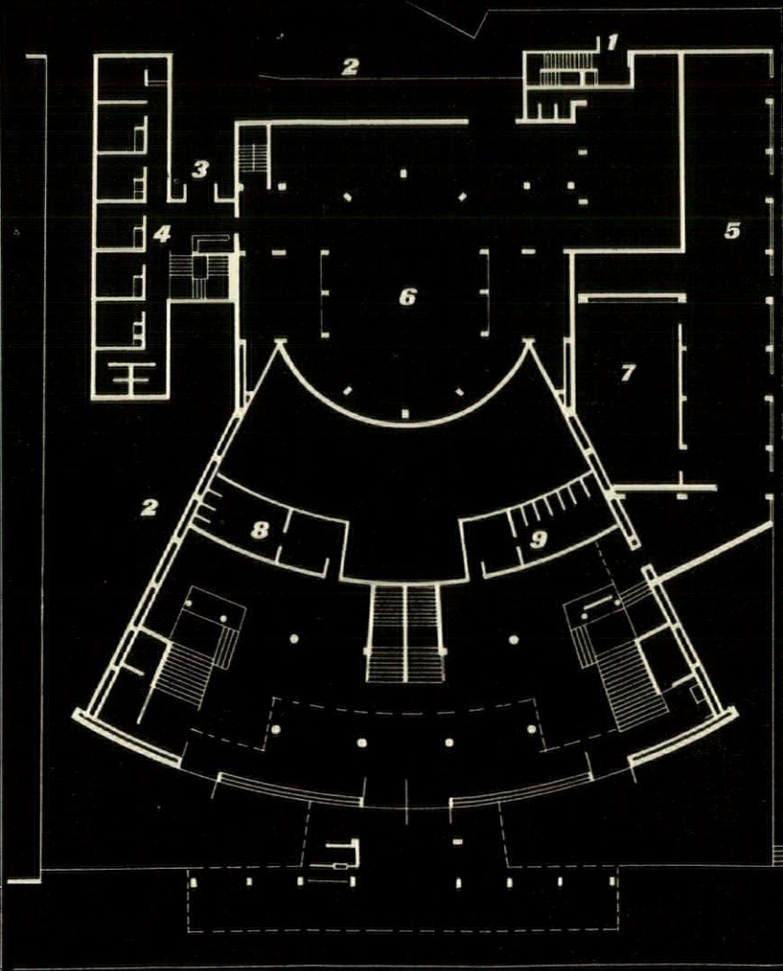
1. dressing rooms.
2. flies.
3. stage.
4. rehearsal room.
5. auditorium.
6. canopy.
7. illuminated advertising.

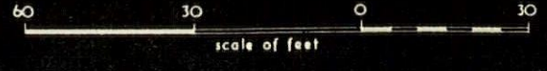
THEATRE IN MEXICO CITY: ALEJANDRO PRIETO, ARCHITE

auditorium floor



lower floor





THEATRE IN MEXICO CITY



2

The metropolitan 'Teatro de los Insurgentes' in Mexico City offers public performances of comedy, opera, ballet and revue as well as orchestral concerts. The seating capacity is 1,300. In a small rehearsal room linked to the main auditorium concerts of chamber music or recitals by soloists can be given.

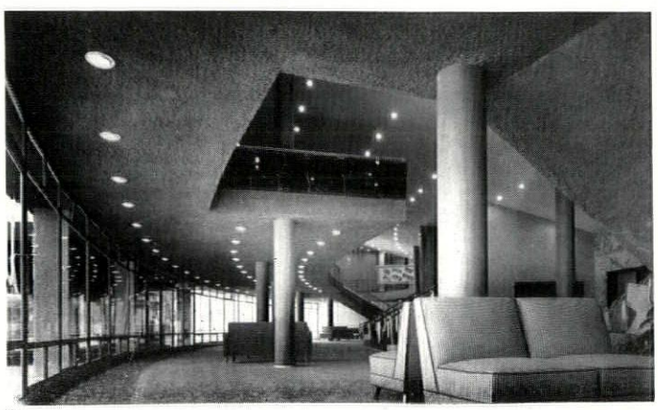
The vestibule is reached under cover from the Avendina de los Insurgentes, and contains the booking offices. The foyer has a restaurant to one side of it and cloaks and smoking rooms on each side of the central staircase.

The backstage arrangements incorporate modern technical developments and the proscenium arch has been omitted. The orchestra stalls are laid out in the form of an amphitheatre giving each seat perfect visibility and acoustics. In the air-conditioned auditorium the distance of the furthest seat from the centre of the stage is 78 ft.

Scenery is dealt with by a revolving platform, which besides moving from right to left and vice versa, is able to move forward or backward, according to the requirements of the works being staged ; it is also able to rise and descend as it turns. The stage is equipped with a cyclorama. The stage opening is 47 ft. wide by 20 ft. high and has a roller-type velvet drop-curtain with a vertical movement. The acting area is 40 ft. deep by 47 ft. wide. Modern staging and production techniques have made it possible to omit prompter's box and footlights. The dressing-rooms occupy a three-storey block. In it are fourteen dressing-rooms each with bath and sofa, two joint dressing-rooms each of which accommodates thirty people, and two 'star' dressing-rooms.

The restaurant, accommodating 200 people, has glass walls facing the street, and an indoor garden with space for a floor-show. A basement houses workshops with hoists at stage level and offers direct entrance from the street for delivery vans. Behind the theatre is a car park for 400 cars.

The structure is a reinforced concrete frame on concrete foundations. The stage tower rests on inverted concrete vaults and the main beam of 47 ft. clear span is trussed and makes use of the wall to ensure that the beam acts in conjunction with it. The main façade is covered with a mural by the late Diego Rivera, carried out in glass mosaic incorporating large patches of red and black tetzontle (a porous volcanic building stone). The total cost of the building including equipment and the mural was £85,700.



3

2, on the facing page, oblique view of the Rivera mural, and the entrance to the restaurant.
3, a view of the main foyer.
4, roof terrace with offices on the left.

THEATRE IN MEXICO CITY




Devizes
Bath
Frome

Trowbridge, the third town in the townscape series prepared by the Architectural Review in collaboration with the University of Bristol, is not an architectural gem, it's rather dull. The interest lies in its peculiarly possessive quality, its insistence on being a town and not an opened out traffic route. How it achieves this is hinted at in the plate opposite where the sinuous traffic routes contain the eye whilst the precincts are not separate but natural spurs or convolutions from the lively traffic stream.

Gordon Cullen

TROWBRIDGE

The presence of traffic in the environment gives to it a sense of purpose and a contact with the world beyond one's own backyard; it is the visible link which is so obviously lacking in a housing estate where the roads simply exist to serve the houses, where there is no link with the great world and where the pedal cyclist pushes and damply tries to get into touch. If the inner vitality of the neighbourhood, socially and visually is incapable of supporting itself emotionally (as it does in, say, Well Hall and Park Village West) then the loss of traffic is fatal, loneliness and desolation rule.

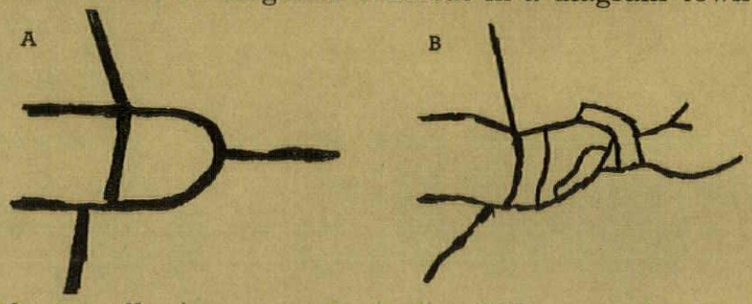
The original battle to segregate pedestrians and traffic, to create precincts (as we showed in Westminster Regained) in which the pedestrian could enjoy freedom of movement, freedom from the tyranny of fast moving traffic, has been won. The shopping and residential precinct is well established. Are we then, cynically, performing a *volte face* by extolling the virtues of traffic and so undermining the precinctual system? Not at all.

But the point must be raised that a lot of planning is to some extent an abuse of the truth. We have seen the result of the by-law town, the estate built according to legal lights. We have seen the sterility and boredom of it all. There is the danger of a more subtle form of sterility arising from an abstract approach, from the acceptance of okay planning terms and the use of abstract diagrams and drawings, or the habit of thinking in abstract terms, whereby the real process is reversed and made negative and sterile. The process is simple. One could, for instance, simplify the traffic circulation of Trowbridge in the form of a diagram and whilst this would, of course, be true as far as the traffic is concerned it would not be true of the town in any other sense. Yet the danger is that diagrams and abstractions are taken for the truth and acted upon so that in the end, if we interpret the world into a formula we shall end up by living in a diagram—which is precisely what the world is beginning to look like. The answer may be difficult. I feel that all the values are upside down, that instead of a creative, organic movement adding fresh meaning to the formulae and abstractions we are mechanically applying abstractions in the hope that they will set fire to the environment.

The only answer seems to be the stock piling of cases, as we try to do in Townscape, so that richness and invention are natural to us and instead of crude hammer blows we can use the particular tool for the particular job.

So to Trowbridge.

You may say, well, it doesn't really matter. Basically the town is like that, A. But, of course, it does matter because the particular shape, B, results in certain particular effects. Let us see how Trowbridge's real shape differs from its diagram. Whereas in a diagram town



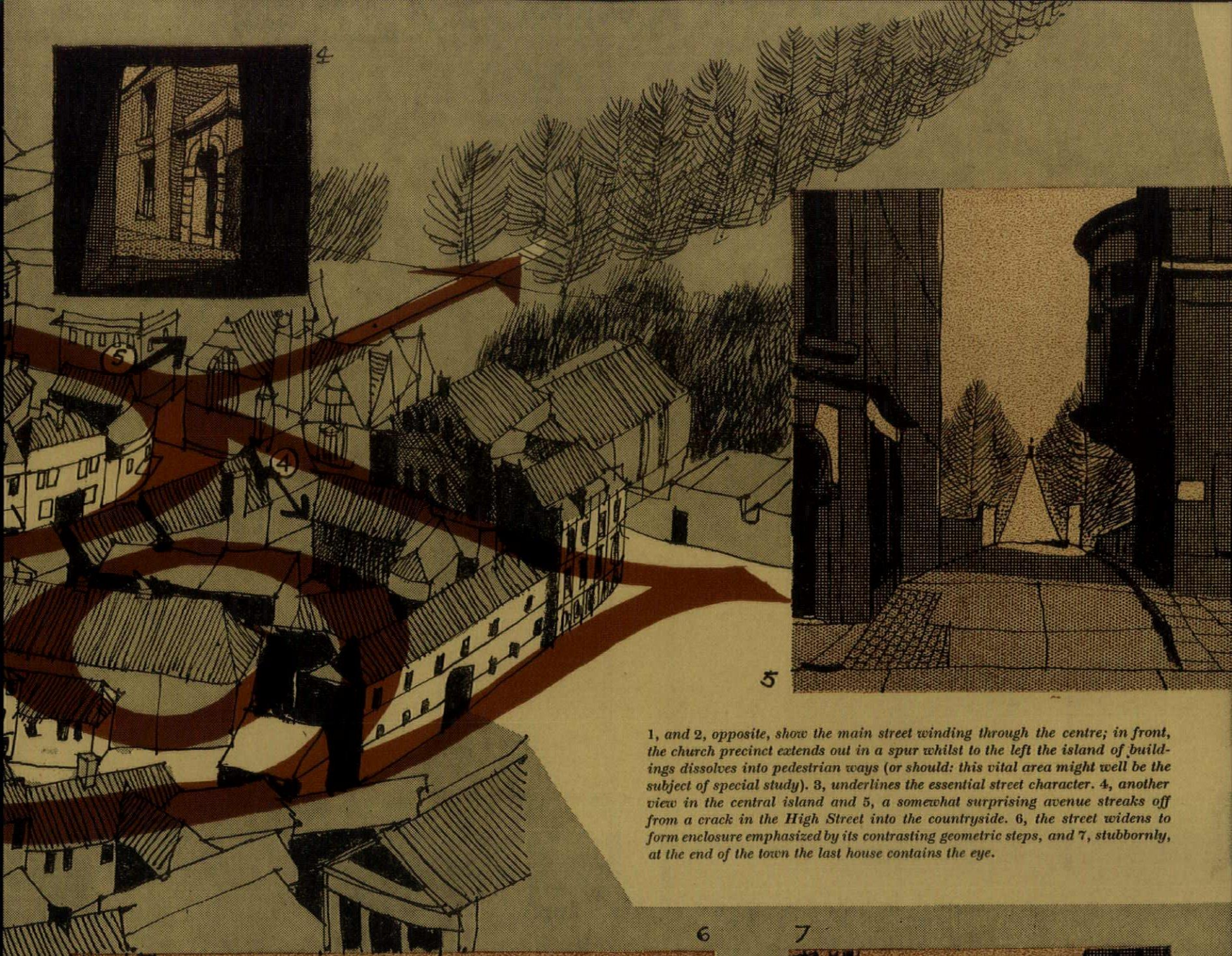
the traveller is aware principally of his route, his way in and way out (as at Gloucester where the Roman cross makes it a diagram town in which there is no sense of place) in Trowbridge one is insensibly and subtly wrapped into urbanism. Wide roads are made to yield up their excessive feeling of width by the curvilinear road pattern which effectively narrows the vista to a slit, the development of one containing view gives place, not to release but to another, so that the insistence on town eventually makes its impact. Naturally this has no adverse effect on the traffic circulation which whizzes along just as merrily as in any diagram town.

And to revert to the first thought, the relationship between precinct and traffic, here in Trowbridge we can perhaps see one good solution. For whilst at Gloucester the precincts are hidden away behind the four arms of the cross roads, at Trowbridge the precincts stem directly from the busy, urban enwrapping traffic stream like whorls or spurs so that whilst the curvilinear form contains and pinches the eye is entranced outwards.

Instead of two separate things, traffic circulation and precinct, in watertight compartments, here the two are in counterpoint and give meaning to each other.

On these two pages the attempt is made to give an impression of Trowbridge. The sinuous coloured ribbon imposed on the air view emphasizes the particular street pattern whilst the convolutions locate the spaces of pause and enclosure or closure. The inset views are to elucidate and explain the main aspects of this comprehensive view.



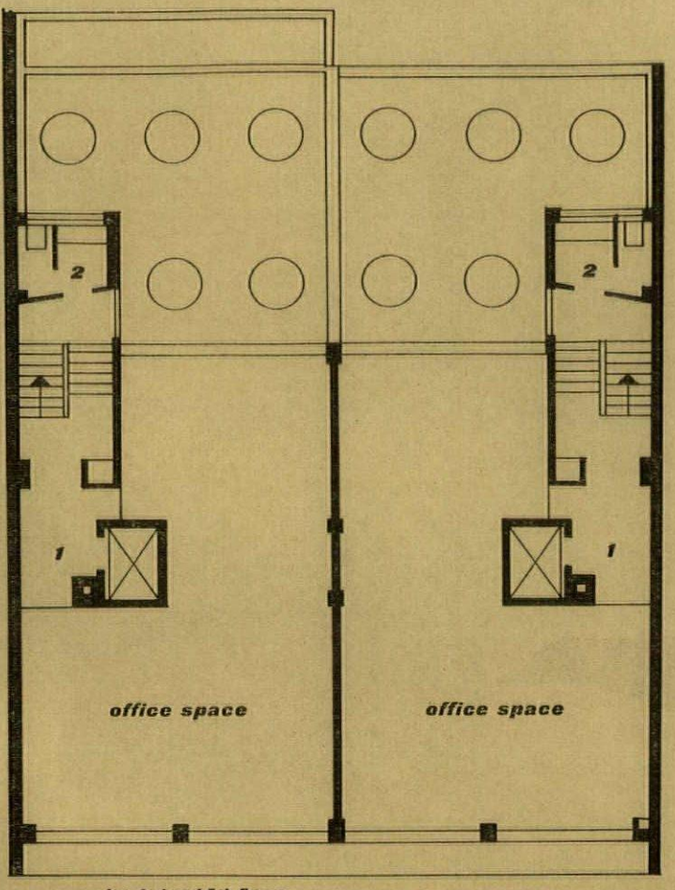


1, and 2, opposite, show the main street winding through the centre; in front, the church precinct extends out in a spur whilst to the left the island of buildings dissolves into pedestrian ways (or should: this vital area might well be the subject of special study). 3, underlines the essential street character. 4, another view in the central island and 5, a somewhat surprising avenue streaks off from a crack in the High Street into the countryside. 6, the street widens to form enclosure emphasized by its contrasting geometric steps, and 7, stubbornly, at the end of the town the last house contains the eye.

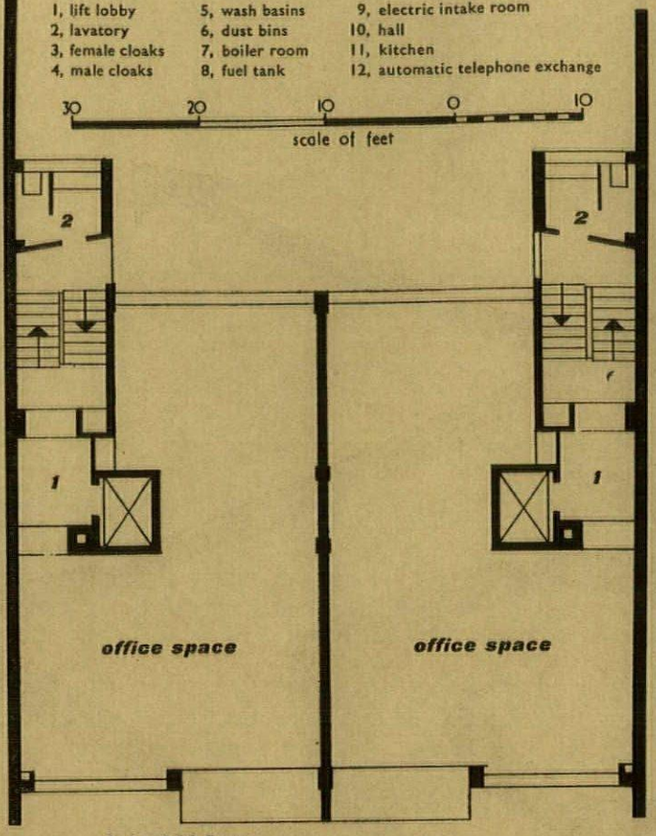
OFFICES IN ALBEMARLE STREET, W.1

1, lift lobby
2, lavatory
3, female cloaks
4, male cloaks
5, wash basins
6, dust bins
7, boiler room
8, fuel tank
9, electric intake room
10, hall
11, kitchen
12, automatic telephone exchange

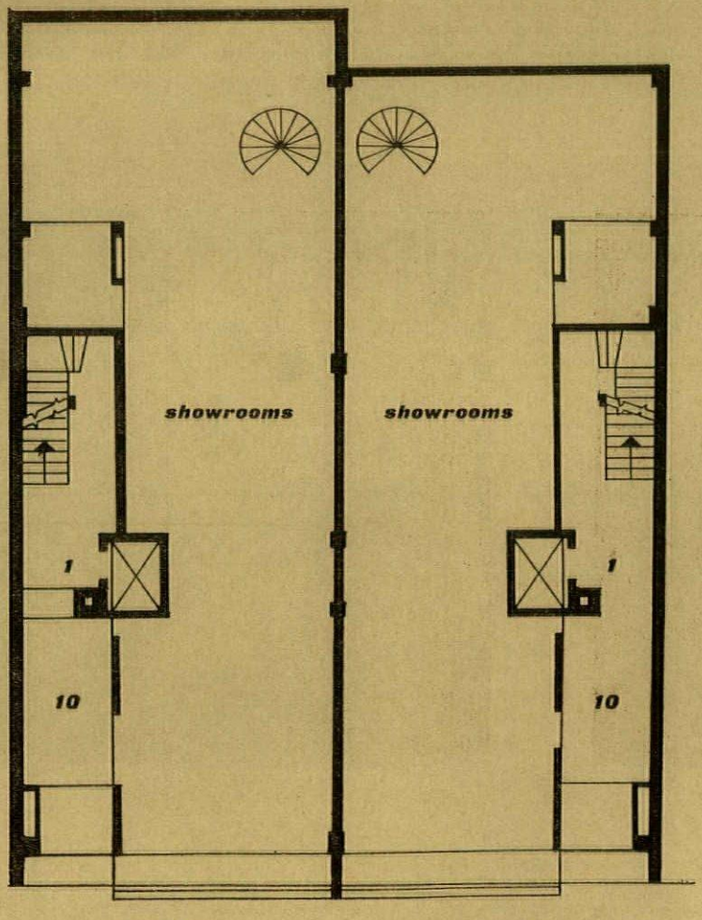
30 20 10 0 10
scale of feet



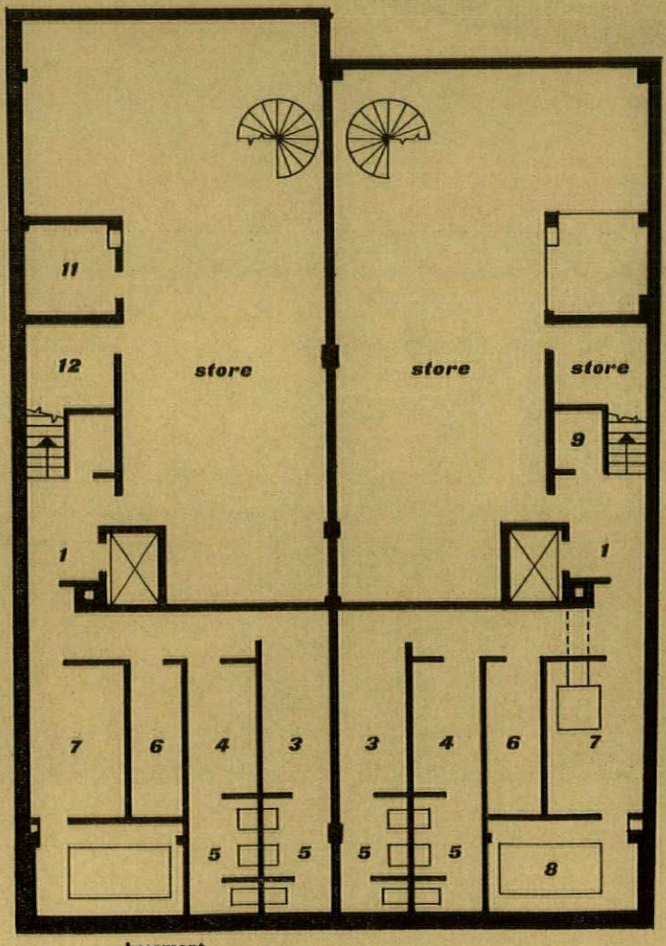
1st, 3rd and 5th floors



2nd and 4th floors



ground floor



basement

OFFICES IN ALBEMARLE STREET, W.1.

ARCHITECT	ERNO GOLDFINGER
assistant	JOHN ROBERTS



1

1, the unified elevation to Albemarle Street covers two separate properties with separate structures and plans that are almost mirror images of one another. The recession of the façade from the established building line helped to avoid an arbitrary set-back at the fifth floor, as well as permitting the boxed-out alcoves on alternate floors.



2

OFFICES IN ALBEMARLE STREET, W.1

2, a system of *tracés regulataires*, based on the Golden section, was used in laying out the main elevation.

This block of offices and showrooms replaces two Georgian buildings, and although developed for two different clients it has been built simultaneously as one, with two internal walls facing each other separated by ½ in. building board. Each entity has its own entrance, staircase and engineering services. The net letting space is 71 per cent despite the restricted nature of the site (24ft. frontage to each building). The ground floor occupies 100 per cent of the site but the basement extends further under part of the pavement. The upper five floors are set back and incorporate the projecting alcove boxes. Relatively large letting spaces within the building have to be sub-divided to suit the tenants' requirements. In the case of 46, Albemarle Street this secondary planning was done by the architect. The golden section was used to control the design of the building.

The structure is of reinforced concrete. Vertical support is provided by rear and front columns, and the thin walls surrounding the lift and stairs. The centre twin pillars are covered with single stone slabs on the front and joined by 'V' shaped copper strips in the back façade. The front façade rests on three points only permitting a continuous opening of nearly 24 ft. in each building. Prestressed and prefabricated planks bonded in concrete form continuous r.c. floors. The offices are very deep; on the upper parts of the windows photobolic screens cut out the light and throw it on to the ceiling.

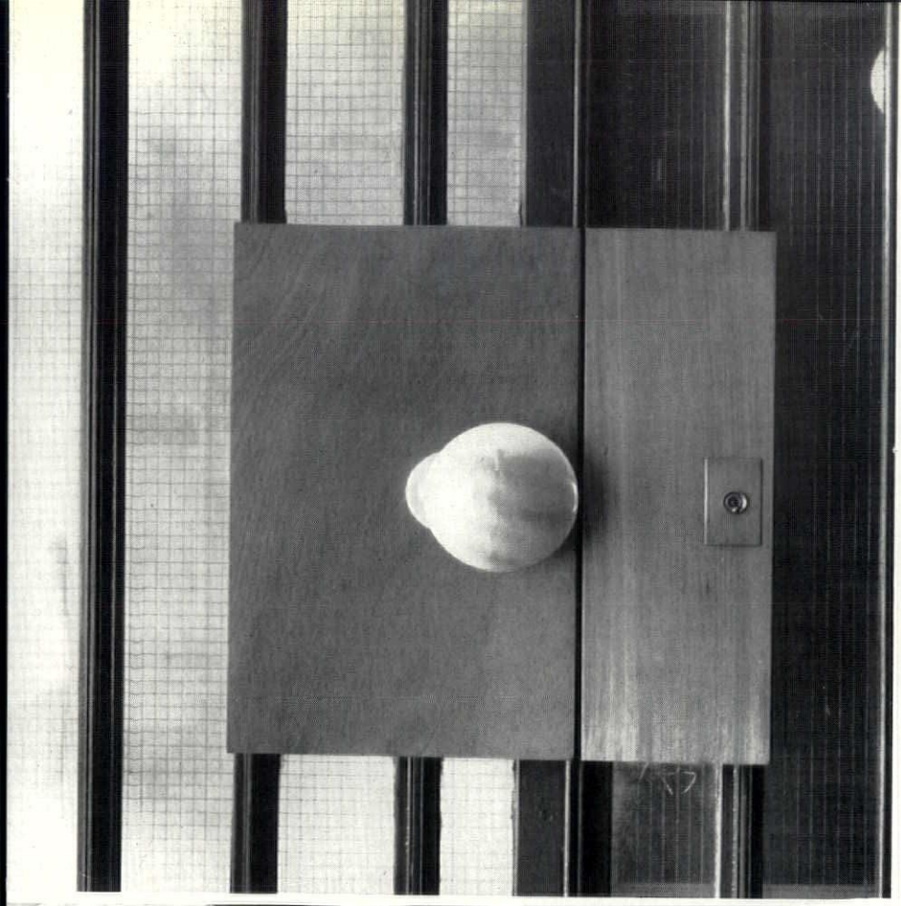
The structure of the street façade is clad in Portland stone, which covers the pillars and the floor thickness; the horizontal beams under the windows are covered with opaque grey-coloured glass. The bay windows of the

3



4 | 5
6

3, at the top of each window are three smaller lights set back behind an aluminium faced ledge which serves to reflect light back on to the ceiling and thus deeper into the room than it would normally penetrate. These ledges, and the plastic relief they give an otherwise flat façade, are clearly seen.
4 is a detail of door furniture and a switch installation in No. 46.
5 and 6, views of the show window of the same property from down, and up, Albemarle Street. The exposed RSJ which serves as a species of fascia-panel spans clear across each half of the façade and permits an all-glass ground floor in which the curtains and door furniture are the only solid elements.

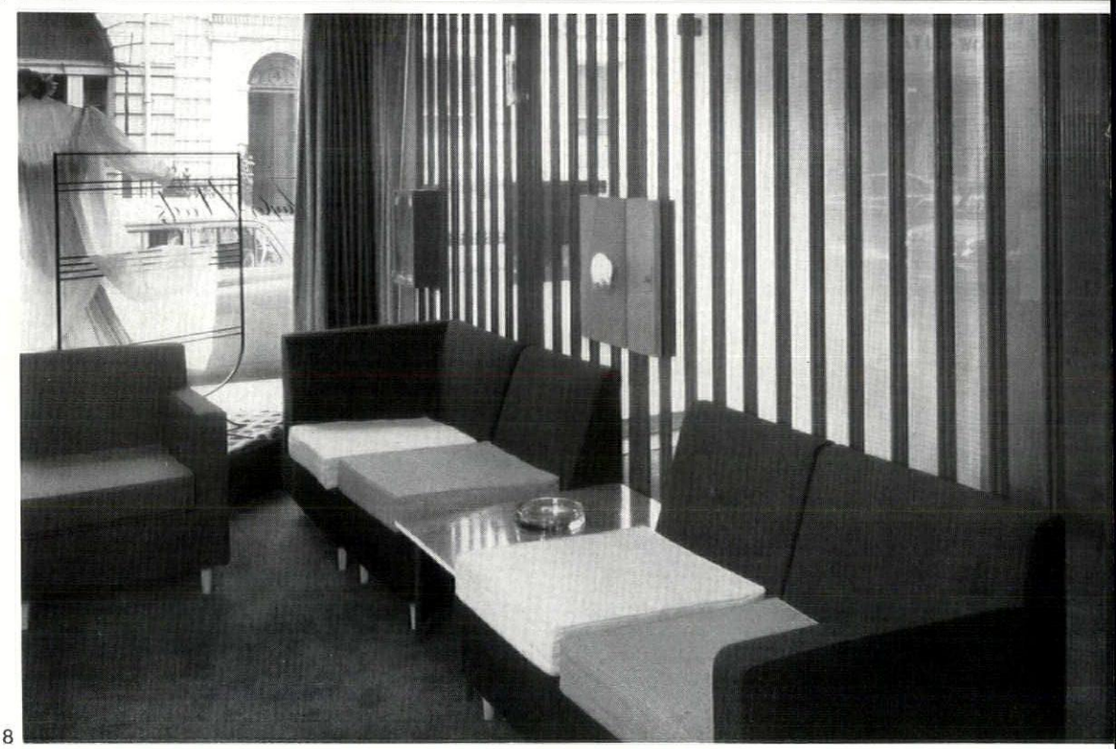



TAYLOR - WOODS


TAYLOR - WOODS



7



8

OFFICES IN ALBEMARLE STREET, W.1.

7 and 8, two views of the entrance and corridor side of the showroom of No. 46. The tall, narrow glazing, though unusual in British practice, is not unknown in France where it is highly regarded for its burglar-proof qualities.

second and fourth floors have sub-frames made of rolled steel channels and angles, painted black. The windows are steel painted white. The finish of the rear façade is partly rubbed concrete and partly bush hammered. The inside is mainly plastered; the staircase landings are clad with white tiles.

Two oil-fired boilers (one in each building) provide hot water for the radiators of the heating system and also heat the indirect hot-water cylinder of the domestic hot-water supply. The indirect hot-water cylinder is also provided with an electric immersion heater for use in the summer, when the oil burners are shut off. The engineers were Ove Arup and Partners (assistant—R. Hobbs) and the quantity surveyors were Davis, Belfield and Everest.



9

9, the work side of the reception/telephonist desk, showing the various work-surfaces, pigeon holes and shelves whose arrangement for operational convenience explains the seemingly abstract pattern of openings visible on the street side of this desk in 6. 10, 11 and 12: three details of the spiral staircase, cantilevered from a central steel tube, which connects the upper and lower showrooms in No. 46. A simi ar staircase, in the equivalent position, is provided in the other half of the building, and serves to open up the basement as additional showroom space.



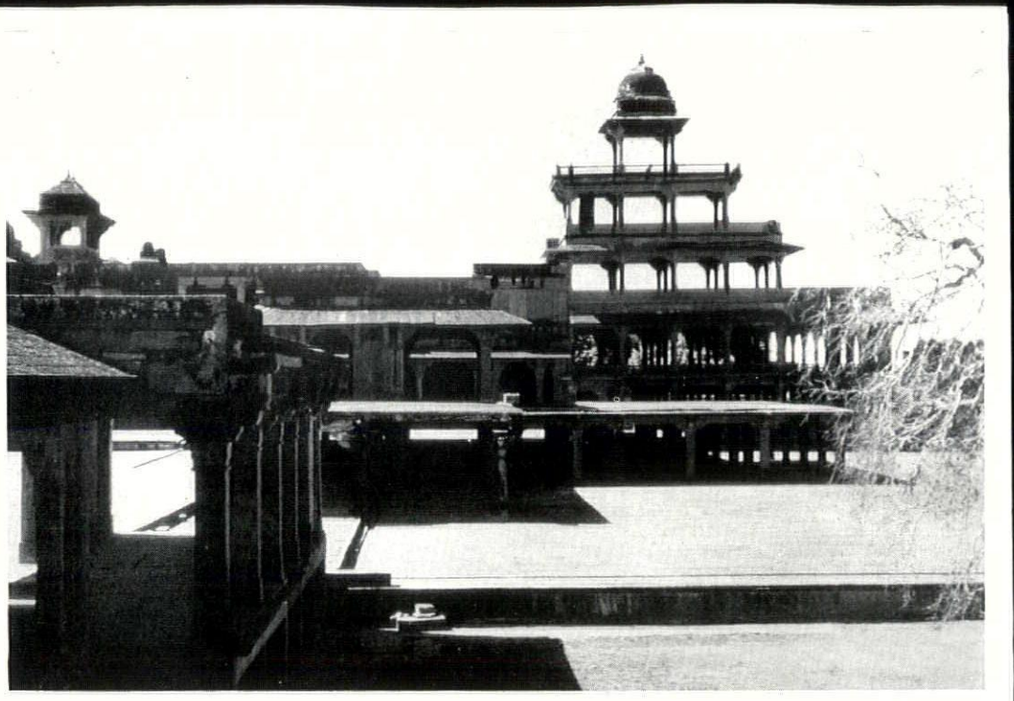
10



11



12



Conceived by Akbar the Great as an ideal setting for his court, Fatehpur Sikri is a complex of courtyards, open verandahs, and shade-buildings such as the five-tiered Panch Mahal, seen above from the viewpoint indicated in the map on page 126. Although the whole scheme was completed in four years, its plan has—to Western eyes—an accidental appearance, without any dominant planning axis. Jaqueline Tyrwhitt suggests, in the article that begins opposite, that it was designed to be seen panoramically by a moving viewer, much as Hugh Casson described Peking in the Architectural Review for February 1955.

FATHPUR SÎKRÎ.—THE PANCH MAHAL.

THE WEST ELEVATION.

Jaqueline Tyrwhitt

FATEHPUR SIKRI

'Regulations for house building in general are necessary: they are required for the comfort of the army and are a source of splendour for the Government. People that are attached to the world will collect in towns, without which there would be no progress. Hence His Majesty (Akbar the Great, 1542–1605) plans splendid edifices, and dresses the work of his mind and heart in the garment of stone and clay. Thus mighty fortresses have been raised, which protect the timid, frighten the rebellious and please the obedient. Delightful villas and imposing towers have also been built. They afford excellent protection against cold and rain, provide for the Princesses of the Harem and are conducive to that dignity which is so necessary for wordly power. Everywhere hostels have been built, which are the comfort of travellers and the asylum of poor strangers. Many tanks and wells are being dug for the benefit of men and the improvement of the soil. Schools and places of worship are being founded, and the triumphal arch of knowledge is newly adorned. His Majesty has enquired into every detail connected with this department which is so difficult to be managed and requires such large sums. He has passed new regulations, kindled the lamp of honesty, and put a stock of practical knowledge into the hands of simple and inexperienced men.'

(*From 'Ain i Akbari' translated by H. Blochmann*)

Twenty-three miles from Agra in India, with its Taj Mahal, lies Fatehpur Sikri, a city built in sandstone the colours of the dying sunset. You approach it in silence, for it has been deserted for over 200 years, but, immediately on entering the core of the city—the Mahal-i-Khas—the heart is uplifted, the eye entranced. One experiences a rare sensation of freedom and repose: an invitation to step forward buoyantly and, at the same time, to loiter luxuriously. Wherever the eye turns, the view is held, but at every step it changes. A seemingly solid background wall of stone is later perceived as a transparent screen. But nowhere is there a fixed centre: nowhere a point from which the observer can dominate the whole. Equally nowhere does he stand conspicuously removed from the centre—a spectator in the wings. From the moment he steps within this urban core, he becomes an intimate part of a scene which does not impose itself upon him, but discloses itself gradually to him, at his own pace and according to his own pleasure.

The Mahal-i-Khas was the core of a city of perhaps 50,000 people. This core is a 'place' somewhat larger than the Piazza San Marco in Venice, and, like it, is framed by buildings and openings as well as having buildings standing within it, as objects both dimensioning its own space and being set off by it. Despite un-western details of architectural ornament the dimensions of the spaces and the organization of the transparent buildings are so much in tune with our present-day conceptions of urban space—the interplay of solid and void, freedom and enclosure, transparency and repose—that I determined to secure some measured drawings.

In 1889, E. W. Smith of the Archæological Survey Department of India spent four winter seasons making laboriously exact measured drawings of almost every detail of the main buildings. His meticulous work was published in Volume 18 of the Reports to the Archæological Survey of India. Edmund Smith was interested in the curious and intriguing admixture of Moslem and Hindoo architectural mannerisms; in the intricate patterns of the delicately carved traceries; in the romantic legends attached to various of the structures. He at no time refers to the architectural purpose of any structure, nor to the plastic organization of the area. His nineteenth-century eyes selected their own aspects of Fatehpur Sikri, but his 'exhaustive and final survey' of the city seems strangely incomplete to our twentieth-century vision (see West Elevation of the Panch Mahal, opposite). Despite the beauty and individuality of many of the buildings—exceptional even when compared with other great achievements of their own period—the thing that first strikes the contemporary observer is their spatial composition, and the close relation this has to his own thinking.

Nothing in this deserted city of Fatehpur Sikri is fortuitous, and none of the effects is due either to the accretions of time or to its ravages. The city was built in the space of four years or so by Akbar the Magnificent, around 1570, and was deserted, but not destroyed, some twenty years later.

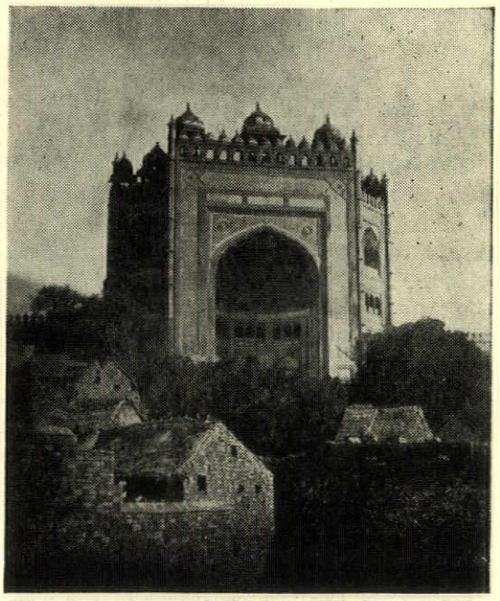
Akbar was 28 when he made the decision to build his new capital city upon the bare hill site of Fatehpur Sikri. He began to live there immediately, took the greatest interest in its development and spared neither money nor pains in its embellishment. Within a few years he received there a deputation of merchants from London who reported that 'Agra and Fatehpur are very great cities, either of them greater than London.' They were astonished at the richness and refinement of everything they saw and added that the city was 'a great resort of merchants from Persia and out of India with very much merchandise of silk and cloth and of precious stones, both rubies, diamonds and pearls.' Akbar was not only a highly cultured man, but also an extremely wealthy monarch. It has been computed that his revenue, at the time of his death, was equivalent to twenty million pounds sterling, whereas that of his contemporary, Queen Elizabeth of England, was about a quarter of one million pounds.

The capital area of Fatehpur Sikri includes far more than the Mahal-i-Khas. There is an exceptionally magnificent Mosque with a tremendous gateway, the High Gateway of Victory (see below); a sequence of fine palaces, a hospital, record office, elaborate 'turkish' baths, and the large and ornate tomb of a Moslem saint, who is said to have foretold correctly the birth of Akbar's long-awaited heir.

Adjacent to the Mahal-i-Khas is another great open space in front of the Diwan-i-Am or Place of Public Audience. This was the gathering place of the people, where public petitions were presented to the Emperor and public announcements made. It seems it also served as a sort of hippodrome where parades were held and animal contests took place.*

Together these two squares formed the core of the city—the gathering place of the people and the gathering place of the court. It is here that the greatest refinement was exercised in the disposition of the structures and the resultant modelling

*Stuart Piggot: "Some Ancient Cities of India" – Oxford University Press.



The great gateway of Fatehpur Sikri, one of the many notable buildings there that stand apart from the Mahal-i-Khas, illustrated on the next pages.

of the space is as subtle and as direct as the brilliant mind of their creator.

The area of the Mahal-i-Khas is a great rectangle approximately 550 feet by 272, interrupted by a simple transparent building which is said to have served as a sort of meeting place—or even a school—for the ladies of the court (Akbar had a large harem). The smaller southern division of the rectangle is largely occupied by a pool of water almost 100 feet square, in the centre of which is a square island approached by four narrow gangways.

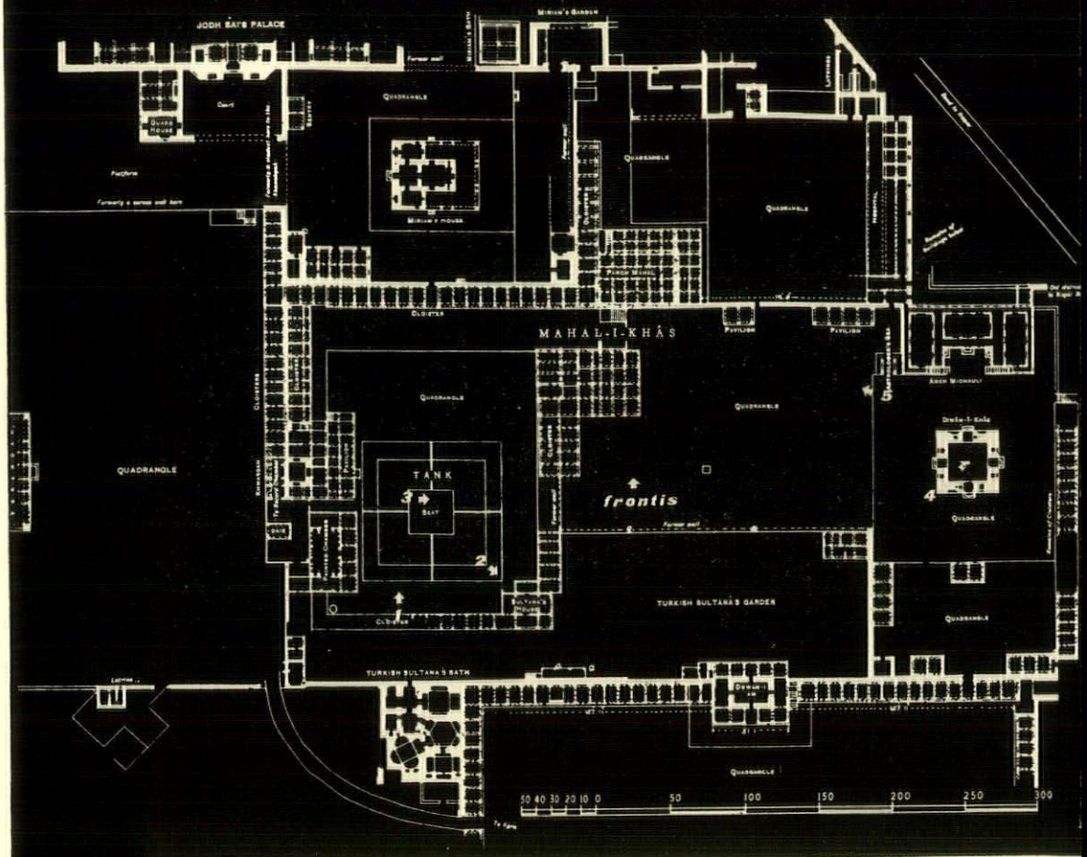
The larger northern division is dominated by a strange and bold, almost cubical, structure, solid and yet transparent, and surmounted with turrets which funnel cool air down to the ground floor. This is the Hall of Private Assembly—the Diwan-i-Khas, 3. The interior, 4, of the building is open but for a single central column, elaborately carved, which supports a large circular stone tray linked to galleries around the walls by four radiating gangways. Here Akbar is said to have sat, hour after hour and day after day, disputing on the nature of the state and of religion with his counsellors who sat around the gallery. The surrounding windows permit the eye to range widely over the country-side, and the building is designed to provide a circulating current of cooling air.

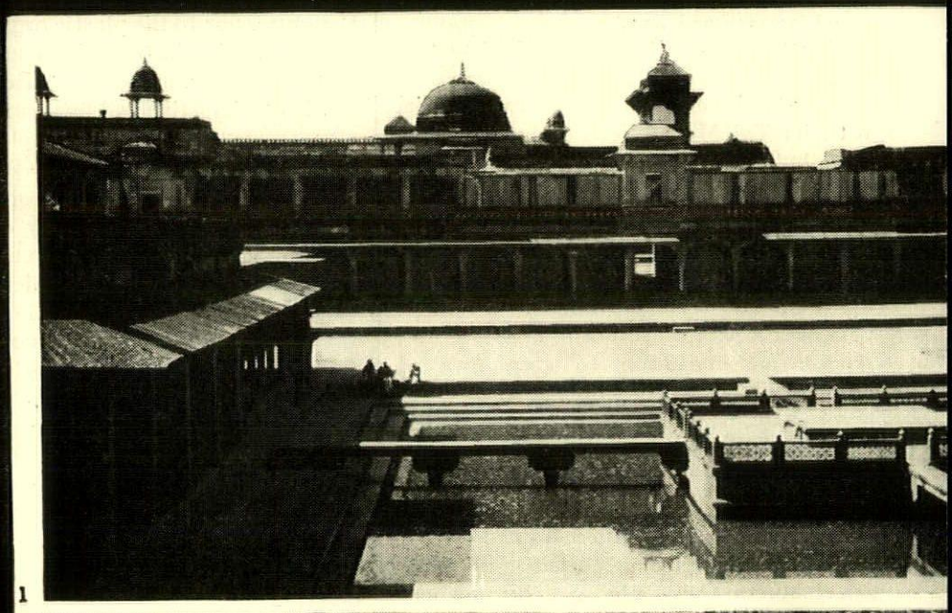
Almost central along the western wall of the Mahal-i-Khas rises the Panch Mahal (frontispiece page 124, and 5), an enchanting structure of five superimposed pavilions built of 170 columns. This is linked by a covered walk to other buildings, including the Khwabgah, or private dwelling quarters of Akbar himself at the south end of the Mahal-i-Khas and the charming quarters of one of his wives along the eastern side. This building, usually known as the House of the Turkish Sultana, 2, is a simple little structure whose every surface is covered with delicate carving in low relief. In its way it is an Indian version of Marie Antoinette's rural cottages at Versailles, the outer surface of the stone roofing slabs, for example, being carved to represent simple half-round 'cottage' tiles, and the undersides to depict a panelled wood ceiling. Much of the surface decoration of this dwelling shows a strong Chinese influence, and this is again evident in the 'painted chamber' of the Khwabgah. Despite its extreme elegance, the Turkish Sultana's 'house' contains only one 'room,' which measures just under thirteen-and-a-half feet square. This is but a fraction of the size of the lady's bath house, some 100 ft. distant, which measures 58 ft. by 70 ft.

It is difficult to describe the dwelling quarters of either Akbar or his lady as 'houses' in the western sense of the word. The normal western idea of a house is a structure containing a number of box-like

[*continued on page* 128

FATHPUR SIKRI.—BLOCK PLAN OF THE PALACES. PLATE A.





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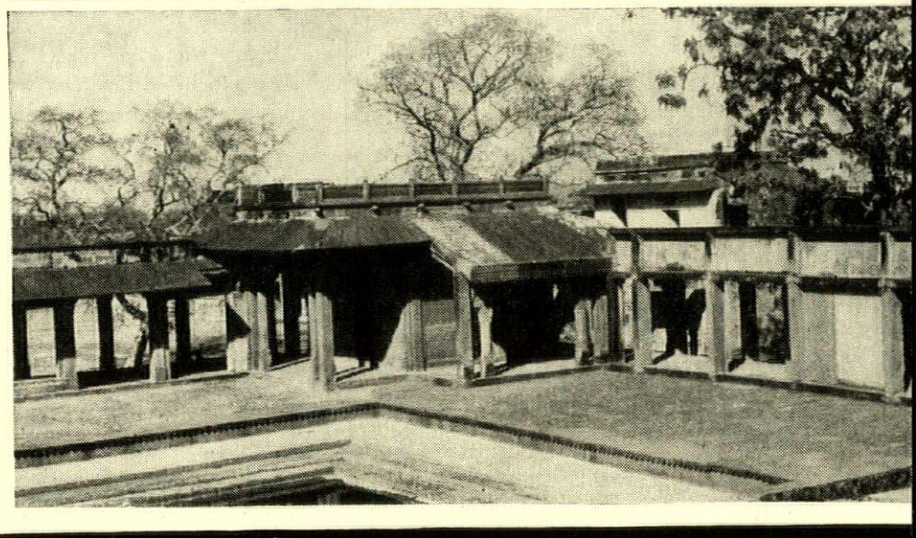

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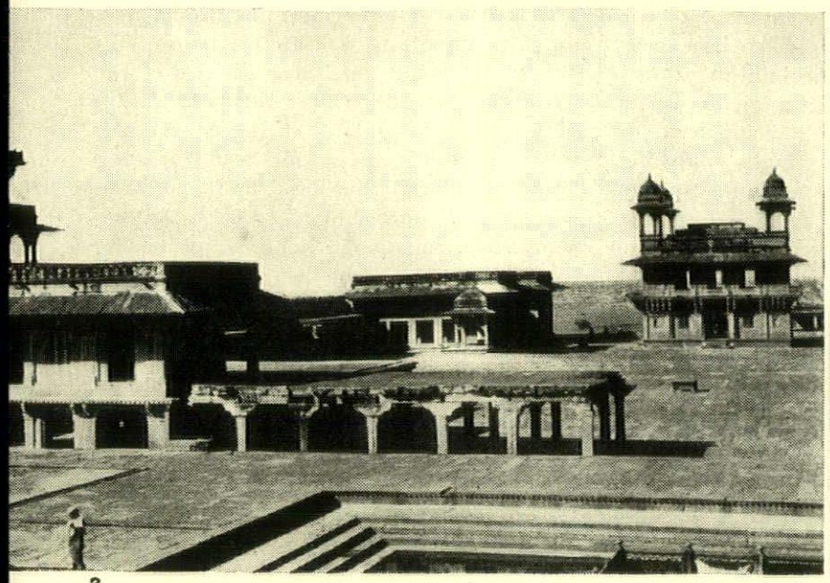

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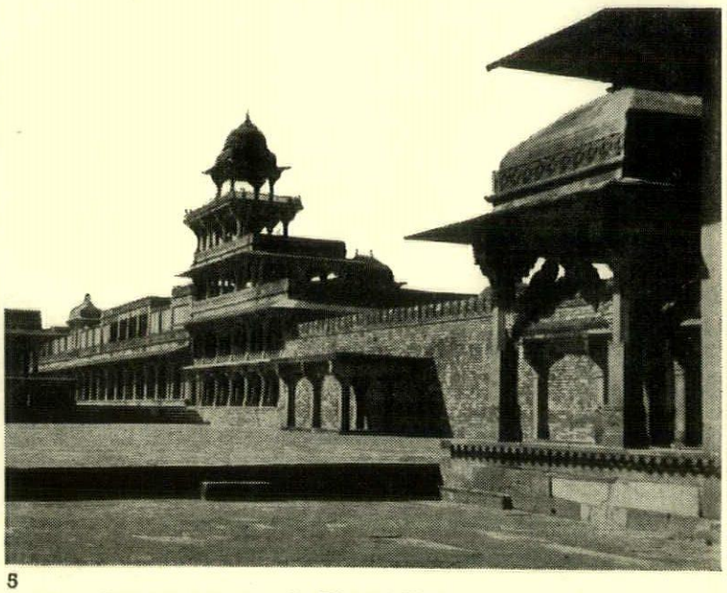
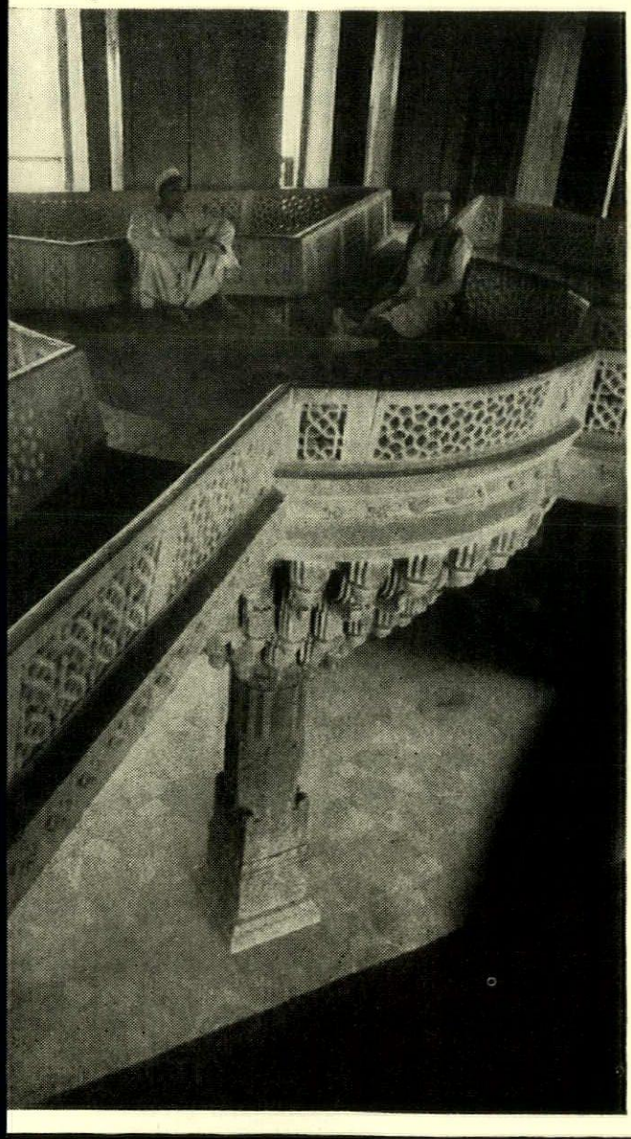


5

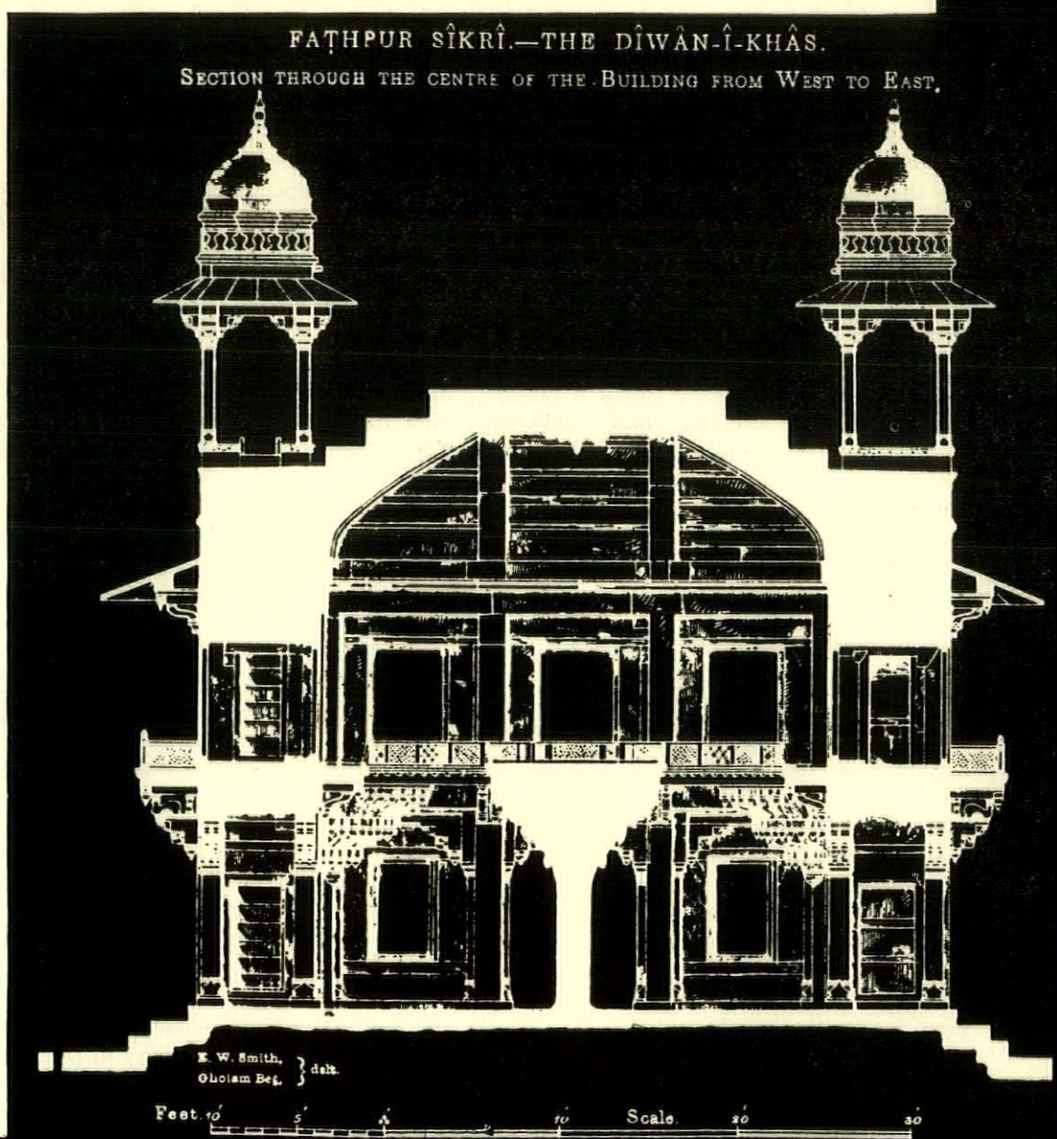
The plan opposite, of the Mahal-i-Khas and the partially-enclosed quadrangles into which it is sub-divided, shows the viewpoints of the illustrations on these two pages. Three of them are from around the tank in the smaller court, 1, opposite, towards the dome of Miriam's house, parallel with the most-nearly-axial piece of planning in the whole scheme; 2, towards the tiny house of the Turkish Sultana in the corner of the cloister; and 3, on this page, looking across three quadrangles to the Diwan-i-Khas, whose remarkable interior is seen below in 4, accompanied by a section taken from E. W. Smith's careful nineteenth-century survey of Fatehpur Sikri. The remaining view, 5, typifies the un-axial planning of the Mahal-i-Khas area, and looks from Diwan courtyard, marked by a two-step change in level, down the long colonnade below the Panch Mahal taking in the dome of Miriam's house once more.

4



FAṬHPUR SÎKRÎ.—THE DÎWÂN-Î-KHÂS.

SECTION THROUGH THE CENTRE OF THE BUILDING FROM WEST TO EAST.



continued from page 126]

enclosures or rooms, each bounded by four walls and a ceiling, these being conceived as flat opaque surfaces pierced by windows and doors that can be opened and closed at will.

The concept was foreign to northern India before the invasion of western ideas. In the difficult climate of this area the minimum area required for year-round existence is not a single 'room' in the western sense, but three different types of private space. The first essential is an open court, or roof-top, which serves as a general living space throughout the bright dry days of winter and as a sleeping area during the oppressively hot summer nights, when every wall emits all the heat it has absorbed during the day—like the wall of a baking oven. The second essential space is roofed but unwalled (though it may take the compromise form of a veranda). Here one lives and sleeps throughout the steamy heat of the rainy season, open to every slight and shifting breeze. The third essential space—the smallest and least frequently used—is a completely enclosed, doubled-walled and double-roofed box, into which no sunlight can ever penetrate. Here at mid-day one can take cool refuge from the blazing summer heat, and here one can retire for warmth during the chilly nights of winter. This then is the only one of the three spaces that corresponds to the western 'room' and it finds its equivalent in the inner sanctum of the Turkish Sultana's dwelling, its walls screened by verandas. Indian furniture is light and portable: a charpoy (string bed), cushions and a low table are all that is needed. Cooking also is usually done in the open.

The spaces and structures that compose the Mahal-i-Khas together form a highly refined living, sleeping and working environment for a number of exceptionally cultured people living in a torrid climate. Even the rising pavilions of the Panch Mahal are not a fantastic whimsy, but the product of a creative imagination—science become art. On one or other of these tapering terraces Akbar could sit at ease with his ministers or with his ladies even upon grimmest evenings of summer.

Perhaps the supreme quality of the Mahal-i-Khas is its proportioning of space. Although several of the buildings themselves are symmetrical in design, their spatial setting is never axial. While it is clear at first glance that this is an ordered composition, one looks in vain for the key to it in terms of western academic art.

It is extremely difficult for us of the west to get away from the rules of the accepted vision of our western culture and to realize, even intellectually, that this is not the only way of looking at things. For instance, our eyes in the west have for 500 years been conditioned, even governed, by the concept of the single viewpoint. This is, however, peculiar to the western world, where it followed the development of the science of optics: the study of the eye as an inanimate piece of mechanism pinned down upon the board of the scientist. The optical result was the development of linear perspective and the single 'vanishing point': the penetration of the landscape by a single piercing eye—my eye, my dominating eye. This created a revolution in our way of perceiving the objects around us and in the rational organization of landscape—whether rural or urban. The organized 'view' came into being: the penetration of infinity by means of a guided line—often an avenue of trees or a symmetrical street. With this came the 'vista,' the termination of the organized view by an object of interest, often the elaborately symmetrical façade of a large building that could only rightly be beheld from a central position at some distance from it. All other views were, consciously and unconsciously, accepted as 'wrong': 'This is the place to see it from.'

There are several fairly obvious resting places within the Mahal-i-Khas, the most notable being perhaps the roof of Akbar's private apartments, the terraces of the Panch Mahal (the five-storeyed Pleasure Pavilion), the entrance to the Dewan-i-Khas (the Hall of Private Audience) and the balcony overlooking the great outer court, the Dewan-i-Am (Hall of Public Audience). From each of these stations one is presented with a carefully balanced panoramic scene: not with a central objective it is true, but with a single co-ordinated sweep or vision or 'eye-full.' In each of these cases, the scene has a transparent centre and equivalent, but not identical, objects of interest bounding the view to right and left. For instance, from the entrance to the Dewan-i-Khas one glimpses in the centre a square pool of water through the transparent columns of an intervening building, flanked to the right by the fantastic hovering terraces of the Panch Mahal and to the left by the curved roof of the state balcony overlooking the Dewan-i-Am. From the terraces of the Panch Mahal, the centre is occupied by the space of the Mahal-i-Khas framed by the flamboyant Dewan-i-Khas on the left and the rising structures of Akbar's private apartments on the right.

A panoramic field of vision, moving slowly through some 60 deg. or 90 deg., would seem to be nearer to the visual conception underlying this composition than a single piercing view that demands a central point of interest.

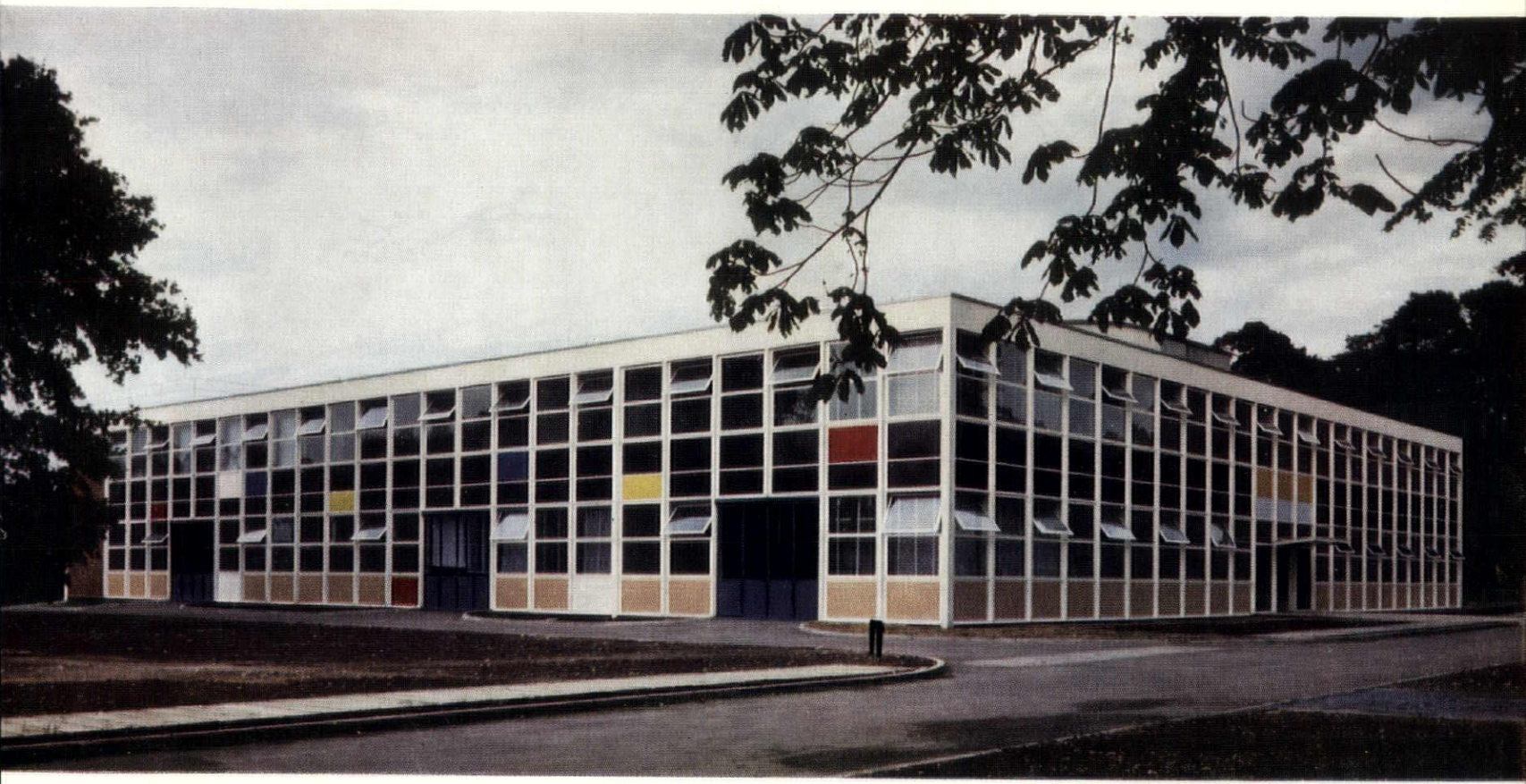
It is now nearly half a century since western artists and scientists started to break away from the tyranny of the static viewpoint—the conception of a static object in a static universe—to rediscover the importance of vision in motion. This close relationship of the discoveries of artists and scientists is not fortuitous: they are fundamentally one and the same. In Japan it was not until near the end of the nineteenth century (after the penetration of western thought) that there was any word in their language for 'art' (meaning 'fine art'). Until then 'art' had just been 'the way of doing things,' whether solving a problem, building a house or preparing tea. There was 'the way,' which was difficult and demanded imaginative intelligence and concentration, and there were poor substitutes of 'the way.' The 'artist' as an outcast of normal society—a mere 'Bohemian' or gypsy—is quite a recent western invention.

Evidences of the fact that our western vision is changing exist all around us, but most of them are left outside the realm of conscious rationalization, because we have not yet learnt to organize them intellectually.

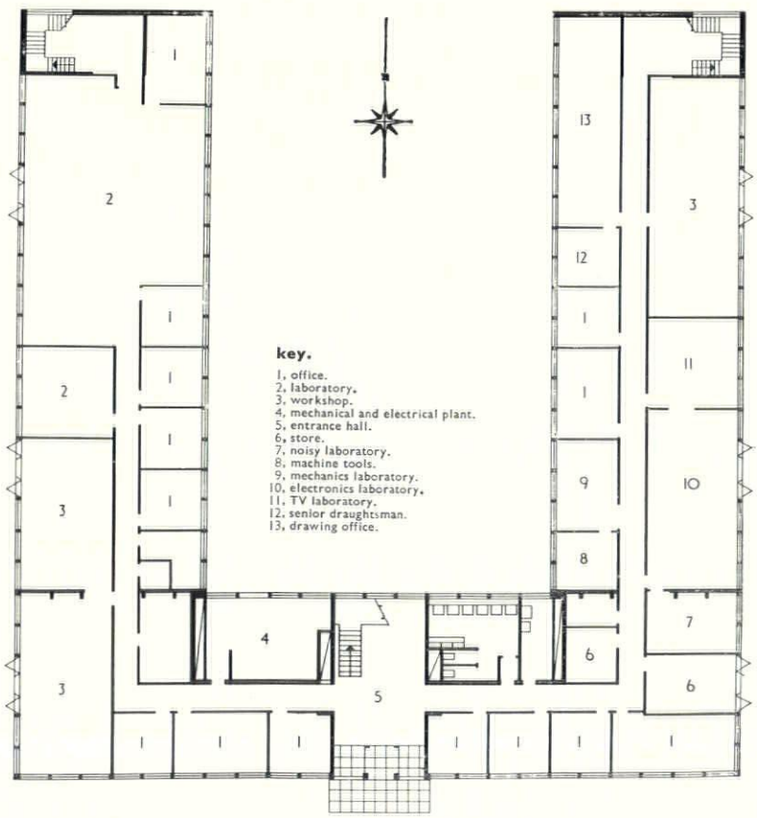
The moving eye is closely with us in the cinema and on television. We see the scene from a certain viewpoint, then go nearer—not gradually but in one swoop—and look at it again from a totally different angle. We accept this readily, because this is the way our eye really works: we can at will change its focus and alter its position. But we seldom connote this with the changed appearance of contemporary painting in which significant features of these different viewpoints are often presented to us superimposed upon a single sheet: not in a time sequence but in juxtaposed fragments as in fact they are recorded by our mental vision.

Today we stand before Versailles and are outwardly—and rightly—impressed (but inwardly we find it rather boring). We move along a city shopping street at night and outwardly—and rightly—confess it is a chaotic mess (but inwardly we find it rather exhilarating). Here is our contemporary urban planning problem: how to find the key to an intellectual system that will enable us to rationalize the organization of buildings, colour and movement in space without having to rely solely upon introspective intuition ('I feel it to be right') or upon obsolete rules based on the limited optical science of the Renaissance—the static viewpoint.

It is possible that it is the view presented to a moving eye that gives the modern spectator such a feeling of intriguing relaxation at Fatehpur Sikri. But another key to its composition lies quite certainly in the fact that all dimensions, whether of the fashioning of spaces by the disposition of structures or of the spacing of columns, or the size and shape of openings and panels, must have been adjusted to a regulating scale of proportions based certainly upon the square, and probably upon the 'Golden Section.'



1, *the west and south sides; main entrance on right.*



ground floor.

LABORATORIES AT FARNBOROUGH, HANTS

ARCHITECT, MINISTRY OF WORKS

SENIOR ARCHITECT, S. G. PAGE

This building at RAE Farnborough is required to provide approximately 20,000 ft. of laboratory space for electronics research. Maximum flexibility was needed to meet changing laboratory layout, hence the U-shaped plan with maximum natural lighting, providing either a clear 32 ft. span for full-width laboratories, or a 4 ft. 6 in. centre corridor with 11 ft. deep offices on one side and 16 ft. deep secondary laboratories, test rooms, etc. on the other, or a combination of both as shown on the plan. A 5 ft. 6 in. module provides minimum working intervals between bench units; and in the offices 11 ft. clear between partitions proved to be a suitable minimum for standard back-to-back tables with chairs. A diaphragm type of r.c. frame was used, with the precast columns functioning purely as props to the first floor and roof, all lateral stiffness and stability being provided by diaphragm floors and walls at chosen positions. Columns were thus reduced to a minimum size and appear only as window mullions on the elevation, also providing fixing positions for re-arrangement of internal partitions as required. The floor consists of light precast r.c. beams, which are prestressed to achieve an overall depth of 18 inches whilst eliminating internal columns. These beams carry the 3 in. in-situ



2, main entrance. The entrance hall inside has grey P.V.C. flooring with a scattering of U-shaped motifs representing the plan of the building in white, blue and red.

Laboratories at Farnborough, Hants

r.c. floor and use black corrugated iron as a cheap and convenient permanent shuttering. The columns are jointed at first floor level by means of bolted scarf joints and stiffened by in-situ wall panels. The external cladding uses double glazing throughout and coloured vitreous enamel, steel-faced, as infill between windows of the ground and first floors. The basic panel colours are buff to the ground floor and black to the first floor with an asymmetric scattering of blue, white, yellow and red. Heating is from a steam-to-water calorifier by the Frenger system of heated ceiling panels suspended from small pressed steel channels cast in beam soffits providing a surface temperature of 85°F. under full output conditions. Lighting flexibility of tungsten and fluorescent fittings is maintained by the use of trunking incorporated in the suspended ceiling on the 5 ft. 6 in. modules. All the normal laboratory bench services, i.e. electric power, compressed air, gas, hot and cold water, and drainage, are housed in a special service casing below sill level. The hall has a 9 ft. by 6 ft. mural in oils on wallboard by P. A. Jobson depicting in abstract form research work in an electronics laboratory dealing with aircraft development.

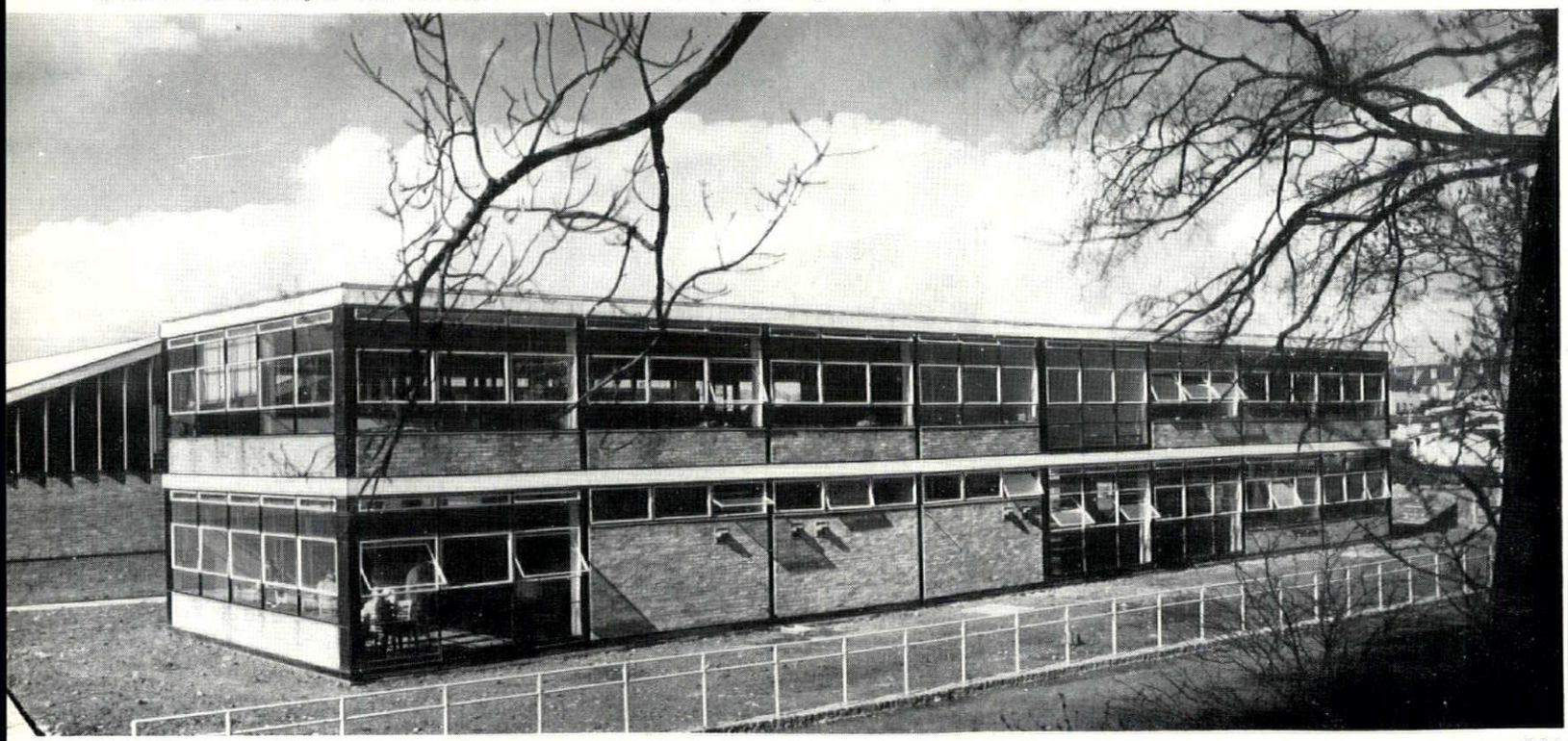
OFFICES AND WAREHOUSE AT NOTTINGHAM

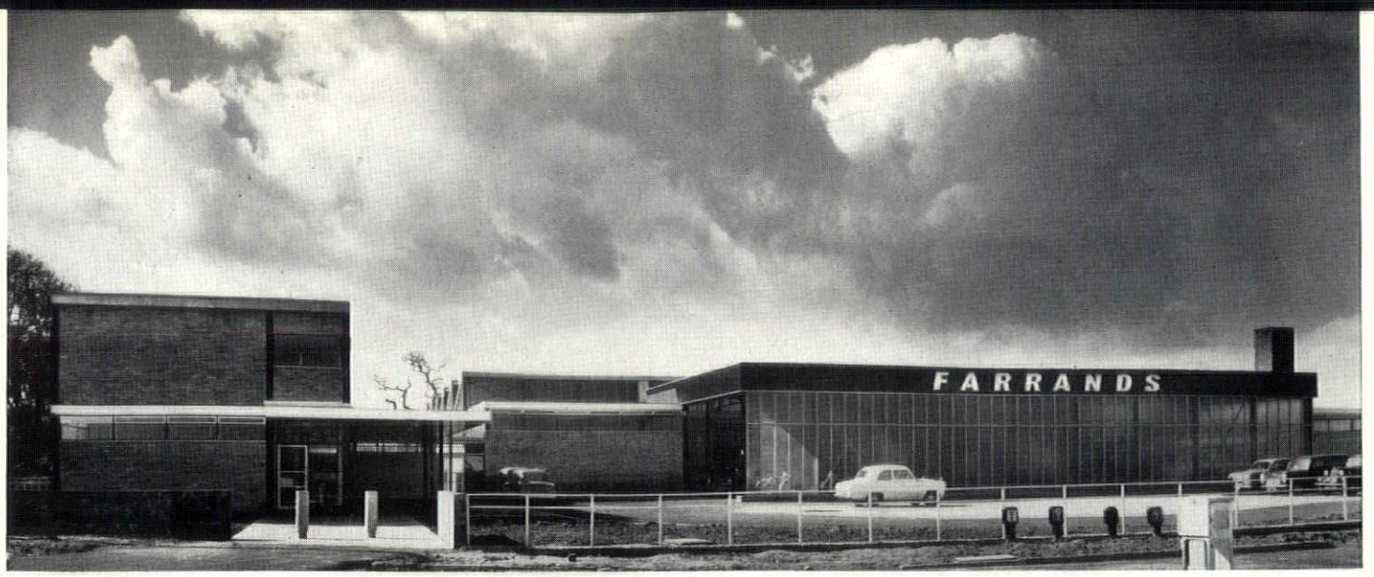
ARCHITECTS: J. M. AUSTIN-SMITH AND PARTNERS

PARTNER-IN-CHARGE: P. J. LORD

ASSISTANT ARCHITECTS: R. SCOTT BROWN AND P. C. HARRISON

3, administration block from south-east with warehouse behind. The three ground floor bays with brick infill enclose kitchen and lavatories.





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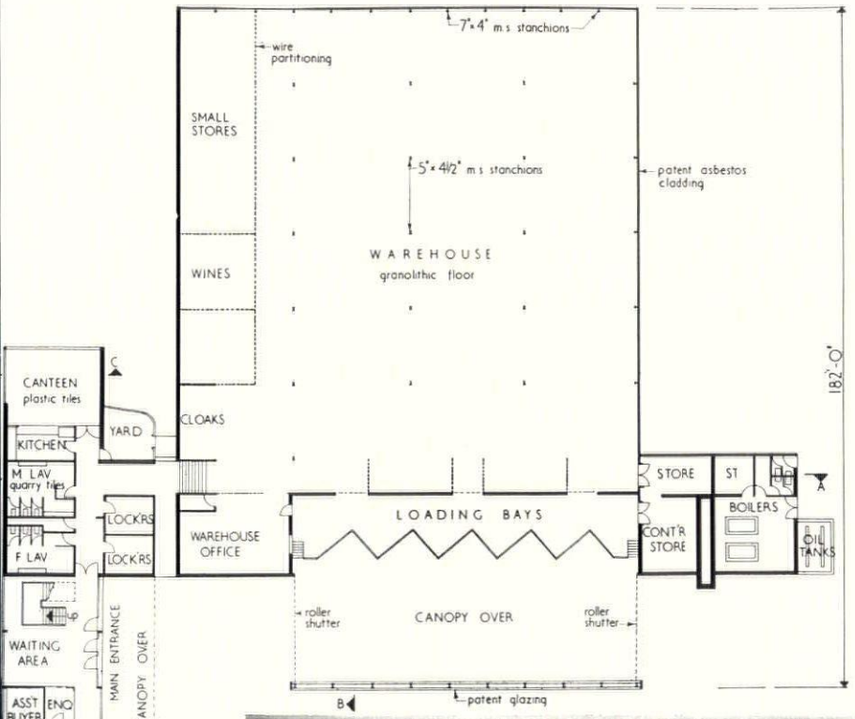
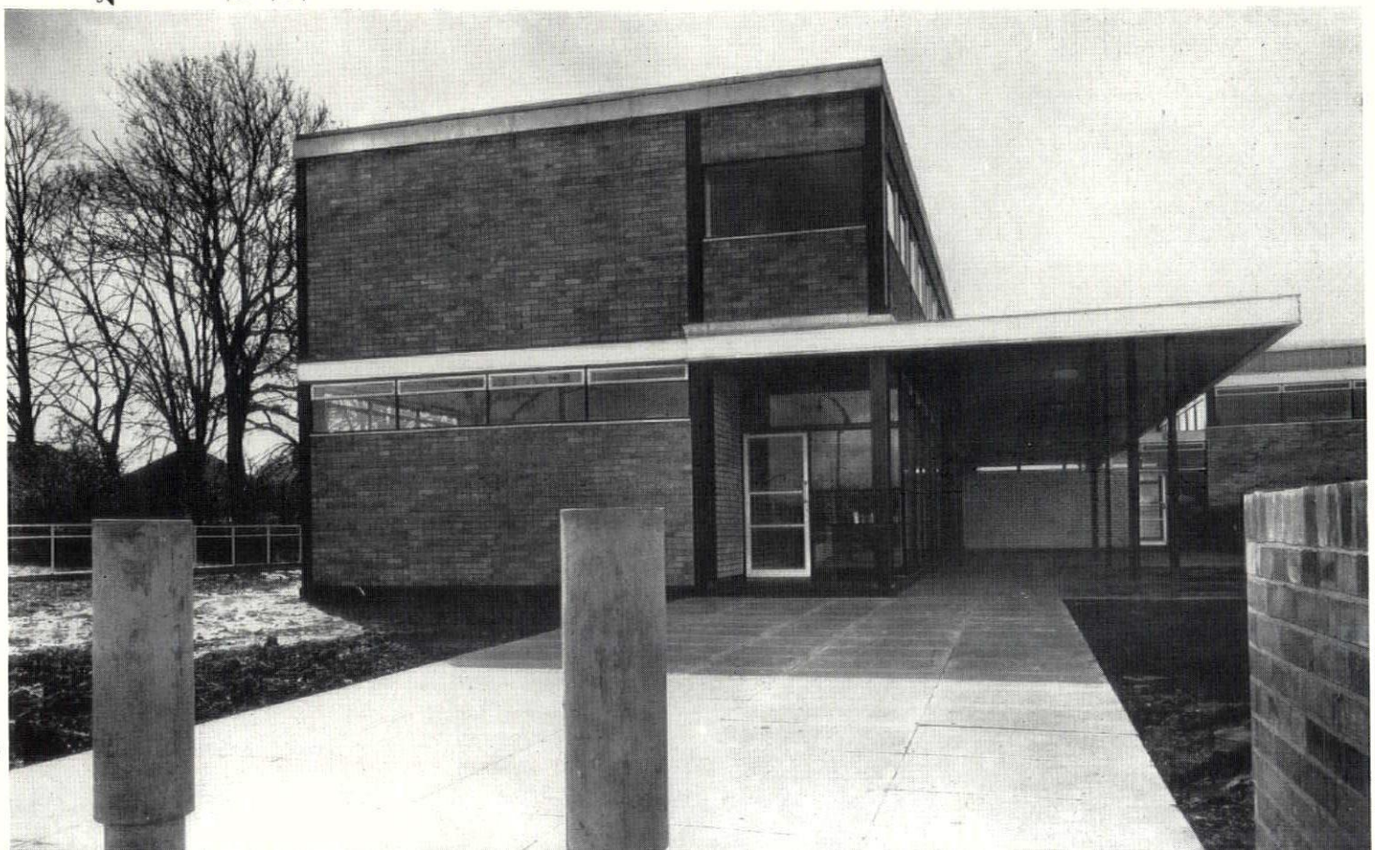


ground floor
scale: 1/48 in.= 1ft

4, main entrance from Wigman Road with warehouse landing bay on the right; the open ends are each fitted with a mechanically operated roller shutter for garage security. 5, pedestrian entrance to the administration block, leading to covered access to offices and cloakrooms.

This is a grocery warehouse and administration offices in Wigman Road on the Bilborough estate NW of Nottingham. Both units are capable of linear extension; the warehouse, boiler house and loading bay (enclosed for security reasons) are built in steel with asbestos roof and wall cladding; the offices are of r.c. construction with brick infill, with the columns slate-faced and the edge beams fairfaced and painted white. The roof of the administration building is a prestressed composite slab of concrete and clay pot with three-ply bituminous felt covering. Inside, the administration block is faced with exposed sand-lime fairface brickwork; the main staircase is made up of welded steel sections with polished hardwood string facings, handrails and treads, and has armour-plate glass panels between painted mild steel balusters.



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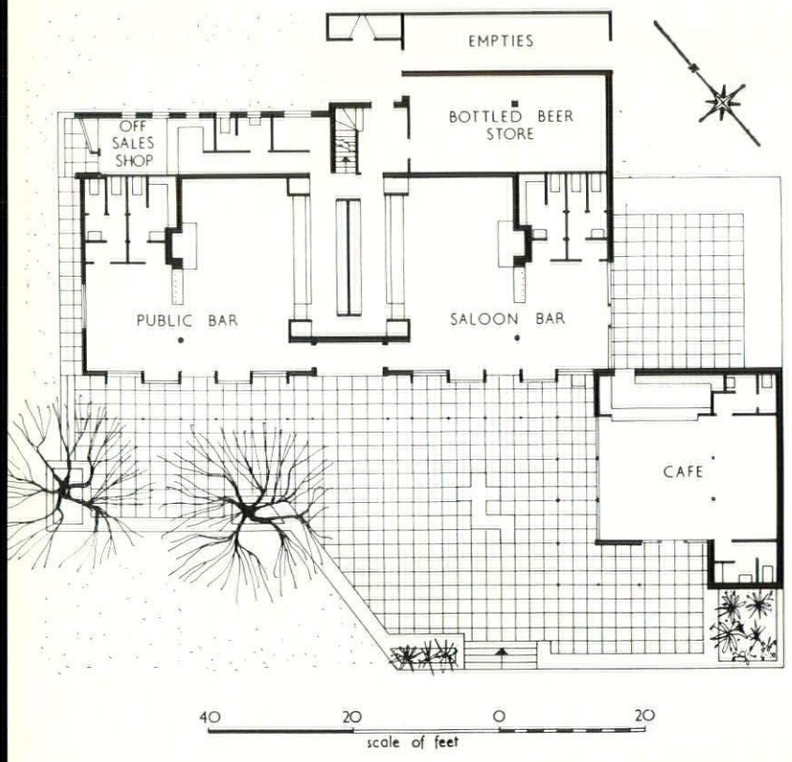
6, *outside terrace from the South; public bar on the left.*



PUB AT CRAWLEY NEW TOWN

ARCHITECTS, MUSMAN AND COUSENS

The White Knight is in the Pound Hill area of Crawley New Town to the east of the shopping centre. The plan is L-shaped enclosing a paved terrace for outdoor drinking incorporating two fully-grown oak trees. The long side of the L contains public and saloon bars, each with a large raised fireplace; the short side is single storey and contains the unlicensed coffee room. In the corner there is a small enclosed garden reached through the saloon bar. The walls are load-bearing brick with grey sandfaced facings; the floor is r.c. and the roof timber covered with copper (pitched roof) and 3-layer bituminous felt (flat roofs). The front elevation of the first floor is vertical cedar boarding; both bars have ceilings and some walls panelled in Douglas fir boarding. The pub sign—a chess figure of a White Knight—was designed by the architects; as were all the interior fittings and décor. The chess motif also appears in a decorative panel at the entrance to the bars, made of alternate slabs of light and dark green slate with superimposed metal silhouettes of chessmen arranged in a classic chess problem.



7



8

7, *public bar and* 8, *saloon bar each approx* 620 *sq. ft. with linoleum tiles and brass bar fittings.*

BOOKS

SIMPSON REVISED

Hugh Plommer, ANCIENT AND CLASSICAL ARCHITECTURE (*Vol. I of Simpson's* HISTORY OF ARCHITECTURAL DEVELOPMENT, *revised*), *Longmans, Green and Co., London—New York—Toronto*, 1956. 35*s*.

Volume I of Simpson's *History of Architectural Development* (1905) now appears in an expanded format with the post-classical portion relegated to a second volume. Thus the first portion of the original (then 162 pages, 102 illustrations) is now a volume with 384 pages and 159 illustrations. It is divided into three parts, Architecture before Greece (60 illustrations), Greece (35 illustrations), and Architecture after Greece (64 illustrations), and each of these in turn into three chapters, terminated by a final tenth chapter on 'The Transformation of Classical Architecture.' In fitting the various styles into the compartmentation there are minor difficulties, with the Achaemenid architecture of Persia separated from its immediate forerunners in Assyria and later Babylonia by 122 pages on Greek, and with Greek Hellenistic architecture placed in 'Architecture after Greece' and thus separated from the main stream by 17 pages on Persian and Etruscan. It would have been preferable to have observed geographical and cultural continuity.

While the illustrations have been brought up to date and old errors eliminated, new errors have crept in. Thus fig. 16 is reproduced from fig. 15 of the old edition, but the old correct lettering has been deleted and the new caption 'Small Temple, Abu Simbel' (also on page 39) has nothing in common with those rock-cut temples of the upper Nile, it being in reality the masonry peripteral temple much farther north at Elephantine demolished in 1822. The piece shown as Sargon's 'Pavement at Khorsabad' (plate 6) is from his son's palace at Koyunjik (Nineveh), actually in the British Museum. Fig. 63, entitled 'Double Stoa, Magnesia,' is double only in the sense that it shows two pedestals, that of the Nike of Paeonius at Olympia (right side up) and a Roman statue pedestal (upside down); it was obviously reproduced from figs. 35–36 of Marquand's *Greek Architecture*, where the same phenomenon occurs, though the author states that his intended fig. 63 comes from Marquand's fig. 361. Similar lack of co-ordination may be responsible for references to Schliemann for a Doric capital at Tiryns (page 184) and to Robertson for the 'reconstruction (of house XXXIII at Priene) by von Gerkan' (page 202), whereas these very illustrations appear as figs. 50 and 65, the latter showing the signature of Wilberg rather than von Gerkan.

The author states (page xix) that he has 'attempted, wherever possible, to give scales in both feet and metres.' Actually, of 65 plans and sections, only 13 show both scales, while 19 are only in feet, 33 only in metres. Since feet are normally used throughout the text, the metric measurements on pages 57, 80, 87 and 151 should have been converted.

The author speaks also of ancient Greek feet, but with little success (pages 173–174) though objecting to the reviewer's reductions to a Doric standard of 12⅞ inches and an Ionic standard of 11⅝ inches (nearly identical with the Roman). Thus for the Parthenon he prefers Stuart's antiquated theory of 1788 that the stylobate measured 100 by 225 Greek feet of 12½ inches (controverted by the Erechtheum inscriptions). And for the temple of Hera Lacinia at Acragas he substitutes a new theory that it was laid out in English feet; but his measurements should be enlarged by the amounts shown in parentheses: axial spacing of columns 10 ft. (add 2⅞ in. fronts and ⅝ in. flanks); wall thickness 3 ft. (add ⅜ in.); width of cella 25 ft. (add 1⅝ in.); frieze height 3 ft. 4 in. (add 3¼ in.); triglyph width 2 ft. (add ¼ in.); metope width 3 ft. (add 1¼ in. fronts and ⅜ in. flanks). It is obvious that if such latitude is permitted there can be no reliable metrological analysis. Acceptance of the Doric unit might have shown him that the 'strange' excess of interval over column diameter pervading Attic Doric design of the Periclean age, about 0.50 m. (which he accepts and baptizes as the 'Dinsmoor Law' (pages 132, 175), was theoretically (as close as the designed ratios would permit) 1½ Doric feet, the width of a man across the shoulders being used as a means of giving scale to the temples, as the reviewer had set forth long ago (*Architecture*, New York, 1923, pages 241–242).

The following errors may be pointed out in the pre-Greek section. The abaci of the columns at Beni Hasan are not 'flush with the smooth architrave' above (page 27), but project (cf. plate 3). The assertion that 'Proto-Doric' columns do not occur in the New Empire except at Deir el-Bahari (page 27) overlooks such examples as those of Thothmes III at Karnak, of Amenhotep III at Semneh, of Dynasty XIX at Beit Walli, etc. The characterization of the festival hall of Thothmes III in the temple at Karnak as a palace (page 41) is surprising. The Ptolemaic 'broken pylon' (page 43) should be 'broken lintel' (as on pages 44, 49). The lack of friezes of figures inlaid against dark stone backgrounds in Sumerian buildings (page 64) may be filled by those at Al 'Ubaid. And, while the author rightly supports the idea of sloping roofs on Aegean buildings of the northern megaron type, he interprets as a flat-roofed exception that at Lerna (page 86, no. 2) which nevertheless preserves the actual sloping mud packing, and also treats Tiryns as a flat-roofed exception regardless of its suggestive plan (page 88); the importance of settling this question in the ancestry of the Greek temple is obvious.

The discussion of the Greek Doric order and temple (pages 128–158) is filled with useful observations; but the perfection of Athenian workmanship is such that one dislikes to see it marred even by minor inaccuracies. A false picture is given by the statement that 'the intervals between foundation walls were often packed with polygonal masonry of large blocks, the whole forming a solid platform . . . carried down to solid rock, as in the Parthenon' (page 149); but the filling was normally merely packed earth, the Parthenon being abnormal in having a solid filling because of its peculiar situation, and this with ashlar not polygonal masonry. The undercutting of the steps at Sunium was not decorative in purpose (page 130); nor was the 'very small shallow sinking designed to frame a large central space, perhaps for frescoes' on the walls of the Propylaea (page 179); both are merely signs of unfinished work. The stylobate of the Parthenon does not rise above the floor behind (page 130, citing plate 9, where the effect is due to an optical illusion, a mediaeval gutter cut just behind the stylobate). Columns do not rest 'in the slightest of hollows on the surface of the stylobate' (page 149). Flutes are not usually three-centred arcs (page 131); in the Propylaea, for instance, they form one-sixth of a circle. The author does not seem to comprehend (page 150) the functions of the wooden empolia ('Dinsmoor seems to imply that the sharp corners of this cubical box . . . compelled the builders to place the next drum in its exact position') and of the poloi ('what is the use of so short a dowel?'). The vertical fascia under the geison mutules never projects 'slightly beyond the taenia of the triglyphs' (page 135), the reverse being the case; before mouldings were substituted (from the Propylaea onward) confused re-entrant angles at the corners were avoided by setting the fascia flush with the triglyph face and so receding behind its taenia. The statement that in the Parthenon the antefixes do not 'take the slightest notice of the triglyphs' (page 139) is in error; it was precisely in order to obtain this co-ordination that was devised the peculiar system described on the preceding page (first published, not by Orlandos in 1948, but by Penrose in 1859, the contribution by Orlandos being the greater width of the cover tiles behind the true antefixes).

There are also abnormal features in provincial Doric, some of which the author seems to have misunderstood. The favourite combination of materials in sixth-century temples of South Italy was not soft limestone for mouldings and hard white limestone for the rest (pages 112–113, 152–155), but sandstone for mouldings and soft limestone for the rest. The author's doubts as to the entablature of the Olympieum at Acragas (page 190), of which he did not happen to see the pieces (though every course was measured by Cockerell and others, including the reviewer), and his preference for locating the Giants inside the temple (pages 181, 190, 243) despite the clear evidence that they were outside, as well as his doubts as to the existence of pediments (pages 145–146) of which the actual pieces have been frequently discussed, would seem to be useless contradictions of observed facts. The absurd members on the pediment cornice at Crimisa are not 'mutules' (page 137), but regulae like those on an architrave. His predilection for 'Chinese roofs' (pages 136, 184), which the reviewer discards because the *editio princeps* at Paestum was shown in 1931 to be erroneous, and because all such restorations elsewhere are entirely without foundation (with a dubious exception at Calydon), is hardly justified.

Problems of ceiling and roof construction cause the author to indulge in numerous speculations. The sockets for purlins existing in many examples are ignored; he merely says that in the temple of Concord at Acragas the purlin sockets are mediaeval (page 147), whereas in reality there are two sets at different levels, one mediaeval and the other ancient. He apparently substitutes 'straddlers,' supporting the ridge beam directly on the heads of the rafters (page 147), a system not only controverted by the respective levels of the sockets (those for the rafters being in the layer above the ridge beam and purlins) but requiring tie-beams to avoid spreading (constituting trusses), which he admits were yet unknown in classical times (though on page 114 he speaks of 'roof trusses of the classical Greeks'). He eliminates the possibility of diagonally braced

beams, such as the Erechtheum is known to have employed, in larger temples, on the ground that they would be unsightly from below (pages 146–147), without realizing that they would have been invisibly placed above the ceiling (except in the Erechtheum). He believes that there would not be room, above the rafters, for battens such as are described in the Erechtheum inscription, so that the marble tiles must have rested directly on closely spaced rafters (page 152); but the rafter sockets are usually too far apart to permit this, and actual cuttings for battens are visible in the Propylaea. For the problematical Apollonium (G) at Selinus he offers two alternative cross-sections, both with 'compluviate roofs' (pages 143–145, fig. 49), of which he prefers that with only two storeys of internal columns, restoring the nave in either case as hypaethral. He argues that there could not have been a third storey because here the upper diameter would have been 'no more than 16 inches . . . an absurdly small upper diameter,' and also because 'a third colonnade would be so flimsy, so monstrous aesthetically . . . that it is at once desirable and possible to remove it.' This would seem to deny the evidence: both Hittorff (1824) and Hulot (1910) distinguished the actual capitals of the second and third tiers, the second being too small to belong to the first, the third smaller still and giving an upper diameter of 17¼ inches. The height of the three storeys can only be estimated; but it would not be incompatible with a horizontal ceiling, with plenty of room for roof construction above. Thus the hypaethral nave is not demonstrated in this case, and hardly serves as an argument for 'compluviate roofs' at Ephesus or in the Olympieum at Acragas (in both of which he encounters contrary evidence, pages 145–146, 166). Likewise at Bassae, where the author would prefer a hypaethral interior (pages 189, 279), the evidence is against him.

Among Ionic examples one can hardly say that 'the Attic (base) makes its appearance in the Athenian Stoa' at Delphi (page 170), since the middle member is not yet a scotia but a bell shape (cyma recta upside down). In the capitals of the Erechtheum it is stated that 'with good taste the designer suppressed the two palmettes in the angles of the volutes' (page 169); but their absence, at least in the north porch and probably also on the east, is due rather to the bad taste of marauders who pulled off the gold-plated bronze palmettes, leaving only their weathered shadows and the holes for attachment of their stems. Painted lilies are proposed for the pulvinus of the Propylaea capitals (pages 169, 187), such as could never have existed without leaving some traces. It is stated that Hermogenes at Teos and Magnesia 'rejected the Ionic diagonal capital' (page 264), without explaining how otherwise he could have turned the corner.

Among Corinthian examples, the author doubts the use of three Corinthian capitals instead of one at Bassae (page 189). In the Philippeum at Olympia, 'whose most fanciful features were given it by its German restorers,' he rejects the internal order of engaged Corinthian columns 'for which there seems to be no evidence' (page 194), regardless of the fact that these have actually been photographed (*Olympische Forschungen* I, 1944). The author adopts for the bed-moulding of the cornice of the Olympieum at Athens the blocks attributed to it by Penrose in 1888, rejecting the reviewer's identification of them in 1921 as capstones of the much earlier pedestal of Athena Promachos on the Acropolis (page 264), and unaware that the reviewer had found remains of the actual dentil course of the Olympieum.

More trivial is the statement that the Didymaeum near Miletus faces west like Ephesus (page 199), the opposite being the case; was Miletus perchance confused with Magnesia? And the inventor of perspective was not Agatharchides (page 209 twice, also index), but Agatharchus.

A final word about the writing of a brief textbook designed for students. It would seem that such a book should be as factual and impersonal as possible. Here, however, a hasty count of examples of the ubiquitous pronoun 'I' revealed a total of 105 (of which 21 in text and 84 in footnotes), usually followed by such personal attitudes as 'have seen (2), saw, cannot see (2), do not see, have not seen (2), could never detect, find (2), cannot find, did not find (2), could not find, never discovered, think (5), do not think, cannot think, know, do not know (3), infer, believe (2), suspect, wonder, gathered, do not understand (3), never understand, am not sure (2), am not certain (2), am doubtful, am inclined (2), am not inclined, am convinced, am not convinced, am not wholly convinced, am not satisfied, must admit (2), find myself persuaded, am not persuaded, cannot reconcile myself, had supposed, still hold, hope (2), consider (2), grant, agree (2), refuse (2), make no apology, do not feel qualified, and would like to rummage.' After many such repetitions one is tempted to ask, 'Who cares?' Nor should he, in such a book, impugn the integrity of contemporary scholars, be they Italian (pages 110, 147, 190, 222, 308, 325) or German (pages 194, 343), especially when the charges are as baseless as in the Olympieum at Acragas and the Philippeum at Olympia (where the author's failure to see the blocks was solely his own fault). Nor can a student be expected to benefit by the numerous tart innuendoes, such as 'passes too many confident remarks on the architecture of peoples outside his own limited field' (page 266).

William Bell Dinsmoor

EXHIBITIONS

In a review of the 1914 *exhibition of Les Indépendants, Arthur Cravan said of Robert Delaunay, the painter of prismatic discs,* that he had such a strikingly pig-like face that it was disappointing to find that he did not paint like a brute. I think Cravan might have recognized in Permeke's best paintings the kind of animality he had expected to find in Delaunay.

Permeke, who died in 1952 at the age of sixty-six, and whose formidable contribution to twentieth-century painting has been brought home to us by a handsome show at the Tate organized by the Arts Council, was, at least by abstract-expressionist standards, a genius: he emphasized the physical side of painting, and 'spread his paste' with gross relish. Indeed, it became quite obvious, after one had read Paul Haesaerts' description of Permeke, that the pictures could only have been painted by a thick-set, round shouldered, bushy eyebrowed, stubby fingered, heavy footed, moodily hearty man.

Permeke also had a ruddy complexion, but it was only reflected in some Devonshire landscapes painted when he was recovering from battle wounds during the first world war. The large canvas called 'Harvest in Devonshire' would be a valuable addition to the Tate collection. It is not a 'visual' painting, and although the huge slow rhythmic strokes of red and yellow paint faintly adumbrate a landscape they are more eloquent as the record of a physical response to the sun. One wouldn't think this picture had been painted in Devonshire if one didn't know its title, but it might, in a side-long fashion, call to mind one of D. H. Lawrence's large blonde women stretching and relaxing and letting her Northern soul go to pot under the sun of some smooth Southern gentleman, and I find it extraordinarily moving that Permeke's one assignation with Provence took place in Devonshire.

As soon as he was back in Belgium, the characteristic dark-brown shadows and straw coloured light returned to his canvases, and his paint took on the look of farmyard manure and conveyed some sense of its acrid warmth—which is just as it should be in an artist who was more concerned with the soil than with the sun.

It is his draughtsmanship that betrays his provincialism. It is facile, sophisticated and emptily powerful. In the twenties, his figure drawing was influenced by physical



1

cubism and African wood carving, and the picture of a doltish couple entitled 'The Betrothed,' 1, is a good example of the mannered way in which he used these influences to demonstrate his solidarity with the peasants. Later he went back to Maillol and Gauguin, with the same end in view and the same arty results.

Fortunately his brushstrokes did not take very kindly to boundaries set by his draughtsmanship, and all his finest landscapes and farmyard scenes occurred when the paint blotted out the drawing. For this reason, it seemed to me that the Belgian selectors of the pictures shown in London chose far too many works in which

drawing had the upper hand. This mistake was not made when he was shown at the Venice Biennale.

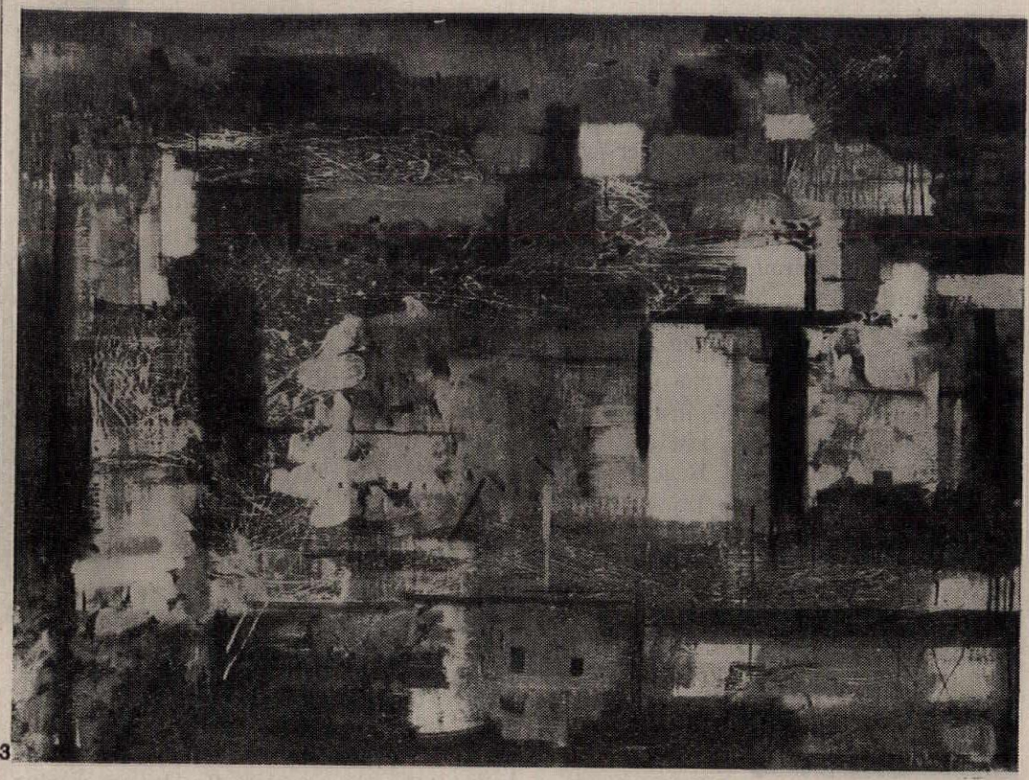
The sculptor César Baldacchini, who was born in Marseilles and works in Paris, and who prefers to be known by his Christian name, has recently held his first full-scale London exhibition at the Hanover Gallery. He is a subtle craftsman who works in the atmosphere of Parisian avant-gardisme as if it were a tradition handed down from father to son. He is at his best when his craftsmanship is at its most dazzling and obtrusive, and the images which emerge from what appear to be arbitrary complexities of construction and



2

a multiplicity of minute technical events are alert and compelling. The iron torso of 1954, 2, constructed with preposterous patience and overweening virtuosity is the most compelling of all. It's a thick piece of female façade, supported at the back by a highly complicated array of metal rods. The contours of the body are built up with hundreds of tiny squares of plate metal welded together, and the textures range from a smooth polish to fearsome effects of scab and fire-rot. The result appears to represent a far-gone carcase propped up after evisceration, and exposed in a mood of celebration. Considered as a cut from a cadaver, it makes a macabre if belated joke against the cult of the Greek fragment. Considered as a demonstration of Dali's notion that the mucous of corruption can assume, under the proper 'paranoiac-critical' gaze, 'the hard and blinding flash of new gems,' it is very nearly successful. But I do not know to what extent this work carries out a preconceived intention, and much of its charm—if this is the right word—seems to spring from the free play of technical fantasy.

Some of César's most recent works give me the impression that they arise from gimmicky ideas for sculpture which have not sufficiently taxed his craftsmanship. The winged figures, for example, are striking enough at first sight, but the immense, irregular sheets of flat metal which stand for wings are dead and unflappable, and the attempt to enliven their surfaces with tachist textures is inconsequentially modish.



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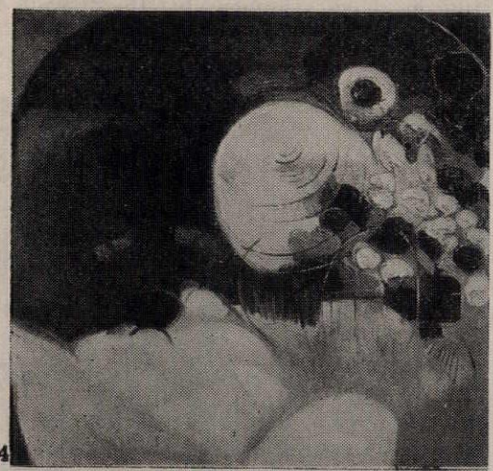
In John Piper's recent exhibition at the Leicester Galleries there were three or



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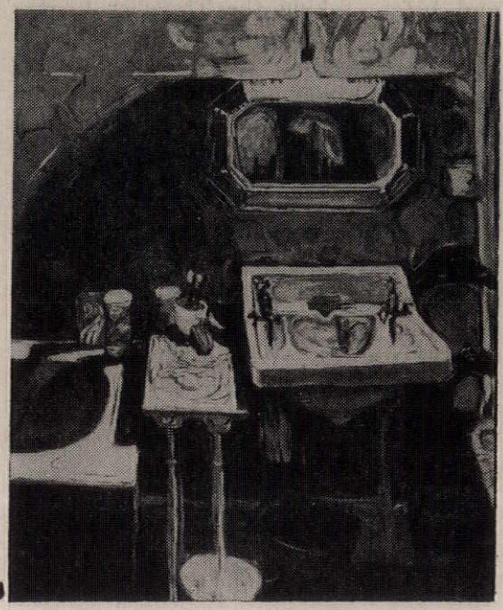
four large oils which make a refined and highly personal contribution to abstract impressionism, and they are probably his most important works to date. Some others which were closely related to them in design were marred by accents of hard, cold, chemical-looking colour that jumped out of the picture plane. The painting called 'West Country Town,' 3, is a lovely essay in the total animation of a surface. The town itself has a dream-like ambiguity and remoteness, and Piper may have had both Monet and Debussy in mind when he was painting this picture, for the buildings are submerged, and half-hidden by textural scribbles that resemble grasses floating on the surface of a pool.

Jack Smith's recent paintings, exhibited at the Beaux Arts, have some of the fascination of ruins, for they depict familiar phenomena savaged and nine parts consumed by a milky substance which the catalogue describes as 'light.' It is clearly a situation which calls for drastic reconstruction, but so far his titles are like proclamations that are not being heeded. One knows that Smith can meet the challenge of a title like 'Clouds in a Pool,' but the picture to which it is attached is neither a plausible impression nor abstraction, 4, and its inventions tend to belittle the theme.



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The idea of exhibiting at the Walker Art Gallery, Liverpool, a selection from the four thousand items submitted to the John Moores Competition didn't turn out to be a very good way of giving Merseyside 'the chance,' as the catalogue puts it, 'to see an exhibition of painting and sculpture embracing the best and most vital work being done today throughout the country.' Far too many important artists were either not represented at all or represented by indifferent works. But the prizes went to deserving cases. The third prize in the junior section, for instance, was awarded to Terry Lee, a student at the Slade, for his 'Bathroom, Regents Park,' 5. Because Lee is at present much concerned with the paintings of Munch, the bathroom fittings are beginning to heave under a misplaced attack of hysteria, but this young man paints knowledgably and well.

Robert Melville

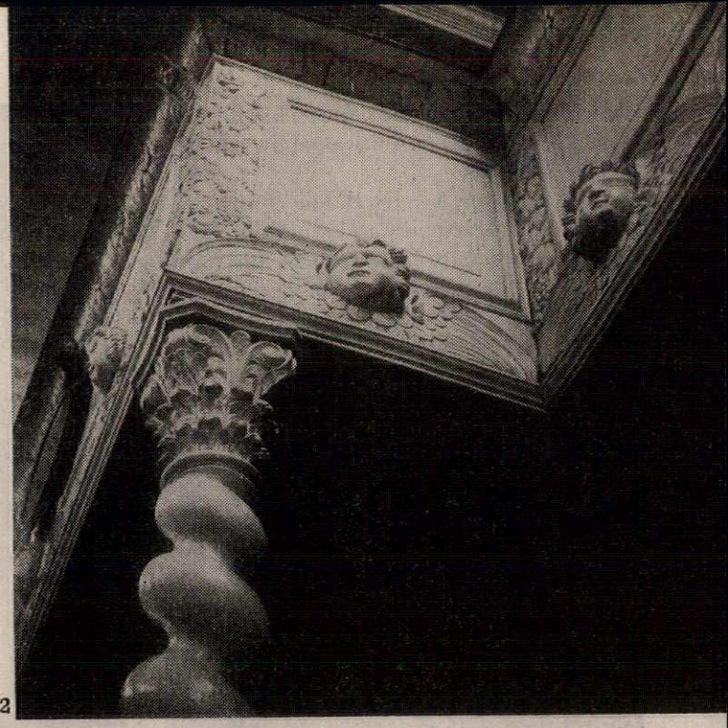
FURNISHING

FITNESS FOR PERSON

The parish Church of St. Mary's, Whitby, stands in its undulating grave yard next to the Abbey. Seen together they form a contrast in intention, the Gothic Abbey soaring to God come wind come weather (and how it can come on that bare cliff-top, northern-feeling even at midsummer), the Church flat, squat and anchored, its tower rising only a few feet above the complicated roofs and crenellations—a swan and a tortoise. Mrs. Gaskell liked it but disapproved of 'the weeping-willows, urns and drooping figures' of the wall monuments. Murray's Guide to Yorkshire after three double-column pages on the Abbey, and before taking the Traveller by the hand to see 'a fine fossilised Crocodile' at the Museum, says rather guardedly 'it lies below the Abbey, contains some Norm. portions, but has been so changed and filled with pews and galleries that its interior is strongly suggestive of a ship's cabin.'

This is still so today, but whereas in 1867 it was a matter of embarrassment, it now seems right and eminently fitting that the parish church of a town noted for the prowess of its fishermen, for its whaling pioneers, for a locally designed and built fishing cobble, and for having given birth to Captain Cook *should* be 'strongly suggestive of a ship's cabin.' Some churches though memorable have very little connection with their begettors, and might be anywhere. St. Mary's could, I think, not be anywhere else.

From the moment one steps into the porch through a wooden gate and under a Tudor arch (both of which could well serve as a template for the inverted hull of a Whitby cobble) one is in the hands of the shipwright. The Church is wonderfully light, and gives off a sense of exaltation perhaps because of the tremendous vitality of its contrasts, contrasts between things and between periods of time. Here there is not even a hint of the tenet that new things put into old settings must blend, must conform—that death-wish of the architect. The eighteenth-century gallery goes slap across the Norman chancel-arch, 1, enraging the writer of Murray's Guide, but how much they have to give each other, these two. The flat ceiling, the low round arches and the tall box pews might be oppressive were it not for the wonderfully elegant soaring pulpit, and the gaiety of the white whirligig columns, 2, and cover. Though these latter may give rise to thoughts of the Armada rather than to Our Father, they were familiar things in the lives of their makers, kith and kin of the great gilded sterns, of the ornaments and carvings of caravels. There are, too, the more expected contrasts to be seen, and at full blow—wood and stone, white paint and brass, green baize and crimson baize, immensely thick walls and windows with very thin glazing bars.



2

I had thought to call these notes 'a landscape without figures' but on looking at these photographs it seems that they have caught the sensation that there has been somebody there, or that there ought to be somebody there, not to add to the admirable composition but to complete the unity of a part of the gallery, or a chair. It is nonsense to put meanings into the hands of dead carpenters, but perhaps this feeling of incompleteness is because they knew that the chair or pew or door which they were making was not only for a man or woman to sit in or go through but that it would momentarily become part of the man or woman. Look at the pulpit. The two slender columns supporting the ornate sounding board seem frighteningly fragile, but put a robust and billowing parson in the pulpit, and he may praise and damn and even thunder without any apprehension on our part that the lid will snap shut. Could one call this 'fitness for person'? There are several traces of this in these photographs; it is a quality that could, and perhaps should, link the oppositions of taste. The future writer of the guide-book might here find common ground with the future Mrs. Gaskell.



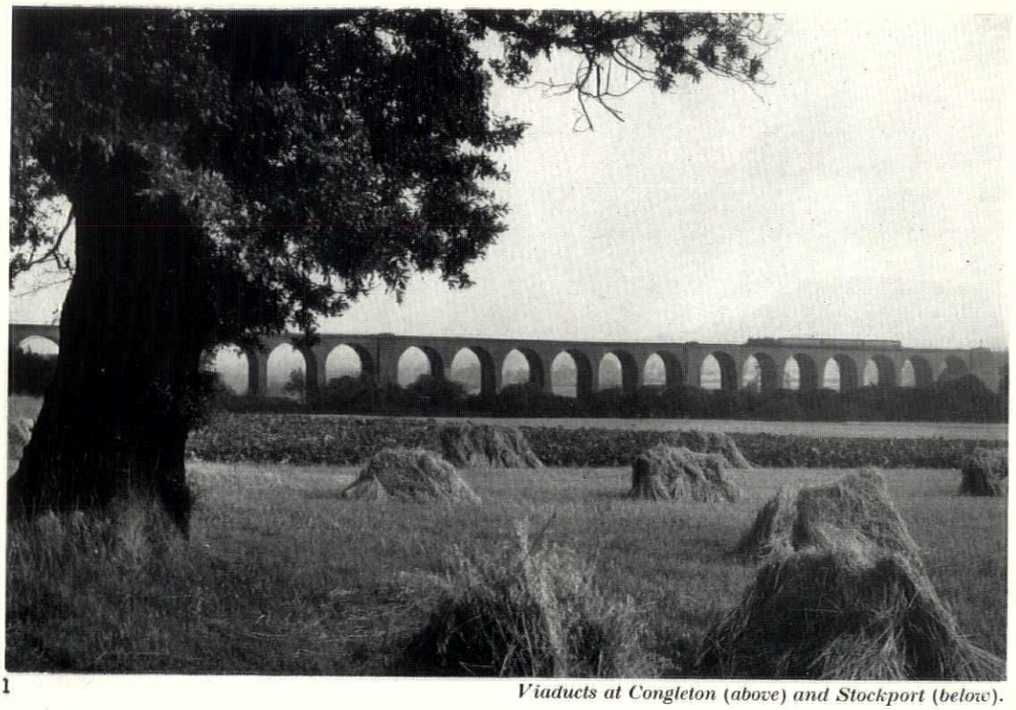
1

Kenneth Rowntree

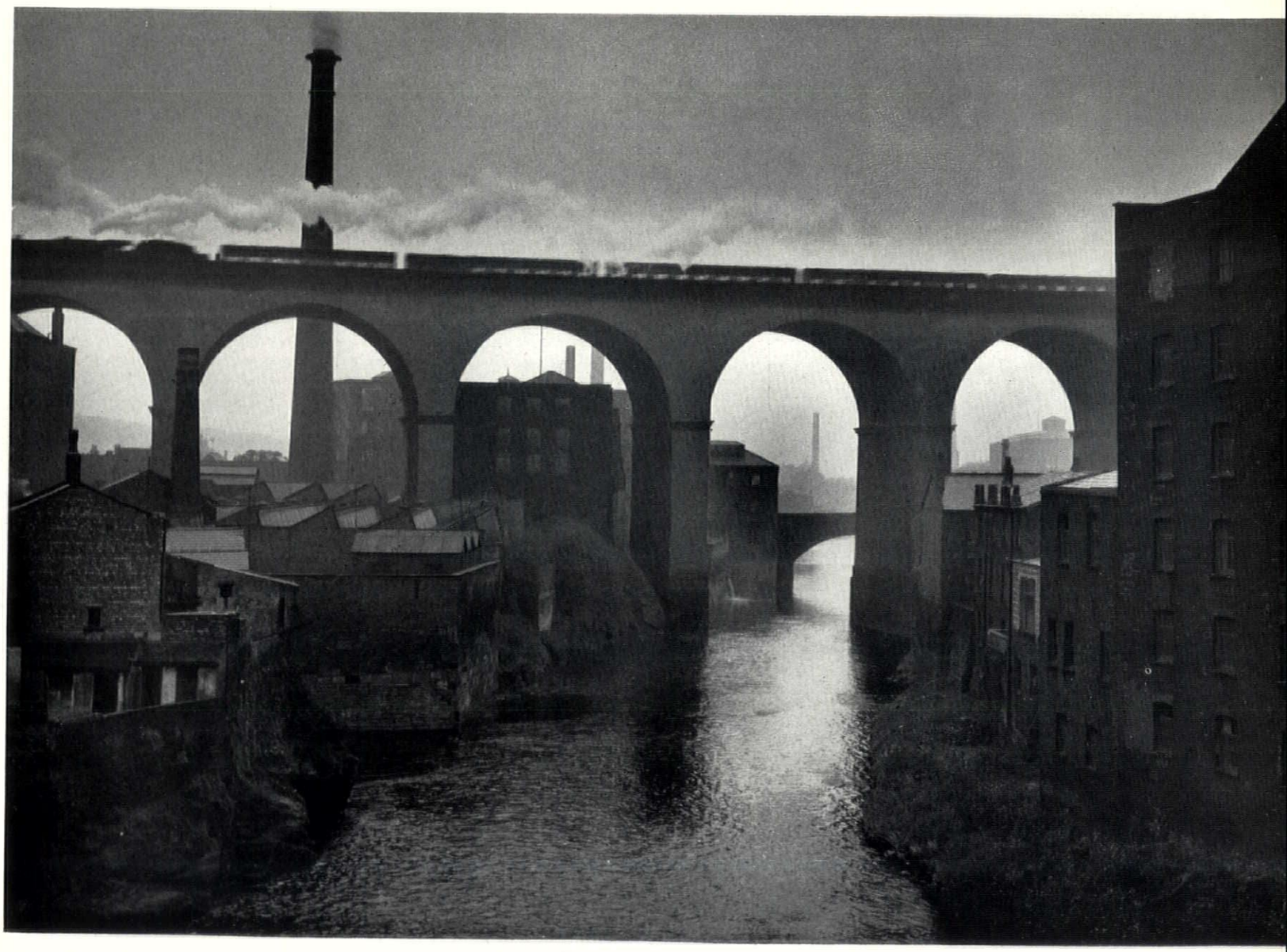
FUNCTIONAL TRADITION

ON THE RAILWAYS

The photograph below, taken by Eric de Maré, sums up a good deal of what we mean by the Functional Tradition. It shows architecture reduced to its basic geometrical elements and gaining thereby in vigour and sincerity. It shows the inherent qualities of building materials permitted to determine the way they are used. It also shows the startling new scale achieved in the period when the Tradition flourished most strongly, the early nineteenth century: to say nothing of the somewhat grimy industrial setting in which many of its monuments are to be found. The scene, 2, is a summer afternoon at Stockport, the cotton town on



1 *Viaducts at Congleton (above) and Stockport (below).*



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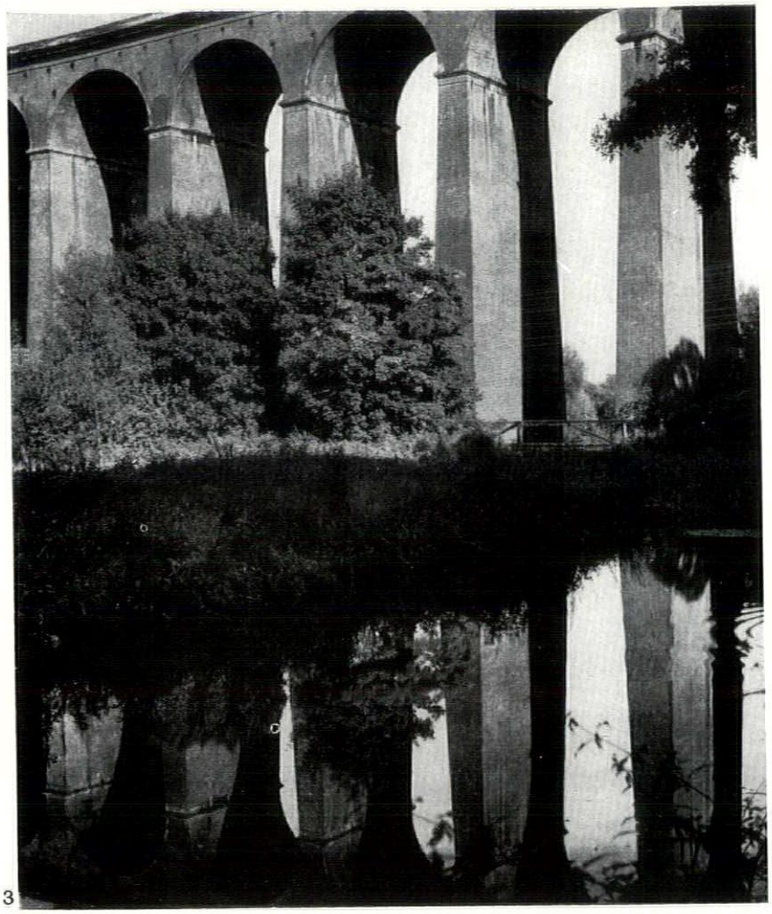

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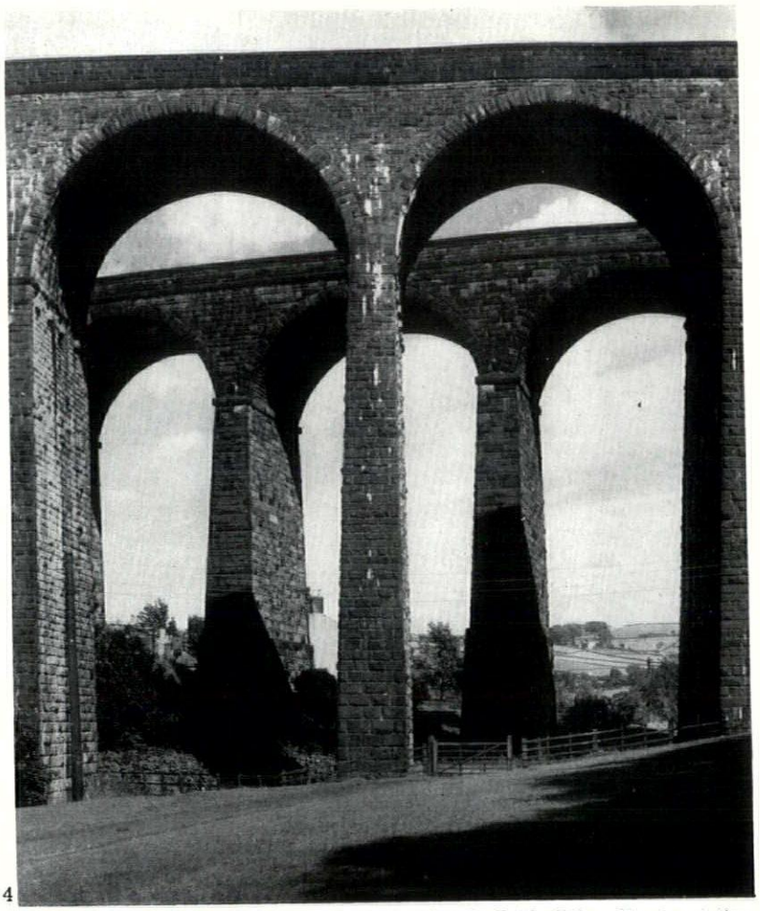


4

Above, viaducts at Welwyn and Chapel-en-le-Frith. Below, Buxton station.

the Lancashire-Cheshire border.

It is also typical that the central feature of the scene, threading its way between the tall riverside warehouses, should be a railway viaduct, because the Functional Tradition is closely linked with the industrial revolution, which itself was inspired by (and inspired) new means of transport—first the canals, then the railways. Moreover the viaduct is the most striking architectural achievement of the railway age. It is to be found not only as part of the picturesque urban scenery of places like Stockport, but in peaceful rural landscapes like 1 (Congleton, also in Cheshire), which shows also how railway engineering, striding ruthlessly across country has, with time, become assimilated into the traditional English scene.

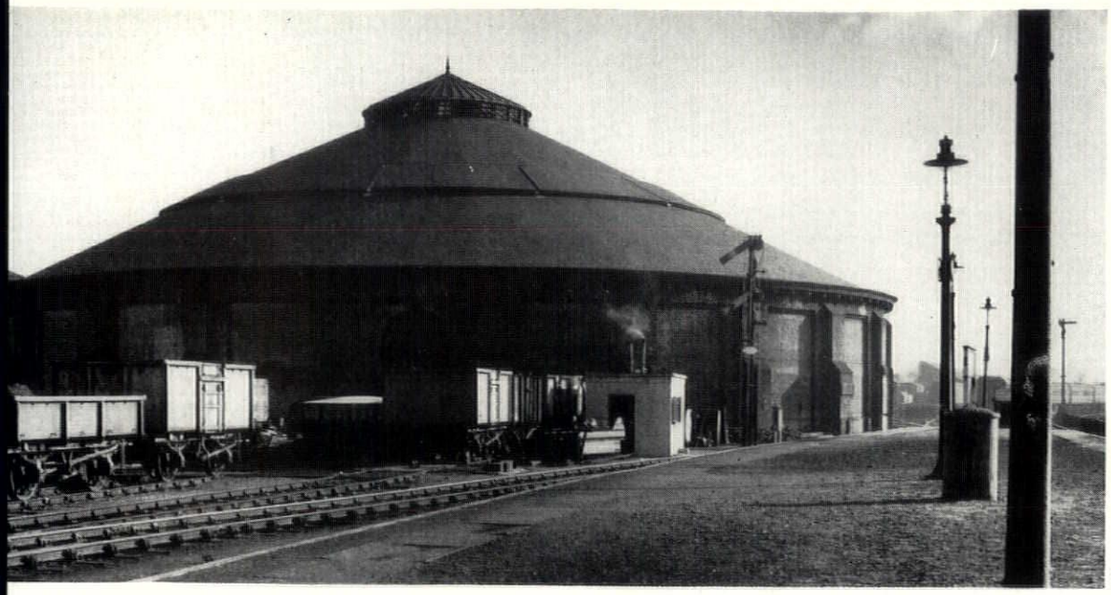
Railway viaducts, in spite of the impressive developments in science and technology that have taken place in the hundred years since the best of them were built, still have a breath-taking scale. Nothing grander of its kind has been built in brick than 3 (Digswell viaduct, Welwyn, Herts.) or in stone than 4 (viaducts at Chapel-en-le-Frith, Derbyshire).

From viaducts the enquiring eye naturally turns to stations, but here the Functional Tradition is not so much in evidence. Most of the main line termini were architects' showpieces, not the anonymous work of engineers. Euston and Paddington, Temple Meads at Bristol, and Newcastle Central are splendid monuments to Victorian self-confidence and taste, but they have not the vernacular qualities we are concerned with here. Of the London termini only Cannon Street (AR, August, 1956, page 74) and Kings Cross can be said to adhere to the Functional Tradition.

At the other end of the scale is the small station which adheres to a tradition peculiarly its own, based not on functionalism but on a romantic, rustic idiom evolved



5



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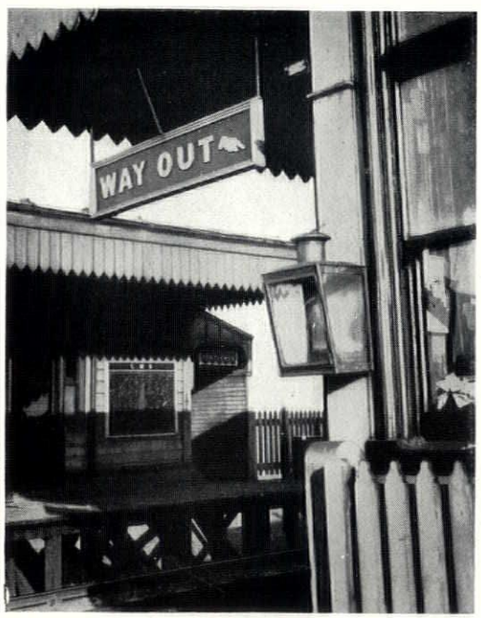
8

The engine shed at Camden Town: left, as seen from the platform of Chalk Farm station; above, from Chalk Farm road. 160 ft. in diameter, it was designed by R. B. Dockray in 1847. Below, signal box and railway storehouses at Garstang, Haworth and Littleworth.

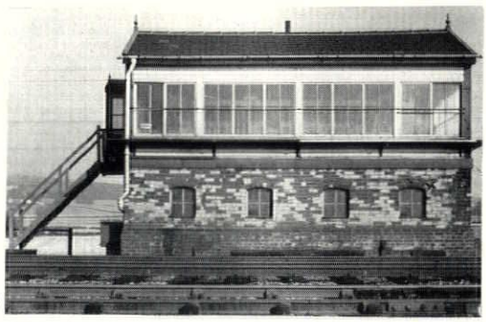
as part of the opposite process to that by which uncompromising functionalism becomes absorbed with time into the landscape: the process of camouflaging and humanizing the products of a new age so that they leave the old landscape undisturbed.* Nevertheless in station interiors individual features, notably the iron roofs, belong unmistakably to the Tradition. 5, Buxton station, represents the many interiors of this kind with its frankly expressed iron arch and tie-rod



6

construction; also its typical blind-arcaded screen-wall on the right. Other features of station architecture that have exploited functional needs to create a strong character of their own are the timber details—especially of overhanging roof edgings and railings. 6, by John Piper, taken in a wayside station in Derbyshire, is typical. Functional details of this kind are to be found even in the most romantically designed rustic stations.

The Functional Tradition is to be seen on the railways in several other types of structure. A famous example is the circular engine-shed at Camden Town, 7 and 8, alongside the main line going out of Euston. It is of brick with a slate roof. There are also signal boxes, like 9 (at Garstang, Lancs.), though many signal boxes belong rather to the domesticated romantic tradition already referred to, and are



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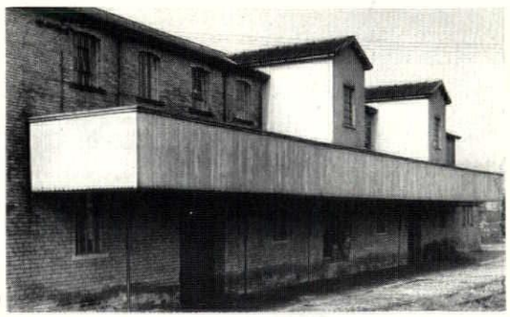

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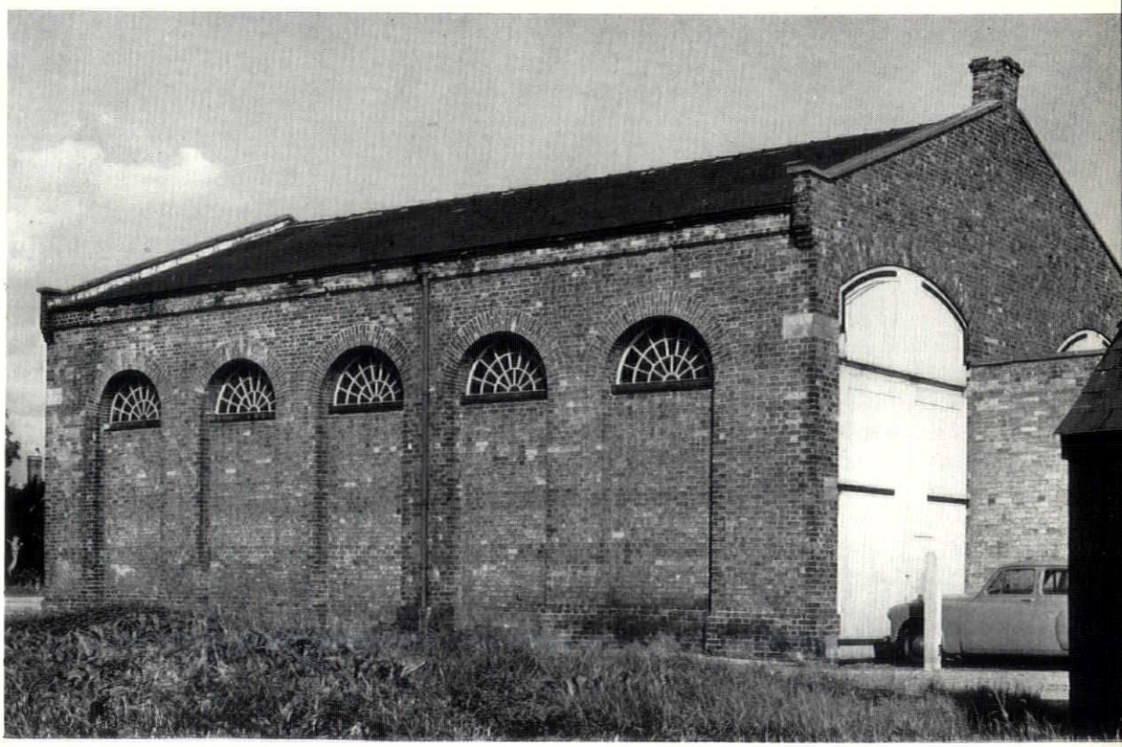


11

* See 'Domesticating the Iron House,' AR, June, 1942.

embellished with finials and barge-boards. And there are storehouses of various kinds like 10 (at Haworth) and 11 (at Littleworth station, near Spalding). The last, with its arcaded red brick walls, is typical of many simple agreeable buildings that the passenger can enjoy from the windows of the railway-train. J.M.R.

WORLD

PALAZZETTO DELLO SPORT

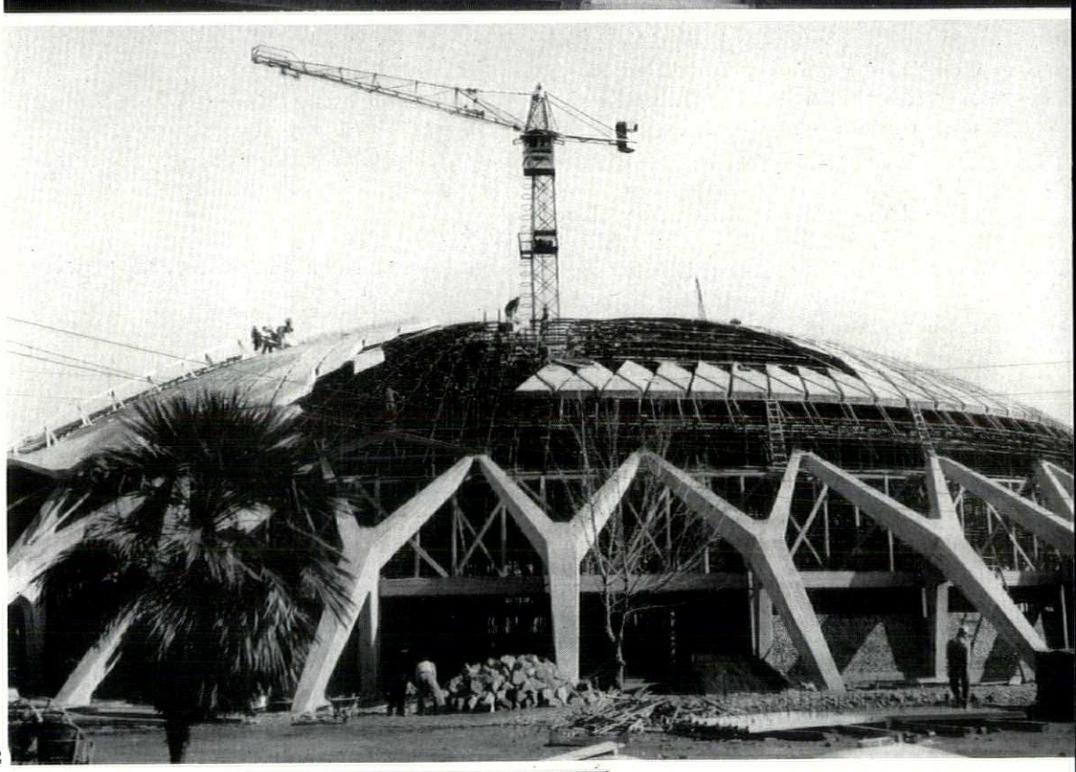
Pier Luigi Nervi has a Midas touch with concrete, and in his hands this material, that used to be denounced as mere vile stuffing, becomes one of the most eloquent there is. The vault that he has just designed for the Palazzetto dello Sport, which is to house the indoor games at the Rome Olympics, combines the Roman gravity of a coffered vault with a sense of lightness that only modern construction can achieve, and made manifest by the complete circuit of windows that run round without interruption under the eaves, 1—an effect that is equally apparent from outside (see frontispiece on page 90) and is accentuated by the scalloped lunettes between the supports.

The accommodation required in this small stadium, whose overall design is the work of the architect Annibale Vitellozzi, included enough playing area for basketball or tennis, which leaves accommodation for 4,000 spectators, but another 1,000 persons can be fitted in when games requiring less space are played. Outside the arena and seating are a ring of rooms accommodating all the necessary ancillaries, yet within an overall diameter of only 190 feet. Public-address, ventilating and floodlighting equipment is concentrated in the eye of the dome, whose clear sweep down to the eaves is without visual obstruction.

It is at the eaves that most of the visual interest of the scheme is concentrated. The lines of the ribs of the precast coffering are here brought together four at a time and gathered on a point-support, which is itself sustained by the meeting of a pair of the upper arms of two adjacent Y-struts outside. The contrast between smoothly rendered surfaces within, 3, and *beton brut* without, is accentuated by the 'shake' in the glass of the windows, and gives a great feeling of lightness combined with massive security. **Michel Santiago**



1



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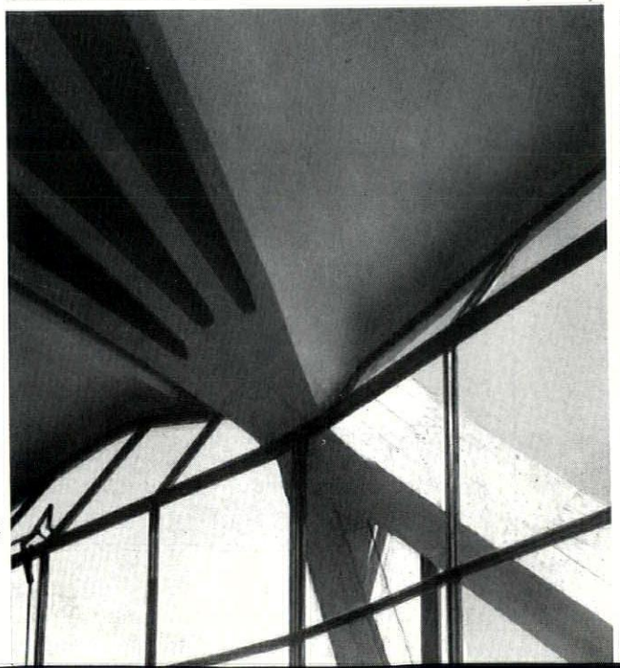
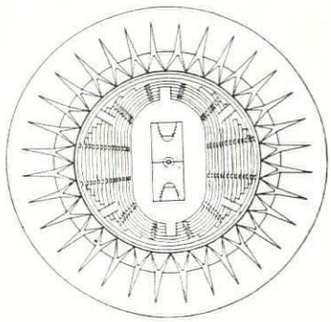


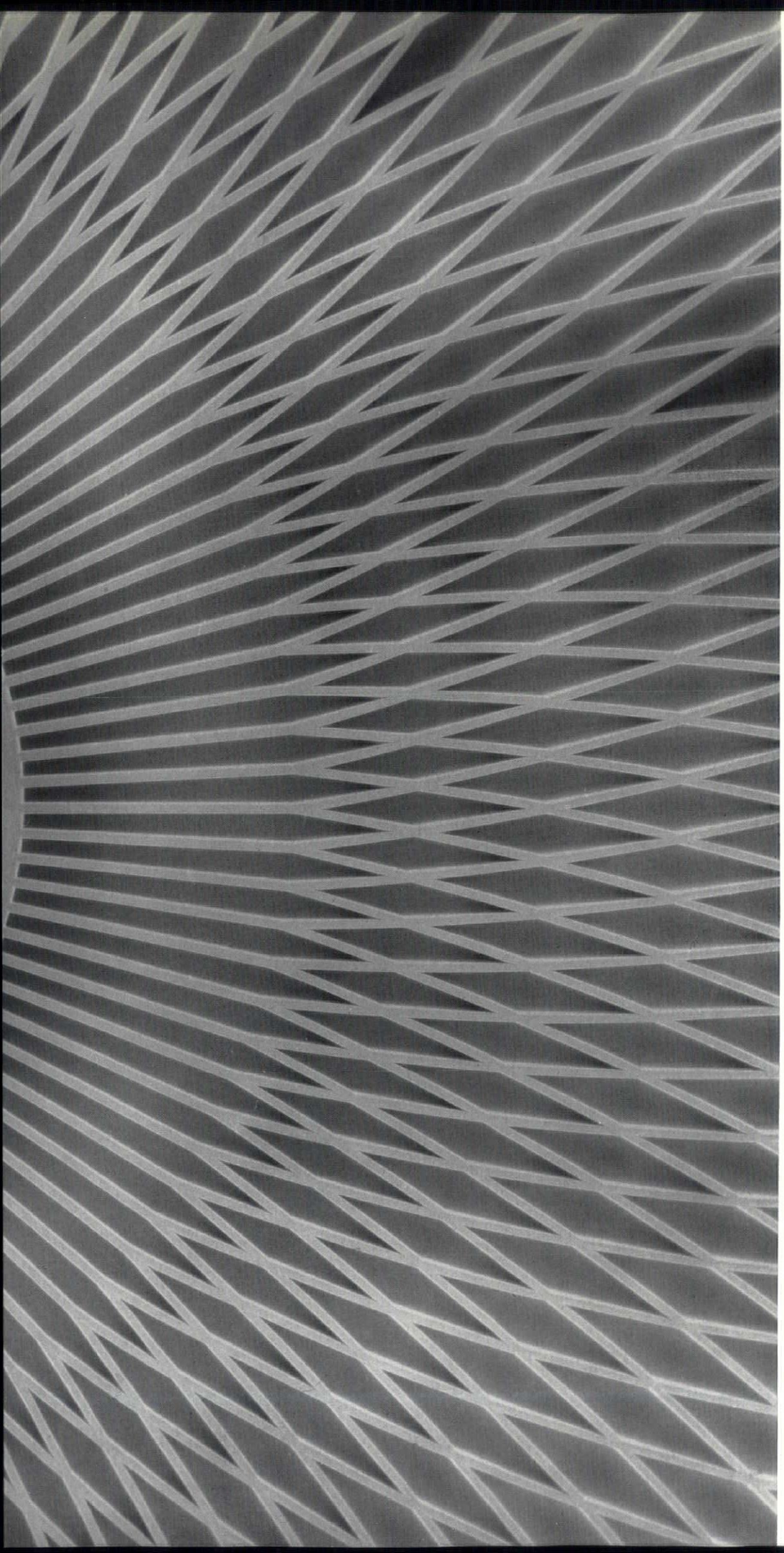
3

1. *Interior of the Palazzetto dello Sport showing the sound, ventilation and floodlighting equipment concentrated in eye of dome.*
2. *The building under construction showing the W-struts erected and the pre-cast coffering being laid.*
3. *Junction of windows, external Y-struts and roof vaulting.*

Below, plan of the stadium.

Facing page  *worm's eye view of a section of the coffered vaulting.*





COUNTER-ATTACK

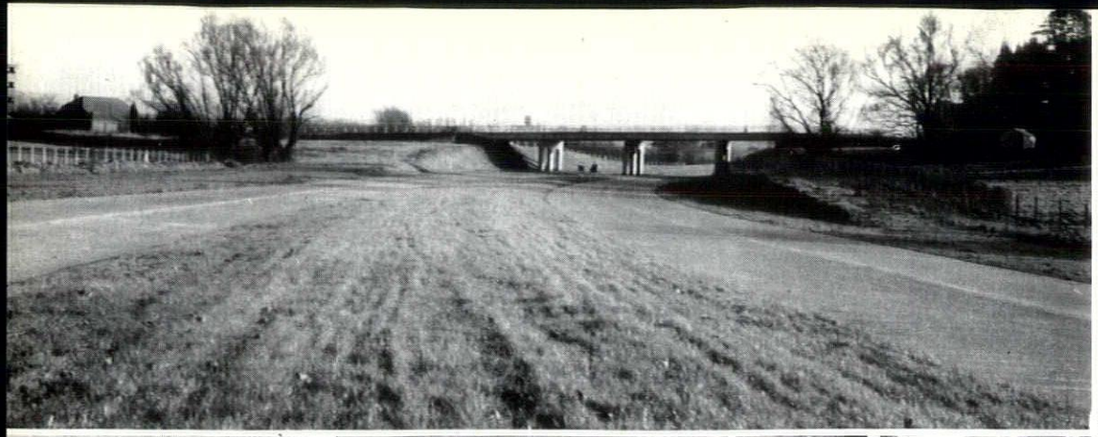
47. Positive Planning (*Ministry of Housing*). In a recent speech to the Town and Country Planning Association the Minister made a case against any greater degree of positive planning, in big or small things, because it would interfere with individual freedom. This sounds a reasonable proposition on the face of things but isn't on close inspection; in fact at the moment the Ministry of Housing is the least of the present threats to freedom.

The plain truth is that the big government things—power stations, rocket ranges, refineries—get put where the proposers want them largely over the head of the housing ministry ('in the national interest') and certainly completely over the head of the man in the street. What possible extra infringement would be created by having all of these schemes worked out coherently inside a national plan?

At the other end of the scale, Mr. Brooke would not retract the 'permitted development' order (see AR, December, 1956, page 432) because it would 'rob the freely elected local authorities of their present discretion.' But the 'freely elected local authorities'—usually acting in committee and in camera—are in fact the worst present-day offenders against individual freedom. The Bureau would like to put this paradox to Mr. Brooke: because the lamp standards in Newton Road, Paddington, were outside planning permission, the residents had no statutory redress whatever and it took a national outcry in the press to get the council even to re-open the case. If the lamp-standards had been subject to planning approval there would have been a planning decision, and at least the hope that the ministry might heed public demand to the extent of granting a local inquiry. With local authorities acting as many of them do at present, rigorous planning cannot give the citizen *less* freedom, because in these matters he has none already; and it might at least assure him of a fair hearing. The whole planning system is a gift to any local Napoleon; the minimum safeguard should be first that everything should be under planning control and second that a local inquiry should be obligatory whenever there is public opposition to an application which has been granted planning approval (instead of being held only when an application has been rejected, as happens today). That may take a lot more time and trouble but it's better than tin-pot Fascism, which is where we are drifting at the moment—and not through too much central planning but through too much power in the wrong hands through the muddled application of a mixture of control and *laissez-faire*.

48. Buckinghamshire (*County Planning Officer*). Berkshire recently held an admirable one-day conference of local authorities to find ways of improving the standard of local planning applications. The Bucks County Planning Officer, Mr. A. H. Prince, commenting thereon, said 'as far as this county is concerned I do not see any need at the moment for a campaign to improve architectural design.' Does Mr. Prince really think that the standard around Slough or Amersham or High Wycombe couldn't be improved? To the Bureau, which sees the efforts made by most county planning authorities in the course of the year, the design standard of Bucks is a long way from being the best.

49. Ashford by pass (*Ministry of Transport and Kent County Council*). This is the second Bureau notice of the town-and-landscape implications of current projects (for Markyate



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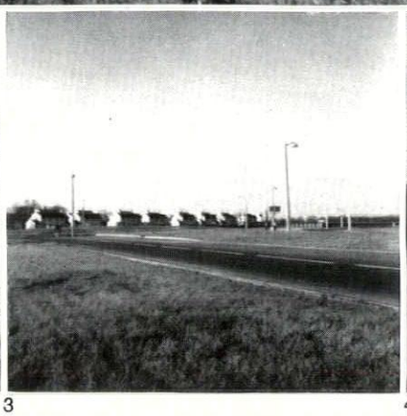

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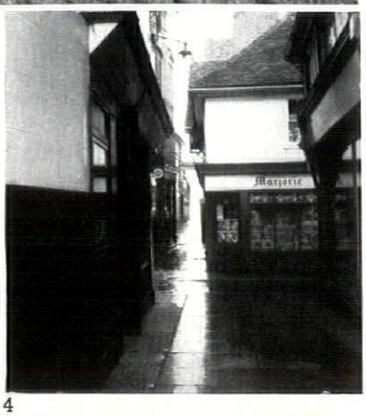


4

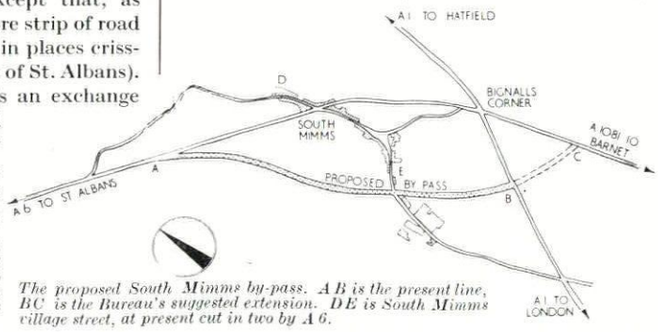
by-pass see AR, November, 1957). At Ashford the outstanding thing is that the landscape architects have so far let well alone. Apparently more complex landscaping is planned; this would be a pity, as the by-pass runs through open rolling country and no attempt has yet been made to prettify it: simple grass banks and central strip, simple sweeping curves and flyover bridges, 1, simple kerbs and a refreshing lack of unnecessary signs (the layby sign being purely informative might well have been put on the road surface without creating any legal difficulties). What might perhaps be faulted is some of the detail, particularly the bridge balustrades,* 2, and the roundabouts at either end, 3, where an original and low-mounted system of lighting would have been a wonderful advertisement of ingenuity to continental visitors.

As at Markyate, the by-pass has given the centre of the town a new lease of life. Ashford has one of the finest townscape effects in the Home Counties, an island site in the middle of the town where the three main roads are prolonged as footpaths to a pedestrian crossroads, 4; the fourth arm leads to the church. It now stands a much better chance of surviving as a focus for local traffic (it is well used and the buildings are all in good condition, unlike the similar island at Chippenham, Wilts.) than it did as a national road-block.

50. South Mimms, Middlesex (*Ministry of Transport and Middlesex CC*). A dual carriageway by-pass is proposed to the village as part of the general widening of the northern approaches to London. This is admirable, except that, as proposed, it will simply add one more strip of road to the Green Belt which is already in places criss-crossed to saturation (e.g. south-east of St. Albans). In landscape as important as this an exchange principle ought to be established (and could be established by the County Planning Office in collaboration with the Ministry) whereby a section of country is given back to the Green Belt, i.e. to uninterrupted rural use. In this case, if the by-pass were continued another five hundred yards to A1081 it would form a true relief road to South Mimms, and the existing A6 could be either blocked or drastically narrowed both at Bignalls Corner and north-west of the village. The minor road, D–E on map, could become once again what it was originally, the village street of South Mimms; a village street, incidentally, which could (*pace* Lionel Brett's recent talk to the Royal Society of Arts) take almost as many houses as it has already and benefit therefrom. Here is a case where building in the Green Belt could enhance it.

*Painted light 'amenity' green. This in fact doesn't blend with the fields at any season: as it is quite obvious that the object is a bridge balustrade it would have been better to make a virtue thereof and paint the railings black and white.

51. Harwich, Essex (*Borough Council*). The first redevelopment area of Old Harwich is to be rebuilt when Ministry permission for the finance has been granted. It consists of a block fronting Kings Head Street which is largely cleared already, 5: only one building, the Wellington pub, is to be kept. Old Harwich, 6 and 7, is another splendid nautical town like Poole (AR, January, 1957) or Faversham (AR, July, 1956), and has a similar problem: how to rebuild without sweeping away the superb and intricate pattern. The Borough Council say they cannot publish plans until financial permission is granted: a pity, because the work they have done in Old Harwich, though architecturally minor, has respected the existing pattern, in this case a much more important thing. It is very hard for one architect's office to attempt the effect of natural growth produced originally by perhaps two dozen builders. To assist this, might the Bureau suggest that each block be split between the borough engineer and an outside architect with a complex dividing line that would force a complex result and produce variety automatically through the different architects' different styles. At the same time a few more houses might be reconditioned—to make the job of matching new and old easier—and it would do no harm to insist that good architectural details like Georgian doorcases and shopfronts from the demolished old buildings are included in the new ones, because modern architects have far too little experience of the *objet trouvé* technique which came naturally to most of the original builders of these towns. If successful, a scheme like this might be the ideal subject for Civic Trust publicity and sponsorship, because it strikes at the root of the problem that the Civic Trust was set up to overcome: the marriage of old and new. There is incidentally at Harwich some land occupied in a desultory fashion by the Navy, 8, which runs between the town and the sea and would make a magnificent site for an open-ended square.



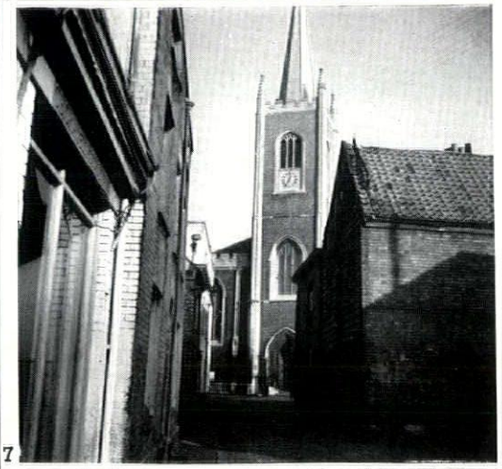
The proposed South Mimms by-pass. A B is the present line, B C is the Bureau's suggested extension. D E is South Mimms village street, at present cut in two by A 6.



5



6



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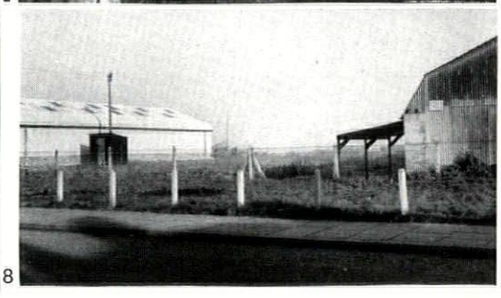


8

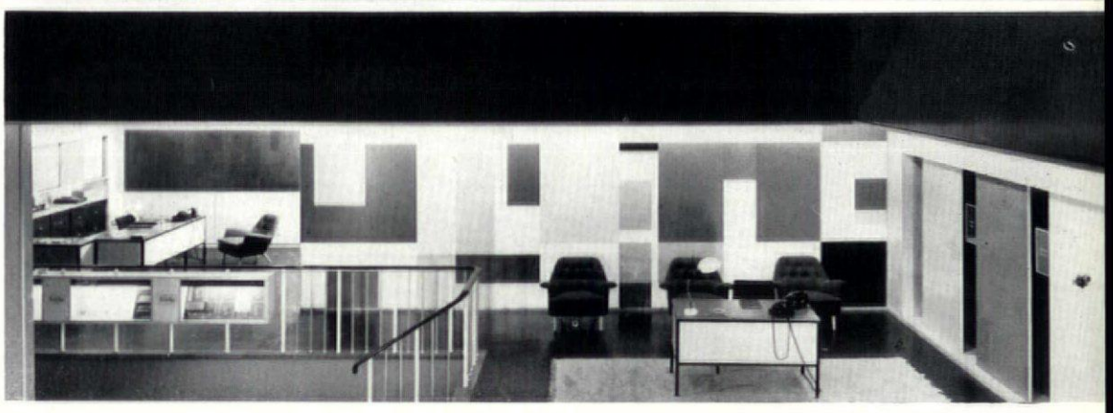
SKILL

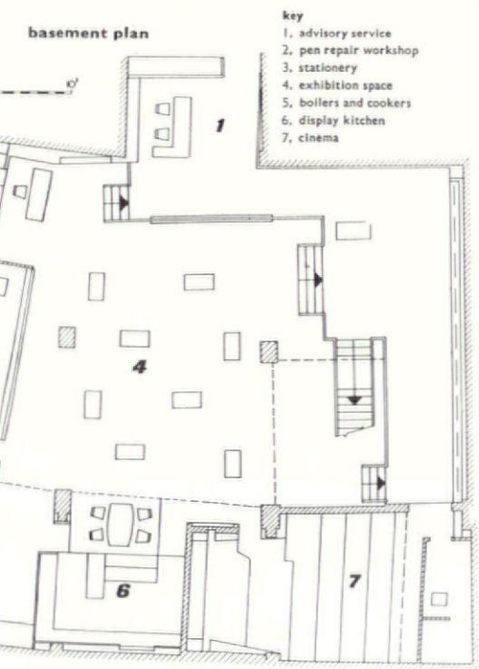
A MONTHLY REVIEW
OF BUILDING TECHNIQUES & INDUSTRIAL DESIGN

1 interiors
2 design review
3 techniques
4 the industry

1, *the showroom from the street, below, a view of the main showroom in the basement.*







1 INTERIORS

SHOWROOMS FOR THOMAS DE LA RUE, LONDON, W.1. *designers: Design Research Unit*

This showroom at 84-86 Regent Street displays plastic products, kitchen equipment, stationery and fountain pens. The original entrance to the second and subsequent floors has been expanded and a reception area formed beside it from which a staircase leads down to the main showroom in the basement.

In the design of the shop front the aim was the maximum vision from the street



2



3

2, the reception area from the entrance lobby; the back wall is veneered with marbled plastic laminate. 3, the head of the staircase from ground floor to basement with an abstract plastic laminate panel behind designed by W. M. Dixon. On opposite page, 4, top, a view of the Formica Advisory Service section with displays showing the firm's various printing activities. 5, bottom left, the main staircase from the basement. 6, bottom right, the dining area with the island unit separating it from the display kitchen.

to the basement showroom. It consists of a light black bronze frame surrounding large plate-glass areas. Stainless steel forms the frame to the doors and transome; the fascia is in black granite. The reveals to the window are of $\frac{1}{8}$ in. thick teak veneer. A specially designed Gothic script is used for the name of the company on the upper fascia and this is repeated in an elaborated decorative form on the illuminated projecting sign and sand blasted into the main window at normal eye level. The name on the transome is illuminated in white letters against an opaque bottle green background, the house colour of the company.

Plastic laminate has been used widely for wall surfaces and fittings. In the entrance hall, the left-hand wall is panelled with 12 in. stripes of dark grey, light dove grey and ivory, the opposite wall being a clear yellow. A marbled design in lilac and black, which is reflected in the completely mirrored left-hand wall, covers the wall opposite the Regent Street window in the reception area, while the right-hand wall is green.

Facing the staircase in the basement is a large abstract mural constructed in plastic laminate by W. M. Dixon. On a raised area before descending into the showroom proper is an advisory bureau, where revolving colour wheels enable different patterns and colours to be compared and matched. Nine changeable panels display the latest patterns and at the lower level of the actual showroom, free-standing frames display fabrication technique.

In the kitchen which displays new cooker design and uses of plastic laminate, the hot plate and oven sections of the gas cooker are separate and form an L-shaped island fitting, with concealed lighting and ventilation above it. Plastic laminate with Bewick wood-cut designs is used in the dining area adjoining the kitchen. Ernest Race designed the circular dining table which has a Portland beige plastic


EMERGENCY EXIT
De La Rue

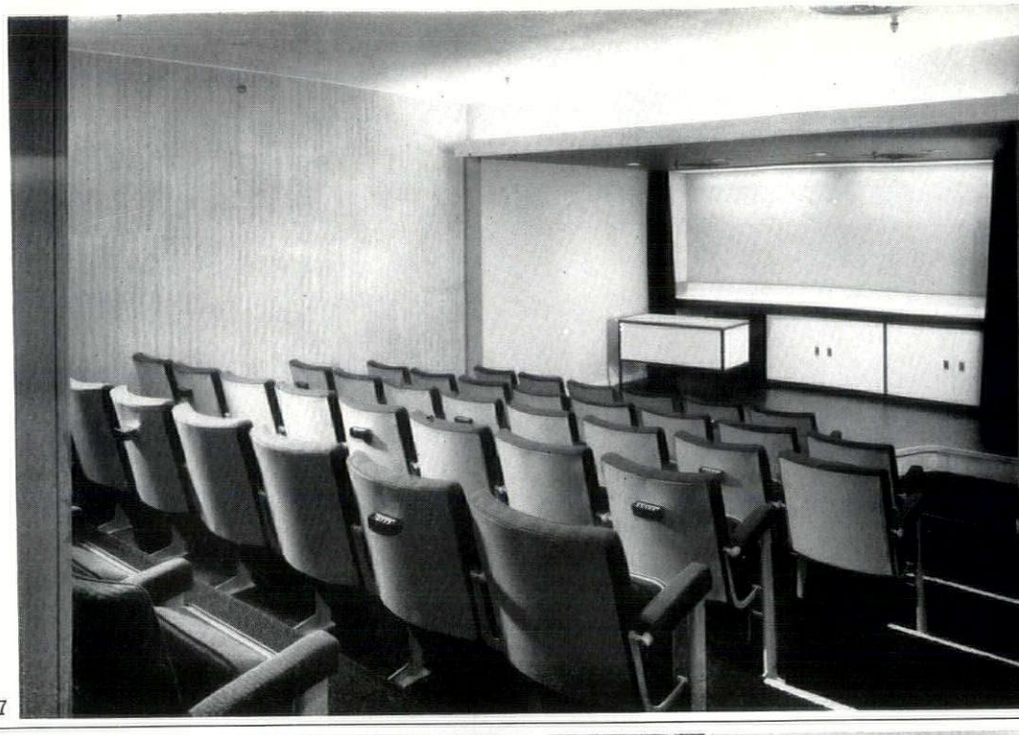




top with brass trim and a revolving central 'lazy Susan.'

The small theatre seating forty-five people is equipped for the showing of both 35 m.m. and 16 m.m. films. In addition to various colours being used in panels and fittings, the side walls are veneered throughout in medium Australian walnut plastic laminate.

The designers were Misha Black, Alexander Gibson and Philip Lucey; signs and typography by Milner Gray and Ronald Armstrong, displays by Ronald Ingles, all of DRU. Special plastic laminate displays were by Charles Monroe, and the kitchen was designed by W. M. Dixon and E. J. Marshall.

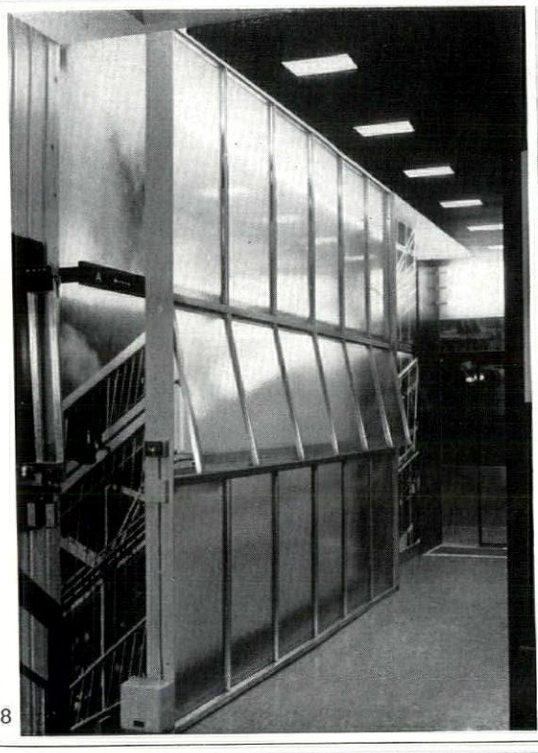


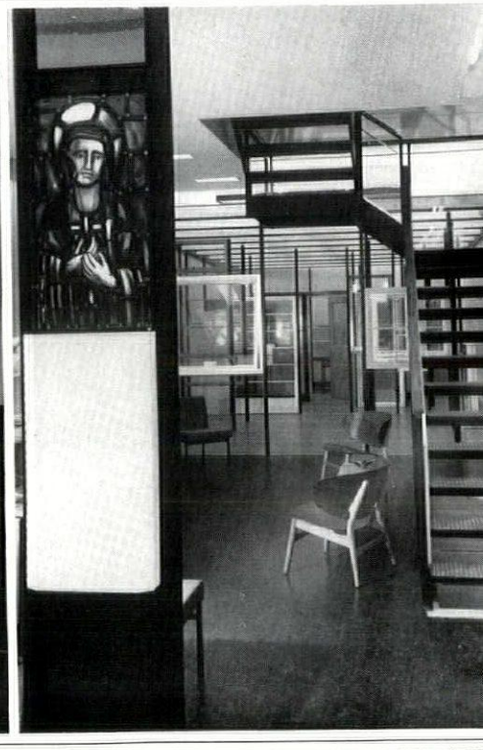
7, the private theatre, used for films and trade and public demonstrations. 7

WINDOW SHOWROOMS, LONDON, W.C.1

Architects: Bronek Katz and R. Vaughan
Architect in charge: Roger Balkwill

In this showroom at 37-39 High Holborn windows, doors and curtain walling for domestic, agricultural and industrial purposes are fixed to a grid. Exhibits can be bolted with friction grip fastenings to grooved pressed steel posts. These are fixed in position between perforated floor strips and grooved overhead beams. Colours generally are subdued, with areas of natural wood, slate, black leather cloth and mirrors. Bright colour is introduced in small lighted ceiling recesses and in stained glass panels. The staircase treads are $\frac{1}{8}$ in. sheet steel with grey panelled rubber fixed between $\frac{1}{4}$ in. steel stringers.



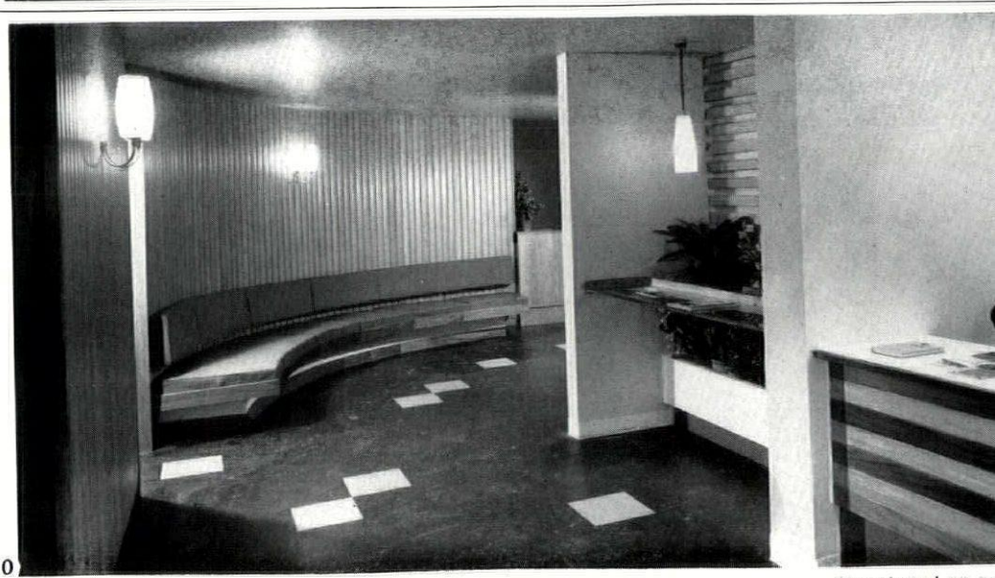


Two different uses of the metal exhibition grid; 8, displaying a section of curtain walling and 9, showing stained glass and window-frames. 8

USAF OFFICERS' CLUB, SOUTH RUISLIP

Designers: Clive Hunt and Edwin Meayers of Heal's Contracts

This is a complete reconstruction, redecoration and refurnishing of the officers' club at the USAF base at Ruislip, Middlesex. The interior of the building was completely stripped and the layout of the club entirely altered, now providing entrance hall and reception counter, lounge area, TV lounge, writing area, bar, and dance floor with dining area around it. A stage is also provided together with

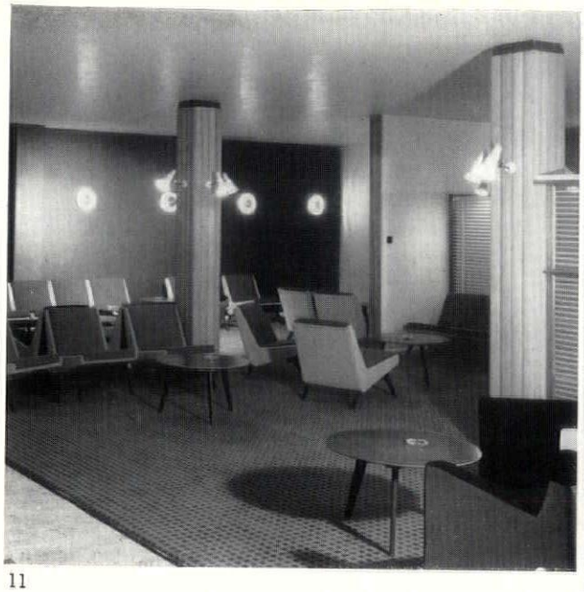


10, the entrance hall and reception counter. 10

[continued on pa

continued from page 146]
club administrative offices. Suspended ceilings are used throughout, incorporating an air extraction plant, which uses similar openings to the recessed pot lights.

The reception counter has a plastic laminate top and wood strip front; the reception area has a floor with random colour tiles and 'egg crate' ceiling light over counter. The lounge has slatted pine clad columns and Zebrano panelling; the carpet is a two-tone textured Wilton (light green and dark green). The bar counter has a teak and beech slatted front, and a photo mural at either side of it covers the complete wall area and shows a woodland scene. The dance floor uses maple flooring; the stage surround is slatted pine panelling, with acoustic tiles in the ceiling area above.



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11, *general view of the lounge area. The carpet is two-tone green; chairs are red, black and kingfisher blue and the occasional tables are mahogany.* 12, *the writing area in one corner of the lounge showing one of the purpose-made beech and mahogany writing tables.*

HOUSE IN HULL

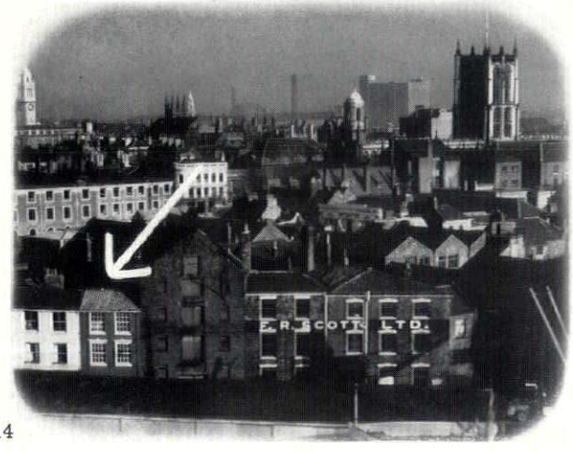
Architect: Alexander Potter

This is a conversion of an eighteenth-century waterfront house in Hull—29 Humber Dock Side—for his own use by the former head of the Hull School of Architecture. It was formerly Sam's Eating House and is sandwiched between a warehouse and a pub, and has been itself at various times both pub and brothel. Outside, the house is painted blue with white woodwork: the complete cost of purchase and conversion was about £1,500.



13

13, *the kitchen showing cooking utensils put to decorative use; beside them is a black on yellow tiled mural by Gordon Cullen.* 14, *view of Hull dockside with the house arrowed; the tower of Holy Trinity is behind to the right.* 15, *the open staircase of polished pinewood linking the three floors of the house.*



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2 DESIGN REVIEW

Necchi Sewing Machine

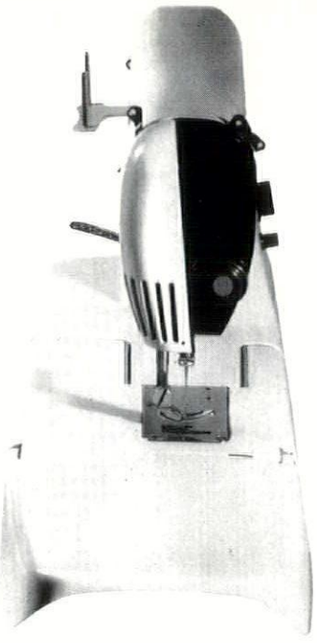
The Italian firm of Vittorio Necchi has produced a new sewing machine incorporating outstanding mechanical and aesthetic innovations.

The post-war renaissance in sewing machine design ended a period in which few developments had taken place for half a century. Until recently the housewife had little choice outside a variety of traditional round frame machines modelled with ample curves and decorated with gold Art Nouveau flowers on a black ground. Since then, most manufacturers have attempted to match technical developments towards power drive and automatic control with a domestic machine-age aesthetic which, curiously, had already been well established in other, less complicated, household appliances.

The large numbers of sewing machines now available from Europe, America and the Far East show a remarkably consistent interpretation of this modern look, though an exaggerated emphasis on 'style' rather than on a direct expression of mechanical function is a common failing. It has remained to only a few firms to lead the way with innovations of lasting significance, and Vittorio Necchi established the current square frame with a machine produced as early as 1934. Now Necchi has introduced a new machine, the 'Mirella,' which is equally revolutionary.

The 'Mirella' is a simple, non-automatic electric model whose unique appearance derives mostly from an unusual location of controls and the treatment of the balance wheel. This latter has been reduced in size and removed from its normal position at the top of the frame to the base of the supporting column, within easier reach of the operator's hand. Previous attempts to integrate the balance wheel resulted in the heavy appearance of the modern sewing machine frame, but the new Necchi solution allows the frame to be slimmer and lighter. The placing of the motor housing within the base plate rather than the frame, as in the earlier 'Supernova,' also contributes to this slimness. Most of the other controls, which normally protrude from the side, have, in the 'Mirella,' been grouped neatly at the back on a black plate which cuts vertically from top to bottom as if





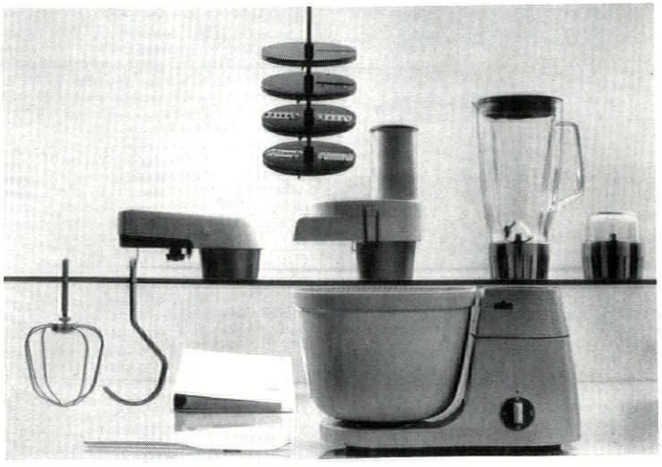
the frame were sawn through to reveal a contrasting interior. Similarly the head is cut back in a sharp-edged step to house the thread tension device and other mechanisms and is also finished in black to contrast with the ivory of the main casing. This deliberate grouping of controls at front and rear allowed the main frame to be made as a single casting uninterrupted by knobs and access panels, and the designers have seized this opportunity to create forms of great subtlety and distinction.

Originally conceived as a free-arm machine, the 'Mirella' can be converted into a flat-bed model by the addition of a hinged plate. As for other Necchi sewing machines the industrial design consultant was Marcello Nizzoli.

Braun Mixer

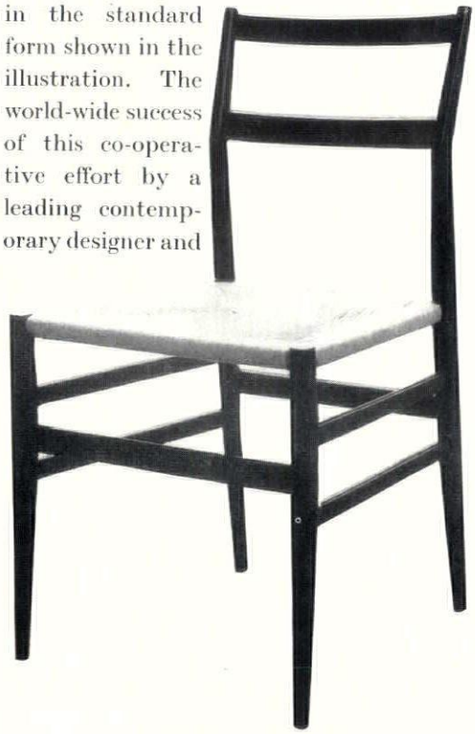
Among the most elegant, as well as practical, domestic machines exhibited at the recent Triennale was the Braun Mixer, as we should call it, which the makers more sensibly call a *Kuchenmaschine*, since it performs nearly all the kitchen functions that can be mechanized. As set out in the illustration, the various work-heads are, from left to right: mixer, with hooks for light and heavy work; mincer, with four different cutting discs; power blender; coffee grinder; and the mixing bowl, spatula and instruction book complete the kit, which, unfortunately, is not yet available in Britain.

Visually, the design represents a consolidation of a trend that has been evolving slowly in recent German work, and now seems to be becoming a dominant—possibly under the influence of the *Hochschule für Gestaltung* at Ulm, with which the Braun company, of Stuttgart, has connections. A good deal of German design since the war has either harked back to the 'modern' past, the Bauhaus, or has used a 'Messerschmidt aesthetic' with strong echoes of war-time aircraft design (this has even affected the sportier Mercedes cars) but, in Gerd Alfred Muller's work for Braun, forms that belong unmistakably to the vocabulary of the Fifties have taken on something of the cool nobility of the work of the Twenties—*Integrationsform*, as Hans Dieter Oestrich has called it, 'created out of the tension between intellectual and sensuous formal interests . . . clear, clean and pregnant expressions of function.'



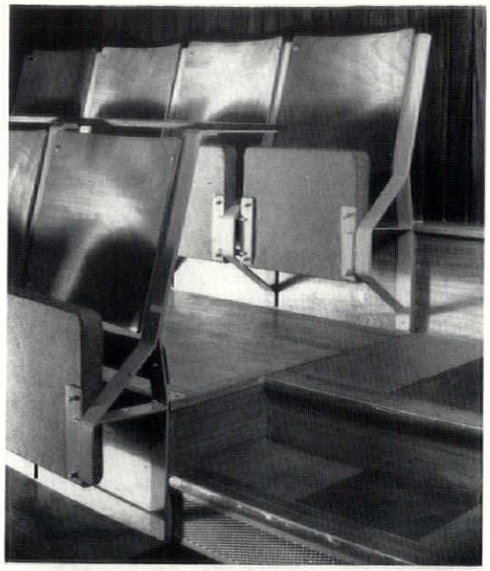
Ponti Chair in England

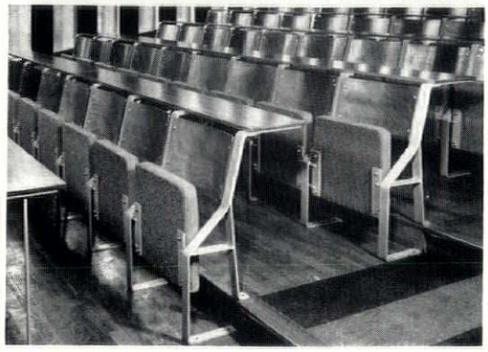
Conran Furniture, who already have an English agency for the celebrated Chiavari chairs from Italy, are now also to handle the equally celebrated chair designed by Gio Ponti, which should retail at about £9-odd in the standard form shown in the illustration. The world-wide success of this co-operative effort by a leading contemporary designer and an old-established handicraft industry prompts the query: can no English designer do an equally elegant re-styling job on the traditional Clissett chair which is so closely related to the Ponti-Chiavari type in structural form?



Race Auditorium seating

A new system of seating for stepped lecture halls, demonstration theatres, and so forth, has been developed by Ernest Race for Liverpool University, where it will be used in their various new developments, and will shortly be more generally available. The vertical supports are of welded steel strap, enamelled grey, the tip-up seats have foam-plastic upholstery covered in plasticized fabric, the backs of the seats and the writing desks are finished in lacquered mahogany. Although the supporting members are not adjustable on site, their design makes it easy to vary the dimensions at the factory to accommodate varying riser-heights, etc., and—in addition—the general conception of the system should facilitate economical and rapid installation of runs of seats of any length.





3 TECHNIQUES

SMALL SCALE LETTERING

by John Sharp

The previous article (AR, October, 1957) was concerned with the numerous methods of manufacturing letters for fascias, and similar large scale purposes. In this article small scale lettering is considered, with such applications as name plates, direction boards, and notices. Naturally there is an overlapping between the two categories, but where there is a limitation in size or application it is stated.

Generally there is a need for improvement in the design standards of the necessary notices, warnings, and instructions, with which we are inflicted. Industrial competition and new materials have reduced the robust cast iron notices of the railway age to rows of characterless sans serif capitals laid out to fill the smallest possible area, while the Ministry of Transport standard lettering has all but killed the art of street name plate design.

Consideration will first be given to the various forms of lettering that are integral with the background, and I will try to show that there are other materials than inlaid bronze that can be used for professional name plates and similar applications—materials that offer the possibilities of a wide range of type faces and colours, and yet are extremely durable. An interesting example of the possibilities of the new materials is shown by a comparison of the notices used by the National Trust, and the Nature Conservancy on their reserves. The former use a silicone-aluminium casting that incorporates their symbol and the name in a specially designed Roman face; there is often an additional notice below this carrying regulations and requests for aid: the latter use an interlaminate printed notice, that, due to the far more flexible nature of the process, incorporates the relevant section of the Ordnance Survey together with a description of the reserve and its object.

engraved lettering

The engraved brass name plate is seldom used now, though there are still plenty of examples about, some having the lettering practically obliterated by the constant attentions of the metal polish rag. It is undoubtedly the need for constant attention that has caused the decline in its use, though there would appear to be little reason why it should not be used in sheltered positions, protected by a coat of one of the metal lacquers used by the ironmongery trade to prevent corrosion. These lacquers have a long life and require only an occasional wipe over.

engraved bronze. The ubiquitous engraved bronze plate is the accepted norm for professional name plates, the dreary dull brown with its cream inlay being the standard introduction to a doctor or dentist. The lettering it cut into the face of a flat plate, and then filled with a vitreous enamel and fixed; a wide range of colours is possible, but cream predominates. The brown finish is produced by a self oxidizing process, and the whole plate is normally lacquered with an ironmongers clear lacquer.

engraved plastics. There are several types of engraved plastic plates.

a, the most familiar is an imitation of the bronze plate just described, using brown bakelite sheet, which is engraved in the same way as the bronze, the lettering being filled with a liquid plastic which is heat cured to a hard state. Visually there is little difference between the finished plate and a bronze one, and they are often used internally. They may also be used externally, provided they are polished regularly with normal wax polish, as the weather has a bleaching effect on the surface. An alternative black bakelite is also obtainable, and the infilling plastic is in a wide range of colours.

b, the lamination process whereby the majority of plastic sheets are produced is made use of to produce another engraving material that is sold under the trade name of Traffolite. In this a sandwich of several layers of different colours is built up, and then the top layer is machine engraved away to expose the colour underneath. This is widely used for instruction tags on instrument panels. The colours are permanent, and there are twenty colour combinations to choose from. The sheets which are up to 4 ft. square vary in thickness from 1 to 6 mm. A variation is a two-layer laminate that has one opaque and one translucent layer, lettering being engraved through the opaque layer to give translucent lettering. Several colours are available. Unlike the first process, the lettering is recessed, and unless cleaned with care is liable to become filled with grime.

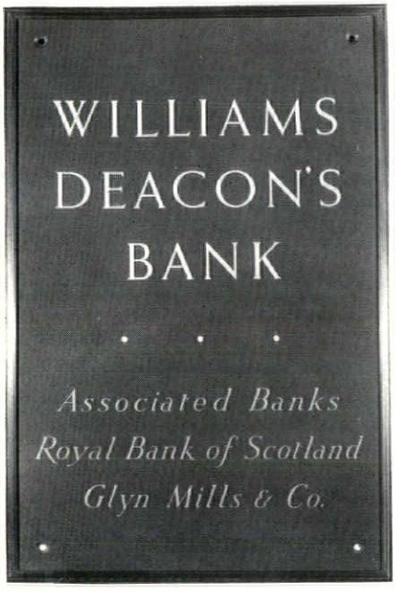
c, engraved transparent perspex has a quality of its own. The lettering is engraved into the back of the sheet and has the appearance of applied lettering; the engraving tool produces a V sided letter stroke that is quite attractive. Any of the transparent coloured perspex can be used, and the letters are coated with cellulose that can be of any required colour. These signs are not suitable for

external use unless the perspex sheet is bonded on to perspex backing as the cellulose does not weather well.

cast metal plates

It is, of course, possible to have a plate made up in any casting metal, but in practice only bronze, 1, and aluminium are generally available. Casting of plates becomes economical only where a number of reproductions are required; for instance, the price of a cast plate of which there are to be twenty reproductions is less than half that of a similar one-off plate. This is because the major cost is involved in the setting up of a pattern. These are usually a wooden base on to which are fixed die cast metal letters, which have a considerable splay to give mould clearance.

Aluminium casting is widely used for the name tags on machines, lifts, and the like. After casting they are generally shot blasted to clean off the moulding sand. They can be left in the shot blast state or, alternatively, the background to the letters is painted with an enamel, and the tops of the letters finished off to give a smooth shiny finish. With this type of plate, the length of legend makes little difference to the price, once the



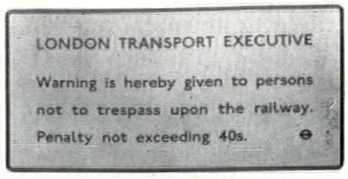
1, *cast bronze plate.*

pattern has been set up, as the costing is on the weight of metal used.

Various qualities of finish are obtainable on a given casting: generally a hard enamel is used to give the required colouring on top of a protective layer of chromate, but for long life a coating of clear lacquer should be specified.

other processes

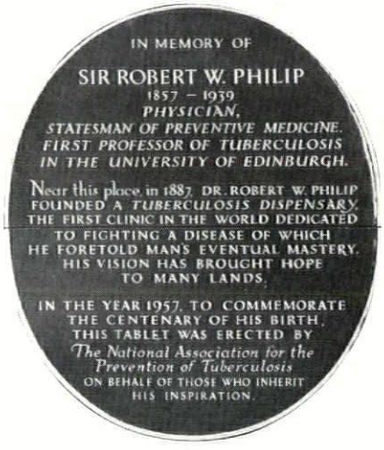
interlaminate printing. The familiar laminated plastic sheets provide another form of permanent lettering. Any required symbol or lettering can be printed, silk screened, or hand painted on to one of the laminates before the pressing process, and then sealed in the press under a top layer of transparent plastic, usually 'Melamine.' The result is a flush plastic sign that will withstand a great deal of rough treatment, 2. The choice of reproduction process depends on the numbers of repetitions required and the nature of the sign. A typical application of the printing process is for the reproduction of an electrical circuit on a panel inside a piece of equipment, and hand painting would be used for specially



2, *flush Formica sign.*

designed decorative panels. It is possible to have a sign overprinted on any of the standard decorative laminates that are in production. The weathering properties of this type of sign are illustrated by notice boards used by the Nature Conservancy; these boards usually include an Ordnance Survey plan with a description of the conserve. The plastic sheet is bonded to a sheet of aluminium, and is proof against the rigours of the weather as well as destructive youth. Here there is an alternative material to engraved bronze for name plates that is waiting to be exploited; one manufacturer seems to have the facilities for reproducing one-off plates at an economic price, if he is allowed to collect sufficient numbers to fill in a standard press size.

ceramic lettering. Panels up to two feet square can be made of ceramic material with lettering formed by the slip outline technique. In this the letters are outlined by a raised ridge of ceramic, and after the first firing the letter is filled with a ceramic enamel and then fired again.



3, *ceramic panel with lettering formed by slip outline technique.*

The result is a plaque or sign with permanent colours and good resistance to weather, 3.

sand blasted glass. This is another process that is sometimes used for street name plates. A sheet of 'Vitrolite,' usually white, is sand blasted on the face with the required lettering, which is then filled with an enamel and fired. These signs have a clean appearance which is maintained with very little attention, and the advantage of the technique is that any face can be used, but the signs are liable to impact damage, and are not suitable for all situations.

street name plates

The manufacturers of Ministry of Transport approved signs are generally only set up to produce the approved sizes of plates and faces. This enables them to maintain quite low prices within those ranges, and as a matter of interest, the three main methods are described below.

The cheapest method is the partially sheared, stamped aluminium sheet. In this the cost of cutting the press tools for an alphabet is very high, but the setting up and stamping of each plate is very simple, so that the final cost of a plate is largely controlled by the cost of the aluminium sheet. After stamping, the plates are enamelled in two or three colours.

The next process in order of cost is the casting of a silicon aluminium alloy. Again the standard faces are the only ones available, but there is more freedom in the total size of a plate.

Finally there is the integral lettering of a rigid PVC sheet. This process is closely guarded by patents, but in principle a PVC sheet is silk screened with the required lettering, faced with a transparent surfacing laminate, and then heat treated. The heat treatment has the effect of fusing the printing, which is carried out in a PVC base medium, into the sheet. Unlike the other two methods this produces a flush surfaced sign that has a high resistance to weather and impact damage; its price, however, is considerably above that of casting. As the reproduction process involves silk screening, it is quite feasible to have any face or symbol reproduced, and it may well be an alternative process for name plates if a demand were created; at present, however, the sole manufacturer is only equipped to reproduce fully worked out designs presented in their final form.

It is quite easy to mistake PVC plates for vitreous enamelled steel plates. This is a process that was widely used, and is cheaper than stamped plates; however, it is very susceptible to impact damage, and once the surface of the enamel has been broken, rust quickly attacks the steel. It is for this reason that it is hardly ever used now for street name plates.

applied letters

These have largely been dealt with in the previous article, but there are some materials that are only suitable for interior use.

cast letters. Small cast bronze letters are obtainable from $\frac{3}{4}$ in. high but the faces are restricted to Roman or Gill Sans. Cast aluminium letters are also obtainable from $1\frac{1}{2}$ in. high.

plastic letters. Here there is a range cut in a casein sheet that is only suitable for interior use. The sheet is self coloured, and is relatively cheap. The letters are usually buffed to polish away the saw marks. A wide range of faces is available from $\frac{1}{4}$ in. upwards.

inlaid plastic lettering. Though strictly not applied lettering, I include here plastic lettering inlaid in wood. This is a skilled process, involving as it does the cutting out of the letters from a thin sheet of board, and then inlaying the hole with a cut-out plastic letter. The result is a very pleasant notice board.

cork letters. Finally there is the Graforel range of stamped cork letters. These are produced by an international company, and many of the 20 odd faces are of continental origin, their range being such that they cover most of the situations likely to arise. The letters range from $\frac{3}{16}$ in. to 4 in. in height and are approximately $\frac{1}{16}$ in. thick, cut from bonded cork. They are normally stuck into the required position, and being flexible, can be bent round cylindrical forms.

illuminated signs

The most familiar for internal use are plate glass hanging signs, which have sand-blasted letters on the back of a sheet of $\frac{1}{4}$ in. plate glass. The letters are painted out in white, and the whole sign is suspended from a tubular fitting that houses a strip light, the light passing through the edge of the glass to illuminate the letters. Due to the colour of common glass these signs generally have a greenish tint. The signs can be clear, or the background can be painted out in a colour. Where a double sided sign is required painting of the background is, of course, necessary.

As sand blasting is the process employed, any required face can be used, though the majority of signs are in Gill Sans or Trajan. Perspex may be used instead of glass, the lettering being reverse engraved and painted. The whole of the transparent range can be used, and clear perspex gives the possibility of a completely uncoloured sign.

As with illuminated signs generally, perspex has enabled a great improvement in suspended Box Signs to take place. Generally an enamelled metal box having two perspex faces houses the lighting and control gear. The lettering or symbols are cut out and

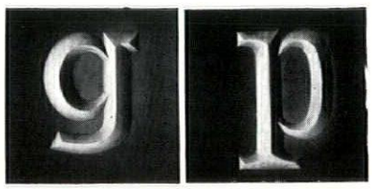


4, *enamelled box sign with perspex faces.*

stuck on to the perspex face, and the backgrounds may be varied with different patterns as required, 4.

cut stone lettering

This, the most ancient form of permanent lettering, was omitted from the previous article as it did not fit into the category of applied lettering. Though monumental masonry, using Roman face, accounts for a very large volume of the stone carving now carried out, there are letter cutting sculptors in various parts of the country who develop their own alphabets for different stones. The stones most commonly used are Portland and Hopton Wood for external work and slate for interior. The work can either be carried out in a studio and then fixed



5, *cut stone letters.*

by cramps to normal stonework detail, or can be worked in situ provided access is reasonable, 5.

faces

Though the engraving process lends itself to the adoption of any given face, manufacturers only encourage the use of a limited range by lowering the price in relation to the rest. The most common faces are Gill Sans and Trajan, though the trend at the moment seems to be towards widening the standard ranges, and some quite interesting alphabets are included, 6–10. As with applied lettering the better manufacturers issue sample sheets of their range.

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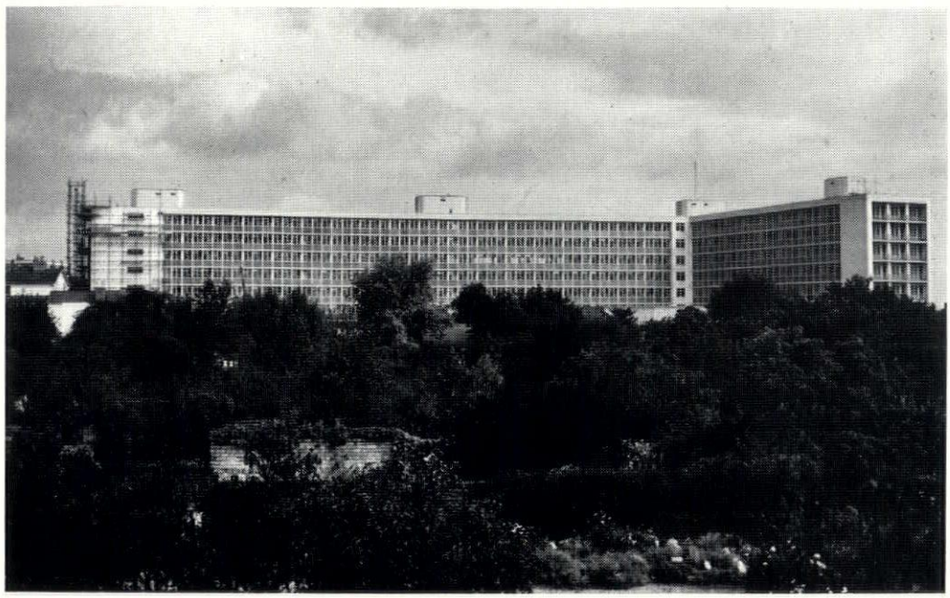
BUILT IN EIGHTEEN MONTHS



FIVE WAYS HOUSE, BIRMINGHAM

designed by Chief Architects Division, Ministry of Works
L. G. Pargiter, M.B.E., F.R.I.B.A., Senior Architect in Charge

with

HOPE'S

HOT-DIP GALVANIZED WINDOWS

HENRY HOPE & SONS LTD.

Smethwick, Birmingham & 17 Berners Street, London, W.1
Local Office: 319 Broad Street, Birmingham

MEMBER OF THE METAL WINDOW ASSOCIATION

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Plastic plates are usually engraved by means of a pantograph machine. In this a small rotary cutter repeats to a reduced size the movements of a pattern following arm. The line produced is very like that of an ink stencil; indeed, the alphabet used to cut instrument panel lettering is the same as the well-known stencils. There are, however, a few faces which are cut in reverse perspex that have been evolved with this machine, and are quite distinctive. These include the very effective script Gillies Gothic, 6, and certain Egyptian and Roman faces cut in outline only.

Casting faces are much more limited, and for small notices are restricted to a Sans Serif and a Roman. In theory other faces could be obtained, but the cost of pattern making would be so high as to make it only feasible if a large number of reproductions were required. It may still be possible to find patterns of some of the robust alphabets used for cast street name plates, but most manufacturers are not able to hold stocks of 'out-dated' faces, and consequently destroy them. There are a few non-standard alphabets obtainable that were specially cut for a county or borough authority, and it is worth enquiring for these. For the Ministry of Transport sign letter sizes are restricted to the recommended sizes, and there are only two faces, Sans Serif and Kindersley. This latter is a modified Roman that was designed to meet the requirements of the stampers press tools, its characteristic being a blunt ended serif.

Recently a well designed Italian electric clock system has been imported. There are a number of variations available, those showing the day and month, 11, being self-adjusting for leap years. The numerals are clear to read though the spacing is not entirely satisfactory due to the change mechanism which is used.



6



7



8

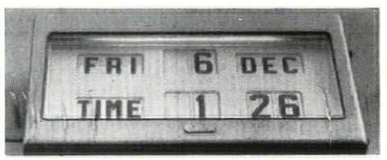


9



10

6–10. *examples of alphabet ranges from the catalogue of Dragard & Humble Ltd.*



11. *illuminated clock at the Westbury Hotel.*

prices *have been obtained from typical manufacturers for two sizes of plate, one being a typical door plate, and the other a notice the size of a name plate. It is interesting to note that where a reproduction process such as printing or silk screening is employed, there is a considerable drop in unit price when quantities are involved.*

method	price	
	price of panel 14 in.×2 in. with twelve 1 in. letters	*price of panel 15 in.×10 in. with twelve 1 in. letters and thirty ½ in. letters*
interlaminate printing	108/3 — 370s.	145/8 — 429/4
engraved bronze	27/6 — 37/4	95s. — 131/6
inlaid plastic	18s. — 26/8	65/5 — 81/6
reverse engraved perspex	19/6 — 22s.	57s. — 66/6
engraved traffolite	16/6	51/1
cast aluminium alloy	12/6	
subsequent castings	8/6	
carved stone letters (excluding cost of stone)	20s.	100s.

Cost of Ministry of Transport standard 4 in. Gill Sans lettering. Twelve 4 in. high letters on 9 in. background.

enamelled steel	30s.	cast aluminium	53s.
part sheared aluminium	32s.	⅛ in. PVC	82s.

acknowledgments **The following manufacturers supplied information: Bakelite; Formica; Kershaw & Co.; Butler Jones; Chase Metal Products; The Lettering Centre; Dragard & Humble; Ward & Co.; Gowshall; Franco Signs; The Royal Label Factory. Also the following sculptors: Peter Watts; Ralph Beyer.**

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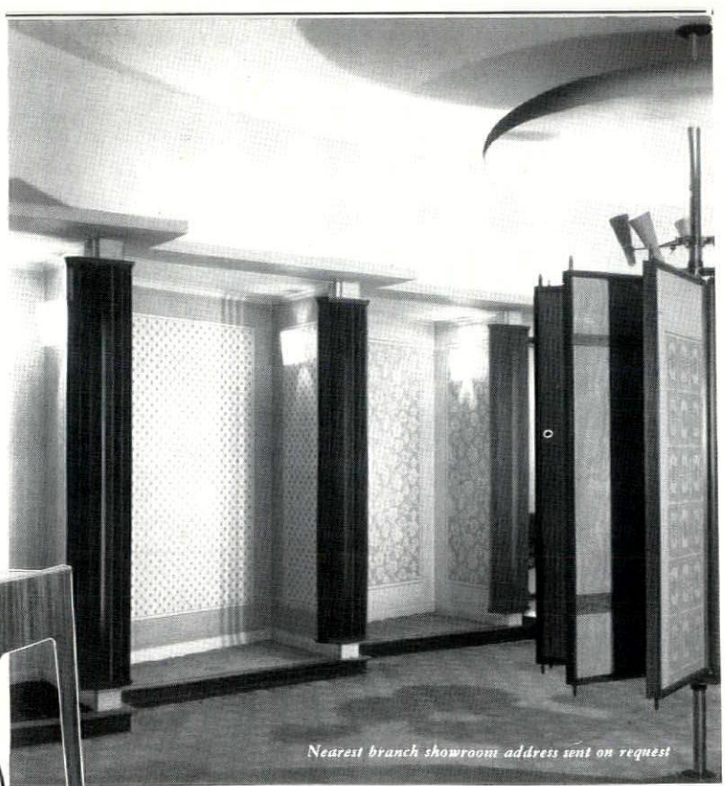

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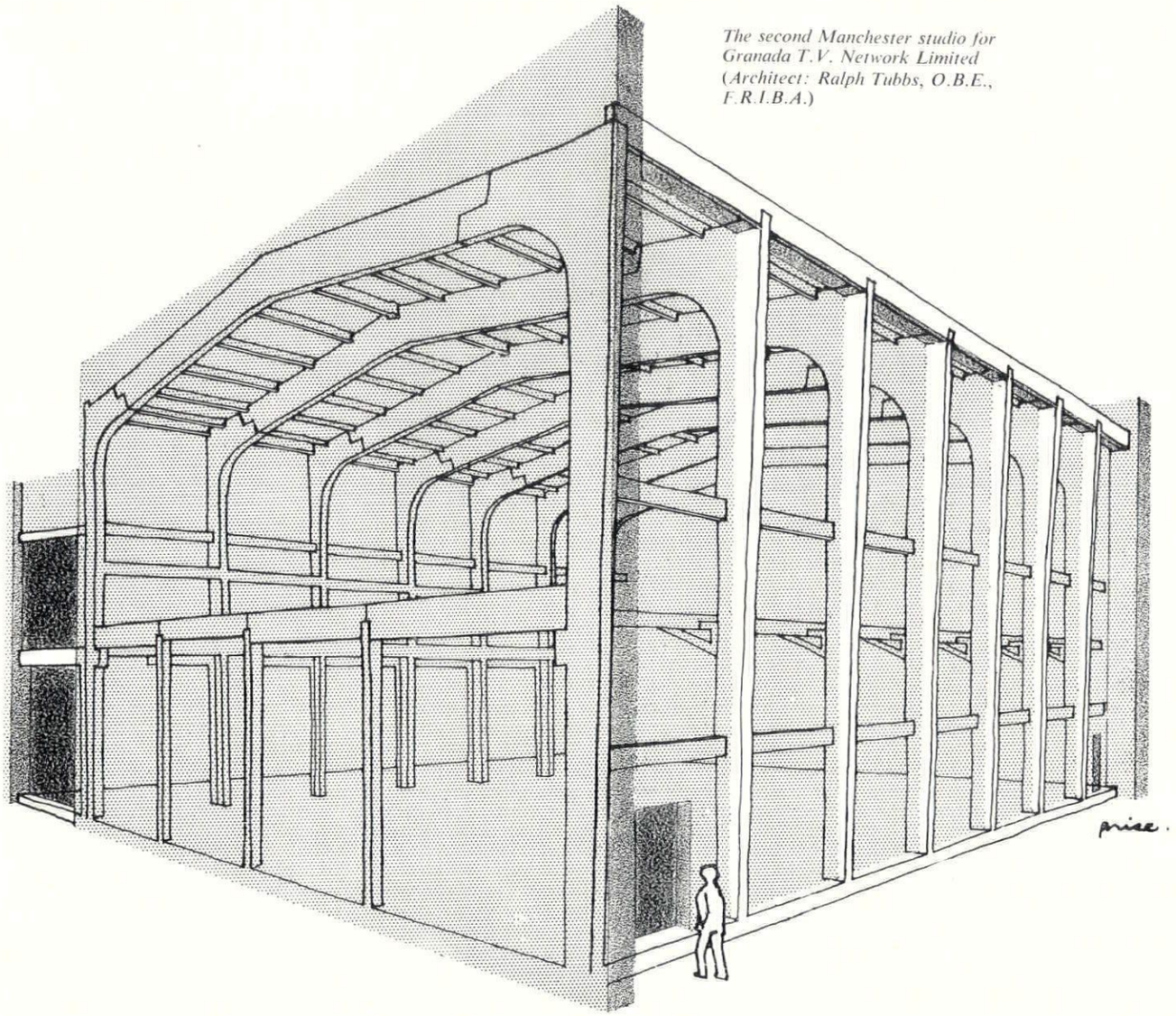


The second Manchester studio for Granada T.V. Network Limited (Architect: Ralph Tubbs, O.B.E., F.R.I.B.A.)

Concrete p.d.q.

The drawing indicates the simple finished appearance of the building, but also reveals the more complex reinforced concrete portal framework, with supported working gallery.
Here is an example of the speed with which we can construct a concrete framework of these dimensions. The detailed design was commenced on July 15th. The frames, 60-foot span, were precast on the site each in three sections—the heavier upper member weighing eight tons—and erected by mobile crane. The purlins were precast in our Manchester factory. By August 27th, six weeks later, the entire concrete structure was complete.

For a fuller, illustrated description ask for our free pamphlet ***Truscon Review No. 21***

q.e.d. Truscon

The Trussed Concrete Steel Co. Limited, 35-41 Lower Marsh, London SE.1. WATerloo 6922

4 THE INDUSTRY

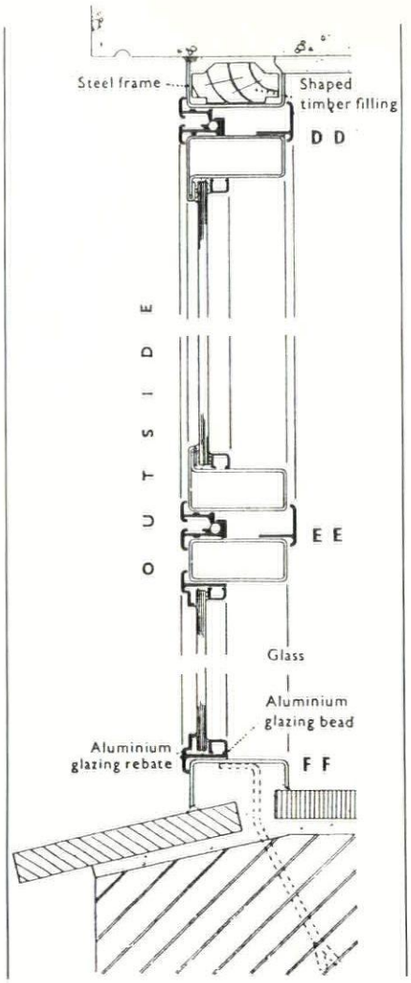
How To Use Our Products

Though we are of the opinion that the phrase 'code of practice' ought to be confined to BS Codes of Practice, we welcome the decision of Robertson Thain Ltd. to issue a series of booklets which set down in a brief, intelligible way how building science applies to their products. They have published two of these 'codes of practice' at the time of writing: No. 1 on '*Materials for covering uninsulated pitched roofs and walls*' and No. 4 on '*Roof venting as a fire precaution*.' As you would expect, both of these useful little documents are strongly marked by the preoccupation with fire risk. It is indeed right and proper that architects and manufacturers should worry about fire risk; but it is nonetheless true, as is pointed out at the conclusion of 'Code of Practice No. 1,' that 'corrosion costs the country £600 million per year, and fire about £27 million. Corrosion is an ever-present hazard; fire is an accident, the risks of which can frequently be reduced or eliminated by good housekeeping, fire precautionary measures and good design.' Referring to the actual contribution to fire hazard of their own products, the writers point out, earlier in the same 'code,' that whereas in the Fire Grading of Buildings Part 1 an occupancy of *low* fire load is one in which the fire load does not exceed 100,000 Btu's per square foot, the contribution of RPM (which has the highest bitumen content of all their sheetings) is only 2,900 Btu's per square foot. This serves very well to put the matter in perspective.

'Code of Practice No. 4' on roof venting gives probably the best summary now available to architects of what—goodness knows—is an involved and contentious subject.
Robertson Thain Ltd., Ellesmere Port, Wirral, Cheshire.

A New Weatherstripped Window

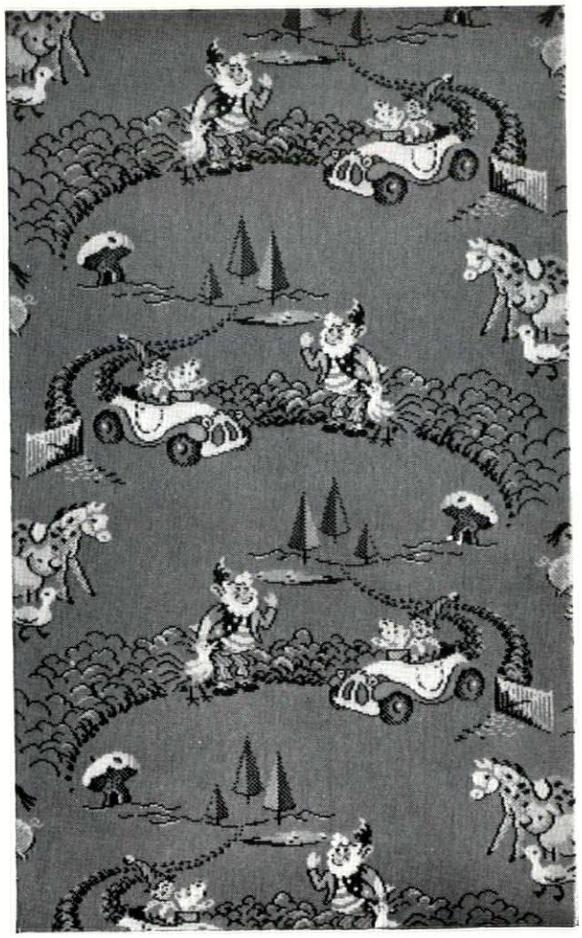
During this winter the curtain wall (and indeed all wide fenestration) has come under heavy fire. This is not because any more evidence has been brought to light on functional performance, or even because of any serious body of complaint, but from a general and understandable feeling of nervousness. In point of fact there is little doubt that both architects and window manufacturers have approached the whole question too lightheartedly. The curtain wall *can* filter even the British climate and British town noise acceptably; but it will only do so if more precautions are taken than have been customary so far. Welcome improvements during the last few months have been the extension of the 180° pivot swing principle to other than wood frames (to make cleaning easier), the extension of double glazing and a great improvement in edge sealing (or, as we more often call it, weatherstripping). All of these are to be found in the new Aygee 'Resistal,' a new steel pivoting window with a very ingenious form of aluminium weatherstripping (see illustration). This degree of edge sealing, which is commonplace in America, is unquestionably worth while on account of the barrier it presents not only against heat loss but (as Thomas Markus pointed out in his article on *The Glass Curtain Wall* in *The Architects' Journal* for December 12, 1957) against sound infiltration.
Aygee Ltd., Century House, 100 Westminster Bridge Road, S.E.1. (Waterloo 6314.)



Flexible Structures

The discovery last year by a team of architects and engineers working under the leadership of Donald Gibson (County Architect, Notts County Council) that mining subsidence is to be combated not by making foundations stronger but by making structures flexible, may revolutionize a much wider segment of building practice than that represented by schools built over coal mines. For the startling fact which emerged was that a structure designed to bend was cheaper because of the saving in foundations than a corresponding structure designed to be rigid; and the question naturally arises of why can you only take advantage of this fact when you have to build on a coalfield? It may well be that the principle of internal adjustment built-in to structures posited at Nottingham may have enabled us to take full advantage of our lighweight building, so that our smaller buildings may henceforth rest on the ground and not rise out of it. Whether this proves true or not, a share of the credit must go to Brockhouse Steel Structures Ltd., whose system it was which was

[continued on page 156



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WIMPEY "NO-FINES" CONCRETE TECHNIQUE

The three new churches at Bell Green, Willenhall, and Tile Hill, Coventry, designed by Professor Basil Spence, O.B.E., A.R.A., F.R.I.B.A., and featured in this issue, have been constructed in Wimpey 'No-Fines' Concrete.

This technique has been used in the erection of many schools and offices as well as over 100,000 houses ranging from old people's bungalows to twelve storey flats and maisonettes, and provides yet another example of the versatility of this method of construction.

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continued from page 154]

adapted to meet the new requirements. Brockhouse have now issued a booklet describing their system and cataloguing the standard components which make it up. The most characteristic feature of the Brockhouse system is the use of a single stanchion size. Originally there was only one stanchion pattern, built up of two cold-rolled channel sections welded along the line of the toes; but they have now introduced a hot-rolled version of the same overall dimensions for the ground floors of three-storey blocks. It is, however, not the stanchions but the method of sprung bracing which is most interesting.

Brockhouse Steel Structures Ltd., Victoria Works, Hill Top, Bromwich, Staffs. (*Wednesbury* 0243.)

CONTRACTORS etc

Churches at Coventry. *Architect:* Basil Spence. *General contractor:* George Wimpey & Co. *Joinery:* Joinery Products Ltd. *Electrical lighting and heating:* 'Electra' (B'ham) Ltd. *Flooring:* Marley Tile Co. *Metal windows:* Crittall Manufacturing Co. *Glazing:* Aygee Ltd. *Plumbing:* Toogood. *Paving:* W. H. Harrabin & Sons. *Light fittings in Nave:* Fredk. Thomas & Co. *Altar furniture:* Coventry Silvercraft Co. *Ironmongery:* A. G. Roberts. *Special colour on Nave roof:* Thos. Parsons & Sons. *Chancel furniture, pews and fonts:* Harris & Moulder. *Enamelled panels for towers:* National Enamels Ltd.

Offices in Albemarle Street, London, W.1. *Architect:* Erno Goldfinger. *General contractors:* Richard Costain Ltd. *Sub-contractors: Demolition:* St. Mary's Demolition & Excavation Co. *Steel:* Twisteel Reinforcement Ltd. *Stahlton floors:* Costain Concrete Co. *Stone facing:* Anselm Odling & Sons. *Metal windows:* Aygee Ltd. *Heating and ventilation:* Hopes Heating Ltd. *Lifts:* Bennie Lifts Ltd. *Electrical:* M. Neidle Ltd. *Roofing, damp course, tanking:* Neuchatel Asphalte Co. *Flying shore:* Scaffolding (Great Britain) Ltd. *Iron and metal work:* Wessex Guild Ltd. *Glass Vitrolite facing and glass domes:* James Clark & Eaton Ltd. *Cork flooring:* Armstrong Cork Ltd. *Panelling:* Morgan & Partners Ltd. *Ironmongery:* J. D. Beardmore & Co. *Asbestos spray:* Turner Asbestos Cement Co. *Lettering:* The Lettering Centre. *Pavement lights:* Luxfer Ltd. *Doors:* Gliksten Doors Ltd. *Stair nosing:* Safety Tread Syndicate Ltd. *Lever handles and push pads:* James Gibbons Ltd. *Grilles:* F. H. Biddle Ltd. *Special cupboard fittings:* Artisans (London) Ltd.; Harris & Sheldon Ltd. *Curtains:* Hille of London Ltd *Blinds:* J. Avery Ltd. *Light fittings:* Lumitron Ltd.

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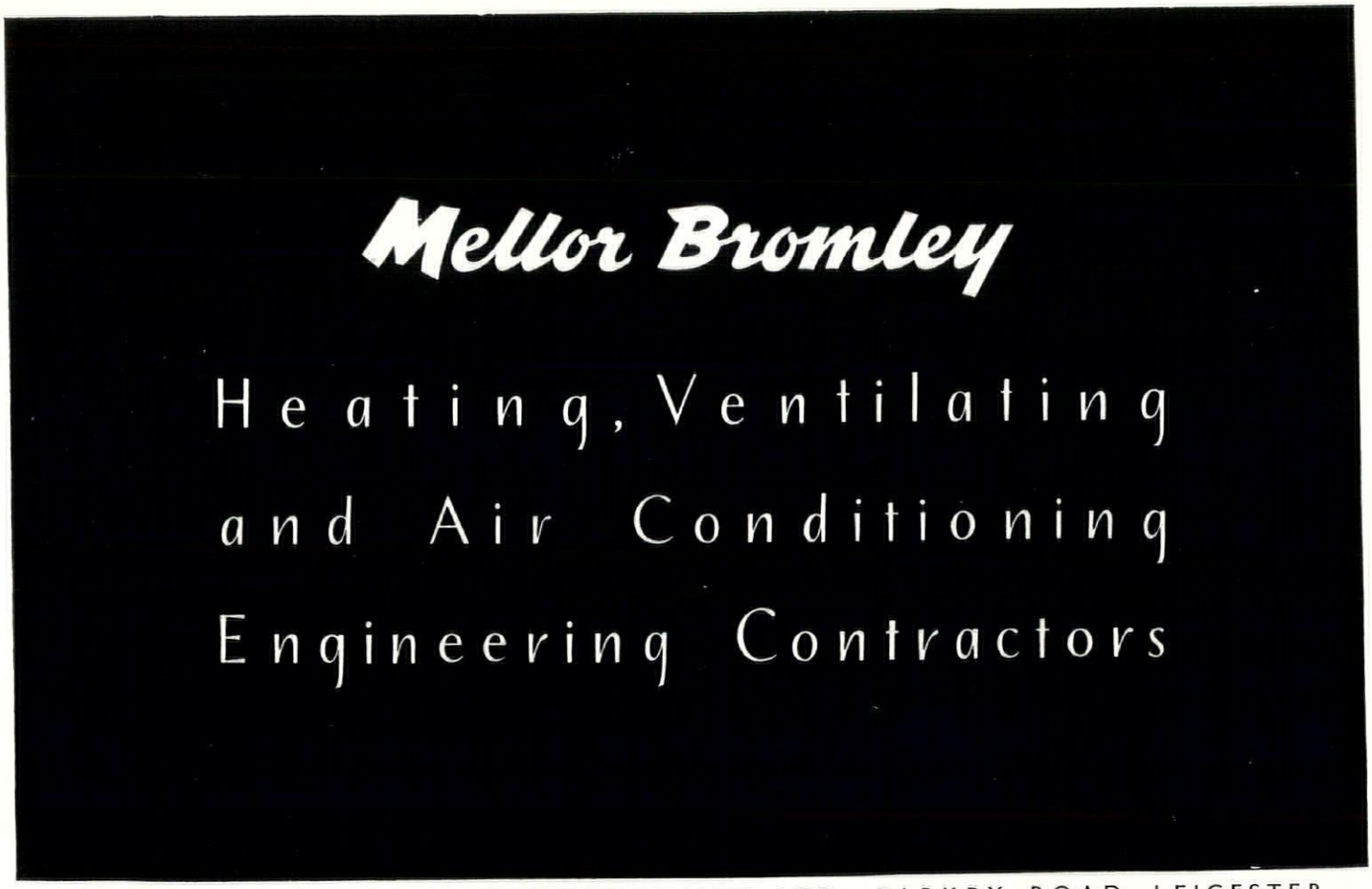

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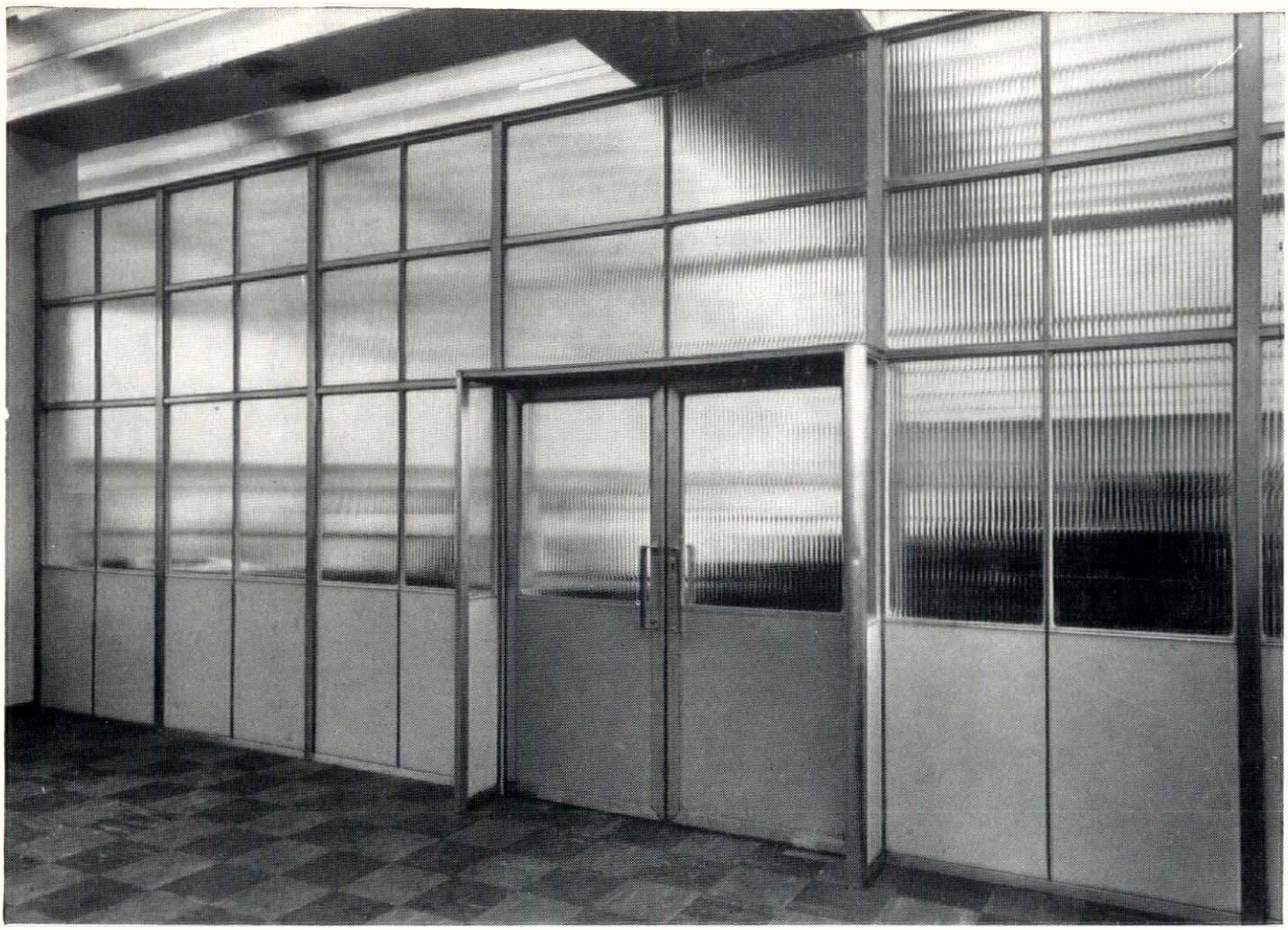



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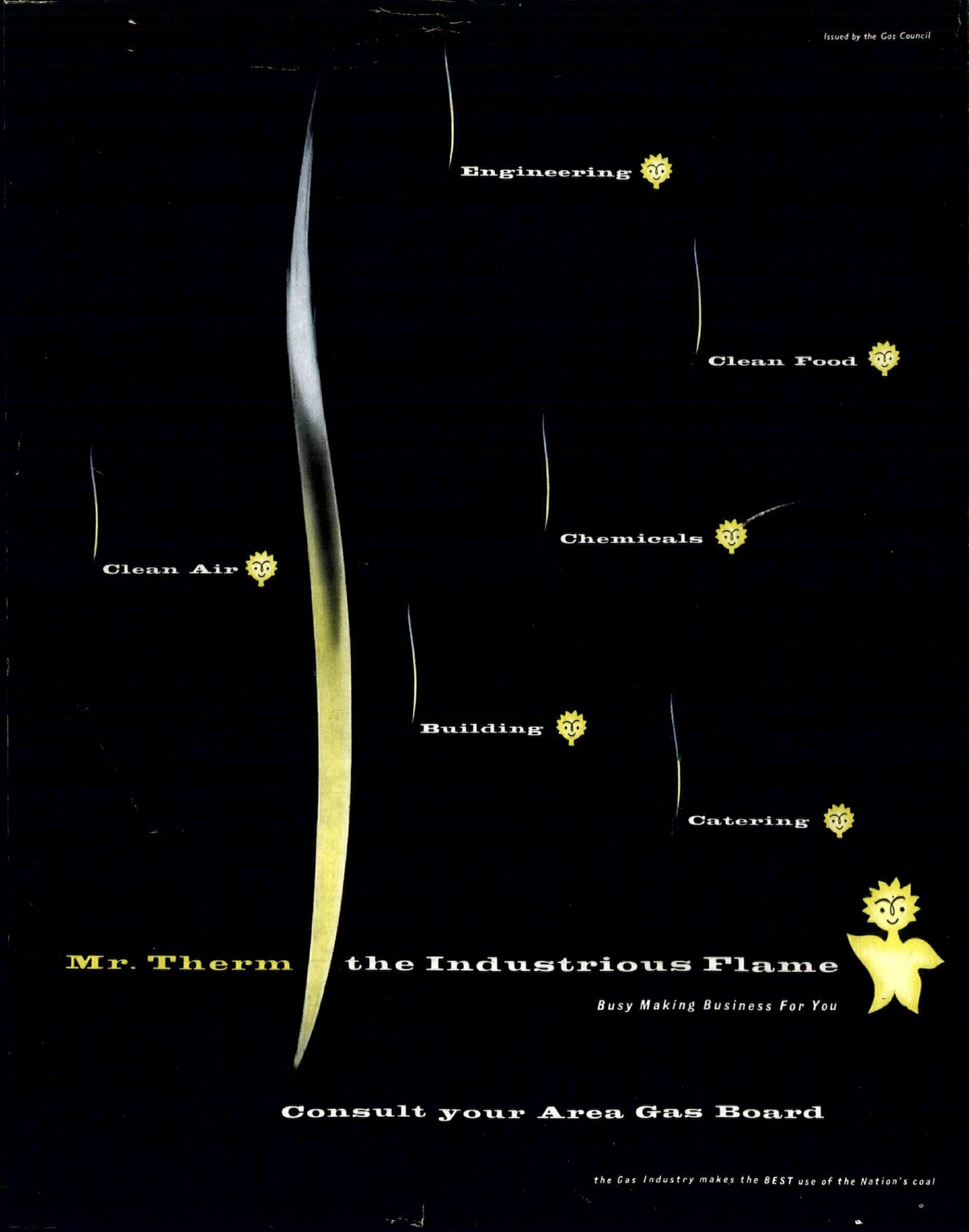

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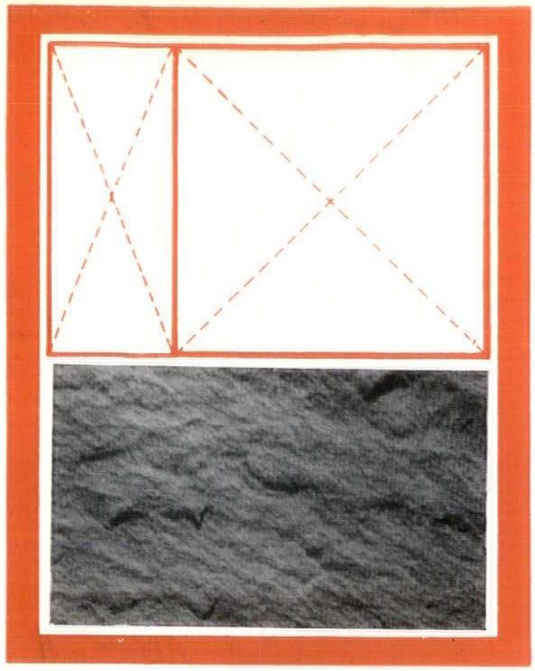

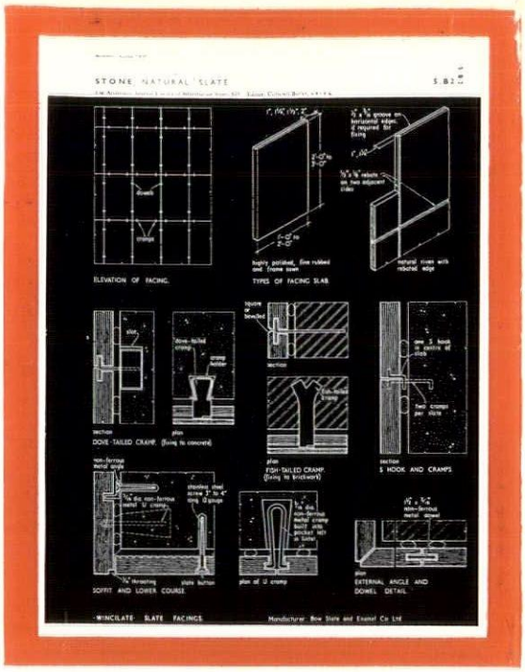

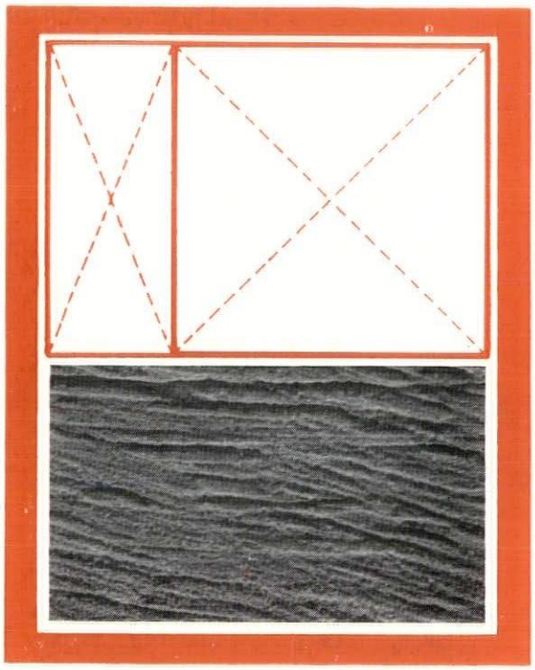

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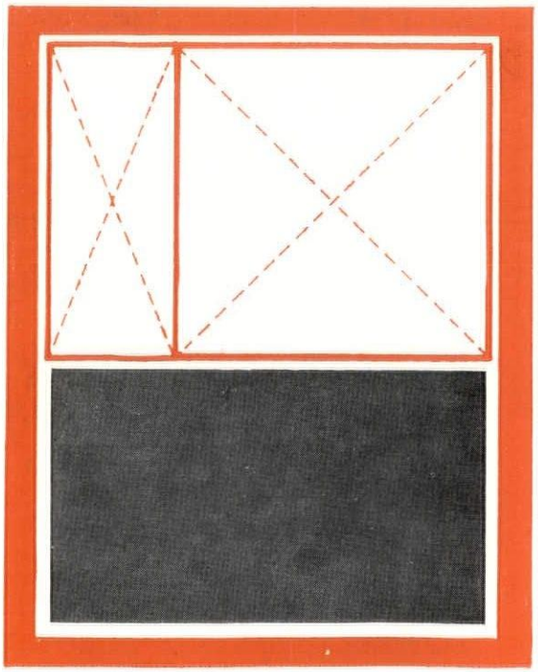
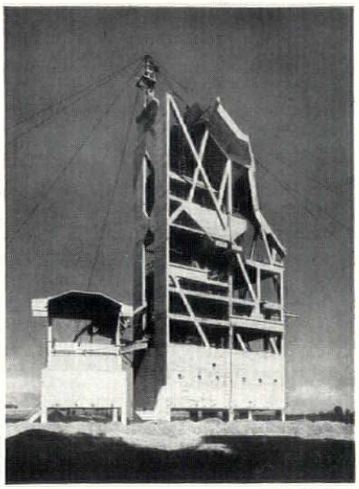


MARGINALIA

Concrete not à la Mode

At a time when post-tensioned vaultwork in concrete seems so fashionable as to be downright compulsive, it is refreshing to see a structure which uses regular (not tensioned) reinforced concrete according to the classical repertoire of plates, stanchions and beams—and does so with complete justification, 1.



1

L'Architettura

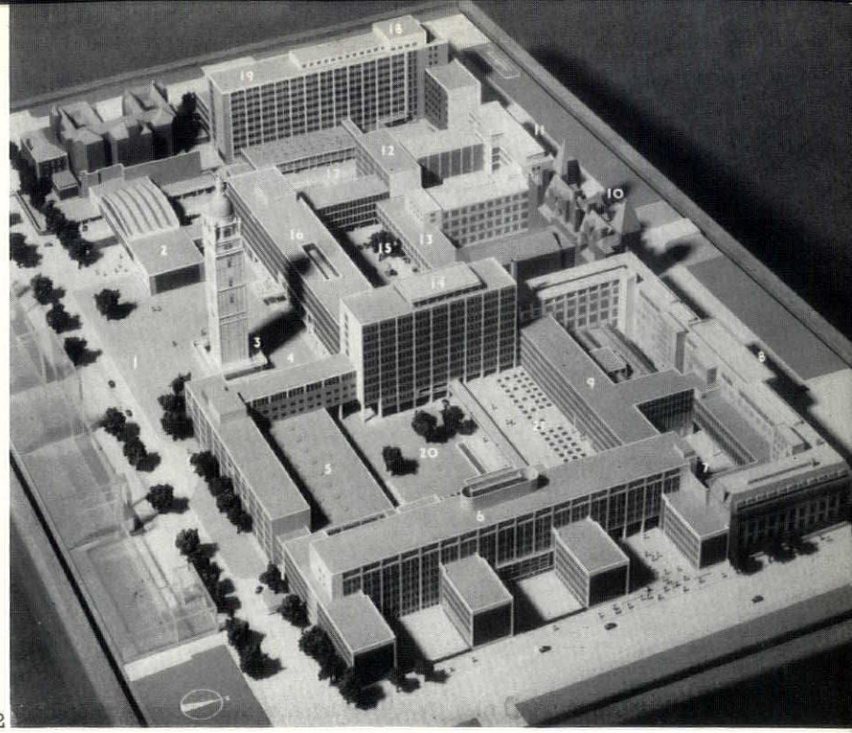
The gravel-plant on the river Stura, near Turin, works on a principle that is unfamiliar to English eyes, dragline buckets being winched directly from the point of excavation to the top of the washing and grading tower, through which the aggregate is fed by gravity. Giuseppe Raineri's design for this central tower handles concrete as a rectilinear material, but not according to the rectangular routines of the dying Perret tradition, and the three major hoppers (discharge, large, and small storage) are treated as integral parts of the structure. The small building in the foreground is a storage bin, and there is also a separate winch-house, standing some way back from the central tower, in order to give the winchman a good view of his operations.

Imperial College Revised

Norman and Dawbarn's reworked scheme for the redevelopment of the Imperial Institute of Science and Technology, South Kensington, 2, shows more respect for existing buildings on the site—Colcutt's tower is clearly visible, and a house by Norman Shaw in the top left-hand corner—and exhibits a more truly collegiate plan than the earlier scheme. Although the plan now retains two of the buildings centred on the *Lost Axis* to which the ARCHITECTURAL REVIEW drew attention in July, 1955, no attempt has been made to emphasize or utilize that axis, and the underpass from the Lawn, at the foot of the tower, through to the Middle Court, for instance, runs parallel to the axis but not on it. In general, the whole site has been developed in a free, asymmetrical, almost picturesque manner, with the new buildings threaded through and around such structures as are to be preserved. It is hoped to close off Imperial Institute Road, at the left of the illustration, in the manner which the REVIEW also suggested, in order to make the whole College precinct a pedestrian area of linked courts and underpasses, with vehicle circulation at a lower level—a division of traffic that seems to promise a workable solution to the problem of collegiate planning in a motorized community, since extensive car-parking is also planned at this lower level. It is to be hoped that the intention to make the square around the base of the tower into a lawn will be reconsidered—the area is not large enough to make a convincing campus, and a hard-surfaced treatment seems more practical for an area that should see a good deal of pedestrian traffic.

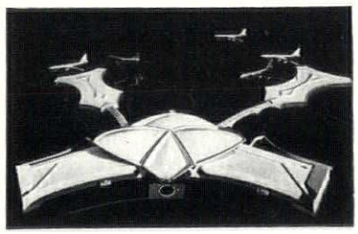
The Vaults of Idlewild

The seemingly complete defection of Eero Saarinen from the Miesian aesthetic of GM Technical Centre appears to be confirmed by the new terminal buildings he has designed for TWA at Idlewild, the international airport for New York, 4. The main concourse is to be housed under a wide, low, four-lobed vault, supported on four vee-legs, the whole very complex as a surface, though each lobe is a fairly simple three-dimensional form with a central ridge and dished edges. The interior of the concourse will doubtless be dubbed 'science-fiction,' and, if completed according to the original project, 5, will certainly be one of the most original interiors outside the field of exhibition architecture—though its acoustics might prove alarming if it were open at any point to the apron where jet-powered airliners are manœuvering. However, there should be no need for this to happen, as the planning of the whole complex has taken the idea of embarkation-fingers to a point somewhat beyond its anticipated logical conclusion. Thus, while baggage-handling and similar



2

1, the precinct. 2, halls. 3, Colcutt Tower. 4, the lawn. 5, civil engineering. 6, mechanical engineering. 7, north-east court. 8, Royal School of Mines (existing). 9, RSM extension. 10, Royal College of Music (existing). 11, aeronautical and chemical engineering (existing). 12, ACE extension. 13, Royal College of Music extension. 14, electrical engineering. 15, middle court. 16, college block. 17, west court. 18, physics. 19, maths. and other depts. 20, engineering court. 21, electrical workshops.

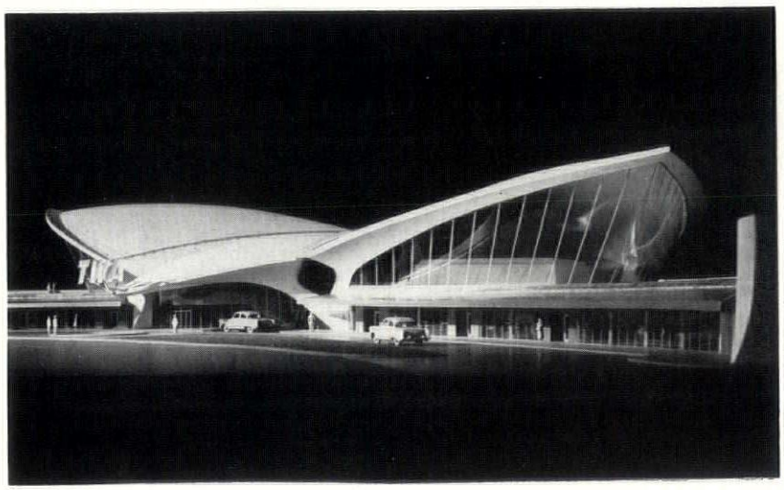


3

services will be dealt with in the two low blocks flanking the concourse, the marshalling of passengers for individual flights will take place in what are, effectively, satellite terminals, seen in 3, at the ends of the fingers, and the fingers themselves, while achieving their anticipated condition of being equipped with moving footways, will no longer deliver passengers direct to the door of the aircraft, but merely to the satellites.

Zodiac

The latest addition to the rapidly growing body of Italian architectural magazines, *Zodiac*, is un-Italian—in intention at least—for this bulky, six-monthly, Olivetti-sponsored publication is 'supernational' in its editorial attitude and its editorial committee, which is all Italian, is backed by a further, international committee, containing names like Entenza, Maxwell Fry, Hatje and so forth. The first issue, which has just appeared, seems a little too top-heavy with distinguished contributors—Gropius, Argan, Giedion, Rogers, Drexler, Bourgeois, Pasmore and Adriano Olivetti himself—for any editorial policy to appear as yet, and Olivetti's own policy-statement seems more concerned with ethical and social problems than with either the formal or the technical questions which we are accustomed to regard as 'Architectural.' This, obviously, could be a position of great strength



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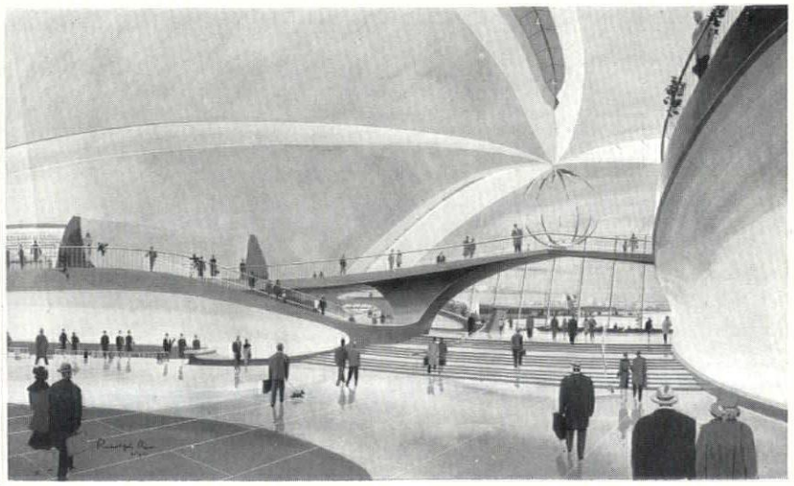

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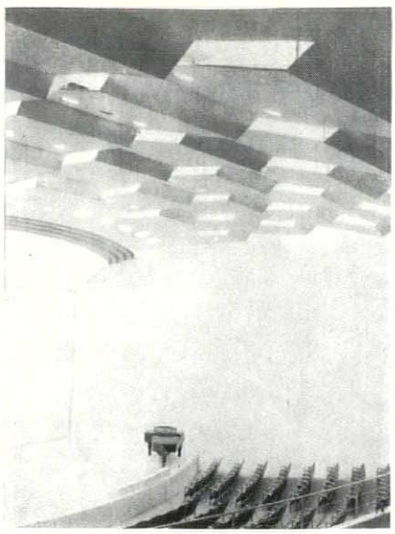
6, 7

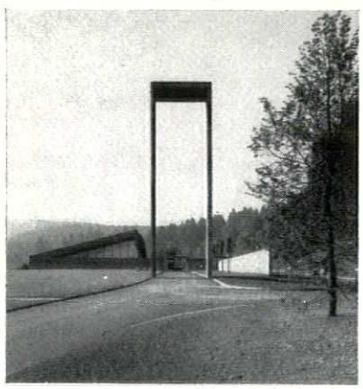


8 *Arkkitehti*

from which to make a vital contribution to the architectural thought of our time, but there is little sign of it in this first number, in which too many people are content to rehearse well-worn, or even worn-out, themes. Adriano Olivetti's own architectural tastes, his political sensibilities and sense of social morality, his international orientations, are all so well-known that one had hoped for a more striking and decisive editorial policy. Is it too late to implore him to retire both his editorial committees, and run the magazine in his own way?

Sculptured Auditorium

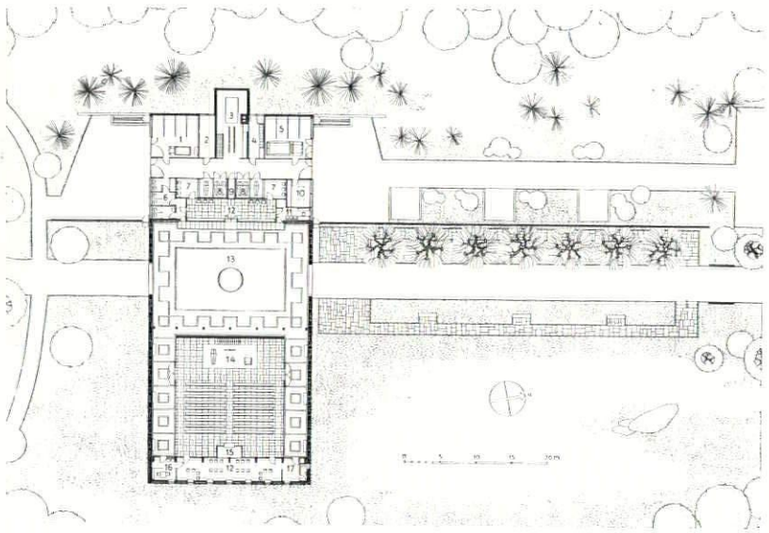
The combined hotel and concert-hall-cum-cinema at Lahti, Finland, recently completed to the designs of Kaija and Heikki Siren, is not only a good example of the polished version of the Finnish style which these two architects practice, 6, but is also notable for the treatment of the auditorium itself. The walls and ceiling are without any decoration or colouring, but the mechanics of the hall have been put to work to give sculptural relief. The needs of acoustics and lighting have been exploited to give an elaborate prismatic effect to the ceiling, 8, and the apertures from the projection booth at the back of the hall have been grouped and treated so as to form an abstract-functional panel of sculpture, 7, on the rear wall of the circle.



9 *Schweizerische Bauzeitung*

Swiss Crematorium

Unlike the Rothschild Mausoleum (*Marginalia*, December, 1957) the new crematorium of the Liebenfels cemetery, Baden, designed by the Zurich architects Lanners and Wahlen, gains its effects of proper monumental dignity by the gradual revelation of a symmetrical plan. This would hardly be suspected from the approach road, 9, for the view beyond the entrance 'arch' reveals only a long wall on the right, and an asymmetrically pitched roof, over the chapel, to the left. However, when the approach road enters the crematorium proper, it proves to be on the line of the secondary axis of an almost academically axial plan, 10, but even so the main axis is still partly disguised since the entrances to the chapel are on either side of it, not axially disposed opposite the entrance to ths relatives' waiting-room on the other side of the central court.



10

Gaudi Symposium

On January 20 the Junior Council of the Museum of Modern Art in New York held a symposium on Antoni Gaudì, an exhibition of whose work is at present being held there. The speakers were Salvador Dali, Henry-Russell Hitchcock, Jose Luis Sert and James Johnson Sweeney. The following description of the proceedings is contributed by Jaqueline Tyrwhitt. . . .

'The Gaudì meeting was lively but —like all such meetings—not profound. Hitchcock showed some colour slides and talked of colour and surface treatments. Sert recounted some anecdotes, but his chief point was that Gaudì was courageously interested in structural forms. This he considered to be Gaudì's main contribution: the rest was influenced by the bad taste of the era plus Art Nouveau. Sweeney gave a long and eloquent display that he had recently been reading Ruskin: then embarked in a seemingly irrelevant comparison of Brancusi and Bernini. He said mighty little on Gaudì, but his flow of language and choice of words was marvellous. We also had a tape recording from Salvador Dali (in hospital). This was almost incomprehensible but it emerged that he considered he himself was the only man capable of carrying the Cathedral of the Sagrada Familia to completion. A few darts were thrown at Picasso, Corbusier and Christian Zervos.

'From the audience Philip Johnson asked Sert how he was expected to *use* Gaudì today: we were no longer in an age of craftsmanship and a straight line had to be straight. Sert replied there was room for all sorts. He thought Gaudì's courage in tackling new forms was a plus and did not imply any minus. The city scape was large enough to include many forms and in some place curves —even bulges—might be permissible and perhaps desirable. A foreign accent asked what Gaudì had that Frank Lloyd Wright hadn't got. Someone said that Wright had called Gaudì 'that mud-pie artist' to which Hitchcock commented Gaudì might have retorted 'that jig-saw artist.' Sweeney said both were products of Art Nouveau and Hitchcock said they weren't. At about this point Douglas Haskell rose and said whether one liked Gaudì or not it was worth while to study him because this was the way everything was tending. Both Wright and Corbusier 'in their old age' were turning to curved, if not anthropomorphic forms. The world was tired of 'one, one, one, one,' like a turkey gobbling up peas 'module, module, module, module,' and we were entering upon the decorative phase of modern architecture. Arthur Drexler—who had organized the show for the Museum of Modern Art—appeared to wash his hands of the whole thing and implied that Gaudì, like Disneyland, appealed because of the association of ideas: he depicted a pre-Freudian escape world. Hitchcock went along with this to some extent, saying Gaudì's work gave rise to feelings of disquiet and 'what was that word so popular a few years back—Angst!' Sert tried to drag the discussion back to Gaudì's interest in structural experiments with warped forms saying that while he himself held no brief for Gaudì's period decoration, he felt it was unjust to overemphasize this side of his work, and that certainly Corbusier's recent work could not fairly be called decorative: it was a searching for new forms. A few more comments were made and then the meeting—which was crowded to capacity—broke up.'

Architect of the Technicolor Workshop

C. Wycliffe Noble decided to study architecture in Basle, and worked in Schönenwerd where he came under the influence of the modern movement. On return to England he joined M.o.W. where he worked on an atomic research establishment. He was Staff Architect to the Festival of Britain, and commenced private practice under the name of Gooday & Noble, in 1951; in 1955 the firm of C. Wycliffe Noble & Partners was established.

Architect of the House at West Wittering

Michael Lyell after qualifying at the Architectural Association in 1949, undertook post-graduate studies in Canada and the United States. He worked as assistant to Sergei Kadleigh until 1953, followed by private practice and partnership with Wells Coates. Currently engaged on office and industrial buildings, shops, motels, miscellaneous houses and flats.

Imperial College

The Clerk to the Governors of the Imperial College of Science and Technology has drawn the REVIEW's attention to the fact that the College is a school of the University of London, and that the illustrations of its new department of mechanical engineering in the January Preview issue should therefore have been placed with the university buildings instead of with the technical colleges.

Gatwick

When the designs for Gatwick Airport were illustrated in the AR January Preview issue, it should have been stated that the consulting engineers for the project are Frederick Snow and Partners. They are also the overall co-ordinating consultants for the Ministry of Transport and Civil Aviation. The architects are Yorke, Rosenberg and Mardall.

ACKNOWLEDGMENTS

MARGINALIA, pages 157–158: 1, L'Architettura; 2, S. W. Newbery; 3–5, 6, 7, 8, Arkkitehti Trans-World Airlines Inc.; 9, Schweizerische Bauzeitung. FRONTISPIECE, page 160, Peter Weaver. COUNT RUMFORD pages 161–163: 1, 4, by permission of Der Gartendirektor Bayer. Verwaltung der staat Schlösser, Garden und Seen; 2, 3, by permission of the Municipal Director, Landeshanpstadt, Munich. ROTHES COLLIERY, pages 165–169: 1–9, Galwey, Arphot. TECHNICOLOR WORKSHOP, pages 170–173: 1–6, 9, Toomey, Arphot; 7, Galwey, Arphot; 8, Colin Westwood. MILFORD HAVEN, pages 182–188: 1–21, Nairn, Arphot. HOUSE AT WEST WITTERING, pages 189–191: 1–6, Norman Gold. PLATE GLASS SHOP FRONT, pages 192–195: 1, Reece Winstone; 2, National Buildings Record; 5, 10–13, Toomey, Arphot; 6, 7, 9, Galwey, Arphot. CURRENT ARCHITECTURE, pages 196–200: 1, 2, Carlfred Halbach Ratingen; 3, G. L. Blake; 4, 5, S. W. Newbury; 6–8, John Pantlin. MISCELLANY, pages 201–210: Criticism, 6, 7, Lucien Hervé; Exhibitions, 3, Studio Yves Herrochon; Townscape, 3, Reece Winstone; Furnishing, 1–3, Ideal Home; 4, 5, Toomey, Arphot; Counter Attack, 1, 2, Nairn, Arphot; 3, Sport and Country. SKILL, pages 211–226: Interiors, 1–6, Toomey, Arphot; 7–13 Galwey, Arphot. Design Review, 1, 2, Browne, Arphot. Street Lighting, 1, 2, 7, 8, 10–24, COID; 3 Daily Telegraph; 4, M. Hartland Thomas; 5, Winkler; 6, Torpen Christian; 26, Toomey, Arphot.

THE ARCHITECTURAL REVIEW

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The Cover shows part of the remarkable programme of exterior relief sculptures on the Church of Achthamar, Turkey, built for the ancient Christian kings of Armenia, and depicting, appropriately enough for a small kingdom flanked by giant Empires, David and Goliath. The church is described and illustrated in an article beginning on p. 174.

157 **Marginalia**

160 **Frontispiece**

161 **Count Rumford** *by W. J. Sparrow* A Loyalist who changed sides in the American War of Independence, came to England, travelled on to Bavaria and died in Paris a Count of the Holy Roman Empire, Benjamin Thompson, later Count Rumford, was in many ways a characteristic amateur-cum-adventurer of the Romantic era. But he was unusual in his architectural and scientific interests, his philanthropy and his practical abilities as a social reformer. In any of these fields he would deserve a full-scale study, but Mr. Sparrow has limited himself to two main subjects—Rumford's *Englischer Garten*, complete with chinoisery pagodas, in Munich, and his contributions to increasing the technical efficiency of domestic equipment, particularly in the generation, distribution and conservation of heat, for he was a pioneer of double glazing, as well as central heating by steam.

164 **Rothes Colliery, Fifeshire:** *Architect, Egon Riss*

170 **Workshop for Technicolor:** *Wycliffe Noble and Partners*

174 **Achthamar** *by Richard Burton, John Donat and Paul Koralek* The island church of Achthamar on lake Van, in Turkey, is among the most striking monuments to survive from the extinct Christian Kingdom of Armenia. Although the general form of many Armenian churches is known, the decorations of few of them survive, and while Achthamar boasts a few fragmentary frescoes within, its exterior is still adorned with a remarkable series of figurative scenes and decorative bands in flat-faced relief. Not only are these carvings notable for the original and satisfactory way in which they combine with the large simple forms of the architecture, but also for their style and vision, which exhibit an extremely Armenian blending of East and West.

182 **Milford Haven** *by Ian Nairn* The industrialization of Milford Haven is probably as justifiable as it is inevitable, but it raises serious planning questions, not only because it infringes the sanctity of a National Park, but because the possibility exists for bold and comprehensive design that could preserve much of the characteristic landscape of the area, and yet find adequate space for industrial installations and extra housing. Mr. Nairn's study of the Haven and its problems not only makes specific suggestions for dealing with individual problems, such as refinery chimneys, but outlines general principles for exploiting what may be one of the finest townscape opportunities of the century, and makes a plea for a really bold and imaginative approach on the part of centralized authority.

189 **House at West Wittering:** *Architects, Wells Coates and Michael Lyell*

193 **The Plate Glass Shop Front** *by Mary Eldridge* Among the most striking innovations in early nineteenth-century streetscapes was the arrival of shop-fronts with really large window-glasses, made possible by improvements in plate glass techniques, and by the removal of the glass tax in 1845. This increased availability of an exciting new material corresponded with a period of increasing commercial pressures, and the design of shop-fronts underwent radical transformations, which are described and illustrated in Miss Eldridge's article, together with the efforts of architectural theorists and critics to keep pace with developments.

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213 **Grosvenor House, Park Lane, W.1:** *Interior Designers, R. D. Russell and Partners*

215 **Design Review**

216 **Techniques: Street Lighting** *by Peter Whitworth* In recent month's, lamp-standards have become objects of the most violent townscape controversies and certain types, particularly those in reinforced concrete, have been subject to widespread execration. In this study of the design of standards, Mr. Whitworth fills in the background of illumination techniques and structural methods that go so far in determining their ultimate form and discusses the characteristics of the main types now on the market.

222 **The Industry**

222 **Contractors**

Authors: *W. J. Sparrow* after taking a first class degree in physics was a schoolmaster for twelve years. He then went to Loughborough College as a senior lecturer in physics working under Dr. Herbert Schofield and had as colleague and co-fire-watcher Mr. Bernard Hollowood. In 1945 he became interested in the training of schoolmasters and was invited to become deputy head of the Loughborough department for the training of teachers. Later he moved to the University of Birmingham where he is now a senior lecturer. He has long been interested in the history of science and has made a special study of the life and work of Count Rumford. He is the author of a text book on *Heat* and numerous articles on educational topics. He was first brought into contact with architecture through the study of church buildings. *Richard Burton John Donat* and *Paul Koralek* are all aged 24. They studied at the AA 1951-56 and on completion of the course travelled overland by land rover to Turkey and Persia accompanied by two courageous wives, to study Persian architecture and decoration aided by the AA and ICI travel scholarships. Previously they had read about Achthamar and made a long detour through the Turkish mountains to visit the island. Richard and John are with the LCC and Paul is with Powel and Moya. *Peter Whitworth* studied at the Southern College of Art 1942-45 and was subsequently junior assistant to the ecclesiastical surveyor to the Dean and Chapter of Winchester 1945-46 and chief assistant to Collins and Calrow 1946-56. He is now at the CoID as secretary to the street furniture panel. In addition he has built his own house with his own hands.

Directing Editors	J. M. Richards Nikolaus Pevsner H. de C. Hastings Hugh Casson
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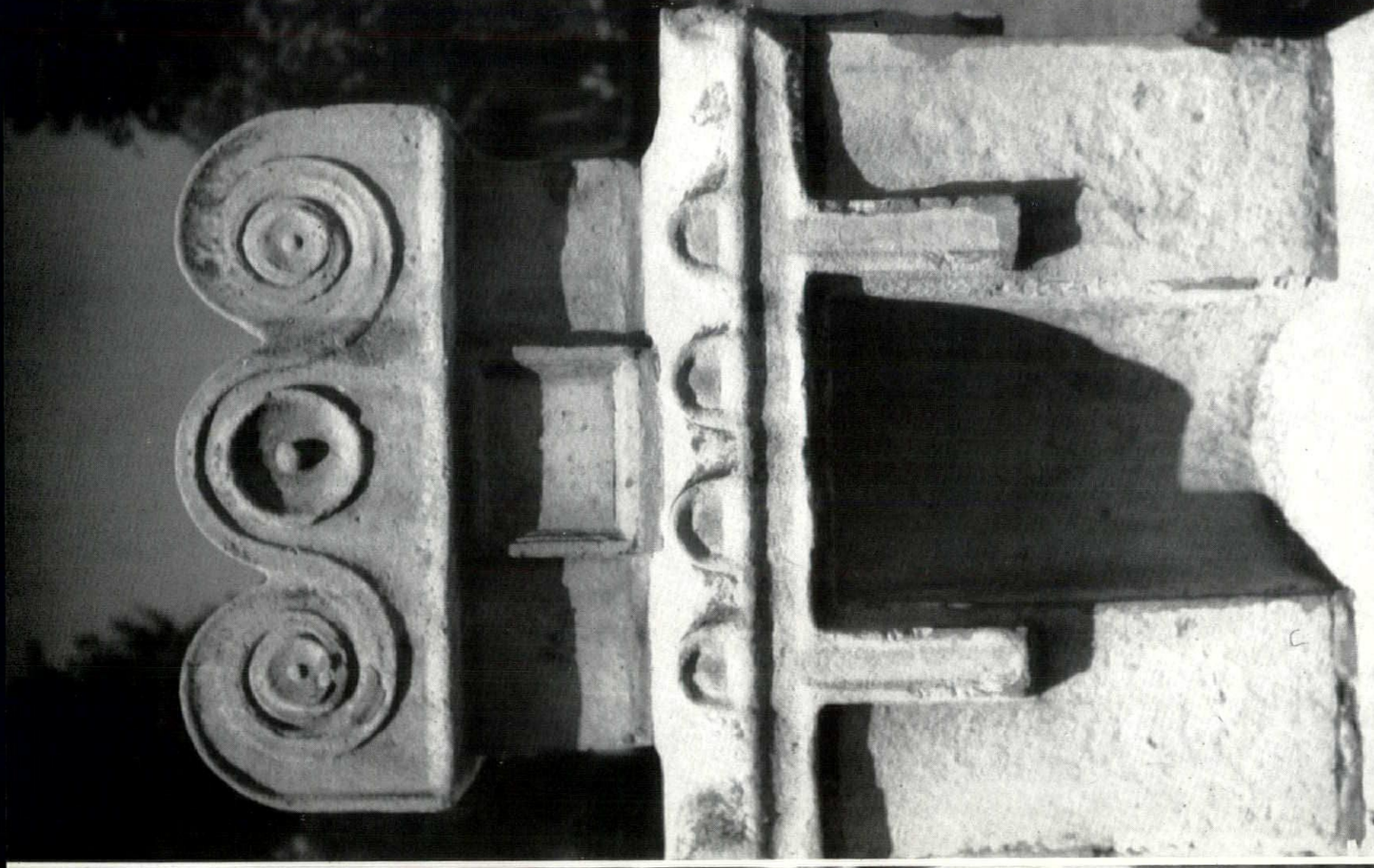
FIVE SHILLINGS

No decay is more pleasingly romantic than that which blurs the geometry of Neo-Classical architecture, exemplified here by two pier
the balustrade of the Soane monument in old St. Pancras churchyard. But visually (let alone structurally) such decay must be halted
or later, and the geometry restored—a labour that will be simplified by the numerous models of these details preserved in the Soane M





W. J. Sparrow

COUNT RUMFORD

Count Rumford, a man of international fame and a prince of opportunists, died at the age of sixty-one near Paris in 1814. He had by then left his mark on the Europe of his time and, to a less extent, on his native America. Though we are here mainly concerned with his not inconsiderable architectural ideas, he was as well or better known in the fields of science, philanthropy, war and diplomacy. He has, in fact, most often been remembered as a man of science, but his scientific ideas and discoveries nearly always arose from practical problems. In our technological age we should remember him as its herald and the first man consistently to apply scientific ideas to daily living.

As a boy, Benjamin Thompson was clearly cut out for a life different from that of an American farmer. He was quick-witted and courteous, inquisitive and skilled with his hands; a lad of parts in whom the local worthies took interest. He was shop assistant, medical student and school teacher in turn. Then at nineteen he married the daughter of the local minister and, as she was the widow of the squire and well-to-do, this circumstance put him on the road to provincial success. Always capable of living up to his position in dress and bearing, Thompson so impressed the Governor of New Hampshire that he was offered a commission in the Second Provincial Regiment of the county. This started him on a military career; but he was soon in trouble. It is now clear, as was then suspected, that he was a royalist in sympathy and, to boot, a spy for the British when open war broke out in 1775. After two trials and a period of indecision he found himself in October firmly established in the British camp in Boston. Here he was useful to the local commanders and, when the Americans drove out the British, Thompson brought the official dispatches to England. He left his wife and daughter in America, but this deprivation of family contacts seems not to have troubled him at all.

In England he soon became the favourite of Lord George Germain (the Secretary of State responsible for American Affairs) and, if contemporary gossip is reliable, of Lady George and her daughters as well. He was, however, no rake, but an ambitious, able and calculating young man. He became a fellow of the Royal Society, Under Secretary in the American Department and a member of the rich and influential group which had control of affairs. His income was soon reputed to be £7,000 a year and, though this is probably too high a figure, this handsome young adventurer was earning and spending on a scale he could hardly have thought likely when he served in a Boston dry goods store.

After a period of active soldiering in America, fighting of course for the British at the end of that sad and humiliating struggle, he found himself a colonel on half-pay without firm or attractive prospects. Germain had retired in disgrace, England was sheltering many loyalists like himself and he still wanted a military career. Taking horses, equipment and maps he started on a continental tour and before long became Colonel and Aide-de-Camp to Charles Theodore, Elector of Bavaria. This cultured, obstinate, pleasure-loving ruler was also Elector Palatine and chiefly interested not in Bavaria but in his territories on the Rhine. Thompson had therefore almost a free hand and what was literally the chance of his lifetime. He took it. Within a few years he had reformed the army and eliminated from it long-standing abuses; he made the soldier's life respectable and established schools for their children. He increased rates of pay, established military gardens and provided soldiers with paid occupation in peace time.

After the army, beggary. Munich and its surroundings swarmed with beggars. With planned precision Thompson had them arrested and provided them with work and food. To the majority of the citizens of Munich this was miraculous and they gave willingly for the maintenance of the sick and the infirm part of the money they had previously felt obliged to throw to importunate and pestering mendicants. In quite a modern style Thompson arranged for collection boxes to be put in churches and other public places—the better-off usually paid by banker's order; and he sent decorated vehicles round the town to collect food. Though he felt no pity for beggars (pity was an emotion he despised) he claimed benevolence as his motive and he wished to reform the morals of those he rescued from penury and vice. 'Let us,' he said, reversing the usual order, 'first make them happy and then virtuous.'

There seemed no limit to Thompson's ideas or to his ability to put them into practice, but by this time he was meeting strong opposition from the Munich City Council and from other sources. His health failed and he looked round for an honourable position which would take him from the centre of conflict. He found one and was appointed to be Bavarian Ambassador in London. To his intense chagrin the King of England would not accept his credentials as he was a British subject and a former member of the British Government. However, he stayed on in London though he was never *persona grata* at court.

He had gained much in Bavaria: honours (he was a Count of the Holy Roman Empire), an international reputation as a reformer, friendship with many European figures, and a growing recognition of his scientific ability.

Of his later achievements, his greatest was the foundation in this country of the Royal Institution. Of his personal affairs it may be said that they were as colourful as his professional achievements, though less successful. After he left America in 1776 he never saw his first wife; he found consolation, however, in Bavaria in the company of the Countess Nogarola and her sister, the Countess Baumgarten, who bore him a child. Later he married that strong-willed, cultivated, grand lady, the widow of Lavoisier. She was, indeed, the stronger character and his abilities and distinctions she could match with her own. This was sad for the incurably self-centred Rumford, and, after somequarrelling, they parted and lived their own lives, both in Paris.

Turning to Rumford's architectural work one thinks first of Munich's *Englischer Garten*, 4, with its hundreds of acres of grass, its lakes, streams and its temple, 2. It was laid out in 1789. Along the bank of the River Isar he found a 'dreary waste of pebbly strand and marshy ground' and turned it into a garden in the English style. His methods were thorough. With the Elector's permission he used an army corps to clear, drain and lay out the site. The soldiers were specially clothed, had free lodgings and extra pay; their regimental duties were reduced to a minimum. Military bands provided music and there were facilities for spare time dancing and games. The *Englischer Garten*, now larger than in Rumford's time, is still one of the glories of Munich and a boon to its citizens.

Rumford was a quick learner in many fields. He was, as we have seen, when he first came to England on visiting terms with rich and influential families and was fully aware of prevalent fashions in the design of large gardens. He was also a warm admirer of Chinese life and ideas, and the pagoda, 3, he put in his gardens bears witness to his admiration. Not that it was the first of its kind. Kew already possessed an impressive example ten stories high, built in 1762. His English Garden was a magnificent achievement and particularly so for a man who at the time was busily occupied with affairs of state and the object of much opposition. Its benefits were fully recognized by the people of Munich, rich and poor alike, and during his absence from the city in 1795 an impressive memorial stone, 1, was set up in the gardens on which can be read the following inscription (the memorial was being repaired when the present writer searched for it in 1954—it has now been restored):

To him
Who eradicated the most disgraceful
public evils
Idleness and Mendicity
Who to the Poor gave Succour,
Occupation, good Habits
and to the Youth of the Fatherland
So many cultural Institutions
Go Stroller and strive to match him
In Spirit and Action
And us
In Gratitude

What Rumford did to deserve so eulogistic an inscription has been briefly outlined. It was characteristic of him that in laying out the English Garden he had in mind utility as well as pleasure, and in order to encourage agriculture he caused to be built at intervals in the gardens cottages and farmhouses. One of the farms he made into a show place, and many who had little interest in the breeding of cattle nevertheless went 'to see them as beautiful and extraordinary animals.' The cowsheds 'were concealed in a thick wood behind a public coffee-house in the middle of the garden.' Concealment of the utilitarian was one of the ideas he picked up from polite society and, of course, was a mark of eighteenth century architectural and domestic design.

A house gives scope for the application of scientific ideas. Rumford's own was no exception. When he returned to England in 1798 he bought number 45, Brompton Row. This he made into a place of renown. A friend and admirer of Rumford's, M. A. Pictet, of Geneva, gave this description

> . . . 'I have been staying in the Elysium belonging to Count Rumford, living there the pleasantest life imaginable. Now is the time to try to describe this pleasing and ingenious structure.
>
> 'The house has five stories including the domestic quarters which in this country are always in the basement. The layout is the same in all stories: two rooms and a staircase. On the ground floor is the parlour, where morning visitors are received, and the dining room. On the first floor a bedroom and a reception room; on the second floor the same arrangement; on the third a bedroom and a workroom for the master of the house. In this room, which looks over the countryside, light enters by windows set side by side to form an arc of a circle and through which a person standing in the middle of the room can see a quarter of the horizon. The window sill is decorated with flowers and shrubs and as one looks over the trees, across the meadows, and seeing nothing in the foreground, one has the illusion of being in the country close by a garden bordered by a park.'

Pictet describes the outbuildings which included a stable, coach house, laboratory and rooms for coachman and carpenter. These outbuildings were joined to the house by a centrally-heated covered passage. The rooms in the house had windows with double glazing, tables which fitted into the wall when not in use and there were built-in wardrobes and cupboards. He goes on:

> 'The bedrooms are similarly disguised; that is to say the bed looks like an elegant sofa the seat of which is formed by one of the mattresses, the other mattress is so made that it folds in two like a hinge along the back. . . . The ends are adorned with two cushions. Under the sofa are two large, deep drawers to hold the sheets, the blankets and the night attire. These drawers are concealed behind a fringed valance.'

Rumford had a passion for order; that and the desire for fame were his strongest motives. It is certain that his intense dislike of waste lay behind his inventiveness. Waste of fuel, inadequate heating and ventilation he attacked with vigour. He was as well known for his efforts to ensure an economical use of fuel as for his attempts to feed the poor economically, and of course, the two sometimes went together. Both gave rise to good-natured amusement, 6. Samuel Galton writing to Matthew Boulton spoke of Count Rumford's 'metaphysical soups in which he seems to have mistaken Element for Aliment.' The French made numerous jokes about him; one witty person said



1, *the recently restored Rumford Memorial in the English Garden at Munich.*



2, *the Monopteros in the English Garden.*



3, *Rumford's pagoda, destroyed in the last war but quickly restored.*

that he was so clever that he would soon be cooking his dinner with the smoke from his neighbour's chimney! But behind all the wit stood the acknowledged expert. The needs of the times in many countries turned men's attention to his essays and from them to the man himself. The satirist John Wolcot (as Peter Pindar) wrote extensively of his work and ways; Coleridge sang his praise in a sonnet; the expert writer on social conditions, Sir Frederic Eden, quoted extensively from his Essays; and in 'Memorials of his Time,' Lord Cockburn, speaking of the famine of 1795 and 1796, wrote:

> 'On the 4th of March, 1795, about eleven thousand persons, being probably about an eighth of the population, were fed by charity in Edinburgh . . . This was the triumph, and the first introduction of public kitchens, Count Rumfords, and cooking committees. Chemistry strained itself to extract nutriment from everything.'

His 'roasters,' fireplaces (quite commonly known as Rumfords) and kitchens were, like his ideas, internationally famous. He himself said that at one time he had not less than 500 smoky chimneys 'under his hands.' He altered chimneys for the well-known men of his time: in this country for Lord Palmerston, Sir John Sinclair, Sir Joseph Banks, the Marquis of Salisbury, and others. His principles were sound for they were based on an understanding of the production and transmission of heat. Contrary to what was then contemporary practice he brought the fire forward, diminished the size of the fireplace, set the cheeks at 135° with the back, reduced the amount of iron and increased the firebrick. He showed that the main fault of most chimneys was the great size of the throat which, he said, should never be more than five inches wide, near to and perpendicularly over the fire, 5. Writing in 1796 he was fully aware of the disadvantages of the ordinary domestic grate and its contribution to London fogs. 'Nothing,' he says, 'surely was ever more dirty, inelegant and disgusting than a common coal fire.' He was 'even sanguine enough to expect' that the time would come when the open fire would disappear 'even in our dwelling rooms and most elegant apartments,' though he was 'still child enough to be pleased with the brilliant appearance of burning fuel.' He could not 'help thinking that something else might be invented equally attractive' to fix his attention and amuse his sight, something 'less expensive and less connected with dirt, ashes and other unwholesome and disagreeable objects.'

In the late eighteenth century the kitchen fireplace in the larger dwelling houses usually consisted of a long coal-burning grate placed in the space under a wide and deep open chimney. There was commonly an oven at one end and sometimes a boiler at the other. It was an inefficient arrangement designed, so it seemed to Rumford, in every part and detail 'for the express purpose of devouring fuel.' It was, however, the smoke jack which most infuriated him. 'No human invention that ever came to my knowledge appears to me to be so absurd as this.' Its inefficiency as a machine appalled him.

> 'Would to God,' he cries, 'that I could contrive to fix the public attention on this subject. . . . Nothing surely is so disgraceful to society and individuals as unmeaning wastefulness.'

But it was in large scale feeding that Rumford found the greatest scope for his knowledge, philanthropic emotion and organizing ability. He personally supervised the building of kitchens in Munich, Verona, and London; in other places they were built to his designs.

He had been led to conclude that seven-eighths of the heat generated from fuel burnt in an ordinary fireplace is carried up into the atmosphere and totally lost. In his early experiments in Munich he had one fireplace to heat eight copper boilers in two rows set in brickwork. Flues with dampers distributed the heat and the fire was regulated by a register. With this arrangement the daily cost of the fuel was one twentieth of a farthing per person with over a thousand being fed. The social needs of the time ensured attention to his work and although he was angry that his improvements were not more widely accepted, it seems in retrospect that he made a great impact on those concerned with the welfare of the poor. It was after his death that neglect overtook him.

The Annual Register for 1798 gives an account of the kitchen fitted up at the London Foundling Hospital under his direction. Particulars are given of the roaster, steam box, and double boiler. The prices quoted are: roaster with accessories, 22 guineas; large boiler, £25; small boiler, £11; steam box £2 8s.; incidentals £10. Altogether just over £70 'for the ironwork' and about as much more for installation. Speaking of the value of the inventions, the writer concludes that the greater the scale the greater the return. The article mentions the necessity for care in opening the doors to serve the fire especially 'where the cook wears muslin' so that 'the draught which is very strong does not draw in and set fire to her clothes.'

Not only did Rumford improve grates, cooking apparatus and chimneys, he saw also the advantages of conveying heat by steam and water. His methods were applied by him for heating halls and large rooms and by industrialists to various manufacturing processes. He was in Leeds in the summer of the year 1800 and was received by the Mayor, Benjamin Gott, the great manufacturer of woollen cloth. Having had occasion to rebuild his factory, Gott had installed apparatus of Rumford's design with an estimated saving in fuel of nearly two-thirds. This pleased Rumford and he is full of praise for such men as Gott 'who abound in no other country' and to whose spirited exertions and initiative

> 'we owe one of the proudest distinctions of our national character, *that of being an enlightened and an enterprising people.*'

Rumford installed steam heating at the Royal Institution both for the great kitchen and for heating the 'Great Lecture Room.' In his report to the Managers on April 26, 1802, he said:

> 'The theatre is warmed in cold weather by steam which coming in covered and concealed tubes from the lower part of the house circulates in a large semi-circular copper tube eight inches in diameter and above sixty feet long which is concealed under the rising seats of the pit.'

This apparatus had its early troubles and was to have a sad end. When the boiler wore out, according to Mr. Webster who was Clerk of the Works in Rumford's time,

> 'the whole steam apparatus was taken away by the ironmonger then employed and something of his own was put up, which for years was an annoyance to Mr. Faraday'

who did not know that steam heating

4, *plan of Rumford's English Garden at Munich, laid out in* 1789 *along the banks of the Isaar.*



had been used until Webster told him.

It is worth remembering that Rumford did not take out patents for his improvements and inventions. He tried hard through the Royal Institution and by other means to make them available for all. He gave clear and detailed instructions for the fitting of his fireplaces. He engaged an

> 'ingenious tradesman . . . (Mr. Summers . . .) to put up a roaster in his own kitchen; to instruct a cook in the management of it; to make daily use of it; to shew it in actual use to his customers . . . ; and also to allow other cooks to be present, and assist when meat is roasted in it. . . . I likewise prevailed on him to engage an intelligent bricklayer in his service who would submit to be taught how to set roasters properly and who would follow without deviation the directions he should receive.'

The Repository he planned at the Royal Institution was to be a teaching museum for the exhibition of large working models, and of mechanical inventions and improvements, particularly those concerned with domestic comfort and industrial processes. Working models 'of that most curious and most useful machine, the steam engine' were also to be available. Each model was to have exhibited with it a detailed description with correct drawings, and subscribers were to be entitled at their own expense to have drawings made, by draughtsmen on the premises, of any model in the repository. For various reasons these plans bore little fruit. They quickly alarmed some manufacturers who, understandably, were not so altruistic as Rumford. There is, among the Boulton Papers in the Birmingham Assay Office, a long memorandum written by Matthew R. Boulton to his father, entitled *Thoughts and reflexions on Count Rumford's proposed establishment for the exhibition of models of the machinery of our manufactories at the Royal Institution in a letter to M.B.* In it the writer says that

> 'the Count's Philosophy has got the better of his Judgment and whatever Support his Plan may receive from the male and female Nobility it will not in all Probability be much relished by the British Manufacturer. . . . To the philosophical Dilletante who employs only his time and talents in pursuit of Knowledge the Fame of his Discoveries may be a satisfactory Reward but to the Manufacturer who expends his Capital as well as his Skill and Labour with a View to Emolument, the Possession of his Improvements can alone afford a proportionate Remuneration.'

This hard-headed manufacturer goes on to ask whether the inventor will think himself suitably rewarded by votes of thanks and acknowledgment as a liberal benefactor.

> 'Can the Institution offer any premiums equal to the fortune derived by Mr. Arkwright from Cotton Spinning?'

Such ideas, he said, might be suitable for backward Bavaria but England had taken the lead of all manufacturing countries without them.[1]

Rumford's ideas in this field were ahead of his time and not very practicable and when he left England the Royal Institution changed its character. While talking of the steam engine, however, it is worth recording that he was very largely behind the introduction of Watt's engine into Germany.

Turning again to the heating of houses we get glimpses of early nineteenth century notions of elegance in Rumford's suggestions for the design of steam stoves for heating halls and passages.

> 'They are,' he writes, 'susceptible of a variety of beautiful forms. . . . A most elegant steam stove might be made in the form of a Doric temple of eight or ten columns standing on a pedestal. The fireplace might be situated in the pedestal and the columns and dome of the temple might be of brass or bronze and made hollow to admit the steam. In the centre of the temple there might be placed an ornamental decoration.'

Nothing was too trivial for Rumford's attention

> 'The use of science is to explain the operations which take place in the practice of the arts and to discover the means of improving them; and there is no process, however simple it may appear to be, that does not afford an ample field for curious and interesting investigation.'

In these words Rumford justified the attention he gave to the art of making coffee. Over a period of years he was led to the design of a coffee pot (one such was used by Hegel) which combined economy and efficiency by using about a quarter of an ounce of coffee for one full cup and retaining the fragrance in the coffee rather than letting it be lost to the surrounding air. But Rumford carried his concept of science into many fields. He improved the design of oil lamps and made at least two suggestions which early manufacturers of electric lamps might have taken note of but did not.

Of the many other branches of his work we may choose one of interest to those who design houses and draw from his essay: 'On the Salubrity of Warm Rooms.' He had probably suffered discomfort when spending his winters in London after enjoying his thoroughly heated apartments in Munich and would have sympathized with those Americans of today who, when wintering in this country, walk out to get warm. He inveighed against the draughts which are set up by large open fires, saying that

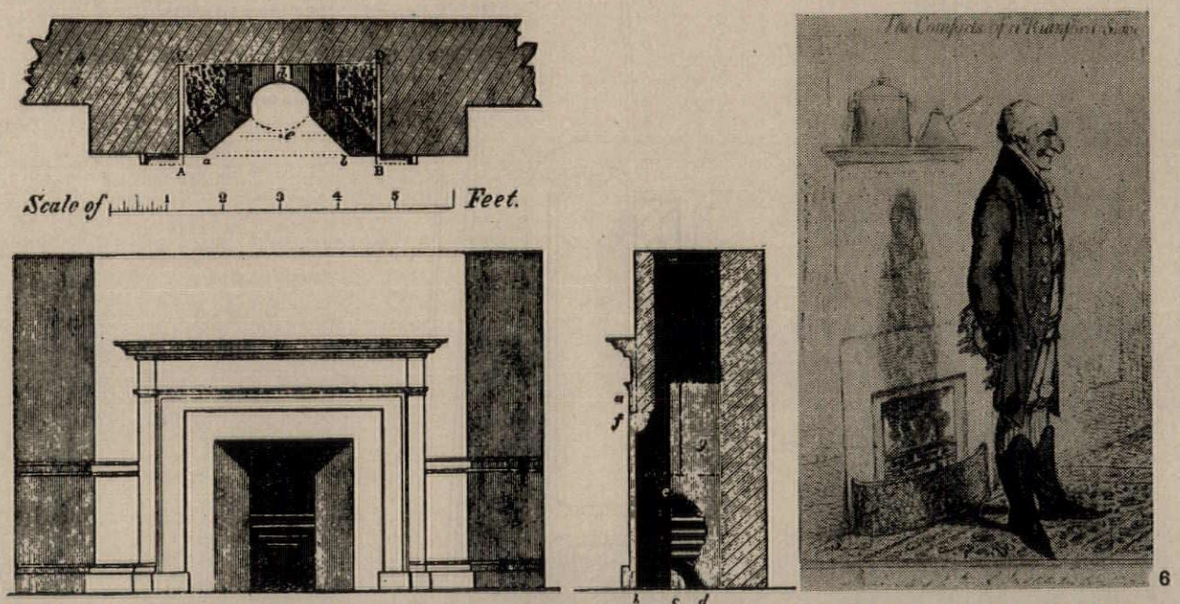
> 'such fires instead of making the room equally warm do little more than increase the violence of those streams of cold air which come whistling in through every crevice of the doors and windows.'

He very rightly pointed out the cooling effect of large windows 'which in open defiance of every principle of good taste' had lately come into fashion. He shuddered at the 'perilous situation' of delicate young ladies in muslins or gauzes when exposed to these rigours. How many young persons of delicate habits, he lamented, are carried off annually by consumptions. On the other hand the Swedes and the Russians keep their rooms very hot 'and yet no people are more strong and healthy than they are, nor are there any less liable to catarrhs and consumptions.'

This essay taken as a whole shows many of the characteristics of Rumford's writings: self-justification, a sense of mission, some overstatement arising from enthusiasm, a lack of caution in his reasoning but, at the same time, much commonsense and sound scientific ideas. His main contentions were right and the last hundred years have seen many of them put into practice in large buildings and big houses. Though he was hampered in his discussion by a lack of knowledge of the importance of relative humidity as a factor in adequate ventilation, and though the experimental and factual evidence he adduced in support of his ideas was extremely slender, his essay was a much needed attack on the prejudice, inertia and ignorance of his day. He was not

> 'without hopes that at some future period houses in England would become as celebrated for warmth and comfort as they were then for neatness and for the richness and elegance of their furniture.'

In assessing both the value of Rumford's work and his character it should be remembered that the activities and ideas described here are but a small part of what he did. His age, of course, was still the age of the expert amateur. He could turn in any direction and quickly find scope for his talents and persistence. He and his work have been so generally forgotten because no one in his time, and few people for many years after his death, saw as clearly as he did the advantages of applying science to the objects and processes of everyday living.

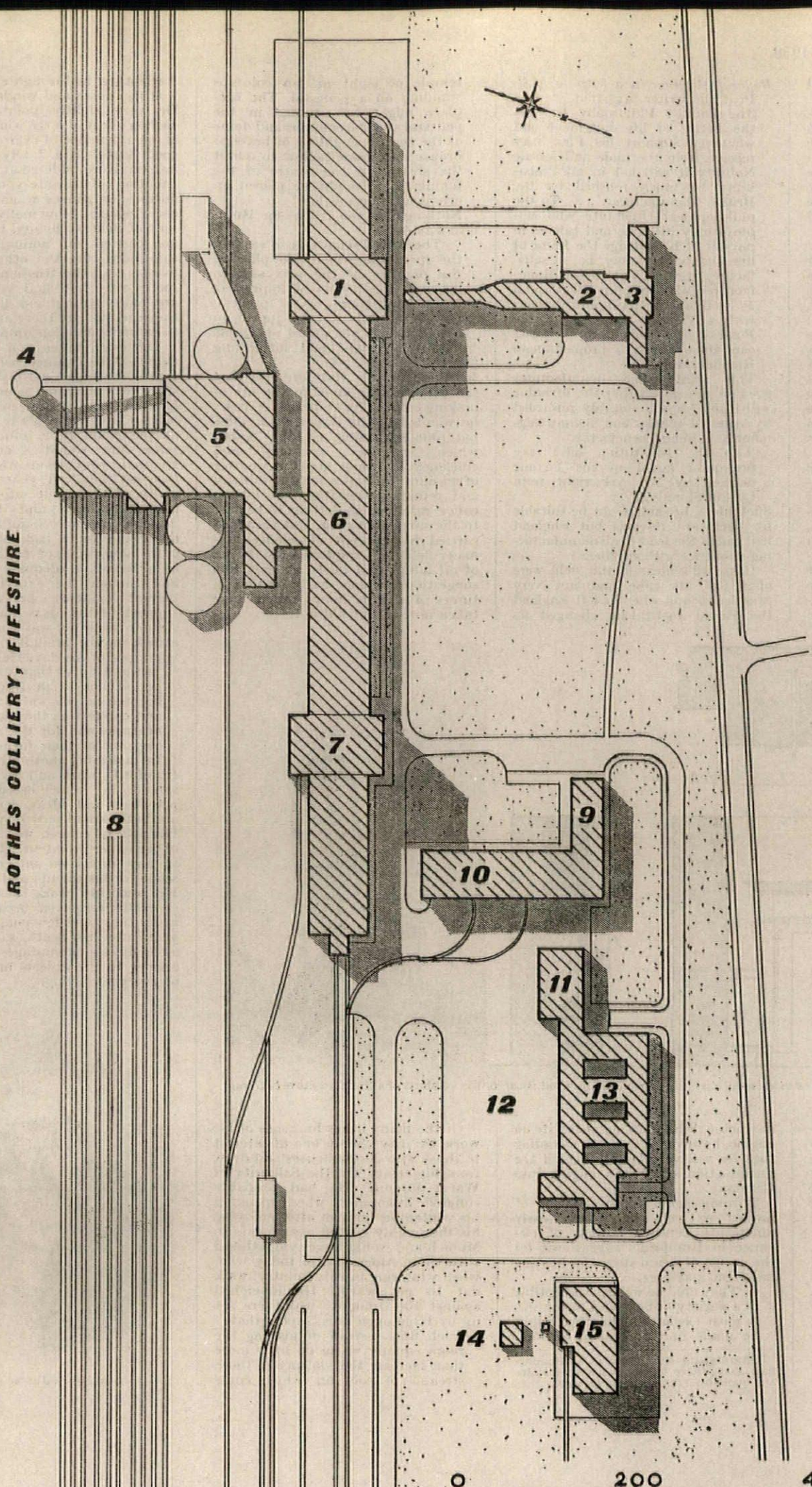


5, *the Rumford fireplace and chimney. Note the relatively small size of the fireplace and the small throat,* 6, The Comforts of a Rumford Stove *by Gilray.*

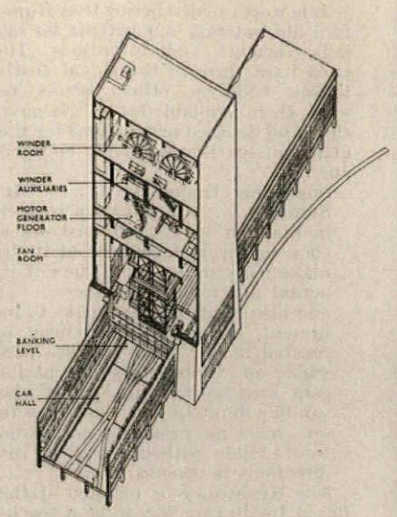


7, *Count Rumford at the age of* 45.

[1] I am grateful to the Master of the Birmingham Assay Office for permission to examine and quote from documents in his care.



ROTHES COLLIERY, FIFESHIRE



key

1, no. 2 tower.
2, fan house.
3, sub-station.
4, dirt disposal bunker.
5, coal preparation plant.
6, car circulation hall.
7, no. 1 tower.
8, railway sidings.
9, offices.
10, workshop and lamp cabin.
11, canteen.
12, car park.
13, pit head baths.
14, cooling tower.
15, gas turbine and boiler house.

ROTHES COLLIERY, FIFESHIRE

ARCHITECT	EGON RISS
ASSISTANT ARCHITECT	JAMES REE

1, the winder towers connected at ground level by the shaft hall.

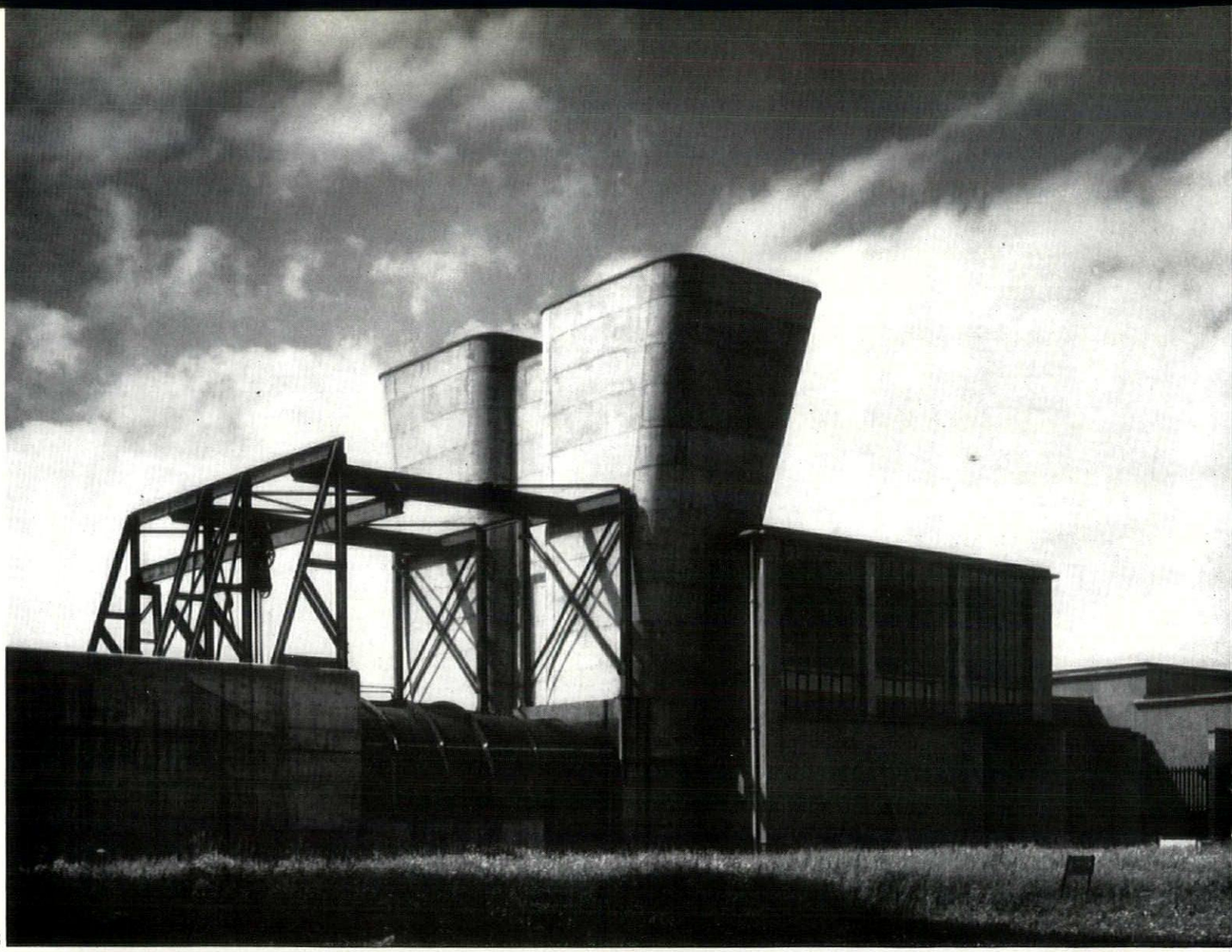


1

Rothes colliery is a new sinking in the East Fife Coalfield, near Thornton, three miles north of Kirkcaldy. The sinking began in 1947 and the colliery was completed in 1956 ; it will work nine seams over an area of ten square miles at an average depth varying from 2,170 feet to 2,610 feet below the surface. The architect was closely concerned with the basic planning decisions on the layout of the colliery ; the pithead baths and canteen were designed separately and are included in only one of these photographs and in the layout plan.

The site of the colliery at Rothes is long but comparatively narrow, extending from east to west between the Strathore Road and the Thornton-Dunfermline Railway. The two winding towers and the shaft hall are situated at about the centre of the site, thus leaving the southern part for the coal preparation plant and the

[continued on page 168



2



3

ROTHES COLLIERY FIFESHIRE

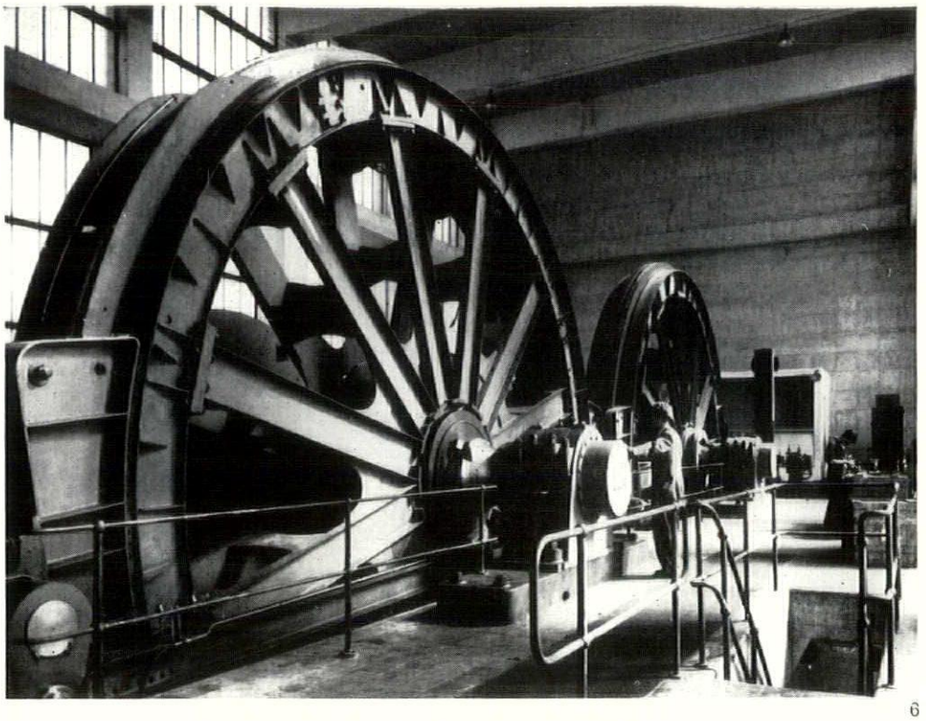


4



5

2, on the facing page, ventilating shafts and fan house.
3, view from the offices towards the medical centre wing of the pithead baths, which were built as a separate contract, and are not the work of Egon Riss but of D. D. Jack, head of the separate architectural office responsible for welfare buildings in the Scottish Division of the Coal Board.
4, one of 191 ft. winder towers.
5, looking towards the winder towers and the workshop block.



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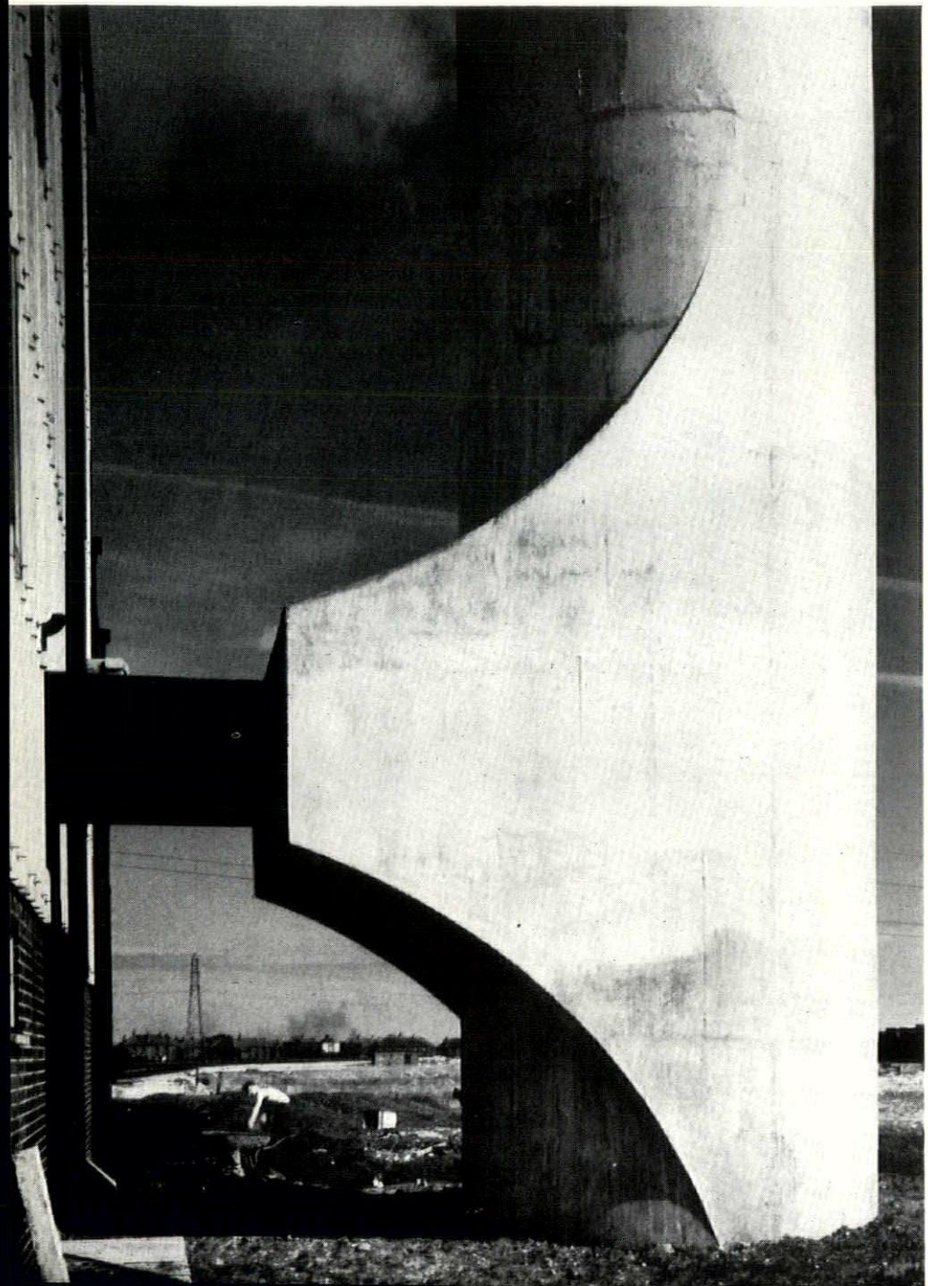
6. Koepe winders in one of the towers.
7. base of the boiler house chimney.



7

railway installations, and the northern part for the administration buildings, pithead baths, lamp cabin, stores, fan house, sub-station, etc.

The towers are approximately 200 ft. high, and house koepe tower winders and other machinery. They are spaced at 500 ft. centres and are connected by the shaft hall which houses the mine car circuit. The two blocks nearest to the road are the administration building and pithead baths, connected at first-floor level. When starting the shift the men arrive at the pithead baths, change into working clothes and proceed to the time office. Underground workers walk from there through the lamp room, over a bridge to the No. 2 Shaft, where they enter the cages to go down the mine. Along this simple route all the essential preparatory activities take place. In the past, the men had to report to various scattered buildings on the pithead to collect lamps, tools, stores and so on, from diverse sources. To reduce fatigue and make the circulation more efficient, all necessary equipment such as lamps, stores, explosives, etc., are brought to a point en route of the on-going or off-coming shifts and distributed or returned at various points. This method of circulation, therefore, can be regarded as a pedestrian scheme at a higher level, independent of all

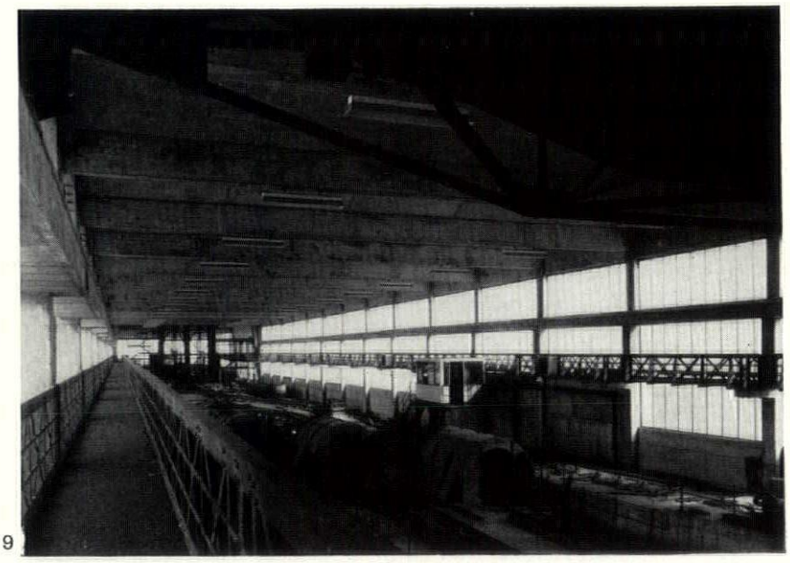


8

8 part of the equipment of the coal preparation plant.
9. inside the shaft hall which houses the mine car circuit.

road and rail traffic, a principle which also increases safety. The ground floors of some of the buildings contain workshops and stores, with access for mine cars and lorries. These areas are comparatively small because there are central stores and workshops in the neighbourhood where most of the repairs will be carried out.

The towers are r.c. with metal frame windows and ventilation louvres, the end wall is clad with rough-shuttered concrete. The car hall is a r.c. frame construction with infills of 11 in. cavity wall and partly r.c., while for reasons of greater flexibility the combined boiler and gas turbine houses are built in a steel framed construction clad with light asbestos sheeting, and on the ground floor 9 in. rough-cast brickwork. Patent glazing has been applied throughout and it is only in the offices that horizontally pivoted hung metal windows in timber sub-frames are used. Finishes in the administration block include linoleum on cement screed for the floors and terrazzo with ferrodo non-slip nosings for the stairs. The civil engineering consultants were the British Reinforced Concrete Engineering Co.



9

WORKSHOP FOR TECHNICOLOR

ARCHITECTS | **WYCLIFFE NOBLE AND PARTNERS**

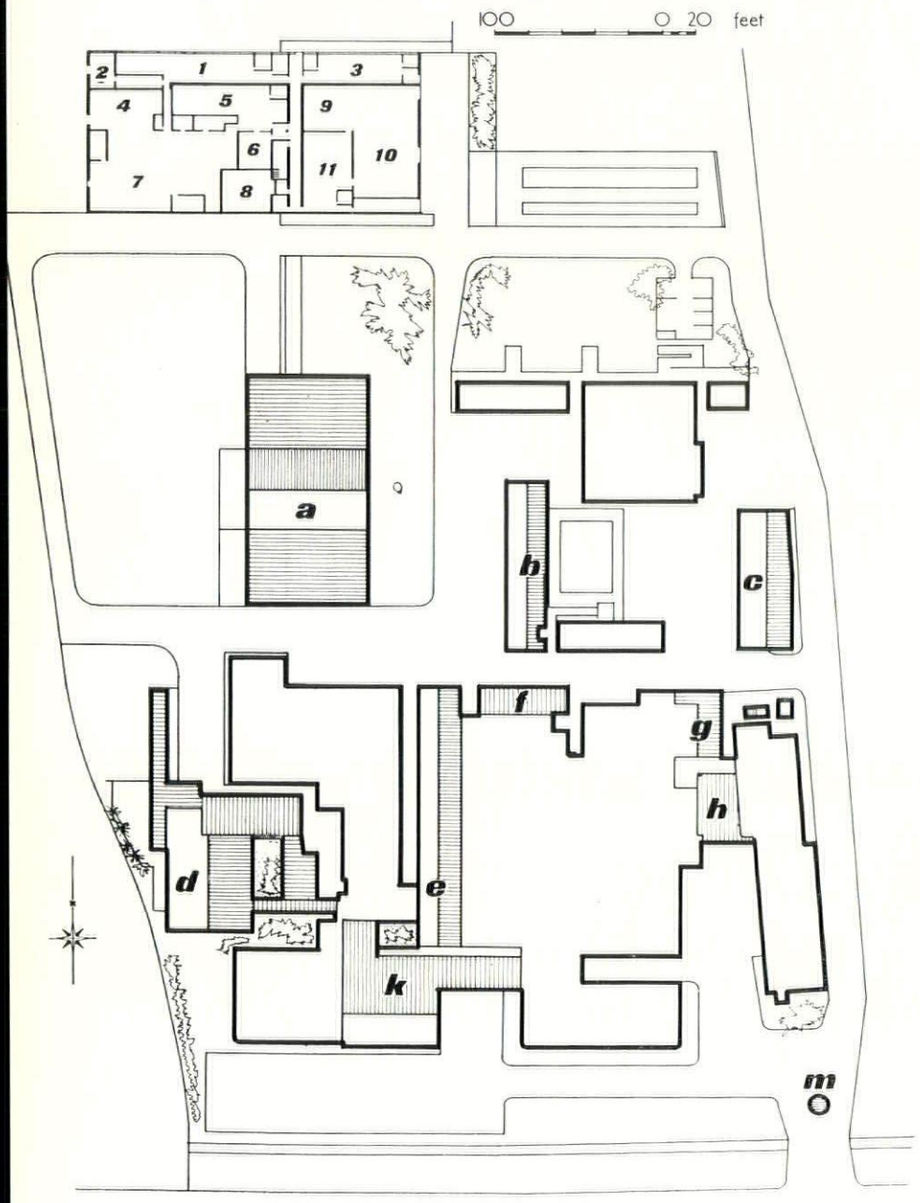
Site plan showing road and building development since 1951.

key.

a, colour developer.
b, pipe bending.
c, film vaults.
d, canteen.
e, fourth transfer machine shop.
f, film storage building.
g, boiler house.
h, film vaults.
k, office.
m, gate-house.

the engineering and workshop block.

1, drawing office.
2, print room.
3, purchasing.
4, pin belt manufacture.
5, electricians.
6, tool stores.
7, tool room.
8, carpenters.
9, metal stores.
10, holding stores.
11, main stores.



These are the latest additions to a series of buildings which have been erected on the Technicolor site opposite London Airport. Fortunately this work was commissioned by a Plant Manager who had vision and influence over the employees and technicians, so that the haphazard development often found on an industrial site has been avoided.

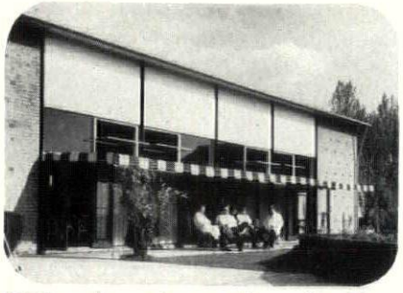
Before the very first building was designed and erected (Canteen: see AR, Nov., 1953), circulation on the site was analyzed, and the construction of roads was put in hand to cater for the maximum envisaged development between 1951 and 1961. To many industrialists this would have appeared a sheer waste of money and time, but considering that Technicolor has continued to expand with a non-stop building programme for almost seven years, this kind of research and analysis has been well worth while. The architect has not only designed the buildings, but also external light fittings and street furniture and in special cases he has advised on landscape.

The Engineering and Workshop Block has been designed on a module using a standard panel frame of mild steel angle to which could be added various cladding materials, e.g. glass (for drawing office), brickwork (engineering stores), asbestos (chemical stores). This allowed also for any of the panels to be removed should a change of function in the building be required. This point should not be underestimated, for though flexibility in planning can become an obsession in a developing industry like this one, changes in process and planning are being carried out all the time. It was therefore essential that the building should be flexible enough for the purchasing stores at some time to be turned into additional drawing or administrative offices, or be easily converted into workshops.

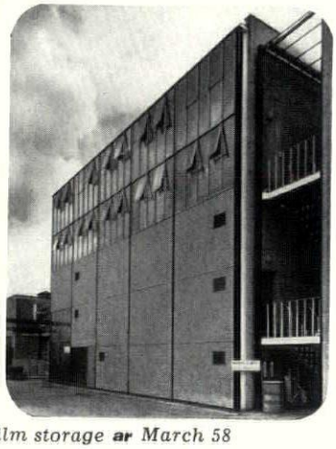
The main structural frame is of channels welded into a box form with tubular trusses at 10 ft. centres, spanning 50 ft. There are two spans across the building, making a width of 100 ft. and a length of 200 ft. The entire building is covered with an aluminium roof with fibre-board insulation to the established factory standard, and covered with grey-green mineral felt. The aluminium is left exposed on the underside and the trusses are painted red. The fascia is of Western Red Cedar, this timber being incorporated in other buildings on the site: this material was considered worth while because the fascia of the building presented a length of something like 1,800 ft. super; the Western Red Cedar fascia with its secret nailed joints weathers naturally and no further maintenance is required. According to the various functions inside the building the floor treatment varies. For the Engineering Shop wood block is used; for the Drawing Office thermoplastic tiles; and for all other parts granolithic screed.

Heating is by warm-air cabinets operated on steam batteries, the main supply being drawn off from surplus steam used in manufacture. The by-pass damper enables cool air to be drawn in from outside and blown into the factory during the summer period.

1, corner of the workshop block built of a standard panel frame of mild steel angles to which various cladding materials are added.



1952 *works canteen* **ar** *November 53*



1953 *film storage* **ar** *March 58*

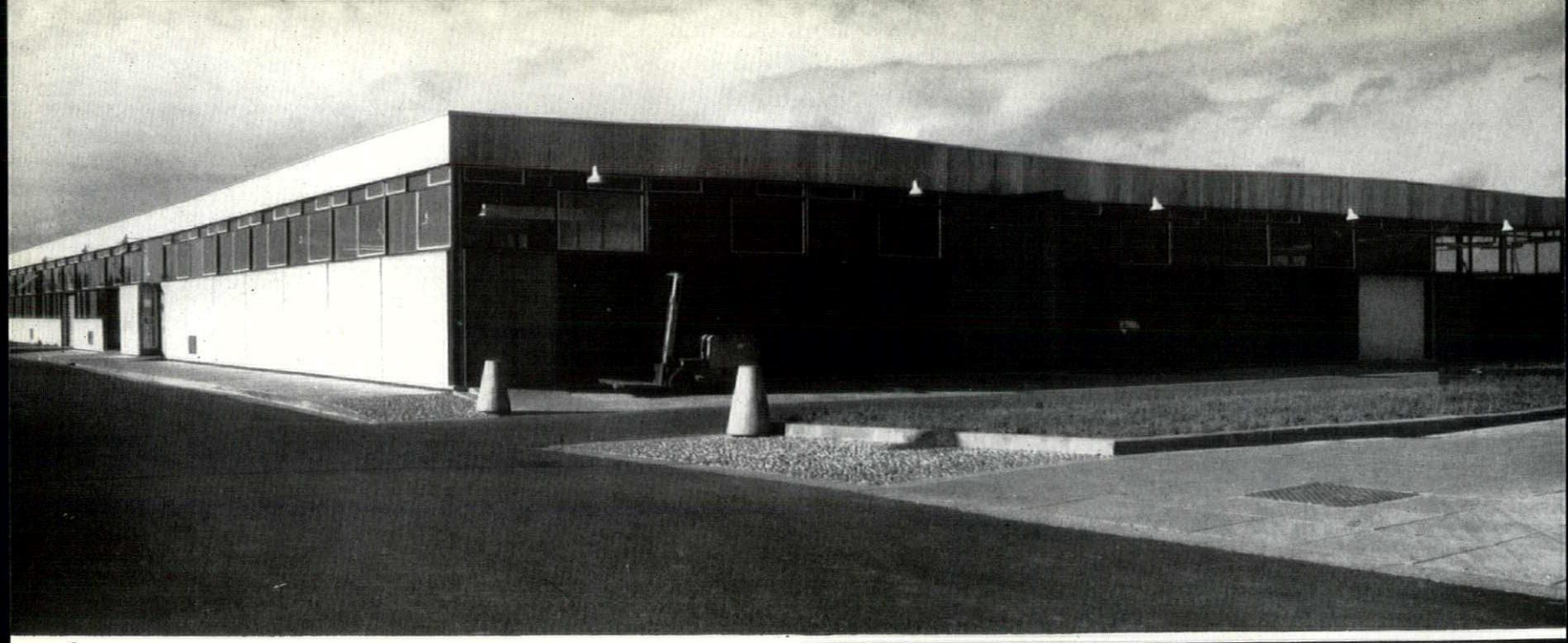


1955 *office extension* **ar** *February 55*



1957 *workshop* **ar** *March 58*

1



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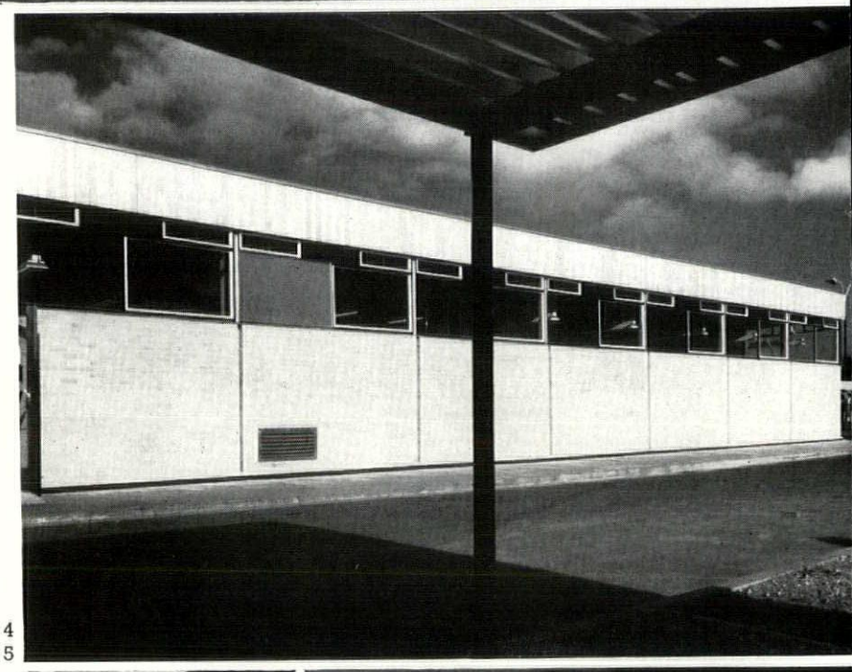
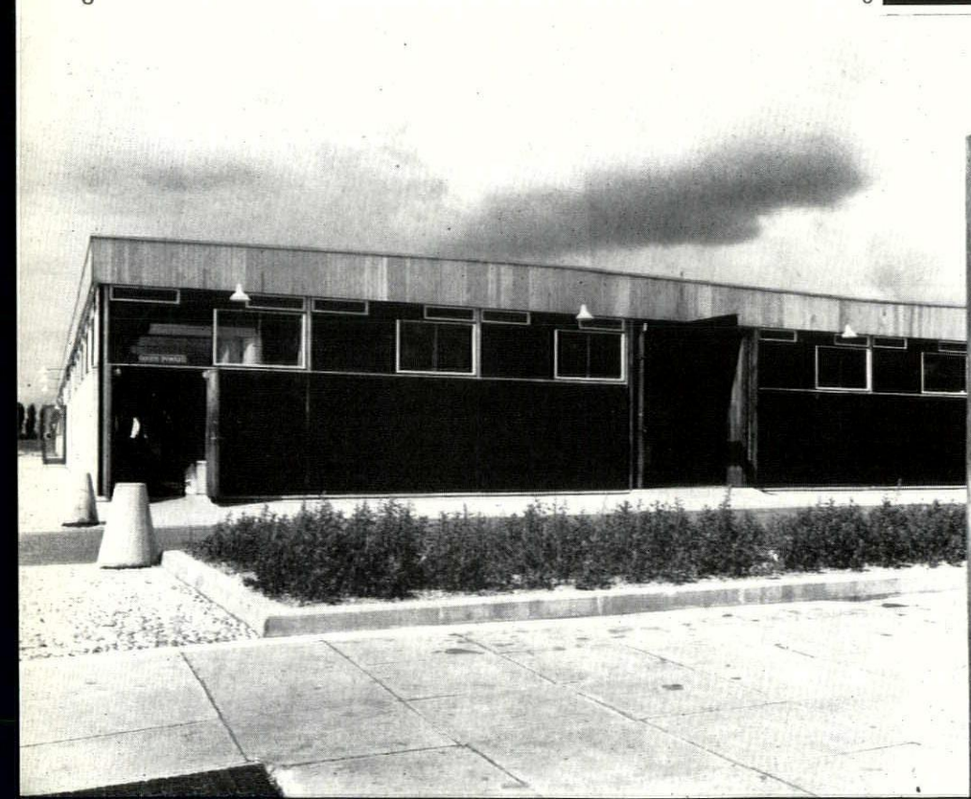


2, general view of the workshop block from the south-east.
3, view from the east with the fence screening the car park on the right.
4, south side of the workshop seen from the canopy over the entrance to the colour developer building ('a' on the plan).
5, corner bay of the workshop.

3



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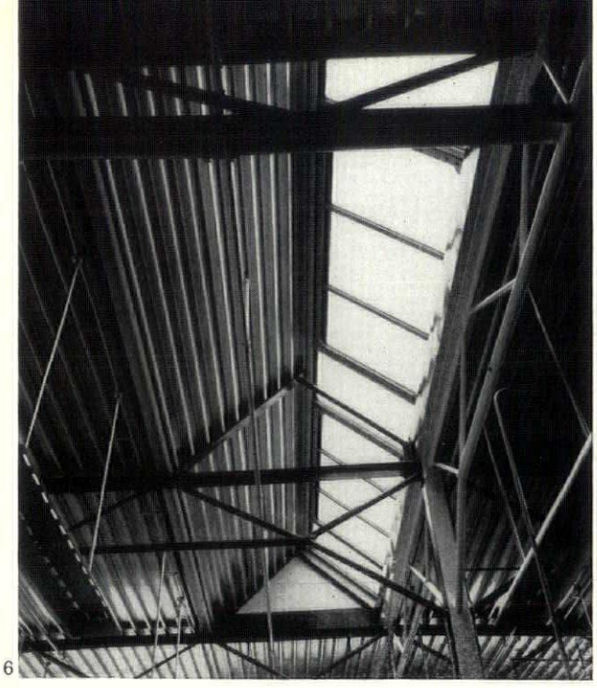

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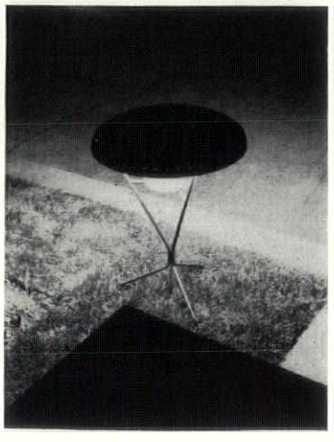
6. roof of the workshop block supported on tubular trusses at 10 ft. centres, spanning 50 ft. There are two spans across the building making a width of 100 ft. and a length of 200 ft.
7. the wall shown in 4 on the facing page, during construction.



7

8. low kerbside light specially designed by the architect. The lamp standards used in the car-park are illustrated on page 220.
9, the film storage building.



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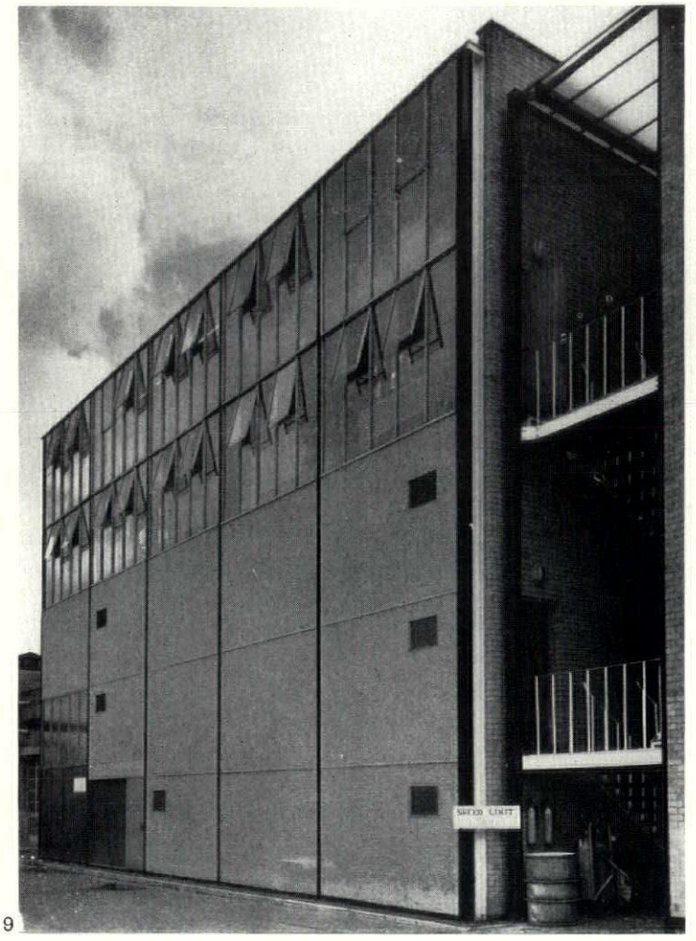

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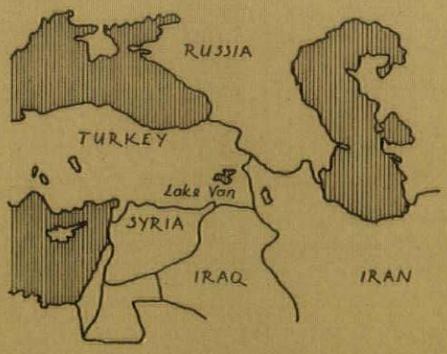
The Film Storage Building was unique at the time of construction, being the first building in this country to be erected over five storeys using the plastic theory as a means of calculation. The entire structure is formed of broad flanged R.S.J. members of welded steelwork, and the floor decks consist of prestressed precast concrete slabs. This building shows the kind of approach which is expected from a firm whose parent Company is American. What they required from a production point of view was that the top floor of this building should be completed first in order to transfer administrative staff from out of the existing factory, and so all preconceived ideas of programming had to be subjected to the client's requirements. It should be clearly understood that time was the essence of this contract. The complete welded frame was completed and the floor decks were put in position the top floor was then cladded with glazing and panel filling and made habitable. The building then proceeded downwards, the scaffolding was dismantled as the panels were filled in with brickwork. It should also be noted that this is a film storage building, somewhat like a giant filing cabinet, where no person operates continually, and therefore headroom could be reduced to the minimum, using as a basis the maximum handling height of a film canister. The panel filling in the lower storeys is of brickwork faced with rendering and Derbyshire white spar chippings: wherever there is rendering material this kind of treatment is used in conjunction with yellow Ibstock facing bricks and Western Red Cedar, to provide a sense of unity between the different buildings on the site.





Richard Burton, John Donat and Paul Koralek

ACHTHAMAR

Straddling the ancient routes of trade and war between East and West, the Christian kingdom of Armenia produced a series of monuments that owed much to neighbouring cultures and yet struck a note of Armenian originality. Their distinctive qualities were recognized as long ago as Josef Strzygowski's Baukunst in Armenian und Europa, *of* 1908, *but they have remained largely unappreciated—few have seen them, and they have rarely been well photographed. In this article one of the finest of these remains, the church at Achthamar on Lake Van, is not only described, but also accorded for the first time the kind of photographic treatment it deserves—as may be seen from the view across its south-western angle, opposite,* ☚ *with its clear-cut architectural forms enhanced by unique areas of narrative and decorative reliefs.*

It is a rugged treeless landscape that surrounds the island church of Achthamar, in the high mountains of Armenia. A hard place, relentlessly hot in summer and swept by icy winds in winter.

The island is a mile from the shore of Lake Van, and rises up a remnant peak of the mountains that break down into the lake's dead, black waters. At one end of the island ochre grey cliffs rise sheer from the lake and from their summit a rocky slope leads down to a small table of land on which the church is built. It stands amidst the ruined walls and broken tombstones of a monastic settlement, a tiny concentration of human skill and effort in the vastness of the landscape.

We felt we were intruders on the island, so strong was the feeling of the past and the atmosphere of profound quiet and solitude. Now nothing living remains except the diminutive fruit and nut trees, the pigeons and seabirds that break the silence with their cries and a vagrant white cat. The church is all that remains, and yet it seemed to us as relevant now as it was when it was first built.

Armenia straddled what was one of the main trade routes between the Orient and Europe, consequently it was the scene of innumerable wars and invasions; dominated in turn by Sassanian kings and Byzantine emperors, and conquered by Seljuks, Arabs, Greeks and Turks. It was one of the oldest Christian kingdoms in the world, Christianity becoming the state religion in 301 A.D., and in spite of its turbulent history its Christian tradition remained unbroken.

The church and a palace were built on the island during the early part of the tenth century for King Gagik of Waspurakan, a local ruler of this remote province during one of its brief periods of independence. Its form, a simple cruciform plan with a central dome surmounted by a conical stone roof, and its decorative treatment of rich carving reflect in an extraordinary way Armenia's position between the cultures of Asia and those of the Mediterranean. On the one hand, we were amazed to see, so far from Europe, something so near in spirit to the Romanesque art of France and England. On the other hand, the typically Armenian form is something quite foreign to western Europe and numerous details of the carving—Mongol faces, figures sitting cross-legged

and others wearing eastern dress—reminded us that we were in Asia and that Christianity itself was born in the Middle East and spread eastwards as well as to the west.

Some of the carvings of strange allegorical birds and beasts at Achthamar are strongly reminiscent of the symbolism of zoroastrianism—in particular the fight of the lion and bull, which is an exact counterpart of a carving at the Achaemenid palace at Persepolis. It seems quite possible that these pre-Christian symbols were introduced by the Sassanians when they conquered Armenia in the fifth century.

Later the Seljuk invasion of the twelfth century had a powerful effect on Armenian art. The decoration of some of the tombstones at Achthamar illustrates this clearly. Their purely geometrical ornament, very different from the carvings on the church itself, is identical to that of the Islamic architecture of the Seljuk period.

The quatrefoil plan of the church yields irregular shafts and plain masses of stone, weathered to an earthen brown, which rise to four tall gables surmounted at the centre by a 16-sided drum with a conical stone roof. Inside, the space is narrow and elevated, with delicately modulated planes derived from the domes, semi-domes and arches. The white walls are covered with decaying frescoes which show scenes from the life of Christ and figures of saints and the 12 apostles.

The most striking aspect of the church is the vigorous carving which enriches the whole exterior. Figures are carved in an unusual deep relief, the whole plane of the carving being set forward from the wall with some animals and heads carved almost in the round projecting boldly from the wall, reminiscent of Gothic gargoyles. Although the compositions are governed by a clearly defined formal organization, in detail they are extremely informal, one would almost say haphazard.

Horizontal bands of decoration divide the church into distinct levels. The lowest level consists of undecorated masonry, its plain surface contrasting significantly with the plasticity of the carving of men and animals above. The two levels are separated by a decorative vine which forms a continuous frieze around the building (frontis. page 174).

The second level contains most of the carvings. There are familiar scenes, mainly from the Old Testament; Adam and Eve, 4, Jonah and the Whale, David and Goliath, (see cover), St. George and The Dragon, 5, Samson and the Philistines, 7, Abraham and Isaac, Daniel with the lions, the children in the fiery furnace and also symbolic birds and animals often grouped in pairs. Many of these scenes represent two opposing forces and seem to be linked by the idea of duality and struggle. Interspersed among them are Christ and the Madonna, saints, angels and historical figures.

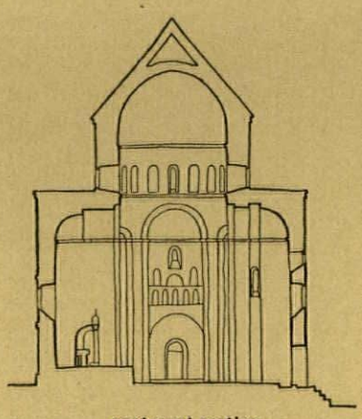
The next band of decoration is a flow of variety and activity, bound together in rhythmic arabesques. It is a forest of vines and pomegranates in which men and animals are shown hunting, feasting, fighting and harvesting, and seems to represent the whole of life on earth, 2, 3.

Above on the gable ends stand the evangelists holding the book, facing out from the church to the four corners of the earth, 13. There is no conflict here, peaceful animals and human heads decorate the eaves and the plain facits of the drum rise out of the complex relationships of mass form and decoration, and are finally resolved at the summit of the conical roof.

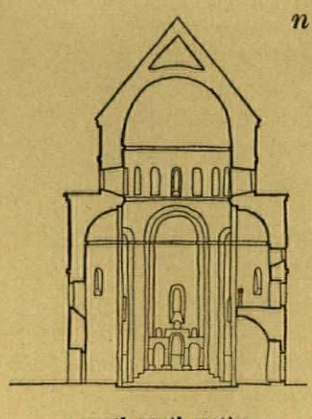
Because the church is essentially a simple and direct statement, the relationship between the carved decoration and the architecture emerges in a striking way. This decoration must be approached on two different scales—in detail the carvings, arranged in informal and often unusual compositions, are quite valid statements in themselves. On a larger scale these compositions are all subordinated—and when one examines them in detail—clearly dependent on the formal idea, or architectural organization of the building, which they help to define. It is in this relation of one scale to another that their significance as architectural decoration must lie.

We felt that the great harmony between the carved decoration and the architectural form is parallel to the relationship of its meaning to the essential idea of the building as a whole, and that as the carvings elaborate and enrich the surface of the building they also extend and deepen the meaning inherent in the formal idea.

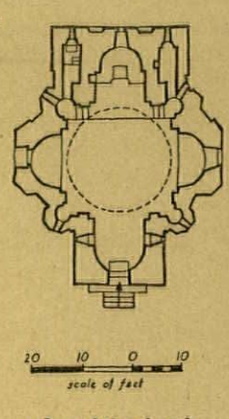
Through the decoration we are able to approach the building closer, and come nearer to the understanding of its meaning and purpose.



east-west section



north-south section



plan of the church

1/2/3

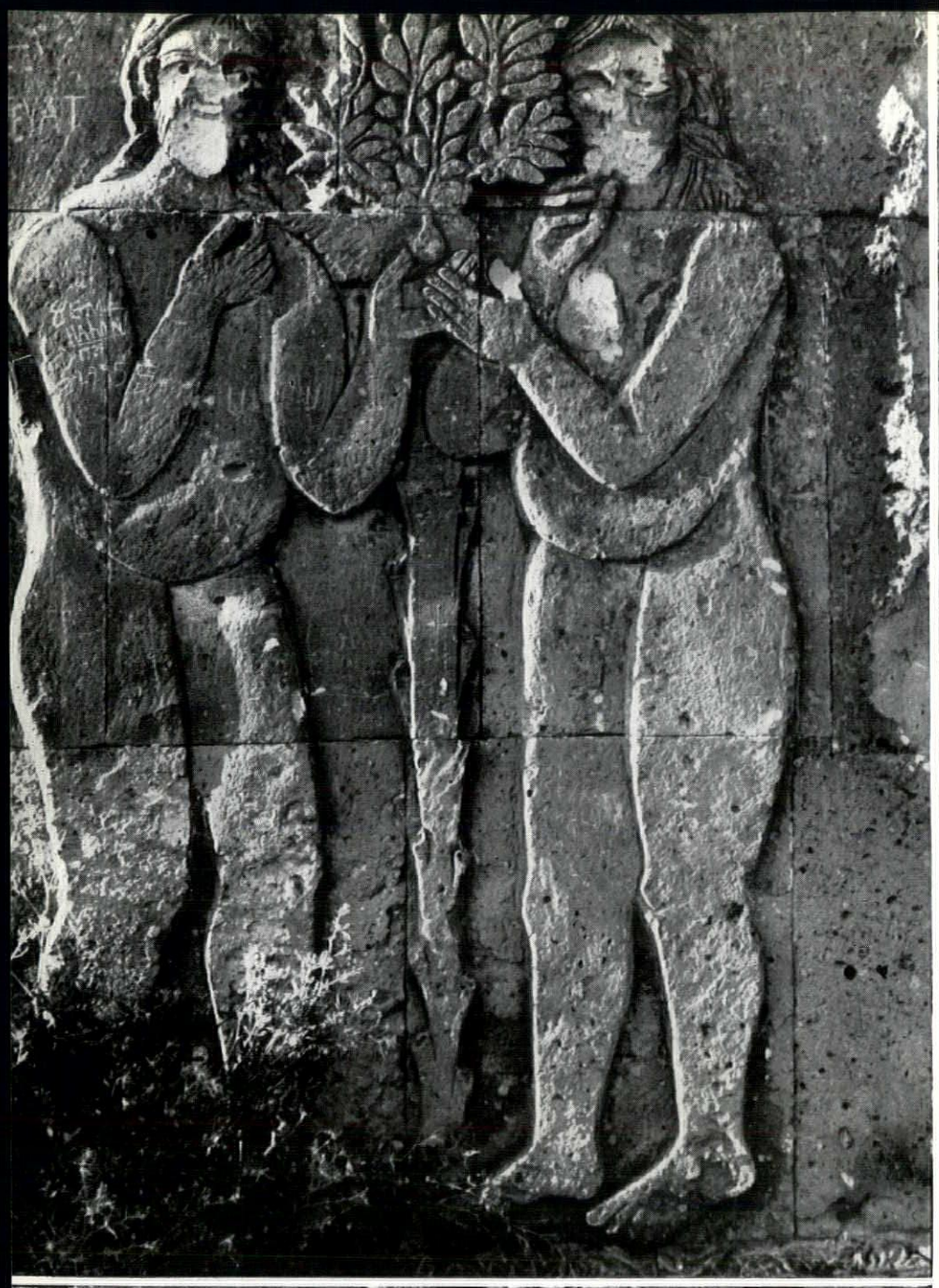
1, the Church of Achthamar standing on an island in Lake Van in the midst of desolate and bare mountains here seen from north-west is covered by sculpture arranged in bands of high relief.

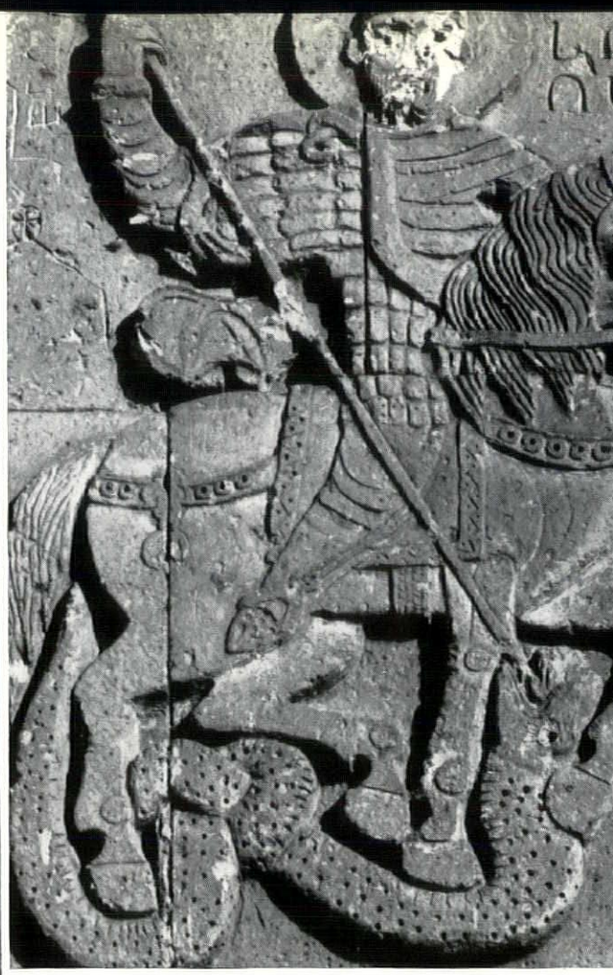
2, 3 show details from the upper and lower frieze with animals fighting and being hunted and men working in a vineyard.





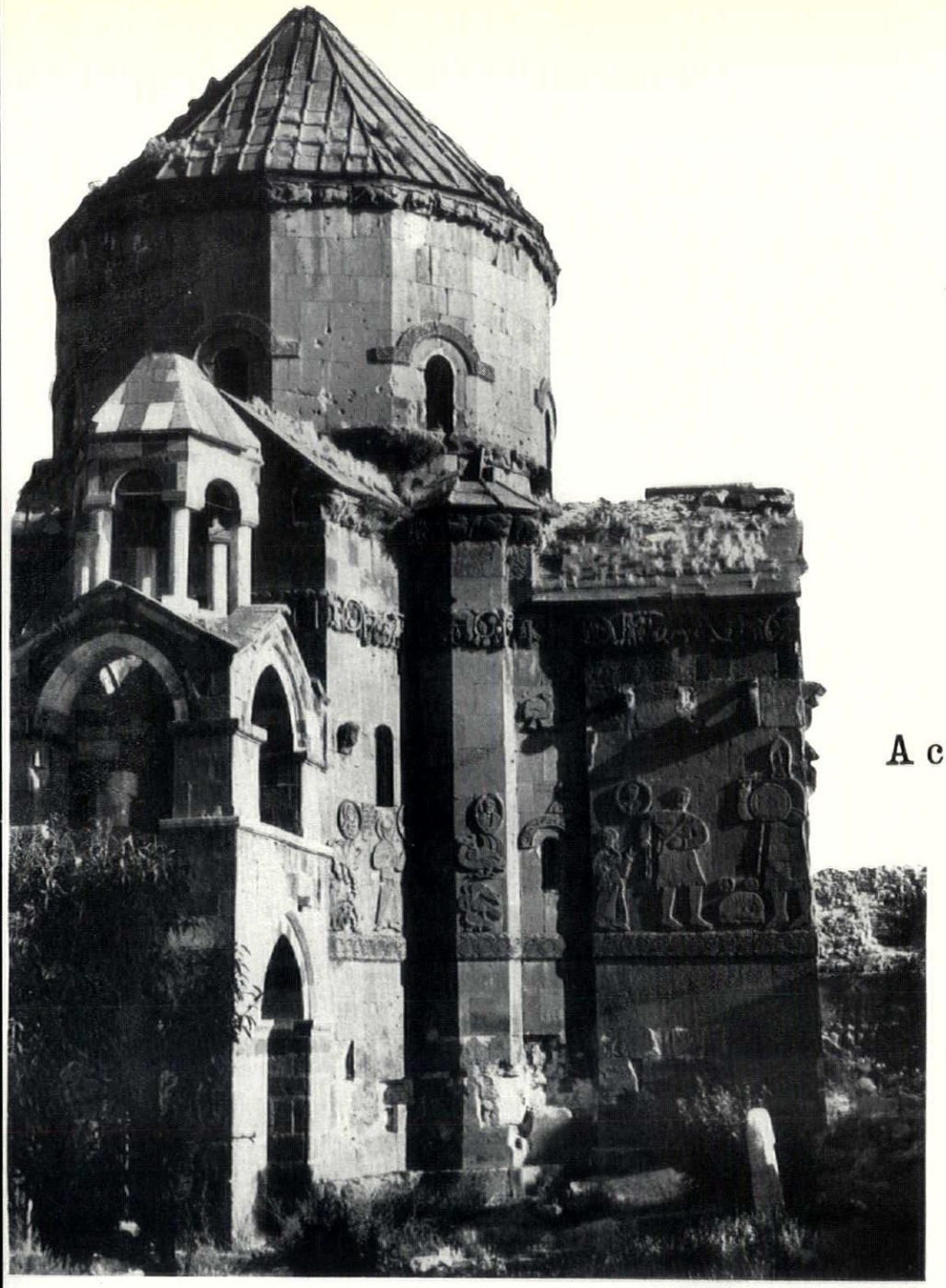












Achthamar



4/6 | 5/7

The larger scenes are mainly from the Old Testament.

4, Adam and Eve.

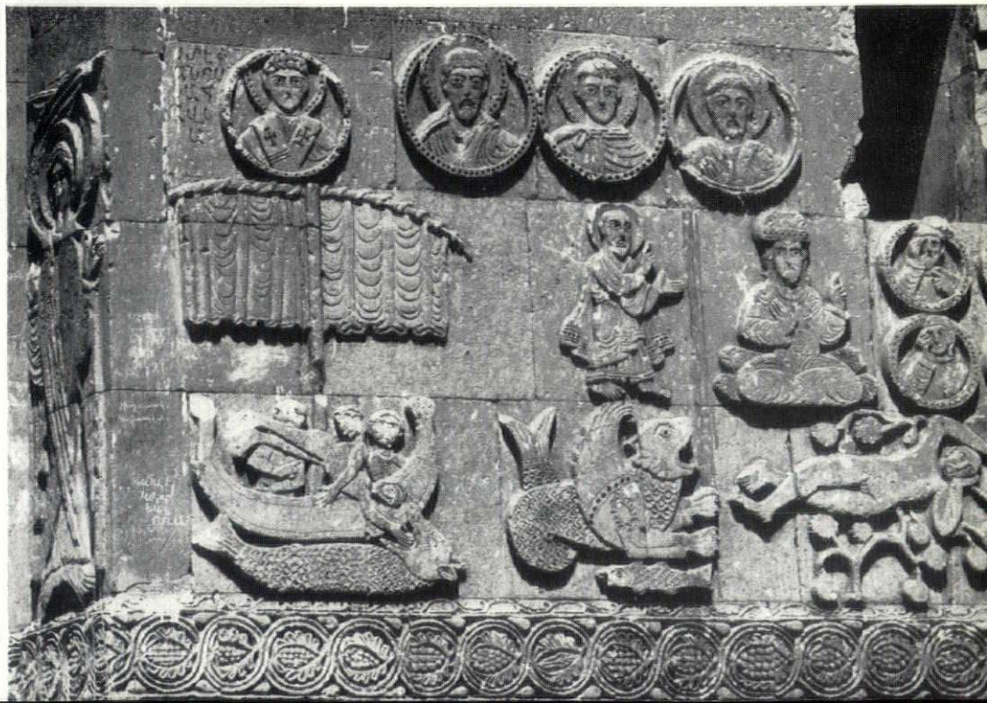
5, St. George and the Dragon.

6, a legendary animal, possibly a hippocampus.

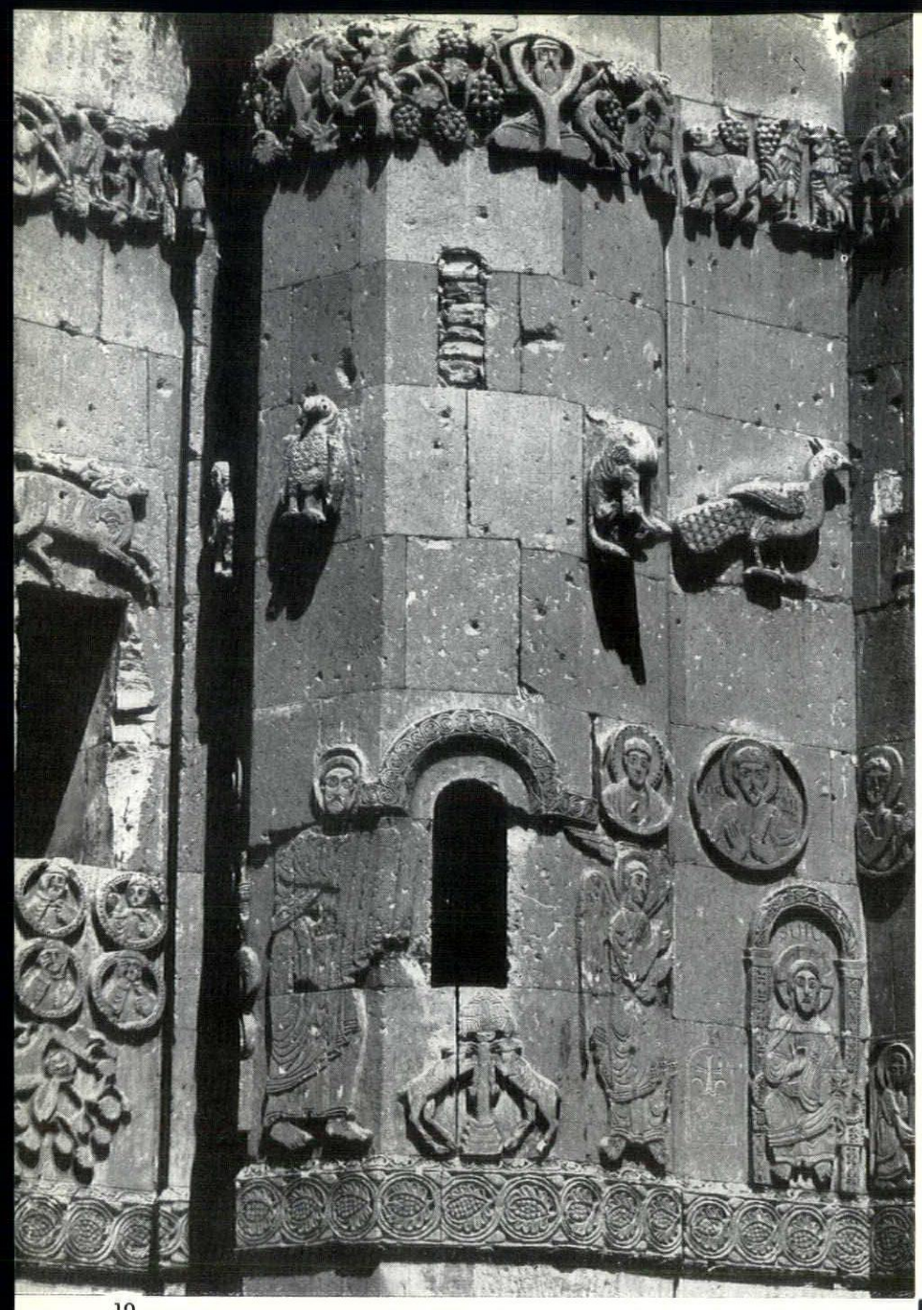
7, Samson slaying the Philistine with the jaw-bone of an ass.

8, the Church from the south; on the right the scene of David and Goliath with Saul standing on the left and Samuel in the roundel above him.

9, scenes from the life of Jonah.



Achthamar



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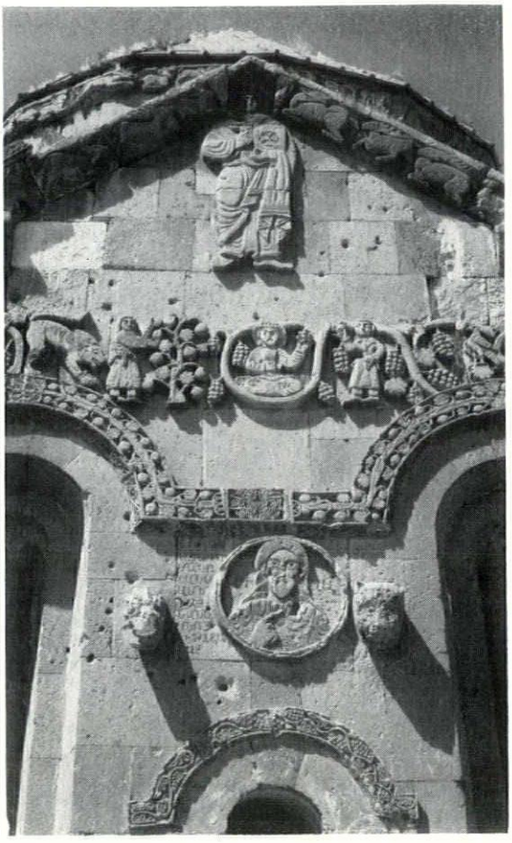

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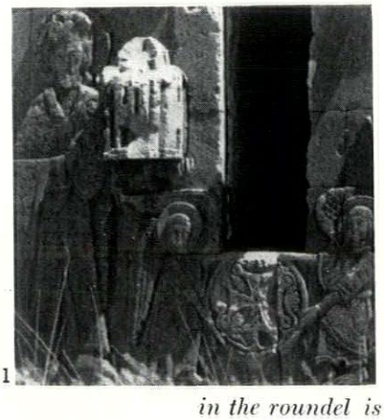


11

10, *part of the south wall showing the apparently haphazard placing of the sculpture between the two horizontal bands.*
11, *King Gagik the donor of the church holding a model of it* (*also frontispiece, page* 174).
12, *the bearded man in the roundel is Adam naming 'all the animals and wild beasts'.*
13, *on each of the gables is an Evangelist looking to the four corners of the world.*
14, *a large carving of the Madonna and Child with the archangel Gabriel.*



13




A. 40
HAVERFORDWEST
St. Bride's Bay
BROADHAVEN
TALBENNY
NEY·LAND
CAREW
MILFORD HAVEN
PEMBROKE
DALE
Popton Point
ANGLE
CASTLEMARTIN
KOKHOLM IS.
Bristol Channel
St. Govan's Head
1
2
3
4
5
6
7
8
9
10

The map opposite shows superimposed the existing proposals for developing South Pembrokeshire, some of the existing service establishments and derelict camps, and the basis of the REVIEW*'s plan for an industrialized Haven in an unspoilt county. Diagonal shading marks the limit of the National Park.*

key

a, existing proposals for development.

1, New Town to house refinery workers. 2, Esso refinery. 3, railway spur to refinery. 4, proposed new road from east combined with barrage over estuary. 5, jetty for International Bulk Carriers. 6, BP jetty at Popton Point linked to 7 and 8, tank farm at Kilpaison. 9, shows where screening is needed to prevent a break-through of the urbanized view. 10, Steel Company of Wales jetty and iron ore dump, Angle. Of these, 1 and 10 would spread urbanization outside the Haven and should be resisted.

b, some existing eyesores (cross-hatched).

Derelict airfields: Talbenny, Angle and Carew. Tank training area: Castlemartin. Airfield in use for storage: Dale.

c, summary of REVIEW proposals.

New buildings to be contained inside the present visual limits of the urbanized Haven, shown by the thick dotted line which takes account of BP and Esso proposals. Solid black indicates extent of present built-up areas: tartan pattern shows land which could be built on without affecting any distant views. Notched coastline indicates unspoilt diagonal views across the Haven which should be preserved as far as possible.

Ian Nairn

MILFORD HAVEN

Let's give the platitude-spinners the benefit of the doubt: the industrialization of Milford Haven probably really is 'in the national interest', for once. The Haven is the best unused deep water anchorage south of the Highlands; it is partly industrialized already and it has a bad unemployment problem.* (Pembroke Dock had 350 unemployed out of 3200 insured in 1957.) The proposed projects either need deep water or are common-sense extensions of what is there already such as shipbuilding yards and repair docks. Two of them are already through the administrative hurdles (the Esso refinery and the BP tank farm) so that some industrialization is a *fait accompli:* so now what?

Setting aside the larger question of the Government's attitude to National Parks, which constitutes a notable example of double-think, even for this administration, can Pembrokeshire be saved? It certainly can, if we are prepared to plan for two distinct things—an industrial Haven and an intensely rural hinterland—instead of desperately trying to spread the development over the whole county and hope that it won't be noticed. Pembrokeshire is treeless but it is also undulating—i.e. anything that goes on in the valleys is invisible over the next hill; and in addition the seaward end of the Haven is blocked by Great Castle Head and South Hook Point (providing that Esso use their site carefully) and the landward end by the hilly banks of the Cleddau. There is in fact enough topographical cover for an industrialized Haven, invisible from the rest of the county, to be a feasible proposition.

That proposition is compromised already to the tune of several slim stacks (like those at Fawley) at the Esso refinery. The landscape can absorb them if they remain the only interruption (as can be checked by looking at the other isolated masts in the county), and here Esso have it in their power to make or mar the whole Haven. They have bought a thousand-acre site containing several valleys of which at the moment they only intend to use three hundred acres. If these acres are sited clear of the west side of South Hook Point and below the sightline from the ridge east of Herbrandston, the refinery will be almost hidden from any point outside the Haven. On the other hand, if the buildings are

* Largely created by Whitehall, be it said, through its wayward habit of closing down Service establishments and not bothering to replace them with alternative work. The nearest industrial area likely to offer same is sixty miles away (Swansea) and is itself depressed.

splashed boldly across the cliff-top where tree planting is virtually impossible, they will be visible for twenty miles or more. The former alternative doubtless means a more tricky layout but Esso should be prepared to do it—and luckily are retaining S. Colwyn Ffoulkes as landscape assistant (as are BP at Popton Point), who is probably the best man in the Principality for the job. The system invented by Sylvia Crowe and illustrated on page 186 shows how each part of the installation could be tested for its effect on the surrounding landscape.

Once the principle has been established everything falls into place, and becomes part of a comprehensive pattern instead of a desperate piecemeal struggle between commerce and amenity. Provided that the dock or refinery plant fulfils this basic condition of being invisible from outside the Haven it can be as industrial as it likes, and here is a great opportunity for a truly industrial detailing carried through right down to the railings and the switchgear: for in Pembrokeshire the tradition has never been lost. As in the Isle of Man there still is a vernacular of functional paintwork for cottages, pubs and factories, although it seems to be utterly ignored by the local architects; examples are given on page 187. The technique could be the salvation of both industrial plant and housing,* and its practitioners are ready to hand; here it is not the familiar architectural situation of a few at the top versus the rest, but the much happier one of a few at the top and a great many at the bottom versus the middle. Even inside the Haven there could be both industry and unspoilt views for almost every householder provided the authorities are prepared to plan tightly to fill existing gaps and to face the difficulties of contour terracing along the hillside, and provided the service departments are prepared to give up space that they no longer need. There are three urbanized areas in the Haven (see map): Milford—Herbrandston, Llanstadwell—Neyland and Pembroke Dock. Any increase of houses and industry here will not alter the balance of the landscape at all because the eye takes them in as being fully urbanized now; in fact all three have many gaps and Neyland could double its population without extending its present visual boundary at all. There are also three completely rural stretches with hardly a house in sight—Newton Noyes to Llanstadwell, Popton Point to the mouth of the Pembroke river and the upper Cleddau; and by a stroke of topographical luck they are diagonally placed so that they fill half of the view from each of the towns. Preserve these diagonal views and contour the houses along the hillside so that each house has a view over the Haven—a sort of modern Clifton or Lansdown—and the industrialization of Milford Haven becomes the finest landscape and townscape opportunity of the century. On the other hand, if the industrial energy is dissipated by suggestions such as that for a new town at Broadhaven, six miles to the north, and fragmentation estates on the edge of every local community, the Home Counties pattern of subtopia (watery gruel like the fringes of Chelmsford or Maidstone or High Wycombe) will simply spread all over South Pembrokeshire. Each housing estate away from the Haven will mean another community disrupted, an improved road all the way to the industrial area, and the Pembrokeshire brand of municipal estate furniture, which is quite rich. Each housing unit put into the Haven could mean an intensification of its existing character.

To do this something like a New Town authority is needed: there just aren't enough resources to pay for the staff in a county where a penny rate only brings in £3,000. The Ministry of Housing has advised the county to prepare a separate development plan for Milford Haven and to improve the quality and quantity of their planning staff but it is not prepared to make any grant to cover the cost thereof, a typical *non sequitur*. In fact the whole fate of Pembrokeshire—and of many other places besides—lies, most undeservedly, inside that four-square Neo-Baroque building at the end of Whitehall. In Pembrokeshire the Ministry can redeem its many past indecisions and equivocations at one blow—and its reputation has probably never been lower, both among planners and the general public.* It can do so without worrying about 'infringement of individual rights' (the Counter-Attack bureau's cases prove repeatedly that that is the hollowest phrase in Britain today) because the development is going on anyway and the choice is simply between whether it is to be done well or badly. Complete *laissez-faire* would please some, complete control would please a few more; a dialectic of a rigorous planning system versus a complete framework for the effective expression of public opinion at all levels might be found to please almost everyone. But the present addlepated mixture of petty restrictions on the little things, an inadequate system of public redress, and aimless drift (*laissez-faire* is too good a name for it) on the big ones, such as National Parks, is by all accounts pleasing nobody outside that four-square Neo Baroque building at the end of Whitehall. It merely drives the planning officers into frustration, the councils and ministries into despotism and the general public either into unhealthy indifference or into a longing for anarchy. Native spirit repelled the threat of dictatorship through force of arms at Fishguard in 1797; can native spirit begin to repel the much subtler but no less dangerous threat of dictatorship through a complete running-down of the existing system at Milford Haven in 1958?

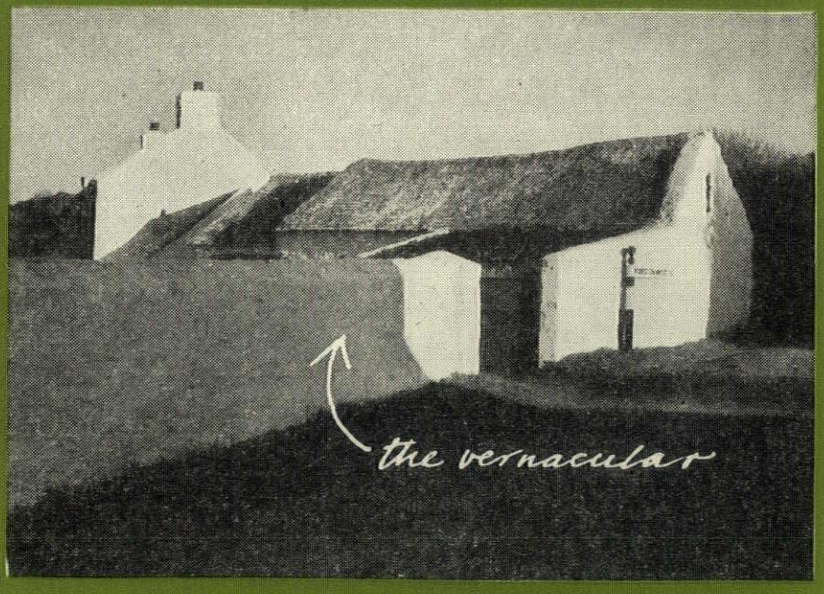
* Though in fact the first job is to provide enough work for the people who are there already, and then to fill in gaps in the streets of Pembroke Dock and Milford Haven.

* The Minister's advice on Milford Haven has so far been limited to a pious hope that trees would be used for screening. Trees are hard to rear in Pembrokeshire anyway, and then tend to grow horizontally rather than vertically, due to the continuous S.W. wind.

Pembrokeshire need not be ruined by industrialization: the choice is still open. If industry and housing are designed piecemeal and spread out over the whole country the result will be an endless multiplication of scenes like Newgale, 3; if they are concentrated inside the Haven to a landscape plan and designed to make use of the existing vernacular techniques typified in the farm at Capeston, 2, the result could be magnificent. The corollary of concentration would be that the rest of the Pembrokeshire coast, like Lindsway Bay, 1, just beyond the Esso refinery, would stay unspoilt.



1



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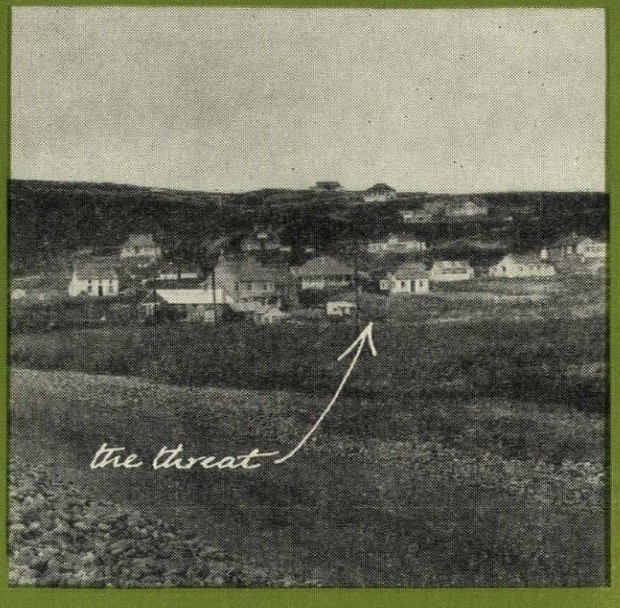

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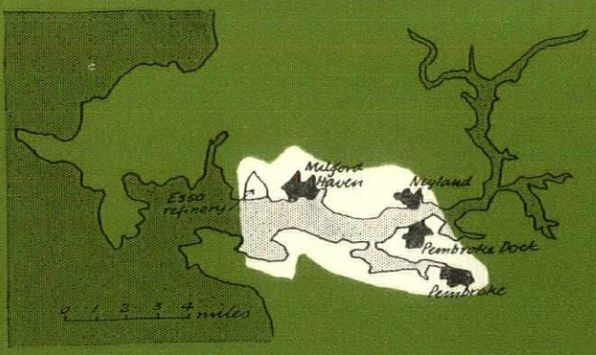
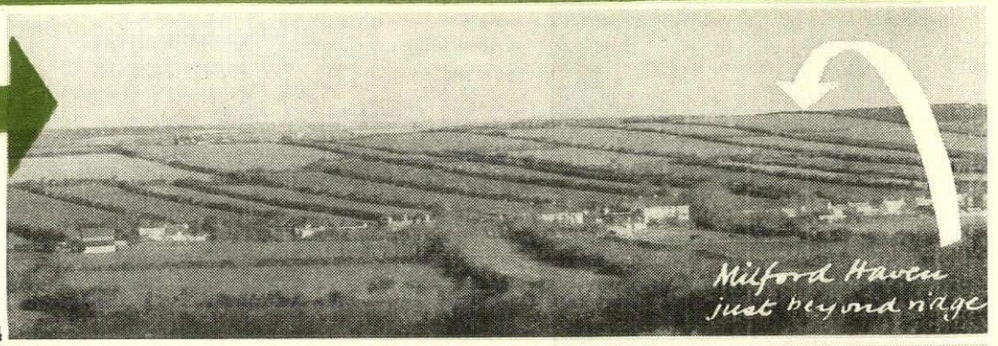


← The aim

An industrialized Haven within the visual boundaries of the present urbanized areas plus those or those involved in the Esso and BP proposals invisible from the rest of the county and preserving where possible the diagonal countryside views inside the Haven. The area from which the urbanized Haven is visible is shown white on the map.

1 landform

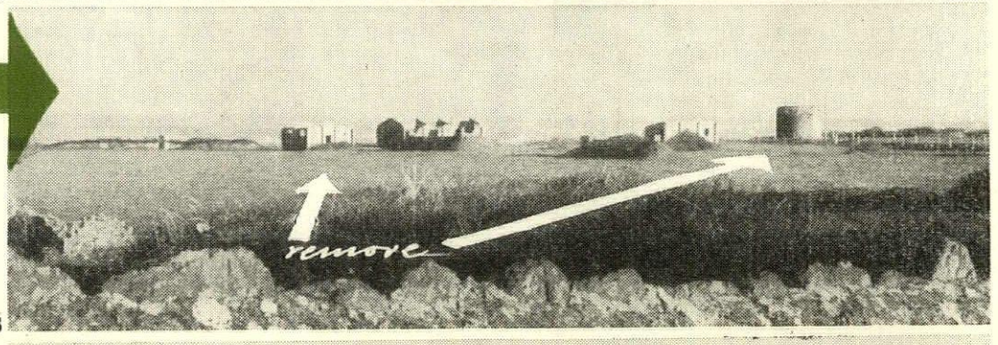
Milford Haven is just beyond the large ridge: it could be as big as Tyneside and still be invisible from outside. The photograph also shows that Pembrokeshire is windswept and almost bare of large trees: the ground itself is the only practicable camouflage.



4

2 skyline

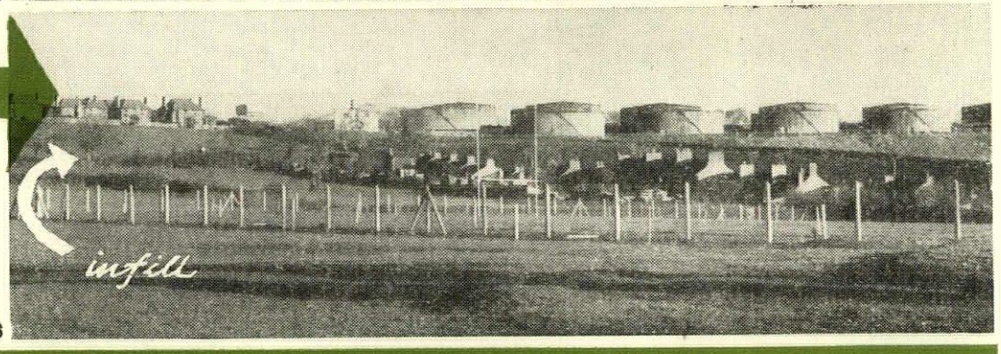
Everything beneath the Pembrokeshire horizon is completely hidden: everything above it may stand out for five or ten miles, because of the lack of trees and the bare contours. This is part of a derelict war-time camp, one of many in the county.



5

3 urbanized views

This is part of the outskirts of Pembroke Dock. This view and many like it are effectively urbanized, already yet only a fraction of the land is built on. To infill the remainder would not affect any view that is not already spoilt and would prevent new inroads into the surrounding countryside.



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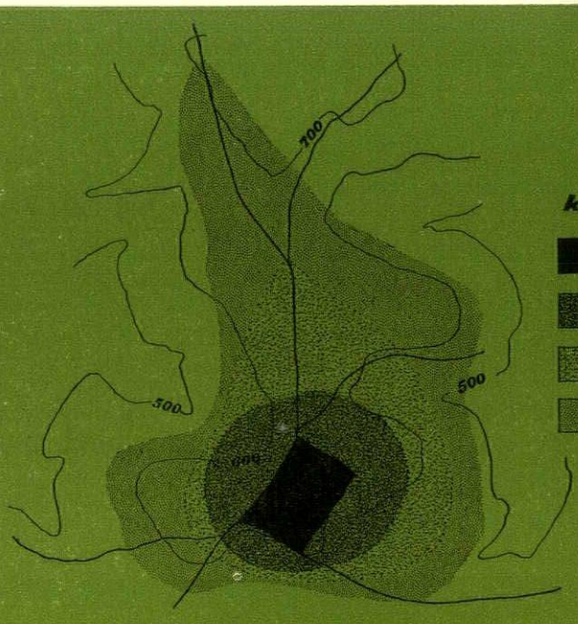


key : Zones of Influence

- Radio station
- Urban area
- Visual dominance
- Psychological influence

← The technique of landscaping

This technique, invented by Sylvia Crowe, can be applied to any form of interruption in the landscape, and is taken from her forthcoming book, 'The Landscape of Power.' This example is the radio station on Crowborough Beacon, Sussex, and shows the successive zones of influence obtained by circumnavigating the site: urbanization, visual dominance and psychological influence. These effects are complex and can only be tested on the site, depending on contours, planting and unexpected juxtapositions of single objects and steep slopes. For an area like Milford Haven a collection of lightweight easily erected dummy masts or easily inflated structures resembling buildings might cost less than an elaborate set of models, and all really big objects could then be given a dress rehearsal which could be rearranged for discussion of alternative sites and groupings.

Intrusion

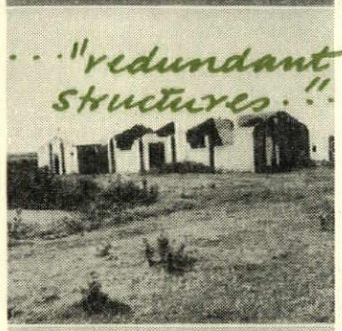
Current practices in Pembrokeshire and some of the names by which ye shall know them. 7, *ribbon development between Milford and Steynton.* 8, *council estate, Neyland.* 9, *Angle airfield.* 10, *new footpath at Pembroke Dock.* 11, *GPO building near Angle.* 12, *Pembroke Dock.* 13, *Fire Station, Haverfordwest.*



7



8



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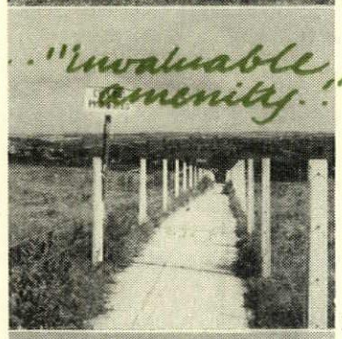

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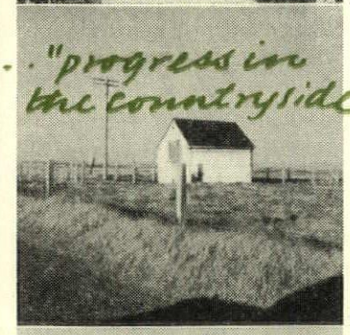

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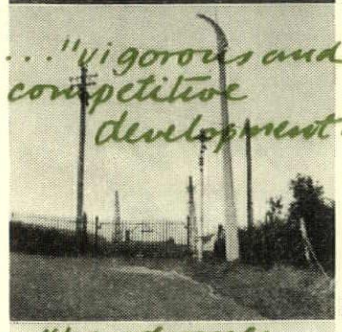

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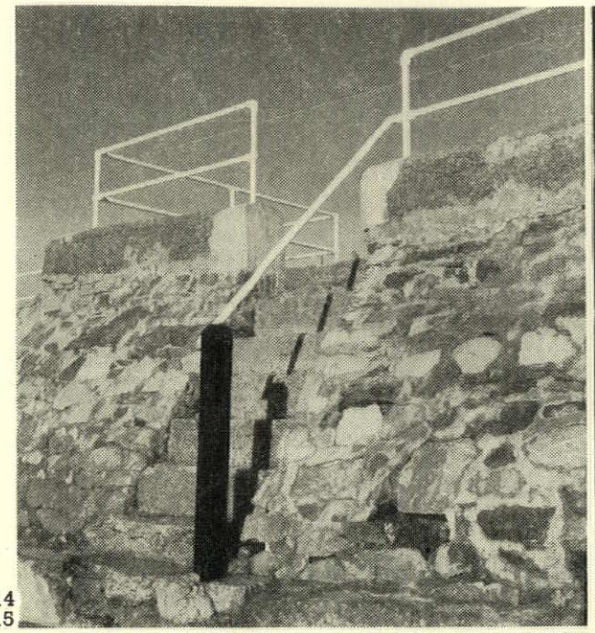

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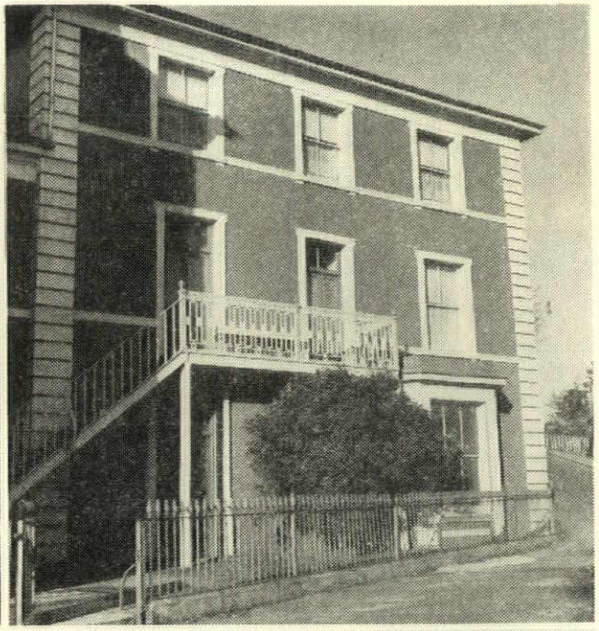

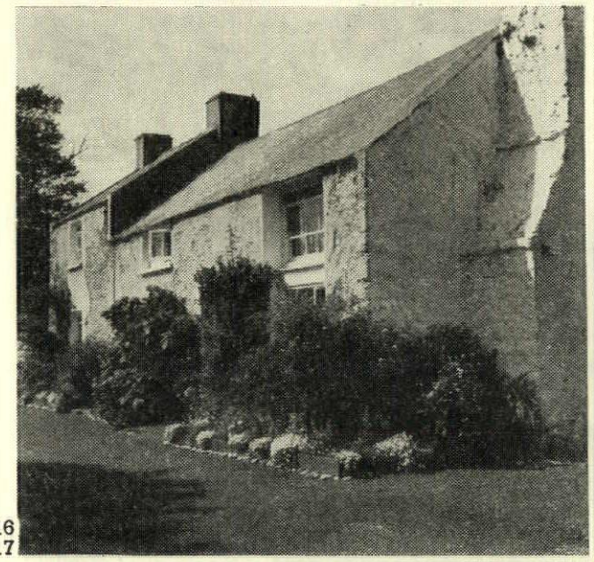

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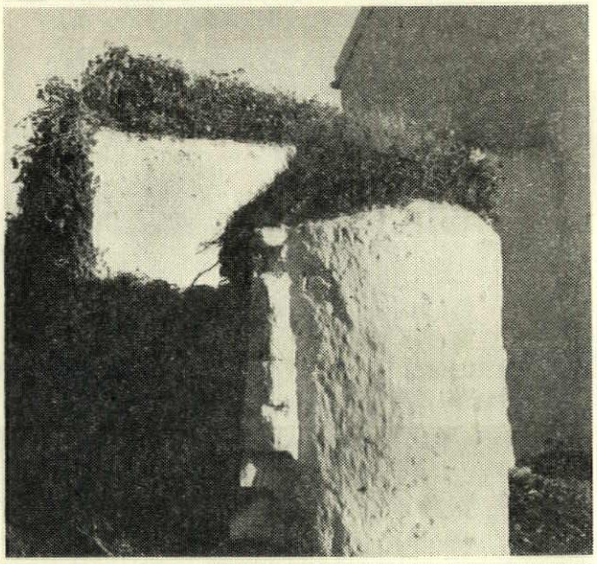



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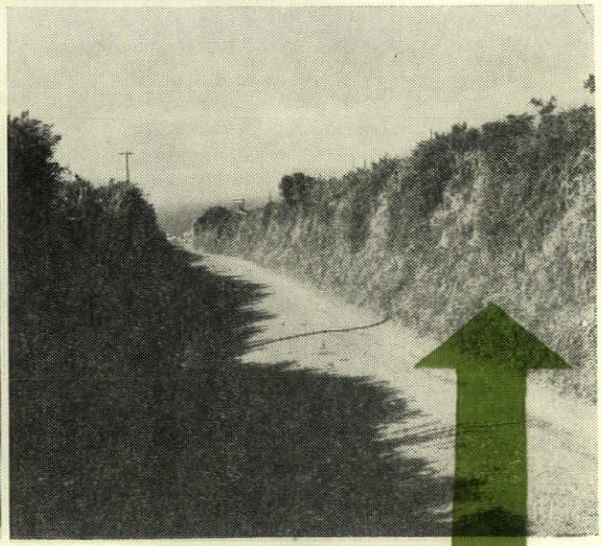
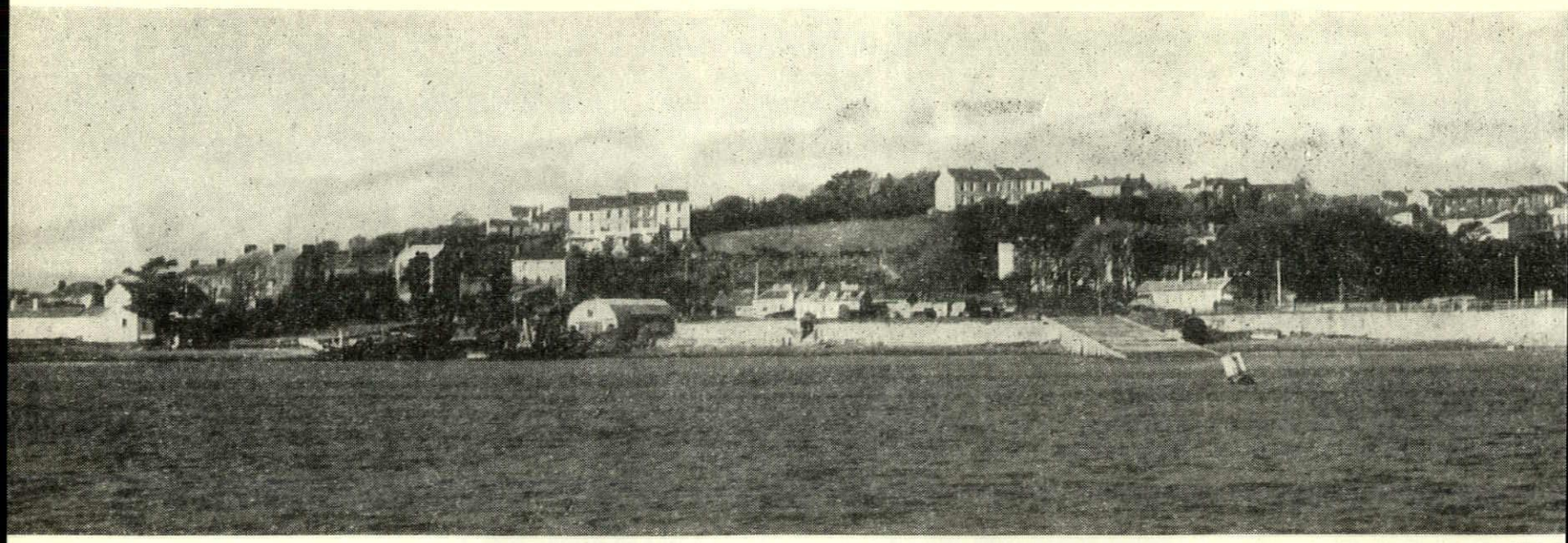
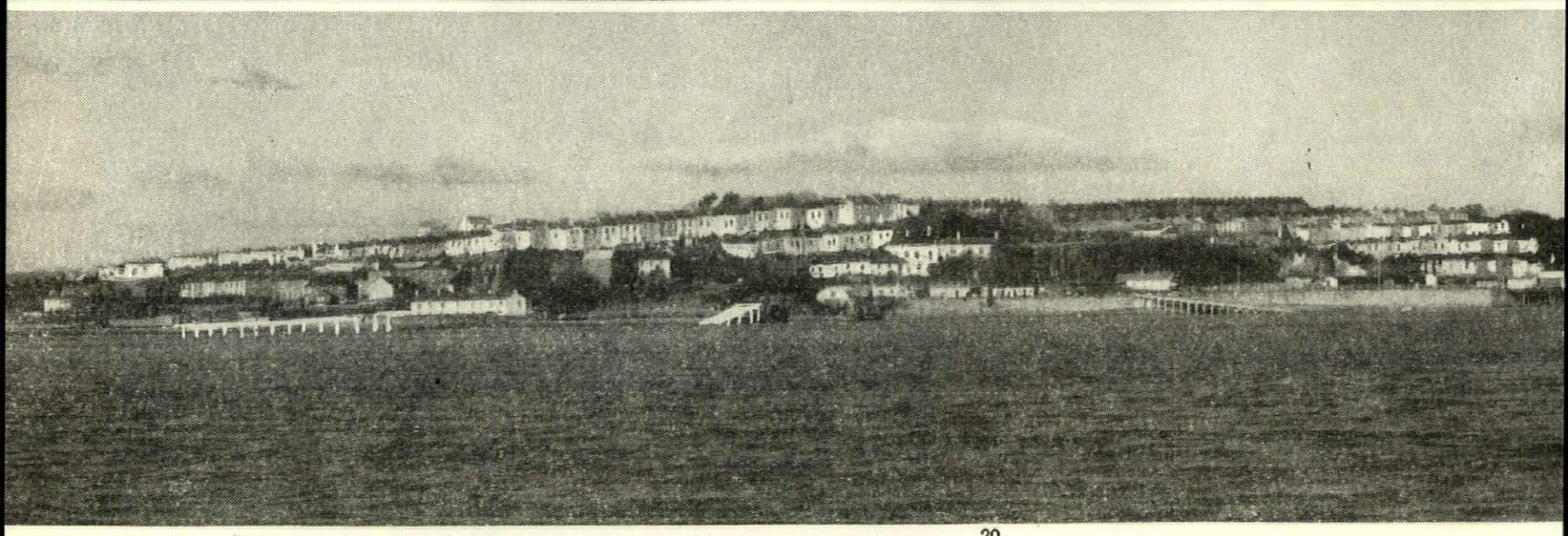


Vernacular

Native traditions still vigorous, not preserved: 14, *functional tradition at Llanstadwell.* 15, *at Neyland, painted buff and ochre.* 16, *at Angle, colour washed white and cobalt blue.* 17, *a detail of the outbuildings of* 16. 18, *pub at Milford Haven: buff walls, black trim, red lettering and lion.* 19, *typical Pembrokeshire sunken road near Angle.*





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21

The Haven New Town. 20, *Neyland from the Pembroke Dock Ferry, an early nineteenth century layout which remained half-finished when the Irish packet terminus was moved to Fishguard.* 21, *a distant view as it might look if completed, building modern houses keeping the original pattern of contoured terraces, and extending and augmenting the jetties. Neyland could double its population in this way and add to the Pembrokeshire landscape in doing so.*

ADMINISTRATIVE PROPOSALS

1, a New Town type authority covering both sides of the Haven from Herbrandston to east of Pembroke Dock, but excluding Pembroke Town, under a landscape architect as co-ordinator and paying compensation to the County equivalent to the loss in rateable value, handing the Haven back if so desired at the end of a set time—say 25 years.

2, an end of 'permitted development' inside the authority's area for an experimental period to see whether it does work and just how much 'freedom' is thereby curtailed.

3, a showdown with the Service Ministries and the Ministry of Works so that Pembrokeshire can be treated as a test case for the use of sappers to clear away all derelict buildings, with the costs worked out to show just how expensive their removal becomes if the sappers' training costs are offset against it.

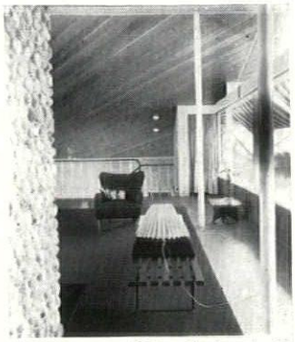
4, the use of the authority to try out experiments to forestall the impending breakdown in local government by bringing electors and electorate into much more direct contact. For example, by making all committee sessions public, by putting major decisions to a town vote, and by instituting some form of independent arbitration for local matters less formal than a public inquiry.

HOUSE AT WEST WITTERING

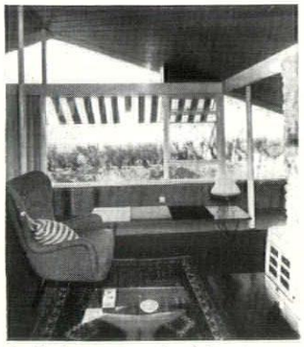
ARCHITECTS | **WELLS COATES AND MICHAEL LYELL**



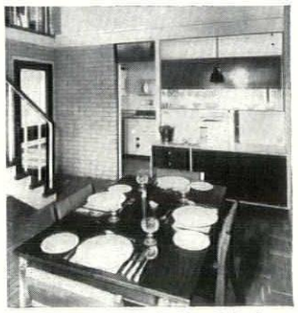
1. south elevation with the garden store and the rear wall of car port on the right, and the path leading to the grass foreshore and beach in the foreground.



2, living room looking towards the upper part of the dining hall.



3, living room looking towards the sea.



4, dining hall looking towards the kitchen.

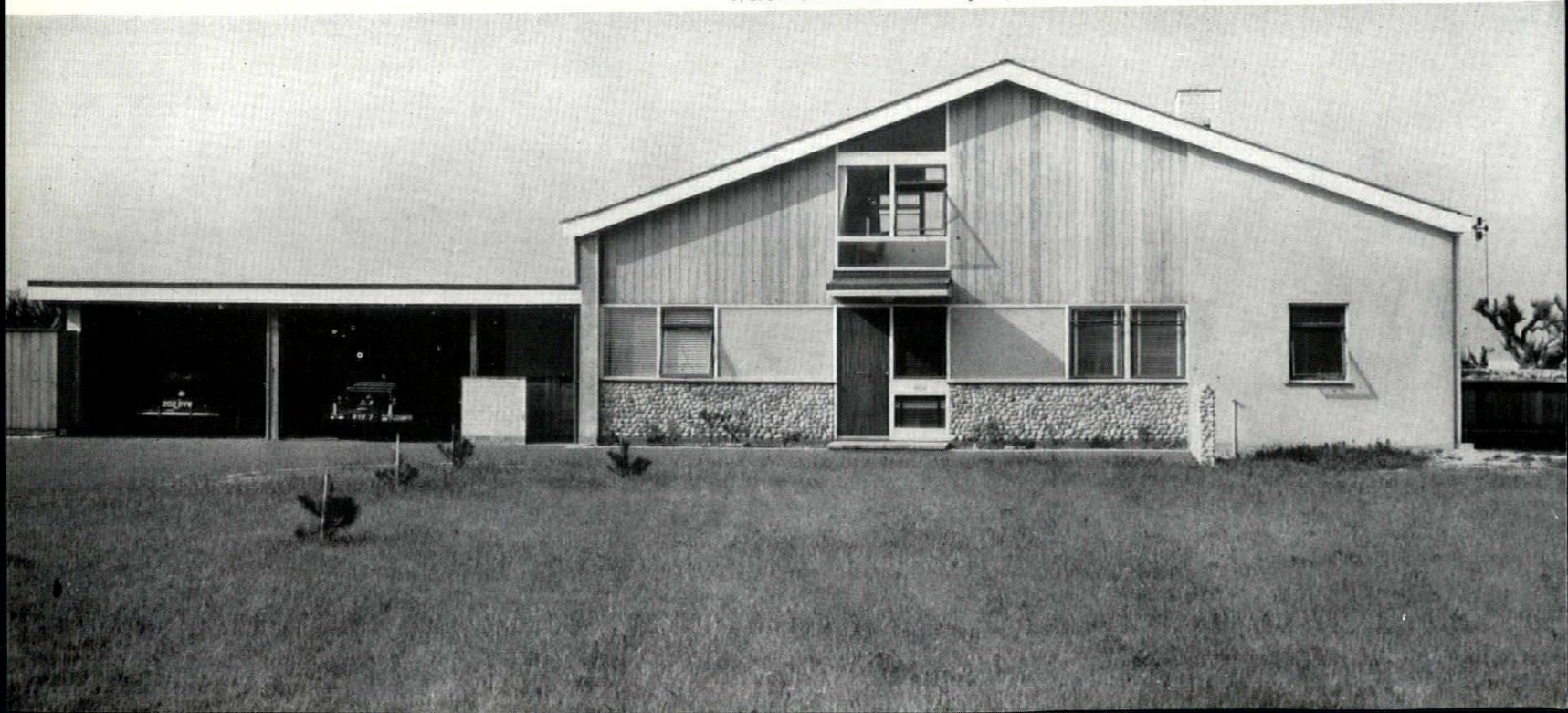
HOUSE AT WEST WITTERING

This is a summer house for one of the architects and his family at East Strand, West Wittering, seven miles from Chichester. The site is ¾-acre of level ground with a grass foreshore leading to the beach on its southern boundary.

The living-room extends over the whole of the first floor and has a south wall of glass (shielded by internally operated sunblinds), providing a view of the sea and the Isle of Wight. This floor is linked with the ground floor at the eastern end by a staircase which leads to the dining-room and extends through a height of one-and-a-half storeys to the diagonally pine-boarded sloping ceiling of the living-room.

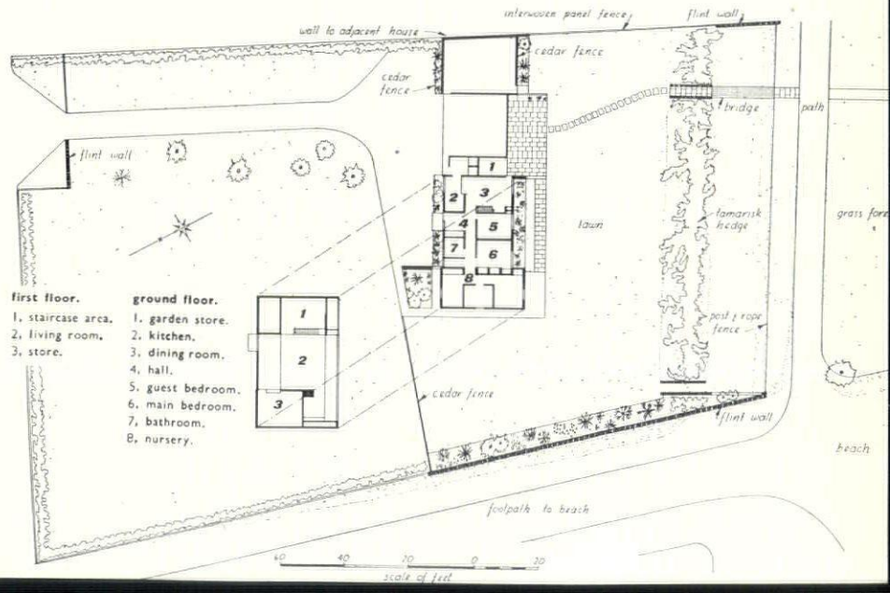
The east and west external walls are 11 in. cavity construction with 4 in. insulation block outer skin rendered and 4½ in. Midhurst white common brickwork as the internal facing, which is unplastered. North and south elevations are 9 in. brickwork faced with random flint, vertical cedar boarding and obscured glass panels. Local flint is used on several areas of the house, the fireplace and garden walls. The internal walls are built in 4½ in. Midhurst whites and 3 in. breeze plastered. In the construction of the horizontals the ground floor is a 5 in. concrete slab, damp-proof membrane, screed

5, from the north with car port, front door and wall faced with vertical cedar boarding.

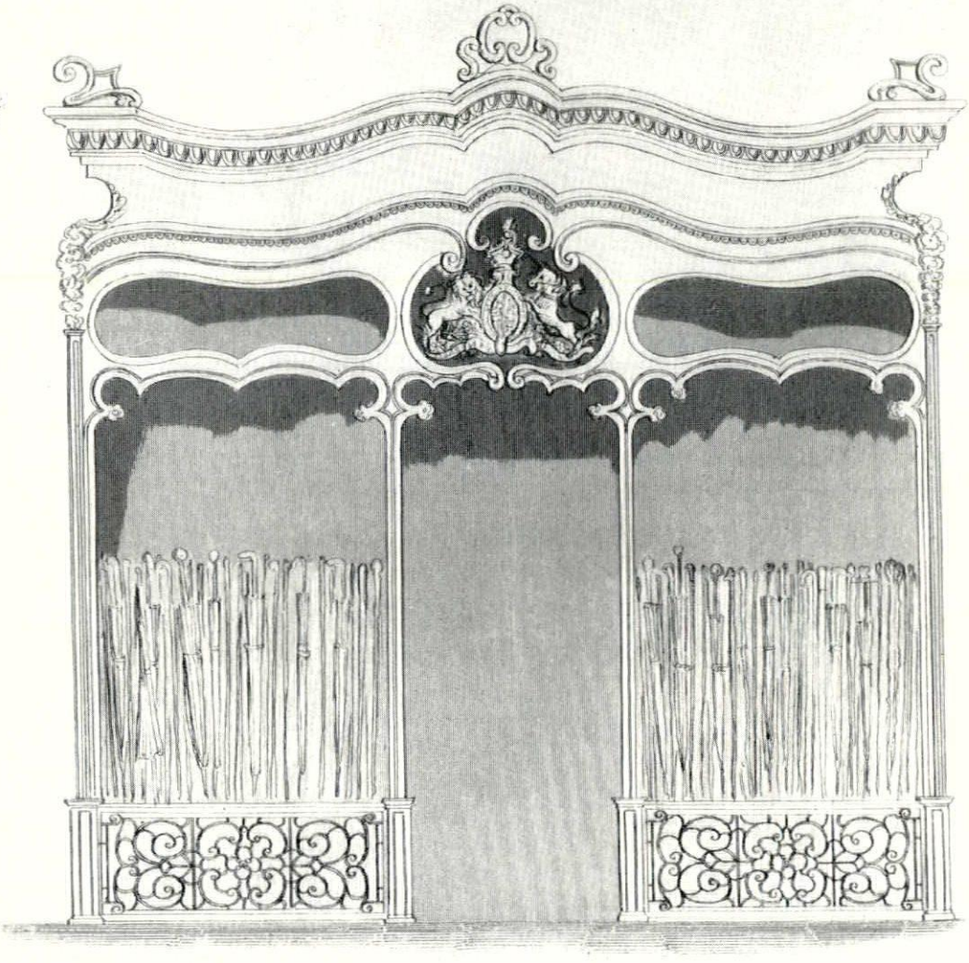


6, close-up from the south, showing the glass wall of the first floor living room shielded by sun blinds, vertical cedar boarding and flint base wall.

covered with PVC floor tiling and the ground-floor ceiling is of gypsum lath and setting coat; $\frac{3}{4}$ in. polished chip-board covering 8 in. by 2 in. joists is used for the first floor while the roof has 9 in. by 6 in. main beams with 8 in. by 2 in. joists running along slope of the roof and Western red cedar shingles laid at a 20° pitch. There is an electric water heater in the linen cupboard; the house is heated by oil-filled electric radiators and a solid fuel stove in the living-room.







As early Victorian technology and early Victorian commerce reacted upon one another in the design of shop-fronts, the areas of plate-glass became greater, the departures from accepted architectural rules more spectacular, but the results were not necessarily incongruous nor incompetent, as these two examples of Plate Glass Louis Quatorze from Whittock's *Shopfronts of London* will show—Saunders and Woodley's, above, and Sangster's umbrella shop left, both in Regent Street, and both built in the late 1830's. The response evoked by such facades at the time of their execution was mixed, as Miss Eldridge points out in her article opposite, but at least one leading journal of the time found that the style had a "striking and most magnificent appearance."

MARY ELDRIDGE

THE PLATE-GLASS SHOP FRONT

'The vast sheets of plate glass in several of the principal shops mark the astonishing improvement and progress effected during the last twenty years in the manufacture of that beautiful article.' (Tallis's *London Street Guide*, 1847.) The expansive but vague epithets, unfortunately characteristic of many references to shop-fronts during that formative twenty years, certainly convey to us the sensational impact made on the eyes of the early Victorians, but they are based, it is well to remember, on comparison with panes of crown glass. In J. Young's *Designs for Shop-fronts*, published in 1828, no pane of glass is more than five feet in length, and the average is less than four; the book was considered sufficiently up to date to be re-published in 1843. The introduction of plate-glass was not, it seems, accompanied by any violent break with traditional shop-front design: a series of columns or pilasters—one at each side of the door and one at either extremity of the front—supporting an entablature by way of fascia. The main difference was that the shop-fronts increased in height, and the window-panes in size.[1]

The chemist's shop, 1, (c. 1828) at no. 8 Argyle Street, Bath, which must be one of the oldest surviving shop-fronts actually designed for plate-glass, is a handsome and well-preserved example of this style. Unfortunately much of the glass was blown in during an air-raid, and all that is left of the old glazing is the panes in the window looking up Argyle Street, and possibly the lowest row of panes in the front window. The curved upper panes seem to foreshadow the long vertical windows of the 1850's, with round-headed arches.

A pair of shops in Stamford, 2, numbers 13 and 14 St. Mary's Street, is a late example of this type. The premises were built in 1851 on the site of the George and Angel, an old coaching inn;[2] the alley between them being the entrance to the old Farmer's Rooms.

The whole conception has an unusual urbanity which would grace a real street junction. This was, in fact, the original intention, for it was thought that the road would be carried through to the High Street. The shop-fronts themselves are an integral part of each building, and have some distinction, with the recession of the entablature between the columns, and the honeysuckle design on the frieze. Originally the columns and entablature may well have been grained in imitation of stone following the custom of the period. The material fashionable for shops varied from year to year, white veined marble, for instance, being in vogue in 1835, according to Nathaniel Whittock (*Shop-fronts of London*). The doors and other woodwork would also be grained, possibly like mahogany—sometimes the genuine article was used—and the capitals and decorative details gilded.

On the east front of no. 13, the large window spaces between the columns contain four vertical sections, each 32½ in. by 97 in. and glazed with two panes, the lower 59 in. and the upper 38 in. long. They touch, but there is no glazing bar between them, a deception which gives the impression of a single larger pane at less expense. This style of glazing is said to be the original, although some of the glass has been replaced.[3] Apparently no alteration has been made to the windows of no. 14, which has been in the continuous occupation of the Grimes family who built the premises.

Shop-fronts in the classical style were, however, too often turned out in a stereotyped form. A critic in the *Westminster Review* (Oct., 1841), complaining that such a hackneyed use of the ancient orders showed a very mistaken notion of reverence for them, put the matter neatly: '. . . thousands of diminutive copies of the same originals are to be seen all over the town, all apparently turned out of the same manufactory —for which reason we wonder that no-one should have established one where columns may be purchased ready for use like chimney-pots [this was actually done a year or two later]. This would save a great deal of trouble in making designs . . . it simply being sufficient to write so many columns, Athenian, etc. . . . size so and so, and so many feet of plate glass between them.'

Whittock thought the orders might be used where appropriate, as for shops connected with learning and the arts, but a purist (*Builder*, 1848) objected that they were quite unsuitable in any case, because the openings which had to be left between the columns for windows were inevitably too large for classical proportion, and 'why should a style be employed merely for the purpose of being mangled?' The answer was that builders could not suggest anything else, as readers were quick to point out to the Editor; who replied that 'if they employ an able architect and express a willingness to pay him fairly for his trouble, they may be more successful.' Perhaps not very helpful advice, for with architects of lofty ideals it was not so much a question of money as of honour: they considered the designing of shop-fronts *infra dig.* As the *Westminster Review* observed, it was a mistaken but excusable attitude: shop-fronts, far from being trivialities, by their nature imposed aesthetic problems difficult to solve, but an architect could hardly be expected to put much heart into this work, when it was likely to be ruthlessly mutilated as soon as it was carried out, if not before, just to 'please the demon of fashion' (Elmes' words in *Metropolitan Improvements*, when describing how the Regent Street shop windows were so constructed that they could very easily be altered; the fronts were supported on the inside by slender iron columns).

Classicism did not have everything its own way, however. Other eclectic tendencies were showing themselves, though unfortunately for the curio collector there is now little trace of them. The Louis XIV style is mentioned in the *Architectural Magazine* in 1838 as 'one of the latest improvements in this department; and in combination with the immense panes of plate-glass now used, and accompanied by rich gilding on a pure white ground, it has a striking and most magnificent appearance.'[4] There was also the neo-Elizabethan style, 3, an example of which was erected in 1841 on the corner of Oxford and Berners Streets. The ornament, moulded in Atkinson's cement, was picked out in colours and gilt on the Oxford Street front; 'tasteful details' which, in the opinion of the *Mirror*, 'must prove attractive and consequently beneficial in a commercial view.'[5] Two years later a still more spectacular edifice arose at 76 Oxford Street: the showrooms of Cottam & Hallen, 'one of the most remarkable of the London palaces of trade.' They were designed after the Alhambra (perhaps by Owen Jones), their ornament and main features being constructed of cast-iron.[6]

But though Oxford Street preferred to borrow its art from the past, it fully appreciated the mechanical ingenuity of the present. In 1861 a revolving shop-front was constructed by a Mr. Coombs of the Borough for a firm of advertising outfitters in New Oxford Street. It was 11 ft. 9 in. in diameter, 12 ft. high, weighed 2½ tons, and was activated by a heavy weight below, connected with moving wheels. It was said to be extremely draughty.[7]

The repeal of the excise duty on glass in 1845 removed a serious constraint on the use of plate-glass. Its popularity advanced so rapidly that by 1852 it had effected a material improvement in the appearance of the streets of London and the larger towns, according to the *Builder*; which had no regrets for the 'lop-sided, cant-bowed windows' common even a decade earlier. At the same time there came a break with the classical tradition in shop-fronts, though it was so deeply ingrained that it persisted until the orders had

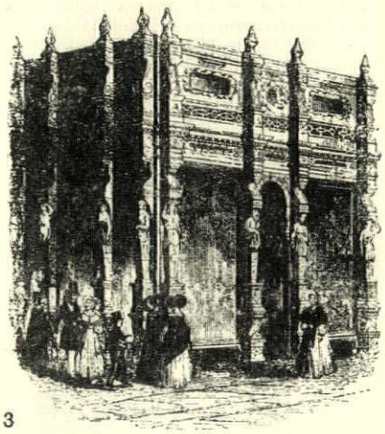


1, *in Argyle Street, Bath: this is the handsome design with four Ionic columns and imposing doors of the pharmacist, c.* 1828, *still showing the large coloured bottles.*



2, *the two corner shops in Stamford, nos.* 13 *and* 14, *St. Mary's Street date from* 1851 *and are late examples of a much earlier type.*

3, *below, the Neo-Elizabethan shop on corner of Oxford and Berners Streets, London,* 1841, *was published in the 'Mirror' of the same year.*



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[1] Increase in height specially noted by N. Whittock, *Shop-Fronts of London* (1840) and customs in decoration.

[2] Information from occupier.

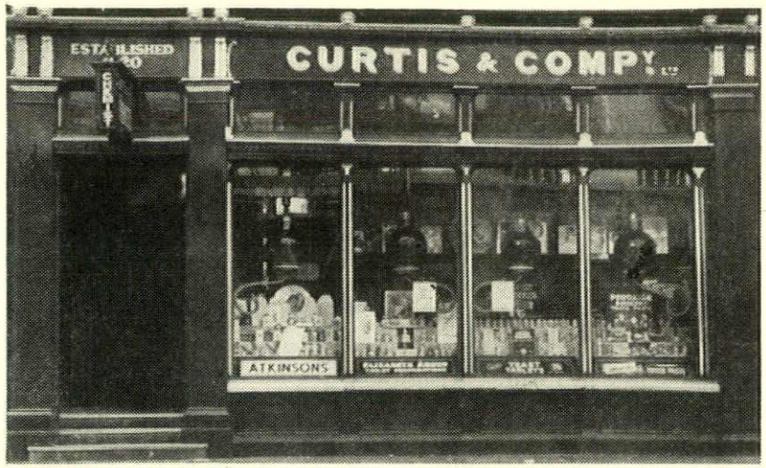
[3] There is similar glazing in a builder's shop in Marylebone Lane, of about the same period.

[4] Two are illustrated in Whittock's book: Sangster and Saunders and Woodley, both in Regent Street. (There is a copy in the British Museum.)

[5] Line drawing in the *Mirror*, April 3, 1841.

[6] Reference in the *Mirror*, August 23, 1845; no drawing. (Jones is said to have designed a Moorish shop interior c. 1840 in Southampton.)

[7] *Builder*, 1861, p. 902.



4, *Curtis and Co.*, 79, *Baker Street, W.*1, *c.* 1860: *vertical emphasis resulting from the economical sizes of plate glass then available.*

degenerated into a collection of vestigial remains. The size of the standard pane of plate-glass became the influential factor in shop-front design—though perhaps 'design' is the wrong word for a somewhat haphazard process of adaptation. In 1852 the largest size obtainable seems to have been about 8 ft. by 14 ft.[8] The price increased considerably with size and a pane larger than this would not have been an economic proposition, though it could have been manufactured. The usual size was a vertical strip 7 ft. to 8ft. by 3 ft. to 4 ft.[9] These strips, with their heavy glazing bars of wood (sometimes mahogany) or metal, gave a strong vertical emphasis to the shop-front, in marked contrast to the criss-cross of the glazing bars of the smaller rectangular panes.

A shop-front which demonstrates this change very clearly, while retaining classical features, is Curtis's, the chemist's shop, 4, at 79 Baker Street. The decorative detail (originally gilded) might suggest a date earlier than c. 1850, but in fact the premises did not change to commercial user until 1857, and Curtis went into occupation in 1861.[10] The shop has many of its original fittings, including the brackets inside the windows supporting the great bottles. The shutters are of the coiling revolving type, an invention which was reported in 1837 in the *Architectural Magazine* as a novelty in use at the offices of the 'Reformer' in Ipswich. The early examples were operated by a winch handle connected with ratchet wheel and pulley, and a similar mechanism still exists at the side of Curtis's window. It was out of date by 1860, when Clark's patent self-coiling shutters had been on the market for several years.

The panes in Curtis's window have a heavier individual framework than was customary at the period. It is more usual to find the panes supported by bars, either rounded or of v-section, often curving into a round or flattened arch (though in many shops, particularly the more modest ones, the panes were simply inserted as plain vertical strips). Very often the round-headed windows had a rudimentary capital at the springing of the arch, and the spandrels were filled in with engraved glass or decorative woodwork. Eileen's Flower Shop, 6, New Bond Street, Bath, Ward's, Northgate Street, Bath, 7, and Rouse's, Wigmore Street, W.1,[11] 5, are representative of this type, which was to remain popular for another generation. In the earlier examples the panes are often divided horizontally by a sash-bar, usually made thinner and more inconspicuous than the vertical bars. This type of shop-front generally has pilasters at each end, supporting an entablature which became less classical as time went on, until at last the fascia gave up all pretence of consisting of cornice, frieze and architrave, and became just a broad band with a decorative border below and above. Eileen's 'cornice' has a pendant border of little decorative knobs, a device which can be seen elsewhere in Bath and the district. Ward's fascia sign is commendable for its bold simplicity; Rouse's also has some pleasant Victorian lettering (not shown in photograph).

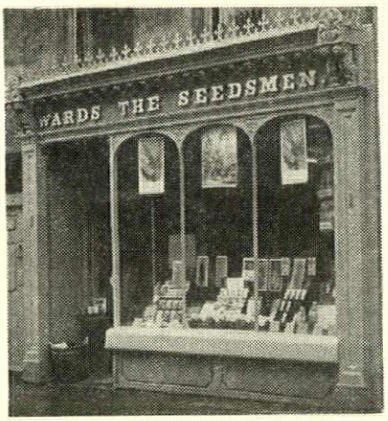
The brackets, usually moulded in Roman cement, could be obtained ready-made from a builder's merchant.[12] Their use to terminate the fascia is a practice which became almost universal in the latter part of the century, so it is interesting to find a reference to it in the *Architectural Magazine* as early as 1834. At the time when the classical entablature was still in use, the cornice, if given its proper return, was liable to impinge on the neighbouring frontages. Builders ingeniously solved this problem by hollowing out the frieze at either end like a scotia, so as to shorten its upper edge. It was such an old trick that by the 1830's builders often seemed to forget its original purpose, and employed it where it was unnecessary. Architects were much vexed by this offence against classical canons, and the *Architectural Magazine* suggested that, instead, the cornice should be finished against a block supported by consoles, as was already done in one or two London shops. A suggestion which wrung this despairing protest from George Dymond, a Bristol architect: respect at least the illusion of the important structural function of the architrave and do not cut through it; let the brackets be laid on it, as the frieze is. (c.f. Harris & Son, Green Street, Bath.)

A pretty compromise between old and new was Law's (later Ridgeway's) shop at 102 New Oxford Street. This had bow windows of moulded plate-glass between its series of Corinthian columns. It was erected in 1859 and must, therefore, have been one of the earliest instances of the use of moulded plate-glass for shop-windows[13].

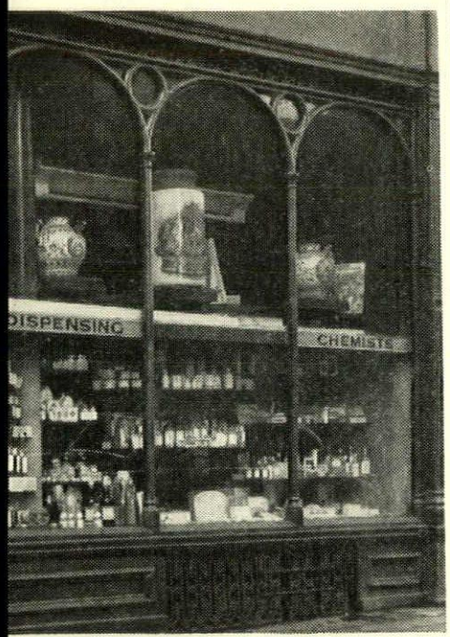
There were recurrent complaints that large plate-glass windows resulted in an architectural solecism: the lower part of the elevation became an ugly gap, and the upper storeys seemed to be supported precariously by glass alone. Even in 1837 the *Architectural Magazine* noted this fault in a shop in Fish Street Hill, which was 'one uninterrupted height of window from the stall board to the cornice under the first floor window . . . the sash bars are either black or very dark brown or grey; so that even the divisions of the squares are scarcely seen.' Shop-fitters evidently anticipated the later capabilities of plate-glass by the deceptive use of glazing bars. It is hard to find early



8. *Abbey Square, Bath, c.* 1840. *An early example of a lofty shop-front, window* 9 *ft. in height. Curiously enough, some of the slightly later shop-fronts such as* 6, *are not so lofty as this, though their individual panes of glass are considerably larger.*



7, *Ward's, Northgate Street, Bath, shows decorative woodwork in the spandrels but disposes of capitals at the springing of the arch, as in* 6.



5, *Rouse and Co.*, 12, *Wigmore Street, W.*1, *c.* 1850: *round-headed windows with rudimentary capitals and decorative spandrels.*



6, *right, Eileen's flower shop*, 21, *New Bond Street, Bath*: *c.* 1850-*another example of the rounded head.*



9, *an example of a cornice finished against a block and supported on consoles, at* 14, *Green Street, Bath.*

[8] Two articles in the *Builder*, 1850 and 1851 (p. 175), on plate glass. Size of plate glass now limited only by cost of machinery required for larger sizes. Mirrors 14 ft. by 8 ft. now comparatively cheap. (Within living memory 4 ft. by 3 ft. was reckoned a good size, and only the wealthy could afford more.) Bed of polishing machine usually 15 ft. by 8 ft. Neither Pilkingtons nor Chance could tell me much about the size of plate glass at this period.

[9] Empirical—I have measured quite a number.

[10] Dates taken from London Directories. Curtis's do not know much about the history of the shop, but are very proud of it, and would like to think it older. The brackets are similar in design to some shown in a contemporary drawing of a chemist's shop in S. Audley Street, in 1861 (*London and Provincial Street Architecture in Victorian Age*, March, 1861).

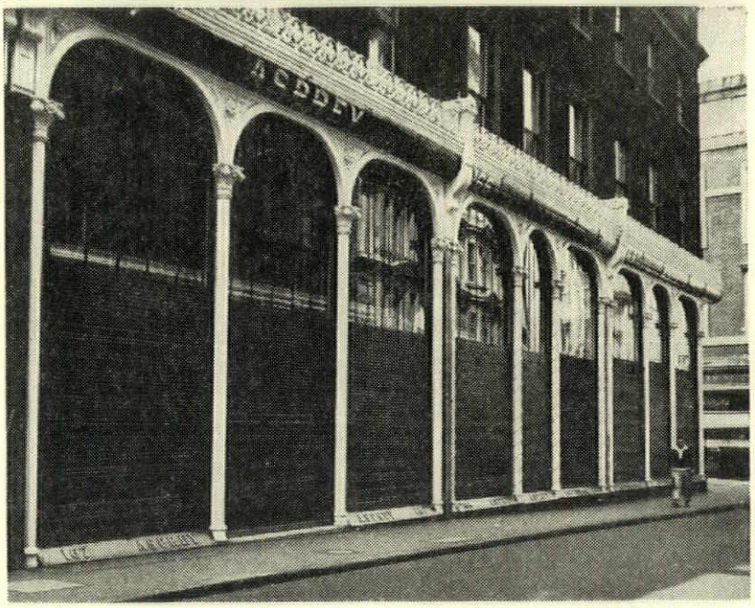
[11] A shop opened at 21 New Bond Street in 1850; previously it was billiards-rooms. There was a change of occupier at Rouse's around 1850. It has been known as Rouse's since about 1810.

[12] E.g. John Herbert & Sons, 42 Parker Street, Drury Lane. Advertisement in the *Builder* in 1848.

[13] Unfortunately Ridgways have no picture of it, and I have been unable to find a photograph apart from the one in Dan's *Shop-fronts Old and New*, 1907.



10

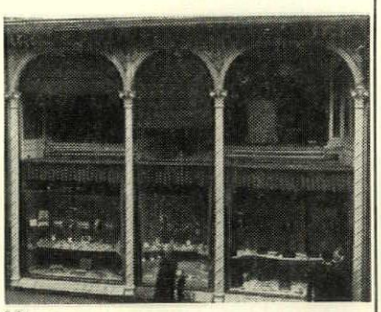


11

10, 11 *and* 12, *Asprey's New Bond Street, W.*1: 12 *is No.* 166, *the original part of the shop, c.* 1865, *later enlarged to its present size, as shown in* 11. *Panels of glass of this size did not appear until around* 1860.

instances of what the *Westminster Review* called 'outrageous display affected in regard to plate-glass'; perhaps we are so used to much bigger outrages that we overlook the prototypes. The shop c. 1840 in Abbey Square, now the City of Bath Information Bureau, has panes approximately 3 ft. square, giving a window 9 ft. in height—loftier than some later shops with the long vertical panes.

Windows on the scale of Asprey's 10, 11, in Bond Street do not appear until around 1860. No. 166 New Bond Street conforms in its present layout to a ground-plan of 1864 in the firm's possession (the adjoining window-bays are later additions): a window has replaced the original central door, of which the boot-scrapers still fixed in the pavement are the sole remaining visual evidence. The date would seem to be confirmed by an article in the *Builder* in 1866, which made a general reference to several handsome new shops erected in Bond Street during the past two years. The article was, however, mainly devoted to Benson's shop, which received particular praise because it avoided the cavernous



12

insecure appearance of some modern shops.

Benson's not only looked but was secure. The insertion of the new window had been a major building operation, during which the building had been shored up by 'Drew's patent shoring needles'; the excised walls had been replaced by cast-iron stanchions carrying girders 2 ft. deep and 14 in. wide. Apparently this sort of alteration was too often carried out with a lighthearted disregard for structural safety. With corner shops (cf. the design of 13 and 14 St. Mary's Street, Stamford) it was a common practice to remove the walls to make returned shop-fronts, with the door in the angle. The *Builder* warned of the danger to stability, when no proper provision was made for support; and it was able to point an effective moral when a shop in Pond Street, Fulham, suddenly collapsed one morning in 1848.

Benson's has not been much altered in essentials, apart from the addition of the portico at the south end. The Portland stone fascia was originally unpainted, and was inlaid with a black marble tablet bearing the firm's name in gilt letters (the tablets with the street numbers still remain). The window arcading and the serpentine Lizard marble columns with gilt capitals are unaltered, though gilt arabesques in the spandrels have been removed; the mahogany vestibule is original. The glass and sash-bars are replacements, but the style of glazing has not been changed. The interior contained painted decorations by a Mr. Hatfield of Marlborough Street, but no record of them remains.[14]



13, *J. W. Benson Ltd.*, 25, *Old Bond Street, W.*1. 1865, *and little altered since then apart from repainting and the addition of the portico.*

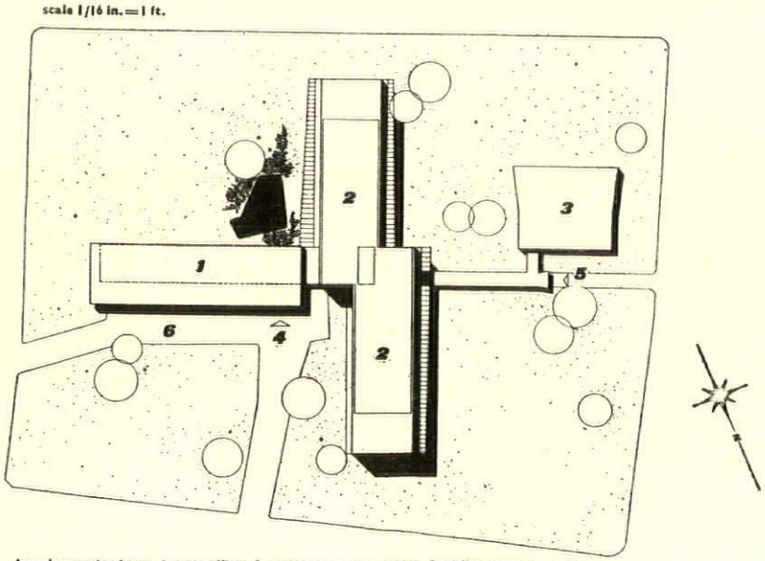
The windows were protected by revolving iron shutters, but the end of universal shuttering at night was approaching. At a meeting of the Architectural Association, in 1866, a Mr. Ward, an American architect, mentioned a growing custom in New York: tradesmen, especially in jewellers' shops and other places where valuables were stored, were ceasing to put up their shutters at night. Instead, they left on the lights inside the shop, and raised the screen between window and shop; the resulting publicity was found to discourage burglars.

The *Builder* wrongly attributed the design of Benson's shop to F. P. Cockerell, who repudiated it sharply in the next issue, pointing out that he had merely acted as surveyor for the freeholder. The builders, Drew & Co., must, he supposed, have designed the shop; and next time he was honoured by mention in the *Builder*, he hoped it would be for something of more interest to its readers than a shop-front. It was an ungracious rebuff. The distinguished architect's brusque dismissal of shop-fronts must have been painful to the *Builder* which had a more discerning estimate of their importance, but it can have been no surprise. Years before, the *Builder* itself had drawn attention to the incompatibility between the demands of commerce and art: 'So long as the greatest surface of window is made a sine qua non, it is hopeless to look for propriety of architectural character.' These terms were not acceptable to architects, who, unlike the *Builder*, seem to have been sadly lacking in Victorian missionary zeal; and trade went unreformed on its own vulgar but remunerative way.

[14] The alterations were made 25-30 years ago. Benson's have no records as they were all destroyed during the War. There is a line drawing in the *Builder*, 1866, p. 153.



1, *from the north-west; counting-house on left.*



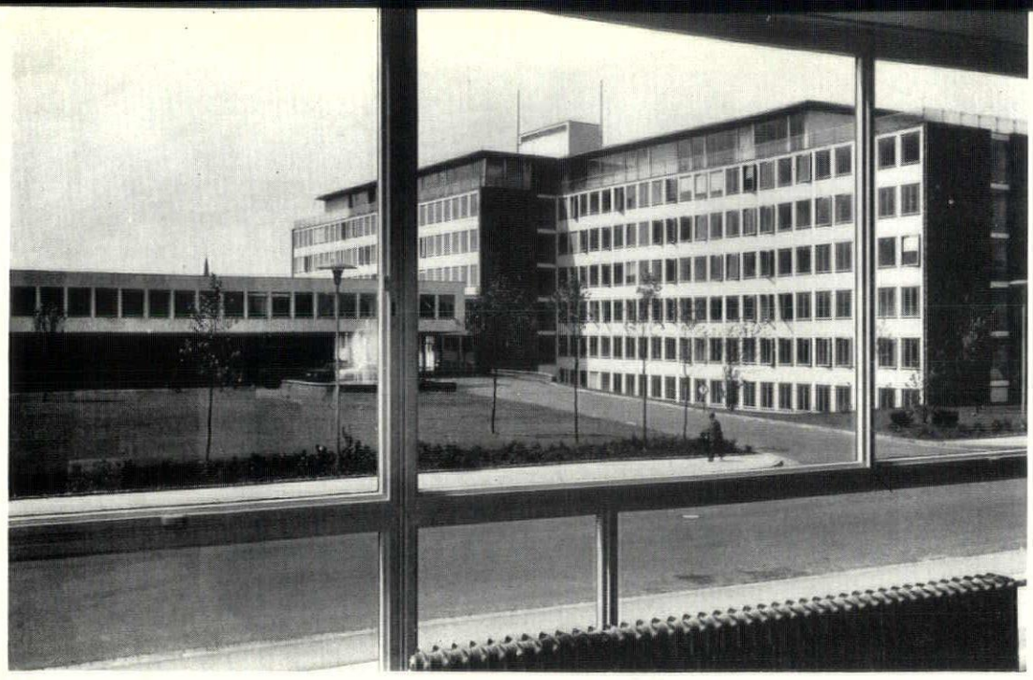
key. 1, counting house. 2, main offices. 3, canteen. 4, main entrance. 5, staff entrance. 6, parking.

OFFICES AT RHEINHAUSEN, GERMANY

ARCHITECTS: HENTRICH AND PETSCHNIGG

This new administration block for the Rheinhausen Foundry Co. was won in competition in 1954, and is sited in a domestic area of a medium size industrial town near Duisburg. It provides for an office staff of 500 on seven floors with three passenger lifts and two small goods lifts for filing and Hollerith cards.

The main construction is reinforced concrete resting on an 80-100 cm. thick reinforced concrete raft because of the danger of rising water from the Rhine nearby. The basement contains central heating and electrical plant; every room is ventilated by air which is drawn into two chambers on the roof and passed through distribution installations on each floor where it is purified, heated and blown into the rooms through ducting. Heating is by convector heaters fed by heat exchangers linked to the central plant; each room has an independent thermostat.

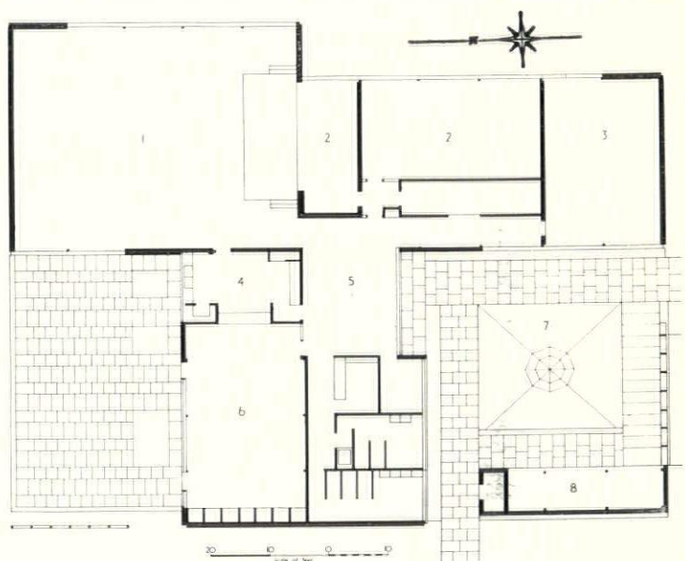


2, day view of the main entrance to the offices at Rheinhausen from a nearby block of flats. The roof structure houses air-conditioning plant.

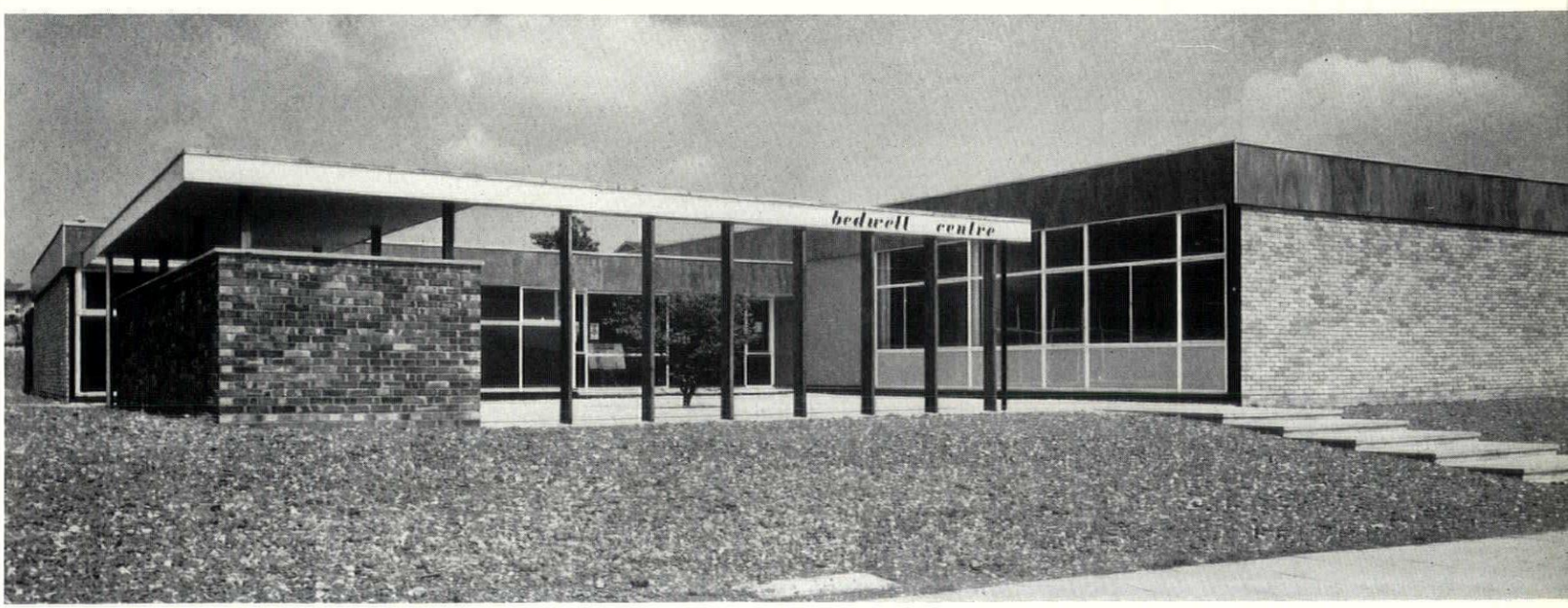
COMMUNITY CENTRE AT STEVENAGE NEW TOWN

DEVELOPMENT CORPORATION ARCHITECT, L. G. VINCENT
ARCHITECT-IN-CHARGE, RAYMOND GORBING
ASSISTANT ARCHITECT, THOMAS CARTER

This community centre serves the Bedwell neighbourhood, with a population of ten thousand, and is part of the neighbourhood centre. The 'T' shaped plan is approached by a partially enclosed cobbled forecourt with covered area for prams and cycles. The spacious entrance hall giving access to all rooms is in the low wing together with kitchen, common room and toilet accommodation. The high wing contains main hall, committee room and lecture room sound insulated from quiet rooms by the store. The building is steel framed on a 10 ft. module supporting roof lattice trusses 1 ft. 6 in. and 2 ft. 6 in. deep, dictating the external depth of the mahogany veneered plywood fascias. Gable walls are 11 in. cavity brickwork; the glazed infill panels are set in front of the structural frame on a 40 in. grid. The floor finish generally is grey-green thermoplastic tile, walls are generally white or pale grey except for panels of bold wallpaper—e.g. the use of 'Palladio' facing the doors in the entrance hall. Basic heating is obtained from thermal storage heaters operating at night on cheap tariffs, augmented by forced convection heaters and tubular heaters mounted at the bottom of the windows.



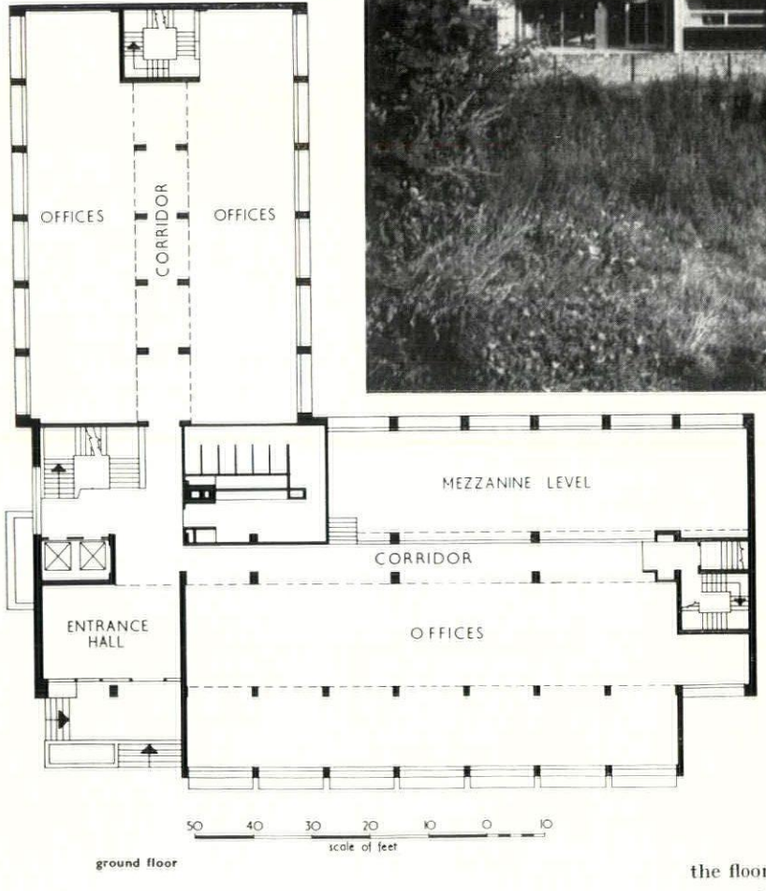
key. 1, main hall. 2, committee room. 3, lecture room. 4, kitchen. 5, entrance hall. 6 common room. 7, forecourt. 8, bicycle shed.



3, entrance forecourt from Bedwell Crescent, bicycle store on left, lecture hall on right.



4, entrance side of Roman House from the west, looking across Wood Street.



ground floor



OFFICES IN LONDON WALL, E.C.2

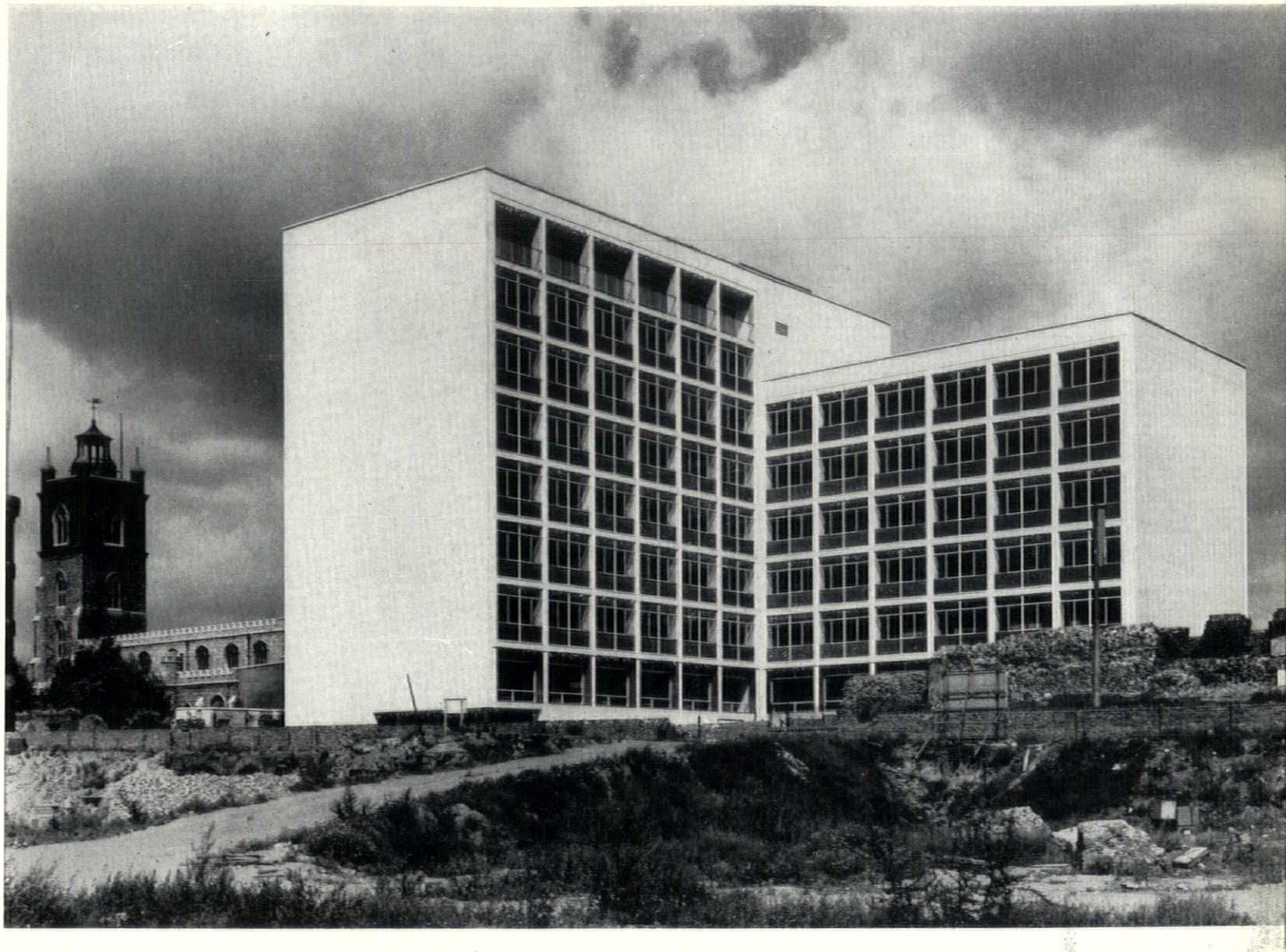
ARCHITECT: R. N. WAKELIN

of CAMPBELL JONES and SONS

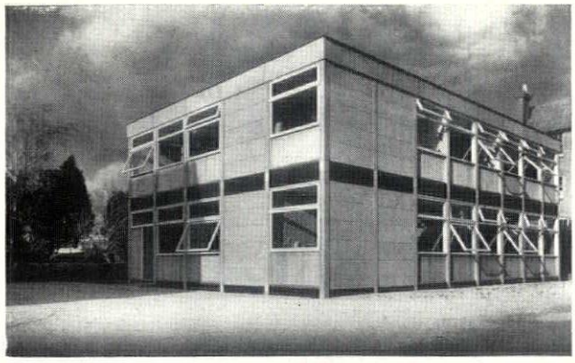
ASSISTANT-IN-CHARGE: J. M. THOMAS

These offices are in London Wall, planned to fit into a comprehensive development area of the City of London and preserving part of the Roman city walls in a terraced public garden adjoining.

A maximum lettable floor space of 61,400 sq. ft. has been provided together with a car park for 14 cars in the basement. The construction is of reinforced concrete on piled foundations with hollow pot floors. The wall beams and tie beams are within the thickness of the floors. Externally, the flank walls, columns and wall beams are clad with Portland stone slabbing 3 in. thick. The window openings are formed with steel sashes glazed with sheet glass and grey glass spandrel panels. Below first-floor level the columns are lined with Swedish grey marble and the infilling panels are of black toughened glass. The plinths are of Vert Olivia marble. Internally, walls and ceilings are plastered throughout and the floor finish in the offices is linoleum and terrazzo.



5, courtyard with Roman wall in foreground and St. Giles' Cripplegate behind.



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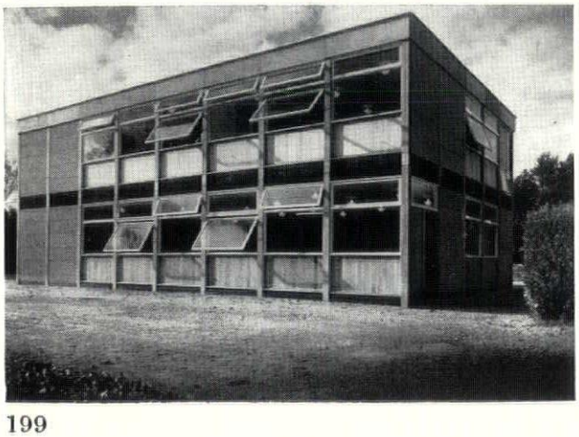
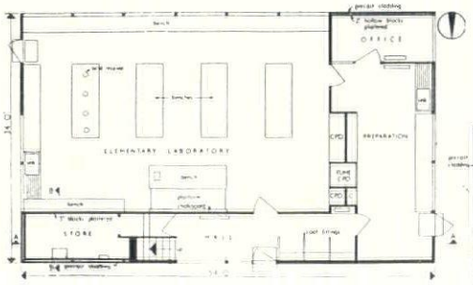


7

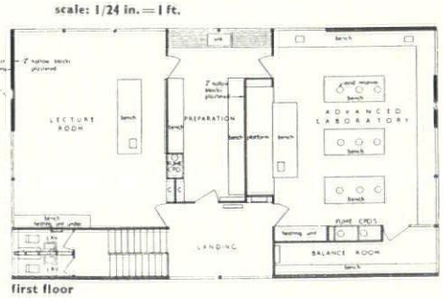
LABORATORIES AT SHERBORNE, DORSET

ARCHITECTS: ARCHITECTS' CO-PARTNERSHIP

This building houses the chemistry department of the Sherborne school for girls and has been constructed to take a third floor if required later. The site is part of a disused tennis court. The construction is a prestressed precast concrete frame as first used in the Ministry of Education School at Watling, with columns at 80 in. centres clad with precast fan-faced concrete slabs. Externally they are coloured black (using black cement mix) at first floor level and faced with Siena marble; elsewhere window units and internal exposed structural members are painted white.

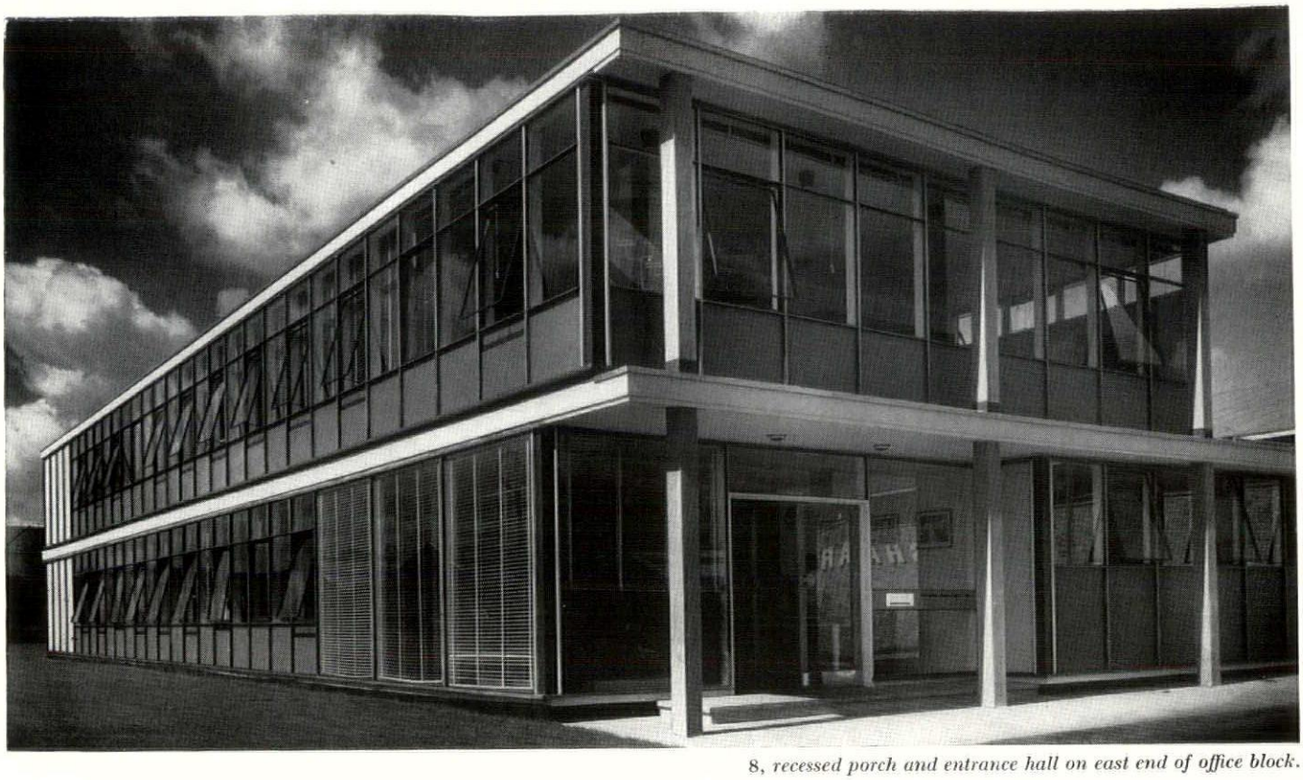


ground floor.



first floor

6, from the south west; the facing slabs in the middle have black cement mix with a dark exposed aggregate. 7, the south side.

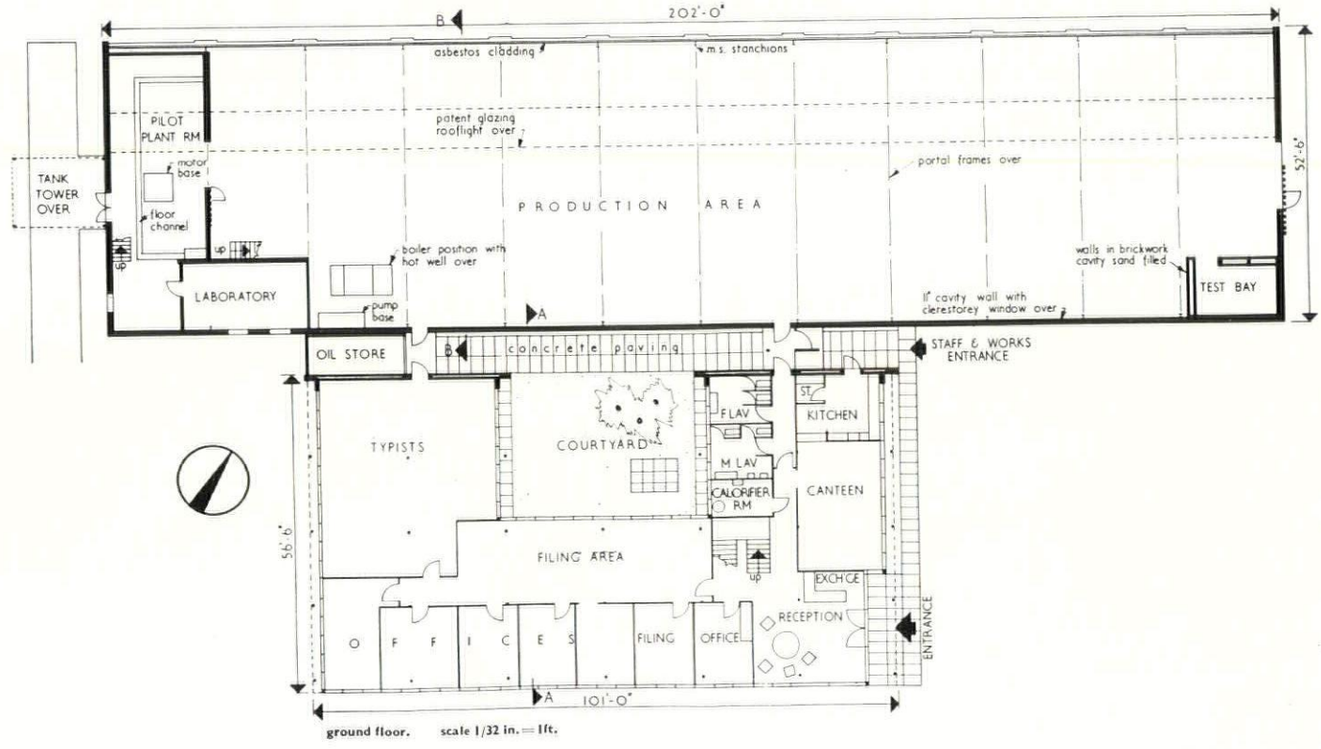


8, recessed porch and entrance hall on east end of office block.

FACTORY AT CAMBERLEY, SURREY

ARCHITECT: JOHN BICKERDIKE. ASSISTANT: PETER GOWER

This factory in Doman Road, Camberley, is for Sharples, who making high-speed centrifuges. Offices and production area had to be separate due to planning restrictions and both had to be capable of future extension. The site is a trading estate: offices and factory are joined by two single-storey wings framing an internal courtyard. The factory construction is steel portal frames and 11 in. and 13½ in. cavity brickwork (stockbrick facings), with a roof of aluminium decking. The office block has directors' and secretaries' rooms and the drawing office on the first floor to be as quiet as possible; the steel frame has walls offset from columns with cantilevered double cross-channels carrying precast concrete floor and roof beams. This has saved an additional row of stanchions and allows them to be placed half-a-module off the grid to avoid interference with cladding or partitioning. The edge steel channels contain a timber curtain wall designed by the architects on a 40 in. grid; solid spandrel panels are light blue.



ground floor. scale 1/32 in. = 1ft.

CRITICISM

CHANDIGARH AND THE SENSE OF PLACE

Genius Loci is a term which may well fall into disfavour through either indiscriminate or over-use. Its widespread currency today does, however, indicate an increasing awareness of the importance of context; a reaction against the tendency to photograph and record objects abstracted from their total environment. Nothing can in fact stand substitute for direct experience compounded of myriad impressions both conscious and unconscious. Nevertheless attempts are now being made to convey this totality of experience—the specific object against the dim 'awareness,' the aura of its environment, the Genius Loci. For only in such terms can an object's existence as a living form be truly assessed, and only by an awareness of the 'Spirit' can further development expand instead of explode the whole. Any such attempts must risk criticism from all quarters for they represent the personal reaction—rational and irrational—of an individual.

Corbusier's early sketches of the site at Chandigarh reveal an understanding of 'place' which is at once identifiable with direct personal experience. A flat plane dispersed with the dark monsoon green of trees, fields of fresh grass green and sedge spreading to low hills of eroded red-brown earth fissured with sunlight: beyond these the purple of Himalayan foothills uncertain with rain, piled with a froth of cumulous mounting to Tibet. The relationship which seems suggested, in Corbusier's incisive line, between the two bold blocks of High Court and Secretariat and the nearest hills is at once appreciated, they grow—in perspective—from the hill scale, are born of the landscape; this seems to anchor the remaining development, sprawling uncertainly, to the only definite 'line of reference'—the hills.

This city sector development, however, when studied in detail, succeeds only in destroying this overall impression of unity and sense of place. Criticism has already drawn a parallel between the lack of scale and humanity found here and that in the New Towns, revealed the vacuity and sense of desolation apparent in all areas. Admittedly the policy of developing scattered sectors simultaneously—a growth from the perimeter inwards—initially tends to destroy total unity, but there seems little hope that the situation will be redeemed when the city has been completely developed. Excuses have been made and the blame laid upon isolated instances of uncontrolled private development, but these are in fact comparatively insignificant. It was presumably the intention to develop sectors as closely knit organic units in which the pedestrian was autonomous. But the dispersal of buildings—no doubt in the name of hygiene, open space, access, etc.—has destroyed all cohesion, and they lack individually that capacity of 'resilience' which effects and is moulded by human contact and is demanded by the Indian way of life.

Between the High Court and the Secretariat and a few hundred yards to the north a small mud village squats between trees (1-3). *This primitive village and the two reinforced concrete complexes towering above are in complete accord with each other, the landscape and the people. It is therefore by turning north, with the unsatisfactory growth of the city behind, and examining these two elements in detail in terms of direct experience, that such 'awareness' as might have resulted in the 'total' development of Chandigarh may be suggested.*

A dust track wanders from the High Court across undeveloped grassland grazed by goats and cattle to the first houses of the decaying community. The focus of the village is at once apparent; a slime green pool for cattle curls round a raised dust platform bastioned with dwarf mud walls, a tree spreads shade over playing children and a worn branch dips back to earth to swing and seat them. The water, the platform, and the tree are the three bare elements of the playground which at evening becomes the arena for village debate; they exist as precisely as the words which list them. The lane leads narrowly between platform and houses, turns and is contained between the blank mud flanks of homes; the high sun thickens the oatmeal texture of gold straw flecking sienna earth walls, the hand automatically strokes its surface. The walls curve to the paths way, are moulded to the irregular contours of the ground and curl as the lip of a bowl against a full cerulean sky. Rusting tin gargoyles break suddenly through the smoothness and point finger shadows; there is a dark door, two primitive ploughs drawing eccentric patterns across the adjoining wall, and a single diminutive window gouged to the black interior high up. Then glimpses through homes to further sunlight startling swept patios and the crazy gear of wells; of crones smoking hookahs, babies cocooned in tied scarves hung from roof trees and swinging to the mid-day heat.

The eye gropes along glaring sunlight, feels into welcome shadow to discover home life slowed to laziness. The path-canyon disintegrates, an alley leads off towards another curving wall turning the way out of sight; there is a hut set back and cowering behind verandah shadow etched with a sunlit pattern of crosses, a crude mud-moulded filigree above a dwarf wall. Already the village begins to thin and isolated homes, thrust from the dry earth, reveal more openly the life within. (Even alone they do not destroy organic unity, for the walls rise in the same dun colour as the paths which thread them.)

Where the path and a wall rise in a hump there is one home more boldly extrovert than the rest. Entering the cool of a crouching room one discovers the simple growth from man to habitat as a cup is turned and formed under the potter's fingers which shaped the whole village and which is the pulse of life there.

Large full-bellied water pots beaten from brass nestle in hollows scooped at the wall base; in the corner the wall swells to a small high cupboard as a swallow's nest to twittering young; an isolated grinding disc, a simple stone geometry pegged there purposefully, breaks the swept vacancy of floor. Beside the entrance a mud screen divides living from cooking; it is low, patterned and gouged with clumsy panels and mouldings, some faintly stained blue-green and mauve. A live and decorated 'sculptural wall' it pivots the house life; the owner seated on a broken rope charpoy, his wife crouched over pots resting in mud hollows on the kitchen range, the children, spinning and twisting a brilliant mauve yarn, shy behind a dwarf wall-refuge fingered and crumbling.

All this is typical of so many Indian villages, yet contains those subtle nuances which localize, breathe the Genius Loci.

Over against the village the High Court is completed. Blank end walls textured with shuttering, pinned with a single gargoyle shadow, contain the towering complexity of concrete and glass beneath the curl and spring of roof vaults turned at their edge against the same deep sky. The facade-grid, playful with sunlight, stained with vibrating colour, shatters immensity into man-scale fragments and rests earth-bound on a broad peopled podium: here a turbaned Sikh sleeps

wedged between fins before a plate glass court room; two barristers, immaculate in black, discuss a brief spreading their papers across its shelf depth; a Tamil labourer, near naked, leans to it resting his elbows there.

Entering the chasm which breaks this close-knit pattern pierced fins soar full height, develop in intersection the bold roof sag far above. In expanding to this spatial freedom the eye discovers at once the total relationship between parts; they pivot their bulk about the ramp ahead — blank and forceful balustrade diagonals rising across a spine cut with amoebic holes of sky and further building to a triple vaulted and intense blue. Following this movement slowly, almost majestically, through the full height, the space, building, sky and landscape are gathered in a series of controlled impressions: diagonal facets of confined blue, crisp frames and fins, slithers of sunlight roughening an expanse of concrete, gouged holes and slots revealing the plastic strength of solid structure, panels of startling colour, the brilliance of foothills and plane arched over by roof darkness.

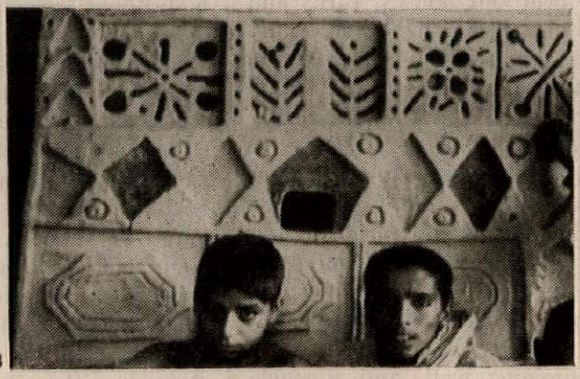


1

The life of the building—robed judges, half-naked children, awe-struck peasants, clerks, labourers—passes ascending and descending, moving through varying levels, walking diminutive across the birds-eye court below, disappearing through half-seen openings. A brief halt focuses the gaze on two Punjabis far below where a blue pool splinters a shaft of sunlight, they squat at the foot of a main fin beneath a recess of scarlet entirely oblivious of their surroundings yet completely 'at home'; their gesticulations weave a black-armed pattern against smooth concrete and their foreshortened heads bob with inaudible argument. Finally from the top terrace—under the very tent billow of shell concrete where the air shifts lazily but welcome, where pigeons perch against chrome yellow—away in a glare of earth brown chiselled sunlight and shadow lies the village.



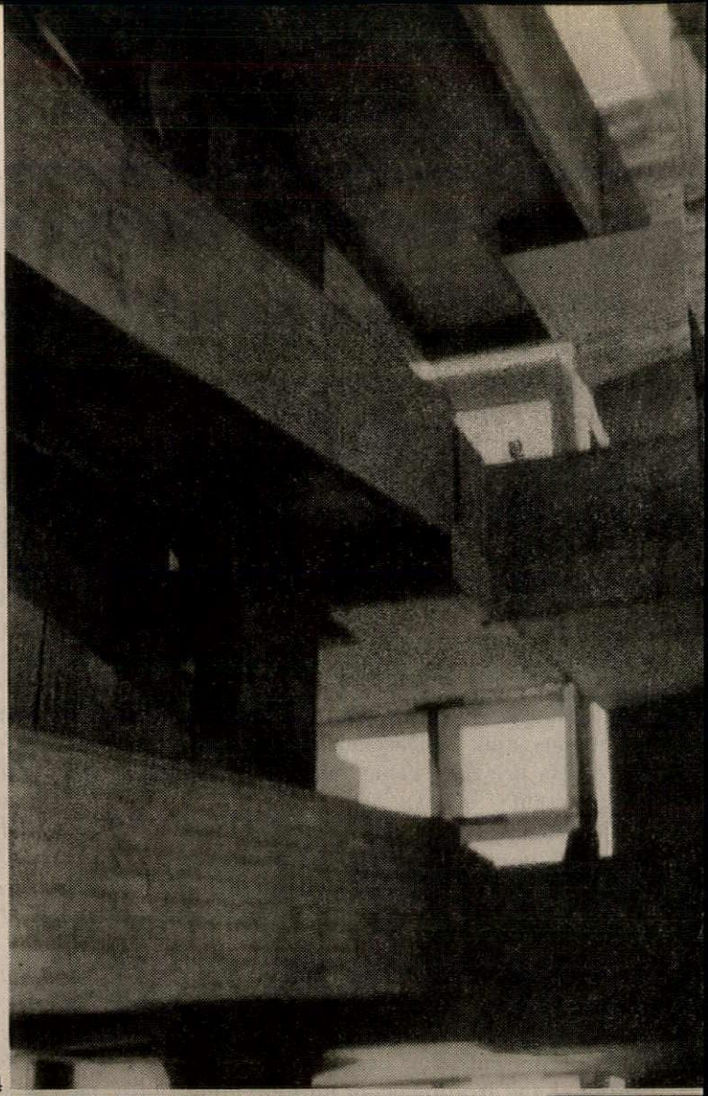
2



3

Michael Blee

1 to 3, the mud village which lies a few hundred yards to the North of the High Court and Secretariat at Chandigarh. This village nucleus establishes the 'sense of place' which was Le Corbusier's 'point de départ' for the new capital city. In the accompanying article, Michael Blee suggests that somewhere in the overall planning of Chandigarh, the 'sense of place' has been lost, though in the great public buildings (particularly in such details of the High Court building, as are shown in 4-7) have successfully achieved a community of feeling between the Indian vernacular and Le Corbusier's very sophisticated genius.



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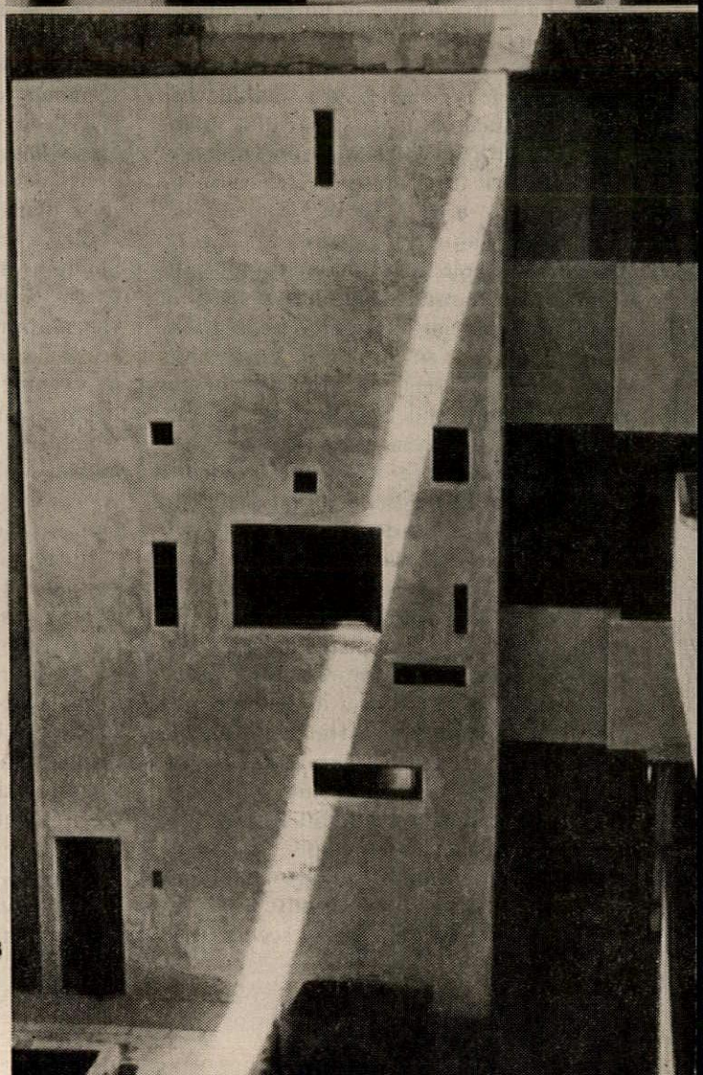

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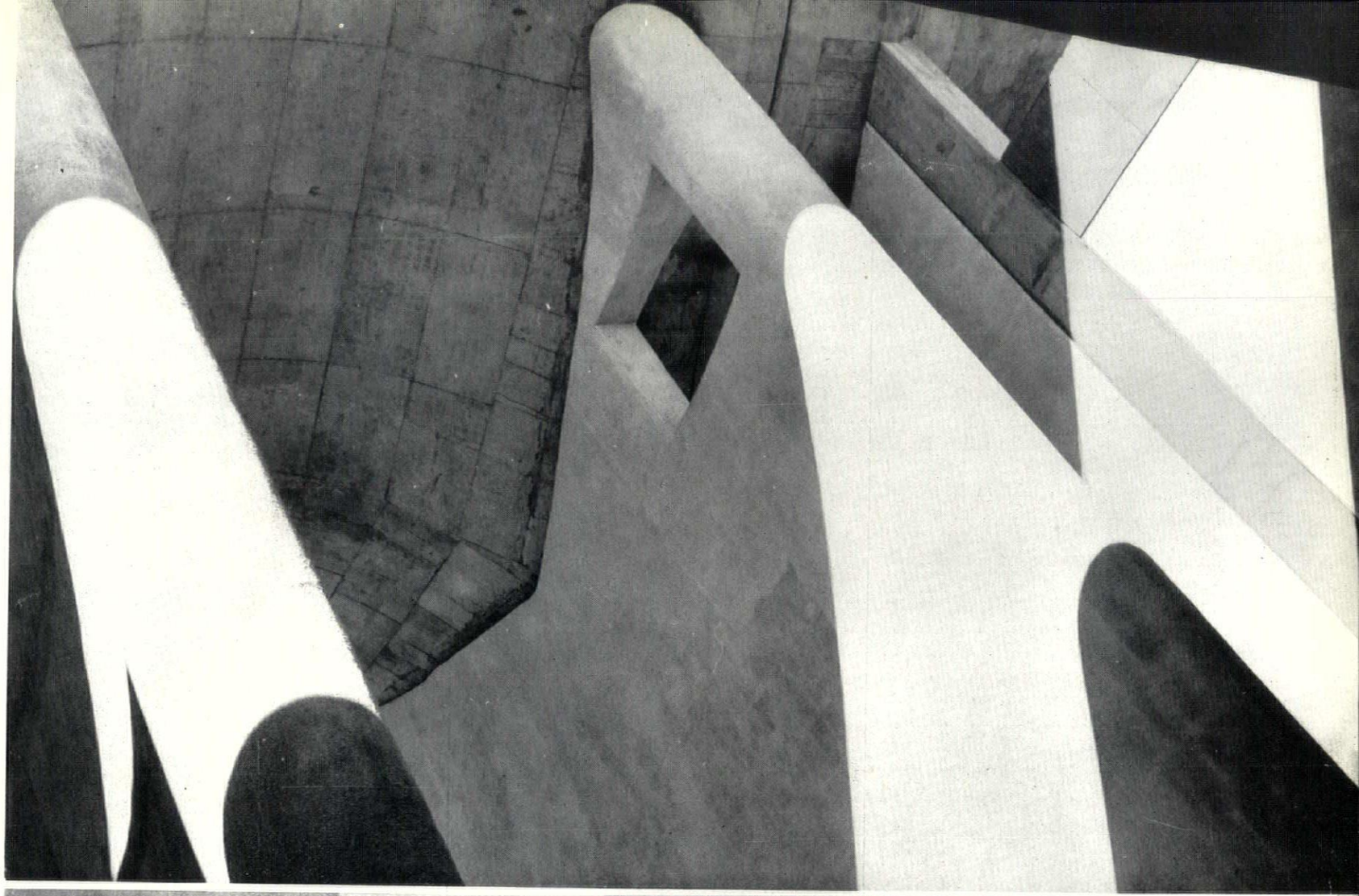

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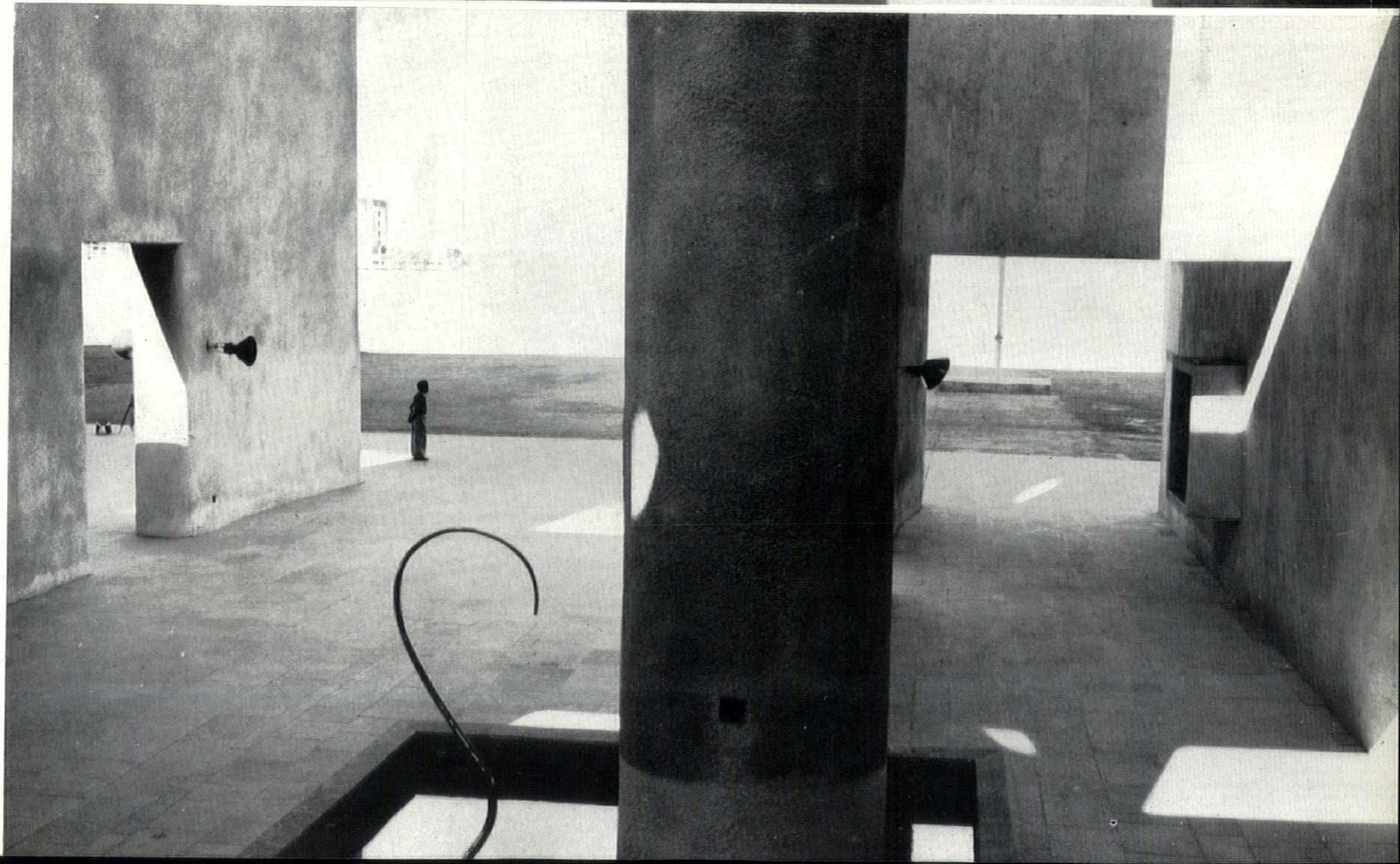


7

EXHIBITIONS

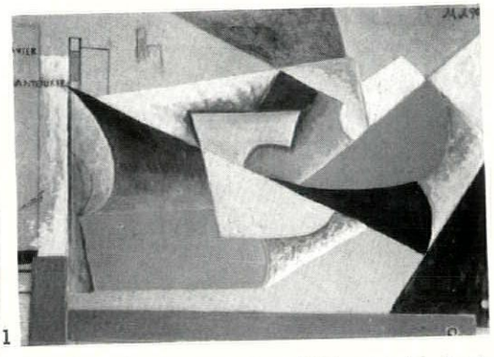
PAINTING

Picasso's supporters used to take it for granted that the razor-sharp facets in his analytical cubist portraits would one day lose their edge and that the faces would somehow return to normal as the pictures receded into old-masterdom. Fortunately they were mistaken. After fifty years, the portraits of Fernande show no sign of recovering from Picasso's cruel surgery, and the face and neck of Fanny Tellier are still shaped like a butcher's cleaver. 'What would you say, Picasso,' asked Manolo in 1911, 'if your parents were to come to fetch you in the station at Barcelona and found you with such frights?' Art critics find such questions contemptible, but if they are taken at their face value they are really rather poetic, for they plunge straight into the Pygmalion theme, and I for one would be prepared to make any sacrifice for the privilege of chatting with one of Picasso's cubist frights in the station at Barcelona. What I am trying to say is that one is not likely to be able to give the masterpieces of cubism their due if one hasn't cultivated a taste for monsters.

The best cubist exhibition ever held in this country was organized by E. L. T. Mesens and put on at the London Gallery in 1947, and I recall that it was very poorly attended. But it became obvious enough when the public hurried through the cubist room at Braque's retrospective in 1956 that cubism had not gathered any more adherents in the intervening years. This is not surprising. There was never any possibility that the public would begin to see people in a cubistic way, because the cubists themselves never saw the world cubistically: they were not adding anything to our knowledge of appearances but producing unforeseeable structures by engineering unnatural mergers between mutually exclusive views of things. Cubist form is all aberration and anomaly, and it's no accident that the greatest of the cubists excels even Goya in the creation of monsters.

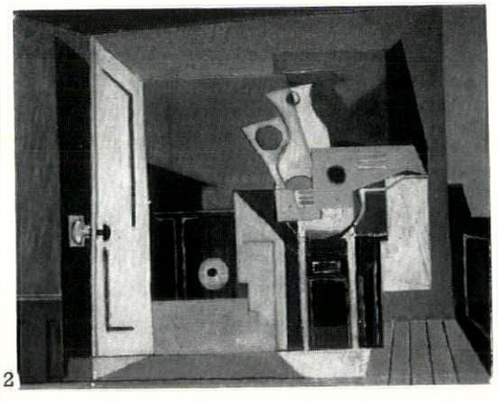
When cubism is less than monstrous, and tries to look like a classical revival or the natural consequences of the art of Cézcanne it is stiff, dull and academic, so it was, in a fashion, adventurous of Gimpel Fils to arrange their recent exhibition of some of the minor artists whose timidities constituted the cubist 'movement' and of some others who had their angular moments without committing themselves to cubism.

In the decorative still lifes by Severini, Lhote, Ferat, Herbin, Hayden, Valmier, etc., the mild applications of cubist dislocation to common objects now look like very faded camouflage, and quite fail to disguise a total banality of vision. In the early landscapes by Dufy and Delaunay and a much later one by Christopher Wood, cubist rigidities are used to stiffen up conventional essays in post-impressionism, and in Wyndham Lewis's 1918 war drawing they are used, with the 'expressive' insensitiveness so typical of this overpraised artist, to make the gunners look as metallic as their howitzer. Diego Rivera's 'L'Homme a la Moustache' is a weak and unimaginative attempt to create a cubist personage in the manner of Picasso. But two works were, for different reasons, outstanding. One of them was a composi-



1

tion by Larianov, 1, which would look very limp indeed beside any cubist collage by Braque or Picasso: it is the date, 1908, inscribed in the top left-hand corner, that I found riveting, for I would have taken its look of being composed of cut papers as a sign of the influence of cubist collages if the first of them had not appeared until four years later. The other outstanding exhibit was 'L'Escalier' by



2

Louis Marcoussis, 2. It is not exactly a masterpiece, but it at least conveys some sense of mystery. It was painted several years after the cubist movement died, and suggests that Marcoussis acquired some inkling of where to look for the heirs of Picasso's cubist personages, for the door opening on to darkness, and the still life arrangement on the landing, which is on the verge of turning into a vaguely bird-like personage, disclose the influence of surrealism.

I don't quite know what to make of Judit Reigl's paintings. They have been on exhibition at the recently opened Drian Gallery at 7 Porchester Place, Marble Arch, and are all variations on the configuration



3

reproduced here, 3. They are painted with assurance and verve, and the catalogue note says that 'they manifest an urgency to transmute the crudest material into an astonishingly new space-world.' This sounds like an exaggeration, but probably doesn't go far enough, for I think that Reigl's work is a cut above the run of 'outer space' abstractions, and may even be an attempt to express a religious experience: there are curious hints of both compassion and ecstasy in the impression, persistently conveyed by her paintings, that some torn and broken thing is involved in some kind of ascension.

Michael Andrews, whose painting called 'A man who suddenly fell over' aroused much comment when it was exhibited at the ICA in 1952, has been holding his first one-man show at the Beaux Arts. He would seem to be a very deliberate worker for although the exhibition covers a period of seven years it contains only twelve paintings and three drawings. The painting of the man who suddenly fell over doesn't look quite as catastrophic as it did in 1952, but it remains one of the boldest and most intransigent contributions to post-war realism. His later paintings are more subtle and complex, but they have the look of being works in progress, full of exciting possibilities, but not yet resolved. One of the most interesting of them, dated 1956–7, is called 'Liony Piony' and depicts a naked human figure of doubtful sex on friendly terms with a lion. The tawny colours are beautiful, and the lion is well conceived, but the composition as a whole is a rather implausible essay in montage, for one isn't in the least convinced that the lion is aware of the presence of the human figure. The painting which I thought most thoroughly worked out, in spite of looking unfinished, is his portrait of the young avant-garde film director Lorenza Mazzetti, 4. It is a strikingly faithful likeness, and has a slightly



4

phantasmal air which accords well with his subject's rather enigmatic personality.

Robert Melville

TOWNSCAPE

ESCAPED LIONS

One of the more subtle pleasures of living in towns comes from their contrast with the country; most of the displeasure of living in big cities lies in the absence of contrast. This may sound like a paradox when it is remembered that towns and cities were built as refuges from the wide open spaces. One would think, therefore, that the happiness of citizens would grow in proportion to the distance away unfriendly Nature was pushed. But contrast, to be appreciated, must first be perceived and in such a way as to set up mental reverberations by the display of what Gordon Cullen has called an extra dimension (AR May, 1954), the intrusion of another language.

This other language is the result of correspondences between opposites and in the case of town and country sends us back to first principles—the artificial object in a natural setting (exemplified by Barbara Hepworth's sculpture, a lighthouse, a Scottish castle—AR May, June, 1954) and its converse—the natural object in the man-made setting. Each situation produces its own particular sensations caused by the tensions set up between object and setting and their effect on the spectator—a phenomenon well-known to artists. Because it has a bearing on human comfort and because towns are built for human comfort it is a phenomenon that could with advantage be studied by town builders.

Towns are extreme cases of man-made objects in natural settings. Madrid, for example, which from a distance appears as a crystalline mirage in the desert, becomes on closer inspection a modern city out of a glossy magazine—a polished artefact set down in an empty, arid, boulder-strewn landscape. The contrast thus engendered gives the city the same emotional attraction as a lit cottage window in a winter twilight. Once inside the city gates we feel safe and civilized; inside the cottage the curtains are drawn against the elements. But since human comfort at its most exquisite depends on a hint of discomfort we occasionally go to the window and peer through the curtains, listening to the rain in the gutters, the wind in the branches. Already snug indoors, we feel twice as snug after watching for a moment the manifestations of discomfort outside.

The virtue of small country towns is that these manifestations are readily visible. In the very act of experiencing urban amenities from smooth pavements, among bustling shops, there is a glimpse of a different life beyond the town walls, 1 (High St., Bridport). The poet Laurie Lee, referring to Siena, described the essence of it when he said in a radio talk: 'The shepherd on the hill was visible from the market square.'

Should this bucolic sight prove too disturbing the well planned town provides a close pattern of narrow streets to turn into. The great outdoors is shut off as protecting buildings close about you. The change from disclosure to enclosure is a positive sensation rarely possible to the same degree in big cities. But this argument in favour of small, compact urban towns, though valid, does nothing to counteract the claustrophobic tendencies of big towns; some other remedy must be found.

Jean-Paul Sartre might prescribe the grid-iron plan of American cities. The long straight avenues that run right across town are open at either end to the desert; the prairie winds can blow unimpeded; a means of escape from the brick and cement defiles is implied, 2 (drawing of New York street by Hugh Casson), which is lacking in the closeknit web of Paris or London. There are moments, of course, in any city when we can feel the impact of the wilds; the nature of things is made poetically manifest in London when on an autumn afternoon the scream of a million starlings will drown the roar of rush hour traffic, a few brittle plane leaves scatter the pavement and a window in Whitehall flashes a dull pink reflection of the sun about to set away beyond the Metropolitan Green Belt. These are transitory effects, however, though none-the-less valuable for that. They accentuate the essentially urban values and enrich the moment when bar doors will open, lights go on and theatre queues begin to assemble. But this odd poetry in unexpected places



2



1

is none of the town designer's doing.

Human need for some natural contrast to city sophistications is evident in the horticultural activities of individuals in back gardens and window boxes, in potted plants and caged birds, and in their corporate efforts—the municipal park and the zoo. The park has its uses, but being as artificial in conception as the big city itself, it is no solution. What is needed is a hint of raw nature, not a demonstration of how nature can be tamed and exhibited. The monkey on the barrel organ does not immediately suggest the jungle; it needs an escaped lion in the streets for that and among the elements of big cityscape there should be a series of escaped lions—natural objects as visual shocks in a man-made setting just to remind us of the nature of things.

In the right geographical setting you can have a mountain in the main street—a lion in your lap so to speak—as at Granada (Spain, not Tooting). But care is needed where geography is less overpowering—as in Bloomsbury where a badly placed building could shut out Highgate Hill.

When the real thing is not visible, cobbled streets and rough textured floors have other justifications besides function or visual pattern; they are reminders of primitive lanes in distant villages.

In Bristol, with ships at the end of streets, 3 (19th century photograph, this area is now a traffic roundabout), the high seas are brought right into town, whilst the Avon at low tide reveals grey mud as primeval as you could wish for.

The most frequent and obvious natural objects found in cities are trees, which behind iron railings are clearly tame and safe. Those in Brunswick Square, Hove, 4, however, belong to a country walk and strike the right bizarre note against sophisticated buildings. And whereas, *the* tree in Oxford High Street is a piece of wild in the act of escaping, the one in Rome, 5, is obviously on the run.



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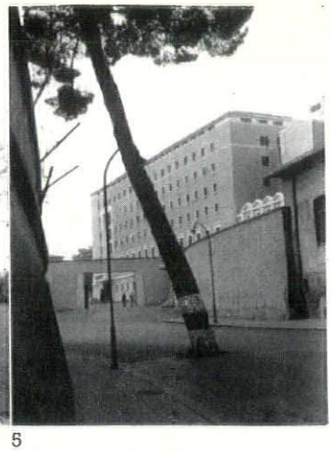

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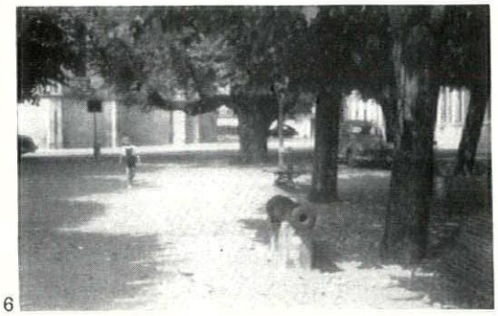
But of all devices, bare earth is perhaps the simplest. Since the city is usually thought of as a natural habitat rather than a carefully contrived environment one tends to think of the London floor as yards thick. Yet a pavement up in Whitehall with a glimpse of bare earth only a few inches below smooth paving slabs—heightened in contrast because of the setting—serves to jolt us into the right relationship with our surroundings. It is a chance to peep between the curtains and then to withdraw again, snug and protected.

All this would not be worth mentioning if nothing could be done about it. Unfortunately those who could do something are either unaware of the precise nature of the need or too busy drawing the curtains, buttoning up, covering and embroidering so that every patch of raw nature is sooner or later, at great cost to the ratepayer, transformed in the name of 'improvement.' What should be snug becomes stuffy and a minor manifestation of subtopia.

One feels that these things are managed better abroad. Odd pieces of common



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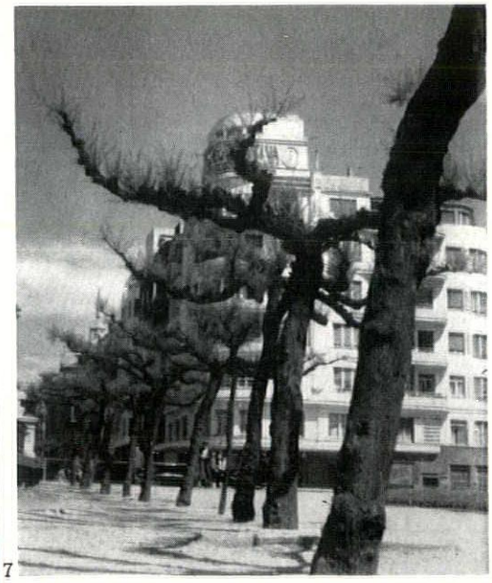
ground, pocket handkerchiefs of ground, 6, are left like that; no tarmac claims them for urbanity. Outside suave buildings, 7, the footpath is often no more than compressed earth. Although this sometimes



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gives to the place a temporary, almost camp-like air, suggesting that the town builders are amateurs with no will to finish the job properly, further contemplation prompts the conclusion that they know what they are about. As in all art, the skill lies in knowing where to stop.

Raymond Spurrier

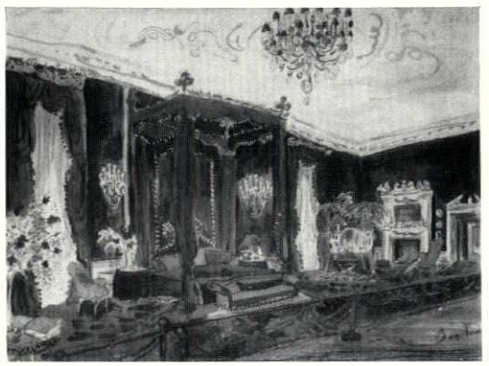


3

IDEAL INTERIORS

Traditionally, and in terms of the bulk of its exhibits every year, the Daily Mail's '*Ideal Home*' *exhibition is a great festival of entrenched, middle-of-the-road popular taste.* Nevertheless, it has a good record for employing leading progressive designers on projects that are far from the middle of the road, as in the case of the House of the Future by Alison and Peter Smithson, and this year's show, which opens on March 4, has a special exhibit of interiors by five designers of name, though not all of them architects.

One of them, Cecil Beaton, has produced an *Edwardian Bedroom* in 'le Style Rothschild' and various tones of red, 1,



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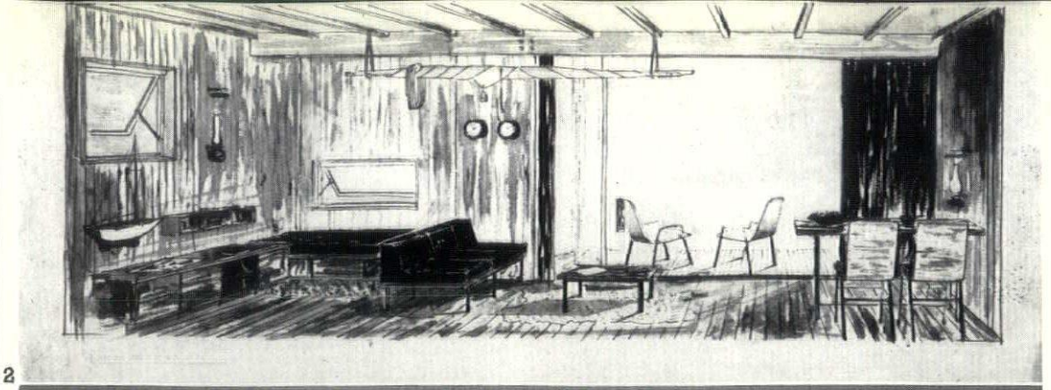
that probably stands fairly close to the popular conception of an acceptable luxury decor—but it may be an outgoing conception, for at least two of the other four schemes will be accepted (in so far as they *are* accepted) as representatives of a kind of modern luxury that has been made familiar through mass-communication media, and in particular the more sophisticated type of Hollywood film. Jo Pattrick's *Beach House*, 2, comes within this category, though one imagines that in her own mind something like the Functional Tradition was uppermost, establishing a working congruity between furled sails, exposed planking, Swedish windows, brass equipment and contemporary garden furniture. With Robin Day's *Executive Office*, 3, a public double-take with *Executive Suite* seems certain, though this particular style exists in reality in England, and largely thanks to the furniture designed by Mr. Day himself.

The other two interiors both transcend current popular acceptances, and yet both make sophisticated cross-references to what is acceptable. Sir Hugh Casson's womb-like *Room for Hi-Fi Listening* with its almost windowless interior, its avoidance of sharp corners and its vast reclining-



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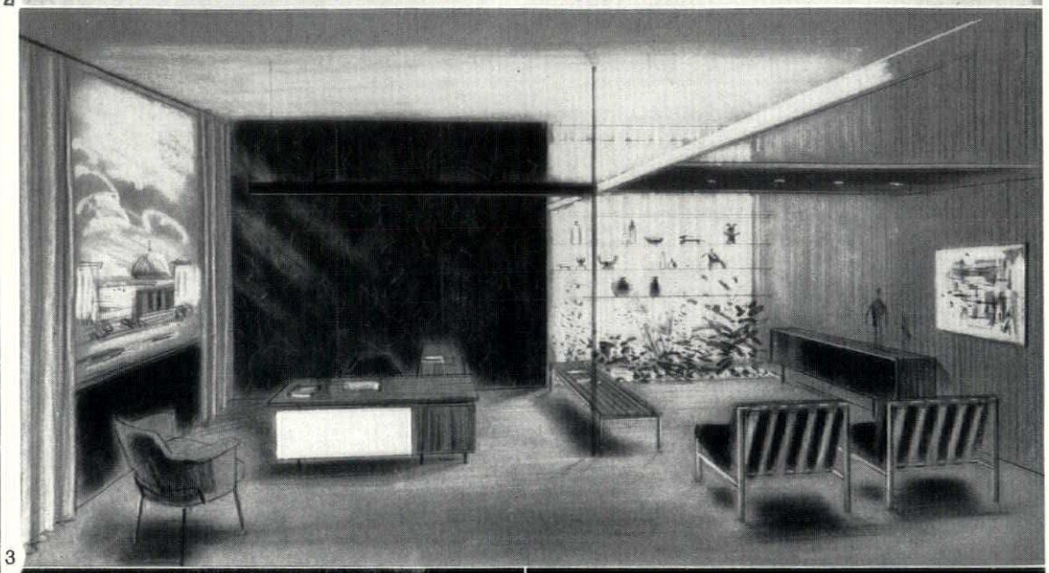

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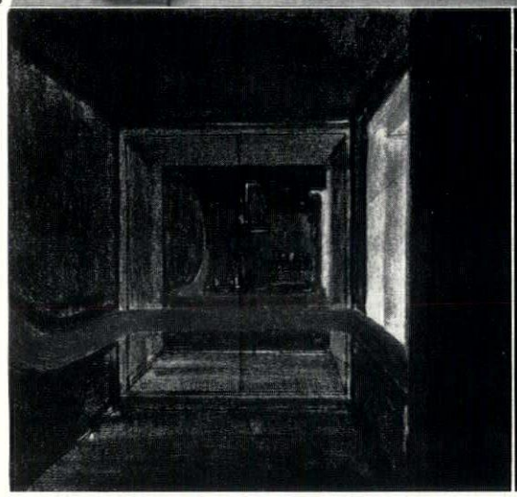

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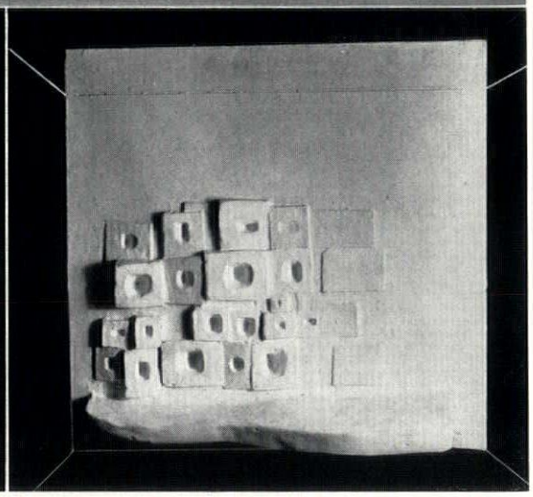

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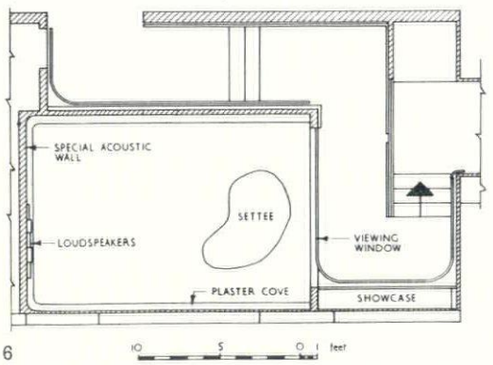
2, Beach House, *designed by Mrs. Jo Pattrick.*
3, *Robin Day's* Executive Office *with two zones, one for work and the other for relaxed discussion.*
4, *suspended Hi-Fi equipment in the room by Sir Hugh Casson.*
5, *the accoustic wall in model form.*



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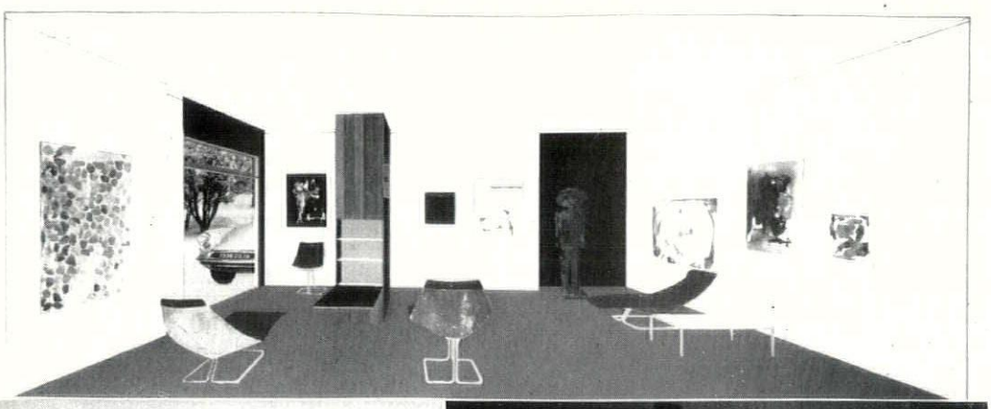
couch, has clear affinities with the underlying psychology of Beaton's Edwardian fantasy, though it runs right against popular taste in its manner of destroying the piece of furniture identified as *radiogram*, and distributing its parts between a showcase by the entrance stair, where the electronic parts will glow with their own radiances, 4, and an acoustic wall, seen in model form in 5, of speakers at the end of the room itself (see plan, 6). Richard Hamilton's *Gallery for a Collector* of Brutalist and Tachiste art, 7, is a simpler conception based on the idea of leaving clear as much wall-space as possible for the pictures and sculpture. To this end all the technical aids considered proper to a cultured man of the mid-fifties, from cocktails to tape-recorder, have been housed in a single mobile fitment seen against the back wall. The only other furniture in the room will be an occasional table, and four chairs—which return us to the question of public acceptance, for these



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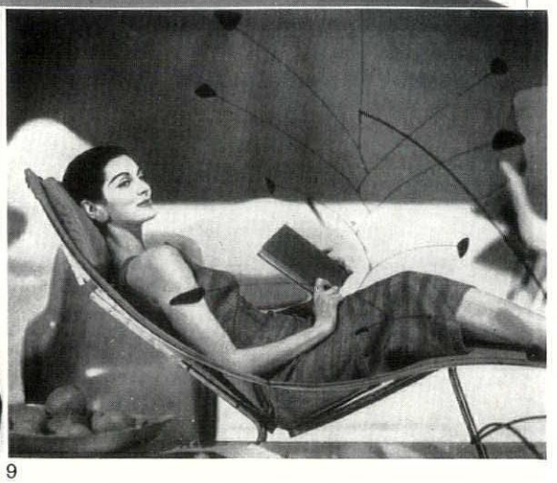

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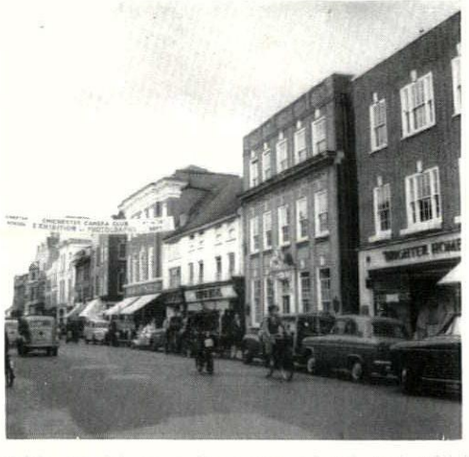
7, *'Gallery for a collector' by Richard Hamilton.*
8, 9, *chairs designed by Harley Earl.*

particular pieces, 8, are the work of that great fashion-maker Harley Earl, chief stylist of General Motors, and would not have been known to the designer of this room had they not been published in the popular magazine *Look*, which gave the *chaise-longue* version, 9, the full pop-art treatment. **P.R.B.**

COUNTER-ATTACK

52. King's Lynn, Norfolk. (*Borough Council*). The fishing cottages around St. Nicholas Church at the north end of the Tuesday Market are threatened by slum clearance and replacement by a new service road for Alexandra Dock. Clearance may be necessary, but only for replacement to the same intimate pattern—especially as this is a social unit as well as an aesthetic one and wouldn't survive 're-location'—i.e. dumping on an estate miles from the town and the docks. New roads should loop round the town and come in from the east, not add to the difficulties of a centre already stretched to its limit by ordinary market-town traffic.

53. Chichester, Sussex. (*City Planning Committee*). Keeping-in-keeping has reached absurd proportions in many of the cathedral cities, and there are already several streets where there are more respectfully fake Georgian buildings than there are genuine ones—this view of East Street, Chichester, is an example, 1. This attitude will only lead to emasculated streets and the devaluation of the original buildings, just as fake half-timber has made appreciation of the genuine stuff much more difficult. What East Street now needs is a bit of curtain walling or an exposed concrete frame, controlled by something much subtler than cornice lines and fairfaced brickwork, conditions



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which would vary for every street and which might be a colour-equation or a solid-void ratio or a rhythm of verticals: Chichester never got to its present beauty by being mealy-mouthed. Much of the trouble may be due to architects themselves and a conscientious planning officer may have to fight two battles: one to prevent his committee insisting on Neo-Georgian and another to prevent architects submitting Neo-Georgian designs.

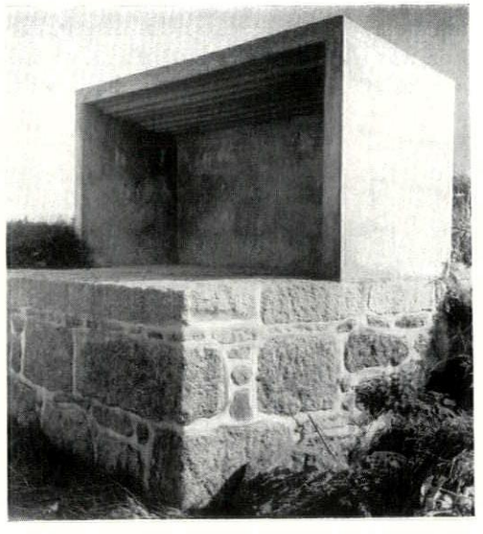
54. Shaftesbury, Dorset. (*Borough Council*). Shaftesbury has a splendid situation on a ridge-top with a 300-ft. drop both east and west. The culmination of this is Park Walk which runs from the town proper to the very tip of the ridge. It used to have big trees along it; these were felled two years ago after considerable dispute and conflicting evidence (the remaining stumps certainly look sound enough). However, that is spilt milk, and the problem is what to do now: at the moment the walk is an arid jangling mixture of stumps and asphalt, 2. The only course is surely to plant more big-scale trees and replace the asphalt with gravel and turf. This could be made into one of the most impressive walks in England: the council have only themselves to blame if they fail to make the best use of it.



2

55. West Wickham (*Residents Association and Borough Council*). The council want to fill in the White Hart pond at West Wickham as a nuisance—'West Wickham is a growing area and is no place for a village pond.' The pond, though neglected, is the most pleasant part of West Wickham and still forms a complete group with pub, trees and meadows; with intelligent landscaping it could become a sophisticated suburban pond. There is definitely a place for the pond (*a*) because West Wickham is a suburb anyway and (*b*) because the rest of the place is a subtopian wilderness.

56. Near Penzance, Cornwall. A churn stand which is completely successful by being entirely simple and up to date; consisting of a stone base and precast concrete top with corrugated iron used for shuttering, another example of the functional tradition in the 1950's. It is a model to anyone who builds in the country—and perhaps most of all to architects, so many of whom might over-design an object like this.



3

BOOKS

A NOVEL ANSWER

TRIUMPH OF PEACE: A STUDY OF THE WHITEHALL BANQUETING HOUSE. *By Per Palme. Thames and Hudson.* 70*s.*

Twenty years ago English architecture was, historically speaking, still in its antiquarian cradle: since the war it has been through the school of art-historical scholarship, and now it has graduated into the academic world of theses and post-graduate research. Mr. Palme's book was prepared as a thesis for a degree at Uppsala University, but it was written in London and it has now been published in an English edition. It represents what for this country is to some extent a new approach to architectural history. Hitherto the questions—other than purely factual ones—asked by writers on English architecture have been concerned chiefly with the history and analysis of style. Mr. Palme has gone one further. Guided by his supervisor, Professor Paulsson, he has attempted to define 'the historical situation in which, and for which, the building came into existence,' and 'to reconstruct its functional and evaluative context in its own age.'

This is a method which has, it is true, been applied more than once to English ecclesiastical architecture, notably by Dr. Addleshaw and Mr. Etchells. But in relation to Inigo Jones's Banqueting House it is something new, and the result is exciting. The building ceases to be merely the four walls behind the most famous façade in English classical architecture. It becomes one specifically designed to serve the elaborate diplomatic ceremonial of the time and, in particular, to glorify James I and his dynastic schemes. Mr. Palme convincingly associates the building of the hall with the preparations for the Spanish Match, and explains Rubens's paintings in terms of the political and religious ideas formulated by the king and his courtiers. He shows us how it was used as the setting not only of royal banquets, but also of masques, audiences, and the Office of Healing, better known as Touching for the King's Evil. Seen in this exalted context the Banqueting House attains an historical significance more than merely architectural: it becomes the Temple of the English Solomon, as charged with Stuart ideology as Westminster Abbey is with Plantagenet piety.

But Mr. Palme has not confined his researches to enlarging our understanding of the Banqueting House as a setting for court ceremonial. He has carefully examined its architectural lineage and indicated the sources which may have been in Inigo Jones's mind when he designed this 'inspired amalgam' of a traditional English hall and an ancient basilica as reconstructed by Palladio. In a particularly interesting chapter he demonstrates the existence of a ceremonial niche which was done away with after an existence of less than five years, and discloses the fact that the lower range of windows was either blocked up or covered by tapestries. The provision of two tiers of windows to light a single space has always been a puzzling feature of Jones's design, and if Mr. Palme does not altogether succeed in explaining the inconsistency, he has at least shown that it was one of which the seventeenth century was conscious as well as the twentieth. His own belief that originally some of the windows were open and others closed in such a way as to illuminate the ceremonial pauses in the reception of foreign ambassadors is ingenious, but seems to rest on insufficient evidence.

Apart from this, Mr. Palme proves his points with an exemplary citation of literary and documentary evidence, and the only general criticism which his book invites is indeed that it retains rather too obviously the form of an academic thesis, and that learning borne more lightly might still have given us the whole story in fewer and rather less formidable pages.

Howard Colvin

ALUMINIUM ART AND TECHNICS

ALUMINUM IN MODERN ARCHITECTURE. Vol. 1.—BUILDINGS. *By John Peter.* Vol. II.—ENGINEERING DESIGN AND DETAILS. *By Paul Weidlinger. Published in England by Chapman & Hall Ltd.* 80*s. and* 140*s.*

Aluminium and the plastics have, more than any other building material, a kind of glamour derived from a vaguely understood association with an advanced technology. Beyond this glamour, however, there is little factual information or, for that matter, understanding of the unique behaviours of these materials. Reynolds Aluminum, one of the three big American producers, recently commissioned these two volumes in order to remedy this deficiency as far as aluminium is concerned. The books are therefore aimed at architects interested in becoming familiar with one of the more important building materials of our period in order to explore to the utmost the available technological resources.

The first volume records certain architectural achievements in the use of aluminium during the last ten years and beautifully demonstrates the maturity, variety and acceptance which has been achieved in Europe and the Americas during this period. It has as an appendix some informal tape-recorded comments by twenty-six American architects. These are often revealing and occasionally amusing; Mies, for example, quoting Thomas Aquinas: 'Reason is the first principle of all human work' and adding 'I don't want to be interesting . . . I want to be good.'

The second volume—unfortunately, I understand, not available separately from the first—is a 'treatise on architectural engineering, directed to a specific building material: Aluminum' and is largely the work of Paul Weidlinger, who belongs to that small but fortunately increasing number of engineers able to combine brilliance with architectural insight. Quite apart from demonstrating the versatility of the various aluminium alloys and their multitudinous application in design from roofing to flagpoles through thresholds, curtain walls, insulation, ducting . . . it deals with the general problems of the material from its earliest stage as bauxite to its shop fabrication. A great many of the detailed descriptions are of very general interest and the catalogue of fastening devices, for example, many of which are borrowed from the aircraft industry, will surprise most architects.

The greatest drawback to the even wider application of aluminium is undoubtedly its price, which in turn is closely related to the cost of electric power. Only small quantities of aluminium are smelted in this country using the hydro-electric resources of the Highlands. Should the Volta River project go ahead, however, the existence of bauxite mines, a dam, a smelter and a port in Ghana, all in close relation to each other, may affect the price of aluminium within the sterling area. We may then come nearer to the economic arguments in favour of aluminium put forward in this publication.

The visual implications of the use of aluminium are related to this cost factor. More than in the case of steel, it is economic to spend a larger proportion of the total cost on labour and to design the more intricate spidery structures which use the material to its best advantage. Aluminium is also a generally weaker metal than steel, so that members will become correspondingly more bulky. Window mullions, for example, will have a greater cross-sectional area in aluminium than steel. Both these tendencies—spidery complexity and vigorous robustness—are, it would seem, very much in tune with current visual feelings.

Michael Brawne

NINETY YEARS ENGLISH BAROQUE

HISTORY OF ENGLISH ART 1625-1714. *By Margaret Whinney and Oliver Millar. Edited by T. S. R. Boase. Oxford University Press,* 1956. 50*s.*

The Courtauld Institute has made an immeasurable difference to the development of the history of art in this country. The editor of the Oxford History of English Art was its second director. The authors of this its eighth volume are the Reader in the History of Art at the Institute and a former student, one of the best the Institute can boast of. He is now Deputy Surveyor of the Queen's Pictures. The division of material between the two authors is transparent though unrevealed. Their collaboration is ideal, thanks to an identity of approach and a sufficient similarity of style. There is only one bad seam, when Dr. Whinney ends her chapter seven in 1675 and begins her chapter nine with the same year, but Mr. Millar interpolates in chapter eight the whole of major easel painting up to 1720 and beyond, a date Dr. Whinney reaches only in chapter thirteen. In another way, however, one author instead of two would have made a fundamental difference. He would no doubt have allotted space according to aesthetic value and historical significance. On both these scores architecture from Inigo Jones to Vanbrugh and Hawksmoor outstrips painting with, after Rubens and van Dyck, a Lely, a Kneller, a Verrio and even a Thornhill as its highlights. Moreover, in architecture every one of the masters was English, in painting none but

Thornhill.

Mr. Millar knows his subject profoundly, he describes superbly well and he never overestimates the artists he is dealing with. Yet readers will grudge him the space he has been given, and not only readers of THE ARCHITECTURAL REVIEW. Sculpture, for instance, might have had a little more space, not because its quality rises above that of painting, but because it has never before been put together in so consecutive and convincing a form as here by Dr. Whinney. And as for architecture, where, thanks to Mr. Summerson's volume of the *Pelican History of Art*, that cannot be said, the regret for constricted space yet remains. Mr. Summerson has about fifty per cent more. Dr. Whinney has done the right thing in concentrating on major figures and major buildings. This enables her to bring out more clearly than anyone so far the changing atmosphere of architecture in England from Inigo Jones to the Pratt-May-Hooke-Early-Wren moment and then to the Late-Wren-Hawksmoor-Vanbrugh phase with which she ends. It is here that she differs most interestingly from Mr. Summerson. He tends to attribute this heroic English Baroque to the younger men, Dr. Whinney stresses her faith in Wren's own capacity at the age of about seventy to develop this new style of colossal masses. As the editor of the future supplementary volumes of the Wren Society on the Bute drawings sold at Sotheby's in 1951, she will have an opportunity to discuss and, I think, prove her case. But if Mr. Millar can spend over a page on Wissing or on Mary Beale, should Dr. Whinney be forced to reduce All Saints, Northampton, to one line, to banish the eminently interesting mid-seventeenth century group of Thorpe-Thorney-Wisbech-Tyttenhanger (and incidentally Balls Park) into a footnote and to omit entirely the equally interesting contemporary work at Bolsover, Derby (County Hall), and Nottingham (Castle), and the later French group beginning with Montagu House, London, and Boughton and continuing with Petworth and Bramham Park? This group would have deserved an appearance in Dr. Whinney's chapters particularly because Mr. Summerson does not do it justice either, and because in addition Mr. Millar, curiously enough, does not even mention La Fosse's activity at Montagu House, although such Franco-Rubensian work cannot have failed to impress English patrons.

The relation of decorative painting to architecture in Stuart England is strange and calls for comment. There could be no greater contrast than that between the classicity of Jones's Banqueting House and the exuberant High Baroque of Rubens's ceiling in it. Equally pronounced is the contrast between Vanbrugh's cyclopic architecture and Pellegrini's proto-Rococo painting at Castle Howard. The Palazzo Barberini in Rome with Bernini and Cortona was all one, Vaux and Versailles with Levau and Lebrun were all one. Perhaps there is a case of 'Englishness' in this admission of different styles in the same building, a case parallel with that of Wren's different styles in his City steeples. If one defines it as a preference for variety over concentration and over uniformity of effects, one could even compare it with the equally English idea of Wren in his Grand Scheme for Hampton Court to keep the Tudor Hall but devise his processional way from the Great Court to the King's and Queen's Apartments through this archaic building and then with a right-about turn which would have made Louis XIV's architects shudder. But such kinds of interpretation are clearly of less interest to Dr. Whinney and Mr. Millar than many others of equal or perhaps higher value.

Dr. Whinney's last chapter is her most impressive. It is a brilliant summing-up of the English Baroque, starting from the little known preface to John James's translation of Pozzo's *Perspective* which is signed by Wren, Vanbrugh and Hawksmoor. Dr. Whinney's remarks on Hawksmoor's churches especially are wholly original and largely convincing, and the last two or three pages are masterly.

The volume is beautifully printed in its text parts, but less so in the illustrations. Here again, if only Dr. Whinney had had the seventy per cent more that Mr. Summerson had and his bigger sizes of pictures too!

Nikolaus Pevsner

HALF AN IDEA

THE IDEA OF LOUIS SULLIVAN. *By John Szarkowski. University of Minnesota Press.* 80*s.*

The position of the historian or critic faced with the problem of Sullivan has become very curious. At the centenary of his birth, the stage seems set for a wave of devaluation; the time is right, Colin Rowe and Philip Johnson have already set their picks to the foundations of the conventional view of him as a misunderstood giant of functionalism, and at any minute now the edifice may begin to buckle at the knees, and fall. Szarkowski's sumptuous picture-book is almost certainly extra hamper added at the top, not buttressing at the base. Both text and pictures are rhetorical in pitch, are often unduly uninformative, and tend to give an impression of Sullivan as the Housman, not the Whitman, of architecture—one gets a sudden flash of insight into the longing that young Chicagoan architects must have had in 1893, as their English equivalents did a decade later, for some real classical expertise in design, expertise that neither Sullivan nor Lethaby would give them. Though that expertise was a mirage, Szarkowski's hypnotic pictures of Sullivan's ornamentation in all its vegetable obsessiveness, make it clear that those in revolt had something to be revolted about, and equally clear that Frank Lloyd Wright must have had either a strong stomach or a numbed palate to stay with it so long.

But there is still the other Sullivan, the poet of structure, the elaborator of noble façade patterns. To him Szarkowski, enmeshed in the Sargasso of ornament, pays too little attention. The words of homage are there, but not the photographs—though there are some striking images of bits and aspects of his structural work. But this was probably inevitable because structure—and particularly structure such as Sullivan's almost isotropic space-grids—is an intellectual concept, not often a visual fact. It is something that neither words nor photographs can usually handle, but only diagrams, such as the famous one of the frame of the Theatre des Champs Elysées, which has contributed so much to the reputation of Auguste Perret. Yet there is neither a section nor a plan, let alone an axonometric or a diagram, in the whole book, and without these quite half of the idea of Louis Sullivan must inevitably be lost.

Reyner Banham

Shorter Notices

SPECIFICATION 1958. *Edited by F. R. S. Yorke and Penelope Whiting. Architectural Press, London,* 35*s.*

Owing to the printing strike of 1956, *Specification* has nominally jumped a year, as there is no 1957 issue. Typically English, adding new headings in defiance of all rules of classification, and generally indispensable, *Specification* this year adds a new section on Curtain Walling by Arthur Parry, A.R.I.B.A., and includes a re-write of 'Fire Resisting Constructor' (who was he?), now sensibly called 'Fire Protection' by L. A. Ashton, another on 'Schools' by John Stillman and John Eastwick-Field, and a monumental re-write of 'Ironmongery' by Robert Maguire and Peter Whiteley, which is so useful that it is in itself worth every penny of the published price. Apart from these, the work of unspectacular renewal goes on, and if there are some whole sections which from the Architect's point of view are an almost total loss (sometimes through his own educational shortcomings) the work as a whole is still the best general reference to building in the English language.

WORK-PLACE FOR LEARNING. *By Lawrence B. Perkins. Reinhold Publishing Corporation.* 32*s.*

This book, commissioned by the Libbey-Owen-Ford Glass Company from one of the foremost school architects in America, is most refreshing. Lawrence Perkins breaks right away from the encyclopaedic approach which has made some earlier American books on schools rather indigestible. His theme is architecture in the service of education, and is expressed in simple, clear and brief statements, illustrated by well-chosen photographs (some in colour) of the work of the author's firm. There is much to admire and envy in Lawrence Perkins' schools, even though there will be reservation about some of the furniture and colour. We doubt if teachers over here would find American assembly halls very useful, but they would love the spacious classrooms and the open fires and Persian rugs in the kindergarten rooms.

D.L.M.

Books Received

TEACH YOURSELF TO STUDY SCULPTURE. William Gaunt. English Univ. Press. 7s. 6d.
ANALYSIS OF MULTI-STORY FRAMES. Gaspar Kani. Crosby Lockwood & Son. 40s.
DAS WOHNLICHE HAUS. Otto Kindt. Ullstein.
ACOUSTICS FOR THE ARCHITECT. H. Burris-Meyer & L. Groodfriend. Reinhold. 40s.
A WORLD OF PATTERN. Gwen White. John Murray. 18s.
PRINTED TEXTILE DESIGN. Terence Conran. Hultons. 25s.
APPLIED BUILDING CONSTRUCTION. Medlycott. Chapman & Hall. 25s.
WOOD SPECIMENS. Patrick Nairn. Tothill Press. £3 3s.
ORIGIN OF FUNCTIONALIST THEORY. Edward de Zurko. Oxford Univ. Press. 40s.



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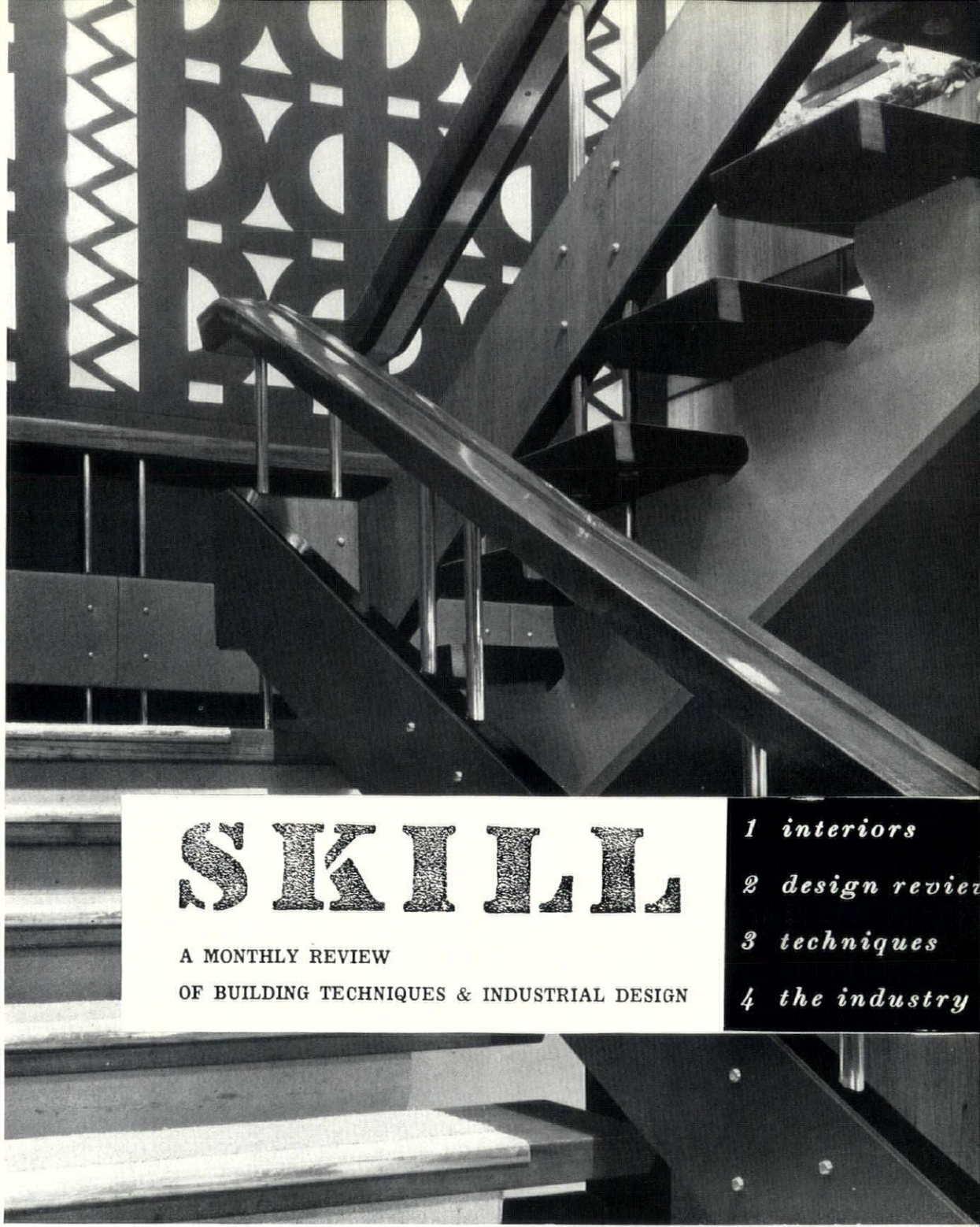
Perspective by R. Myerscough Walker
Floor Tiles by Marley

'The form of the plan and the pattern of the floor tiling should be considered together . . .'

This plan is really an extended staircase access, rising a few steps at a time, to a large landing area. Since this scheme is a museum related to an administration area, public access is through the museum which rises gradually towards the upper storey. In this case the different levels have been marked out in total areas of different colour.

The Marley Tile Company Limited, Sevenoaks, Kent *Sevenoaks 55255*
London Showrooms: 251 Tottenham Court Road, W.1



SKILL

A MONTHLY REVIEW
OF BUILDING TECHNIQUES & INDUSTRIAL DESIGN

1 interiors
2 design revie
3 techniques
4 the industry

1, *staircase and fibrous-plaster screen based on African designs.*

1 INTERIORS

BOOKING HALLS, BOND STREET, W.1

Architect: Michael H. Egan. Assistant architect: W. Lance Muriel.

This passenger booking hall at 19-21, Old Bond Street, is for the Union Castle Line. The ground floor display windows are linked by a 24 ft. long centre window which has a teak slatted floor forming the base for changing displays which



2, *the main entrance with the sculptured panel by Henry Haig on the left.*



3, *the reception area furnished to represent a liner's sun deck.*

provide a partial screen to the main booking hall. The fascia piers and flanking walls are grey granite with stainless steel door furniture and window surrounds. Lettering is in a combination of perspex and stainless steel and is illuminated in rose. Two projecting signs, also in perspex and stainless steel, represent the house flags. On the left of the entrance door is a sculptured panel by Henry Haig carried out in vitreous enamelled copper plates set in cement fondu. A low canopy extends from above the doorway into the main hall.

On both floors the decorations are similar—African teak panelling and teak slatting in white decorated plywood contrasting with paler areas of plaster; curtains which have a gold and black motif on a neutral background and beige carpeting. Ceilings which are treated with pale blue-grey acoustic tiles have openings for the ventilation system and recessed tungsten light fittings designed by the architects. Counters are dispensed with and specially designed booking desks of walnut and stainless steel with red leather inset tops are used instead. These incorporate hanging telephones to keep the top of the desk free and are designed to stand singly or to butt together.

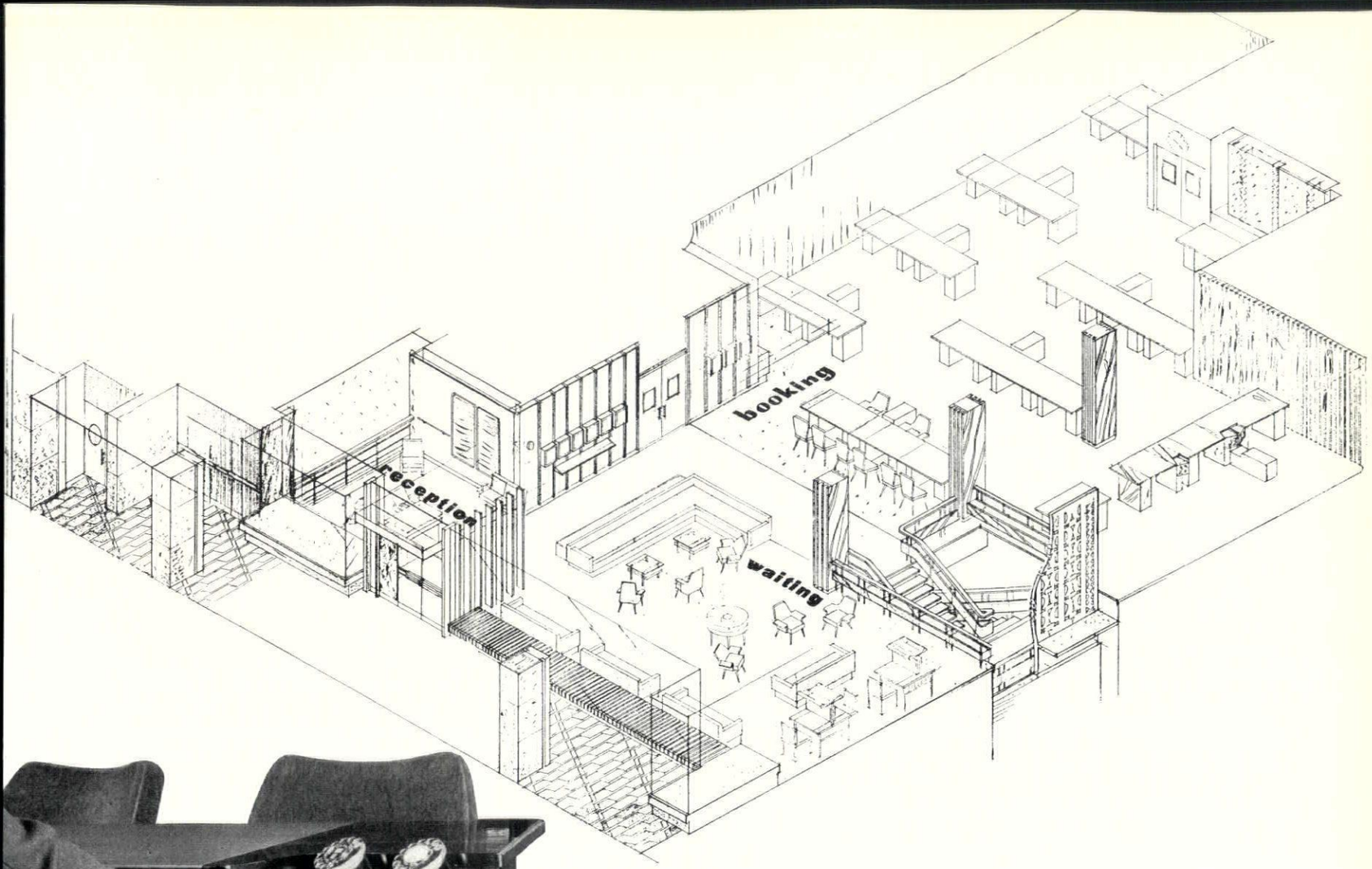
The staircase has a reinforced concrete carriage with solid teak treads and handrail, baluster of brass, a balustrade of padded red leather, and a screen of fibrous plaster having a perforated pattern based on African designs. On the lower ground floor a decorative map covers the whole of one wall.

4, *the staircase from the lower ground floor.*



5, *the booking desks and chairs for the public covered in pale blue alpaca.*







6

above, isometric drawing of ground floor booking hall. 6, specially designed booking desk of walnut and stainless steel incorporating hanging telephones.

GROSVENOR HOUSE, PARK LANE, W.1

Architect: Gordon Jeeves

Interior Design Consultants: R. D. Russell & Partners

In the new wing which completes the hotel there are ninety-two bedrooms and two suites on seven floors while accommodation below is devoted to offices and general services for the hotel. Most of the bedrooms follow a standard pattern which is varied from floor to floor by different colour schemes and a choice of wood finishes—cherry, walnut or mahogany. Each bedroom has a built-in fitting of wall length which includes a wardrobe,



7

GROSVENOR HOUSE, PARK LANE, W.1

7, the dressing table with mirrors, placed to give an all-round view of the head.

8, sitting room in one of the suites.

9, a bedroom showing the bedside-table between the beds and luggage stools which can be folded away.

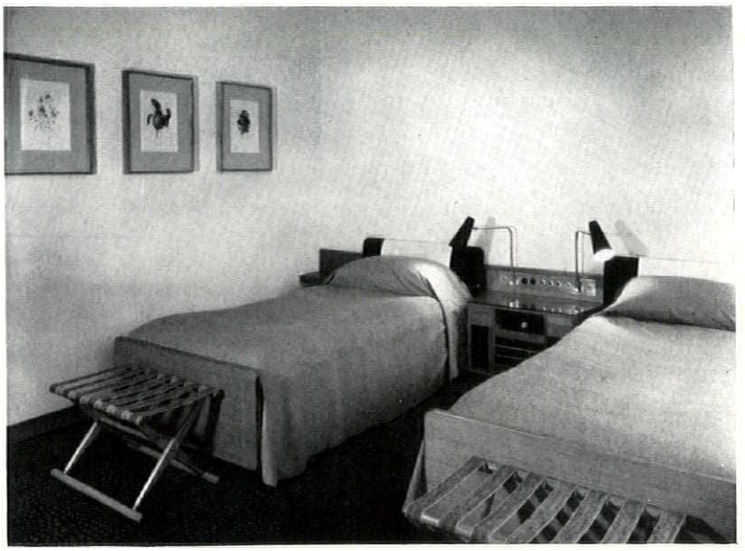
10, typical bathroom with coloured tiles on floor and walls, and mirror with indirect lighting above the wash-basin.

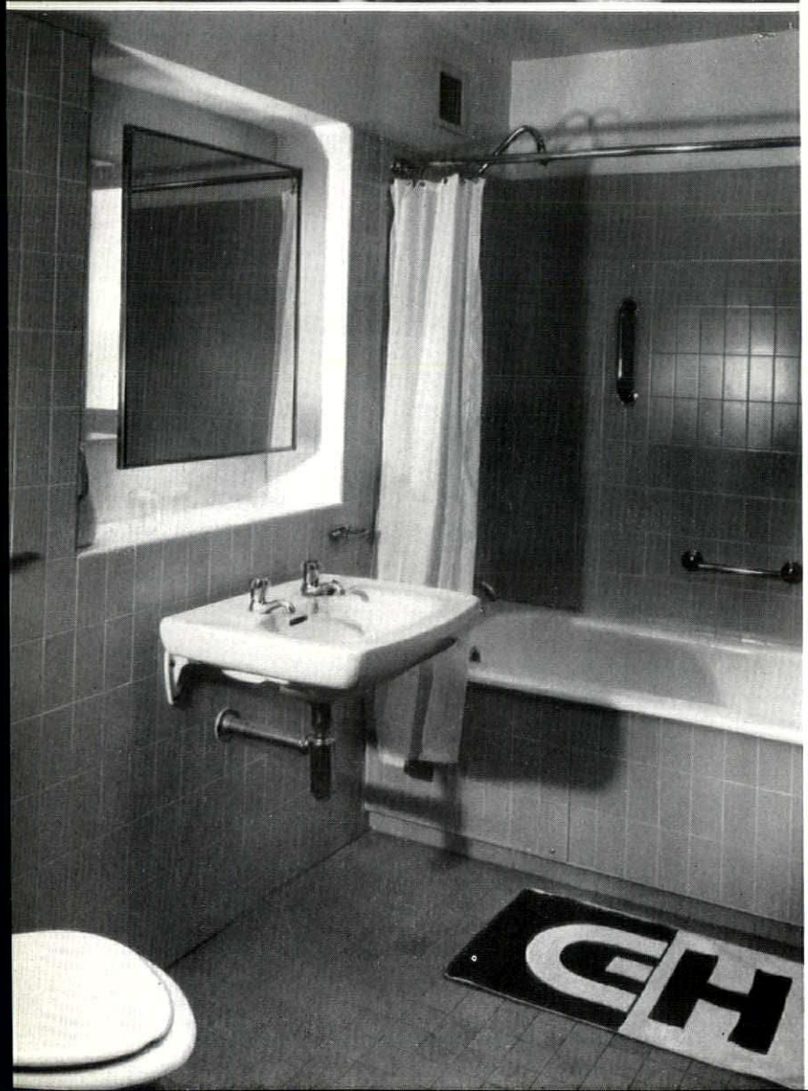


8

storage space and a dressing table. Heat is supplied by thermostatically controlled radiators concealed by cane-filled frames. The bathrooms are separated from the lobby by a hardwood screen with a glass panel at the top. Condensation is reduced by a ventilating system which changes the air in each bathroom every ten minutes.

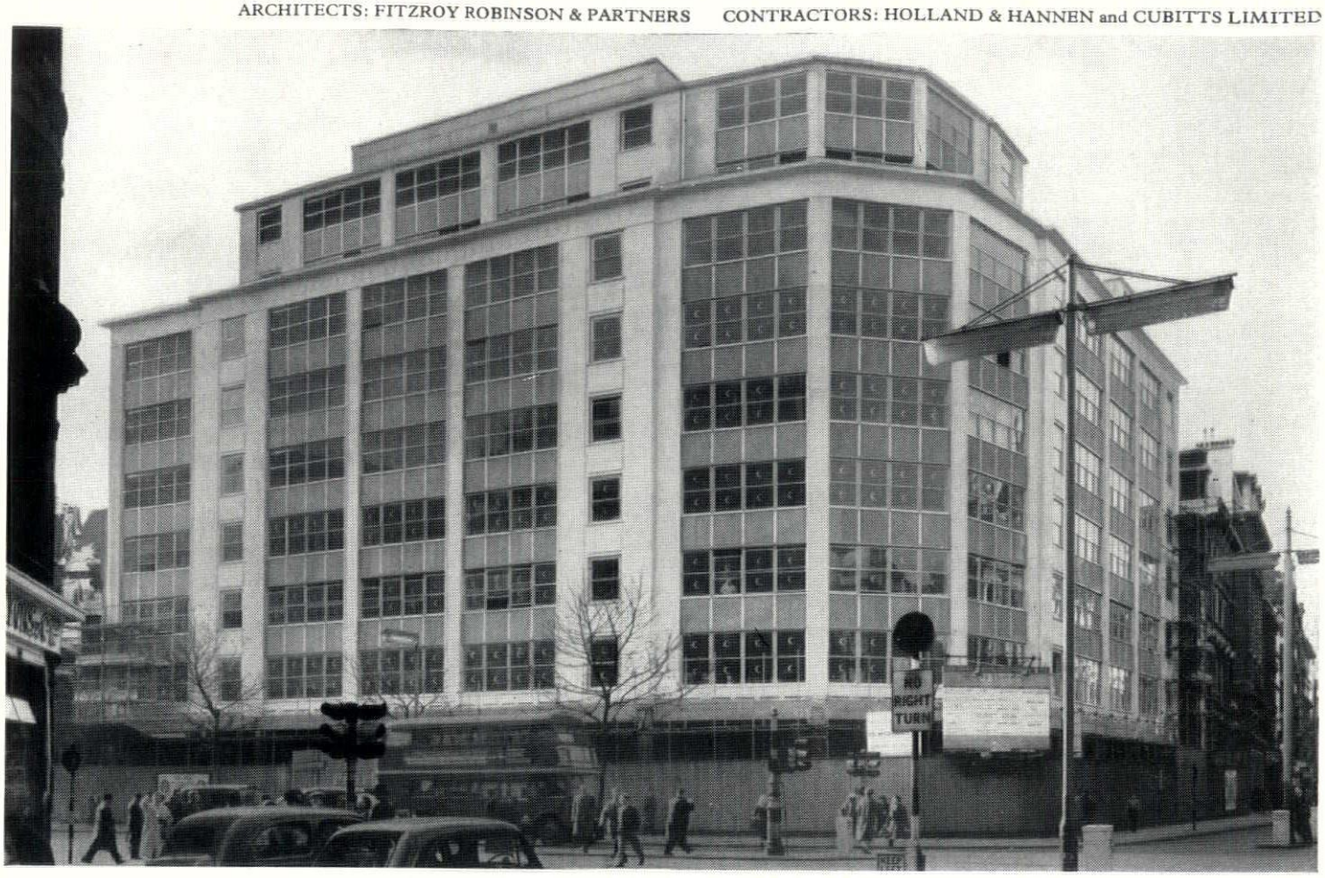
9





10

ARCHITECTS: FITZROY ROBINSON & PARTNERS CONTRACTORS: HOLLAND & HANNEN and CUBITTS LIMITED



Erection of the new office building on the site of the former Holborn Restaurant

expedited by off-site fabrication and on-site assembly

The new building is expected to be ready for occupation by the end of the year. It has a steel frame with BISON precast prestressed concrete plank suspended floors.

Major economies resulted from reduced use of on-site shuttering, reduced floor fixing time, reduced overall floor depths, reduced man-hours and materials required. These were rendered possible by using BISON composite concrete plank floors (and hollow slabs for the suspended ground floor). BISON composite plank floors use prestressed concrete planks and *in situ* structural topping. The electric service conduits and other services are laid within the structural topping and this work is synchronised with floor fixing as a whole.

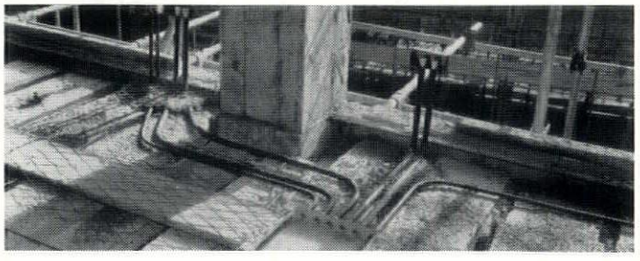
If ordinary *in situ* concrete floors had been used, extra time and material would have been necessary for the thicker screeding required to cover the electric services etc. which would have to be laid on top of the structural concrete, thus the floors would have been 2 in. to 3 in. deeper; the cost of the Natural Portland stone frontage and that of the brick clad for the rear elevation would have been correspondingly increased.

The savings actually made—because of thinner floors rendered practicable by using BISON composite plank construction—have been estimated as 520 sq. ft. of Portland stone for the stone-clad eight-storey frontage, and some 1,570 sq. ft. of brick cladding for the four storey rear elevation.

BISON floor fixing and concreting teams started work on January 1st 1957, shortly after commencement of steel frame erection. The sub-contract included some steelwork encasement and the bulk of the work was completed in less than two months—between completion of steel frame erection on May 22nd, and July 19th. This performance would have been impossible if ordinary *in situ* concrete floors had been used, because of the extra time required for formwork erection.

In eight weeks 14,937 yards super of BISON flooring were fixed —well over 500 sq. yd. per week. Between fixing the prestressed planks and pouring the structural topping, time was allowed for installation of electric and other service conduits. And, in the same period, no less than 1,533 steel beams and stanchions were encased in concrete; 22,591 cu. ft. of concrete was used, this being poured and completed at well over 700 cu. ft. per week.

Obviously it pays to use BISON floors!



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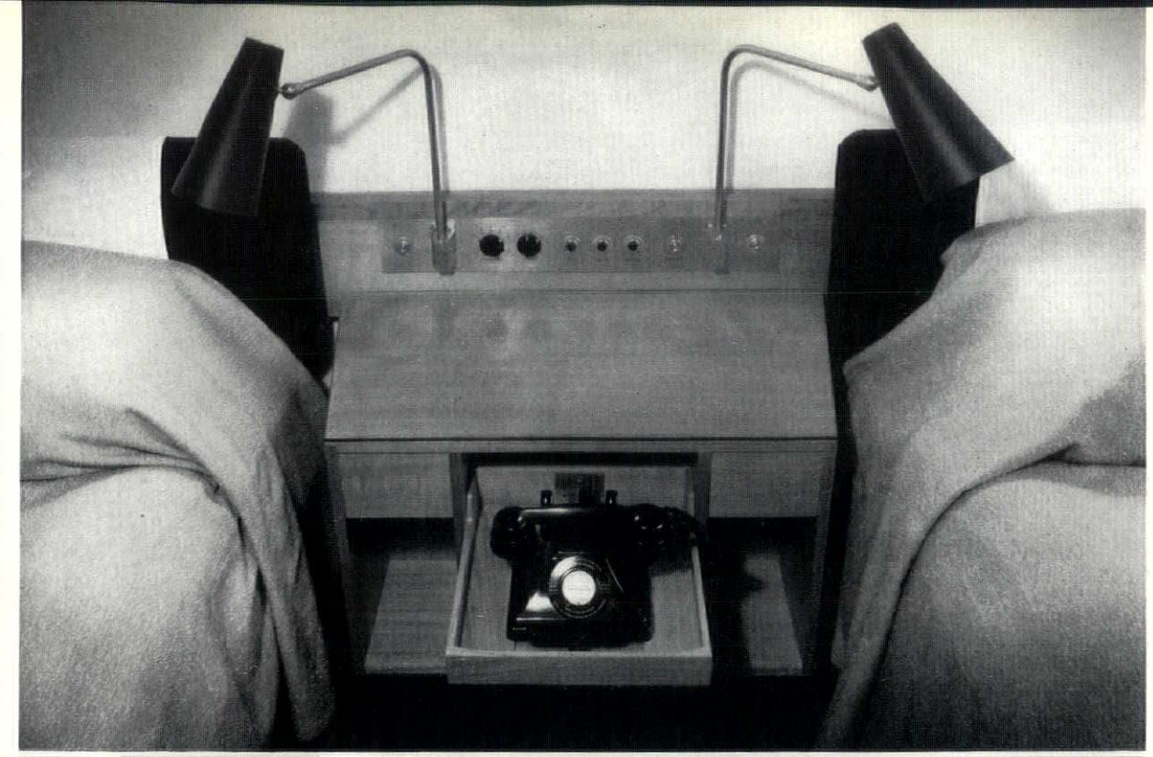
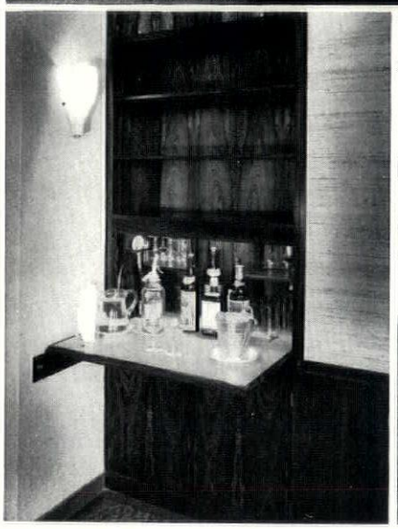
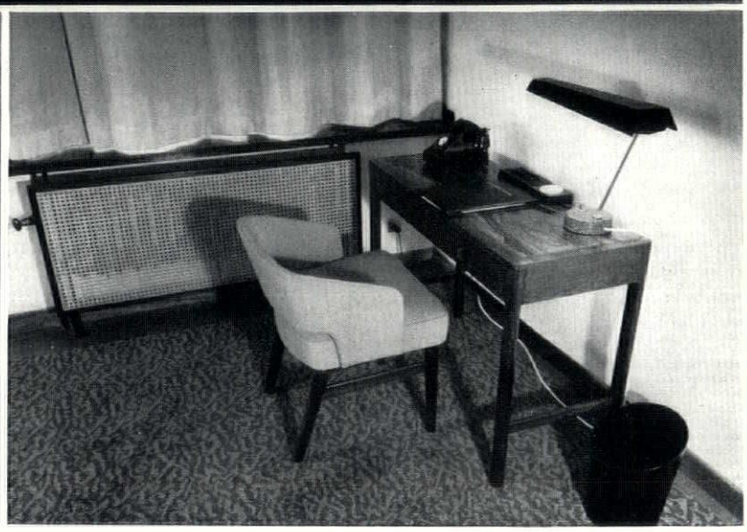


11, *the bedside-table fitted with radio, light and communication switches and a pull-out shelf for the telephone.*





12, *part of a built-in storage unit which incorporates a bar and amplifier.*

13, *a corner of a bedroom showing a radiator with cane cover and typical writing table.*



1

2 DESIGN REVIEW

Nothing could better demonstrate how success begets success, and improvement begets improvement, than the 1958 Furniture Exhibition at Earls Court. The improvement in over-all display, presentation and consumer-appeal which resulted from the activities of Leslie Julius's exhibition committee in 1957 have been extended, not only in the visual atmosphere of the show itself, 1, but also in the emergence of more enlightened design on more and more manufacturer's stands. The institutional displays around the central feature this year were more ambitious, and probably more consequential, in that they helped to give visitors a more broad-based standard of judgement, by exhibiting selected design from Britain, Italy, Finland and Sweden.

The Scandinavian exhibits were marked,

as ever, by purity, simplicity, elegance—and an inevitable sameness arising from excess of natural birch and light-toned fabrics. The British exhibit, 2, selected by the CoID and designed by Challen and Floyd, while less sure of itself than the others, was much more enterprising than usual—if the exhibits themselves were familiar, albeit worthy, the device of showing them on floor-slabs suspended without visible means of support, clear of the ground with light flooding out from underneath, was extremely effective. Of the Italian section the less said the better, except that it could well be the deathblow to the Italianate craze in English middle-brow taste.



2

3 TECHNIQUES

STREET LIGHTING

by Peter Whitworth

Gordon Cullen's recent article (AR, December, 1957) was a plea for flexibility in street lighting. In this article Peter Whitworth reviews the best current British fittings and illustrates some of the results obtained on the Continent by using variable mounting heights.

It is inevitable that development should take place when an industry finds itself outdated by changing circumstances. The awakening of those concerned with lighting is not quite as recent as is often supposed; fifty years ago suggestions were made for lighting installations requiring light sources of some 500 watts and columns 28 ft. high. Similarly the much maligned concrete column made its debut as early as 1915, and was well established by the late 1930s. It must also be appreciated that, since its inception, public lighting to the lighting engineer, if not to the planner, has been concerned with user safety after dark. Since the first flare was used to draw attention to an obstacle or change of direction the ideal has been to perform this function even better. The introduction of the motor car and the increased use of the roads by night resulted in thought being given to roadway lighting, and by the thirties many installations had been erected using lamps of high output such as the mercury vapour and sodium gas discharge lamps. The use of these new light sources revealed the need for scientific study of the installation procedure and the effect of variables, including road surfaces, spacing and mounting heights, and in 1937 the Ministry of Transport set up a departmental committee to consider the whole problem. The work of this Committee is particularly significant, and many of its recommendations still concern us today in the Code of Practice for Street Lighting (see AR, December, 1957).

It is against this background of rapid technical development and the ready market for new products that we must consider the manufacturer. In common with many others in British industries, the manufacturers of street lighting equipment were shrewd enough to concoct easily saleable lamp standards, basing their character on the tired worn design clichés of the day, and relying on the susceptibilities of the authorities who were to buy them. The early attempts at design were often sadly misdirected and based largely on a hazy idea of classical proportion.

This state of affairs, arrested during the war years, became more apparent afterwards when the need to install new lighting schemes and replace dilapidated installations was common throughout the country. The Ministry of Transport, aware of the situation, invited the Royal Fine Art Commission to consider the designs of lighting equipment on its behalf, and financial aid to local authorities whereby one half of the cost of an installation lighting a trunk road was met by them, was made conditional on the design of the columns being acceptable to the RFAC. While this showed action on the right lines, it was not in itself enough, and in 1949 a meeting attended by some 40 representatives of municipal associations, government bodies and departments, and other interested parties, considered a joint memorandum by the RFAC and the Council of Industrial Design, outlining the difficulties and suggesting some remedies. It was generally agreed at the meeting that there was a lack of co-ordination between those responsible for the design of equipment, its selection and siting, but many local authority delegates were of the opinion that they were fully competent to deal with the matter locally. Time has shown this to be all too rarely true; however, several constructive suggestions came out of this meeting, including one that was unfortunately never acted upon. This was that a small central working committee be set up to consider the whole problem. It does not even now seem too late for this; it should be able to perform a very useful service.

At about the time of this meeting, it was realized that the CoID, with its experience in dealing with manufacturers' design problems, was in a good position to continue the work of the RFAC on behalf of the Ministry of Transport, and at the same time pursue a policy of improving the daytime appearance of street furniture. In 1952 the Council set up its Street Furniture Panel and took over this work. Since then it has maintained a list of approved lighting columns on behalf of the MoT, and has made this available to interested parties. The RFAC continue to advise local authorities on the siting and selection of columns and their relationship to specific problems. The CoID have negotiated with the manufacturers at the design stage, and this has led to a marked improvement in equipment. This would not have been possible without the co-operation of the makers, and often major financial sacrifices were made in changing plant to produce better designs. So successful has this co-operative effort been that today there are available designs of a high order and a wide range of equipment from which to choose. Many of these columns and lanterns compare very favourably with those offered anywhere, whether judged by technical or visual standards. This in itself, however, is not enough if the resulting improvement in lamp-posts and other items is offset by careless or unsympathetic siting, and it is essential to see that the installation is handled to the best advantage, rather than accept misuse with complacency.

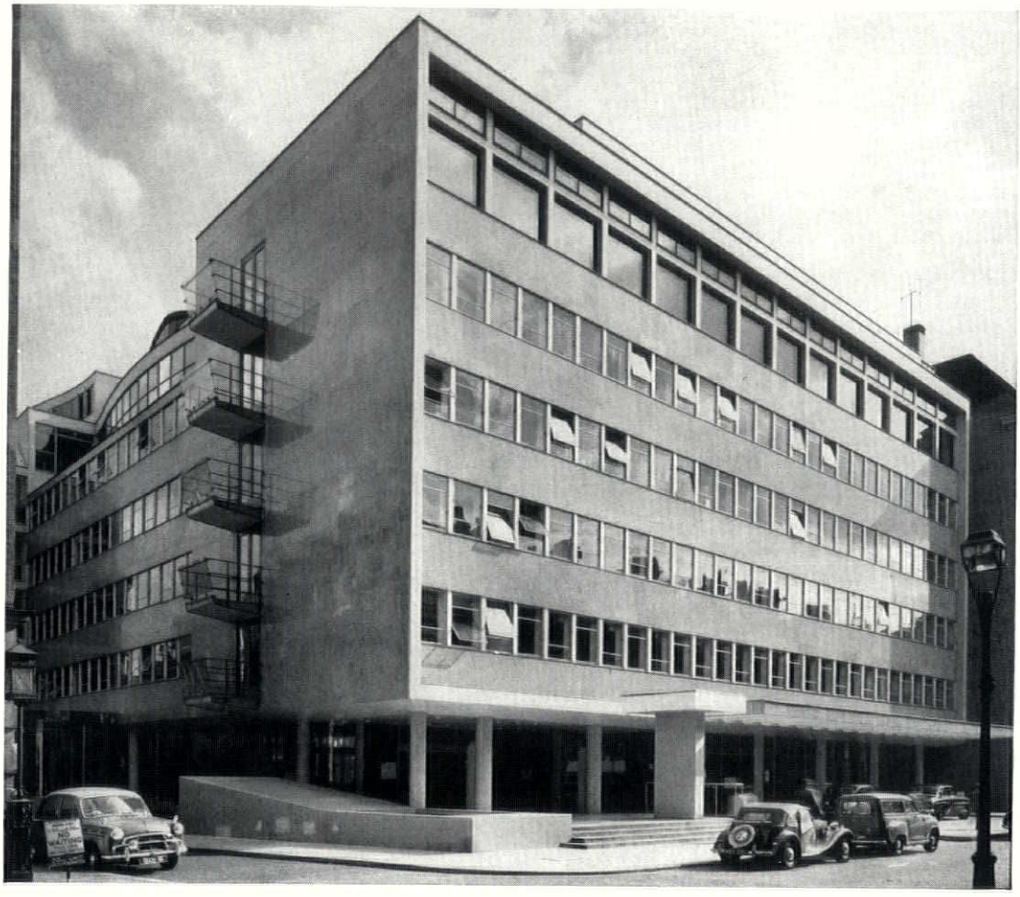
One cannot seriously question whether or not motor roads should be lit. Adequate street lighting is essential to the safety of all road users, and there is ample evidence to prove that good lighting does materially reduce road risks, and sufficient to suggest also that accident reduction during hours of darkness can amount to as much as 30 per cent.

The basic principles of the Code of Practice, when applied, result in an installation giving safe night vision, and at the same time draw the user's attention to local hazards and the configuration of the roadway and junctions. However, the classification of roads is unrelated to surroundings and townscape, and while fast traffic routes such as the Cromwell Road extension look well with their new furniture, our villages and towns can be scarred by the intruder. Those who choose to live in the past, pretending that electricity is merely a nasty phenomenon which is better ignored, appear delighted with this failure—it is indeed a pity that nothing constructive is attempted by those people to draw attention to the prime cause of the unhappy situation, other than by assaulting an unfortunate by-product of an inadequate system.

The progress made cannot be denied, and from providing lighting on five miles of trunk roads in 1947–8, during the past year the figure has risen to 120 miles! On the credit side it must be said that much of this work is good, and we should study these examples at least to the same extent as the failures.

One is tempted to sympathize with the poor lighting engineer and his staff who bear the brunt of the public criticism, and it is only right and proper that as a good servant to his master — the local authority — he should accept this responsibility, but many aspects of this problem are completely beyond his control, typical of the ramifications of local government. Finance and the spending of public money is governed by committees, many of whom interpret economy to mean 'always buy the cheapest.' So much attention is paid to the competitive tender system that often a price for an installation unsuited to the requirements is accepted, even when the tender for the ideal equipment is only fractionally higher. This system is inadvertently supported by the MoT grants based on the lowest tender.

[continued on page 217



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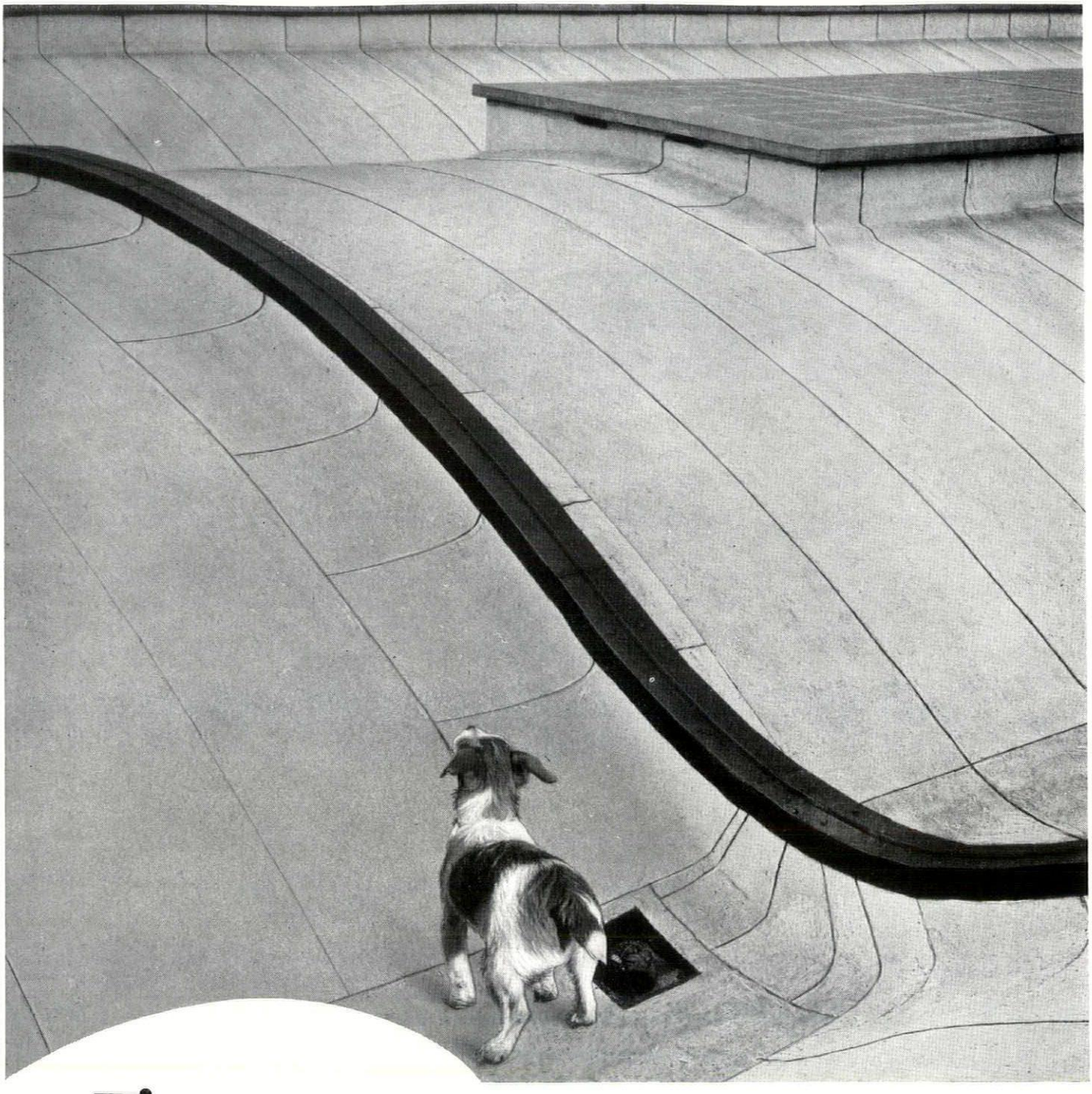

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continued from page 216]

This practice is leading to a price-cutting within the public lighting industry, and there is a danger that this could lead to a general lowering of standards. The industry has reason to be proud of their record to date, in reducing costs, when one considers that the annual cost per mile of street lighting in 1937 was some £400 and today it is unlikely to exceed £750 per mile. In the past ten years the cost of trunk road installations has risen from about £2,400 to £4,000 per mile, which compares very favourably with increases in other fields.

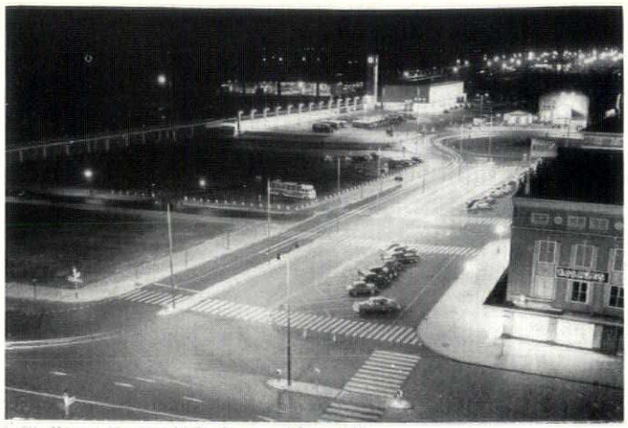
One cannot but feel a touch of nostalgia at the passing of the old cast-iron lamp-post and its ornate lantern, but it must be remembered that the shapes of our new street furniture cannot economically or practically follow old shapes. Like most other modern products, they are for the most part made by machines, often of new materials, and perform new functions—the modern lamp-post has no prototype in the past!

It is regrettable that it is still common practice to consider the design of the column and lantern separately instead of as one unit. Certainly the lantern by night must be technically suited to its job, but by day both column and lantern must be acceptable. It is often this disregard of daytime appearance and lack of relationship between the components of a lamp-post that ruin an otherwise satisfactory solution. It is nonsense to assume that appearance and performance in street furniture are not compatible.

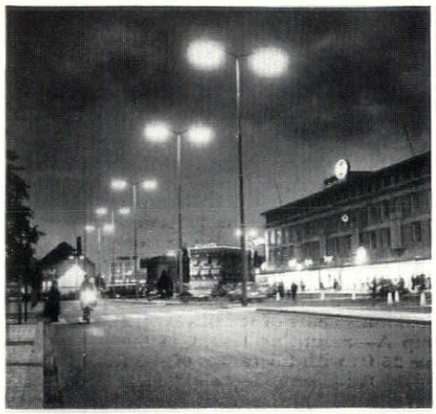
The design of lanterns is related to the shape of light source, and their character is largely determined by the optical control employed. Several types of light sources are available (excluding gas) and these vary in size from a fluorescent tube some feet in length to the ordinary domestic tungsten lamp. 'White light' fluorescent tubes are used in sizes from 2 ft. to 5 ft. long; gas discharge lamps such as the green-blue mercury and orange sodium in wattages from 80–400 are in common use, as are tungsten-filament lamps over an equally wide range. Each of these lamps has its special uses to the lighting engineer. The fluorescent tube is popular because of its natural colour rendering, and it has the advantage of a comparatively low intensity at the source owing to this being spread over so large an area, making it suitable for a wide range of lighting applications. It does, however, need a sensitive designer to avoid these lanterns becoming luminous horse troughs. The effect of travelling in the tunnel of light they force into the night is unpleasant and can destroy any sense of surroundings. The limitations to the output of a single fluorescent tube make it necessary to use several together, and these are placed within the lantern, to suit the form of optical control adopted. Refraction, reflection and diffusion are used to direct the light where it is required. Many solutions incorporate all three.

Multiple light sources within the one fitting can be used very effectively to produce lanterns of variable output, enabling the maximum light to be emitted during peak traffic periods, and a lesser output is available for normal requirements.

Gas discharge and tungsten lamps are compact in overall size and light source, but require accurate optical control to distribute the light properly and avoid glare. Recent developments include multiple use of these within the lantern. The heat generated by these lamps presents yet another problem on the designer's brief, and it is current practice to



1, *Eindhoven. 13 metre high columns with two 400 watt colour-corrected mercury lanterns to each bracket, resulting in a very high level of illumination.*



2, *Eindhoven. Twin lamp version in foreground. Four lamp columns leading down to roundabout. The grand scale of this layout enables columns of this height to be used.*



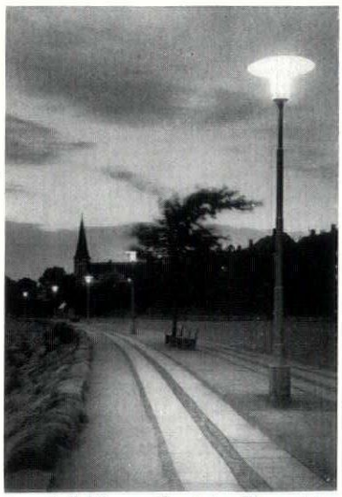
3 *and* 4 *above, German examples of the 'whip' column and lantern. Much commended by tourists, but this rather loose curve cannot be the answer to all applications. Assumedly the light source is two or three 4 ft. 40 watt fluorescent tubes, considerably less than recommended by our Code of Practice.*



4



5, *a gracious, if tall, column, in a petrol station in Switzerland.*



6, *park lighting on Bornholm. The post-top lanterns contain three 20 watt fluorescent tubes. The column design shows signs of much the same problems as our designers encounter.*



7, *Dutch examples of continuous taper steel columns with some 30 ft. or more mounting heights. The curve of the bracket is elegant and the lantern mounting clearly defined.*



8, *this example represents a very logical solution to the original problem, which was to protect the light source, assumedly a bats-wing gas burner, from the elements, and at the same time provide air for combustion and ventilation.*

dissipate this by heat exchange with the surrounding air through the lantern casing rather than by air circulation and ventilation. The colour corrected mercury lamp, currently finding favour, is kinder to complexions than sodium—however, many motorists prefer sodium lighting when in the driver's seat, due to its penetration in fog and the sharper contrasts produced.

The function of the column or lamp-post is to hold the lantern in such a position that it can perform its job of lighting, and its appearance should be either inconspicuous or distinguished. Regulations necessitate columns being of various heights. (Group A—mounting height of light source 25 ft. with tolerances of +5 ft. and −1½ ft.; Group B—height 15 ft.: +1 ft. and −2 ft.) Provision for holding the lantern immediately on top of the shaft or at varying outreaches by means of brackets is required. Sometimes outreaches of up to 7 ft. 6 in. are needed, due to physical limitations on the column position. Structurally the column must be capable of withstanding the forces acting on it from the lever arm of the bracket and lantern, wind pressures, and in addition, a certain measure of vehicular impact that unfortunately occurs when columns are used in great quantities alongside motor roads. Another less obvious structural requirement is that the columns must be strong enough to be delivered to the site and erected. In the case of concrete, this is an important consideration, as the stresses incurred in erection are probably greater than those experienced in use.

A compartment in or on the column must be provided to connect the lantern with its energy (almost invariably electricity). This must make provision for terminating the main (usually located below ground in the road) in a sealing chamber, and provide space for connecting this supply to the control gear, fuses, time switches, and all the ancillary equipment required by the lantern. Recent developments, and the increasingly popular housing of chokes, transformers, etc. (when required) within the lantern, together with the possible miniaturization of all this gear suggest a reduction in the size of the base chamber, which so often governs the lower dimensions of the column. The tender system acts as a hindrance again to this development as engineers are unfortunately prone to specify compartments large enough to hold almost any gear that has ever been thought of, which may be selected by price, so that more often than not the result is an oversize compartment and column. Housing the control equipment below ground in a specially constructed chamber, even when possible, is expensive and its use is often prevented by shallow mains or other services below the road. From the practical aspect it seems more logical to service equipment at a convenient height than to go into a hole in the ground.

Much interest is aroused by the Continental columns, which always appear to be more acceptable than many of our own, probably because of the overriding advantage of unity, as the column and lantern are designed together. The Continental examples also tend to be higher, thus giving an appearance of elegance that is often missing in our own examples. In Britain higher mounting would allow columns to be wider spaced if used with a lantern of greater output, and still give the same illumination on the road. This could well be tried in many of our cities. The Continental standards we see illustrated do not

[continued on page 220



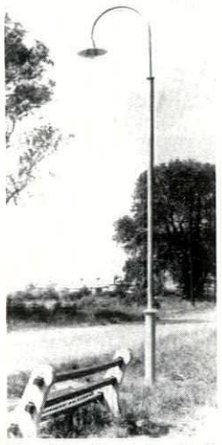
9, this lantern is truly the successor to 8 overleaf, tackling the problem with the integrity of the earlier example. The whole creation of this shape is related to its performance and light control. It was shown at the 1957 Triennale.



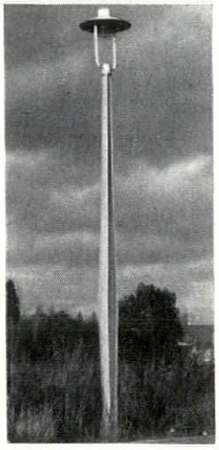
10 to 14, excellent lampposts rarely seen owing to the short-sighted tender policy. 10, column and lantern by Messrs. Falk, Stadelmann.



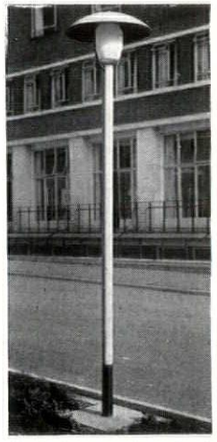
11, prestressed concrete column by Anglian Building Products Ltd., designed in collaboration with Kenneth Boyd.



12, steel column by North Midlands Engineering Co., designed by David Mellor.



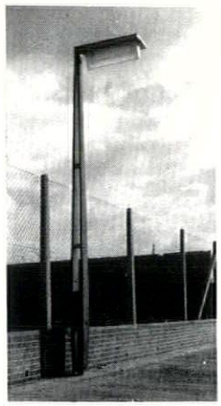
13, cast iron column by the same company and designer as 12.



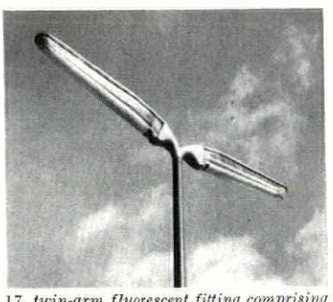
14, designed and produced by Troughton and Young (Lighting) Ltd.



15, Stewart and Lloyd's steel column, GEC lantern, brackets and canopies designed by architect's department, LCC. Not yet in production.

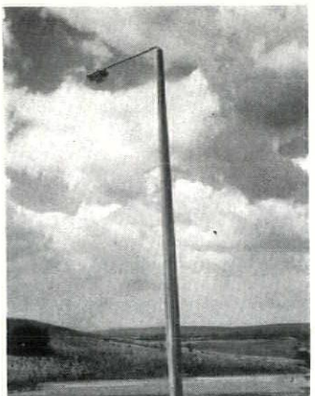


16, lantern and timber column by Thorn Electrical Industries both designed by Richard Stevens. Not yet in production.



17, twin-arm fluorescent fitting comprising two lanterns each containing three 5 ft. 80 watt tubes. Designed and produced by Messrs. Siemens.

18, detail of the sodium lantern shown in 21.



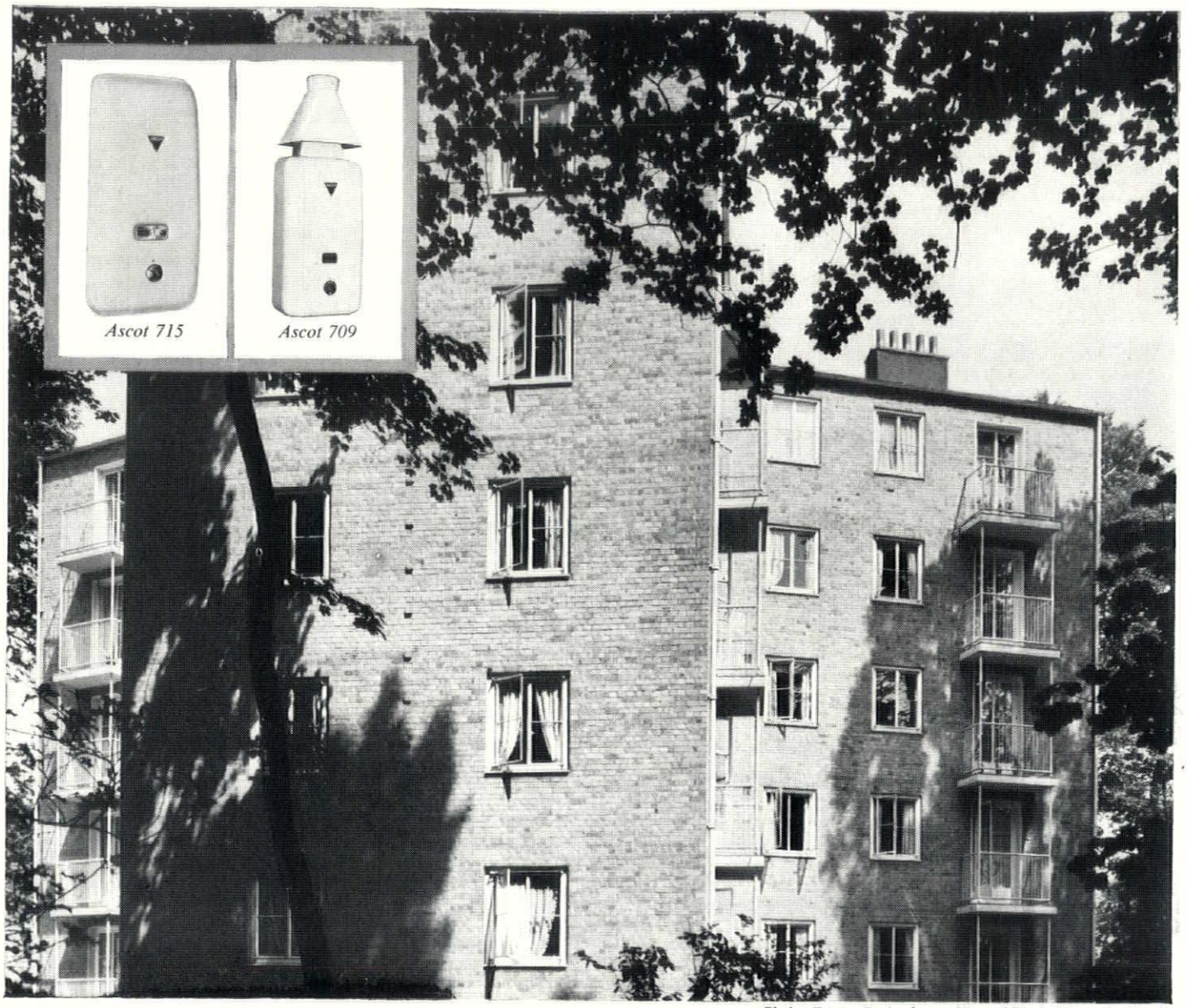
19, concrete column with metal bracket. Designer, Jack Howe, produced by AEI.



20, above, column on the Cromwell Road Extension. 21, sodium lantern on aluminium alloy column; Thorn lantern designed by Richard Stevens, column by High Duty Alloys. 22, small fluorescent lantern on steel column. Same designers as 24.





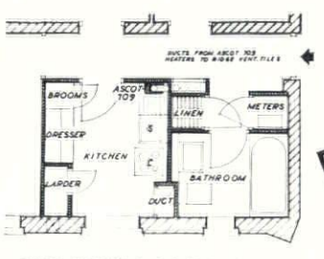


Chulsa Estate, Beckenham : View of Block 3 from the South.

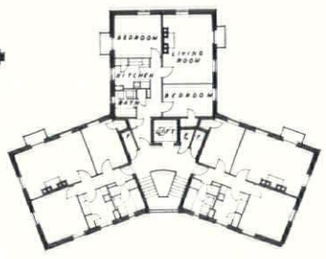
ASCOT IN NEW HOUSING (6)

Beckenham Borough Council's Chulsa Estate in Crystal Palace Park Road, Beckenham, comprises 172 flats and maisonettes in 13 blocks. Ascot multipoint instantaneous gas water heaters were chosen to give a comprehensive hot water service to each of these since the flexibility and compactness of Ascot installations enabled the architects to make the best possible use of the space available for the Estate.

In some blocks, Ascot 715 "balanced flue" multipoints were installed: the planning and load-bearing requirements of the "star blocks", one of which is depicted above, were, however, found to be better served by the installation of Ascot 709 multipoints, each with an asbestos flue carried up into the roof-space and terminating at the ridge with a vent tile.



TYPICAL KITCHEN & BATHROOM PLAN



TYPICAL FLOOR PLAN

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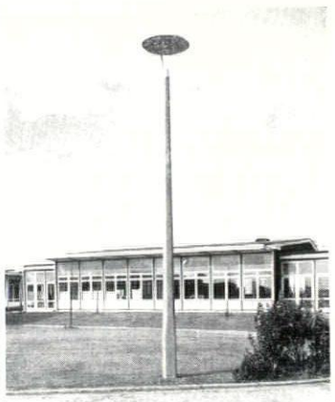
continued from page 218]

in general have the output of their British counterparts and on the whole one must assume that the installations of these are not as successful by night as our own. Exceptions, such as the lighting in Eindhoven, show an imaginative and fearless approach worthy of study as an example of civic lighting in the modern manner.

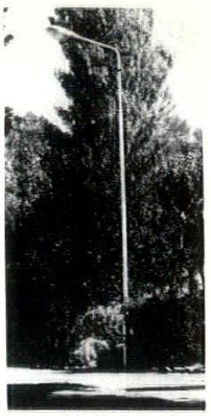
The concrete column increased its popularity immediately after the war, largely due to the steel shortage, but gained the permanent support of users due to its low initial cost and the complete lack of maintenance required. It is unrealistic to assume that no concrete column can be good looking, but it is true to say that the design of a concrete post is a most difficult task, and involves many restrictions not encountered in other materials. The shaft itself of simple reinforced or prestressed concrete has its proportion generally determined, not by aesthetics or mechanics, but by the dimensions of the base compartment plus the necessary thickness of concrete to surround this and maintain strength at a critical point. The alternative to this is to house the compartment in a swelling blistered on to the shaft. Both methods have been successfully employed, but the latter has not been very popular. The concrete bracket arm on the other hand presents an almost insoluble set of conditions. The best solution can only be when the proportion of the shaft, bracket and lantern present one unified structure; the need for various bracket arms and lanterns cannot produce more than a compromise. Undoubtedly an excellent visual and mechanical answer is the use of a metal bracket which can be easily varied to suit requirements, but regrettably this is not getting the support it deserves from the buyers on maintenance grounds. Manufacturers have now solved most of the problems encountered in producing a satisfactory 25 ft. standard, but with few exceptions the smaller 15 ft. column lags behind very largely due to the dictates of the base compartment.

The elegant slim steel lamp-post can, by virtue of the thinner walls round its gear compartment, emerge from the ground with a smaller shaft and this is an unquestionable asset, enabling a column to present the minimum visual intrusion on the street picture. Regular maintenance is required to protect the metal from corrosion and, given this, the columns can be used to great advantage—careful choice of colours can do much to help a column located in a tricky situation. At the moment it is to these columns one turns when an 'invisible' scheme is required, as their character is less dominant than that of concrete columns.

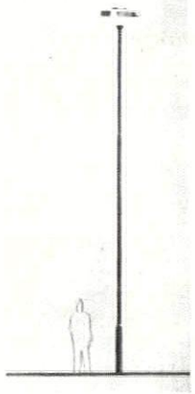
The tapered steel tube, so effective in Continental designs, has not yet been used here to the same advantage. We have a form of tapered tube in a 15 ft. column made from sheet in aluminium alloy, and both large and small octagonal columns produced by folding steel and welding, but it appears that the economic manufacture of a tapered tube in steel has not yet been achieved. In fairness it must be said that a lamp-post of this form is not the goal of many of our designers, but there is an awareness that a very slim tapered column with an elegant small lantern would meet many of the requirements encountered in preparing lighting schemes for our pleasant county towns.



23, post-top lantern on prestressed concrete column. The slim base section has been achieved by reduction of the control gear compartment—a bold venture by the manufacturer anticipating public demand. AEI lantern, Stanton Ironworks column.



24, new lantern with 400 watt colour-corrected mercury lamp supported by steel column. A column by North Midlands Engineering Co., designer David Mellor; lantern by Thorn, designed by David Stevens.



25, left, an experimental installation with two 400 watt colour-corrected mercury lamps within the one lantern. The first serious British attempt at the design of the new high output lantern. Column by Stewart and Lloyd's, lantern by Thorn.

26, right, tungsten parking lights, lamps at Technicolor factory (see page 170). Designed by C. Wycliffe Noble, manufactured by Troughton and Young.





Rotherwick House

In the new Bond Street headquarters of the Union Castle Steamship Co. the dual reception desks were specially built by Waring & Gillow to the designs of the architect Michael Egan, F.R.I.B.A.

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4 THE INDUSTRY

lightweight roofing

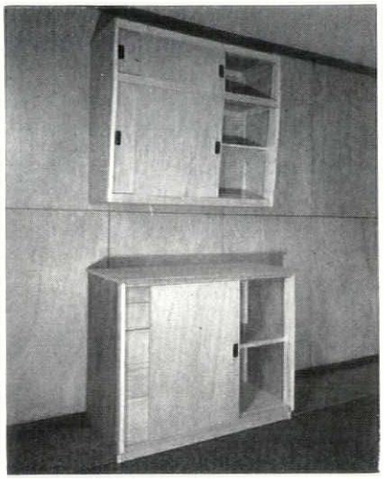
The photograph below shows a man pouring gypsum concrete on a 'Pyrodek' roof. This is a form of lightweight fire-resisting (2 hour) roof which is new in this country—but not in America, where it comes from—and which has been added to the list of roofs which Andersons will make. Bulb mild steel tees (of 2 in. by $2\frac{1}{8}$ in. or $2\frac{13}{16}$ in.) are fixed at spans from 6 to 10 ft. on the supporting structure, formboards are laid between their flanges, mesh reinforcement is laid over tees and formboard, and gypsum concrete is pumped on to make a roof of about



3 in. thick. The gypsum sets in 15 minutes, after 1 hour it can be walked on, and after 24 hours the usual built-up roofing can be laid on it. The U value is 0.38; but this can be reduced to 0.16 by the use of fibreglass formboard. Weight will vary with the depth of tee used, but will be about 15 lb. per square foot (including three-layer waterproofing). The manufacturers state that the roof is most economic for areas of 1,000 square yards super or more.
D. Anderson & Son Ltd., Stetford, Manchester. (*Longford* 1113.)

kitchen fittings

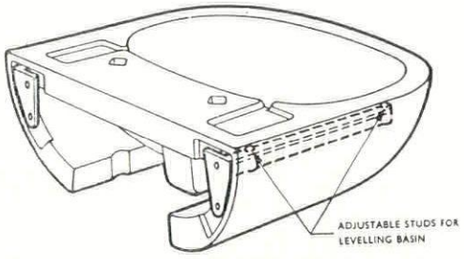
Mass produced kitchen fittings are a class of product which has a bad reputation among architects, chiefly because they have been designed not according to commonsense, but to emulate cookers and refrigerators. To the architect, therefore, the chief selling point of Kingston's Scandinavian kitchen fittings is that they don't at all resemble the nasty slick white (or pink) image which will rise immediately to his mind. Being made of wood, they look like it; and being well constructed, they may be allowed to remain looking like it (i.e. they don't need painting). The doors are sliding to save space and are opened and shut by means of countersunk pulls, which could with advantage be made in a finish which offers less contrast to the surrounding wood. Nevertheless the finished product is refreshingly free from woman's magazine-ishness.
Kingston Architectural Craftsmen Ltd., Minster Works, Hull. (*Hull* 43121.)



conspectus of sanitary ware

The comprehensive catalogues of our major manufacturers of sanitary equipment drop with rather a thump on the architect's desk, if only because of the immense stock of goods which our complex society requires them to hold. As a class of literature they tend to be depressing, if only because the architect is not the only customer to be satisfied; and, indeed, to finger through some of them, you get the impression that he only accounts for a very small part of the market. This is not, however, the impression given by the loose-leaf catalogue which has been built-up for some years now by Shanks. Though there are, inevitably, some leaves which you will turn over quickly, the main impression gained is how great has been the task of linear purification carried out by this firm over the vast field of its products, how sensitive they have been to architects' advice, perhaps sometimes to architects' prejudices. It is a good catalogue, telling you what you want to know in a businesslike way (short of the price, which would hardly be practicable in a work of this kind).

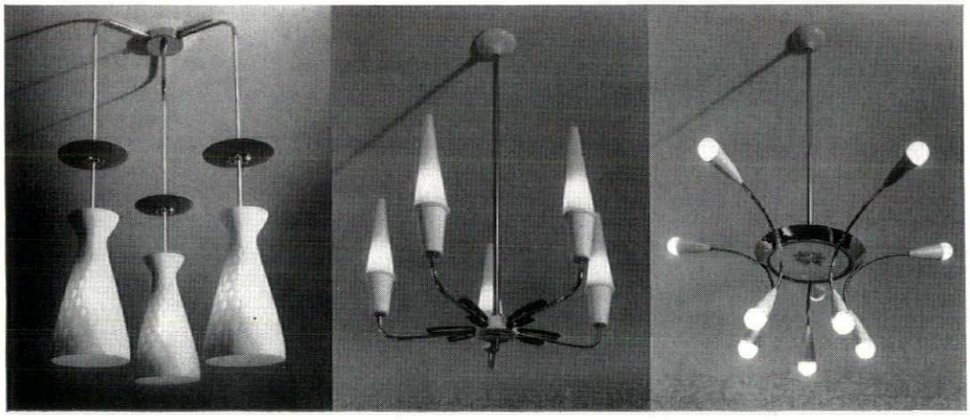
It is not possible to do justice here to the separate items (there are over 700 of them); but it is certainly worth pointing out one newcomer, the Marnock lavatory basin, a very neat vitreous china version which overcomes an age-old source of washbasin untidiness by incorporating the brackets inside the basin profile.
Shanks & Co. Ltd., 81 *New Bond Street, W.*1.



CONTRACTORS etc

Technicolor Laboratories, Harmondsworth, Middlesex. *Architects:* Gooday and Noble. *General contractors:* Janes (Builders) Ltd. *Consulting engineers:* R. T. James & Partners. *Sub-con-*

[continued on page 224



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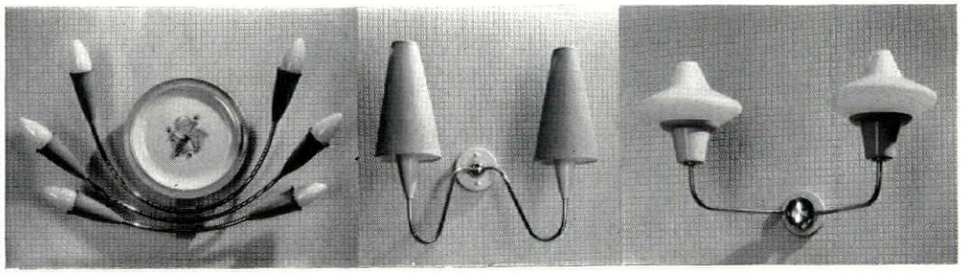

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Rothes Colliery, Fife. *Architect:* Egon Riss. *Civil engineering consultants:* B.R.C., Stafford. *Building contractors: Towers, car hall, sub-station and fan house:* Holland & Hannen & Cubitts (Scotland) Ltd. *Lamp cabin offices, workshops, gas turbine and boiler house:* Mowlem (Scotland) Ltd. *Drainage:* Geo. Wimpey & Co. *Structural steelwork:* Redpath Brown & Co.; Markham & Co. *Patent glazing:* W. H. Heywood & Co. *Metal windows:* Henry Hope & Sons.; Williams & Williams. *Joiner:* Alex B. Cant. *Painter:* A. T. Rolland Ltd. *Linoleum:* Numire. *Plaster work:* David Thomson. *Terazzo tiling:* Toffolo Jackson & Co. *Electrical:* Wm. Allan Smith & Co. *Roads and site works:* James White (Contractors) Ltd. *Roofing:* Ruberoid Co. ; McCartney Ltd. *Glazing:* James Thow Ltd. *Roller shutter doors:* Roller Shutters Ltd. *Passenger and goods lift:* Etchell Congdon & Muir. *Paint:* Craig & Rose.; Matthew Maclay & Manson Ltd. *Moler brick lining to chimney:* Industrial Products Refractories Ltd. *Sanitary fittings:* Shanks & Co. *Street lighting:* Jas. Scott & Co. (Elect. Engs.) Ltd. *Rubber floors:* The North British Rubber Co. *Fire-resisting doors:* Durasteel Ltd. *Heating:* Taylor & Fraser Ltd. *Boiler makers:* Penman & Co. *Gas turbine:* John Brown & Co. (Clydebank) Ltd. *Shutter gates:* The Bolton Gate Co.

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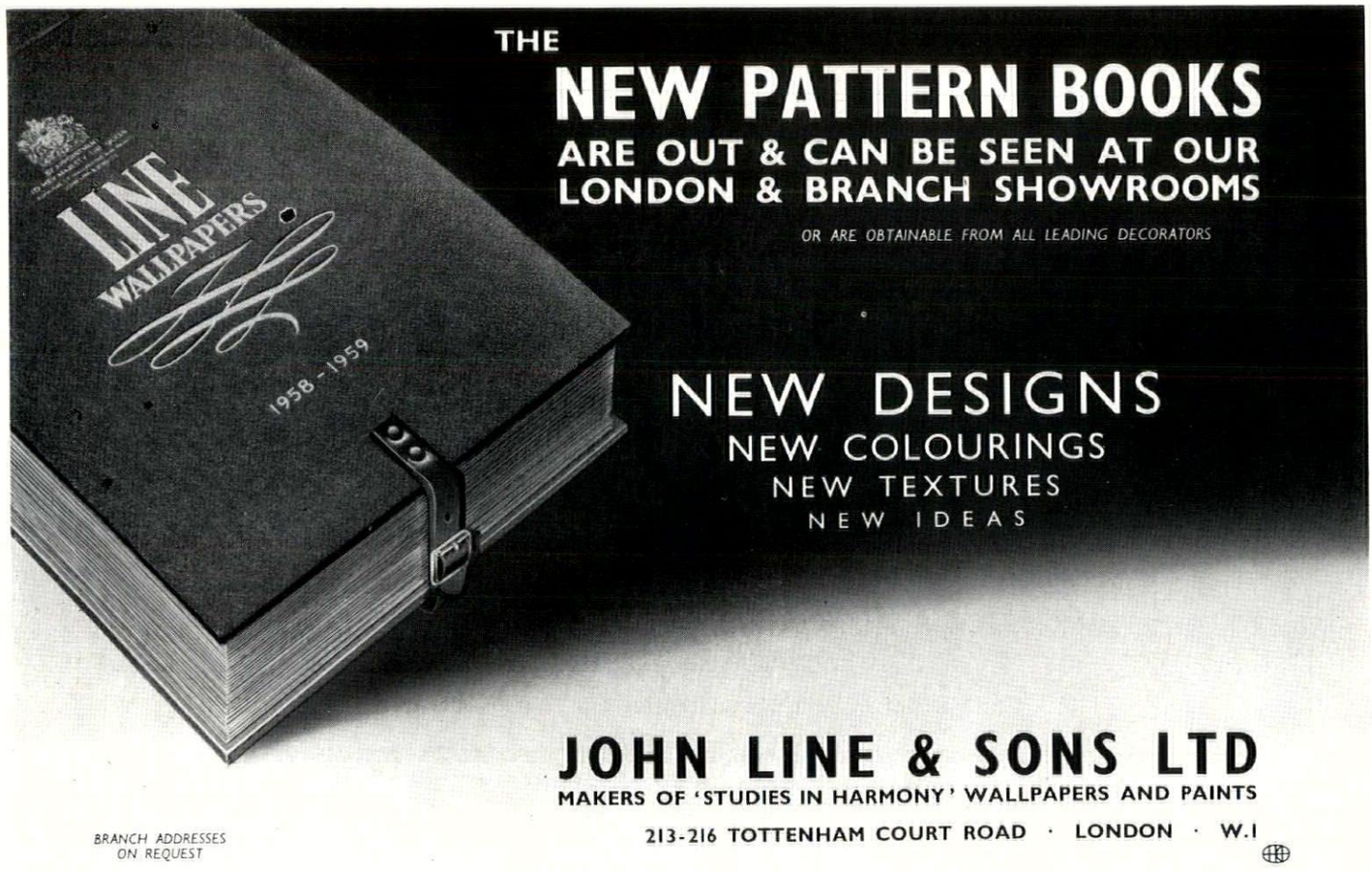
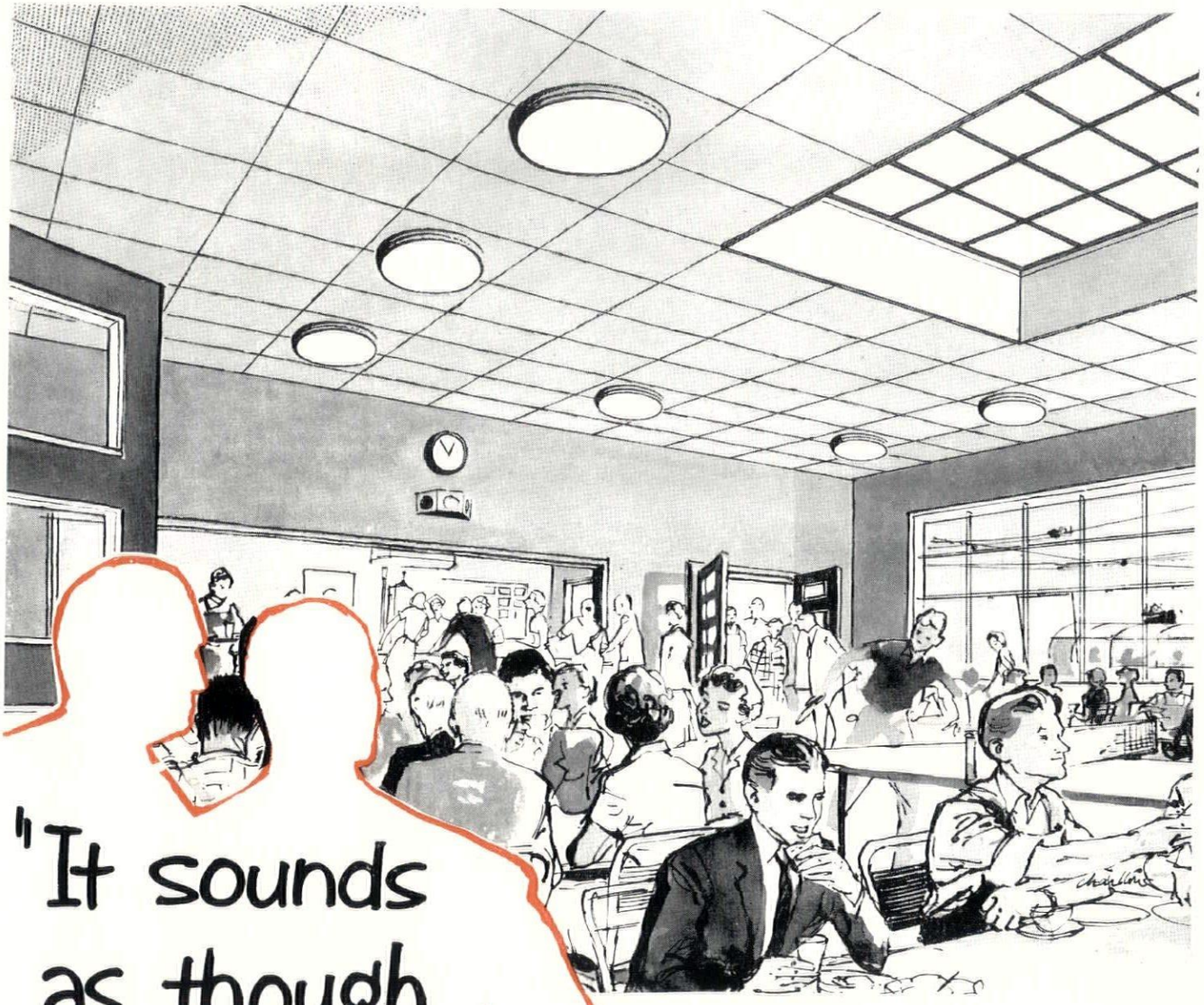
Laboratories at Sherborne School for Girls. *Architects:* Architects' Co-Partnership. *General contractors:* Gilbert-Ash Ltd. *Sub-contractors: Ceilings:* Tentest Fibre Board Co. *Heating:* Weatherfoil Heating Systems Ltd. *Window and external door units:* East & Son Ltd. *Ironmongery and sanitary fittings:* William Dibben & Sons. *Furniture:* Avant Galleries Ltd. *Blinds:* Dean's Blinds (Putney) Ltd. *Fire fighting equipment:* The Pyrene Co. *Laboratory fittings:* Spencer Joinery Ltd.

Factory and Offices, Camberley, Surrey. *Architect:* John Bickerdike. *General contractor:* J. M. Jones & Sons (Builders) Ltd. *Sub-contractors: Reinforced concrete (precast steps):* Conallcrete Ltd. *Precast coping:* Qualcrete Ltd. *Floors and roof:* Geo. Greenwood & Sons. *Bricks:* Eastwoods Sales Ltd. *Fletton:* The London Brick Co. *Special roofings and felt:* Wm. Briggs & Sons. *Partitions:* Bellrock Gypsum Industries Ltd. *Structural steel:* Conder Engineering Co. *Tarmacadam:* General Asphalte Co. *Patent flooring:* Marley Tile Co. *Granolithic paving:* F. Bradford & Co. *Central heating:* Weatherfoil Heating Systems Ltd. *Boilers:* Spanner Boilers Ltd. *Stairtreads:* Korkoid Decorative Floors. *Metal staircases:* R. Smith (Horley) Ltd. *Casements and patent glazing:* Senlac Metal Casements Ltd. *Sanitary fittings:* Adamsez Ltd. *Standard flush doors:* Gliksten Doors Ltd. *Handrails:* F. J. Lewis Ltd. *Signs:* The Lettering Centre. *Paint:* Walpamur Co. *Chlorinated rubber paint:* Tretol Ltd. *Door furniture:* Alfred G. Roberts Ltd.

Booking Halls, Bond Street, W.1. *Architect:* Michael H. Egan. *Shopfront: Shopfitters:* Fredk. Sage & Co. *Sub-contractors: Terrazzo flooring:* Marriott & Price Ltd. *Electric light fittings:* Fluorel Ltd. *Interior: General contractors, furnishings, curtaining, etc.:* Ian Henderson Ltd. *Purpose made furniture (cash desk, writing tables, etc.):* Waring & Gillow Ltd. *Acoustic ceiling:* May Acoustics Ltd. *Fibrous plaster screens, coves, spray decorations, etc.:* David Esdaile & Co. *Spotlights for special effects:* Strand Electric Co. *Ship's handrail:* Harland & Wolff Ltd. *Curtains:* Edinburgh Weavers.

Grosvenor House, Park Lane, W.1. *Architect:* Gordon Jeeves. *Interior design consultants:* R. D. Russell & Partners. *Sub-contractors: Electrical installation:* Troughton & Young (Lighting) Ltd. *False ceilings:* Campbell Denis Ltd. *Fitted furniture:* Gordon Russell Ltd. *Heating and ventilation:* Z. D. Berry & Sons. *Carpets:* Carpet Manufacturing Co. *False ceilings: Expanded metal: Metal channels:* Lathing Supplies; Expanded Metal Co.; Metal Sections Ltd. *Joinery:* Builders' Supply Co. *Light fittings:* Merchant Adventurers Ltd.; Troughton & Young (Lighting) Ltd.; Anthony Juer Lighting Ltd.; Finmar Ltd. *Paint:* Imperial Chemical Industries Ltd. *Sanitary fittings:* Shanks & Co.. *Terrazzo shelves:* Art Pavements & Decorations Ltd. *Wallpapers:* Cole & Son (Wallpapers); John Line & Sons.





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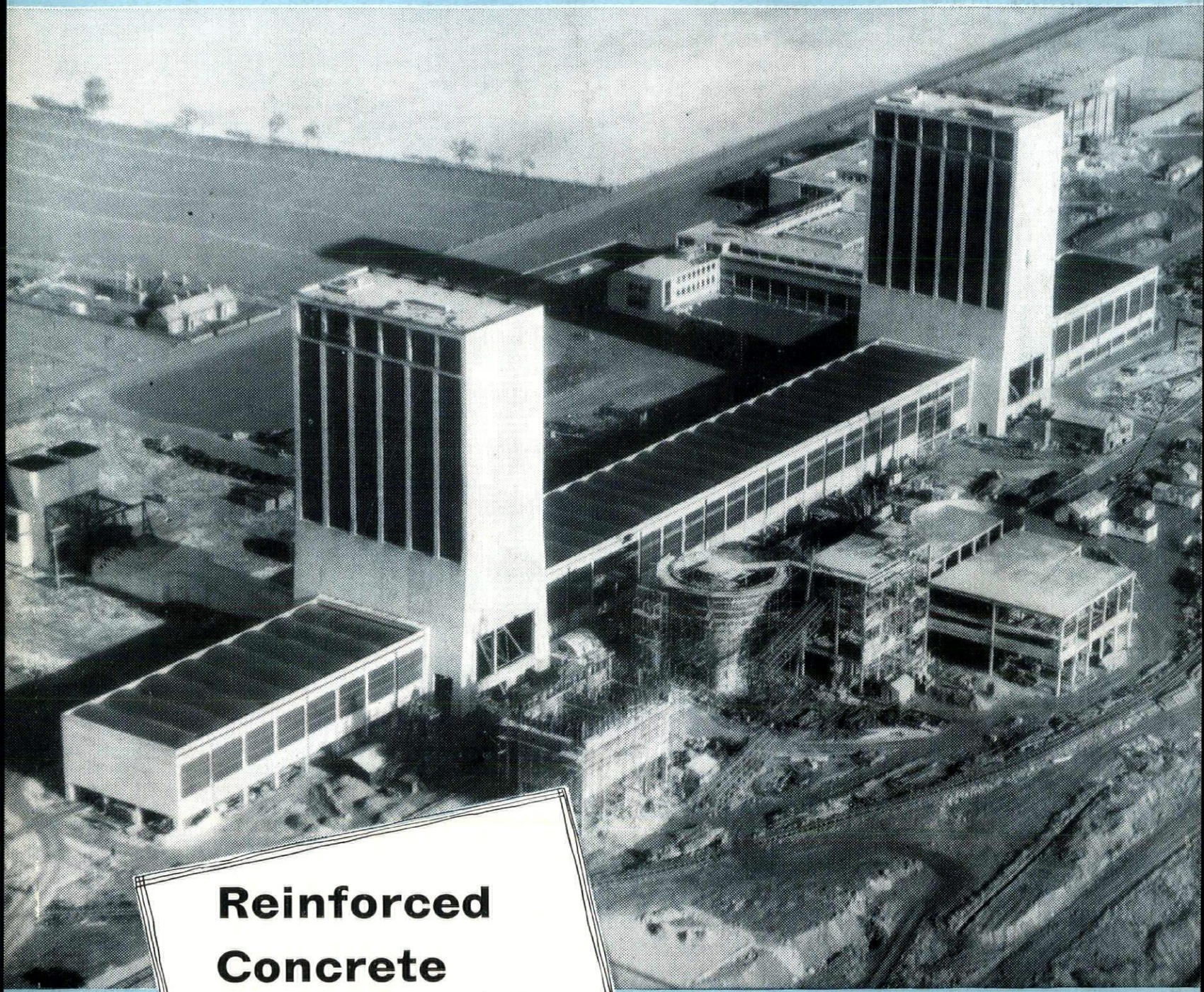

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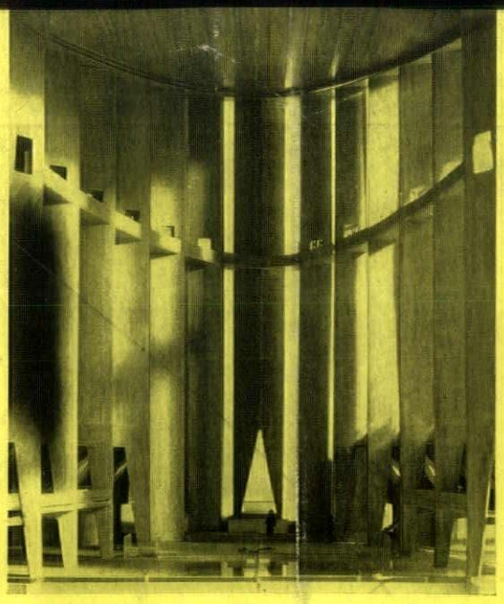

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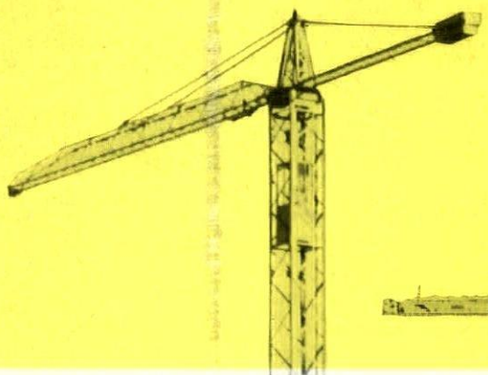



gned by Guillaume Gillet and the late Bernard
ille, the church of Notre Dame at Royan, seen
r construction below, will be notable not only
he dramatic use of pure structure, as can be
from the model of its interior, above, but also
ne way it towers above the rebuilt sea-front of
oombed resort, centre right. It will thus be
ng the most visually striking of the many new
ches built in Europe since the War, but
ould also answer to the newly awakened
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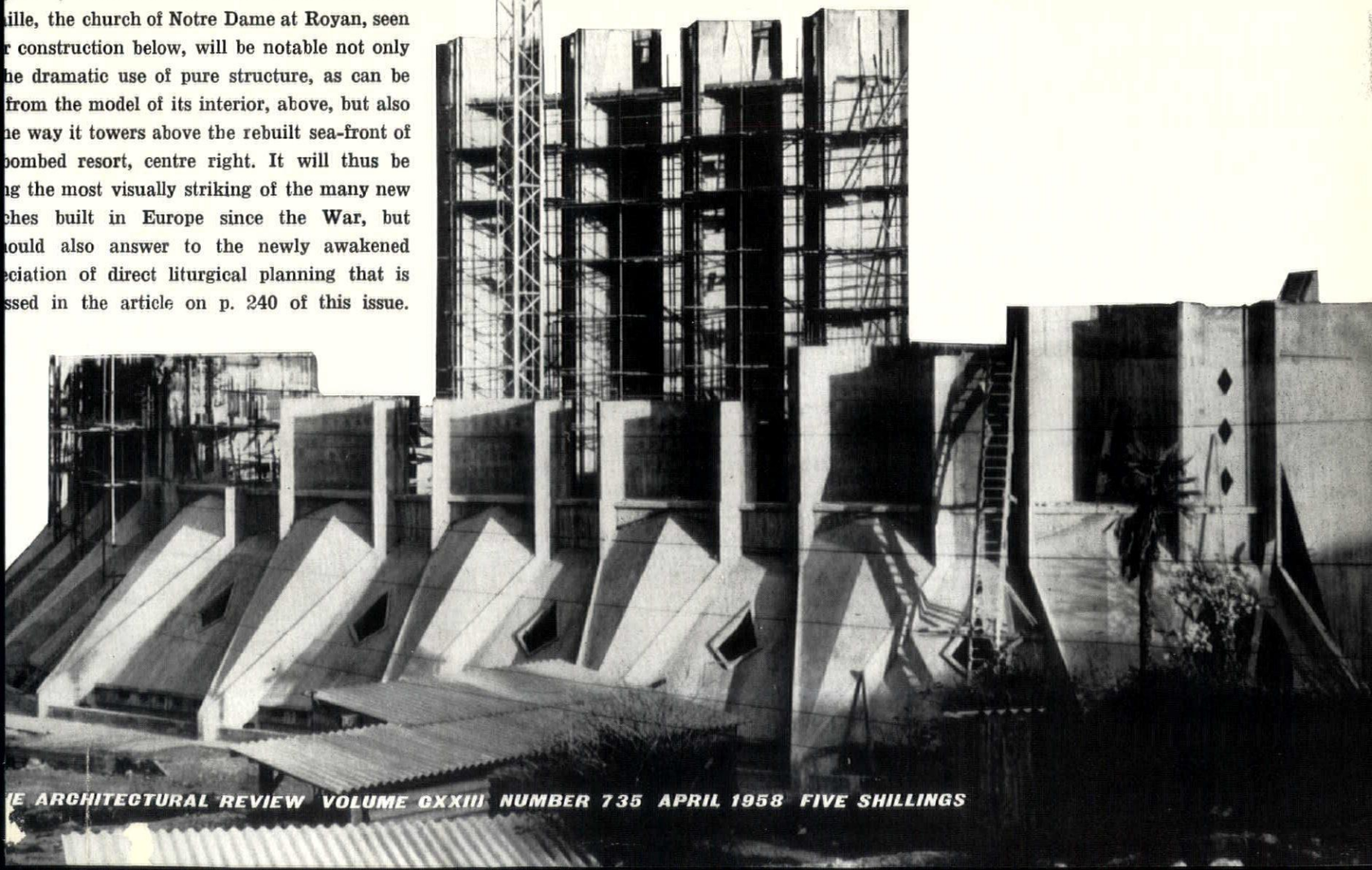
ssed in the article on p. 240 of this issue.



E ARCHITECTURAL REVIEW VOLUME CXXIII NUMBER 735 APRIL 1958 FIVE SHILLINGS



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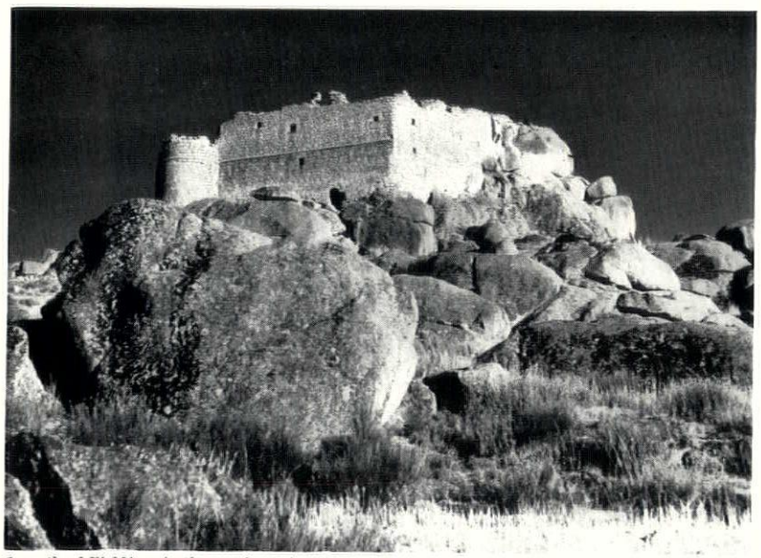
MARGINALIA

Castles in Spain

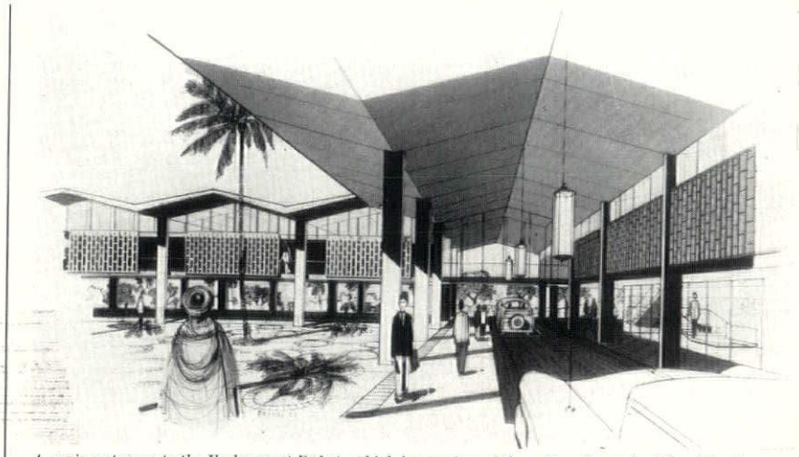
Though it must seem unfair to those brought up in the best traditions of wishful thinking to exhibit photographs of what castles in Spain look like, the recent exhibition of Spanish Castles at the RIBA produced many images that were fully as fantastic as any pipe-dreamer could hope to see—Almansa perched on its rock, the square keep of Fuensaldana towering haughtily over the fields, the Levantine bastions of Avila, Navas del Marques looking improbably like a model crofting settlement or nineteenth-century gasworks, and—most fantastic of all—El Miron, near Avila, 1, crowning a formidable tumulus of gigantic rocks. The exhibition was assembled by the Asociación de Amigos de los Castillos, an organization formed in 1952 to unite the efforts of all Spaniards interested in the history and preservation of the country's five-thousand-odd mediaeval castles.



1, castle of El Miron in the province of Avila.

US Embassy in Rabat

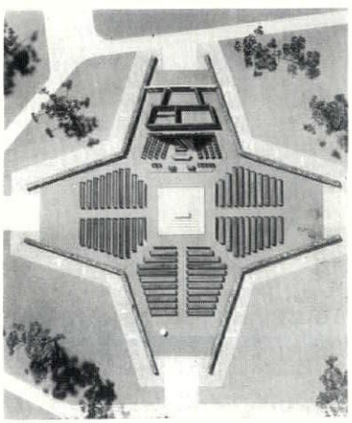
Ketchum, Gina and Sharp's project for an Embassy in Rabat, the capital of Morocco, stands somewhat closer to US domestic architectural norms than do other recent examples of American diplomatic design. As the perspective shows, 4, this should be the world's first drive-in Embassy, and the whole design has a distinctly supermarket feeling. The roof treatment, unlike that of Sert's scheme for Baghdad, is not a true sunshade, with the roof carried clear of the structure over an air-gap, but relies on deep overhangs and through ventilation across the top of the first-floor workspaces to achieve workable internal climate. Such an approach is not to be interpreted as a deviation from the current US policy of handling local preferences and architecture sympathetically—not only are regional materials to be used, but since the climatic conditions of Rabat are comparable with those of Southern California, this design might serve as a piece of unobtrusive technical-aid-by-suggestion, an export of US know-how.



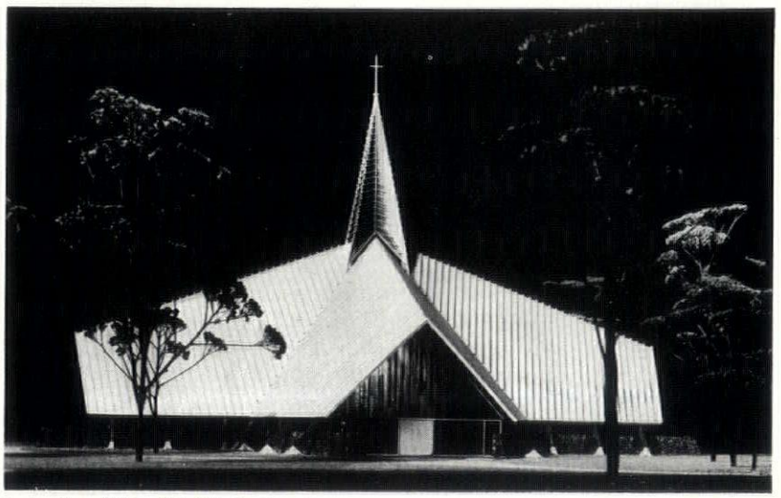
4, main entrance to the Embassy at Rabat, which has a view of the entire city and of the Atlantic.

Christ Chapel, Overbrook

The possibilities of using a tapered greek-cross plan for protestant liturgy are already being explored in Germany, in such works as Hentrich's church at Duren (*Marginalia*, March, 1956), and now a similar plan, 2, is proposed by Vincent King for Christ Chapel on the campus of the Episcopal Academy at Overbrook near Philadelphia. In plan, the US version is even more formal than the German, with a centrally situated altar (an idea more in line with the ideas of the 'Liturgical' wing of European religious thought, discussed in the article beginning on page 240) but the exterior conforms to recent US trends for ridge-roofed informality in ecclesiastical architecture, with four low-spread, copper-clad roofs, 3, rising to a central *fleche* standing over the crossing. The fleche is to be glazed, in order to admit light through an oculus on to a cross suspended above the altar, and the gable ends of the arms of the plan are to be used for stained glass.



2, plan of Christ Chapel, Overbrook, USA.



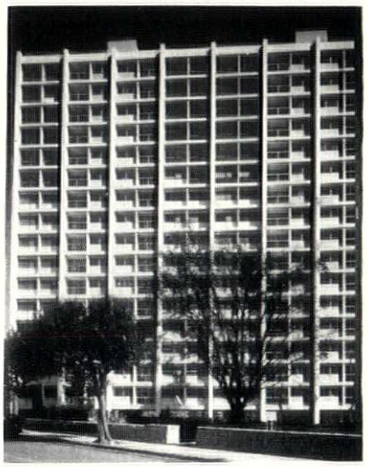
3, elevation of the model of Christ Chapel.

Leo Bruhns

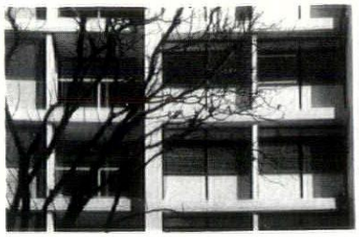
Leo Bruhns, German art historian and a friend of many who worked in Rome, died a few months ago. He was born in Estonia in 1884, went to school at St. Petersburg, became a lecturer at Frankfort, then Wilhelm Pinder's successor at Leipzig and finally director of the Biblioteca Hertziana in Rome. He belonged to that generation of German scholars to which *Bildung* in the meaning of Goethe and Humboldt still meant everything. He was a religious man (a Protestant) and a man of scrupulous integrity. As a scholar he started with studies of sculpture first of the late Gothic period, then of Mannerism and Early Baroque (both in the form it took at Würzburg). He then published a general history of art in a number of small volumes, impeccably written and popular in the best sense. When he had moved to Rome (with a sigh of relief, for by then National Socialism had been busy for ten years in the German universities) he began work on his *magnum opus*, *Die Kunst der Stadt Rom*, a history of art in Rome from the Lupa to Canova, in over 600 pages and brought out in 1951 by Anton Schroll in Vienna in two volumes with 460 illustrations. Bruhns's task was formidable indeed. It required extensive reading and seeing and patience and a long breath. All these qualities he possessed, and the story unfolds at an unhurried tempo. The book is, moreover, warmly written and totally devoid of personal mannerisms and axes to grind. It is indeed a beautiful book, far too little known in England where it would prove both instructive as a reference book and enjoyable as a book to read before and during a journey.

Bienal Prizewinner

Although the presence of such entries as the Olivetti Building, the Wogensky house, office blocks by Helmut Hentrich, and so forth, meant that most of the field for the architecture prizes at the 1957 Bienal at Sao Paulo started as favourites, there were a few outsiders among the entries, and a small proportion of these actually collected awards. By far the most accomplished of these was the apartment block in Sao Paulo, 5, by Salvador Candia, Plinio Croce and R. C. Aflalo, unmistakably Miesian in inspiration yet



5, apartment block in Sao Paulo.



6, detail of apartment block.

entirely free from plagiarisms, and deploying, with unobtrusive yet unshakable logic, a graded system of rectilinear structural elements that range from main stanchions down to cladding, 6, mullions, to produce detailing that is as convincing and unforced as the totality of the block itself.

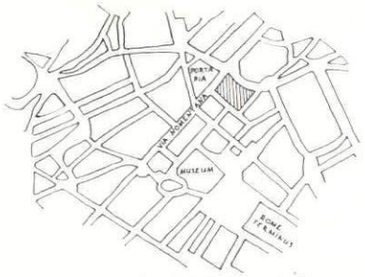
Yerbury Foundation

The announcement of a new independent research foundation in architecture is clearly an important development in architectural education, but when it also gives a crown of recognition to a pioneer who himself has done much to improve the flow of architectural information, then it is doubly welcome. The Yerbury Foundation, instituted by the Architectural Association in honour of F. R. Yerbury, is intended to provide the AA with funds for advanced study in a number of fields, the probable fields being indicated by the presence of two progressive design-conscious industrialists (Lord Wilmot and Sir Colin Anderson) among its seven trustees. The Foundation, having been formally set up, is now launching its first appeal for funds, further information on the subject being obtainable from the Secretary to the Trustees, 34-36 Bedford Square, London, WC1.

Embassy in Rome

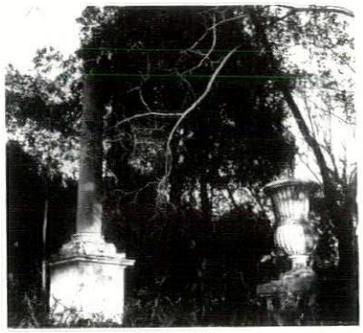
In view of the way in which the British Government has succeeded in lowering its prestige abroad with the design of recent Embassy buildings, it is to be hoped that it will make some efforts to recover itself with its proposed new buildings in Rome. However, the position is complex—the Ambassador's residence is currently in the ex-villa Wolkonsky, and this is not the subject of any rebuilding proposals. What is proposed is to erect new Chancery buildings on the site of the old, destroyed embassy near the Porta Pia, 7, where a small chancery building already exists, having survived the destruction of the Embassy proper, most of whose foundations seem likely to disappear under the proposed widening of the via XX Settembre.

However, between the old Embassy and the chancery offices, there was (and still is, albeit unkempt) a fine *giardino inglese*, 8, including part of the ancient walls of Rome, one of the few green areas in what is now a densely built-up part of the city. It is understood that the British Government is proposing to sell off nearly a third of this irreplaceable garden to a private developer, in order to defray expenses—an outrage which would be very poor diplomacy given the present temper of Roman opinion (cf. the fate of the Hilton Hotel) and would, in fact, be contrary to Roman town-planning legislation, since the garden is scheduled as an undevelopable *parco privato* and would require a special municipal permit to be built on.



7, site of proposed British Embassy in Rome.

Unfortunately, there has been a recent precedent in developing just such a scheduled *parco*, that of the villa Chigi, which was carried through the relevant committees of the Roman Commune in the teeth of a 'counter-attack' opposition, and while the British Government is unlikely

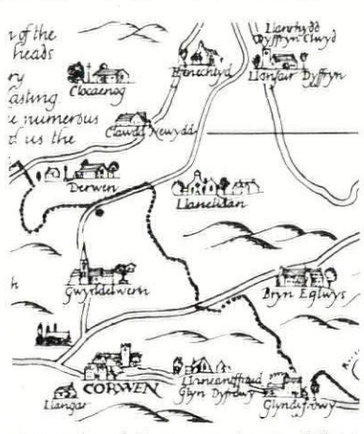


8, the chancery garden today.

to descend to the tactics required to achieve such an end, it is possible that local developers who wish to buy the other third of the property might be prepared to try to influence the decision. It would appear to be a diplomatic and town-planning necessity for the Government to abandon the scheme at once—and apply themselves to the problem of a decently conducted competition to secure a design for new chancery buildings that will not precipitate another prestige-losing failure.

Monuments Map

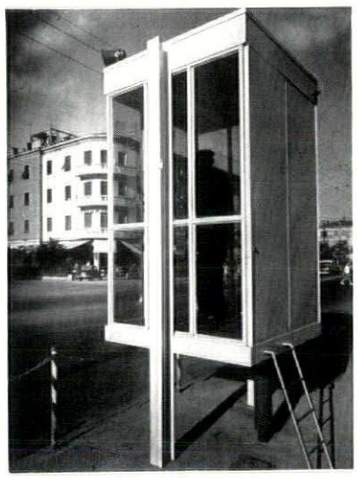
The Historic Buildings of North Wales is very nearly a valuable addition to British travel literature. Its aim is admirable—to give a map of all the ancient monuments in the Snowdon National Park (plus a gratifyingly large number of non-ancient ones) backed by a full gazetteer on the reverse of the sheet—but it falls just sufficiently short of its intentions to be irritating. The gazetteer, for instance, is full enough to give even architects' names, where they are known, and sufficiently sophisticated to spell gothic with a terminal *k* when required, but it is not always accurate—it gives the wrong map reference for Port Meirion, to name an example that many people might want to locate—while the map itself is drawn in an arty convention derived from Speed, 11, with perspective tummocks instead of contours, lettering à la Marion Richardson, which is not always readable, and weeny sketches of the monuments, mostly on too small a scale to serve as identification-checks for non-architectural tourists. The gazetteer can be put right by resetting, but it is difficult to see what can be done about the map.



11, a section of the monuments map of Snowdonia.

Parmesan Police Box

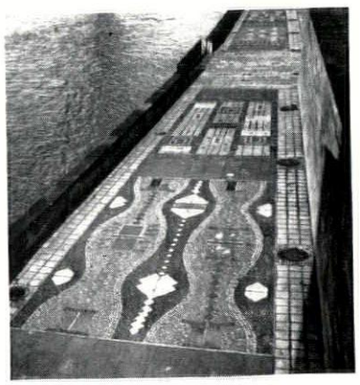
The flat juxtaposition of the ancient and the modern is probably easier to make—physically as well as psychologically—in Italy than anywhere else, and yet it is all too rarely made even there. Franco Carpanelli's crisply Miesian traffic control box (he is an ex-pupil of Mies van der Rohe) has been designed for Parma, in the heart of the 'Sitwell belt' of Emilian cities of art, but so far, 9, seems only to have been used in the broad *viali*, on the city's outskirts, or in areas of low historical and architectural interest. Since its pure rectangular aesthetics are of the sort generally rated timeless, it will be interesting to see how it stands up to an *ambiente storico*, and what sort of polemics attend any attempt to put it there.



9, traffic control box in Parma.

Floorscape in Hanover

The REVIEW has given much attention in the past to the use of changes of texture and materials on the ground to indicate changes of use. Here is a German example of floorscape used not functionally but decoratively, giving the horizontal surface the richness of colour and texture that is usually reserved for vertical surfaces. This decorative pavement, 10, designed by Dr. Heinz Wolff, is on a footpath that runs beside the River Leine, between it and King George Square at Hanover.



10, footpath in Hanover.

Architects for House in the Isle of Wight

James Stirling, 33, studied at Liverpool Univ. School of Arch. and the Association for Town Planning and Regional Research, London. Exchange scholarship to the USA in 1949, worked for Khan & Jacobs, New York; then with James Cubitt & Partners, and Lyons, Israel & Ellis. Competitions include Poole Tech. College and Sheffield Univ. In private practice and part-time teaching at Regent Street Polytechnic.

James Gowan, 34, studied at Glasgow (pre-war) and Kingston (post-war), worked with Brian O'Rorke, Powell & Moya, and Lyons, Israel & Ellis; competition entries include Poole Technical College and Edinburgh Medical Extension. In private practice and teaching at the Architectural Association.

INTELLIGENCE

The 1958 Royal Gold Medal of the RIBA has been awarded to Robert Schofield Morris, a partner in Marani and Morris, of Toronto. Mr. Morris was President of the Royal Architectural Institute of Canada 1952–4; among the firm's most important current buildings are Head Office Building for Shell in Toronto, Toronto branches of both the Bank of Montreal and the Bank of Canada, and a new Science building for New Brunswick University, Fredericton.

ACKNOWLEDGMENTS

The colour blocks on pages 265 and 268 appear by courtesy of John Wright. COVER: Photo Duprat. MARGINALIA, pages 225–226: 1, RIBA; 2, 3, Vincent G. Kling; 4, Asher B. Etkes Associates; 5, 6, J. Moscaldi; 8, Marion Johnson; 9, Franco Carpanelli. OFFICES AT NEWPORT PAGNELL, pages 232–235: 1, Basil Moore; 2–5, Sam Lambert. OFFICES AT BIRMINGHAM, pages 236–239: 1, Galwey, Arphot; 3–5, 8, Birmingham Post. A LITURGICAL BRIEF, pages 240–255: Frontis, 4, 10–13, 15–22, G. E. Kidder Smith; 1, 2, Fernez; 8, Jacques Thevoz; 14, Rene-Jacques. HOUSE IN THE ISLE OF WIGHT, pages 256–260: 1, 4–6, 8–10, Michael Wickham; 2, 3, James Stirling. BANK OF LONDON AND SOUTH AMERICA, pages 263–268: 1, 3, 4, 7, 8, 12, Herbert K. Nolan; 5, 13, 14, Galwey, Arphot; 9, 10, Wainwright. LAMOND OF DUNDEE, pages 269–271: 3, 4, Dundee Public Libraries; remainder, Bernard Wopinski. CURRENT ARCHITECTURE, pages 272–276: Middlesbrough Little Theatre, Stewart Bale. Furniture Shop in Bromley, Toomey, Arphot. Teachers' Training College at Birmingham, Galwey, Arphot. House at Sheffield, Alan Dredge. MISCELLANY, pages 277–282. Exhibitions, 2, 3, Solomon R. Guggenheim Museum; 4, R. B. Fleming and Co. Townscape, Ian Nairn, Arphot. Counter-Attack, 1–4, Ian Nairn, Arphot; 5, Wakefield Express Series Ltd.; 6, Eastern Daily Press; 7, Roads Campaign Council. SKILL, pages 283–294: Vinyl handrails, Marley Tile Co.



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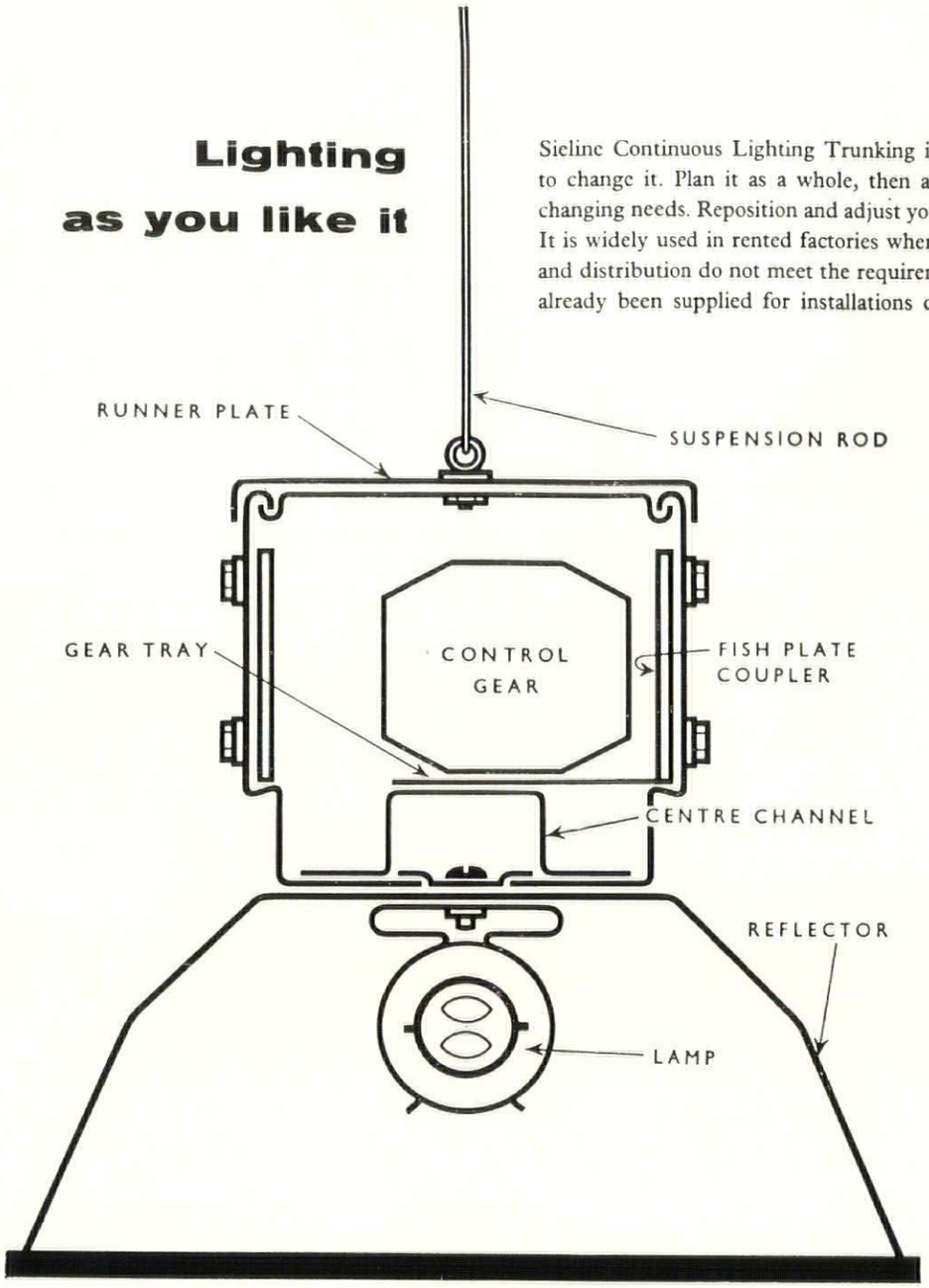

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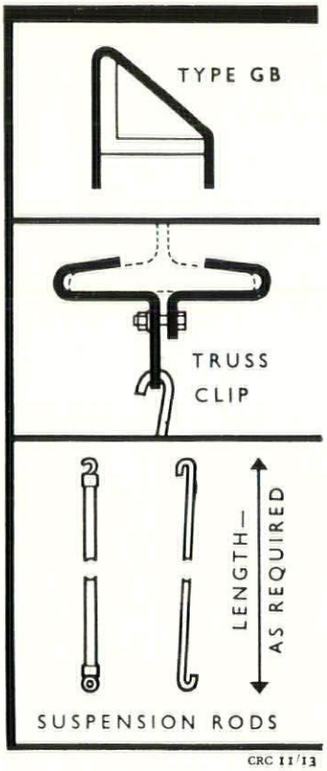

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THE ARCHITECTURAL REVIEW

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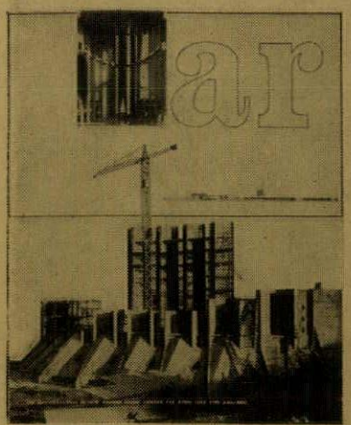

This Month's Cover shows, in model, drawing and progress photographs, the new church of Notre Dame at Royan, France, designed by Guillaume Gillet and his engineer, the late Bernard Laffaille. Though the immediate impact of these illustrations is structural, the church also answers to the new concepts of functional liturgical planning that are discussed in the article beginning on page 240.

225 **Marginalia**

228 **Frontispiece**

229 **Tridon** *by Reyner Banham* Among the architectural texts that have acquired what Mr. Banham calls 'secret society status' Paul Valery's *Eupalinos* is one of the most curious. It is normally read as a high-level exposition of the very essence of architecture, but it really discusses two different and mutually exclusive attitudes. One is that of the *Beaux-Arts*, which Valery understood and seemed to approve, personified by Eupalinos himself; the other is a species of inspired functionalism of which he could have had no experience in the early Twenties when the book was written, but subsequently manifested itself in a new tradition that runs from Moholy-Nagy to Charles Eames, and is epitomized in *Eupalinos* by the figure of Tridon, the Phoenician Shipwright, who broke all the customary rules of behaviour, even those of ship-building.

232 **Offices at Newport Pagnell:** *Architects, Gordon and Ursula Bowyer*

236 **Offices at Birmingham:** *Architect, J. H. D. Madin*

240 **A Liturgical Brief** *by Peter Hammond* For want of a clear grasp of the problems at issue, church architecture is in danger of losing its way in false solutions based on a superficial understanding of the present situation of Christianity in the world. The issues are not concerned with creating shrines to the glory of God, nor inducing moods conducive to a worshipful frame of mind, but in developing a rational approach to the problem of planning for a live and active liturgy adapted to the present state of Christian thought. As the Rev. Peter Hammond points out, it is in those countries where the so-called Liturgical Movement is strongest; in its claims for a more active participation by the congregation in the rites of the church, that ecclesiastical design is currently in its most flourishing condition, because the existence of a live liturgy gives the architect a clear brief to direct his work. In England, where the movement has—as yet—little influence, it may require the architect to demand from his clients clear liturgical guidance, an approach that has just begun both to appear, and to promise more stimulating designs than have been produced here so far.

256 **House in the Isle of Wight:** *Architects, James Stirling and James Gowan*

261 **Interior Design** The inception, in this issue, of a regular supplement devoted to problems and achievements of interior design, is not an alteration of policy on the part of the ARCHITECTURAL REVIEW, but the filling-out of a complete coverage of building design in all its aspects. It is also a plea for a more open-minded approach to the problem of interior design in general, seeing it neither as something absolutely within the architect's control, nor as something entirely outside his responsibility, but rather as a field of expert, integrated, sympathetic consultancy, like structural engineering.

263 **Interiors: Bank of London and South America:** *Architect, John Wright*

269 **Lamond of Dundee** *by D. M. Walker* The prestige of Mackintosh, and thus of Glasgow, has so overshadowed other progressive architecture of the period in Scotland, that the contribution of other architects and other towns has been overlooked. In this article Mr. Walker attempts to characterize and evaluate the work of William Gillespie Lamond, who worked in various Dundee offices from the mid-nineties almost to the first World War, and left the stamp of his very personal style—derived more from London than from Glasgow—on a number of buildings in the area.

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Skill

283 **Hi-fi** *by Philip Hickson*

284 **Cost Analysis and Cost Planning** *by John Carter* The body of mental disciplines that serve architectural design is at present undergoing a major extension in the direction of improved management techniques, and the first steps on this road are provided by Cost Analysis, and its complement, Cost Planning. Mr. Carter, who is the assistant editor concerned with these subjects on the *Architects' Journal*, discusses the nature and significance of costing techniques, and their impact on received ideas about design methods and the architect's relation to society.

288 **The Industry**

292 **Contractors**

Authors: *Peter Hammond* studied at Bromley Art School 1937-40 and went on to the RCA with a scholarship. After war service in the Navy he read history at Merton College, Oxford, 1946-48 and studied in Greece 1948-50. He was ordained in 1951 and served on staff of St. Michael's, Oxford, 1951-53 and St. Thomas, Regent Street, London, 1953-55. In 1955 he married a graduate of Bryn Mawr, Pennsylvania, and he is now rector of Bagendon near Cirencester, where a large early-Victorian rectory in two acres of wilderness has become a regular meeting place for clergy and architects concerned with the problems of church design. His first book, *The Waters of Marah* was published in 1956 and he has recently completed a new book on contemporary French churches. *David Morrison Walker* was born in 1933 in Dundee and educated at Morgan Academy, Dundee, and thereafter to Dundee College of Art where he took the Scottish Art Diploma in 1954, and did a post diploma year as a result of a scholarship. Chiefly draws and paints architecture, and has in consequence been interested in architectural history from about twelve. Around 1951 he began research on Dundee architects which led to the publication of *Architects and Architecture in Dundee*, 1770-1914 (*Abertay Historical Society paper*, 1954). His post diploma year was spent producing *Nineteenth Century Mansions in the Dundee Area*, illustrated by forty-two lithographs, a private publication of Dundee College of Art, still not quite finished. Since 1952 has helped the Scottish National Buildings Record in a spare time capacity. He is now on National Service with the Royal Engineers at Longmoor in Hampshire. *Philip Hickson* was born in 1909 and educated at Stancliffe Hall, Derbyshire, and at Clifton College, Bristol. In 1930 he joined John Bill & Croyden Ltd. as electronic designer and while with them he designed among other things the 'cardiaphone,' a heart beat amplifier. From 1931 to 1950 he was with Ardente Acoustic Laboratories where he designed long-range loud-speaking equipment which was later used extensively. In 1950 he joined the John Lewis Partnership and is now responsible for the radio, television and electrical service departments. He is a Fellow of the Royal Society of Arts and a Member of the Designers in Industry Association, and his hobbies are electronic circuit designing, model making and playing the guitar. *John Carter* was trained as an articled pupil in East Anglia, then worked for two years in the office of Louis de Soissons. From 1949-50 he was on the staff of the Medway College of Art, and from 1950-53 taught at the West of England School of Art. He joined the staff of the *Architects' Journal* in 1954, and is a co-opted member of the RIBA cost research committee.

Directing Editors	J. M. Richards Nikolaus Pevsner H. de C. Hastings Hugh Casson
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FIVE SHILLINGS



Outside and Inside take on a new meaning in American cities. The Outside is the Xanadu of fantastic towers ringed by writhing expressways; the Inside is the hard crisp world of fire hydrants and dramatic slits of light. The problem is to reconcile this pattern with the human needs of its daily users; the answer appears in this month's **FORTUNE** and part of it is a contribution from the Counter Attack bureau, described more fully in Miscellany.

Reyner Banham

TRIDON

Some books acquire the reputation of distilling the very essence of a mental discipline, and Paul Valéry's Eupalinos, ou l'Architecte *is often supposed to have done this for architecture. But Reyner Banham suggests that all it can truly be said to have distilled is the personality of an ideal academic architect—except for one passage where it anticipates almost, irrelevantly to its main argument, the character of a truly progressive designer of the 'Fifties, a remarkable feat for an author writing at the time of Le Corbusier's earliest books and the pioneer phase of the Bauhaus.*

In the focal zone of any conscientiously elevated discussion of architecture as a noble discipline of the mind (rather than a technique of designing buildings) one can almost always find a disputant who claims apostolic status on the grounds that he has read *Eupalinos, ou l'Architecte*. If he has indeed read it, then he is a lucky or a diligent student, for this short book of Paul Valéry's is not easy to come by in its entirety in the original French, and Professor Stewart's dignified English translation has never been issued in an edition of more than seven-hundred-odd copies. Thus the Eupalinides would be a select clan in any case, but, in addition, like the admirers of say *Hubert's Arthur* or even *The World of Null-A*, they seem possessed of an almost Rosicrucian mystique, recognize one another afar off, and converse in an initiated short-hand that impresses where it does not illuminate.

Like all books that attain this secret-society status, *Eupalinos* possesses, in addition to sheer physical rarity, pronounced qualities of literary oddity. It is not by any means the first attempt to imitate Plato's 'Socratic Dialogues,' in which philosophical concepts are expounded by the mutual abrasion of incompatible minds, nor is it unique in its time. But it must surely be the only one in which any of the original disputants are set posthumously in the Twentieth Century, for the dialectical exchanges of *Eupalinos* are bandied to and fro on the banks of Styx, between the shade of Socrates and that of a slightly more recently deceased acquaintance. And even without a gratuitous reference to Stephane Mallarmé and, apparently, to the mathematician Henri Poincaré, the reader would still sense that every turn of phrase and nuance of meaning is two-and-a-half millenia more sophisticated than Plato's. Valéry's Socrates has been brooding and festering in Hades for the whole Christian epoch and more. No longer the old chop-logick whose integrity could not be doubted even by himself, his disgruntled shade is consumed by self-pity and corroded by the cynicism of a disappointed *Membre de l'Institut*, declaring that only the monstrous injustice of his death has ensured his opinions credence and remembrance.

This is hardly the stuff of which a compelling architectonic mystique could be made, but the worst of Socrates' shade is not revealed until after Eupalinos, the architect, has been dismissed from the argument. He does not enter it, as one might have expected, as the other interlocutor—that unrewarding function of Socratic stooge, the straight man who feeds the sage with leading questions and gasps of admiration, is performed by the shade of Phaedrus, who introduces Eupalinos into the discussion on two separate counts; firstly as a reasonable man in order to show that reason has a part even in the irrational desire to create immortal monuments; and, secondly, to demonstrate something that Plato holds inconceivable—that men of sound intellectual fibre could yet be attached to the world of tangible and visible forms.

Eupalinos thus appears as a man equipped with virtues that stand an architect in good stead—reason and visual sensibility. But he has additional virtues; he lives for his art—

> . . . the more I meditate on my art, the more I practise it; the more I think and act, the more I suffer and rejoice as an architect; and the more I feel my own being with an ever surer delight and clarity.

I go astray in my long spells of waiting.

He attends to its niceties, for Phaedrus remembers

> imperceptible modulations . . . insensible curves, minute and powerful inflexions . . . which he introduced and concealed.

He has picked up from some clairvoyant reading in Choisy, as yet unpublished for another twenty-three centuries, not only the habit of speaking in two-edged aphorisms . . .

Il n'y a point de détails dans l'exécution.

but also a care for things like damp-courses, for he

> ordered small laths to be cut following the grain of the wood, so that, when placed between the masonry and the beams that rested thereon, they should prevent the damp from rising. . . .

Eupalinos, take him all round, looks like a model Beaux-Arts product, finnicky, intellectual, practical in an unadventurous way, and with a clear sense of his place in the world, for he kept his hands clean on the site, and this to Socrates was his crowning glory.

P. He gave them nothing but commands and figures.

S. That is the very way of God.

One can well imagine how this paragon of shining rectitude might appear as the prototype of a race of dedicated architects, but it must also be recognized that he had the countervailing vices of his type: priggishness and sentimentality . . .

> This delicate temple, none know it, is the mathematical image of a girl of Corinth, whom I happily loved. It

reproduces faithfully proportions that were particularly hers

snobbery, in classing buildings with a predominantly functional intention, below 'edifices of art alone,' and hard-cored academicism . . .

> What is important for me above all else is to obtain from *that which is going to be*, that it should with all the vigour of its newness satisfy the reasonable demands of *that which has been*. How can one help being obscure?

Obscure? Surely not. In France particularly, the long uphill battle waged by progressive artists and architects against the *Salon* and the *Ecole*, would have rendered this quintessential statement of Academic aims as clear as it was familiar: the new shall be subject to the old.

The academic intention of the work as a whole is further underlined by the two topics that follow. The first is an extended ('we have all eternity in which to discourse') demonstration of that well-worn academic theme, the equivalence of architecture and music, and the other topic is too involved, and yet too obvious, to require discussion here—it treats, roughly, of the 'need' to select only those qualities of one's materials that are relevant to the purpose immediately in hand, but this topic is introduced by a short Socratic anecdote that is crucial to an understanding of just where, and how, *Eupalinos* fails as a text for twentieth-century architects.

The Sage sets out to explain to Phaedrus why—out of all the possibilities open to his talents as a young man—he did not choose to develop those that might have made him an architect, and the explanation hinges upon the fundamental and chronic failing of all academic thought—the inability to accept or assimilate whatever will not 'satisfy the reasonable demands of that which has been' by not conforming to any of the accepted categories of classification. Socrates relates that he was walking on the sea-shore one day when he chanced upon an object that he could not then categorize, and still (two-and-a-half millenia later) could not properly describe to Phaedrus, and so upset was he by its unclassifiability that he hurled it back into the Aegean and ran from the shore in panic. Yet the object that Valéry puts into his hands as an image of inscrutability is all-too-scrutable to us.

> It was a white thing of the most pure whiteness; polished and hard and smooth and light . . . perhaps some fish-bone weirdly worn . . . a piece of ivory carved for I know not what purpose . . . a fragment of rock.

Three decades after *Eupalinos* it is almost impossible for us to visualize the object in Socrates' hand as anything but a Moore, a Hepworth, an Arp or a Brancusi. Between then and now, we have passed through an age when the Surrealists insisted that found objects be interpreted, not chucked back in the sea, but Valéry's choice of the wrong image cannot be excused on the grounds that the situation has changed since he wrote this passage, for, in 1923, the object could already have been a Brancusi; the *Bird in Space*, or the *Newly-born*, would answer most of the attributes of the Socrates-baffler.

While there were very specific reasons why Valéry was unlikely ever to see virtue in abstract art as such, reasons to which we must turn in due course, there was a more general reason why he was unlikely to accept any of the stirrings of progressive thought of the early Twenties. He seems to have had an exclusive, not inclusive mind, like the one with which he endows Socrates, capable only of assimilating those things that he could pigeon-hole into existing categories. The innovations of his own time that Valéry was quickest to accept were those that merely extended the analytical or symbolical capacities of established modes of expression, such as French, mathematics, or classical architecture.

In the view which is currently entertained of the development of classical thought, abstract art is usually seen as one of its inevitable end-products, but, in historical fact, it required considerable and arbitrary acts of will to bend it in that particular direction, and Valéry was not of that party. His view of the mathematical destiny of design was the exact opposite of theirs, and those who rashly adduce Valéry as one of the justificatory authorities for mathematical abstract art, should bear in mind not only Socrates' act of rejection on the seashore, but also this passage from his *Introduction à la Méthode de Leonardo da Vinci*

> In art there is a word that applies to all styles and all fancies, and at one stroke dismisses all the pretended difficulties with regard to the opposition or relationship between art and that 'nature' which for good reasons, is never defined: the word is *ornament*.
>
> The ornamental conception is to the individual arts what mathematics is to the other sciences. . . .

Valéry, on this showing, is unlikely to have anything of real interest to say to the architects of the Twentieth Century when he speaks with his Eupalinoid or Socratic voices, but *Eupalinos, ou l'Architecte* has an inexplicable saving grace (though strict Eupalinides probably don't see it that way) an unresolved interruption in the argument that in some ways resembles the boozy and bloody-minded irruption of Alcibiades in the *Symposium*, but with far less benefit to Socrates. Phaedrus is a cut above the ordinary run of Socratic feed: his mind, not yet boxed-in by the fixed professional disciplines of architecture or dialectics, is capable of appreciating other kinds of creative personalities besides the Eupalinoid, and in order to prove some point about theory and practice that Valéry will not let Socrates allow him to prove, he introduces the character of Tridon the shipwright, a mysterious and unscrupulous go-getter, whose life appears to have been dedicated to wine, women and seafaring, who

> never ceased from pondering upon the problem of navigation . . . his busy daemon urged him on to make the best ships whose keel ever cut wave. And whereas his rivals remained content to imitate the models then in use, he, Tridon the Sidonian, ceasing not to fathom the unexplored regions of his art, breaking up the petrified combinations of ideas and taking up things at their source . . .

Tridon is thus a radical, as well as a roughneck; his aim is root and branch knowledge of his own subject, and of any other that comes within hailing distance of it . . .

> he was provided with the profoundest and most delicate ears ever owned by skull of man. All that penetrated those bushy labyrinths fell a prey to a monster of portentous greed. . . . I know not how many languages, how many recipes it had digested. What a variety of wisdoms it had transmuted. . . .

and he was a functionalist of the most dynamic, yet imaginative kind.

> He thought that a ship should, in some sort, be created by the knowledge of the sea, and should almost be fashioned by the wave itself . . . he would speak with the abundance of a poet of the tunnies and porpoises, amid whose gambols he had lived so long.

Phaedrus is nowhere made to record that Eupalinos applied himself in this abandoned and productive manner to problems of site organization or the theory of structures: his nights, apparently, were spent in devising means of concealing about his temple proportions peculiar to a girl of Corinth. He appears, too, to have imitated the models then in use, and his knowledge of the technicalities of building appears to have been limited to ready-made recipes. But old tricks of his own trade do not seem to have appealed to the Sidonian shipwright, and while Eupalinos might have held converse with philosophers in order to discover some unifying *rationale* underlying these tricks, Tridon sat in on their seminars in search of new tricks and practical devices from other people's trades.

> A saying of Pythagoras, a precept and a number remembered from Thales, if some planet shows, and if your self-possession has not left you, may well lead you back to life.

The contrast that Phaedrus draws

between the two men is total and complete. There is nothing priggish or sentimental related of Tridon: he is depicted as a notorious debauchee, his wife kept a pub in the Piraeus and he applied his functional philosophy to morality as well as everything else.

> Even vice and virtue were for him occupations which have their special reasons and graces, and which are practised as circumstances demand.

Valéry, indeed, has Phaedrus go to some length to establish him as an astute and good-humoured roustabout, hard-pawed and foul-mouthed, insatiably inquisitive, always in search of technical excellence, but unhampered by ideals, a disrespecter of persons, conventions and categories, *rusé* and case-hardened by long acquaintance with the sea.

It is a rousing portrait of an extreme kind of creative genius, and though Valéry seems capable of observing and—to some extent—illuminating its activity, he cannot let Socrates comprehend it. The Sage is made once to commend Tridon for his contempt of ready-made ideas (but not to condemn Eupalinos for accepting them) but he also describes him as a 'rascal' and an 'Octopus,' and neither he, nor even Phaedrus, is allowed to conceive that the Sidonian, with his unorthodox approach, could be an entirely successful shipwright.

S. Did Tridon at least turn out anything really good?

P. Some marvels of seaworthiness; some others, no doubt, are at the bottom.

'No Doubt' is, notoriously, a phrase that confirms the uncertainty it affects to deny; Phaedrus does not know for certain if any of Tridon's products have foundered, but it is inconceivable to him that the luck of the Ocean should run as strongly in his favour as it did to other shipwrights. This is a curiously unconvincing passage; how could a man-about-Piraeus, such as Phaedrus gives himself out to be, remain ignorant of the professional reputation of so egregious a character? Yet all Phaedrus can offer is 'No doubt.' Either Valéry is trying to bluff his way past a nasty hole in his argument, or his attention is wandering.

In any case, it is clear that having let Tridon in, Valéry is stuck for a device to get him out, and within a few lines of the question of seaworthiness, he simply shuts him out of the discussion by having Socrates execute a classic Freudian ploy for attracting sympathy, by countering a description of one of Tridon's ships in full sail, with a self-pitying

> O Life . . . And for me, the black, loose-flapping sails of the vessel with its load of priests, which as it laboured back from Delos, dragging on its oars . . .

Tridon may have been shut out of the dialogue, but not out of the reader's mind. Valéry might have pulled off this crude manœuvre in 1923, when even the established radicals in French architecture —Perret and Garnier—were turning Eupalinoid, and the Tridonian type was unknown outside the ranks of engineers such as Eiffel, Panhard or the pioneers of aviation. But in the year that *Eupalinos* was committed to print, the modern movement in architecture acquired its first true Tridonian in Moholy-Nagy—a practical manipulator of things and concepts, a constant seeker after technical excellence and the ideas of philosophers, an experimenter, no prig, a demolisher of conventional systems. Since Moholy joined the Bauhaus, his type has become more familiar to us over the years, and reaches a position of curious eminence today in the person of an outstanding frequenter of sages in search of operational wisdom (as those who have seen the credit-titles of *A Communications Primer* can testify)—Charles Eames, of whom Phaedrus might have been speaking when he said

> . . . no mortal more various in his means, more knowing in artifices; more inquisitive about all that did not concern him, more cunning in making it serve for what did concern him . . . he viewed all affairs solely in the light of practices and processes.

Eupalinos could only prevail over Tridon today in Academic circles; the rest of us have drastically overhauled our standards for a desirable operational personality, and with them our concept of a universal mind.

The phrase *Uomo Universale* gets a good deal of exercise nowadays, and it usually stands for someone like Leonardo da Vinci. Tridon is not a universal mind of that type, as Eupalinos appears to have been. Valéry himself seems confused on this point, and makes Phaedrus speak of Tridon in terms that recall passages from Leonardo's notebooks, while in the *Introduction* he tries to equate Leonardo's Method with that of the eminent Tridonian, Michael Faraday. But this will not stick: even on Valéry's showing Leonardo was—as we know Faraday, and may presume Tridon, not to have been—a mind crippled in the faculty of compassion, a will maimed in the organs of creation. Valéry notes with approval Leonardo's cerebral curiosity and epicene disgust at the act of love, and hails him as the leading player in that

> Intellectual Comedy which . . . would be so much more precious a thing than the Comédie Humaine, or even the Divina Commedia

. . . a role for which Tridon is manifestly unfitted.

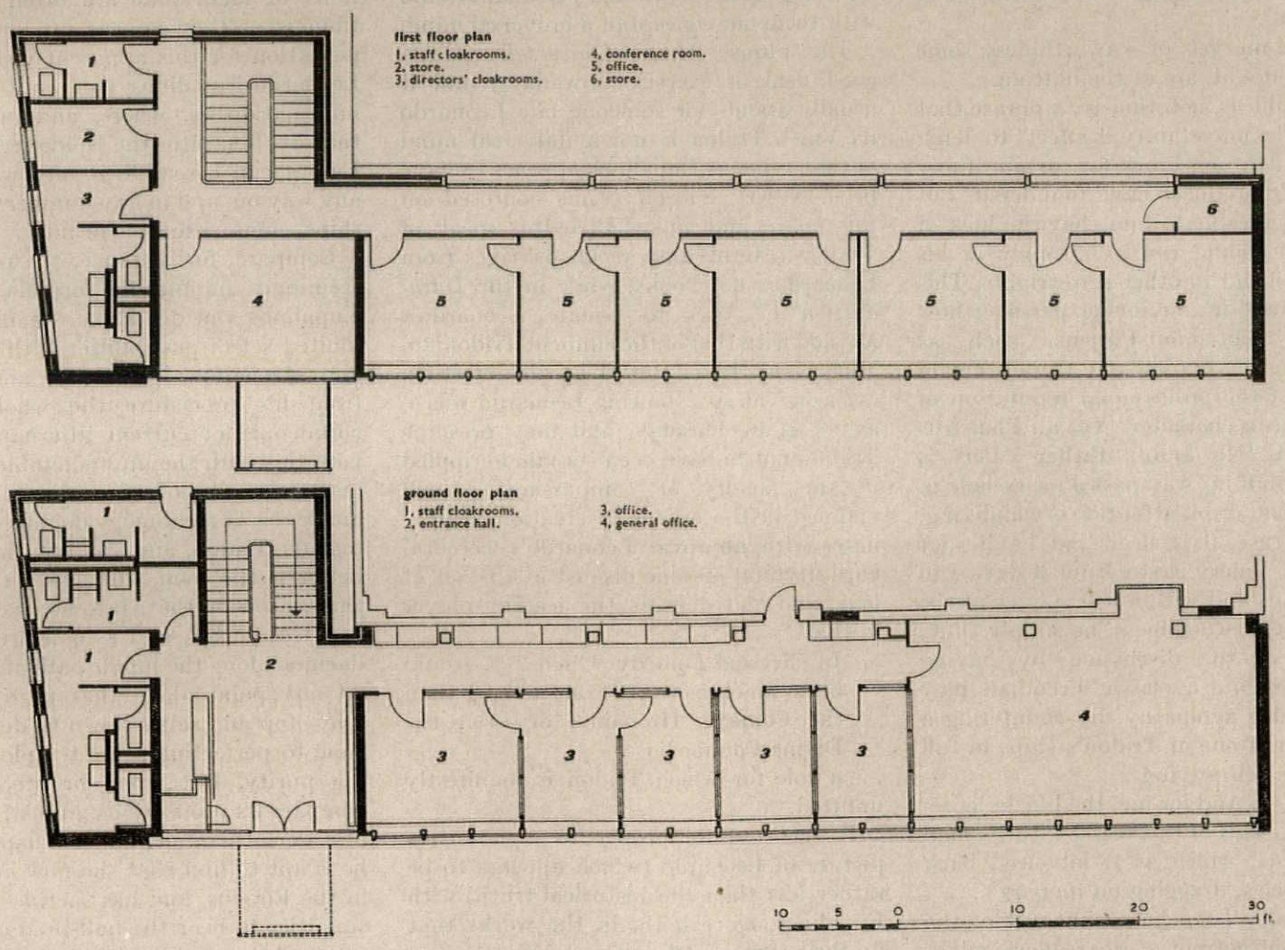
It seems quite proper to equate this picture of Leonardo (which appears to be rather less than the historical truth) with Eupalinos, since both, in the works that fly their names in the title, are clearly projections of the author himself, and the Method that he attributes to the one seems equally applicable to the other: it is a method of systematic exclusion and its universality is limited to a comprehension of an abstract diagram, the classes and scales of measurement into which things and processes can be fitted, not the things and the processes themselves—it is quite characteristic of Leonardo that he should have correctly designed an apparatus for converting human muscle-power into wing-flapping action, but not have first ascertained whether or not the available power was sufficient to lift a man's weight from the ground. Leonardo's universality embraces only the filing system that held the rather limited body of known facts available in the early *Cinquecento;* it is tidy, exclusive, closed and subjective.

We tend to require our universal minds nowadays to be open, inclusive and objective, even at the risk of appearing untidy. Our characteristic types of genius tend to be unprejudiced catch-alls of anything and everything they can hold, unfiltered and as found. Their claim to universality is about as good or as bad as Leonardo's, but their contents are very differently organized. Whereas his was organized by a thin spiderweb of theory, regular and geometrical of aspect, running continuously and permanently between the facts, ours is inclined to be organized into promiscuous and temporary aggregations of facts that are often as discontinuous as they appear random. In compensation for this apparent mess, whereas Leonardo-Eupalinos can only utilize his information as, where, and in the order that it fits into the spiderweb, Tridon-Eames can assemble it any way up and any way on, and in any number of relationships, commensurable or not.

Compare, for instance, the pellucid but seemingly immutable formula by which Eupalinos van der Rohe organizes a very limited set of possibilities with steel, glass and elementary geometry, and excludes from his procedure the whole teeming cornucopia of current alternatives—compare this with the unpredictable variety of materials and geometries, coverings, joiners and levels of technology deployed by Buckminster Tridon, and you see the difference between the man who has retreated, for this reason or that, into a paved and well kept cul-de-sac, and a man driven by his daemon along the jungle path of adventure. At any point along that path Eupalinos may stop and settle down to devote a lifetime to perfecting some temple of agonizing purity, but when he steps back to compare its proportions, at last, with those of a Corinthian girl he once happily loved, he is apt to find that she now keeps a pub in the Piraeus, and has sacrificed her vital statistics to bear the half-bred offspring of a rough-handed shipwright who knew something better to do at nights than think about architecture.

OFFICES AT NEWPORT PAGNELL

ARCHITECTS | **GORDON AND URSULA BOWYER**



The building houses the administrative staff of a small works carrying out the servicing of precision machines manufactured by the parent company—Société Genevoise Ltd.—in Switzerland, and is on the outskirts of Newport Pagnell. The offices are connected to the existing works at the rear but have been kept structurally independent in order not to disturb production during the construction period. Accommodation is planned on two floors with offices to one side of the entrance hall and staircase and cloakrooms on the other. General offices are arranged on the ground floor and directors with their private secretaries above with a small conference room over the entrance hall. The structural mullions in the offices are spaced at four-foot centres to allow for a flexible partition layout. Directors' offices are generally three bays wide (12 ft.) and secretaries' two bays (8 ft.) with general offices of varying sizes. Structurally, a combination of load-bearing brickwork and r.c. columns is used with post-tensioned precast concrete mullions on the entrance façade. Floors and roof are of prestressed concrete beams giving an unbroken ceiling to all offices and spanning from front to back. The staircase is formed from precast concrete treads cantilevered out from the fairfaced brick walls in the entrance hall. Externally, a pale cream facing brick is used and the precast concrete work has an off-white aggregate with an acid finish. The facing slabs around the entrance and conference room window are of slate and the panel at the side of the entrance doors is faced with teak strips. The infilling panels below cill level in the offices are of pale blue glass and the cills internally are of precast concrete coloured dark grey. Internally, all offices have acoustic tile ceilings with cork tiles on the first floor and lino tiles on the ground floor except in the entrance hall where terrazzo is used. Services are generally concealed and floor ducts are provided for the telephone installation. The mural in the entrance hall which incorporates a number of the client's machines is by Henry and Joyce Collins.



1, general view of entrance façade.

2. staircase from above. The fairfaced brickwork is a pale cream and the pre-cast concrete cantilevered stair treads, which are dark grey, have a 9 in. bearing in the brickwork and are spaced to conform to the brick courses and joints. The balustrade is formed from veneered blockboard supported on tubular metal rods.

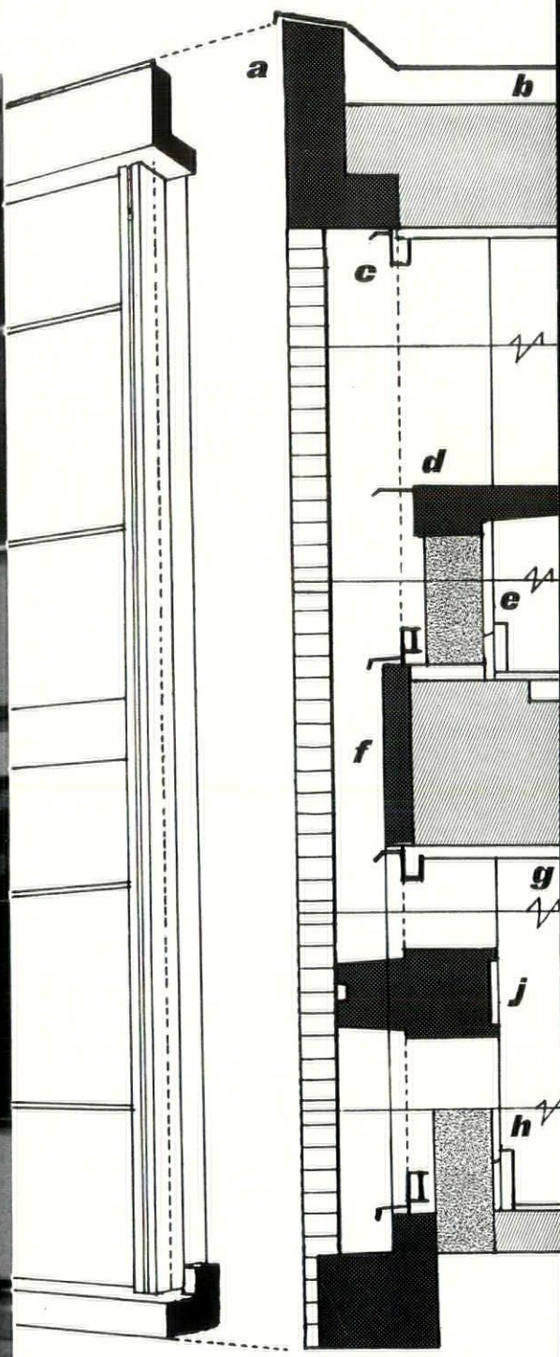
3, detail of main entrance. The conference room window above has a projecting aluminium angle frame and the surrounding facing slabs are of slate. The r.c. entrance canopy, fascia and edge beams are faced with pre-cast concrete slabs with an off-white aggregate and acid finish, while the panel at the side of the entrance doors is faced with teak strips.



2

3





key
a, precast coping.
b, 7 in. stahlton roof.
c, metal windows.
d, precast cill.
e, 4 in. insulating concrete blocks.
f, precast fascia unit.
g, 9 in. stahlton floor.
h, 4 in. insulating concrete blocks.
j, precast mullion.



4

4. entrance hall from the foot of the stairs. The reception desk on the right is veneered in teak and birch with a black lino top. The wall behind the desk is olive green, the ceiling white and the floor is of pale grey terrazzo tiles.
5. entrance hall from behind reception desk. The mural, which was carried out by Henry and Joyce Collins, incorporates some of the machines serviced by the clients. It is painted largely in varying tones of grey with small areas of intense blue.



5

OFFICES AT BIRMINGHAM

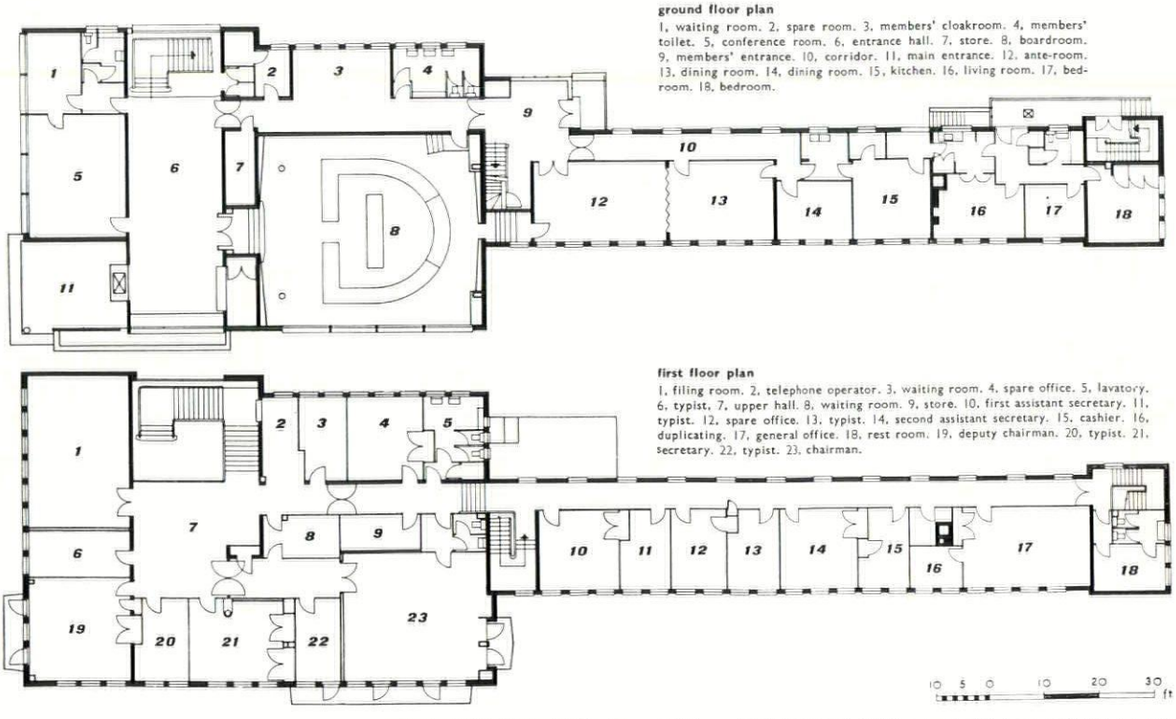
ARCHITECT | **JOHN H. D. MADIN**

These offices are for the Engineering and Allied Employers' Association and are planned on a long, narrow site on the corner of Frederick Road and St. James's Road, Edgbaston. Two houses originally occupied the plot, but these were bombed in the war. The building was planned in two units, each of two storeys, and arranged along the length of the site facing St. James's Road, so that most rooms and offices would face south. Corridors, cloakrooms and lavatories are mainly arranged on the north side of the building, linking a separate entrance for members, one for office staff, and a kitchen and tradesmen's entrance.

The units are of different construction, the main block nearest to Frederick Road having a r.c. frame with in-situ r.c. floors and roof, and exterior brick infill panels clad with a veneer of Roman travertine, with the grain in alternate slabs running horizontally and vertically. The double-glazed windows are set in surrounds of green Westmorland slate and the steel opening frames are painted white outlined with Corsican red. The inner reveals to windows of the main block have also been painted red to contrast with the cream of the travertine, and the reveals of the subsidiary block windows chrome yellow. The subsidiary block which faces St. James's Road is of brick load-bearing construction and in-situ r.c. floors and roof. The roofs of both blocks have been insulated with a thick layer of cellular concrete. The rainwater pipes to the main block are taken down in the centre of the building. The subsidiary block has brown buff brickwork with cream pointing: the window openings are accentuated by projecting green Westmorland slate surrounds.

The entrance of the main building faces Frederick Road, and is approached through armour-plate glass doors beneath a canopy, shielded on one side by a green marble panel with black and white markings, pierced with diamond-shaped holes lined with white marble. The other flanking wall of the porch is finished in cream travertine and the ceiling is of textured plaster painted a deep crimson. The floor of the vestibule is in grey terrazzo divided up with white plastic strips, while the entrance hall has a floor finish of grey rubber tiles with 18-in. white lacing strips, the pattern of which links with that of the vestibule. The main boardroom was planned around the horseshoe-shaped boardroom table. The walls at either end are panelled with sycamore slats running vertically from floor to ceiling; the sycamore has been moulded and cut back at the edges to improve the acoustics of the room, and is backed by a thick acoustic blanket; set in the panelling at the further end, and framing the head of the horseshoe table, is a large black leather panel, bounded by brass margins and set in an outer frame of Australian walnut; this panel has been arranged so that the centre section forms a door giving access to the members' anteroom beyond.

Heating is by a fully automatic oil-fired boiler, which works a system of radiant type flush panels in the greater part of the building, and this heat generated by the boiler is also used to operate a warmed-air system to certain rooms and also provide domestic hot water.

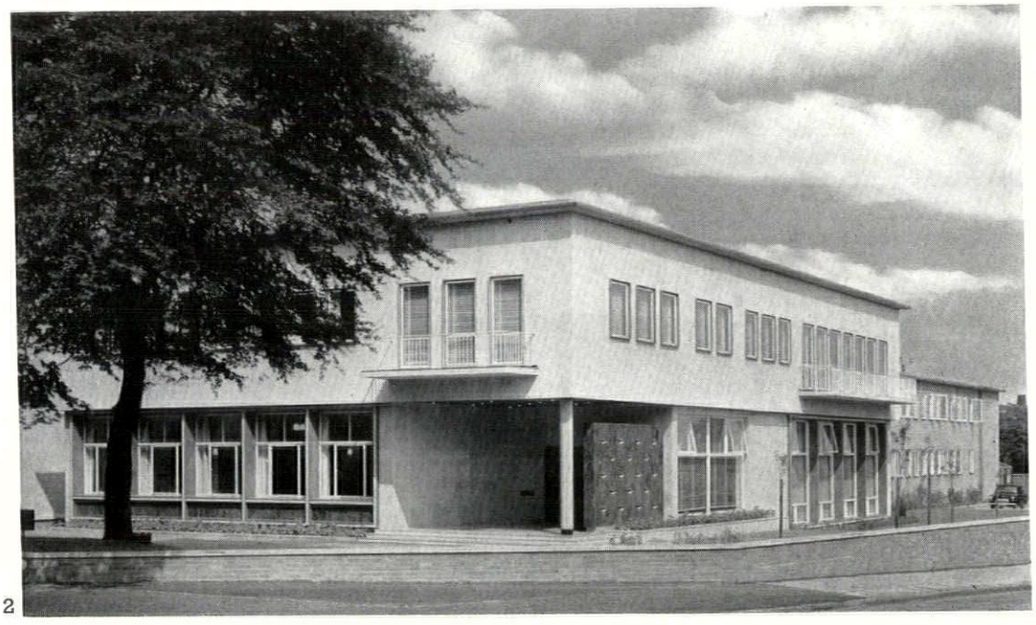


ground floor plan
1, waiting room. 2, spare room. 3, members' cloakroom. 4, members' toilet. 5, conference room. 6, entrance hall. 7, store. 8, boardroom. 9, members' entrance. 10, corridor. 11, main entrance. 12, ante-room. 13, dining room. 14, dining room. 15, kitchen. 16, living room. 17, bedroom. 18, bedroom.

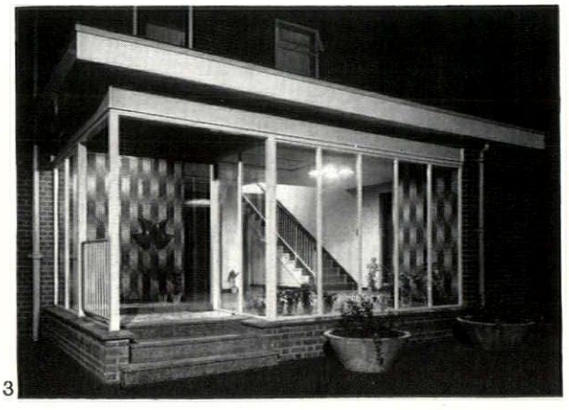
first floor plan
1, filing room. 2, telephone operator. 3, waiting room. 4, spare office. 5, lavatory. 6, typist. 7, upper hall. 8, waiting room. 9, store. 10, first assistant secretary. 11, typist. 12, spare office. 13, typist. 14, second assistant secretary. 15, cashier. 16, duplicating. 17, general office. 18, rest room. 19, deputy chairman. 20, typist. 21, secretary. 22, typist. 23, chairman.

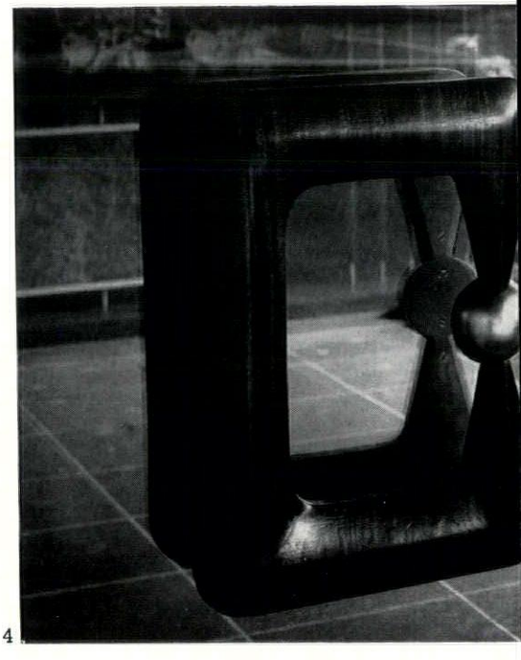
1, Frederick Road entrance of main building. On the right of the entrance is a pierced panel of green marble; the left hand wall is travertine, the ceiling is scarlet.

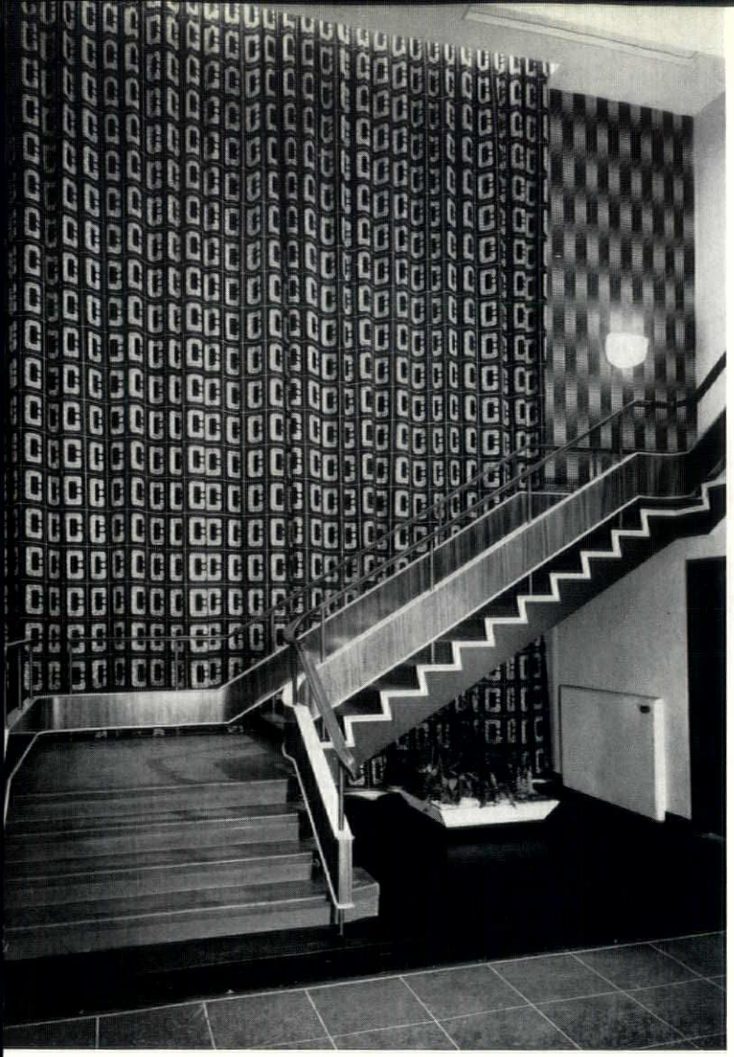




2. main building from the south west. The first floor is faced with travertine, alternate slabs having the grain running vertically and horizontally. The window surrounds are green Westmorland slate.
3. members' entrance on the north side of the building.
4. the handles to the main doors designed by Richard Swale and James Gibbons incorporating a symbolic motif: a ball held by calipers.









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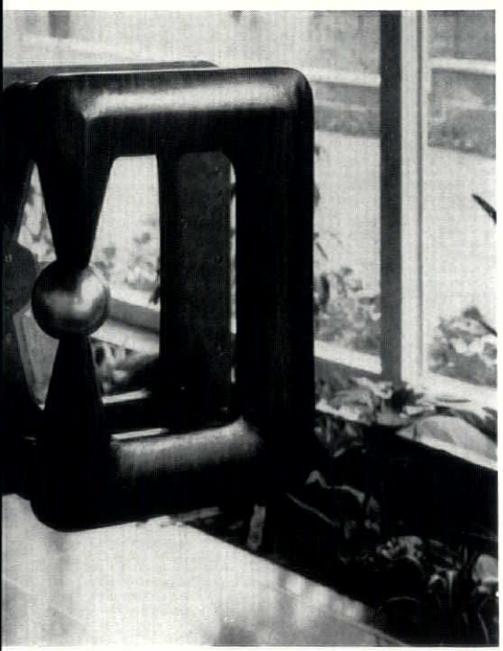
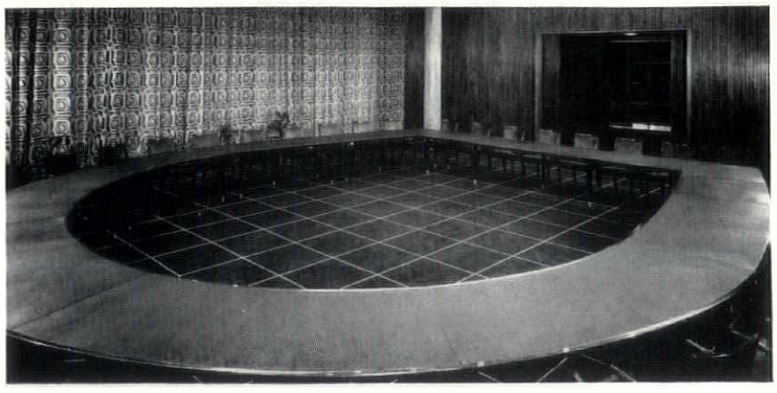
5, the main staircase rising from a black rubber dais. The edge of risers and treads is worked with a white terrazzo ribbon, and the string has been painted red. The curtain behind was designed by the architect and is gold, yellow and black.
6, commissionaire's alcove in the main entrance. The front panel of the desk is of burred elm, with an ebonised black frame; the wallpaper of Sicilian lions behind is gold and black.
7, the boardroom; the carpet is ruby with a grid of silver blue lines; the entrance doors are covered with dark red hide with satin brass finish panels. The boomerang shaped handles are satin brass and leather.
8, the boardroom table visible in 7, designed by the architect in Nigerian walnut with a dark blue hide top. The shape and size can be altered.



7





8



Peter Hammond

A LITURGICAL BRIEF

To many an architect the function of a church seems nebulous, his own duty reduced to the provision of shelter and atmosphere. But if the function is defined as the liturgical relationship of priest and congregation, then it becomes precise. Even so, a demanding ritual need not cramp the designer's style intolerably, as the Reverend Peter Hammond points out in his article below, nor does a simpler rite, such as the Lutheran, exemplified by Wilhelm Kongeter's Klarenbach church at Dusseldorf,  *opposite, permit him unlimited licence.*

All over western Europe the decade just ended has been one of almost unparalleled activity in the field of church building. In western Germany more than 350 churches have been built or radically reconstructed in the one diocese of Cologne. In France new churches and monasteries are multiplying so rapidly that it is difficult to keep abreast of the latest projects. On this side of the Channel the destruction of the war years, and the growth of new centres of population, have given rise to extensive programmes of church building in almost every English diocese. Many new churches have been built in Holland, Switzerland, Italy, Sweden and Finland. As for the United States, it has been estimated that the next ten years will see the construction or rebuilding of no fewer than 70,000 new churches and synagogues at a total cost of nearly six billion dollars.

It must be confessed that the results of all this activity have been somewhat disappointing. While a great deal of interesting work is being done on the Continent, very few post-war churches can be accounted wholly successful. In this country we have yet to build a church which will bear comparison with Sir Ninian Comper's St. Philip, Cosham (completed in 1938), and the recent survey *Sixty Post-war Churches* is a depressing catalogue of timidity and mediocrity. Much the same might be said of the exhibition organized by the Central Council for the Care of Churches. It seems evident that the Church of England has failed lamentably to seize an opportunity such as is unlikely to recur.

While there are signs of a nascent renewal of church architecture extending from Finland to the Pacific seaboard of the United States and Canada, and while it is widely recognized that there is probably no problem in contemporary architecture where the need for radical solutions is so imperative as that of church design, the real character of the problem is still far from clear. A great deal of hard thinking is necessary if we are not to waste still more time and money on misguided projects which, though not without a certain superficial attraction, are essentially irrelevant. One has of course to recognize that the majority of new churches in every country of western Europe are still pathetic attempts to give new life to dead formulae. It is easy to forget this in considering a highly selective survey like the recent *Eglises de France reconstruites*, or the special number of *L'Architecture d'Aujourd'hui* devoted to church architecture, where the horrors are discreetly veiled. I do not think, however, that the persistence of these historical souvenirs, these sterile exercises in neo-Gothic or sham-Romanesque, need concern us overmuch today. This particular battle has already been fought. Sooner or later, even in this country—where the building of new churches is still inextricably confused with the preservation of old ones—it will be recognized that it is no use speaking to the contemporary world in a dead language.

I believe that the real danger is rather that, for want of any clear grasp of the problems at issue, the Church will identify itself with false solutions based on a highly

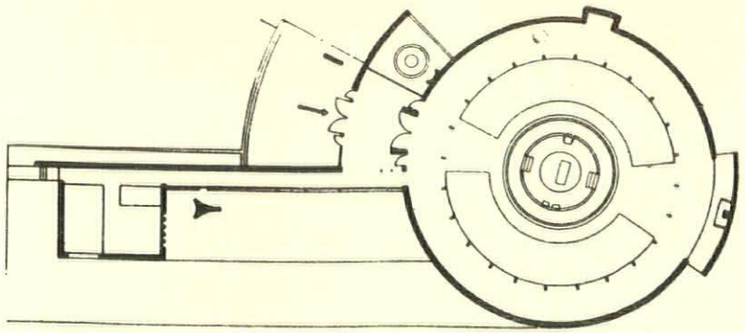
superficial understanding of the present situation. This is happening already, and the first fruits have proved dispiriting in the extreme. There is very little to choose between the familiar essays in dead languages and many of the 'frankly modern' churches which have sprung up all over western Europe during the last few years. It can hardly be too strongly emphasized that the fundamental problem is *not* one of style, of finding a 'contemporary idiom.' It is rather a matter of rethinking afresh the whole question of what a church is for: and the answer to this question cannot, as is often supposed, be taken for granted. It is all very well to say that the designing of a church is not a planning problem but an opportunity to create a shrine to the glory of God. A vague religiousness can never be more than a very imperfect substitute for an informed understanding of the essential function of the church, any more than a lofty conception of the benefits of universal education can take the place of a precise grasp of the problems involved in designing a school. It is necessary to be more specific. It is a striking fact that many architects who genuinely attempt to observe the basic principles of the modern movement in designing a hospital or a factory, seem only too willing to throw all such disciplines to the winds if they are given the opportunity to build a church.

The most successful churches of recent years have been inspired by a movement which is fundamentally theological in character. The Liturgical Movement, as it is commonly known, is an attempt to reformulate in terms of contemporary social and cultural patterns the essential function of the Church in the modern world. Though this movement is not confined to any one country or denomination, it is among Continental Roman Catholics that its influence has been most widely felt. Significantly, it is in those countries of western Europe affected by the Liturgical Movement that church architecture is beginning to emerge from the depths of sterility and irrelevance into which it had fallen.

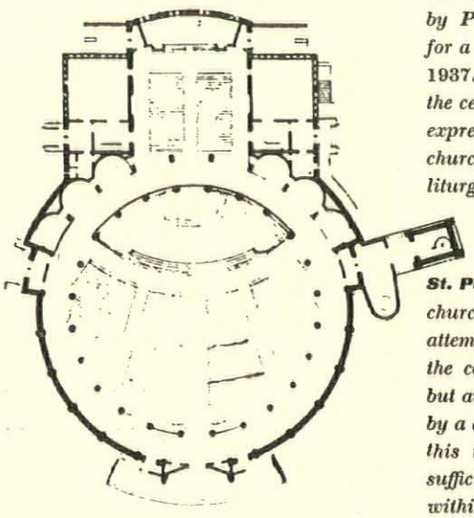
In Germany and Switzerland, and, more recently, in France (where the Liturgical Movement failed to establish itself until the years of the German occupation), a new kind of church has begun to appear: a church which reflects a new theological outlook, a deepened understanding of the liturgy which gives the building its *raison d'être*. The church is seen first and foremost as the place where the local Christian community gathers for the eucharist. *This* is its essential function, to which everything else is subordinate. The liturgy itself is regarded not as something performed by the clergy alone, but as a corporate action in which everyone has an active part to play. Hence the current experiments with novel types of church plan based on the square, the circle, the ellipse and the trapezoid. Such plans are not primarily the result of the freedom conferred by modern methods of construction. They are the outcome of the Church's new understanding of itself, and of the liturgy in which its essential character should be most fully realized and made manifest.

Churches like St. Albert, Saarbrucken, and St.

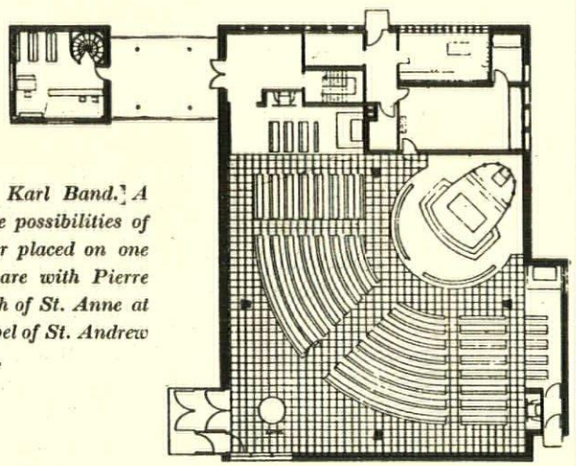
[*continued on page* 244



Boust, *above, new church in the Moselle by Pingusson, who produced a project for a church of this type as long ago as* 1937. *The congregation stand all round the central altar. The plan is admirably expressive of the primary function of the church as the eucharistic room, and of the liturgy as the act of the whole church.*

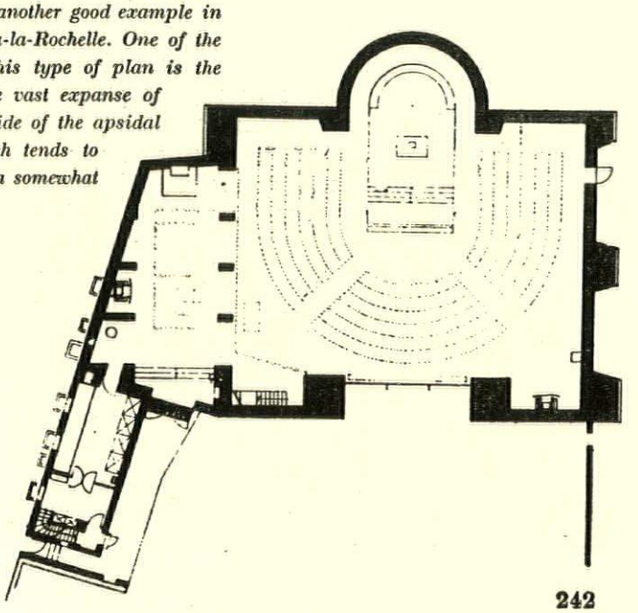


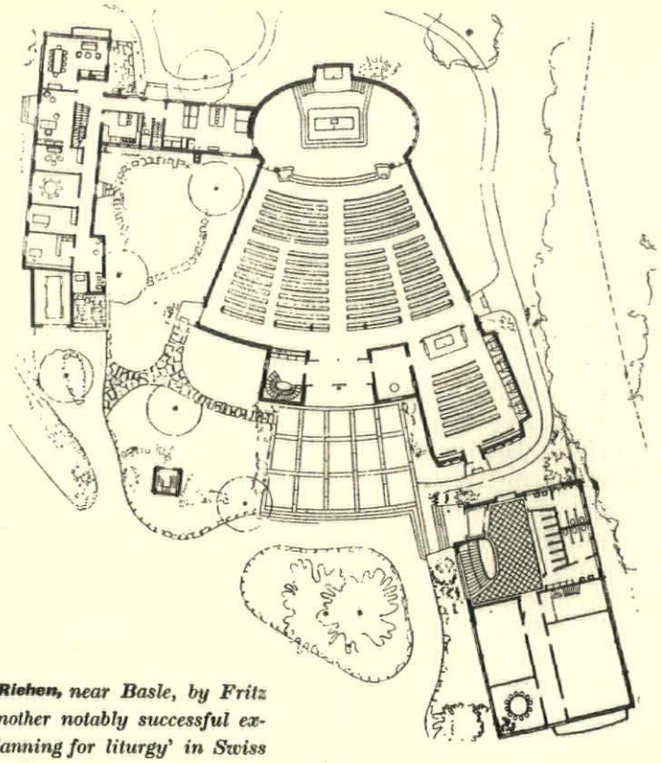
St. Peter, Yvetot, *left, recently completed church in France by Yves Marchand. An attempt to create a church which expresses the corporate character of the eucharist but avoids the practical difficulties created by a central altar. As with other plans of this type, the sanctuary tends to be insufficiently defined: it is swallowed up within the main volume of the church.*



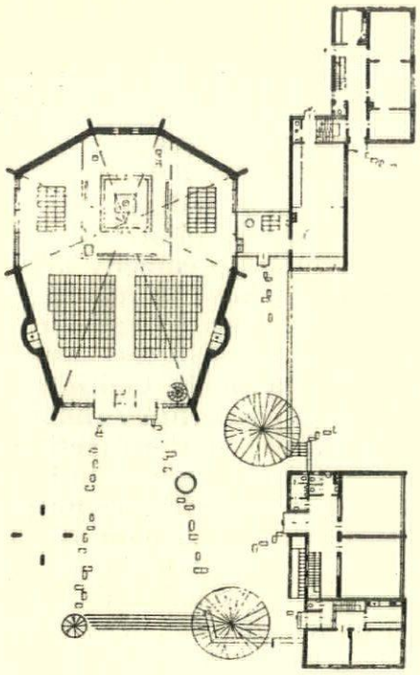
St. Rochus, Turnich, *by Karl Band. A plan which illustrates the possibilities of the square, with the altar placed on one of the diagonals. Compare with Pierre Prunet's projected church of St. Anne at Nancy and the tiny chapel of St. Andrew at Nice by Renner Senn.*

St. Elisabeth, Opladen, *by Emil Steffan, below, one of several recent 'amphitheatre' plans: there is another good example in France at Laleu-la-Rochelle. One of the difficulties of this type of plan is the treatment of the vast expanse of wall on either side of the apsidal sanctuary, which tends to give the church a somewhat theatrical air.*

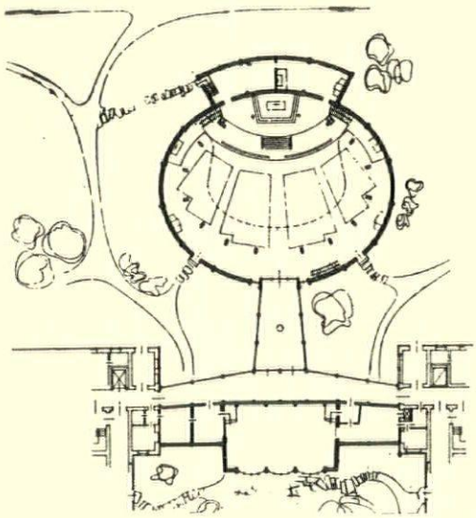


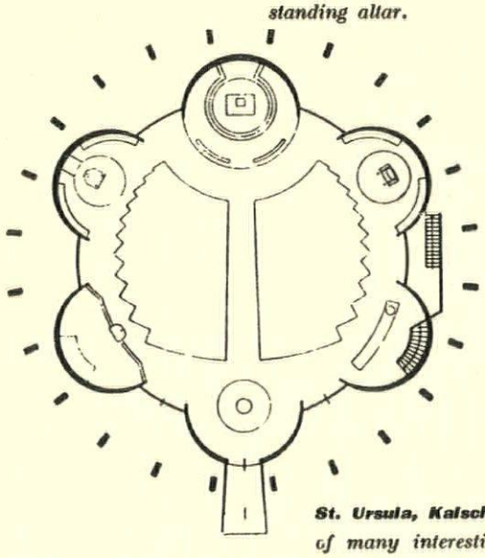


St. Francis, Riehen, *near Basle, by Fritz Metzger. Another notably successful example of 'planning for liturgy' in Swiss post-war churches.*

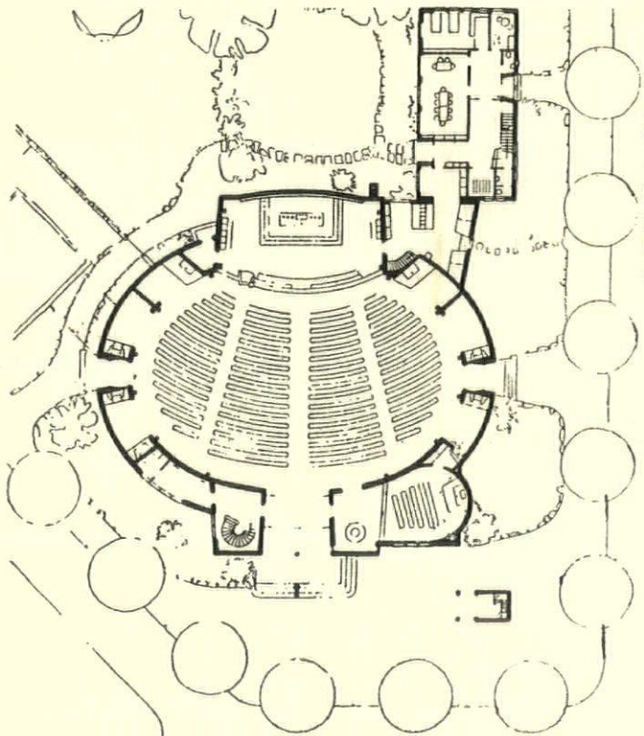


St. Michael, Wipperfurth-Neye, *by Bernhard Rotterdam, above, interesting plan based on an irregular octagon. The congregation sit on three sides of the free-standing altar.*

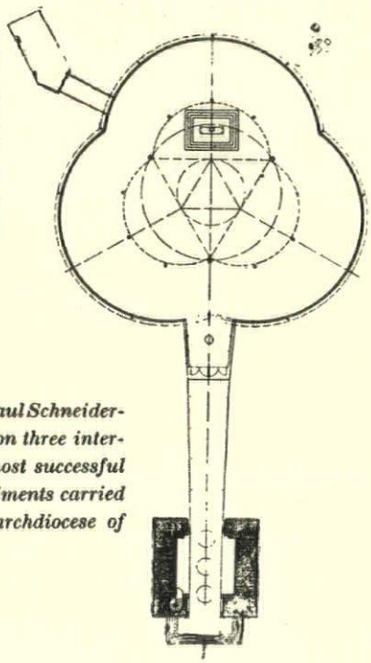




St. Ursula, Kalscheuren, *above left, one of many interesting post-war plans by Gottfried Böhm. It suggests comparisons with certain Baroque churches.*



SS. Felix and Regula, Zurich, *by Fritz Metzger, left, and* **Chapel of University Clinic, Freiburg,** *by Horst Linde, top left. At Freiburg, as at Yvetot, the sanctuary tends to 'float'. Metzger overcomes the problem by placing the altar within a shallow rectangle on the short axis of the ellipse; a notably successful solution.*



St. Rochus, Dusseldorf, *by Paul Schneider-Esleben, right. Plan based on three intersecting circles. One of the most successful of the many planning experiments carried out since the war in the archdiocese of Cologne.*

Ursula, Kalscheuren, both by Gottfried Böhm, Horst Linde's chapel for the University Clinic at Freiburg, Fritz Metzger's church of SS. Felix and Regula at Zurich, and St. Peter, Yvetot, by Yves Marchand, all demand to be judged not simply on aesthetic grounds —as essays in plastic research for its own sake—but as attempts to embody in architectural form a theological vision. The reason why the typical medieval plan, with its elongated nave and chancel, and its altar set against the east wall, is being so widely abandoned on the Continent today is the fact that it expresses an entirely different understanding of the liturgy, and of the function of the church building, from that now current in Liturgical Movement circles. The marked preference for plans based on the square, the circle, and the ellipse orientated on its short axis, is not due to aesthetic considerations at all. It reflects the growing demand that the laity should be able to play their full part in the liturgy: that the relationship between the ministers at the altar and the whole body of the faithful should express their common status as con-celebrants in the eucharistic action. Other functions of the church include, of course, the ministry of the word and the sacrament of baptism, but its primary purpose is to provide a place for the celebration of the eucharist.

It has been said that one of the difficulties of church architecture in the past has been that architectural form has followed too closely an inadequately conceived function. I believe that this is true not only of the past: it is the crucial difficulty today, particularly in this country. We have no clear conception of the function of the church building, and until the client is in a position to supply the architect with an adequate programme he can scarcely complain if he gets an unsatisfactory church. The reason why the best of recent Continental churches are so far in advance of any we have built in England is, quite simply, that a great deal more thought has been given on the other side of the Channel to the question of what a church is for. It is not that we have no architects of the calibre of Fritz Metzger or Rudolf Schwarz—though whether commissions for new churches are going to the most suitable architects is another matter. The fact is that the best Swiss, German and French churches of the last decade are *theologically* informed to a far greater degree than their English counterparts.

The new Coventry cathedral promises to be a particularly spectacular example of architectural form following an inadequately conceived function. Basil Spence himself has asserted that 'a cathedral in England has a greater purpose than a church in which only to hold services. . . . The object of this cathedral is to turn the visitor who may go into the cathedral alone for a half hour's peace—to turn him from a visitor into a worshipper.'* Now a cathedral is not a parish church—but neither is it an oratory. If its function is more complex than that of the eucharistic 'room' it is none the less determined by the liturgy. As Marvin Halverson has remarked: 'Corporate worship sums up all the activities and meaning of the Church. . . . While personal devotion and private worship are not denied, worship in the Christian community is a communal act. Therefore a church building must be designed not for the worship of the alone with the Alone, but for a corporate fellowship called to a purpose in the world. The building should be shaped by worship, and not worship by architecture.' The task of the architect must always be to create a worthy setting for the liturgy: not a building 'designed to achieve a "mood" in which an individual may have a "worship experience".'† To conceive the primary function of a cathedral in terms of its effect upon the casual visitor is rather like describing the Festival Hall as a building where one can have a pleasant meal with a view of the river. It is to ignore its fundamental *raison d'être* while giving undue prominence to something that is essentially incidental and derivative.

Coventry cathedral will no doubt be praised or criticized in due course on aesthetic grounds. It seems to me that its fundamental weakness lies elsewhere: in an inadequately conceived functional analysis. This church contributes nothing to the debate which has been proceeding during the 35 years since the building of Perret's epoch-making church at Le Raincy. It springs from an entirely different world of thought. The quest for sparkling and beautiful altars at the end of long vistas is strictly irrelevant to the problems of church planning and liturgy which are exercising Continental architects like Metzger, Schwarz and the Böhms, and which will sooner or later have to be faced in this country also, if we are ever to build a church worthy of its purpose. We are in no position today to build cathedrals. Our immediate task is to apply ourselves afresh to the grammar of church architecture—not to compose epic poems.

So far as the Continent is concerned, a great deal of hard thinking *has* been done since the 'thirties. If the Liturgical Movement has as yet produced very few really outstanding churches, it has at least created a widespread awareness of the true character of the problems at issue. It has also inspired a considerable number of unpretentious churches which combine great artistic integrity with a lucid grasp of liturgical principles—by which I mean far more than the arrangement of church furniture. There are many examples of such *tâches modestes*—wholly admirable as far as they go—in and around Basle; while recent French churches like those at Tournan-en-Brie, Morsang-sur-Orge and Issy-les-Moulineaux, if not free from certain prevalent faults—such as the reckless use of *pierre apparente*—hold out considerable hope for the future. Le Corbusier's chapel at Ronchamp (which, it is important to remember, *is* a pilgrimage chapel and not a parish church) goes much further than these modest suburban churches. Alone among contemporary churches it seems to me to succeed in expressing, in forms which are entirely free from historicism, something of the symbolic, cosmological function which also belongs to the House of God. It is a very remarkable achievement, but, most emphatically, not one to be imitated. It has already had a most unfortunate influence on a number of otherwise

* *Religious Buildings for To-day*, New York, 1957, p. 132.

† *Ibid*, p. 4.

[*continued on page* 255

tower

1, *the aspiring vertical thrust of a tower is, in the case of Auguste Perret's church in reconstructed Le Havre, a favourite motif of the designer, as well as a potent Christian symbol. Indeed, the poising of such a tower above the centre point of a four-square plan is an epitome of the confluence of Gothic and Classical ideas on which his life's work was based.*

2 *and* 3, *even inside the church the powerful vertical emphasis is maintained, reinforced concrete making possible an open-work structure almost completely free from internal braces or other visual obstructions, while the standardized precast elements of the spiral staircase introduce an immediately recognizable module of human scale, at a distance where the accurate visual appreciation of dimensions can become difficult.*



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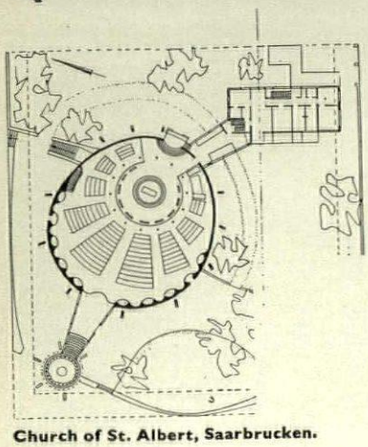


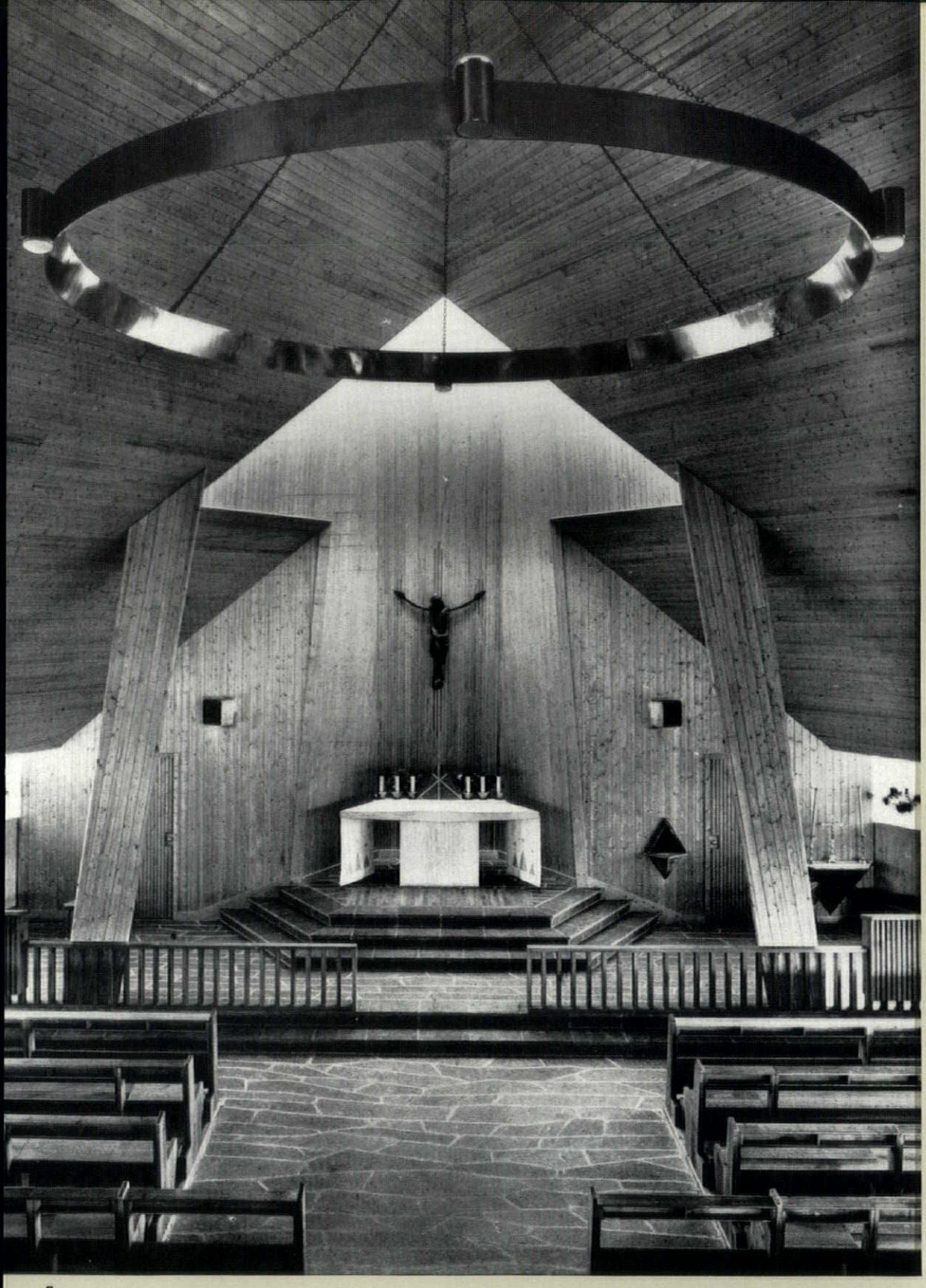
Church of St. Albert, Saarbrucken.

oculus

4, *the egg-plan church of St. Albert, Saarbrucken, designed by Gottfried Bohm, son of the celebrated Dominikus Bohm, is one of a number of recent European churches that have put new life into the Baroque device of concentrating the main source of light above the altar. It is also almost unique in utilizing one of the plan-forms advocated by Rudolf Schwarz in his book* Vom Bau der Kirche (*reviewed in AR, October,* 1952), *though Schwarz's version had a central column passing through the altar, not a ring of columns surrounding an arena-like space, as here.*

5, *Michel Marot's striking wooden church of St. Agnes at Les Grés, also employs a light-source immediately above the altar, but hidden (from the view of the congregation) in the base of the spire, whose supporting struts are grounded just beyond the chancel rail.*

6, *the spire, while a distinct*



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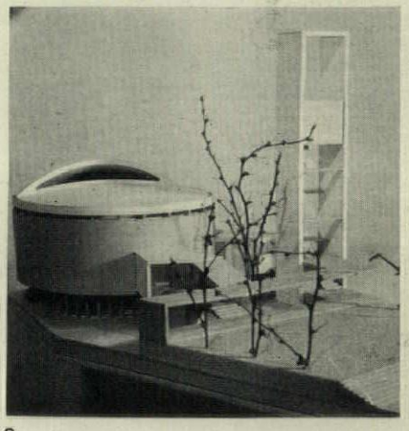

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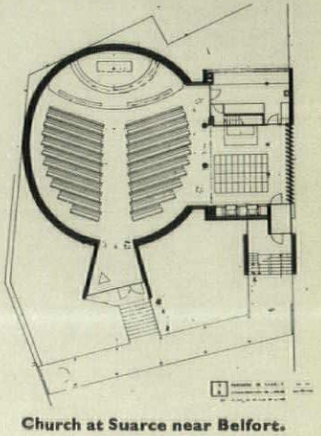
structural and visual entity, is clearly conceived as part of a coherent system of triangular forms, deriving from the peculiarities of site and plan.

7, the wooden detailing of St. Agnes is as coherent as the structural form—this view looks across the porch to the gallery stair and the baptistery beyond.

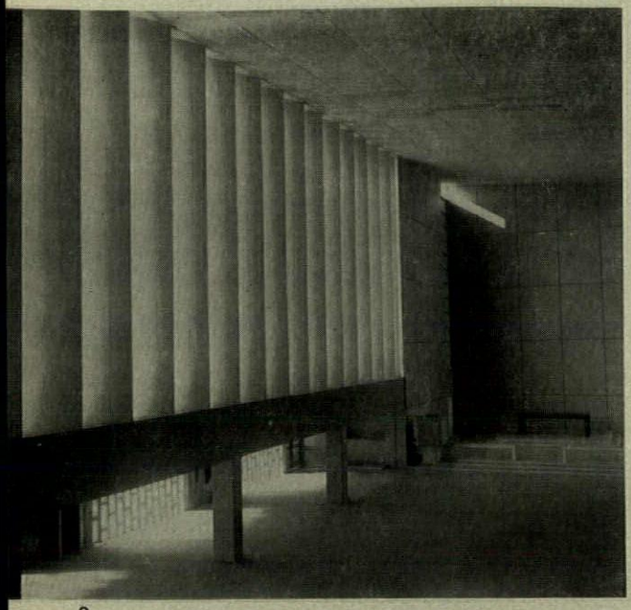
8, another form of concealed chancel lighting, again with Baroque forebears, appears in this proposed church for Suarce, near Belfort, designed by Dumas, Dumas and Wecker, utilizing a window in a gable formed above the chancel rail.



Church of St. Agnes at Les Grés.



Church at Suarce near Belfort.



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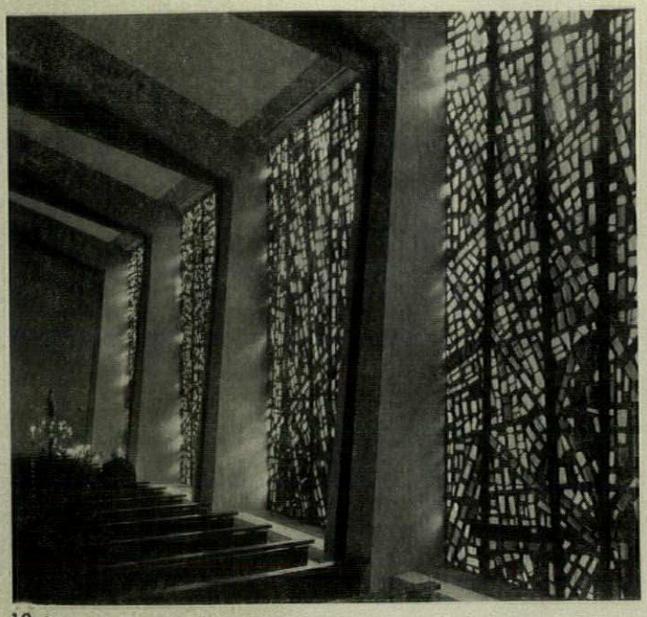

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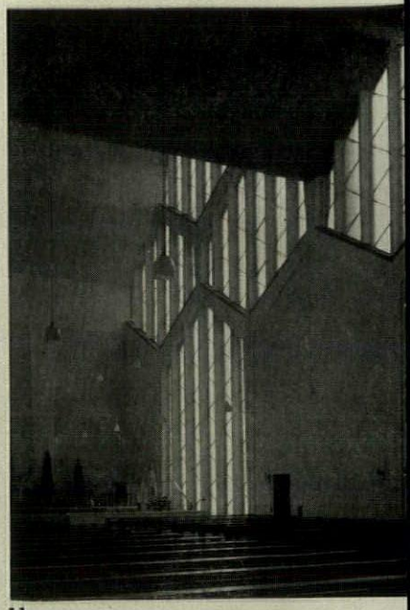


11

12

church wall

9, *the church wall, which it had become something of a modern orthodoxy to regard simply as a light-transmitting - membrane, is now commonly treated as a much more active participant in the design of the interior, and in Marcel Lodz's Ste. Jeanne d'Arc at Belfort it is modulated by a series of tall louvres directing light toward the altar.*

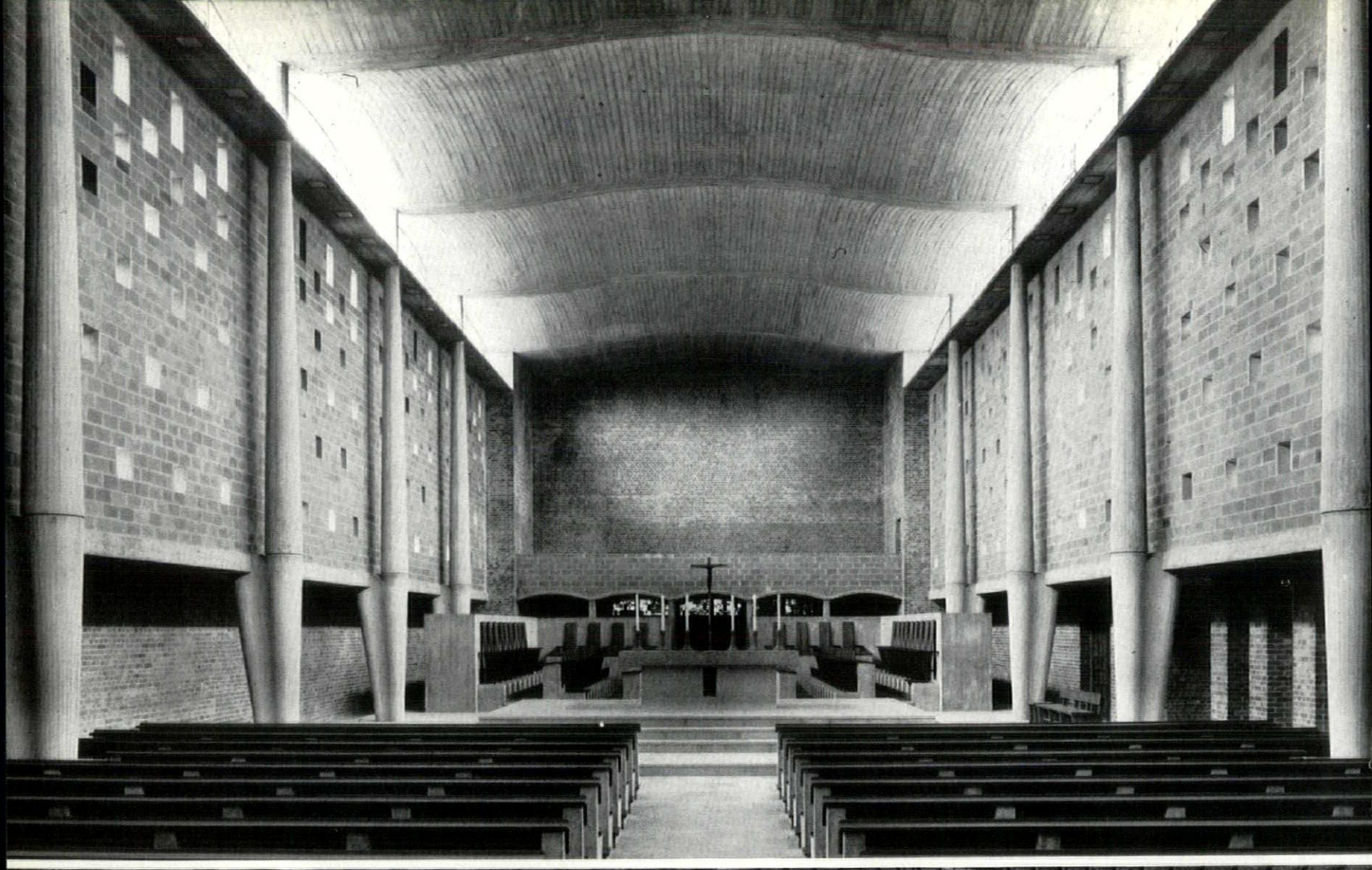
10, *in the church of St. Maurice, Saarbrucken, by August Dietz, the nave wall is treated as a glowing expanse of coloured glass.*

11, *St. Joseph's, Cologne, Schwarz and Bernard, working in a manner unlike anything in Schwarz's book, use polygonal and vertical openings to distribute light and direct the gaze of the congregation as the liturgy requires.*

12, *the concept of the nave wall as a pierced membrane is seen at its most dramatic in France, though the 'columbarium treatment' favoured by Robert Faraut in the church of Notre Dame de Grace at Morsang-sur-Orge, is as unusual as its scale effects are deceptive.*

13, *the most famous of all perforated church walls is Le Corbusier's unprecedented, but functionally impeccable, chapel of Notre Dame du Haut at Ronchamp, pierced by apertures like mediaeval firing slits, through which shafts of coloured light stab into the interior.*









16



17

nave

14, *even thirty-five years after its completion, Auguste Perret's concrete basilica at Le Raincy continues to serve as a norm to which all modern church interiors are compared, and many, to this day, are still subtle deviations from that norm, as in the case of the church of the new Dominican Priory at Lille* (*facing page*), *designed by Pierre Pinsard and Neil Hutchinson, where the columns, albeit tapered and bracketed, and the running vaults, albeit sprung from recurved beams, clearly reveal the Perretesque inspiration.*

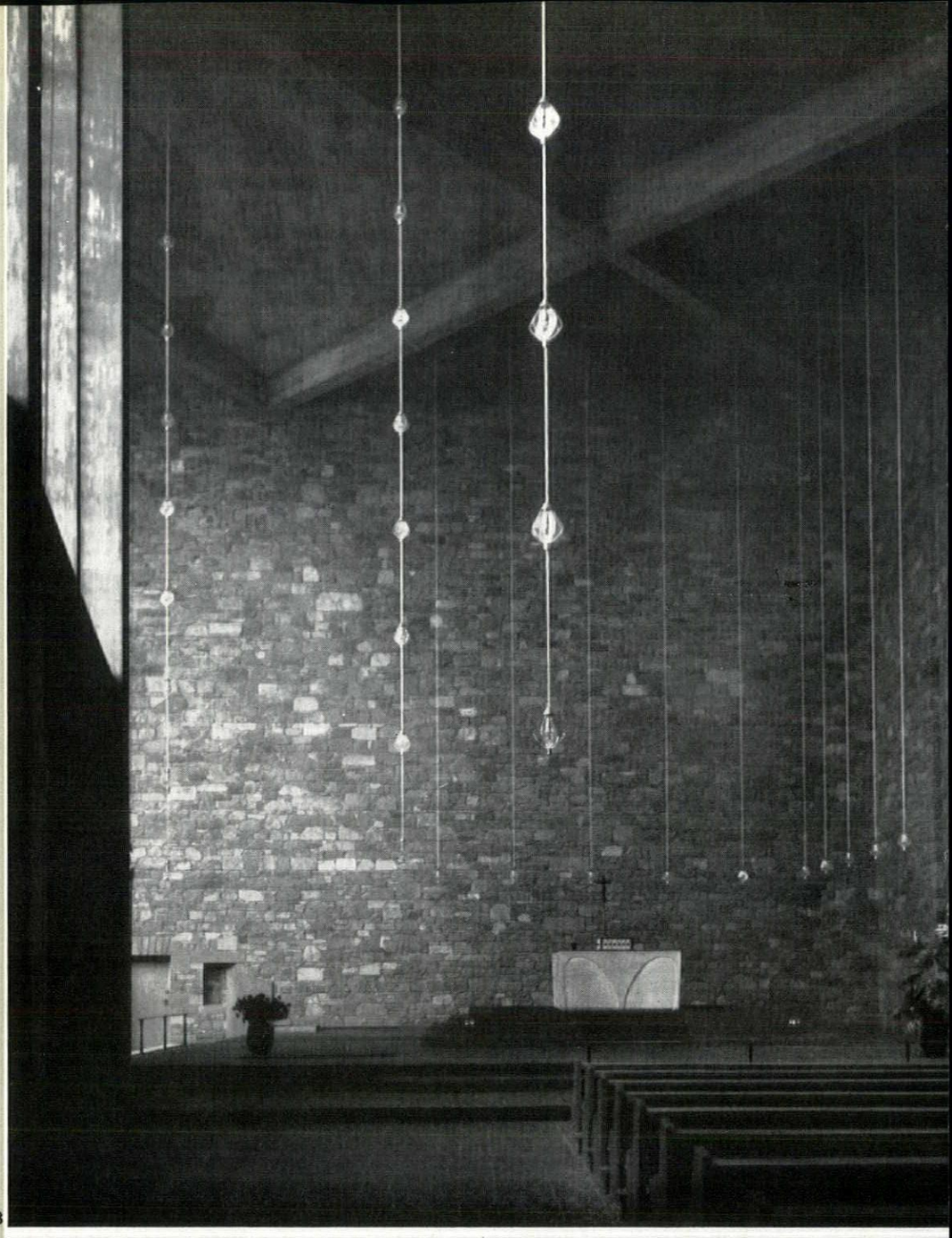
15, *the other dominant tradition in modern church interiors is that of the Protestant preaching hall, without internal columns, a plain roof on plain walls, and an east end disposed in such a way as to give prominence to the pulpit, exemplified here by the studied elegance in brick and concrete, wood and metal, of the Bullinger Church, Zurich, by the brothers Pfister* (*facing page*).

16 *and* 17, *further variations on the two dominant spatial types; Hermann Baur's All Saints', Basel, columniate, vaulted, Perretesque, and a small church at Thayngen, Switzerland, by Josef Schutz, which—like the churches by Basil Spence and Partners illustrated in AR, February,* 1958 *—uses an exposed internal structure to give articulation to a hall-like space, but in this case for the Roman rite.*

altar

18 *and* 19, *whether the altar-table serves as the work-surface of an active liturgy, or more abstractly as the repository of symbolic concepts, it must still be the visual focus of the interior of any Christian church, and in few churches has attention been more dramatically focused than in Rudolf Schwarz's St. Anne, Duren. The altar is a massive stone block, situated under the crossing of a pair of imposing roof-beams, in the angle of an approximately L-shaped space. Light falls on it from the arms of the L, filters down on it through a pierced wall-panel, glows around it from two ranks of hanging lamps.*

20, *among the most widely noticed of recent churches has been Figini and Pollini's, allegedly Brutalist, Madonna of the Poor, outside Milan (facing page), but notice has concentrated too much on the structure and too little on the liturgical arrangements. The altar-table is a roughly-hewn slab of stone, balanced on a single upright, and it stands in a kind of inner chancel (a device not unknown in Italian churches) formed by a free-standing concrete screen that makes five sides of a hexagon, with its open side towards the congregation.*



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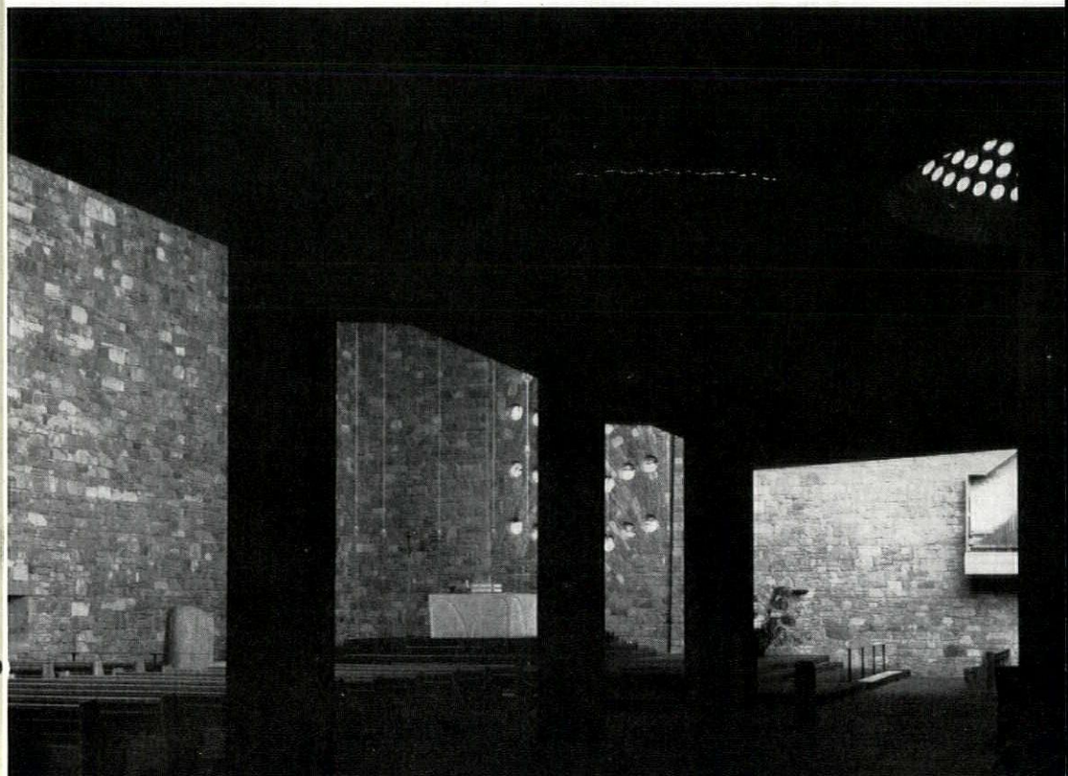


19



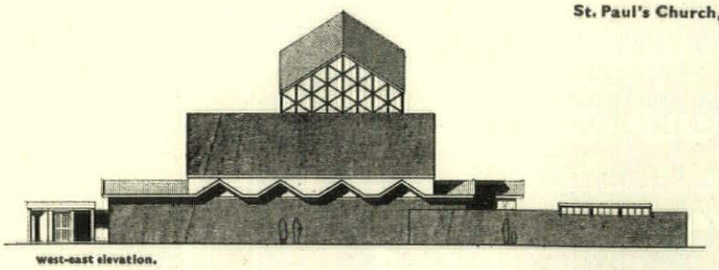
21

In the design of the altar-table itself, two traditions almost as old as the liturgy are at war; one insisting that it be made glorious with art, as in Hermann Baur's All Saints', Basel, 21, *the other that it shall be left as a plain, primitive table—a tradition with*

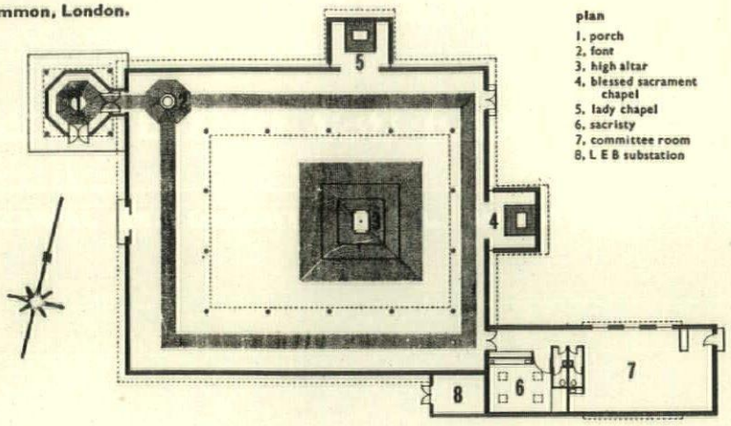
22

which the altar of Notre Dame de Grace at Morsang-sur-Orge, 22, *makes the last compromise short of letting it completely alone.*

St. Paul's Church, Bow Common, London.



west-east elevation.



St. Paul's church (Church of England), Bow Common, London, E 3, architect, Robert Maguire, has an experimental arrangement with freestanding altar, the seating, pulpit and other furnishings can be moved to other positions in the light of experience. The chairs are stackable.

continued from page 244]

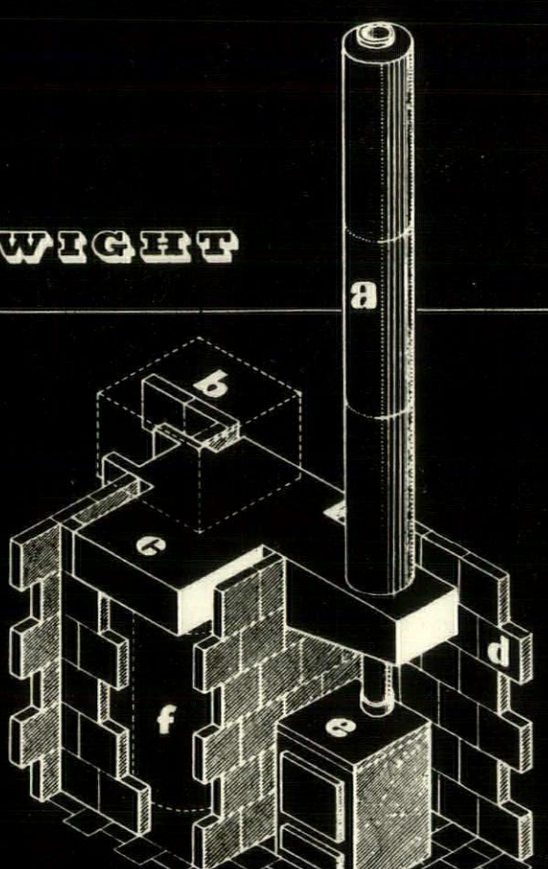
interesting parish churches in France—Villey-le-sec, for example.

The prospect for church architecture on this side of the Channel is at the moment somewhat cheerless. It is to be feared that, as the ecclesiastical authorities begin to grasp the revolutionary notion that it is traditional to be modern, we may expect to see still more examples of what are essentially medieval churches masquerading rather selfconsciously in contemporary fancy dress. There are, nevertheless, some grounds for hoping that the next ten years will see an increasing awareness of the real character of the problems confronting the church architect. Robert Maguire's new church at Bow Common may well prove to be of far greater importance than any church built in this country since St. Philip's, Cosham. It is the outcome of a systematic application of functional analysis to the problems of church design; the unusual plan springs 'from an attempt to relate the altar to the priest and people in such a way that they can best carry out their functions in the liturgy.' This unpretentious parish church promises to be a notable landmark in the development of church architecture in this country.

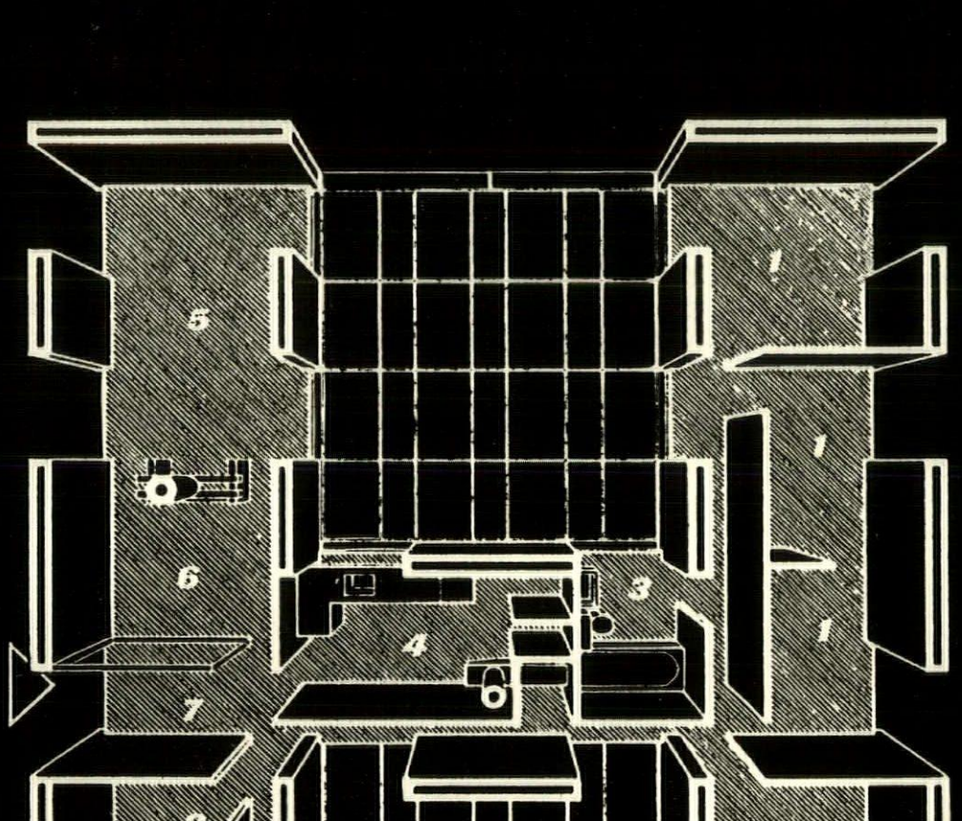
One of the main factors in the renewal of sacred art on the Continent has undoubtedly been the existence of enlightened ecclesiastical patronage: in France, for example, the Dominican Order has played a crucial role. In this country, on the other hand, it may well be that the initiative will come from the architect. I see no reason why an informed architect should not exercise upon an ecclesiastical client the kind of salutary influence that he has already brought to bear upon the Ministry of Education. The new church at Bow Common shows that it *can* be done, provided the architect knows what he is doing. If the principles of the modern movement have any validity, they are applicable to the design of churches as well as schools. If this were more generally realized in architectural circles in this country we should be well on the way to a more rational approach to the problems of church building.

HOUSE IN THE ISLE OF WIGHT

ARCHITECTS | JAMES STIRLING AND JAMES GOWAN



kitchen stove



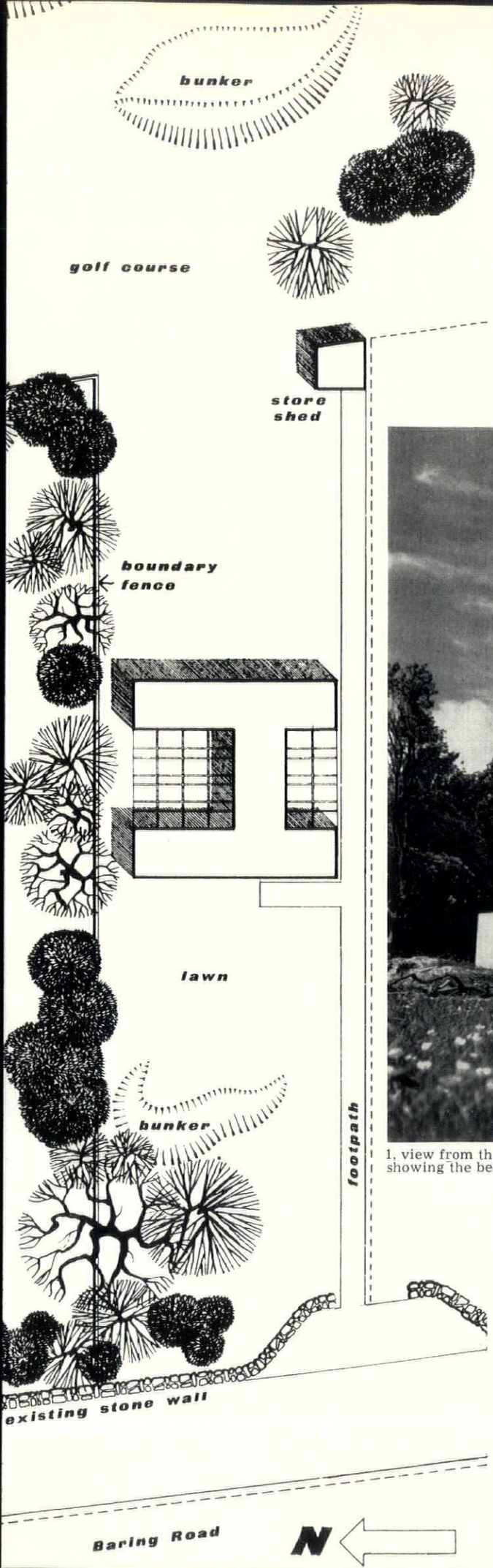
scale : 1/8 in. = 1ft.

plan

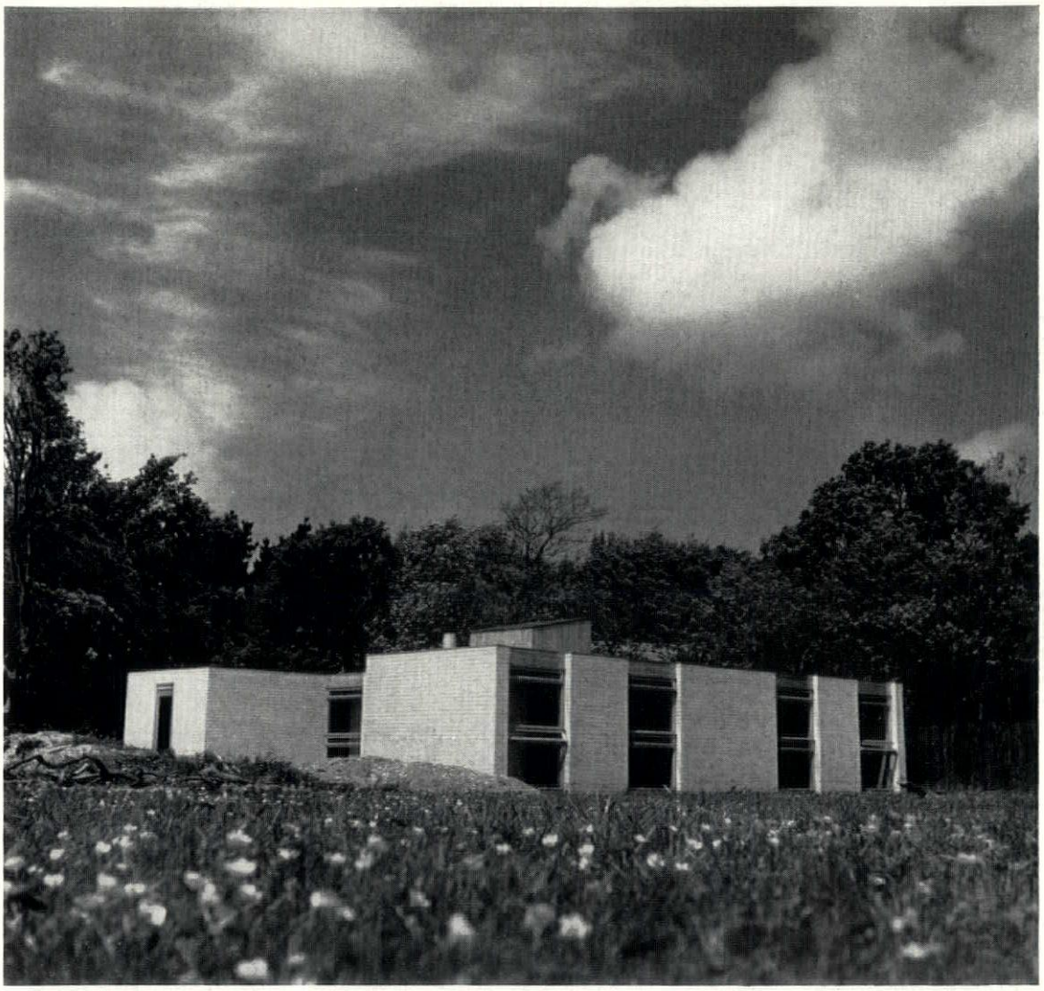
key

a, precast concrete outer lining. refactory concrete inner lining, lime mortar fill.
b, tiled bathroom soap tray.
c, r.c. beam.
d, fair face. 18 in. × 9 in. × 2½ in. precast concrete blocks.
e, crane stove.
f, 30 galls. copper calorifier.
g, red quarry tiles.

1, bedroom.
2, studio bedroom.
3, bathroom.
4, kitchen.
5, living room.
6, dining room.
7, entrance hall.
8, store.

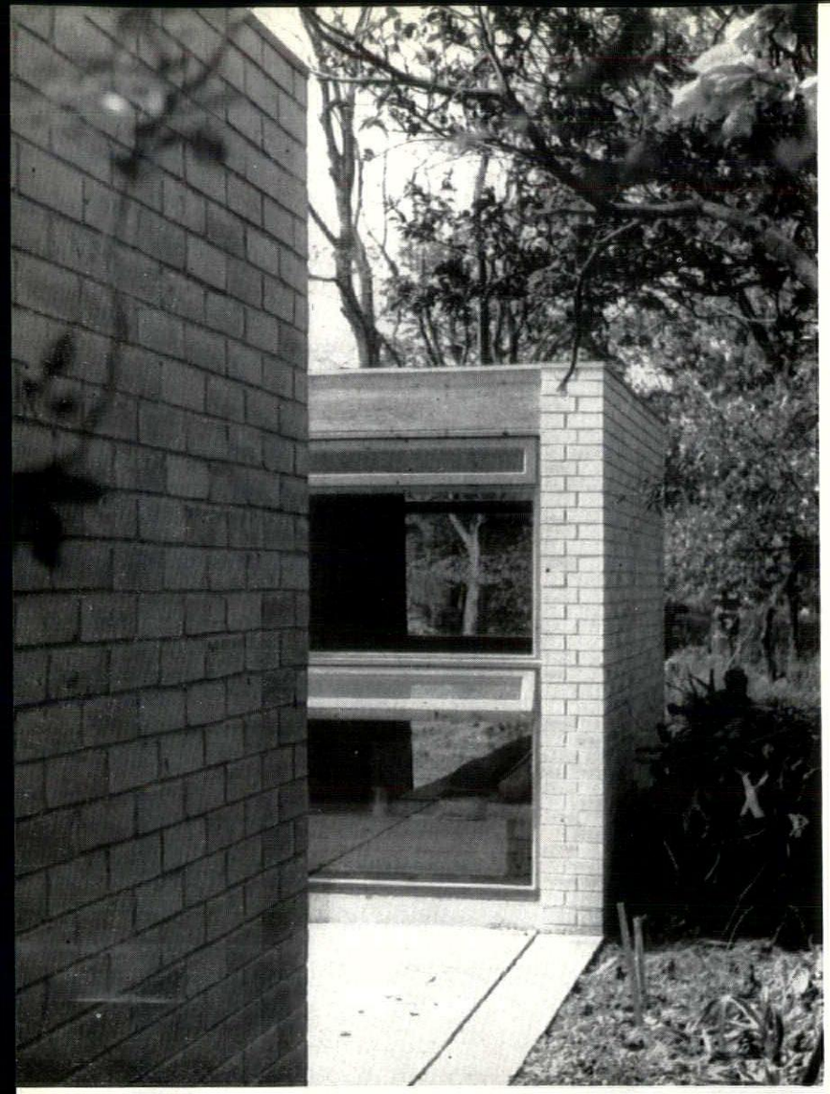


The house is in Baring Road on the outskirts of Cowes, with Northwood Park Golf Course on the east ; the road was previously a stone-walled country lane which is now being developed with detached private housing. It had a chilly reception from the County Planning Department and a local panel of architects made various suggestions including a roof with 18-in. overhanging eaves ; it was also intended to use smooth red wire cut bricks (commons) internally and externally but this was not permitted. However, after three months' delay, approval was given without further modification. The owner, a painter, required as large a house as possible within reasonable economic limits for himself, his wife



1, view from the south-east, showing the bedroom wing.

and two small children. A simple repetitive structure was adopted consisting basically of a 5-ft. wide brick pier with a discontinuous brick footing and a 5 ft. 9in. timber trimmer spanning a 5-ft. wide opening. These carry 5 in by 2 in. joists which span 10 ft. All load-bearing walls are 11-in. cavity white sandlime brickwork fairfaced inside and out, and non-load-bearing partitions are 2½-in. fairfaced concrete blocks. The floor finishes are 4-in. Gurjun strip flooring on battens in the living-area and 6 in. by 6 in. smooth red quarry tiles. The roof is lined with 1-in. fibreglass quilt and the ceiling is 3-in. wide softwood tongued-and-grooved V-jointed boarding. Three layers of roofing felt with a white grit finish are laid on 1-in tongued-and-grooved boarding and the eaves are finished with a 1 in by 1½ in.



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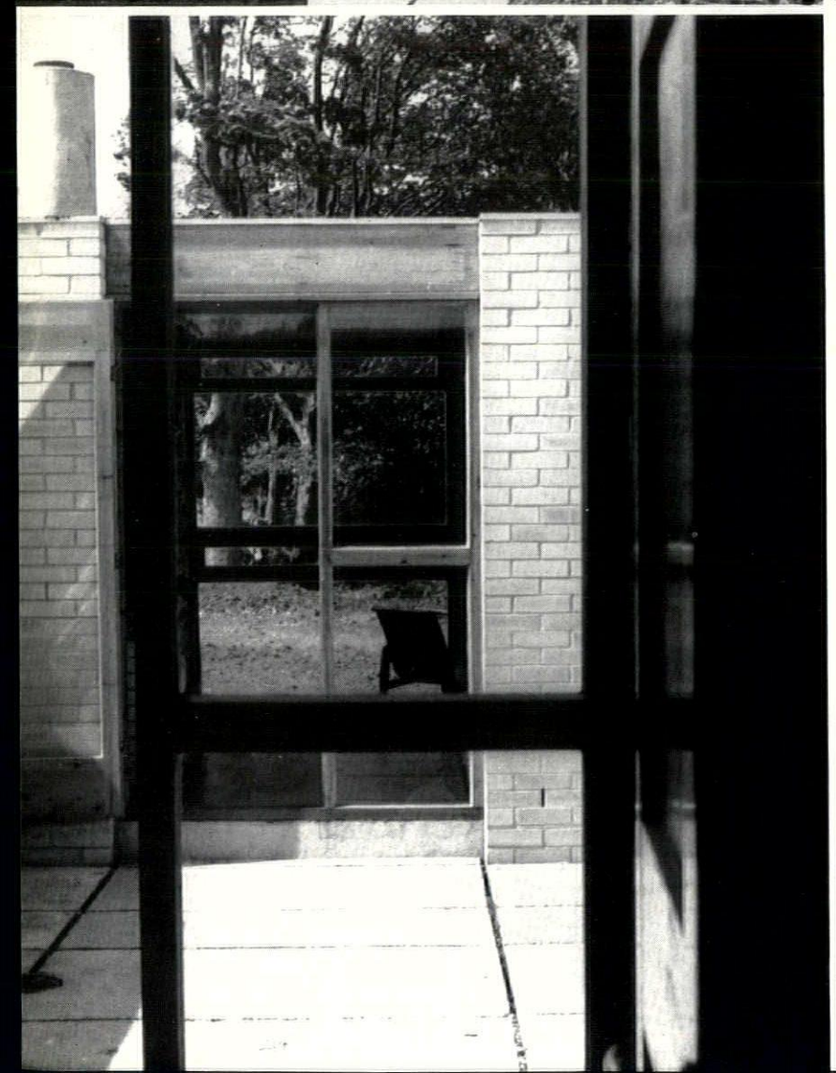

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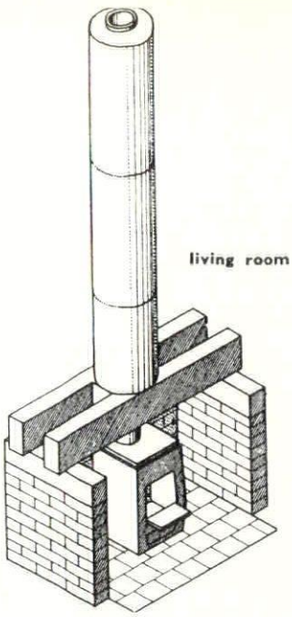
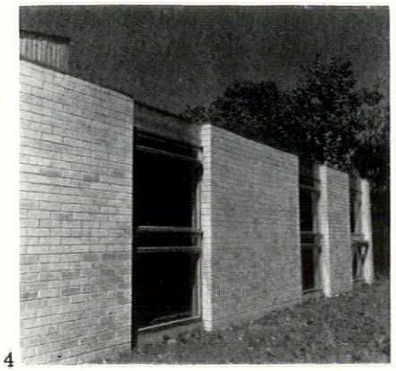
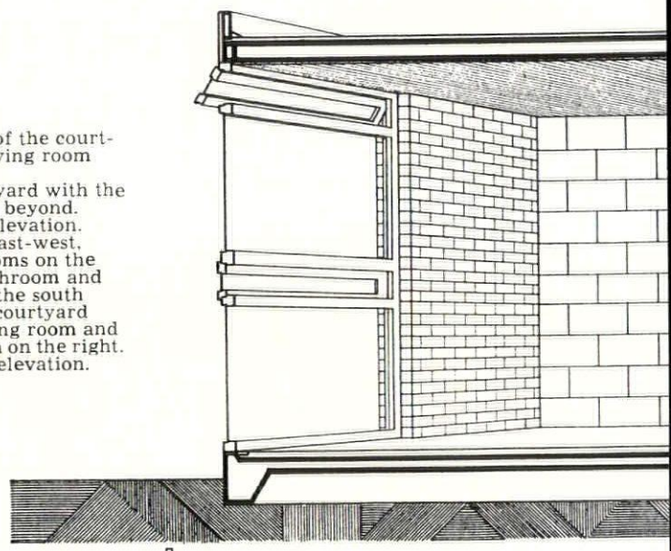




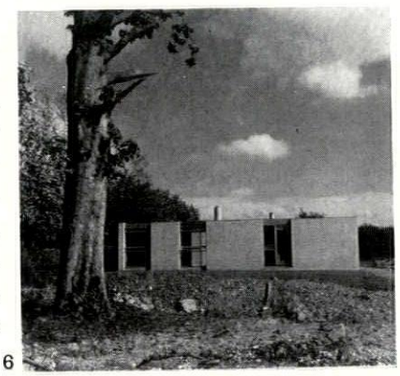
4

2, a corner of the courtyard and living room wing.
3, the courtyard with the living room beyond.
4, the east elevation.
5, section, east-west, with bedrooms on the left, the bathroom and kitchen on the south side of the courtyard and the living room and dining room on the right.
6, the west elevation.



5

aluminum angle edging. All the joinery, ceiling, doors and windows are softwood treated with wood seal and given three coats of matt varnish. The fireplace flues are carried on in-situ r.c. beams. The outer lining is constructed of precast concrete drain pipes and the inner of precast refractory concrete units, with the interspace filled with lime mortar. The house has an area of 1,600 sq. ft. and the cost was £2,800.



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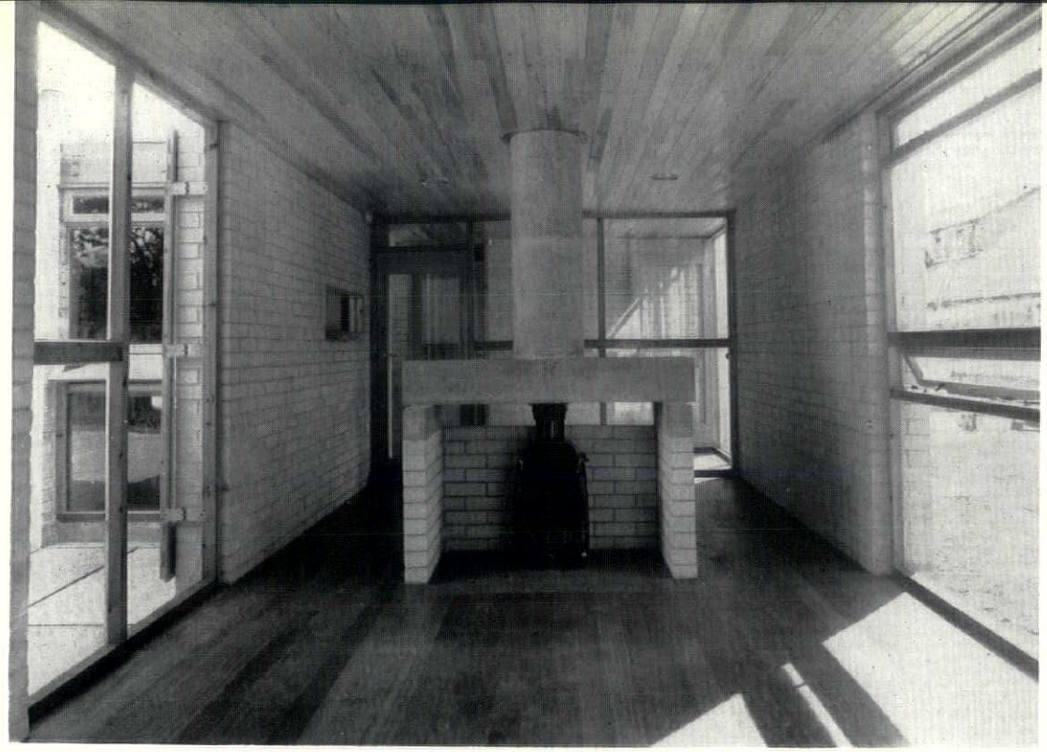
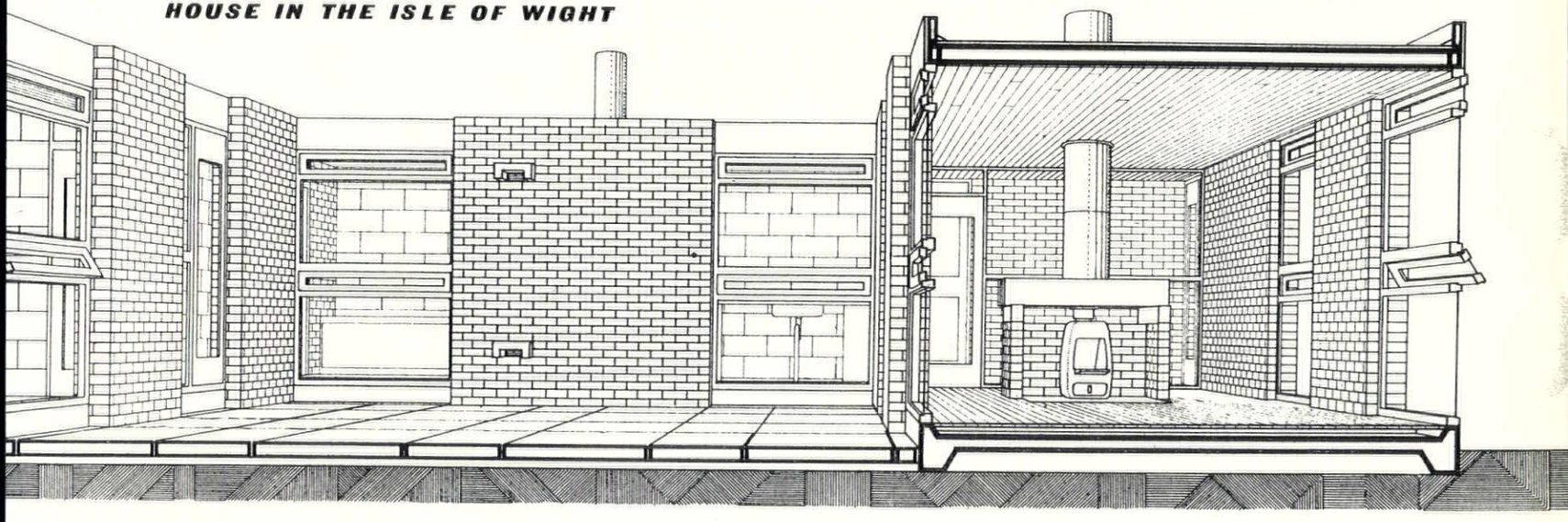
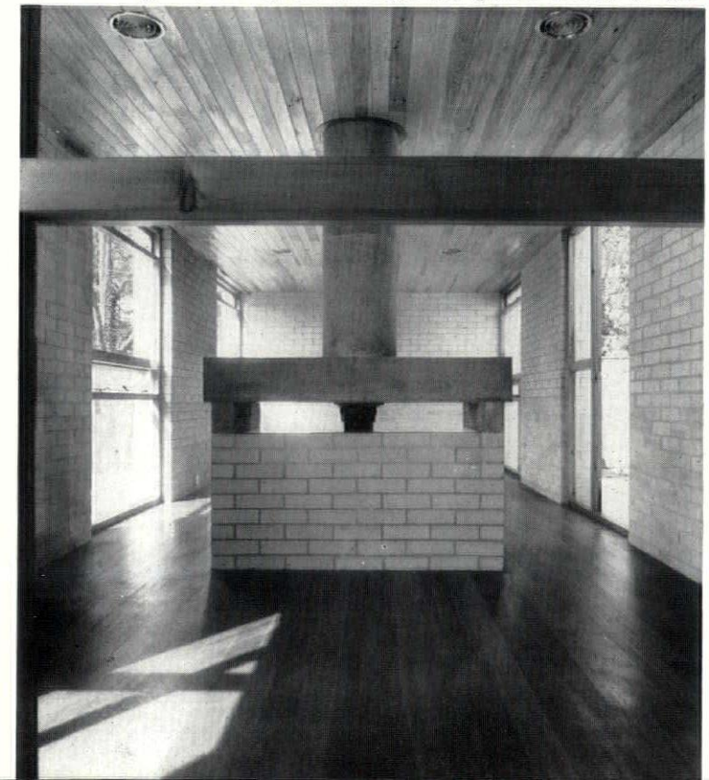


7, the living room fireplace with the glazed screen at the main entrance beyond.

HOUSE IN THE ISLE OF WIGHT



8, the living room fireplace through the glazed screen of the entrance hall.





9

9. the east elevation.
10. close-up of kitchen sink with courtyard beyond



10

ID

INTRODUCING A MONTHLY REVIEW OF INTERIOR DESIGN

To have designed the inside as well as the outside of a building is to have created one of the most complete works that is within a man's compass, and the pioneer theorists of Modern Architecture rightly insisted that interior design must be an integrated part of architecture, and must always lie within the architect's sphere of responsibility. But their ideal picture of a building designed from fire-irons to fenestration by the same hand was too ideal, and ignored the vital factor of differing rates of obsolescence as between the frame of the building and its furnishings.

The factors of safety that enable a building structure to survive one cycle of the seasons will normally be big enough to see it through a hundred, but an interior that fits its occupants functionally at the moment of the building's inception, is likely to be frustration to them in two decades or less. The architect's mind, geared to generalized functions that change slowly, or never, is unlikely to be athletic enough to deal with specialised functions that change in the school-years of a child, or may be transformed in months by a new system of accounting.

And yet, clearly, he cannot abdicate his interior responsibilities, either by an act of repudiation or one of self-delusion ('complete flexibility of plan'), without losing control of those very areas of shelter which it is his prime function to create. He needs—save for rare cases of genius—something like the same kind of sympathetic consultant advice that he could get from a first-class structural engineer.

But such collaboration must be truly sympathetic. The old-style interior-

decorator is out—a collector of pretty things, he usually revealed his fundamental lack of sympathy with architecture by trying to obscure it with complicated drapes, unless he has 'gone contemporary,' in which case he will endeavour to obscure it with pot plants and Venetian blinds. His place must be taken by interior designers whose training and experience have, for a greater or less period of time, been those of an architect. We have, in Britain, some distinguished examples of architects who have turned interior designer, and of leading offices which maintain architectural assistants specialising in interior work. But this kind of convertibility is all too apt to open the road for failed architects to become second-rate interior designers. Genuine architectural expertise in interior design requires a period of common education before the two inseparable visual disciplines assume their distinctive characters, but at present no leading architecture school has an interiors course built into its curriculum, and neither of the leading metropolitan design schools has a live architecture course under its roof.

A firm lead from architects seems to be as necessary here as in dealing with the furniture trade, which will have to supply much of the interior equipment to be used. At present the British furniture industry offers the best craftmanship for money in the world, great expertise in the employment of traditional materials such as wood and leather, and a complete absence of any national character in design, except in the maintenance of traditional formulae. It is astonishing that an industry so heavily mechanised should have shown so little interest in deriving a style from mechanical inspirations or the exploitation of mechanical techniques, and if it is maintained in defence of the industry that its £115,000,000 annual turnover depends on a mass-market that will not have advanced designs, there is another factor that can be set against this—and against the consciences of architects.

One firm, not a giant of the industry, has just seen fit to invest a considerable sum in the moulds for two of the most advanced chairs in the world—of foreign design. These chairs are not expected to sell on the mass-market, but in the contract field, which is almost entirely within the control of architects, or specialist interior-equipment firms. Here is a case of architects getting what they want, when they want it, but not until nearly six years after it was designed, largely because most of them were too far out of touch with developments in furnishing to realise that it could be had.

The need for greater architectural expertise in interior design cuts both ways—the experts must acquire more architectural sensibility, the architects must acquire, or be prepared to pay for, greater expertise in interior design. The present dichotomy between the two disciplines will not be healed by compromise, but only by something bold and full-blooded, by architects who genuinely understand the problems of interior design working in creative collaboration with interior designers who fully appreciate the nature of architecture.





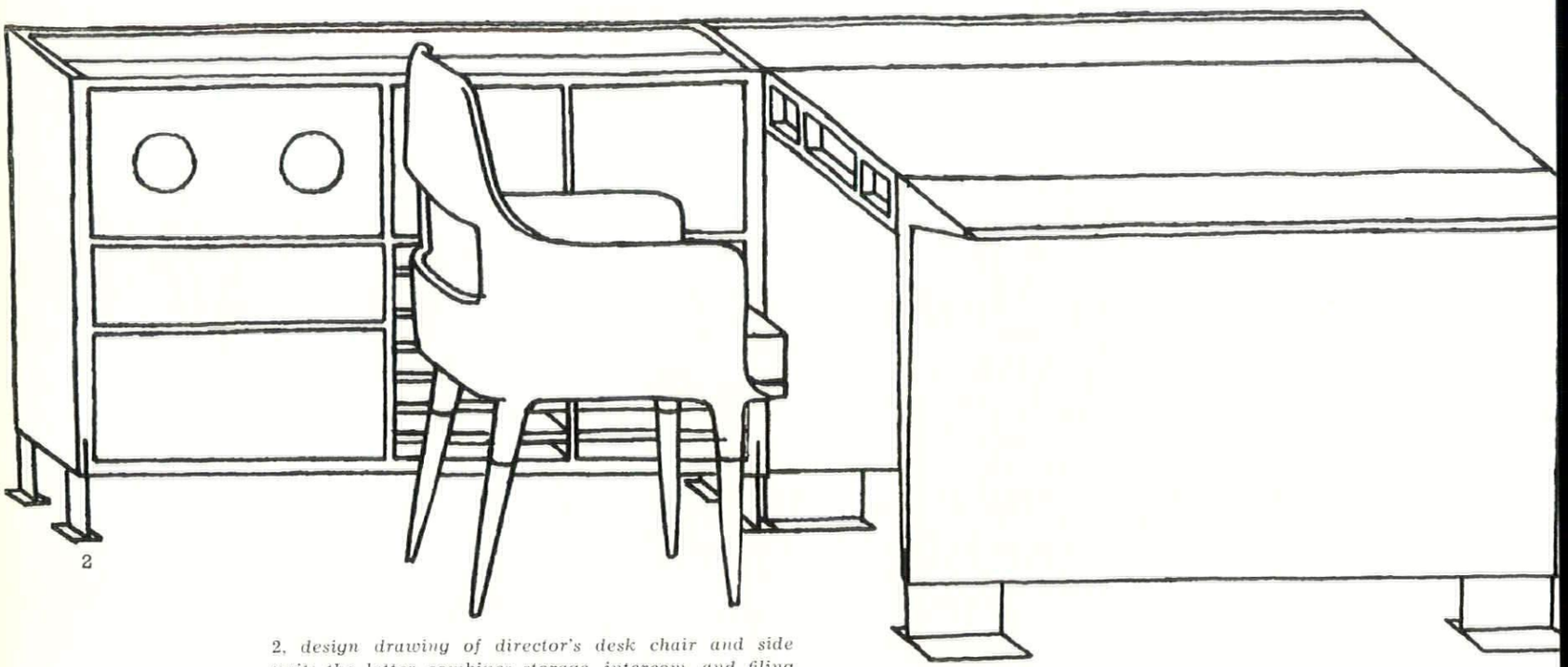
right, kite shaped coffering of the suspended ceiling in the visiting directors' room ; above, exterior from Queen Victoria Street of the recently completed building.

Bank in Queen Victoria Street, EC4

architect: John Wright

These interiors for the Bank of London and South America are in refreshing contrast with the traditionalism of the building itself.

The main rooms are on the third floor, consisting of Directors' offices, board room, library, luncheon room, a small private dining-room and a waiting-room, leading off a central V-shaped



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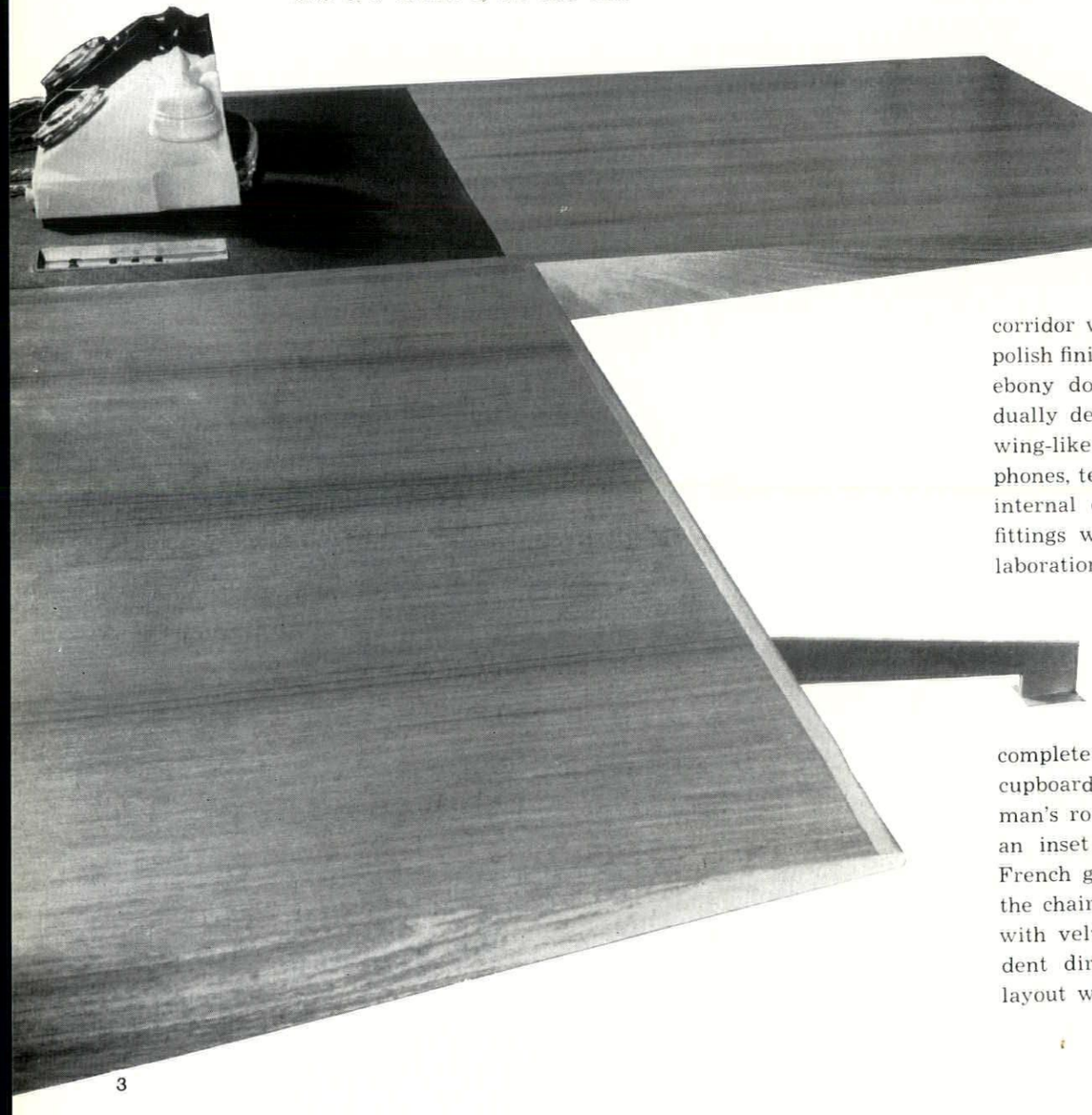
2, design drawing of director's desk chair and side unit; the latter combines storage, intercom. and filing unit. 3, a variant of the side unit.

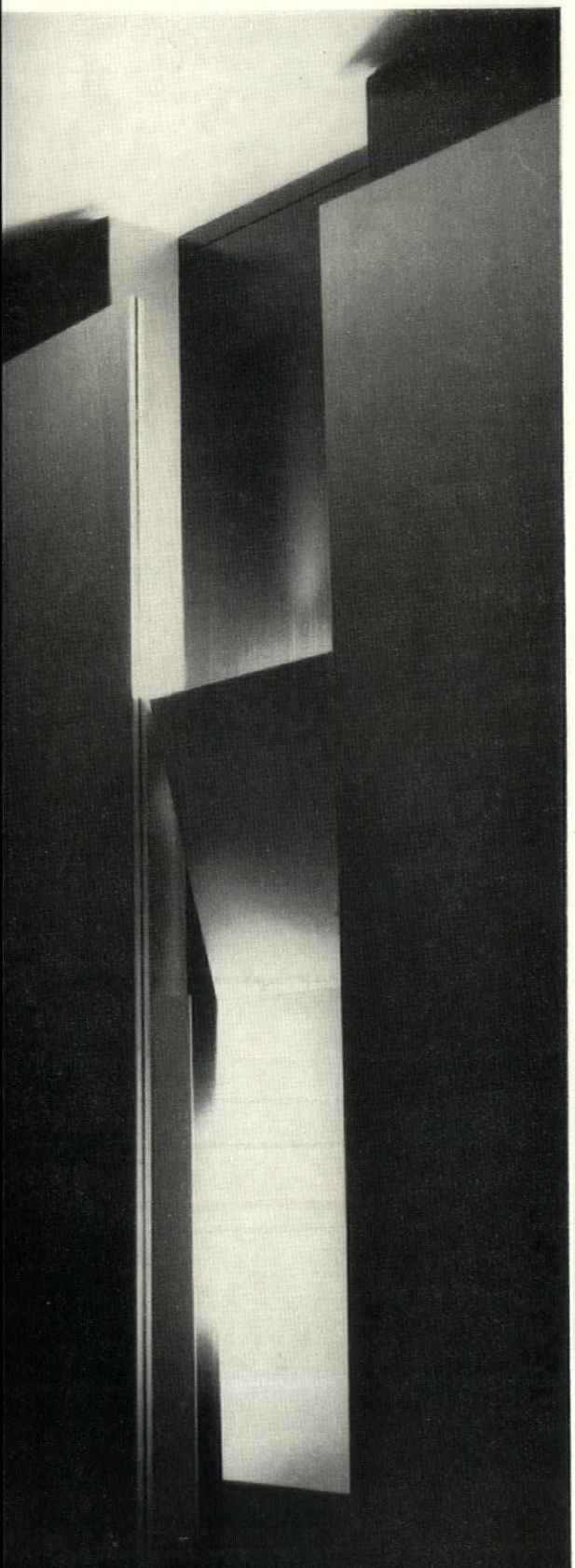


3

corridor which is panelled in aspen with velvet polish finish and incorporating recessed Macassar ebony doors. The Directors' rooms are individually designed, but similary furnished, with a wing-like desk with a side unit to take dictaphones, telephones and a press-button system for internal communication; all the furniture and fittings were designed by the architect in collaboration with the Board. Each office has a complete wall unit consisting of a bookcase, coat cupboard and a private compartment. The chairman's room is lined in English pear wood with an inset of white ivory: the furniture is in French grey walnut with silver metal trim and the chairs and sofa are in green moroccan hide, with velvet curtains to the windows. The resident director's room has similar fittings and layout with the wall unit covered in very dark

7, subsidiary lighting in third floor corridors concealed in the panelling. It will eventually illuminate statues which are to be put in the recesses.
8, chair from a director's desk unit.
9, directors' board room; the table is bog oak with leather inlay.

7

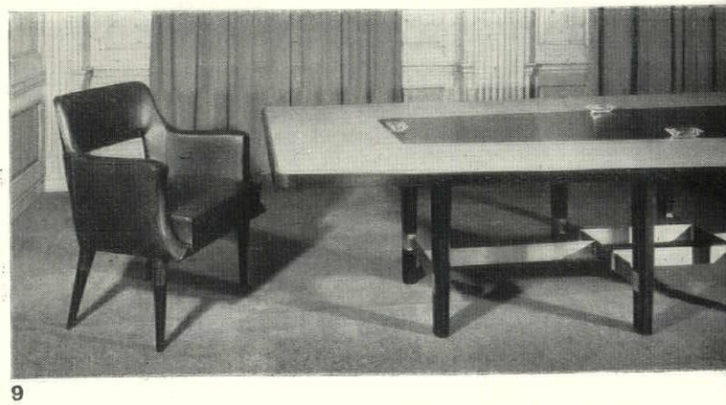




8

blue goat skin, to set off a display of Greek vessels. The walls are covered with a new matt-sprayed plastic in off-white, and the curtains and ceiling have a simple abstract design, which is picked up by concealed lighting from the walls and ceiling.

The second floor is taken up by executive offices, all lined with coach-painted panelling, with the desks and side units again designed by



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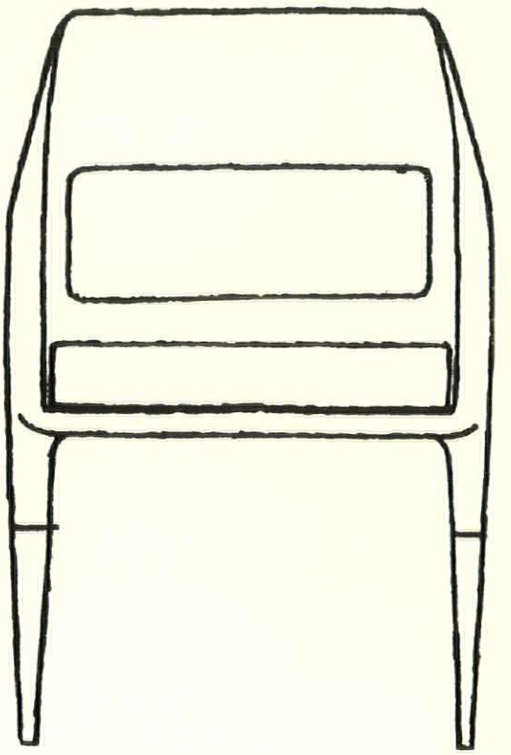
5

4, detail of director's desk. 5, the desk as installed in the small directors' room. 6, design drawing of director's chair.

BANK IN QUEEN VICTORIA STREET, EC4





6



10

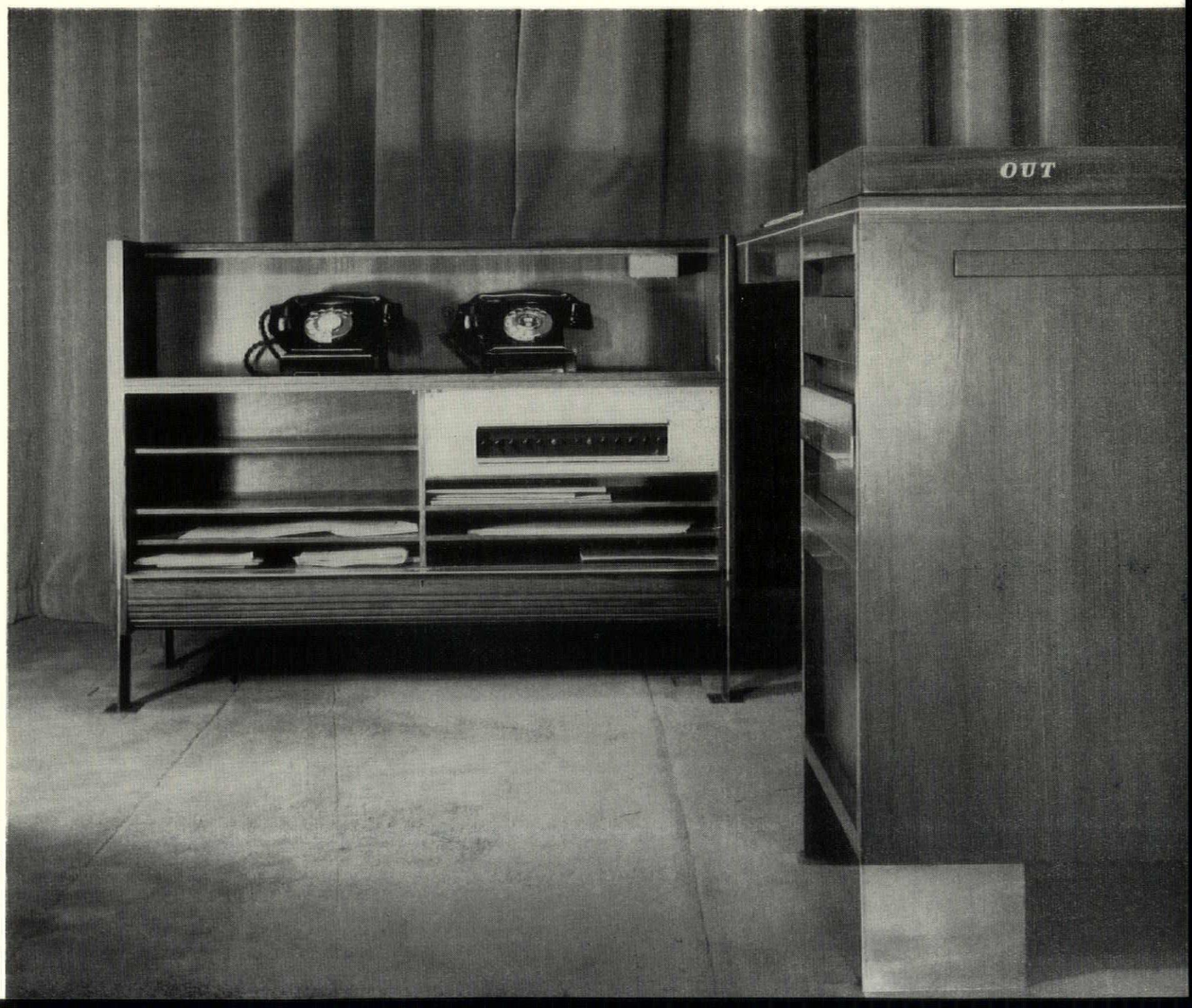


11

10, *wall unit in resident director's room; it is panelled in dark blue goatskin.*
11, *committee room on executive floor; the table has leather inlay and the chairs are corduroy covered.*
12, *executive type desk, normally made of teak.*

the architect. The light fittings were designed by the architect's office in collaboration with G.E.C. and are made up from laminated glass which diffuses and spreads the light. In addition to the normal office fittings, a flush fireproof cabinet is fitted in each wall unit for valuable papers.

The remaining floors are general offices and public space and are treated in a similar manner, but using standard furniture. The staff restaurant and recreation room is on the seventh floor. There is a bench type seat opposite the large windows, for coffee, with a magnificent view towards the Thames. The furniture is in light braced metal with tan and jade green upholstery, and the woodwork is lacquered beech: the



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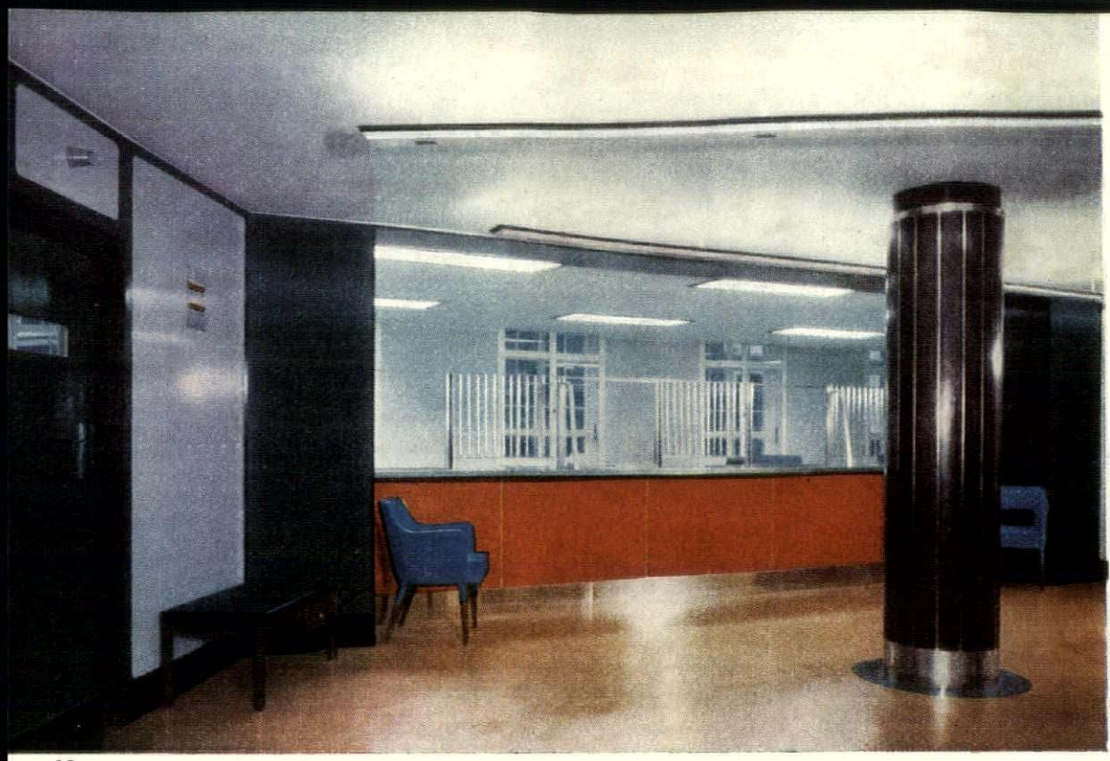

13

floor is of Canadian maple. In the recreation area are cane easy chairs and ebonized-wood furniture, with black and white striped Swedish rugs on the floor. A mural by Robert Buhler, depicting the South American landscape and peoples, runs along the whole of the length of the back wall, which is fitted with banquette seating.



15

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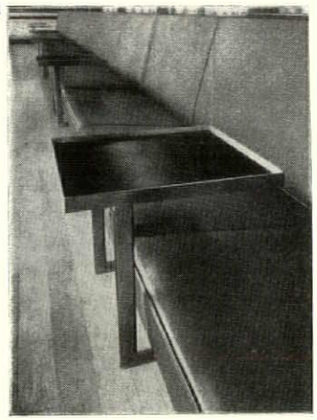


13, *first floor corridor.* 14, *restaurant with mural.* 15, *seventh floor recreation space.* 16, *detail of restaurant.*

14



DAVID M. WALKER

LAMOND OF DUNDEE

The work of Charles Rennie Mackintosh has received so much publicity that it has become usual to regard the modern movement in Scotland as purely a Glasgow affair. That is not a correct assumption: for there was an active if less uncompromising modern school in Dundee, and as will be shown, it was to London rather than to Glasgow that it looked for inspiration.

Dundee is an industrial city of some 180,000 souls with a greater reputation for ugliness than is warranted, though the record of local architects since 1840 had, with certain exceptions, been bad. The exceptions were the Soane Medal winner James Maclaren (1829–93), like his namesake a 'rogue,' and John Murray Robertson (1844–1901), who was first an exponent of Thomsonian Greek, but about 1877 broke with the Gothic, Scots Baronial, and Italian styles then current, in favour of something more comfortable and less expensive, settling finally on his own version of the 'Cadogan' style after experiments with half-timber based on what he had seen in North Germany and the Low Countries.

It was from Murray Robertson's office that the best architects of Dundee's Edwardian era came—D. W. Baxter, James Findlay, Donald Mills, Godfrey Shepherd, and David Smith. None of them attempted anything with an art-nouveau flavour; the architects who did venture on this difficult ground, apart from the authors of the School Board buildings, to whom this article is devoted, came from the offices of Charles and Leslie Ower, exponents of extreme Victorianism, and Thomas Martin Cappon, whose outlook had been more moderate. The office of C. & L. Ower may seem a puzzling birthplace for such a movement. Its creation was in great part due to William Gillespie Lamond (1854–1912), the assistant of Charles Ower from about 1896 to 1898, of Thomas Martin Cappon from 1898 to 1904, and of James H. Langlands from 1904 till his death.

W. G. Lamond was born at West Calder on December 4, 1854, son of Robert Lamond, who was factor there. It has not been possible to get much information about his early life, but he finished his schooling at Dumfries, and there he was apprenticed, leaving later to spend a period in the office of an architect in Northampton.[1] About 1880 he set up in business at Arbroath as an architect and civil engineer. Arbroath was still a prosperous textile town, though the industry of the surrounding area was slowly dying. What induced him to go there is not known. His first known major work was the Arbroath Water Tower of 1884, a favourite butt of the Saltire Society, which has twice unwittingly awarded Lamond its damnation. The history of the building is too complicated to be related here. The first designs had been in a 'Moorish or Spanish style of architecture.' They were then changed to 'Scotch Baronial or Castellated.' Lamond made the plans but was not allowed to supervise their execution. The whole ended in a tangle of litigation and a building without promise, except perhaps for the great bold sweep of the plinth.

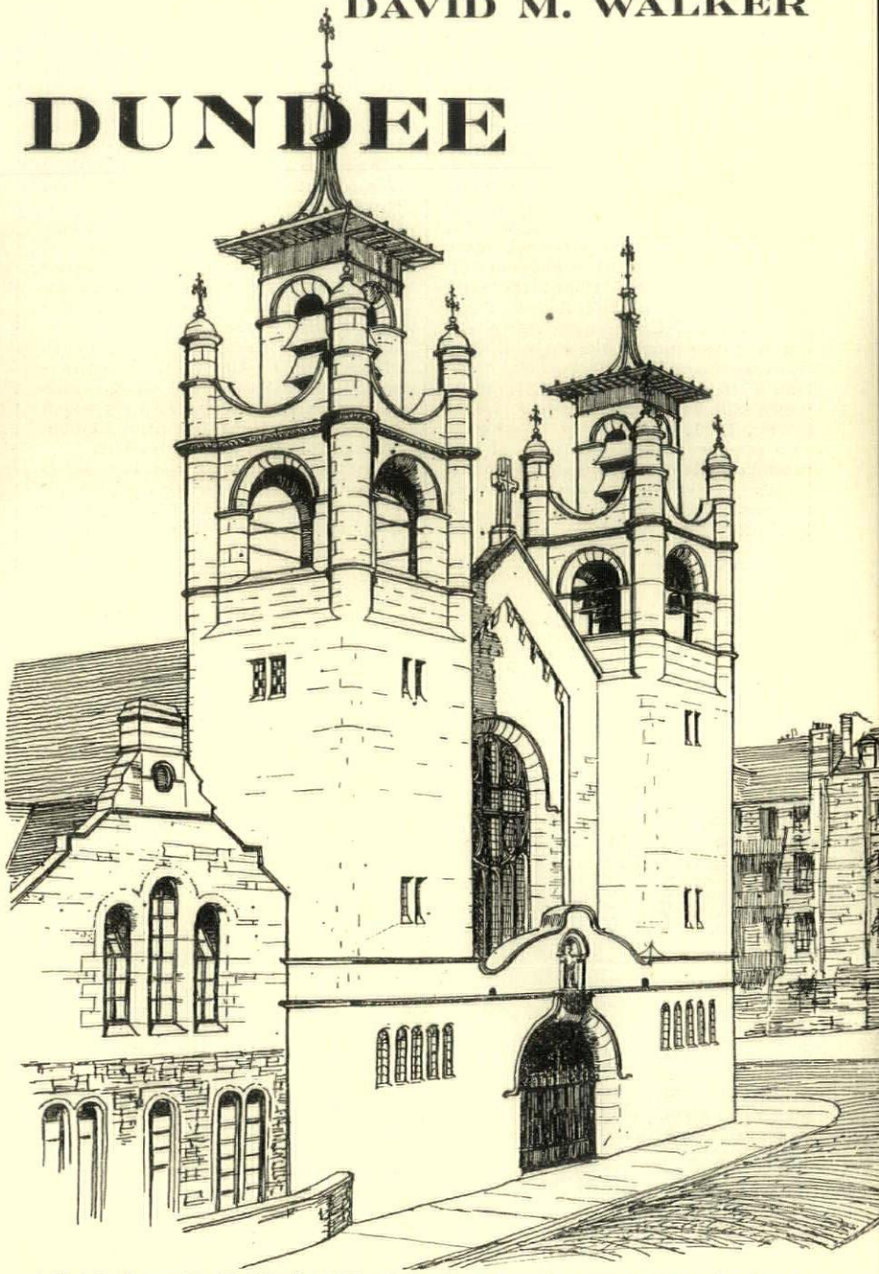
[1] I could not find out which offices these were.

The little information to be had about Lamond's work in Arbroath in 1884–94 does not give much hint of his work after 1893, except in details such as the roof of the schoolhouse of St. Vigeans which is of an unusual shape, and an extension of the turning works at Friockheim where he lived, a one-time industrial village a few miles from Arbroath. On this little building, recently demolished, Lamond lavished all his abilities. It was built of white brick and much trouble was taken to work the slight differences in colour into patterns. Unfortunately the project ran into financial difficulties, and so Lamond, then aged about forty-two, decided to leave Arbroath and take up employment at Dundee. He applied to Charles and Leslie Ower, a firm with an enormous business. Charles Ower, the elder brother, was a rather difficult, but generous and well-meaning man with a genuine love of architecture but little faculty for design. His taste was for extreme Victorianism, but he appears to have quickly recognized Lamond's ability and given him considerable opportunities for design, opportunities which no previous assistant of his had been granted. Lamond designed for him the Pearl Insurance Building adjacent to the Dundee Royal Exchange, in a somewhat riotous Gothic style.[2] In spite of disagreements Lamond seems to have enjoyed his stay with Charles Ower, but unfortunately Charles and Leslie split partnership, to the detriment of their business. Lamond left them and joined the staff of Thomas Martin Cappon.

Cappon was younger than the Owers, and never subscribed to the extreme rigours of the Victorian style. In Cappon's office the chief assistant was a brilliant young man called Harry East, who, I have no doubt, influenced Lamond strongly. Cappon was then completing three important jobs, the Panmure Arms Hotel at Edzell, 2, begun in 1895 and now burned down, the smaller, extremely up-to-date Ramsay Arms Hotel at Fettercairn, begun in 1896, and St. Patrick's R.C. Church, Dundee. It had originally been intended, when the church was begun in 1897, to have gables on the confessionals, close to the main walls; but at the last minute they were scrapped in favour of parapets with an unusual flattened curve. The first published appearance of this motif which I can trace is in Hall, Cooper and Davis's design for Chesterfield Schools and Baths illustrated in the *Building News* (to which Cappon subscribed) of February 18, 1898. On May 20 a drawing of St. Patrick's with the revised confessionals followed in the same journal. Who suggested the alteration, and whether that is the source, or whether it was developed from the details of the Panmure Arms, as seems reasonably probable, it is impossible now to say. The motif made a third appearance in print in 1898 in Inigo Triggs's Academy design for a golf club house. At any rate, it became the motif by which Lamond's hand could most readily be recognized. In 1900 Cappon built, 1, the twin Campanili of St. Mary's R.C. Church, Forebank, Dundee. Lamond was now chief draughtsman, East having emigrated, and presumably prepared most of the drawings. It is supposed to have been based on an Italian model according to an anecdote about Cappon sending a postcard of it from an Italian holiday, but an important influence on the design was doubtless Harrison Townsend's first design for the Whitechapel Art Gallery published in *Academy Architecture Illustrated* (to which Cappon also subscribed) of 1896. No-one now remembers Lamond discussing Townsend, but it is to Townsend that most of Lamond's detailing owes its origin. At St. Mary's appear the large simple convex mouldings, and the softly rounded corners of which Lamond was so fond. The parapet motif reappears in a rather ugly extended form over the main doorway. Nothing else from Cappon's office between 1898 and 1904 is so lively as the campanili of St. Mary's, but Lamond was also engaged on the designs of the Wishart Church (1901) in a free Perpendicular style owing something to St. Patrick's, the Whitehills Hospital, Forfar (1899), the Airlie Monument at Prosen which derives partly from the Arbroath Water Tower, and partly from the House of Airlie, some alterations to R.C. schools and the R.C. church at Broughty Ferry, 1904, red brick, but delicate and lively in detail.

However, by 1903–4 Cappon was not so busy, and Lamond foresaw that in a short time Cappon would be able to handle all the work with John Mather and the apprentices. He also foresaw that, with the Education Act of 1901 raising the school-leaving age, the Dundee School Board, whose buildings were then taxed to the utmost, would soon have to undertake an extensive building programme, and accordingly applied to their architect, James H. Langlands, for employment. Langlands' work is worth some notice; the original School Board architect was James Maclaren's nephew David, whose style was entirely dependent on his uncle's mansion of Ashludie. Langlands, his assistant and successor, worked first in an expurgated version of this style, then tried something of his own; but at North Clepington School (1892) he gives us

[2] The style of the British Linen Bank at the West Port suggests his work, though the uncertainty of the date of Lamond's departure makes it difficult to be sure whether it is his hand or his influence we see in it.



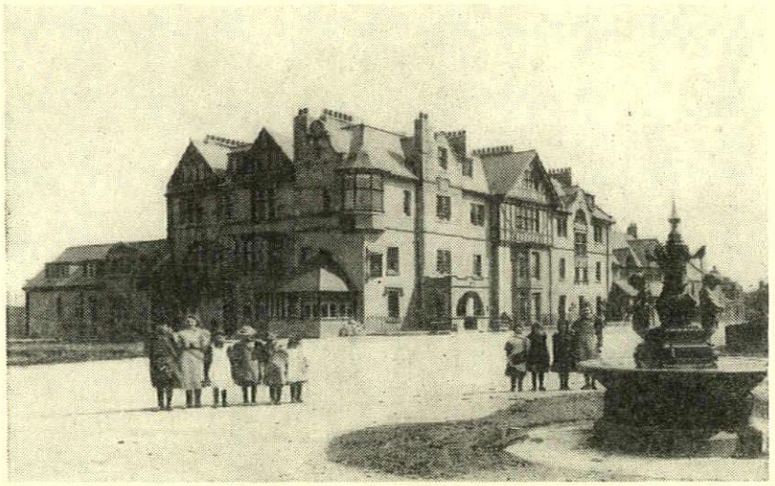
1, *the twin Campanili of St. Mary's RC Church, Dundee* 1900, *built by Henry Cappon when Lamond was his chief draughtsman.*

an early, rather hesitant, foretaste of Edwardian neo-Palladian.

Langlands' first big job after Lamond's arrival was the reconstruction of Ancrum Road School (1905), 3, quite different from anything he had done before; and with Lamond's characteristic parapet motif. The incorporation of David Maclaren's old buildings made it difficult to get a unified composition but here appear the staircase towers with rows of small square windows and nearly all the other elements of the Dundee School Board style of 1904–14. None of the details were really original inventions. The overhanging canopies of the doors derive from Townsend's Cliff Towers, illustrated in the *Studio*, Vol. 13 (1898), pages 239–240, and *Academy Architecture*, 1897, page 79. At this house also appear pillars like those of the railings at Stobswell School, and the bands of small square windows, contrasted in the schools with the tall schoolroom windows, a contrast style of the schools was Henry Sellars' Dumfries Academy (1895, illustrated in the *British Architect* of October that year) which Lamond may have seen.

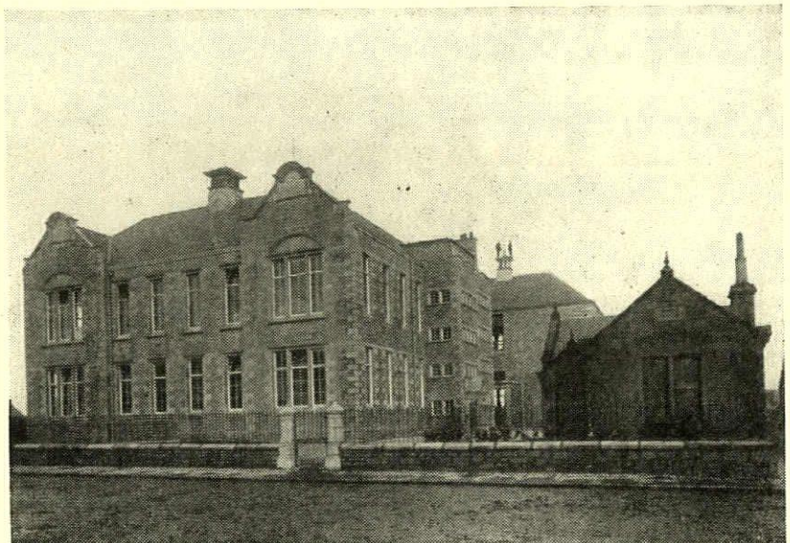
With Stobswell School (1907), 4, came the big opportunity. It was built on a clear if rather constricted site at a cost of £25,280. The detailing is substantially the same as Ancrum Road, but the whole building is much bolder, richer and more confident in handling. I cannot suggest any precedent for the design, other than that it is the scheme of Ancrum Road vigorously reorganized. The design was worked out from many studies on the scale of one sixteenth of an inch to the foot, finally enlarged to vast drawings on the scale of half an inch to one foot on which Lamond and the other draughtsmen worked lying on their stomachs.

In the same year the Langlands office took part in the competition to graft a façade on to the singularly dull newly erected buildings of the

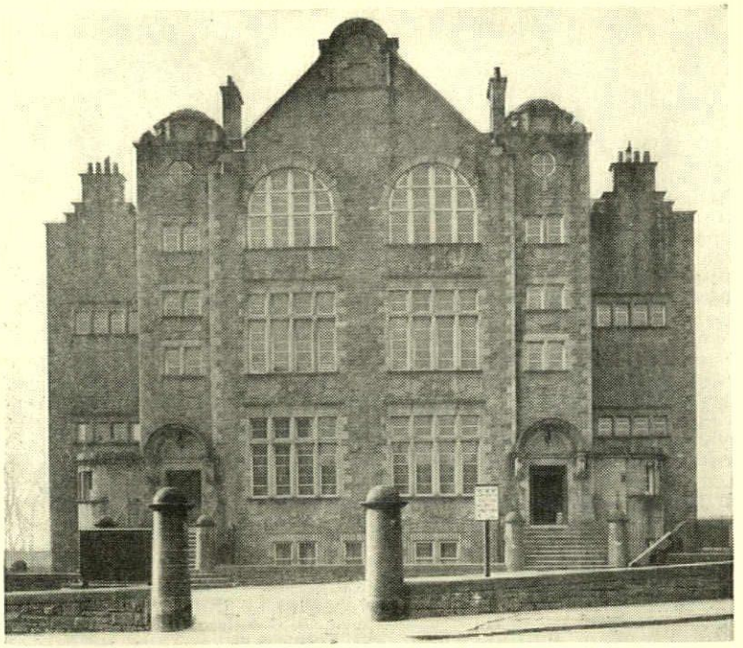


2, *Panmure Arms, Edzell, now burnt, begun by Henry Cappon in* 1895 *at about the time when Lamond joined the firm.*

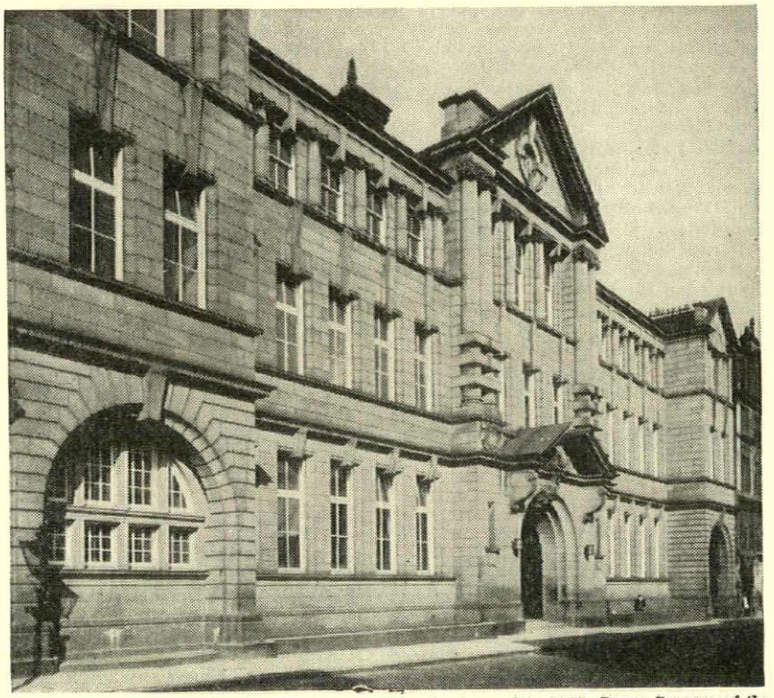
perhaps unconsciously suggested by some of the earlier and more experimental work of Murray Robertson, for example Ravenscraig, 1874, or 57 Dock Street, 1880. The mysterious-looking roof ventilators have a precedent in Knott's design for a Library at Newport, Isle of Wight, illustrated in the *British Architect* of January, 1901, though it is quite likely it was derived independently from Lamond's previous roof ventilators. It is also possible that an influence on the general Technical Institute, 5, and won it with a design by Lamond which is basically Palladian (Renaissance appears to have been stipulated) but with all the rules violently broken. It is certainly not a successful building, but the infringements give something of an analysis of the methods by which Lamond secured his effects. The façade is fifteen bays wide with narrow pedimented end bays, and a three-bay centre with a big entrance arch which has a broken pediment canopy. The



3, *Ancrum Road School, Dundee,* 1905; *the first big job done by the Dundee School Board after Lamond joined it.*



4, *Stobswell School, Dundee,* 1907; *the same motifs as Ancrum Road but made up here into a personal and sensitive style.*



5, *the Technical Institute façade, won in competition by Lamond in* 1907. *Rogue Baroque of the Halsey Ricardo type.*

centre breaks up above the level of the main building and has a high pediment supported by outrageously tall giant Ionic columns intermittently rusticated at the bottom half, it seems, to disguise their height, and half to prevent the order shooting off the building. Along the attic storey run utterly crushed baby columns of the same order, springing several feet taller in the higher centre; that is three different sizes of the same order on the one front. Great play is also made with keystones, dropped below the level of the bottom of the cornice in the attic, and springing to the next string course on the main floor, so that the whole design seems in startling conflict.

In June, 1907, the managers of St. Salvador's Episcopal School intimated their intention to close their school, and the Dundee School Board were unexpectedly obliged to build a new school, 6, in Dens Road. This was a much better site than Stobswell, but unfortunately the cost of the Stobswell School had stirred up immense activity among busybodies, and although the School Board defended their architect, Dens Road had to be simpler to avoid further controversy. There is little detail, and the building relies for its effect on the grouping of the staircase towers developed from the two previous staircases, and the roof between. If any influence was at work in the design, it was most probably that of James Findlay and David Smith's remarkable design for the Caird Cancer Building of 1905, now hidden and spoiled, with high roofs of a better shape than that of Dens Road. The Dens Road school has, in fact, several serious faults; it lacks the deep eaves of Stobswell, the proportion of the ventilator is clumsy, the windows of the staircase towers are not too well managed, and the design of the

chimneys does most damage of all. Nevertheless, the building has a more powerful appearance than illustrations suggest.

However, at the Eastern School, Broughty Ferry, 7, all the faults of the Dens Road design were eliminated, except perhaps for the want of a cornice under the roof. It is the Dens Road design reorganized; the end parts have been dispensed with, and the staircase towers widened with narrow projecting bays towards the centre. The rhythm may have been suggested by Mackintosh's Scotland Street School in Glasgow. Behind the front rises an enormous second roof, there being a third storey at the back, which makes the school, seen from a distance, impressive out of all proportion to its size, and avoids any of the central weakness of Dens Road.

The final school of the series, Glebelands, 8, involved the incorporation of a school similar to that reconstructed at Ancrum Road, and the designs have, indeed, similarities, though Glebelands is very much bigger in scale and completely unified in composition. The design was affected by the fact that classes had to be held during the progress of the work—in the event a fatal condition as the old building caught fire on February 5, 1912, and within an hour the almost finished building was destroyed. It was rebuilt according to the original design in 1913–14.

Glebelands was the last school in which Lamond had a hand; for he died suddenly on Sunday, June 23, 1912. That the style of the Board Schools is his, there can be no doubt. It was universally adopted in all office drawings so that not even the different draughtsmen can be identified. Broadly, J. H. Langlands was responsible for the planning, the dealings with the Board and the Education Department, which was no small matter, and organizing the work of the office. Lamond was chiefly concerned with the elevations and the preparation of the drawings. The style of the schools is, I think, 'modern' rather than 'art-nouveau.' There is little in the nature of the Glasgow School of Art interiors. Fanciful lettering of a mildly art-nouveau character is certainly on most of the drawings, and on the schools too, but the big pale water-colour drawings have lettering in Renaissance frames, and no unnatural trees or spooky figures are anywhere in evidence. Like the governors of the Glasgow School of Art, the School Board desired plain building, and that with Lamond's knowledge of, and inclination for, modern work, set the style. The School Board, according to the Triennial Reports, was very pleased with its new buildings despite the fact that they must have looked distinctly unfamiliar to Dundonians at that time. Was this remarkable receptiveness perhaps the influence of Professor Patrick Geddes, whose advice the School Board occasionally sought? It would add yet more interest to Lamond's remarkable schools.

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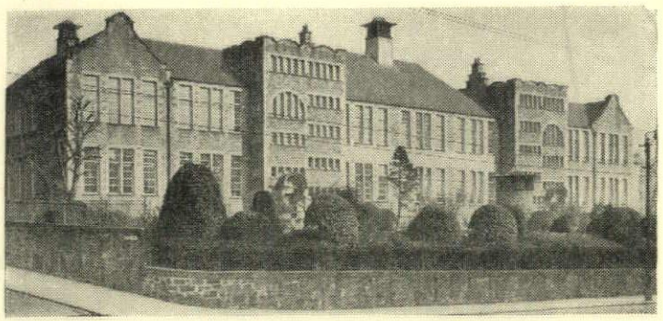
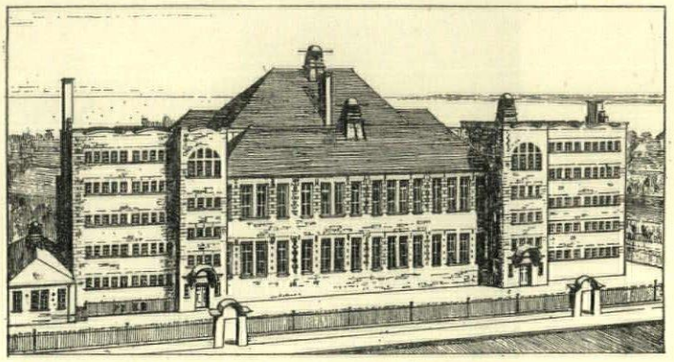
[3] A final note on the other work of the firm, and Lamond's other work and influence, will not be out of place. Langlands also built the much smaller St. Joseph's R.C. school in the same style, altered one or two others, and made an unsuccessful competition design for Kingsway Special Schools, the drawings for which still survive. Of houses, some follow a style similar to the schools, as No. 13 Lammerton Terrace, and some are white harled with light timberwork. But on the whole the schools are very much more successful than any of the houses. Lamond did several jobs on his own account in Friockheim, the biggest the large and handsome schoolhouse. His weekends and evenings, however, were chiefly spent in helping several architects with whom he was friendly; his influence if not his hand is strongly in evidence in Druimbeg, 1909, by Edward Tough for Allan Robertson. Most of his spare time was spent for an architect outside Dundee, believed to be somewhere in the south; but his name and their location are now forgotten; they certainly should not be hard to recognize. Lamond remained friendly with nearly all the old apprentices at Ower's, and Charles Soutar, Patrick Thoms and William Gauldie all show his influence. The case of Patrick Thoms is rather different from that of the others because, with his partner William Wilkie, he built many houses with interiors of a stronger art-nouveau flavour, and many of his drawings have similar characteristics to Mackintosh's. Most of these houses have been redecorated but fortunately Mr. Thoms has good photographic records of them. The style, however, did not survive the first World War, even though at first it was unaffected by Lamond's death, the unexecuted drawings for the Harris Academy prepared by Mr. J. H. Langlands, Jnr., showing little change of style; but by the 1920's it was dead.

acknowledgments

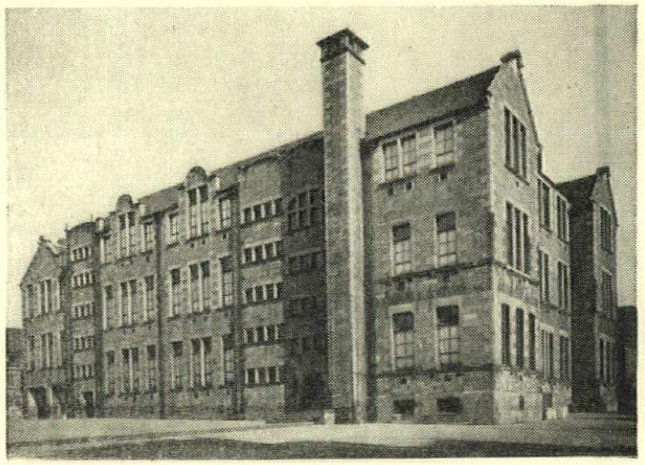
The author would like to acknowledge the help given by Mr. J. H. Langlands, Jnr., Mr. Frank Thomson and Miss Jessie Lamond.



6, *the Dens Road School*, 1907. *Cheaper than Stobswell* (*see* 4), *and less carefully thought out.*

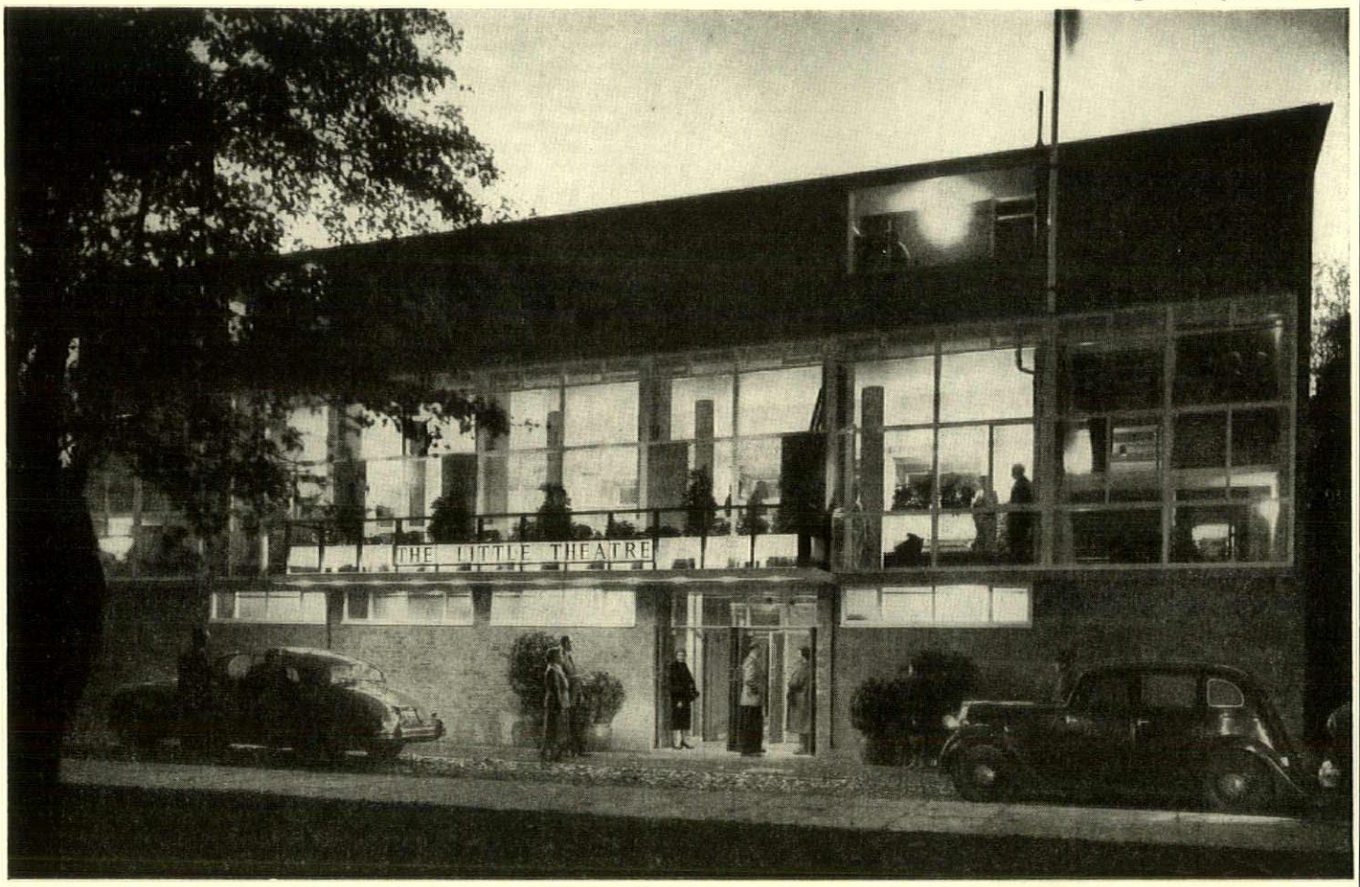


7, *Eastern School, Broughty Ferry.*



8, *Glebelands School, built c.* 1908, *and rebuilt after a fire in* 1913–14; *the last school with which Lamond was concerned.*

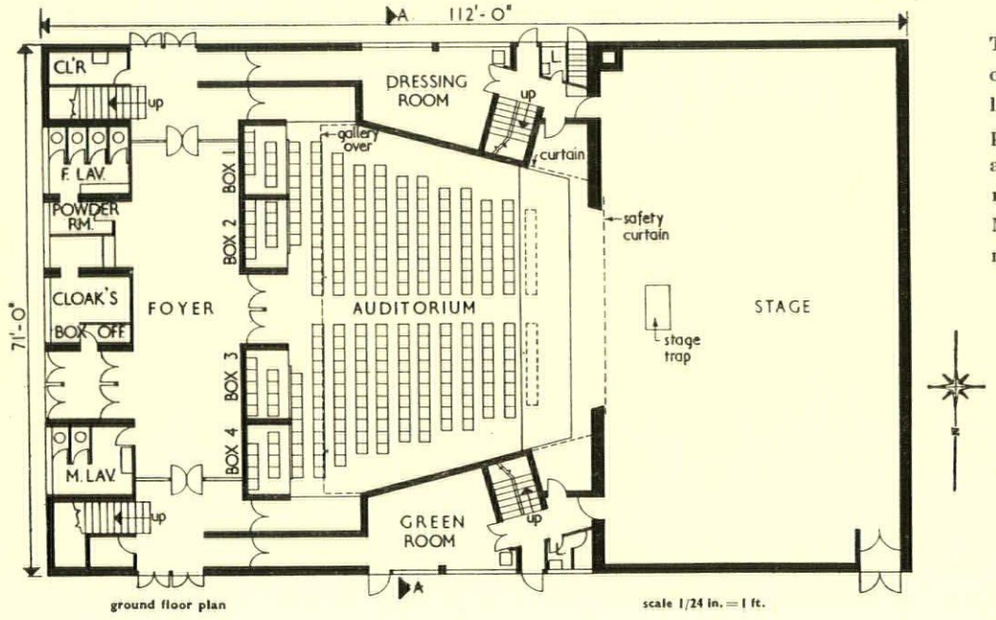
1, *night view of the entrance.*



MIDDLESBROUGH LITTLE THEATRE

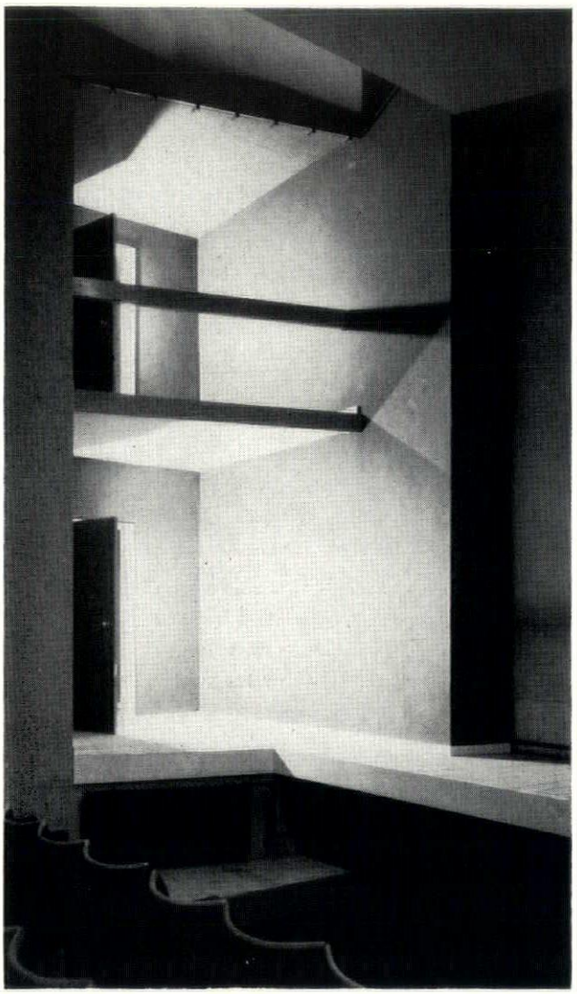
ARCHITECT: ENRICO DE PIERRO

ASSISTANT ARCHITECT: PHILIP E. BELL



The Little Theatre is the first new theatre to be built in this country since the war, built for an amateur group who have collected the entire cost of the building (£50,000), some from their productions, some from donations from industry and local bodies, and the last £8,000 from the Gulbenkian Trust. The site is in the late nineteenth-century wooded suburban grounds of The Avenue, Middlesbrough; the theatre holds five hundred and seating arrangement of stalls and circle was chosen after various alternatives were

2, side entrance on to the forestage, showing the orchestra pit and the permanent strip of forestage.
3, the stalls and circle with the projection booth in the rear wall.



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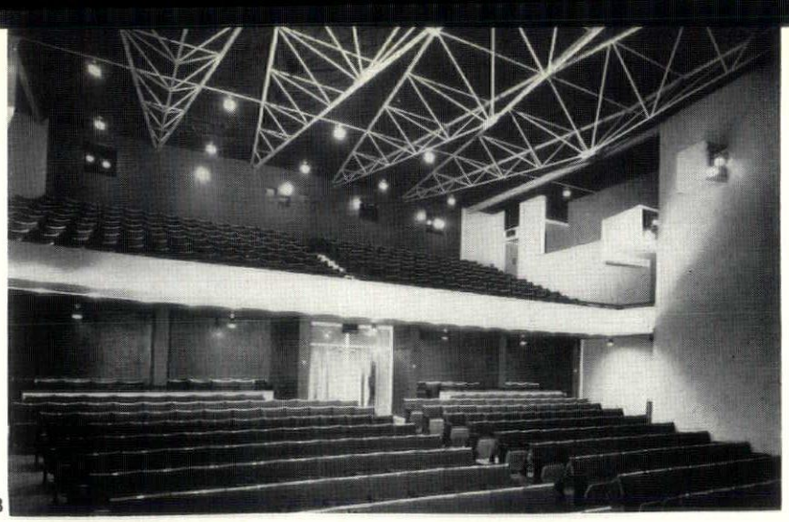


3

Middlesbrough Little Theatre

considered. The construction is of load-bearing brick walls and piers, with fairface sand-faced flettons outside; the foundations are an in-situ concrete strip under the structural walls and an in-situ mesh reinforced floor slab. The roof has precast soffits sitting on steel space frames covered by lightweight insulating concrete: the frames are painted yellow and the ceiling slabs black. Inside the foyer, the underneath of the gallery has white raking beams and precast floor slabs and risers in another arrangement of the colours used in the foyer: mushroom, dark grey, geranium red, dark green and yellow. At 49s. per sq. ft. the theatre was extremely cheap.

4, detail of the two varieties of opening light; horizontal pivot hung sashes, and vertical sliding sash windows, both in aluminium.

FURNITURE SHOP IN BROMLEY

ARCHITECT: BERTRAM CARTER



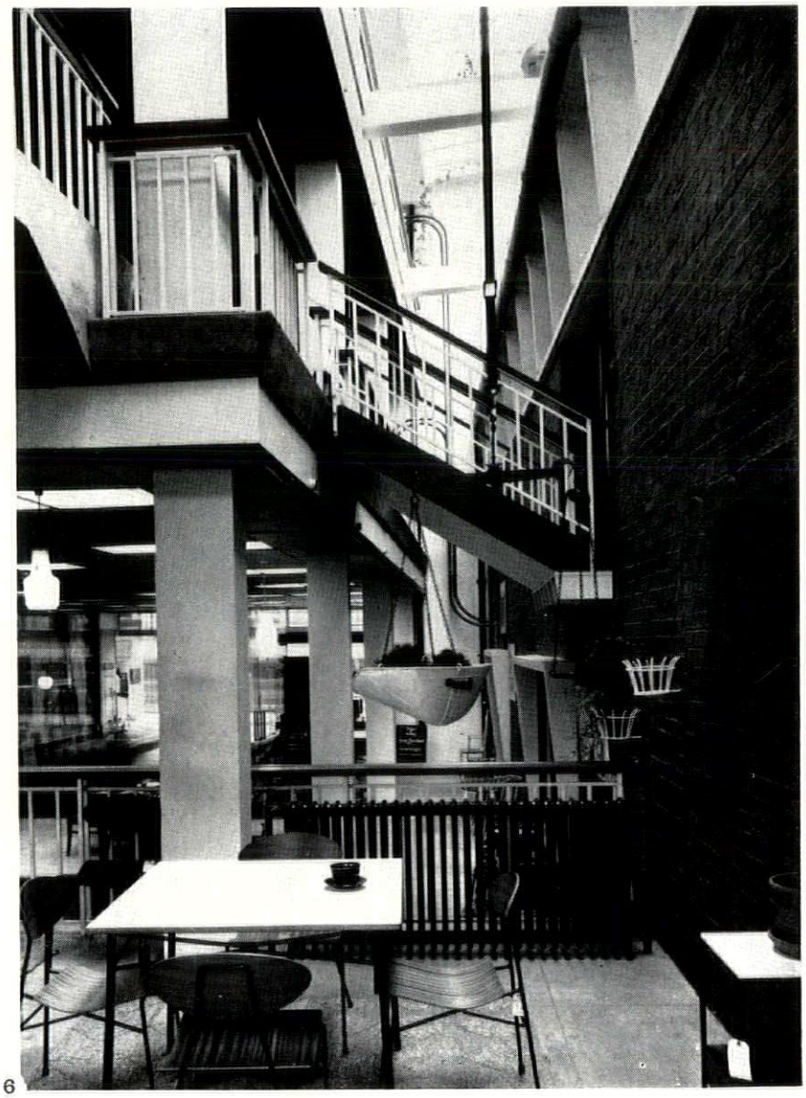
4



5

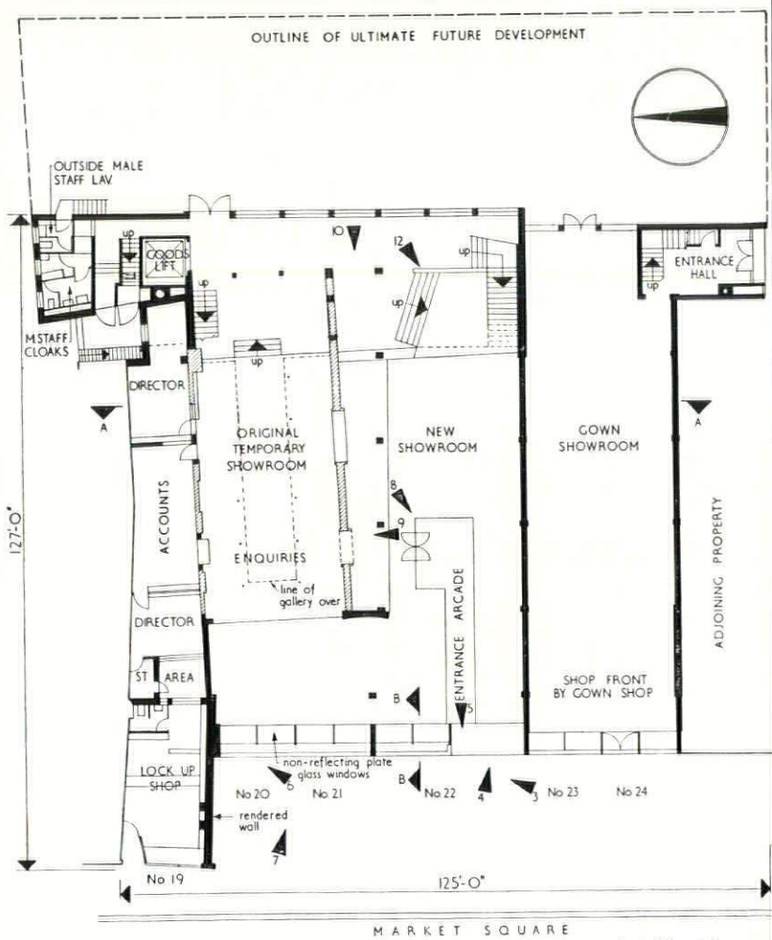
Furniture Shop in Bromley

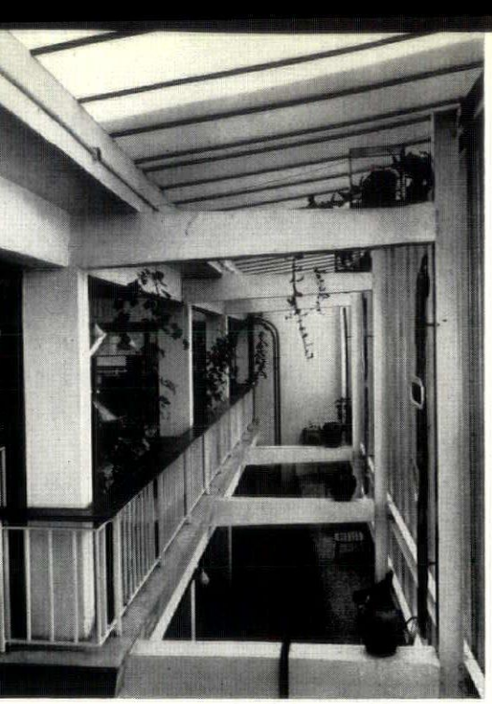
5, the entrance facade, which faces Market Square.
6, the junction of the old building with the new, which gives natural light to the whole depth of the showrooms.



6

This is the headquarters of Dunn's of Bromley, on the east side of the Market Place, on a site they have occupied since 1710. The pre-war shop was blitzed and was replaced in 1948 by a two-storey temporary shop by the same architect, which has been retained and is now partially enclosed in the new building. The store is later to be extended, to the rear, north and to the south, when the present off centre 'picture window' will become the centre of the façade. The construction is reinforced concrete throughout; frame,

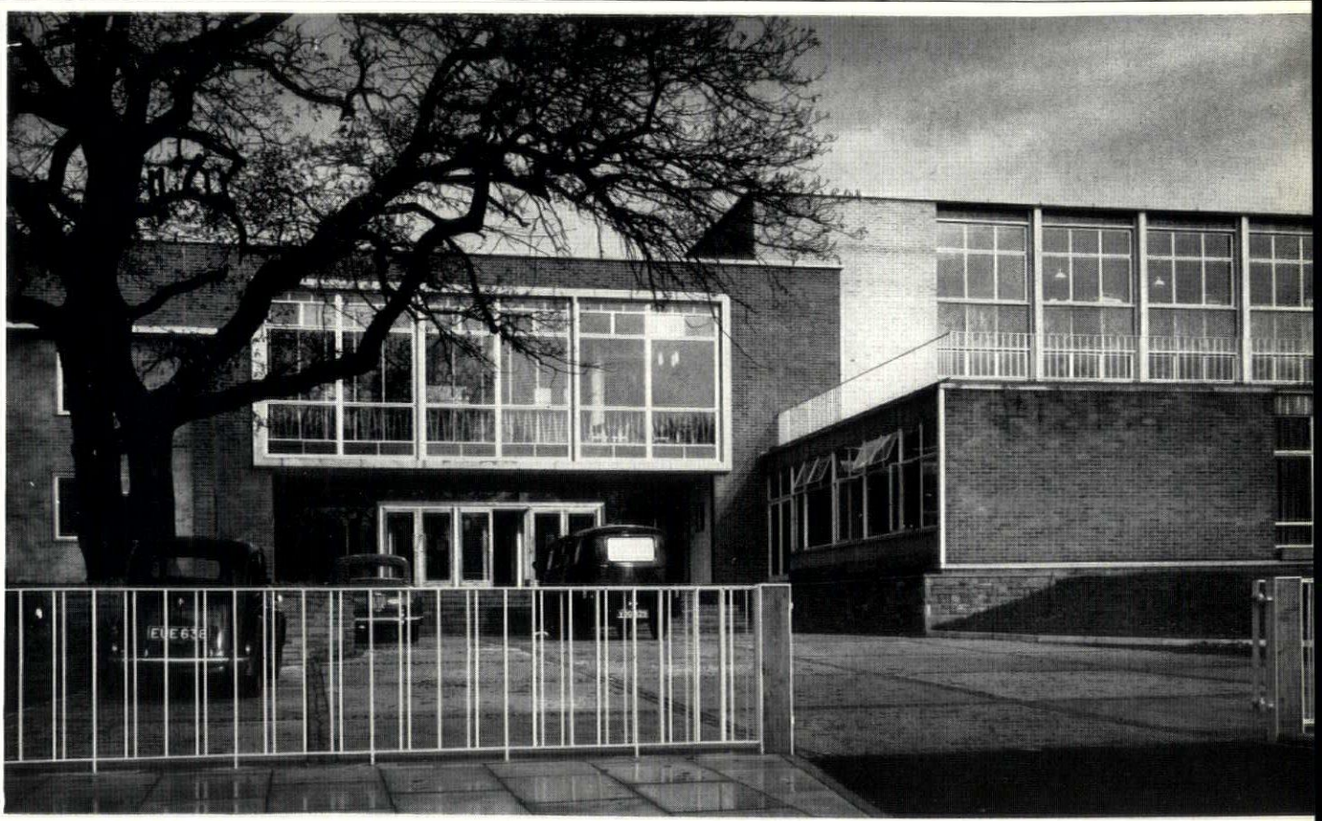




7, *view from second floor level of the junction of old and new buildings.*

Furniture Shop in Bromley

floors, flat roofs and roof trusses to the north light roof. The Market Square elevation has patent aluminium curtain wall infill above 'governed by the angle of 54° 45''—Golden Section—and non-reflecting shop windows below, designed by the architect. Inside, generally, ceilings are coloured, and the finishes are subordinate to the displays of furniture, textiles, glass and china. The insulation board ceilings to the ground and first floors are suspended, masking the beams and providing mobile supports for display and interchangeable lighting units. The temporary shop is completely free standing inside the new store, external walls having become internal partitions. The spatial effects provided by the links and bridges between old and new provide opportunities for special displays.

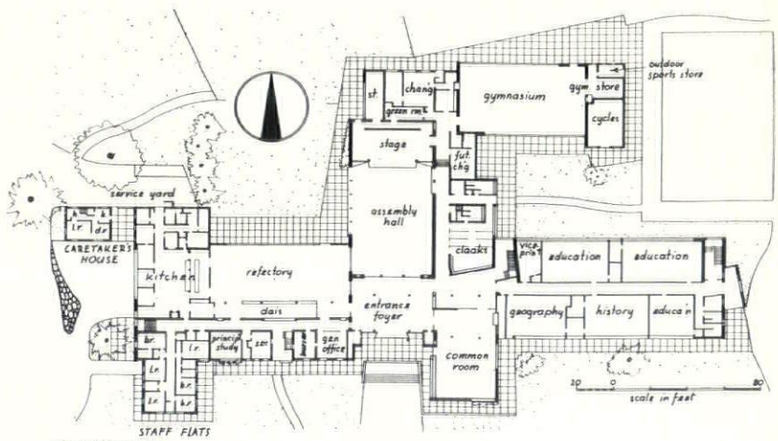


8, *looking towards the main entrance, with the library above and the teaching wing to the right.*

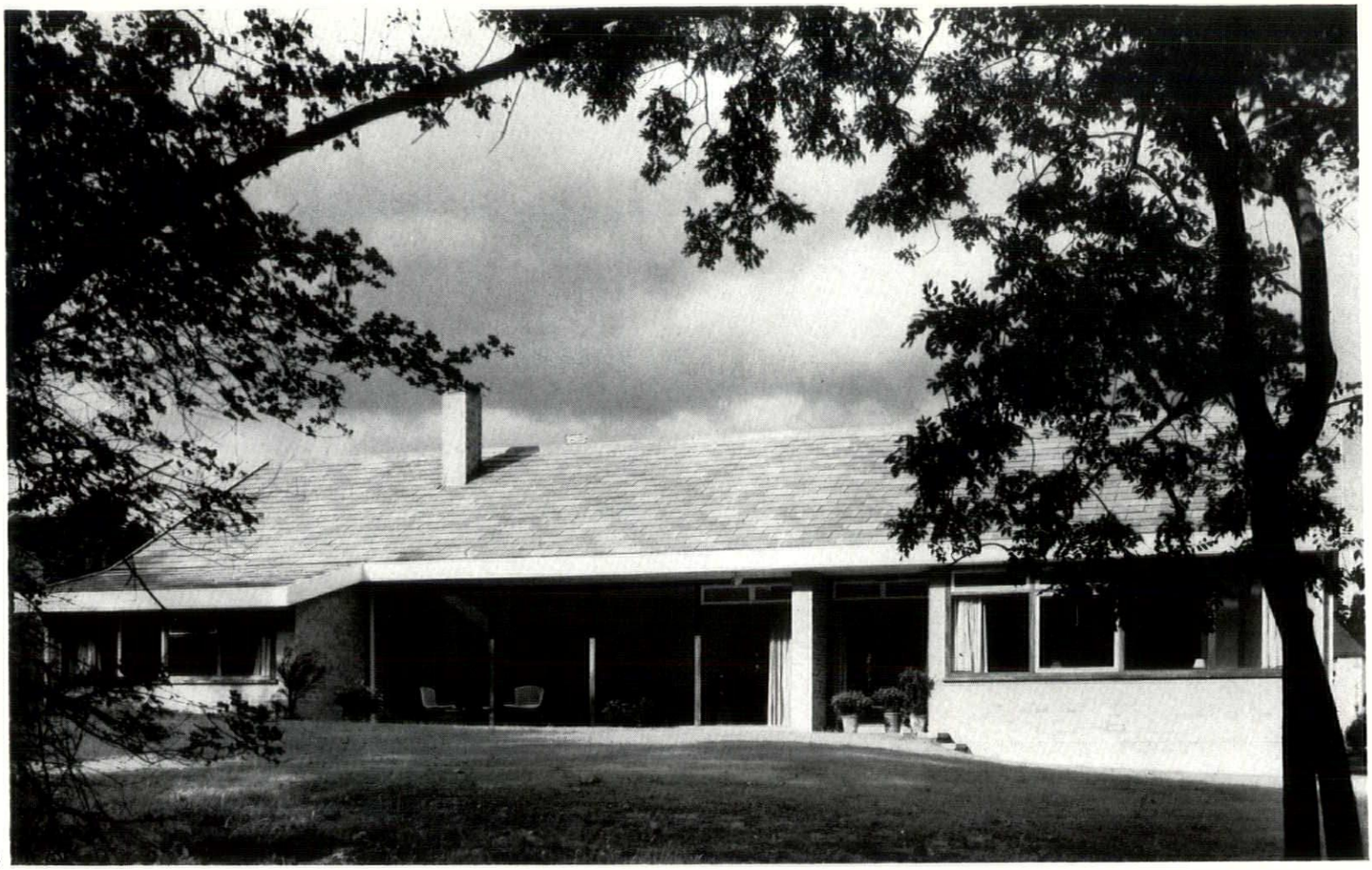
TEACHERS' TRAINING COLLEGE AT BIRMINGHAM

ARCHITECT: A. G. SHEPPARD FIDLER (BIRMINGHAM CITY ARCHITECT)

This training college for 200 students is on a nine-acre site in Westbourne Road, Edgbaston. It consists of a main building for the teaching, social and administrative accommodation and two hostels each housing 65 women students. The main building is of steel frame construction with concrete floors and roofs, and generally the cladding is of brickwork faced with two colours of rustic bricks. A green granite aggregate facing slab to parts of the three-storey block provides a contrast to the brickwork and is used as infill panels between the large windows of the teaching rooms.



ground floor plan.

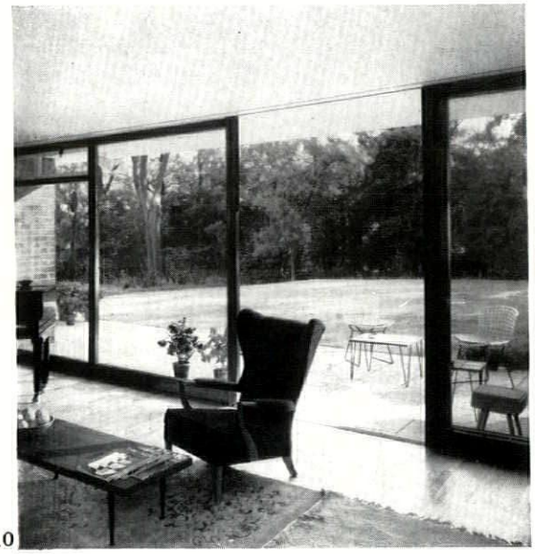


9

HOUSE AT SHEFFIELD

ARCHITECTS: GEOFFREY AND JUNE HOLROYD

The house is in Eccleshall, a suburb of Sheffield on a deep narrow site with a wood and stream at the end. The glazed façade of the house is placed so that trees and foliage entirely fill the view, and a built-up lawn continues the floor and terrace in one horizontal plane towards this. The house consists of four load-bearing brick cross walls at centres of 25 ft., 25 ft. and 15 ft. and a heavy concrete tile roof. To cut out the need for lintels across glazed areas extending fully between crosswalls a continuous timber ceiling is suspended from pre-cast prestressed concrete purlins. All storage walls and window frames are fixed directly to the suspended ceiling. The house is centrally heated by hot-air ducts under floors, part of which can be cut off if not required. The bathroom is electrically heated.



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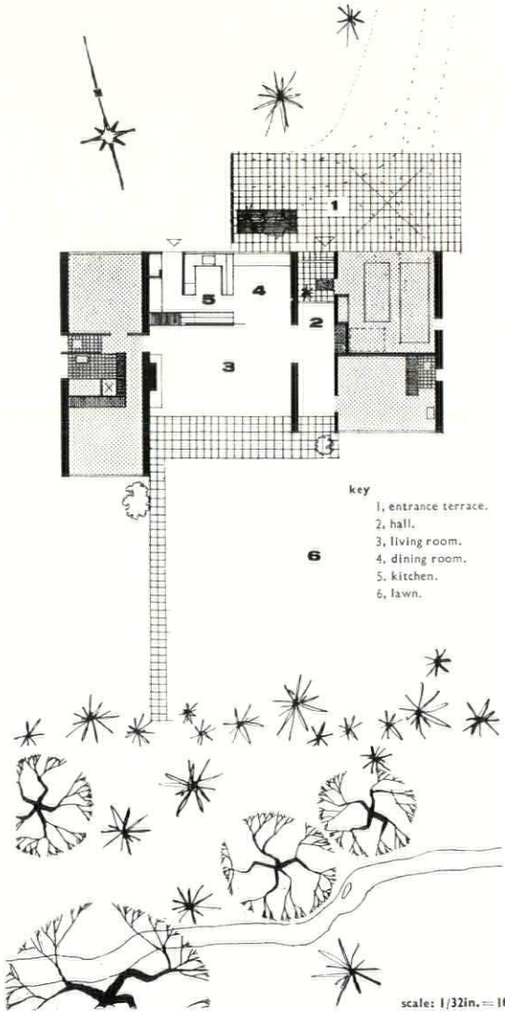
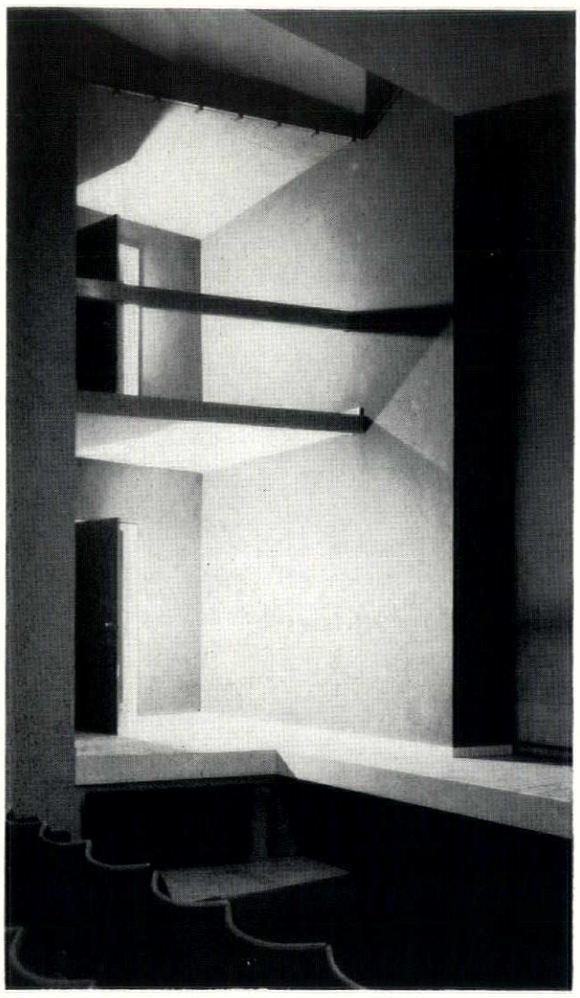


9, view of the garden façade from the south.
10, looking from the living room across terrace and built-up lawn to the wood.

2, *side entrance on to the forestage, showing the orchestra pit and the permanent strip of forestage.*
3, *the stalls and circle with the projection booth in the rear wall.*



2



3

Middlesbrough Little Theatre

considered. The construction is of load-bearing brick walls and piers, with fairface sand-faced flettons outside; the foundations are an in-situ concrete strip under the structural walls and an in-situ mesh reinforced floor slab. The roof has precast soffits sitting on steel space frames covered by lightweight insulating concrete: the frames are painted yellow and the ceiling slabs black. Inside the foyer, the underneath of the gallery has white raking beams and precast floor slabs and risers in another arrangement of the colours used in the foyer: mushroom, dark grey, geranium red, dark green and yellow. At 49s. per sq. ft. the theatre was extremely cheap.

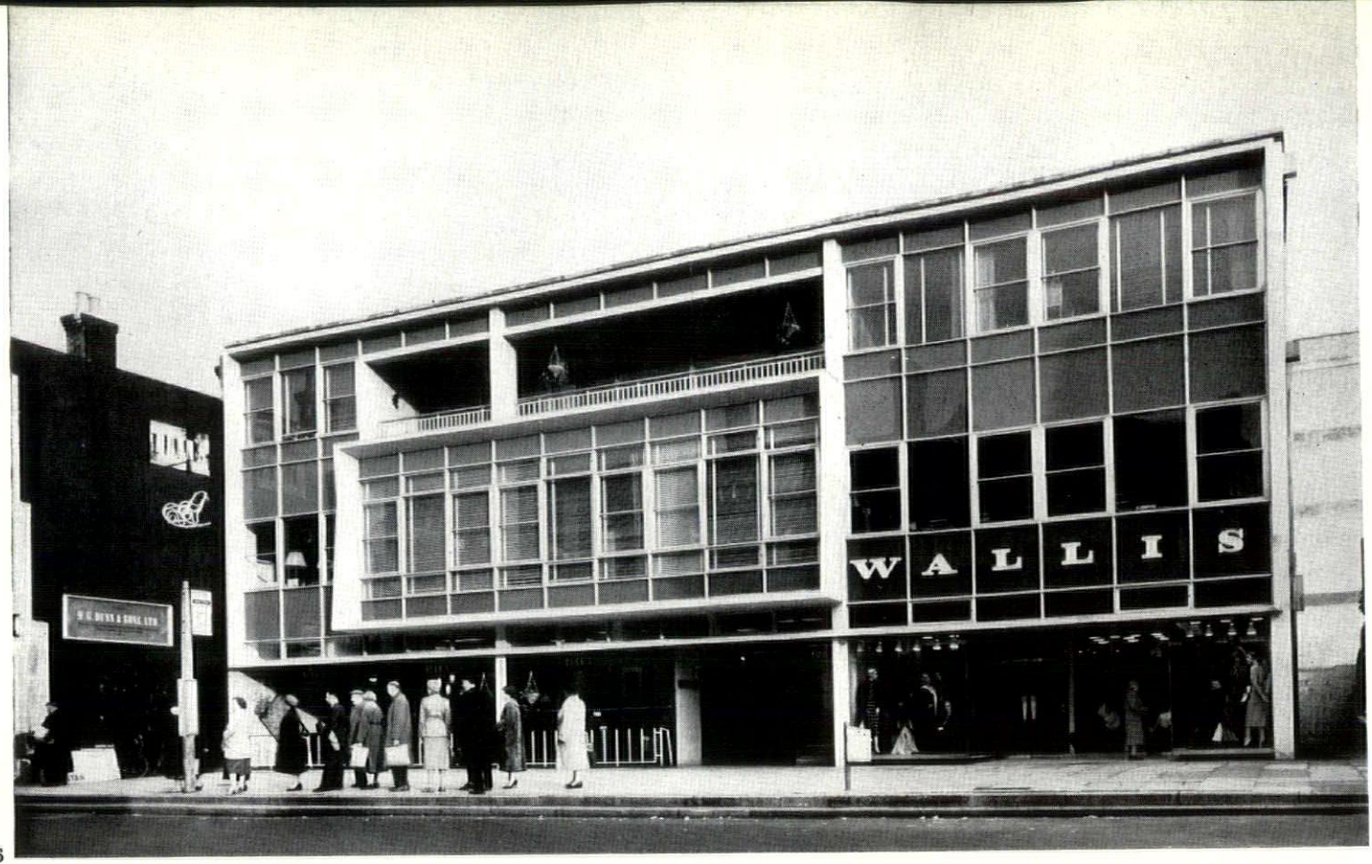
4, *detail of the two varieties of opening light; horizontal pivot hung sashes, and vertical sliding sash windows, both in aluminium.*

FURNITURE SHOP IN BROMLEY

ARCHITECT: BERTRAM CARTER



4



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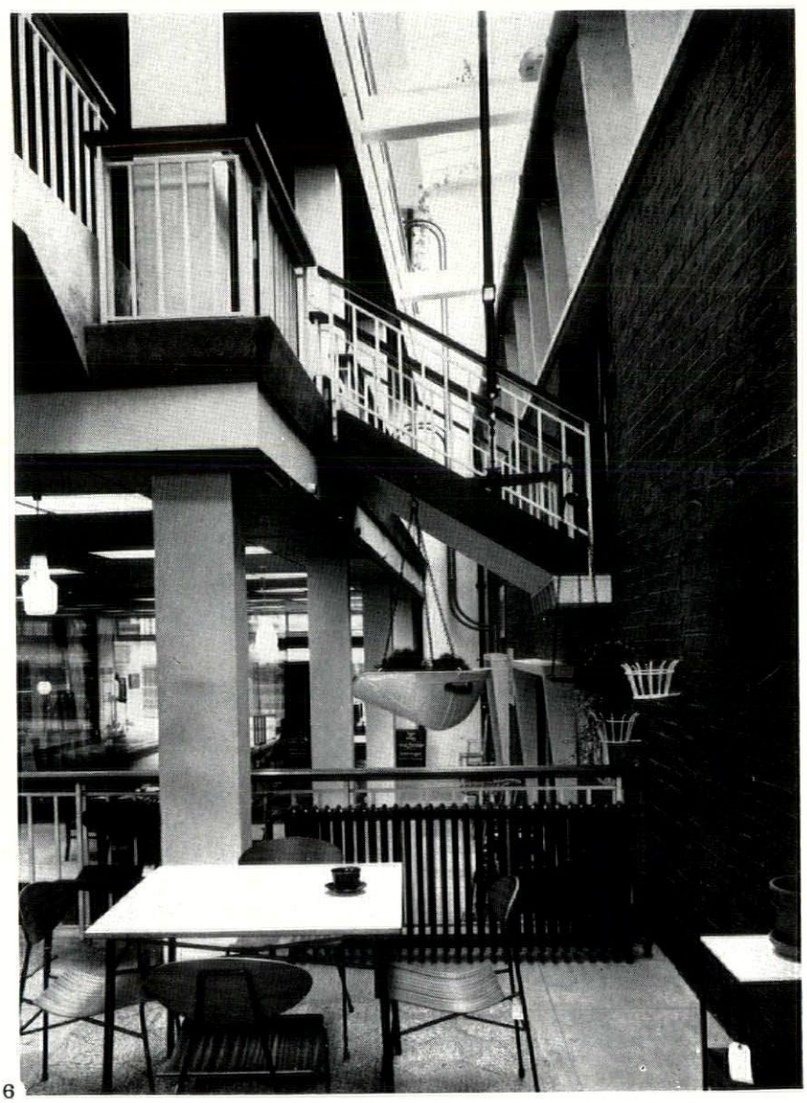
Furniture Shop in Bromley

5, the entrance facade, which faces Market Square.
6, the junction of the old building with the new, which gives natural light to the whole depth of the showrooms.



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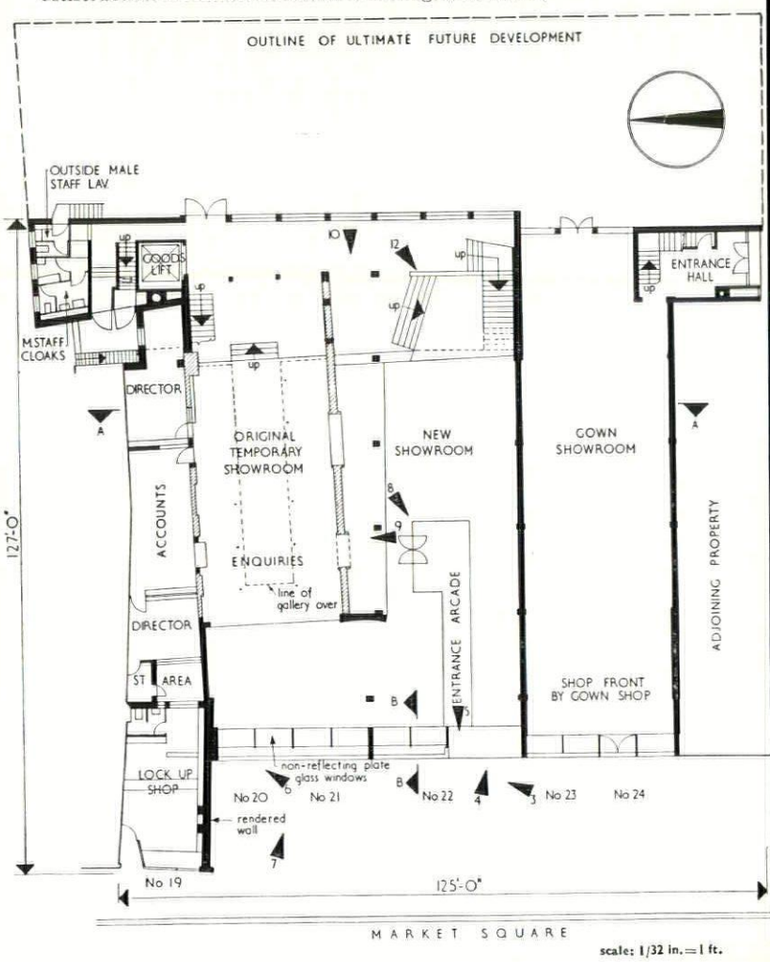
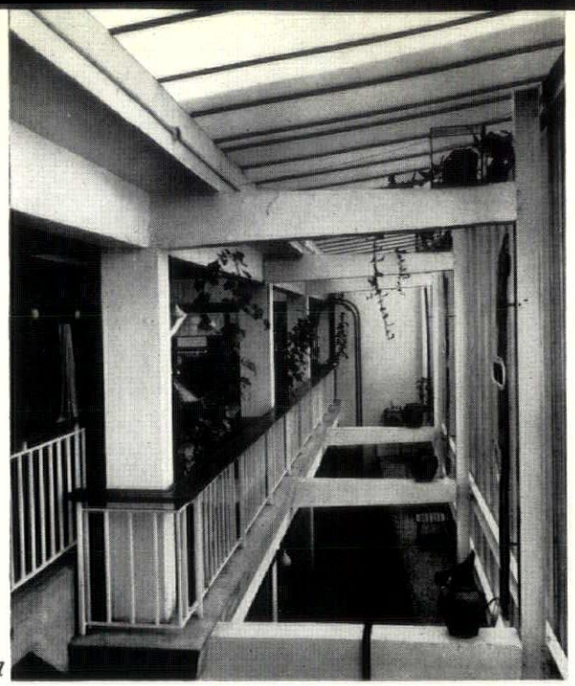
This is the headquarters of Dunn's of Bromley, on the east side of the Market Place, on a site they have occupied since 1710. The pre-war shop was blitzed and was replaced in 1948 by a two-storey temporary shop by the same architect, which has been retained and is now partially enclosed in the new building. The store is later to be extended, to the rear, north and to the south, when the present off centre 'picture window' will become the centre of the façade. The construction is reinforced concrete throughout; frame,



scale: 1/32 in. = 1 ft.

Furniture Shop in Bromley



7, *view from second floor level of the junction of old and new buildings.*

floors, flat roofs and roof trusses to the north light roof. The Market Square elevation has patent aluminium curtain wall infill above 'governed by the angle of 54° 45''—Golden Section—and non-reflecting shop windows below, designed by the architect. Inside, generally, ceilings are coloured, and the finishes are subordinate to the displays of furniture, textiles, glass and china. The insulation board ceilings to the ground and first floors are suspended, masking the beams and providing mobile supports for display and interchangeable lighting units. The temporary shop is completely free standing inside the new store, external walls having become internal partitions. The spatial effects provided by the links and bridges between old and new provide opportunities for special displays.

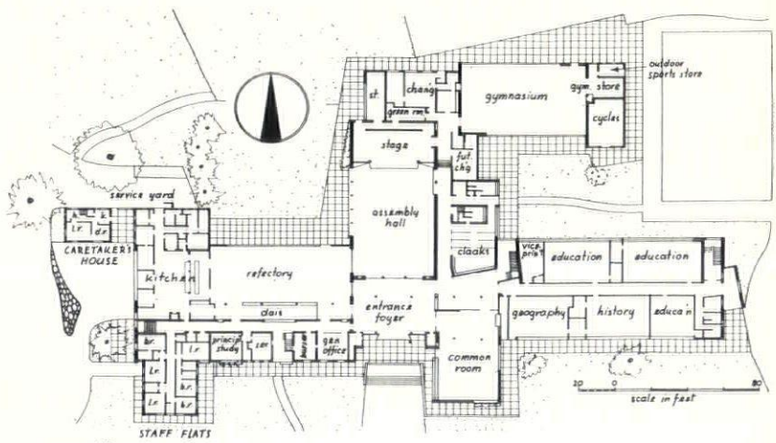


8, *looking towards the main entrance, with the library above and the teaching wing to the right.*

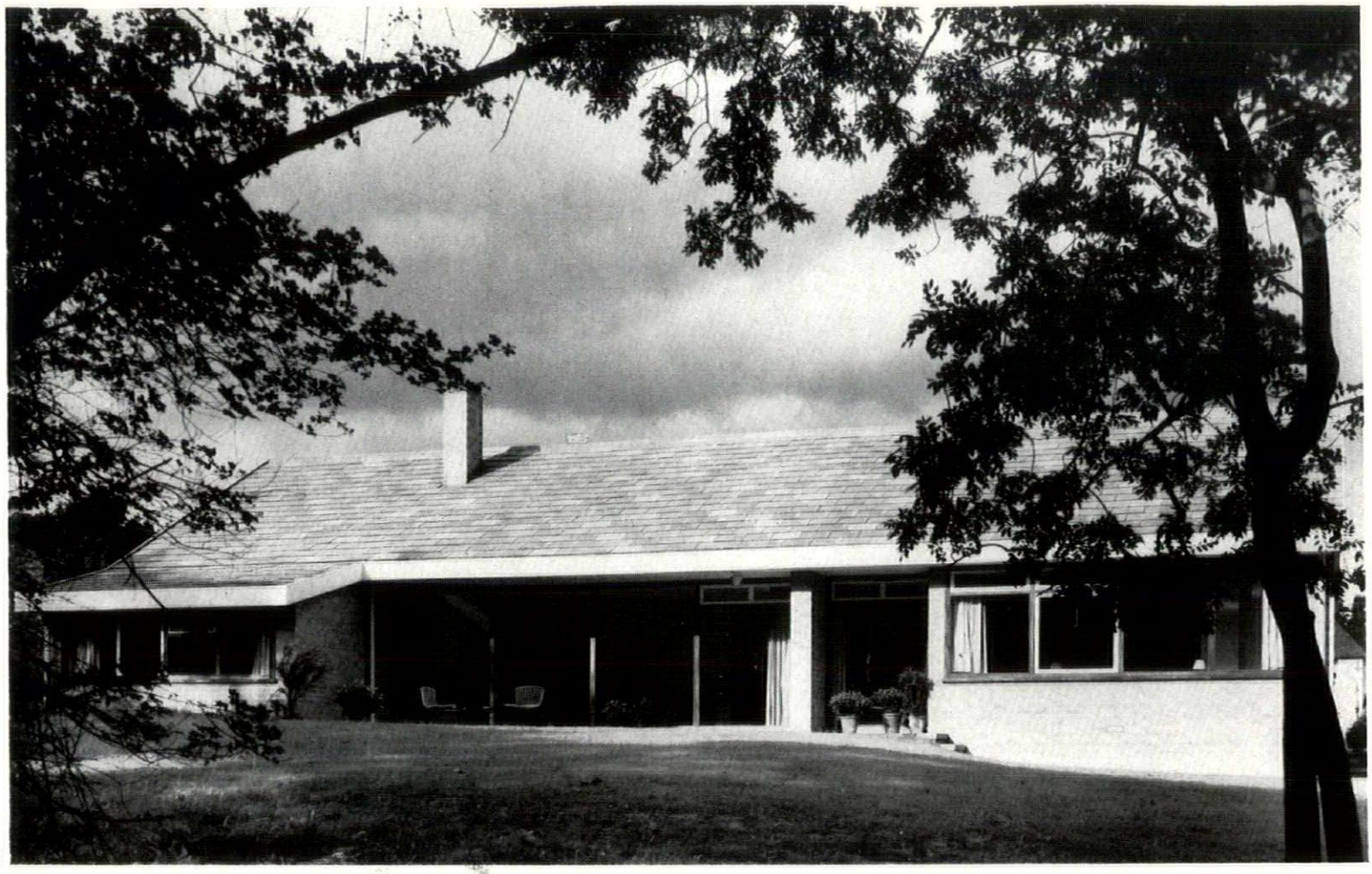
TEACHERS' TRAINING COLLEGE AT BIRMINGHAM

ARCHITECT: A. G. SHEPPARD FIDLER (BIRMINGHAM CITY ARCHITECT)

This training college for 200 students is on a nine-acre site in Westbourne Road, Edgbaston. It consists of a main building for the teaching, social and administrative accommodation and two hostels each housing 65 women students. The main building is of steel frame construction with concrete floors and roofs, and generally the cladding is of brickwork faced with two colours of rustic bricks. A green granite aggregate facing slab to parts of the three-storey block provides a contrast to the brickwork and is used as infill panels between the large windows of the teaching rooms.



ground floor plan.



9

HOUSE AT SHEFFIELD

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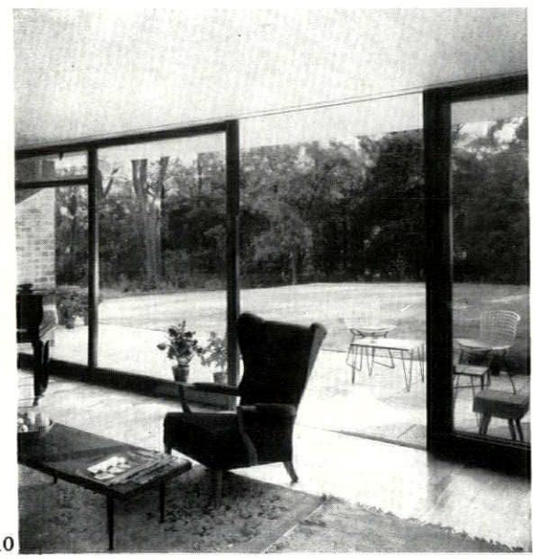

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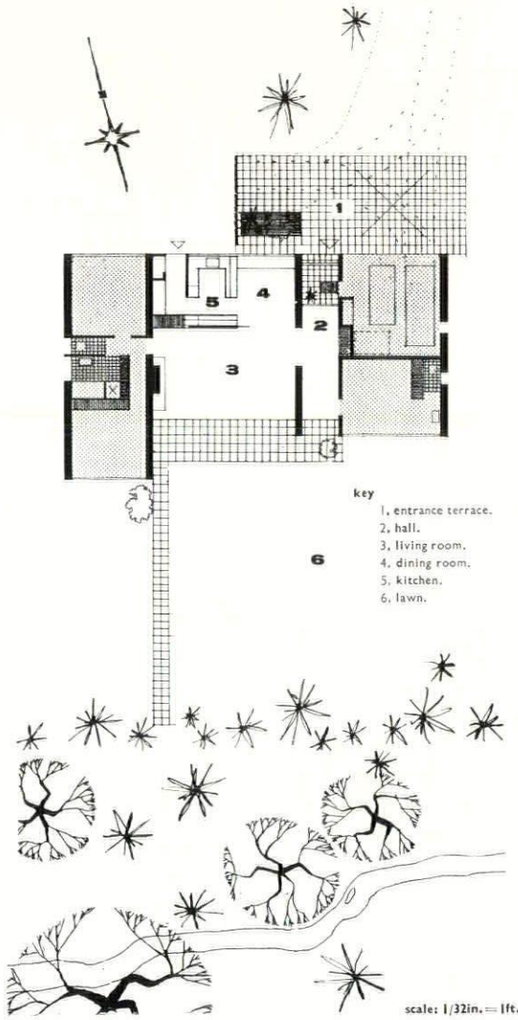

9, view of the garden façade from the south.
10, *looking from the living room across terrace and built-up lawn to the wood.*

BOOKS

A RAILWAY RICKMAN

THE RAILWAY STATION. *By Carroll L. V. Meeks. Architectural Press, 60s.*

A book on railway stations has long been wanted. As Mr. Meeks infers, the most splendid and interesting stations of the early days of railways are mostly to be found in Great Britain. Though I do not regard this book as the ideal one on its subject it will create pride in neglected and maltreated stations in which this country abounds, if not in the breasts of the British Transport Commissioners at any rate in those of the readers of art history. It is a large volume, with over two hundred pictures and almost as many pages of text and heavy with bibliographies, footnotes and comparative tables and other paraphernalia of its class. This all goes to show that, in America certainly, railway architecture is being taken seriously. One might almost say too seriously, for the author's anxious desire to avoid the charge of triviality has made his book over-solemn and, for long stretches, confoundedly dull.

Let us give him the credit for what he has achieved, and this is a welding together of station architecture all over the world from 1830 to 1956 into a single book. He has subdivided the subject into convenient periods and named phases which may well make him the Rickman of railway architecture. In his opening chapter, rich in quotations from other art historians some of whom he refutes, Mr. Meeks establishes his aesthetic criteria. He says that nineteenth century architects were governed by what he calls 'picturesque eclecticism' —that is to say they thought of building in terms of 'the Picturesque' as expounded by Christopher Hussey (born 1899) in his pioneering book on the subject published in 1927. And they were 'Picturesque' whether using classic, Gothic or building huge train-sheds in cast iron and glass. He points out that nineteenth century station architects, at any rate until 1890, were every bit as adventurous and experimental as modern architects. For modern railway architecture he can as yet find no convenient term. He sees a beginning of it in those experiments in concrete in the art nouveau style such as Dervaux employed at Rouen station (1913–28).

He divides railway station architecture into five phases:

(i) Functional Pioneering (1830–45), the simple train-shed, first of wood then of cast iron. St. Thomas's, Exeter (Devon not Derbyshire as this book says) is probably our most complete example, though Francis Thompson's Derby Trijunct station (1839–41) was probably the best.

(ii) Standardization (the fifties), the use of arches and towers and glass roofs—Paris, Gare de l'Est; London, King's Cross; Newcastle, Central.

(iii) Sophistication (1860–90). Towers triumphant and the apogee of the glass roofed train-shed in London, St. Pancras. In each of these chapters Britain takes the lead with USA a close second.

(iv) Megalomania (1890–1914). Eggert's Hauptbahnhof at Frankfurt am Main seems the best example of this period and Copenhagen the most charming, though I doubt if the author would allow himself such an adjective. Grand Central and Pennsylvania, New York belong to this period and they completely outclass British equivalents like Waterloo and Victoria (LB & SC).

(v) The Twentieth Century Style. Here credit is given to Great Britain with her 'modest budgets' for producing the Holden underground stations and which show she 'was still capable of distinguished designs.' But the new terminus at Oslo, and Rome (Italy) and Cincinnati are obviously more impressive.

My quarrel with this book is that in attempting to do too much, it does not do enough and turns out to be a mere academic thesis. Railway station architects did not think of these stations purely in terms of massing of shapes. They were often guided by the strong personalities of the railways themselves and the directors of those railways. They often paid regard to the local style of the districts where the stations were built. The goods departments of stations were as much part of their architecture as the passenger part. So were the warehouses. The livery of engines and carriages, of porters and guards; types of lettering adopted by different railways; the emblems in cast iron; the detailing of booking offices, barriers, notice boards—all these are essentials of the subject which have been omitted. The result is a book like one of those dry Victorian works on Gothic architecture which pay no regard to locality. The purpose of the buildings is forgotten in a preoccupation with style and date.

This aridity is reflected in the pictures. Almost all of them are much too small. Many could as well have been reproduced in line in the text and the space saved could have been used for larger illustrations and for showing the detail which is part of the pleasure and interest of railway architecture. The illustrations have been chosen more for their 'interest' than for their attraction. The book lacks enjoyment, though it is immensly painstaking. It does not really have the value of works on railways by such men as Hamilton Ellis, Rolt and Sekon.

John Betjeman

TOWARDS THE PICTURE FRAME

THE FRENCH STAGE IN THE SEVENTEENTH CENTURY. *By T. E. Lawrenson. Manchester University Press, 55s.*

The present-day concern at the lack of cohesion between the actor and his audience is one of the reasons given by Dr. Lawrenson for the presentation of this very scholarly research into the evolution of the picture-frame stage in France. He deals at length with the origins of the theatre in Greece and Italy, and traces its rebirth and growth through archaeological reconstruction, medieval street theatre and courtly function.

The free conventions of the illusionistic perspective setting are compared with the unity of place inherent in the classical architectural background or in the multiple setting of the medieval or Terentian setting. The dangers inherent in the spectacular use of scenes and machines are underlined by descriptions of Servandoni's spectacular productions in the Salle des Machines, for which he had 'no text, no music, no movement, and, final *carence*, no men!'

Dr. Lawrenson believes that the 'growth of stage perspective and the presence of the Italian machiniste accelerated the polarity of stage and auditorium,' but this relationship of the two elements was long delayed. In his descriptions of the seventeenth-century theatres we can see many of the impedimenta which hindered the achievement of this polarity. The earliest theatres were constructed in buildings originally erected to serve as tennis-courts. The *loges* were arranged along the walls of the building to form a rectangular *parterre* or pit; an admirable arrangement when this area was used by the performers as may be seen in the illustration of the late sixteenth-century ballet in the Petit Bourbon, but creating insuperable difficulties when perspective scenery is introduced into such multi-purpose buildings as the Palais Royal in its earliest form. These limitations still persisted until the end of the century and beyond, as may be seen in the plan of D'Orbay's Comédie Française. Although this polarization of actor and audience was hastened by the perspective scene, we must be careful that we do not fall into the trap of believing that it was the only cause of this arrangement. Too many people believe today that the removal of the picture-frame from the contemporary theatre must of necessity call for a regrouping of the actor/audience relationship, but, where direct address is a necessary part of the drama, this is not true.

Dr. Lawrenson also reminds us that the social aspect of the theatre is one that has played a very important part in the history of theatre development: even Sabbattini excused the curved form of auditorium where a rectangular form would be more appropriate to viewing a perspective scene, on the ground that it allowed the best view of the young ladies of the audience seated in the semi-circular orchestra.

While the book is most generously illustrated, the architect concerned with theatre design may be disappointed to find that the architectural descriptions of the seventeenth-century theatres are largely disposed of in one short chapter, and he may be disconcerted by the lack of definition of many of the theatrical terms.

Richard Leacroft

EXHIBITIONS

PAINTINGS

The disconcerting exhibition at the ICA of work by five young painters was arranged in a hurry by Roger Coleman—the youngest member of the ICA's selection committee—to replace an exhibition which had to be postponed. I think Coleman is the only man who could have brought this group of paintings together, for it proved to be a further demonstration of the kind of 'relaxed' intransigence which turned 'Ark' under his editorship into the gayest and most intelligent art magazine published here since the war. The artists were not expecting to be exhibited and the show was an unmitigated exposure of their explorations and longings, their crazy humour, passionate seriousness and startling lack of hero-worship.

They are by way of being connoisseurs of mass media; they gave the popular press every assistance in its search for news angles, and one of them, William Green, who is still a student at the RCA, provided television with some first-class entertainment by exaggerating his 'approach' to the canvas into a gimmick to end all gimmicks. In contrast to the automatic finger-wagging of the critics, who were once again alarmed by the growing irresponsibility of the ICA and were not surprised that the general public remained suspicious of modern art when a supposedly serious organization exhibited paintings done with a bike, the television sequences of Green at work were directed with a subtle appreciation of both the absurdity and validity of his procedures: there was fine visual drama in the shots which followed streams of black paint across large white canvases, and the laughs were allowed to arise naturally out of Green's total concentration upon his task, leaving his shy and melancholy dignity quite unsmirched.

Green and three of the other exhibitors—Richard Smith, Peter Blake and Peter Coviello—are all well under thirty and have grown up in an informal, nonconformist atmosphere created by the impact of American action painting, and unlike that rather shabby battalion of professional picture-makers who have indicated their desire to be in on action painting by trying to mate Rothko with Pollock or Mathieu with Soulages, with the cold-eyed inefficiency of stock breeders who haven't learned the facts of life, these young men are really venturesome. They make sure of nothing beforehand, but if they have ever been visited by the spectre of the Unresolved Problem they must have been fast asleep at the time. The fifth exhibitor, John Barnicoat, is older than the others. He writes with a brush on a compartmented surface, and fights with shadows in a world of aesthetics.

Richard Smith's 'Blue at the Roots' is the most untroubled piece of English action painting I have seen: it makes a new kind of conversation piece, and its three large areas of colour mingle at the edges with such obvious pleasure that one could easily get the notion that it might not be right to be looking. Coviello is absorbed by what might be called the Presence in the Pâté. So far, his pastes haven't anything like the range of textures to be found in the work of the Dutch painter Bogart, who has just had his first London one-man show at Ginpels, but they are well-pounded and edible-looking, and the dim figures that have been buried in them appear to be slowly moving towards the surface in accordance with some natural law.

But the most original of these young painters is Peter Blake. He is so unmistakably and unshakably himself that his pictures do not look like anything else that has ever been called a work of art, and he will probably have to wait much longer than the others for a one-man show. Most of his pictures are painted on bits of scrapped planking, they usually depict circus people in a manner somewhat reminiscent of Victorian posters, and the painted titles are part of the image. The subjects include 'Dixie, Darling of the Midway,' 'Siriol, She Devil of Naked Madness' and 'Cherie, Only Bearded Tattooed Lady.' The painted image is partly scrubbed out, as if to give it the look of an ancient panel, and then bits of the clothing are 'restored' with coloured tin-foil. The clash between paint and tin-foil recreates in a remarkable way the noise, the garish lights and the tawdry finery. I have made them sound like funny little ingenuities, and in a sense that's what they are, but they are also desperately sad, for Blake has perceived his freaks as battered saints, and they stare out at us with unbearable passivity, as if they were representatives of the insulted and condemned, raised to frowsy godhead. Blake scrutinizes the human void as sharply as Samuel Beckett, but with more compassion. His largest picture, 'On the Balcony,' 1, is planned quite differently from the others. It starts as an oblique view of young people on park benches, and then he uses the grass as a notice board on which to paste his most treasured scraps. Everything that gets into this picture takes on the look of being something that he wants to keep forever, from the Royal family and the



1

photograph 'In Sincere Memory of John Minton' to the cover of Life Magazine and the badges on the young people. It doesn't look much of a picture in reproduction, and the picture itself was pitched out of the Littlewoods Competition by an eminent and fairly liberal selection committee; nevertheless, it is a splendid example of Blake's inspired messing about and of his ability to make a direct and loving response to the world about him.

It's madness to admit it, but I would rather have this tatty work of Blake's than any of the geometrical abstracts by Kandinsky included in his exhibition at the Tate. The examples of his abstract expressionism are a different matter.

The Tate show was of forty-five paintings chosen by J. J. Sweeney from the huge Kandinsky collection in the Guggenheim museum. The selection provides a fair account of his career, and it begins to look as if the only Kandinsky's which I can wholeheartedly admire were all painted in



2



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GOVERNMENT TAKE OVER BILL

FROM OUR POLITICAL CORRESPONDENT

The Thermal Insulation (Industrial Buildings) Bill, a private member's measure introduced by a Conservative M.P., Mr. Gerald Nabarro, is now to be sponsored by the Government and is likely to become law this session. The Bill will provide that all new industrial buildings equipped for space heating must be insulated against loss of heat if they are erected after 1958.

moved a new clause empowering the Minister to make regulations to restrict the use of certain materials.

He said that this new clause arose from further consideration and consultation on the contents and implications of the Bill. There had been strong representations from the Structural Insulation Association, and accordingly the new clause empowered the Minister to make regulations excluding the use of materials if they did not conform to the standards of resistance to the spread of flames. Those regulations would specify the particular materials and the particular standards.

Plans deposited with the local authority which showed that restricted materials were being used in a building would be rejected by that authority unless they also showed that the materials were to be used in such a fashion that would not increase the risk of fire breaking out or spreading. The standard of resistance could be that in the British Standards Specification 476 of 1953 which were well known to architects and

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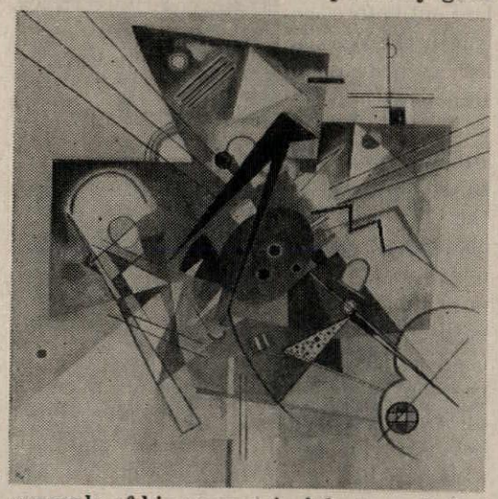
1914. This seems to be the year in which the best of his abstract expressionist pictures were painted, for although he was formulating the style in 1913 the pictures of that year are marred for me by the obtrusive presence of long, pod-like, disturbingly ugly forms. He was at his best when he avoided closed forms altogether, and produced a brilliantly explosive flux of paint marks rushing diagonally across the canvas, 2.

I do not understand Kandinsky's subsequent devotion to geometrical fantasy, except that it's obviously fanatical, and the result of some kind of conversion, and that it represents an attempt to separate the spirit from the flesh. His contention that a circle is calmer than an apple and that the impact of the acute angle of a triangle on a circle produces an effect no less powerful than the finger of God touching the finger of Adam in Michelangelo is simply outside my experience. I have chosen for reproduction what I take to be an exceptionally good



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example of his geometrical fantasy, 3, but it leaves me cold. I can see in it only a flair for designing, and an unimaginative centering of the forms which is almost incredible, coming as it does from a painter who was one of the first of the moderns to 'frolic among the focusless fields, tumultuous,' as Masson puts it, 'with incessant creation.' The Kandinsky catalogue was a modest little document which didn't include a biographical note.

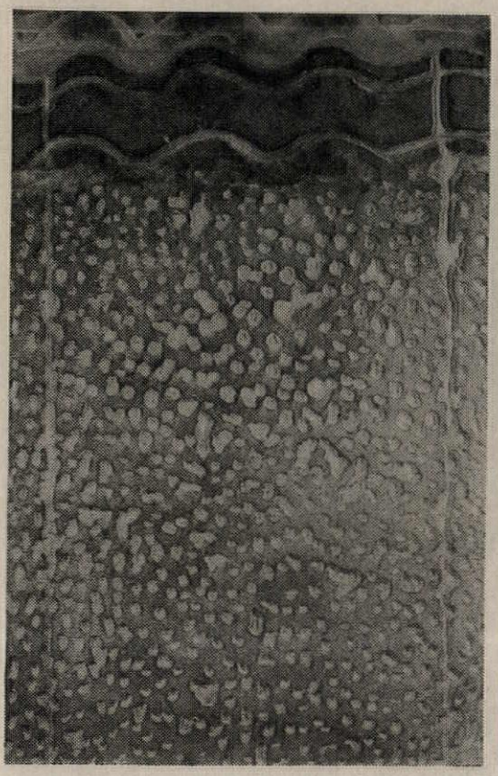
Recent attempts to haul up Robert Delaunay into the front rank of twentieth-century painters are reflected in the sumptuousness and documentary thoroughness of the catalogue issued for his retrospective at the Arts Council Gallery. He is credited with being the first painter to do this, that and the other, and his paintings of overlapping discs have been called 'radiant hymns to the sun,' but his work is facile at its best, and ugly and unresolved or vulgarly pretty at its worst. Even the Eiffel Tower paintings have not worn well; they look more confused than



4

dynamic, and the suggestion made in the catalogue that they are finer than Leger's early cubism is ridiculous. His cubo-futuristic 'Cardiff Team,' 4, has a thin charm of its own, and he has incorporated lettering amusingly, to give the uniformed spectator a line on the virtues of his work—its astral beauty, its constructive arrangement of colour and its overall magic.

Antonio Tàpies, whose work was first shown here three or four years ago in an official exhibition of contemporary Spanish art, has recently contributed a group of new works to a mixed exhibition at Tooth's. In the interval he has become one of the most considerable of the artists who



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are experimenting with hard pastes. He digs into his delicately coloured plasters with an exquisite appreciation of the laws of chance, and his 'Grey Painting with Indentations,' 5, is among the most refined and elegant works yet produced under the influence of Dubuffet's 'bits of ground.'

Robert Melville

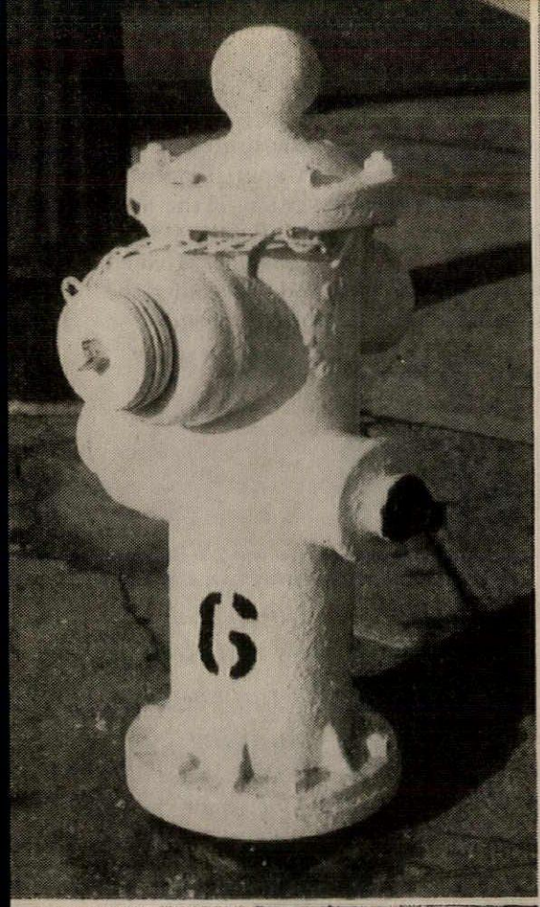
TOWNSCAPE

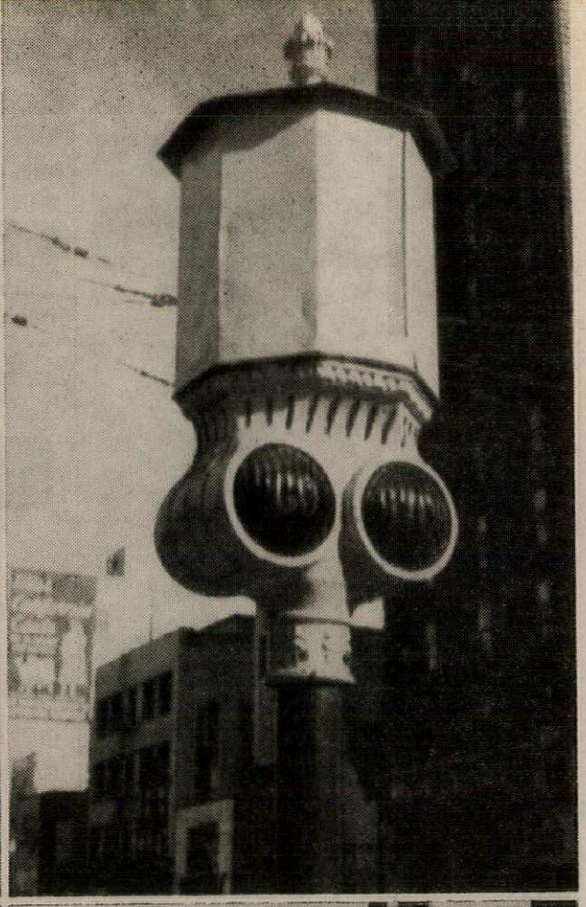
DOWNTOWN AMERICA

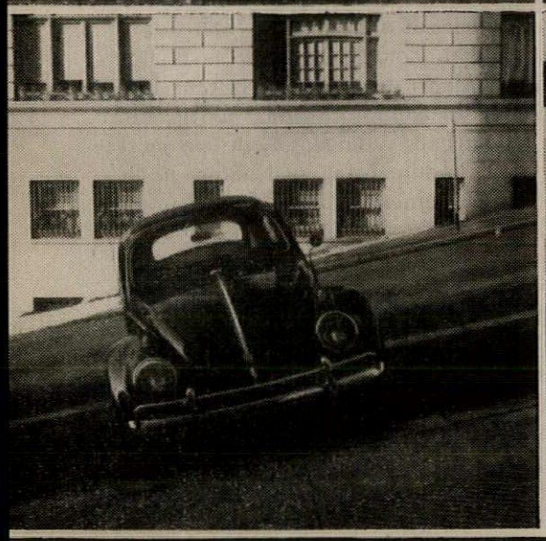
Fortune *magazine has been running a remarkable series of articles on urban growth which is far ahead of current American planning and architectural opinion.* It is intended to be general reading for high level business executives (it need hardly be said that there is no equivalent paper in this country) and has attacked the complementary problems of a throwaway attitude to the American countryside—there is now precious little to throw away between New York and Washington—and sterile and inhuman urban redevelopment projects, some of them done by august names in the Modern Movement. The final article appeared this month, dealing with the things that go towards making a humane environment downtown, and *Fortune* asked the REVIEW's Counter-Attack Bureau to help with this; the issue contains drawings by Gordon Cullen based on research by Ian Nairn.

The problem became one of giving the urban pedestrian an alternative to the automobile-gridiron-skyscraper world, to use if he wished to. American cities are magnificent expressions of the impersonal parts of metropolitan life, from the first sight of towers on the horizon to the staccato non-serial block-by-block progression through deep slits of space. But in the process some of them have stopped being habitable places for people six feet high. In metropolitan London you always have the choice: you can become flotsam in the shopping streets, or an onlooker from the alleys and churchyards and squares. In an American city there is no such choice, and the townscaper's job is to provide one, not by replacing the gridiron but by superimposing another pattern on it, to provide two simultaneous cities, the effect of each being enhanced because it counterpoints the other.

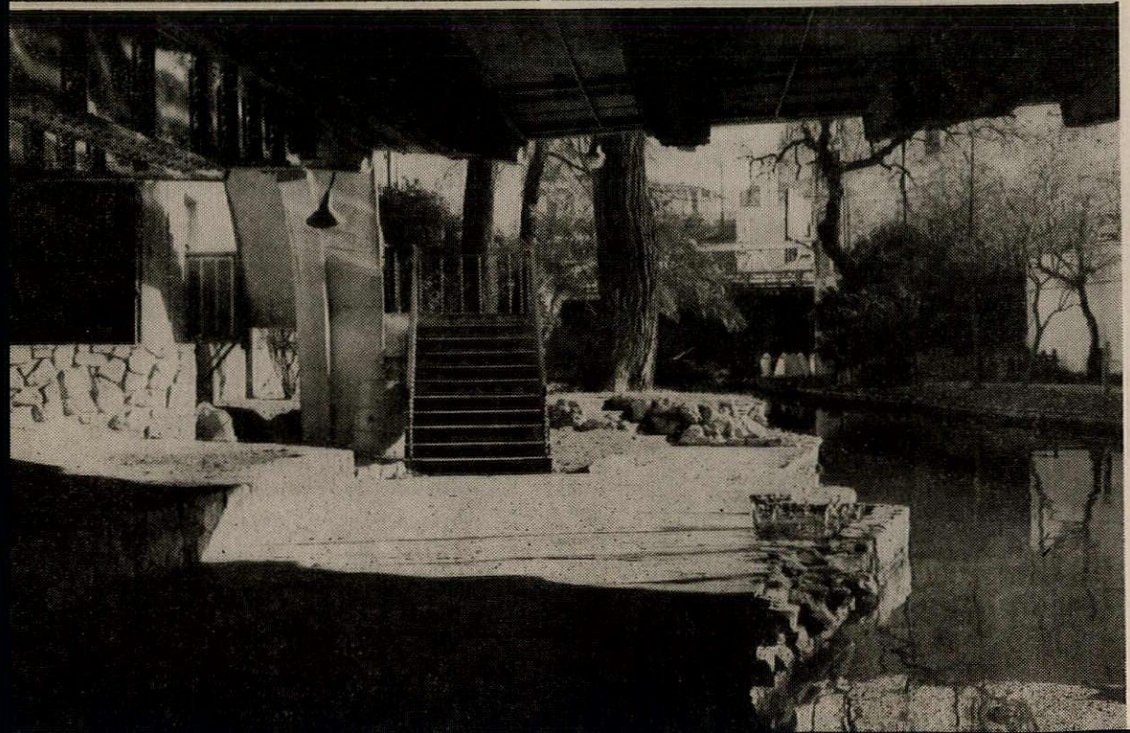
There are in fact more existing clues to this pedestrian pattern than might be expected. A few of them are shown on the next page they range in size from the splendid





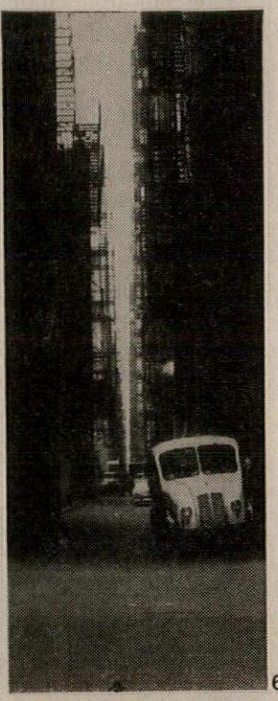






1 | 2
3 | 4
5

and unexpected virility of the San Francisco fire hydrants, 1, and street lights, 2, to the opportunities given by superblock development, and the mid-block alleys—cavernous in Chicago, 6, man-sized in Louisville, Kentucky (the New York equivalent is public ways through the buildings themselves). Cars can be brought into the pattern topographically, like San Francisco's 1-in-4 streets, 3, or by organizing them into buildings behind quickly erected screen walls, as in Chicago, 4. Where the pedestrian world has already been created the result is remarkable. San Antonio, Texas, has a river running through it, 5, which makes a complete loop in the heart of the city, 15 feet below street level. It was laid out before the war by the W.P.A. as a pedestrian ribbon with cafés and open-air bookstalls, plus the continual impact of the city above, changing every few yards. It is now a magnet for both local residents and tourists: San Antonio has been given the choice. The sad thing is that most redevelopment projects, even the most architecturally up to date, have not got beyond formal buildings in formal landscape—neat (when seen from the top of a skyscraper), clean and stone-dead. I.N.



6

COUNTER-ATTACK

57. Portsmouth, Hants. (*City Council*). The blitz left Portsmouth with so few old buildings that one might have expected the Council would have preserved those which remain. Apparently not; the latest official victim is the Mile End colonnade, an early nineteenth century Doric screen to a small and now disused cemetery. The area is being developed as a filling station: the station owners offered the colonnade and land behind it as a gift to the Council as an open space whilst they used the forecourt only. The Council accepted the land but applied to remove the colonnade from the list of scheduled buildings, and the Ministry agreed, regretting the demolition but 'leaving the decision to the local authority'—a choice bit of buck-passing when it was the local authority who had applied to demolish in the first place. The colonnade would make an admirable entry to the park—a screen wall has to be erected anyway between park and petrol pumps—and would be enhanced if anything by a

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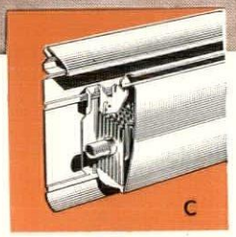

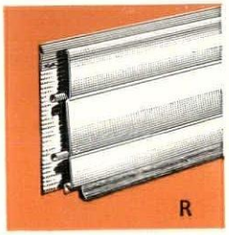

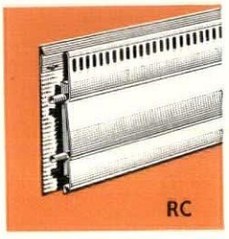

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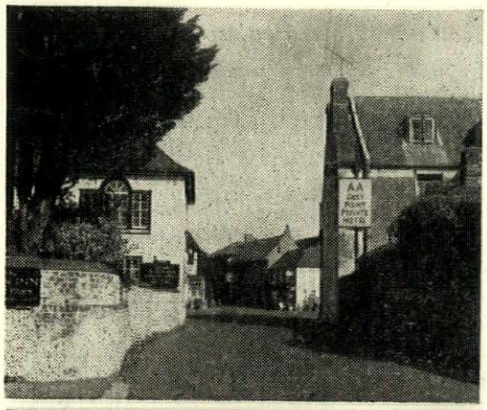
busy forecourt and bright colours. Not to make use of it like this—against the advice of their own city architect—can only show a complete lack of imagination in the City Council; and Portsmouth could do with some imagination today.

58. SOS Findon, Sussex. (*Area Planning Committee.*) Findon is the first village north of Worthing on the Sussex Downs. It has a very pleasant central square, 1, but is on the verge of being swamped by inadequately controlled new housing. The problem is very simple and can be summed up in two words—flint walls, 2; if the walls are maintained the village will survive. This can be insisted on as a condition of planning consent—as has been done for example at Thorpe near Egham in Surrey: if the result involves mirrors and tricky garage entrances, that is a fair price to



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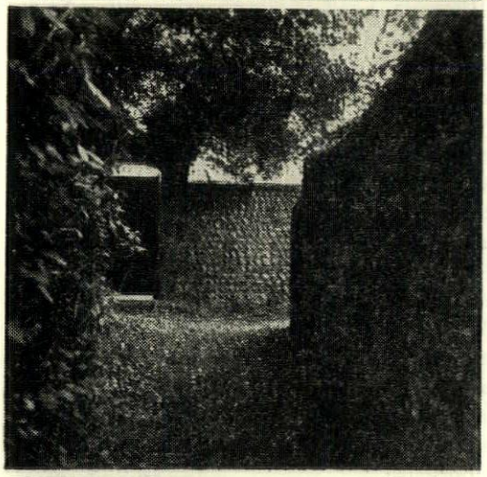

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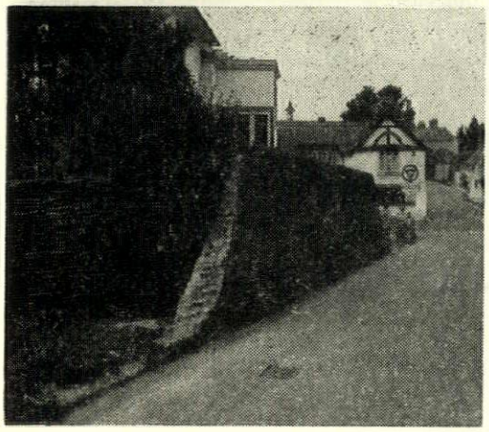

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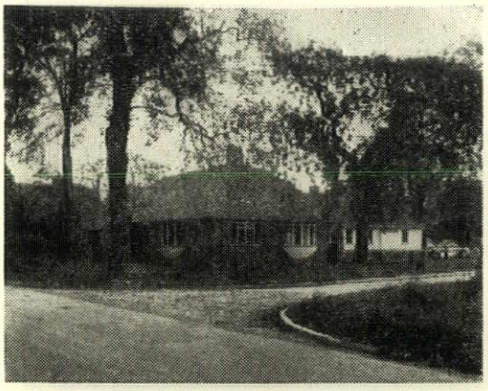
pay for living in an unspoilt village. What is happening at the moment is this, 3, and 4, and the villagers are justifiably fed up. The fate of Findon is entirely in the hands of the area planning officer and the planning committee: they could



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give a magnificent lead by preparing a supplementary development plan in co-operation with the villagers which would state exactly on what terms new buildings would be allowed into the village (not stylistic terms, but conditions such as those mentioned in the note on Chichester in last month's issue). Findon would be noteworthy as the first village in the country to do this; at the moment it looks like being just one more bit of Swamped Sussex.

59. Pontefract, Yorks, WR. (*Town Council.*) An imaginative match of new and old has kept the façade of Pontefract's market hall, 5, whilst completely rebuilding the back. Built in 1859, it is not yet old enough to be respected as an



5

antique, so that its survival is all the more praiseworthy. In fact it has guts and character, in this case more important than antiquity particularly because so much modern building in the Riding is quite characterless.

60. Edgbaston, Birmingham, and Norwich, Norfolk. (*Tube Investments Ltd., and Norwich Union.*) Here are two more buildings which prove that the battle for modern architecture has certainly not yet been won in Great Britain. T.I. House, 6, is on a corner site on the



6

main road at the beginning of Edgbaston and Neo-Georgian has been chosen to 'blend with existing buildings and preserve the architectural character of Edgbaston.' In fact, six storeys will automatically alter the scale of this part of Edgbaston whatever salad dressing is applied to the frame. This is not necessarily a bad thing (the building will be a terminal view to Broad Street and is on the very edge of the leafy early nineteenth-century suburb); the thing to do is to accentuate the contrast by having a crisp and lightly detailed modern block, not an inflated replica of one of the nearby villas. Work has only just started on the foundations; the structural frame could still easily be given a more appropriate set of clothes.

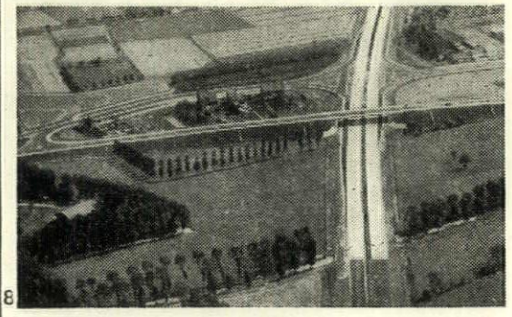
At Norwich the new building is complete, 7, and its jaded tenth-hand Palladianism is a sad



7

decline from the Edwardian magnificence of some of the firm's earlier buildings. It is set back forty feet from the old building line in St. Stephen's Street (which only carries one-way traffic as it is) leaving an enormous barren pavement with no character of its own, certainly not a place to linger in. This is just wideness for wideness' sake without any attempt to do anything positive; and it isn't good enough for a city which has so far given all of its urban open spaces a distinct character and surrounded them by a network of lanes to augment their effect.

61. Ostend-Brussels Motorway, Belgium. A cloverleaf intersection which is a beautiful example of economical land use, 8, and the reverse of the vast Euclidean doodles of current American practice, which leave the land



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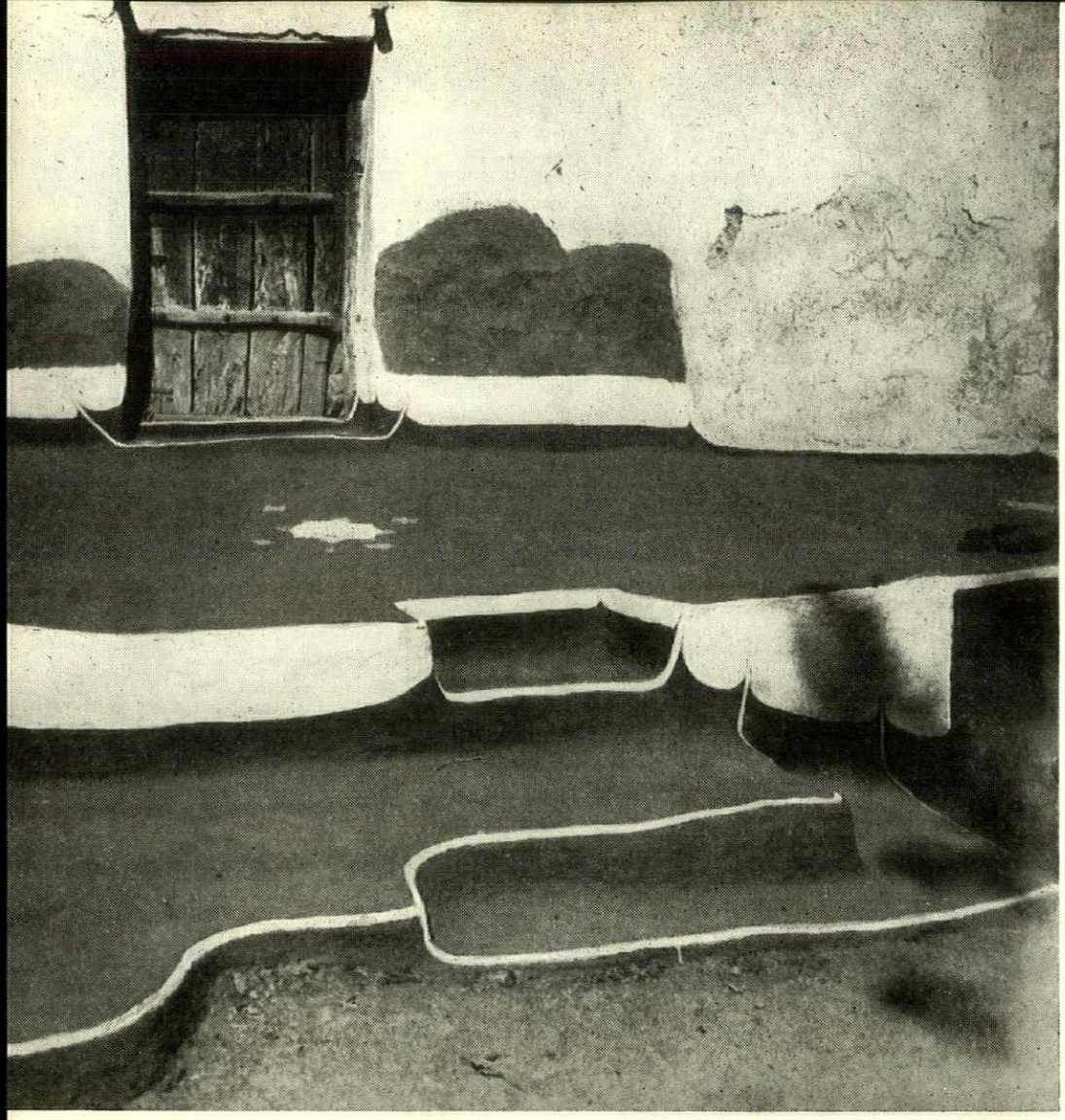
enclosed in the loop quite sterile. There can be no question of which alternative the English motorways ought to adopt: we haven't enough land to be able to spare it for grandiose gestures. The houses in the loop on the left actually fit in better for being islanded and made into a self-contained unit, something which can be seen in the areas cut in two by the Cromwell Road extension and which the REVIEW will discuss when that road is finally complete.



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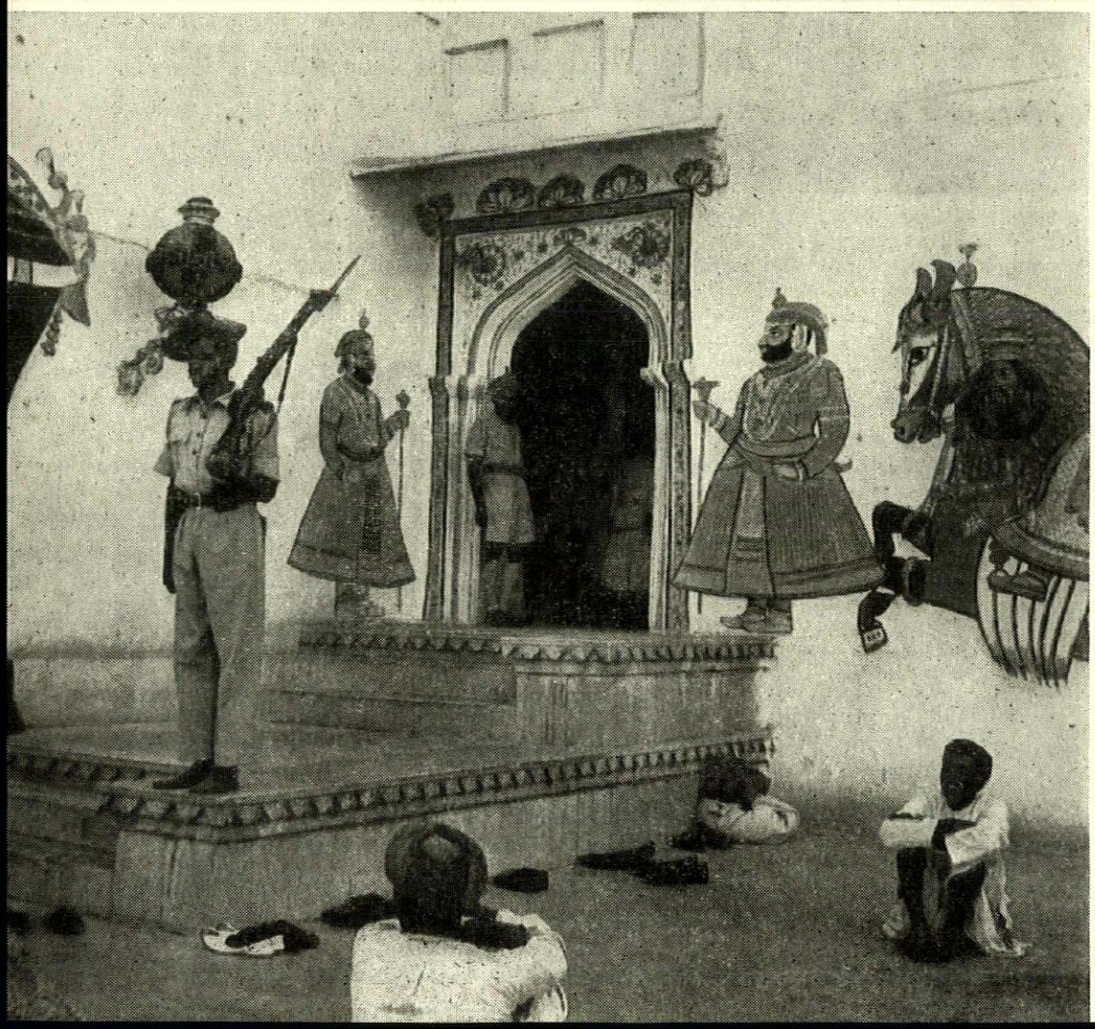

2

APPLIED ART

PAINTED PORTALS

Whitewash is the luxury of rich and poor alike, Le Corbusier once said, but had he then known India, he might have included polychromy in this canon of democratic decoration, for both prince and peasant there can often boast skilful and effective colour-work at their front doors. In Congeevaram, an unpretentious house photographed by Roderick Cameron*, 1, boasted—like many others in the region—a well-maintained flight of steps leading up to the main platform of the house. Steps and platform alike are of beaten earth, the sharp arrises picked out in white in a manner that is both functional and visually trim, while the broader bands of paint echo, by the scallopings of their lower edges, the sensible covings of the re-entrant junctions of horizontal and vertical surfaces, where a sharp edge would have been impracticable in the given material.

If this was Indian Functional Tradition, the palace of the Maharajadhiraja Mharana, head of the premier ruling house of India and entitled to a salute of nineteen guns, at Udaipur, 2, stands at the other extreme in its intentions as a building, and yet the means it employs to express its function are substantially the same. Polychromy is used again, not to define a step and a platform, but the position of the ruler, whose security and status are secured not only by the live, contemporary soldiers standing guard at the entrance, but also by painted representations of traditional guards and military animals, standing in their own, purely pictorial relationship to the whitewashed wall-surface and the painted architecture of the door-case.

Michel Santiago

*SHADOWS FROM INDIA by *Roderick Cameron* is to be published by *Heinemann* in May. An exhibition of Cameron's Indian photographs will be held in London in early June.

1, *above, steps and living platform of a house in Congeevaram.*
2, *below, mural painting around the courtyard of the palace at Udaipur.*

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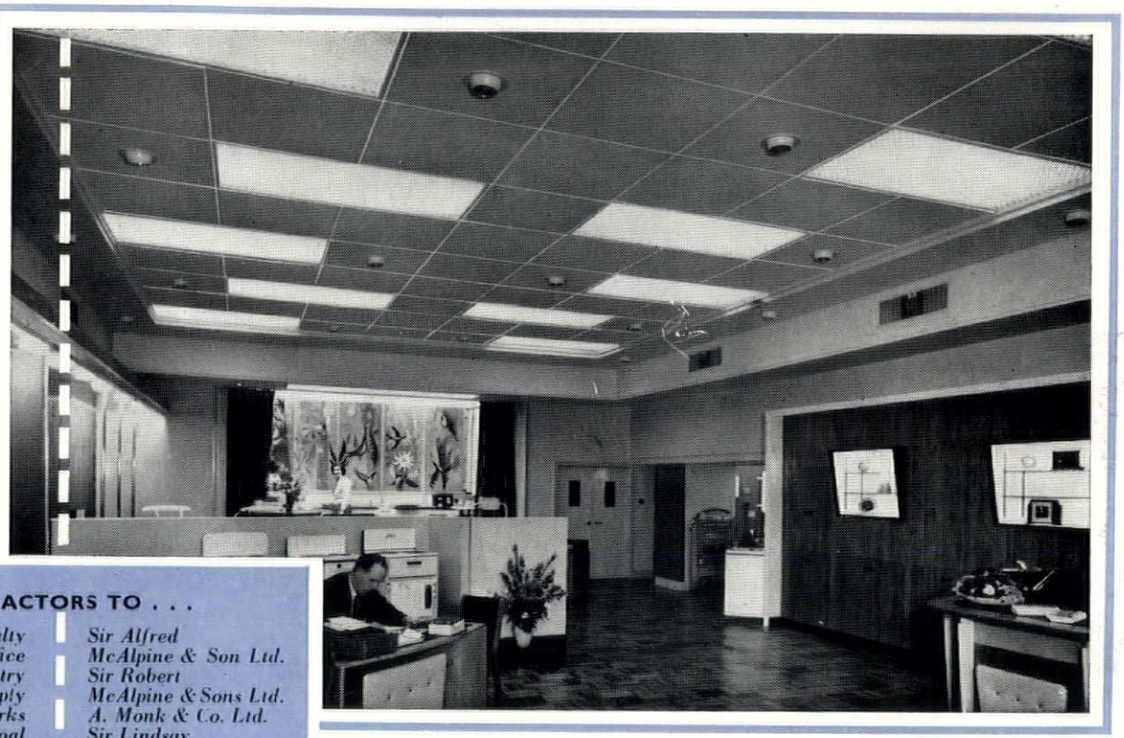

Architects: Gordon & Dey, F./F.R.I.B.A., Edinburgh.

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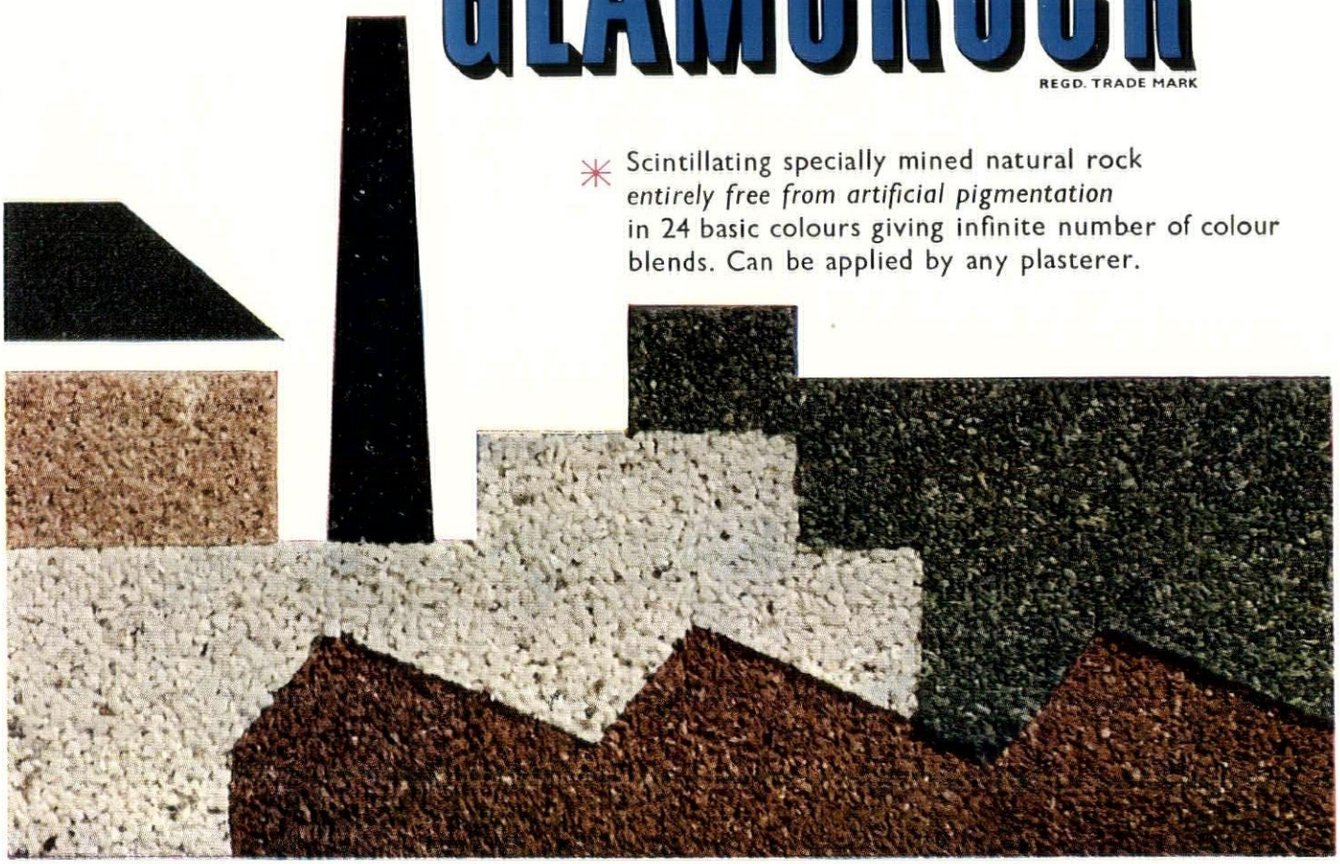

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HI-FI

by Philip Hickson

It is hardly necessary to explain the growing importance of high-fidelity home-music systems or what they comprise. Most people now have a good idea of what can be expected from a really first-class high-fidelity equipment as compared with the reproduction of records and radio obtainable from the ordinary commercial radiogram. Music lovers realize that to obtain the faithful reproduction of sound, the sense of 'presence,'—of being in the same room as the artiste and the realization of full musical enjoyment—it is necessary to have a full-blooded Hi-Fi system. High-fidelity systems, as such, comprise four basic parts: the radio unit; the record player; the amplifier and control unit; and the loudspeaker. The most important link in this chain is undoubtedly the loudspeaker and in this article it is only proposed to deal with one aspect of the loudspeaker and its inclusion as a built-in unit into a house or bungalow.

As is well known, a loudspeaker unit consists of a diaphragm—usually called the cone—which moves the surrounding air molecules and thus transmits the sound vibrations to the ears of the listener. This cone is energized by a coil of wire moving in a magnetic field according to electrical impulses received from the amplifier.

As the final musical results are determined by the amount of and by the way the air is vibrated, it follows that the shape and size of the cabinet or enclosure in which the unit is contained is of the utmost importance. Without going into technical details it is virtually impossible to provide realism with a very small cabinet. All sorts of tricks have been resorted to in order to improve the 'frequency response' (the range of musical notes and overtones reproduced) by fitting loudspeakers into cabinets with folded horns, resonating chambers and so on, but the aim of the designer is to try and provide something that will give the effect of the technically necessary large volume of air into a small space for convenience. In other words, trying to put a quart into a pint pot.

However, no cabinet design tricks or resonators can equal the reproduction afforded by an exponential horn of correct dimensions to reproduce properly the lowest musical notes. The sense of 'presence' and spaciousness is not really believable until heard when a column of air of the proper dimensions is being vibrated. One loses entirely that sense of the sound of a seventy-piece orchestra coming through a twelve-inch diameter hole. But, and this is a big but, a horn of this type needs a lot of room!

This, however, is the challenge to the architect; to be able to accommodate a horn of the dimensions needed and yet to make it a 'functional feature' of the house or to build it in in such a way that it forms part of the structure. Sir Hugh Casson recently accommodated a horn of very large dimensions as an architectural feature on the side of a bungalow for Lord Montagu at Beaulieu. Although so large and of entirely functional design, its contours nevertheless flow effortlessly into the lines of the building. The results it gives are quite exceptional. To get some idea of the size of horn required, table I gives the mouth diameter required for the lowest musical frequency it is desired to reproduce adequately, the length depends somewhat on the size of the loudspeaker unit to be used but in the second table lengths are given for speaker units of 12-in. and 15-in. diameters.

The large horn and speaker unit are, of course, primarily for the very low and medium low notes; the middle range, the treble and overtones are dealt with by other smaller speaker units which are fitted in the mouth of the large horn. The bass notes give depth, character and timbre to the music, while the treble notes and overtones give the quality, colour and subtle nuances of tone and

table I

lowest frequency	musical note	diameter of horn mouth	rate of taper*
16 cycles per sec.	C_4 below middle C	21 ft.	48 in.
24 ,, ,, ,,	G	15 ft. 9 in.	36 in.
32 ,, ,, ,,	C_3 below middle C	10 ft. 6 in.	24 in.
48 ,, ,, ,,	G	7 ft. 10 in.	18 in.
64 ,, ,, ,,	C_2 below middle C	5 ft. 3 in.	12 in.

* This is the spacing between the ordinates of the horn at which the area doubles each time.

table II

lowest frequency	length of horn using 12 in. unit (approx.)	length of horn using 15 in. unit (approx.)
16 cycles per sec.	35 ft.	32 ft. 6 in.
24 ,, ,, ,,	23 ft.	21 ft.
32 ,, ,, ,,	15 ft.	13 ft. 6 in.
48 ,, ,, ,,	9 ft.	8 ft.
64 ,, ,, ,,	5 ft.	4 ft. 3 in.

shade. To provide true low bass notes, one needs a lot of air movement and only a horn loading of adequate size can really provide this effectively.

From the table, it will be seen that the horn size required to reproduce effectively 16 cycles per second (the lowest organ pedal note) is so large as to be unwieldy except for a very big room of a very large mansion. However, the 32-cycle and 48-cycle horns can be accommodated in a number of ways in houses and rooms of fairly reasonable size.

It must be emphasized that although the various sizes of horns are 'labelled' by their lowest frequency, this *by no means* infers that the horn will not reproduce frequencies below this. What it means is that the horn will reproduce down to this frequency *without loss* of efficiency, the falling off after this is only gradual; for instance the 48-cycle horn will reproduce 16-cycle organ pedal notes very well indeed and considerably better and more naturally than any of the wood cabinets on the market. I mention this point especially as in case any high-fidelity enthusiast might be reading this article he might be tempted to think that the 'Lowest Frequency' headings to the columns in tables I and II were actually the lowest note the horn could reproduce.

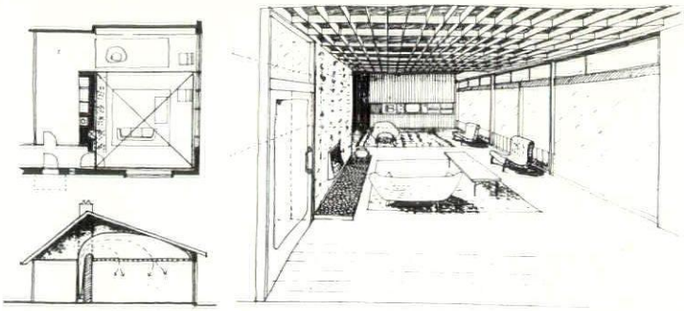
With regard to the loudspeaker used to drive the horn, obviously a high-efficiency unit of at least 12 in. in diameter for the smaller size horns (48 and 64 cycles) and 12 in. or 15 in. for the 32 and 24 cycle horns must be used. Even 18-in. units can be successfully fitted to the larger sizes, thereby shortening the length of the horn somewhat.

The actual cross-sectional shape of the horn, while desirable, is not essential that it should be circular; it can be octagonal, square, or even oblong within limits. The actual shape of the cross-section is not vital so long as the exponential law of the development is followed. However, there are technical reasons why it should not be long and narrow, particularly at the final opening. The horn itself can be straight or curved providing there are not too many convolutions. It must be made of a non-resonant material such as gypsum or plaster 3 in. or so in thickness. If made of wood, this must be fairly thick and the outside must be deadened by plastering over thickly.

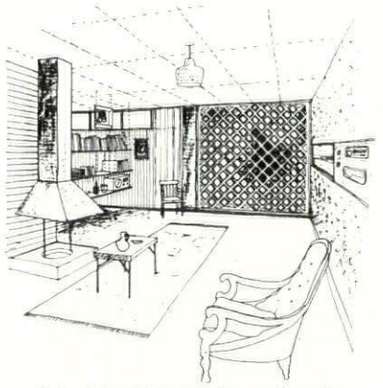
The mouth of the horn (i.e. the final opening from which the sound emanates) can 'feed' the room from a side wall—or from the ceiling—and the sketches show several arrangements of folded horns as well as straight horns 'feeding' in from the roof and an outside wall. In this case the horn can be made an exterior feature and it must be, of course, protected against the weather.

At the loudspeaker-unit end of the horn, arrangements must be made to house the unit and to fix it to the horn by means of bolts or screws. If the horn is a plaster one, these bolts can be embedded in the plaster at time of 'casting' or forming it. It is advisable to fill the compartment where the loudspeaker-unit is fitted with a sound-absorbent material such as Fibreglass after the unit is in place and before the back-plate of the compartment is attached. It is also desirable that this back-plate should have a few 1-in. diameter holes in it to provide the necessary pressure-relief for the movement of the cone.

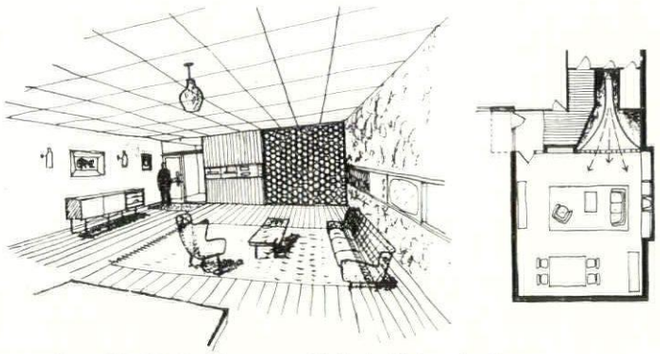
If there are any problems, specific or general, that may occur to interested readers, I shall be glad to reply if they will write c/o the Editor.



1, *horn in roof above louvred ceiling.*



2, *bachelor flat installation; with grille over horn mouth.*

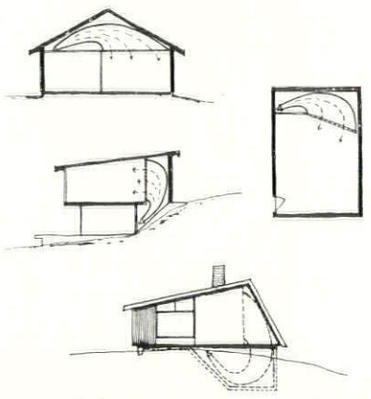


3, *another wall installation, horn recessed behind grille in end wall.*



4, *a hi-fi pagoda.*

Illustrations by D. MILLS, ARIBA



5, *typical arrangements of a folded horn.*

COST ANALYSIS AND COST PLANNING *by John Carter*

'Cost analysis' and the other side of the penny, 'cost planning,' are primarily practical techniques which aim at enabling the architect to control the cost of a design. Their increasing acceptance, among both architects and quantity surveyors, is in itself a most significant cultural event, introducing, as it does, what is almost a new mode of thinking into the design process. In the article below, John Carter, the Architects' Journal's *editor in this subject, explains exactly what these techniques are and how to use them.*

Cost Planning

One of the main uses of analyses is to compare the prices of one building with those of another, but first the prices must be brought to a common basis, because buildings differ in size and total cost. And the prices must also be related in some way to what the customer is getting for his money, because amounts of cash are, by themselves, meaningless. The common basis of the customer's goods is the square foot of floor area, so that £25 worth of ironmongery in a 2,000 sq. ft. house appears as 3d. per sq. ft. of floor area. A list of all such prices affords a sensitive picture of the way in which the money spent has been distributed—indeed, they can be plotted in graphic form, (see table p. 285), like an engineer's stress diagram, portraying what Grenfell Baines has called a 'cost stress pattern' of the building.

Before the advent of cost analysis we thought about costs as something detached from architectural thought. The figures we used represented either *space* (3s. 8d. per ft. cube for chapels, 5s. 6d. for cinemas, 4s. 9d. for fire stations and so on) or they represented *materials* (32s. 9d. per yard super for reduced fletton brickwork in cement lime mortar, 59s. 6d. per yard cube for mass concrete in foundations, 18s. 2d. per foot cube for timber framed in floor joists and so on).

But cost analysis presents prices with quite a new meaning, for it shows the cost not of space or materials, but of architectural notions, of architectural functions. Where it was characteristic of the old idea of costs that you had to design your building in some detail before you knew its cost; cost analysis enables a target cost to be set in advance and the distribution of that target cost to be controlled. Thus where formerly the architect defined only the functional and performance standards his design would have to meet, he can now also define the *cost* standards of these functions. A figure of shillings and pence becomes an index of attainment, interdependent with other indices of attainment (sound insulation, weight bearing capabilities, illumination levels), integral with the complex of knowledge and ideas that a building signifies.

Mechanics of Analysis

There are one or two explanations to be made about the meaning of cost analysis figures, but to complete the picture sketched above, we should

[continued on page 285

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Details and Illustrations appear on pages 263–8

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continued from page 284]

describe the procedure of planning the cost of a projected building.

Assume that the building owner has given both his space requirements and the amount of money he is prepared to spend. Assume also that you the architect have available the analyses of one or two similar projects which, if not your own buildings, are well known to you. By consultation with your quantity surveyor and other sources of advice, you have decided that 80s. per sq. ft. is a likely total. You deduct a 'safety margin' of, say, 2s., in case there are adverse 'market conditions' when it comes to tendering. Then you deduct something for the normal Contingencies and Preliminaries items. The sum you have left must now be split into separate elements each representing a functional aspect of the design. This can be done at quite an early stage in the working out of the sketch design—the stage when the main lines of the plan and the relationship of the units are becoming fairly clear and you can get a rough idea of the areas of walling and flooring. Let us in fact take *external walling*. In the analysis you are using to build up the cost plan, walling cost 8s., its area was 0.75 of the floor area and its construction was a bit more extravagant than what you have in mind for your new building. First you do some arithmetic to show that the walling cost 10s. 8d. per sq. ft. of *wall* and then, because you are going to try a more economical method of walling, you deduct from this, say, 6d., leaving a target cost of 10s. 2d. per sq. ft. of wall. This is then multiplied by the *wall* area in the sketch design and the product divided by the floor area so that it can be related to all the other element costs you are going to work out.

Procedure for all the elements is more or less the same as this—an arithmetical adjustment for differences in *quantity* of element between the analysis you are using and the sketch design; and an adjustment for differences in *quality* which will be based partly on experience and partly on arithmetic. It used to be quite common when explaining cost planning to people for the first time, for them to be scornfully critical when they realized that the procedure still required judgment and experience—as if the whole point about new methods was to omit the possibility of human error altogether. They quite forgot that, before cost planning was invented, one might involve one's client in two-thirds of his professional fees before he could be given any assurance of the cost at all, and that the architect, in hesitating between this or that system of floor construction, had no means of knowing what effect his choice would have upon the total commitment except that *this* might push it up a bit more than *that*.

Having worked out target costs for every element, they must be totalled up to see how they relate to the total cost—80s. per sq. ft. If they exceed, adjustments will be needed. If the excess is a large one it may mean that the floor area assumed just cannot be bought for the sum of money allowed and either the one must be reduced or the other increased. Discussion of this question with the client can be based on the figures calculated. If the excess is moderate, it is only necessary to prune some of the element cost targets—which ones depending on the knowledge of requirements, methods of construction and prices.

The result of all this work will be the draft cost plan—a list of prices against element headings. It comes into use when the sketch design is becoming more realistic, when actual systems of construction are being considered. For example, the type of external walling proposed will be priced by the quantity surveyor—to see whether it can be done for the sum of money allowed (cost per sq. ft. of floor area by floor area). Subcontractor's estimates for the heating installation will be compared with the heating target; similarly with roofing estimates, sanitary fittings quotations and structural consultants estimates for the frame. As this work proceeds it may become clear that some of the target costs are too low and others perhaps too high, so periodically there should be an overall cost check leading to a revised cost plan. A system in which the targets are adjusted according to the skill discovered in hitting them may seem un-English, but the point about it is that adjustments are interdependent within a fixed total. If we add to the cost of the windows, the same amount must be taken off somewhere else. Similarly, if it is found that cold water services can be provided for £500 less than was anticipated, we can spend the extra money on, say, ironmongery. It is, perhaps, the most valuable feature of all in cost planning that it gives control over the distribution of money throughout the design phase—and in a remarkably precise way. It is not a method of depressing costs to their lowest.

Sooner or later a point will come when the construction of the building has been worked out for all parts—with only a few points of detail remaining to be settled. For each of the 30 or so 'elements' of the building there will be an estimated cost—based in some cases on the quantity surveyor's calculations, in others on sub-contractors' and suppliers' quotations. They may differ from the original cost plan—perhaps considerably, but the main value of cost planning has not been lost because the prices have been arrived at by adjustment relative to each other, within a known total, and thus expenditure is still under *control*.

The procedure described above is to some extent an ideal one. In practice there are some untidy patches, mainly due to the fact that the technique is still very new. For example, in one private office it was decided to cost plan a building for which no appropriate analysis was available—at least no analysis of which the architect had sufficiently detailed knowledge to use with confidence. What he did was to take six published analyses of similar jobs and average each of their element prices. He was well aware of the fallacy of this method, but it did provide a starting point from which to get at 'real' element targets. As ideas on constructional method and material became clear in the design phase, estimates of their cost enabled the 'average' targets to be corrected. Only the main items of expenditure were targeted but this partial cost planning proved itself at the tender stage. The same office has now cost planned more than half a dozen projects, each one with more assurance than the last. The numerous unit prices produced by approximate estimating in this period have been filed in a 'cost bible' which is used both for calculating target prices and for preparing further estimates.

Presentation of Analyses

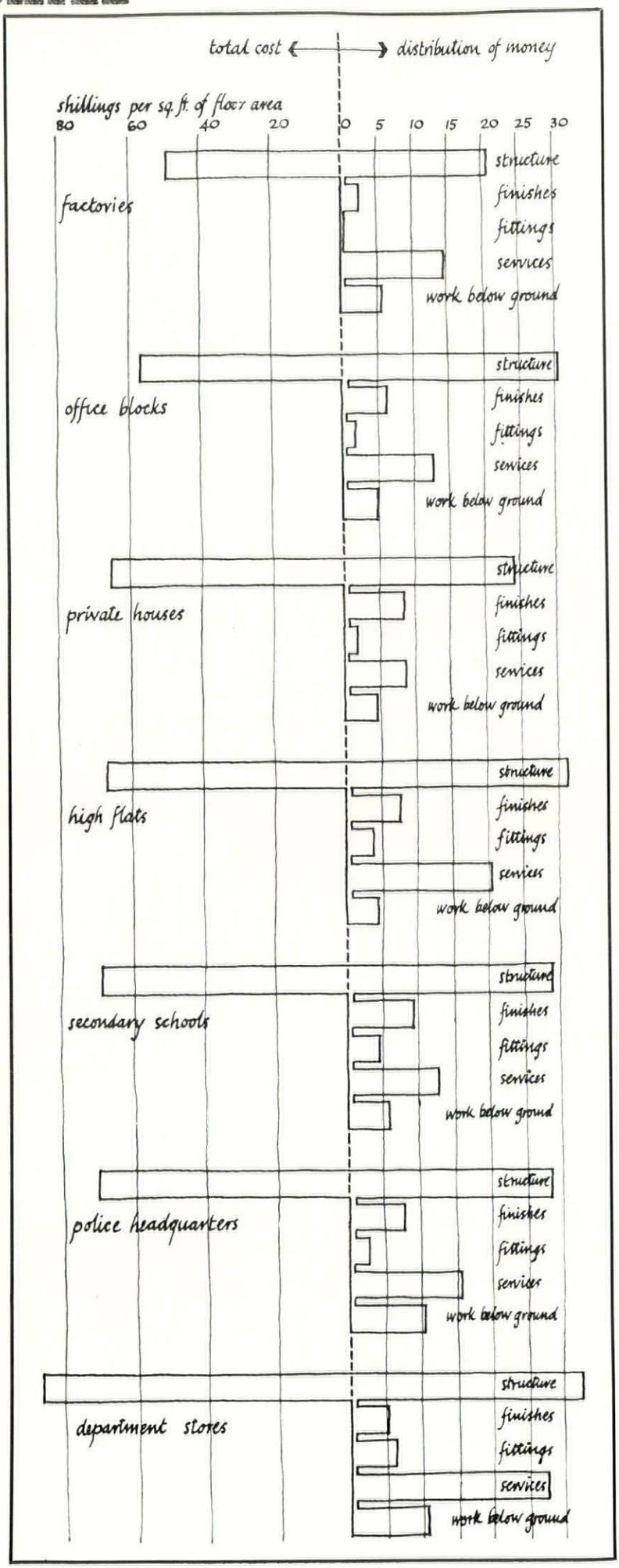
Analyses are normally prepared from trade bills of quantities that have been priced by a builder by collecting the various priced items in the bill under element headings on an abstract sheet. Complications do, of course, occur. In a block of flats where walls and floors are of reinforced concrete constructed by a specialist sub-contractor, separation of the cost into the elements *external walls*, *internal walls*, *upper floors* and *staircases* could prove very laborious. Similarly, with systems of curtain walling with opening lights incorporated, isolation of the element Windows might not be easy. Problems of definition also arise. Should brick and concrete heating main ducts go with *heating installation* or with *work below ground floor level*? Should the cost of closing the cavity of a wall at windows go with the element *Windows* or with *Walls*? Problems of this kind are mainly of significance where two or more analyses are to be compared. Consistency of treatment is, perhaps, of more importance than the actual solution of the problems.

Except in individual offices, there exist so far no detailed definitions of what items each element should include, but a study group convened by the AJ is at present preparing such a guide—for published analyses.

To record and present an analysis so that it is intelligible and useful, three kinds of information are needed—the Quantity, the Quality and the Cost of each element. *Quantity* can be given as sq. ft. of partition or floor finish; numbers of different kinds of electrical outlet, numbers of different kinds of sanitary fitting, etc. *Quality* can be given by brief specification notes describing the materials used and *cost* by shillings per sq. ft. of floor area. To complete the picture of the economics of that particular job, the circumstances of the contract should be given also. The tender date,

specimen cost analysis *part of a cost analysis from the* Architects' Journal. (*Old People's Home at Plymouth, city architect: H. J. W. Stirling.*)

element	cost per sq. ft. s.	d.	specification
hot and cold water installation .	3	4	hot and cold to each bed/sitting room basin. Roof space utilized as circulating duct. Hot water circulation assisted by pumps
sanitary fittings . . .	1	4¾	A lavatory basin to each bed/sitting room. Slop hopper to dirty linen room 33 lavatory basins, 6 single sinks, 2 double sinks, 4 foot baths, 5 baths, 9 w.c. suites, 1 slop hopper, 3 urinals
heating and ventilation . .	3	2¼	accelerated low pressure hot water by radiators in all rooms except entrance hall, dining room and ground floor sitting room, where there is coiled floor heating. Open fireplaces in sitting rooms. Extract fans to kitchen and drying room. Natural ventilation to bed/sitting rooms
gas installation . . .		1	gas points to cooker, hot cupboard to servery counter and eye level grill. Poker points to two sitting rooms
electrical installation . .	1	11¼	Each bed/sitting room has light switch and bell push to call system by bedside, with socket outlet below, 18 in. from floor level. Call system of luminous type and once started will not stop until switched off at the source of the call type of point and number of each type: Lighting, 110; 13-amp. outlets, 52; clock, 5; motors, 4; cooker, 1; fire alarms, 6; call system, 31
fire-fighting equipment . .		¼	Four hosereels fixed into positions recommended by the fire officer, two on each floor. Additional equipment for boiler room and kitchen
total of services	10	3¾	
drainage	2	1	one-pipe plumbing
other elements not shown above		3	kitchen equipment, gas: cooker, hot cupboard to servery counter and eye-level grill. Electric refrigerator and cooker to matron's kitchenette
total cost per sq. ft. of floor area = £31,282 / 12,579 sq. ft.	=49	8¼	



cost distribution *of 7 types of building compiled from cost analyses published in the* Architects' Journal. *Left of centreline is the total cost and right its distribution in 5 major groups. Notice that, except for buildings with basements, work below ground remains remarkably constant; that, structure apart, the largest proportion of cost is taken by services (mainly sub-contracted items) and that fitting takes the smallest part of the cost. It is revealing to compare this distribution of expenditure with the distribution of the architect's interest and effort.*

the duration of the contract, whether labour had to be imported, whether the market conditions were adverse and so on. There should also be plans and a photograph.

For presentation of the prices some think it better to give not only the shillings per sq. ft. of floor area, but the cost of the element in £'s and the rate per sq. ft. or per number of the element itself as well. The main purpose here is to provide information for approximate estimating. There is also a wish, particularly among architects, to see the element costs as percentages of the total, but this can be misleading. The cost of the plumbing installation may be the same for two houses of different total cost, but one would appear as a smaller percentage than the other.

There is some conflict of opinion among surveyors and architects on what prices should be presented and how they should be presented. There is an obvious advantage in using final account figures rather than tender prices, since most contracts are subject to variation. But final accounts take notoriously long to settle, after completion, and incorporation of variations into the analysis may add to the labour of preparation.

The objection has been made that to base a cost plan on an analysis which itself represents perhaps the lowest of six tenders is not very realistic, especially if the tenderer put all his profit in the preliminaries and 'loaded' the rates for excavations and foundations—in order to get a fat first certificate. Clearly, analyses would be much better if bills were always priced in the same way and if final account prices were used, but to delay the introduction of analyses into the profession until these conditions can be fulfilled would mean remaining too long in the dark. In any case it can be held that a builders' tender represents a firm offer to do certain work for a certain sum and is, therefore, not a fictitious figure. Nor is there any reason why quantity surveyors cannot use the same experience and knowledge in interpreting bill rates that they used before cost analysis came on the scene.

So far we have described what cost analyses are; how they can be used to plan the cost of a project in advance and how they are prepared. What else do they tell us?

Cost Distribution

Apart from those in MOE Bulletin 4 (Cost Study) which was seen by a relatively small number of the profession, the first analysis to be published appeared in February, 1955, in the *Architects' Journal*. Since then about 100 analyses have appeared representing some 15 different types of building. We are by now so used to them that we forget what it was like not to know how money was distributed in buildings. The actual figures challenge many of those assumptions which lie at the root of architectural theory and make a revealing commentary on accepted procedure.

All architects are familiar with the post tender reduction bill—that 'morning after the night before' when the bold decisions of the design phase have to be revised to clip away the excess thousands of pounds.

A fine floor finish may give way to cheap tiles, hardwood joinery to softwood, 3 coats of oil paint to 2 coats of distemper, Swedish ironmongery to British BMA. Yet cost analyses reveal these items to be quite small proportions of the total price. Floor finishes may take 2s. 6d. out of 70s. whereas the roof cost in the same building is perhaps 6s. 6d. Quite a small reduction of the roof cost could lower the tender by more than a drastic reduction of the floor finish cost, and with a less adverse effect on the future maintenance costs of the building. But at post tender stage it is too late to reconsider the roof. The advent of cost analysis shows how very much in the dark we were in the past, designing this or that part of a building without knowing what it would cost, without knowing what it *ought* to cost, without knowing what proportion of the total money its function and purpose should justify.

When published analyses first began to appear, one of the surprises was the large proportion taken by services—heating, electrical and plumbing work. In some building types these together often cost as much or even more than the structural frame, even though the frame appears to be the biggest design problem and the most difficult construction task on site. Why is this so—or rather why are we surprised that it is so? It could be that the great emphasis laid upon economical structure and architect-engineer collaboration in the 1930's has caused services engineering to be left behind in the general progress towards economy. It could be that because services—pipes and cables—have no 'form' in the architectural sense and are mostly buried away from sight, architects are not interested in them aesthetically and therefore have not lavished their skill or encouraged their engineers to improve design economy. Has the curiously high relative cost of services anything to do with the fact that there are fewer independent consultants in this field than in the structural field?—or with the fact that applied physics and chemistry have little part in architectural training? Has it anything to do with

[continued on page 287







These photographs show the various uses to which this one room can be put. The work was commissioned by Brooke Bond Ltd. and the original Heal design was carried out by Heal's Contracts Ltd. Write for booklet "Interiors".

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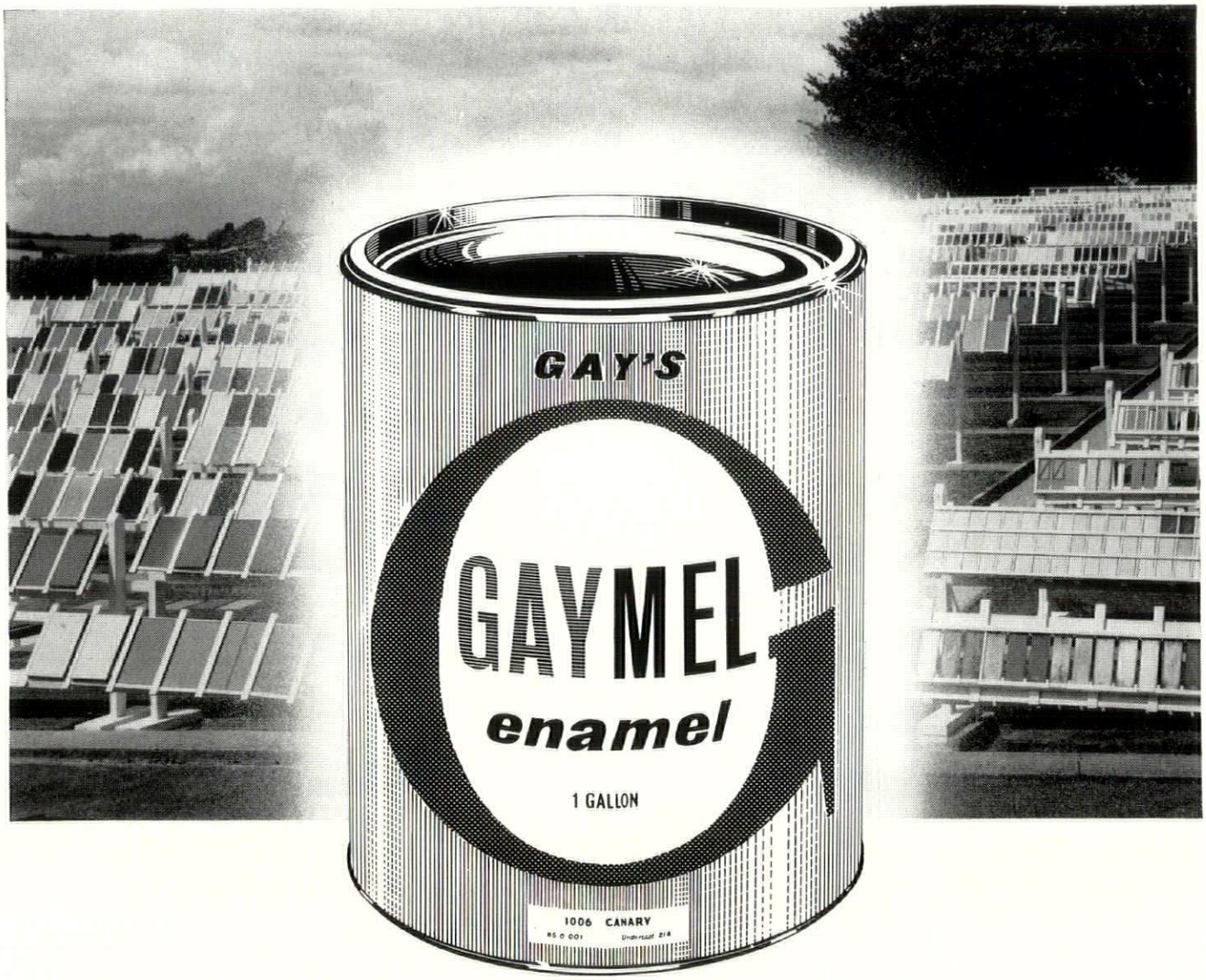

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continued from page 286]

element	cost per sq. ft. s. d.	specification
internal partitions . . .	2 9.4	6 in. honeycomb gypsum plaster panels self finished both faces fibrous plaster column casings hardwood sliding folding doors
6 in. plaster panels — 323 sq. yds. sliding folding doors — 23 sq. yds.		
doors (internal) . . .	0 10.2	2 in. glazed hardwood flush doors pressed metal frames anodized aluminium door furniture.
single — 11 double — 3		
w.c. doors and partitions . .	0 1.1	1¼ in. softwood flush doors 1½ in. by 4½ in. softwood frames ironmongery 3 in. honeycomb gypsum plaster panels self finished both faces
no. of cubicles — 2		
wall finishes	0 6.4	86 yds. sup. wall tiling behind 12 sanitary fittings
floor finishes	3 11.9	screeds: 1⅜ in. cement and sand finishes: 170 yds. sup. p.v.c. sheet 475 yds. sup. studded rubber 27 yds. sup. cement and sand paving 21 yds. sup. heather brown quarry tiles 5 yds. sup. paving slabs fibre link mat and steel mat well frame tile and hardwood skirting
ceiling finishes	3 6.1	1½ in. suspended vermiculite 3 ft. 4 in. by 1 ft. 8 in. panel ceiling ⅛ in. pressed steel painted ceiling closures
decorations	1 10.9	walls (plaster face) — 3 oils steel windows and external doors } ditto ceilings { no decoration hardwood, internal doors and fittings { two coats plastic polish softwood — 3 oils
cloakroom fittings . . .	0 1.2	No. 140 hat and coat hooks on softwood rails

quantity, quality and cost *on the left, a page from (Ministry of Education) Building Bulletin no. 4 (2nd edition) showing a way of presenting cost analyses to express* quantity, quality *and* cost *of each element. Published by permission of the Controller, HMSO.*

the practice of not measuring 'services' items in the bill of quantities in the same detail as we measure structural work?

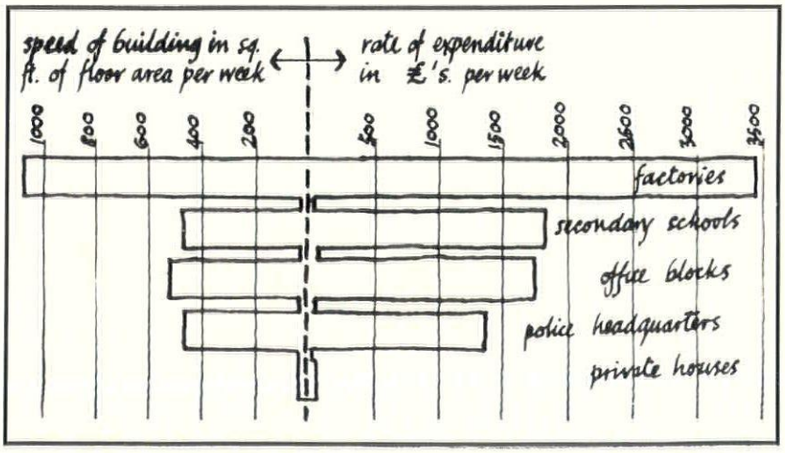
Whatever the answers to these questions, it is fairly clear from cost analyses that we should investigate the whole question of services more closely and critically than we do, to elucidate some of the factors which determine the economy of heating and lighting our buildings, of providing the means to wash, cook, dispose of waste and to relieve ourselves.

Cost Planning in Practice

The technique was first used by the MOE Architects and Building Branch in 1951 on their development school at Wokingham. County authorities were encouraged to adopt the method by the issue of Building Bulletin 4 (Cost Study) in 1951, but few of them did so until rather later on. 1956 saw the beginning of an increasing interest in the method among architects and surveyors generally—a few of them in private offices. The original hostility which greets any proposal to depart from familiar procedure has now died away and there is general agreement that 'some form of cost control' is necessary. But agreement far exceeds practice and the reason given by individual people is for the most part that 'they just haven't the time.' There are two points to be made about this. One is that anything new will take longer while it is new. The second is that those offices which employ cost planning find that it has a disciplining effect on the whole design process. A reduction of the time spent on adjusting high tenders would be expected, since that is one of the objects of the technique, but cost planning also has the effect of forcing earlier consideration of problems that might otherwise be left until later and it compels a more detailed and comprehensive investigation of construction methods. This comes about because all items comprising the total cost must be considered if the total is to be assured and because the quantity surveyor must have a fairly good specification on which to estimate or get quotations for alternative methods.

Indeed, offices which employ cost planning consistently soon realize that the context in which the work takes place must itself be planned in advance if full value is to be realized. The functional breakdown of a job which the cost analysis headings provide forms an appropriate division of tasks for the designers and it seems only a logical step from this that the time to be spent on each task should be planned in advance so that, for example, decisions about the kind of frame will be in step with decisions about the kind of walling or windows. Planning of this kind inevitably brings up questions of the kind of drawings and the way they should be done. If decisions about the kind and cost of one element must depend upon decisions about other elements then it is natural that working drawings remain in draft form until virtually the whole building has been thought out on paper. There arises then a sharper distinction between working drawings, in the literal sense, and the drawings made for issue to the builder (or 'production' drawings). And this distinction makes us wonder whether the kind of drawings we customarily issue are really the best way of putting our ideas across. It was this that led to the idea of 'operational' drawings—a set of standard size sheets, each one of which represents the work of a distinct site operation—showing only the information necessary for that operation. Now there is a close correspondence between 'elements' and 'operations' so that we begin to see that a breakdown originally worked out to express expenditure can impress its pattern on efforts, events and documents. That a method of controlling the distribution of money is only one detail in the system of organizing the work of the whole office. The architects who say, truthfully and sincerely, that they 'just haven't the time' to cost plan are expressing the fact that, for the most part, the profession is trying to discharge complex tasks within a system of organization evolved by a previous simpler age. Rather as if a team of men making motor cars were to try to organize themselves and their work in the same way as carriage builders of the 1890's.

There is a curious irony here, for the architect's strongest claim on society is his skill in planning, in coordinating space and material to meet a complicated diversity of needs and functions—a skill which, one feels, would naturally extend to the planning of time and events. When the idea of such planning, of *management* does take root in the profession, as soon it must, we may well find that the architects bring to it a humanity, a cultural authenticity absent so far from other, better developed fields of management.

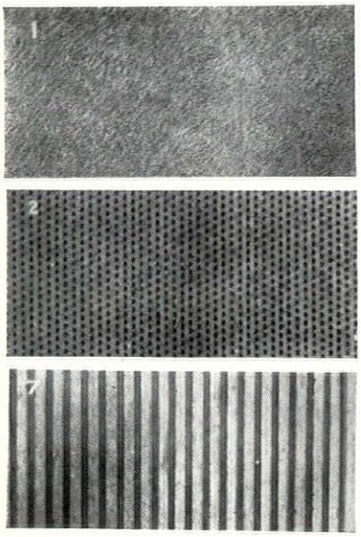


comparative speed and cost *on the left, further information compiled from published analyses. Horizontal columns to the left were plotted by dividing the number of weeks in the contract into the total floor area; columns to the right by dividing the weeks into the cost. The diagram represents averages of several buildings.*

THE INDUSTRY

Textured concrete

The texturing of concrete, like the application of colour to a building, is a facility which architects must use with caution. Nevertheless, it is always of interest to know what is to be got and how to get it; and a new publication by the Natural Rubber Development Board entitled *Casting Concrete against Textured Rubber* tells precisely this. The object of this booklet is to outline the results of experimental work which has been carried out jointly by the NRDB and the CCA since 1949. It is concerned both with the technique of handling and with the strength and limitation of the medium. For the architect, the first motive for texturing concrete is to give a particular 'value' to a plane; it is worth remembering, however, that texturing improves weathering by confining hair cracks. Included in the booklet is a review of the patterns which are so far standard. Three of the most successful we show here: the numberings being for identification. The criterion of choice seems to be that when the finished effect is fairly described as a 'texture' it is successful, but when it is more truly described as a 'pattern' it is hazardous. The booklet may be obtained from the *Natural Rubber Development Board, Market Buildings, Mark Lane, London, E.C.3.*



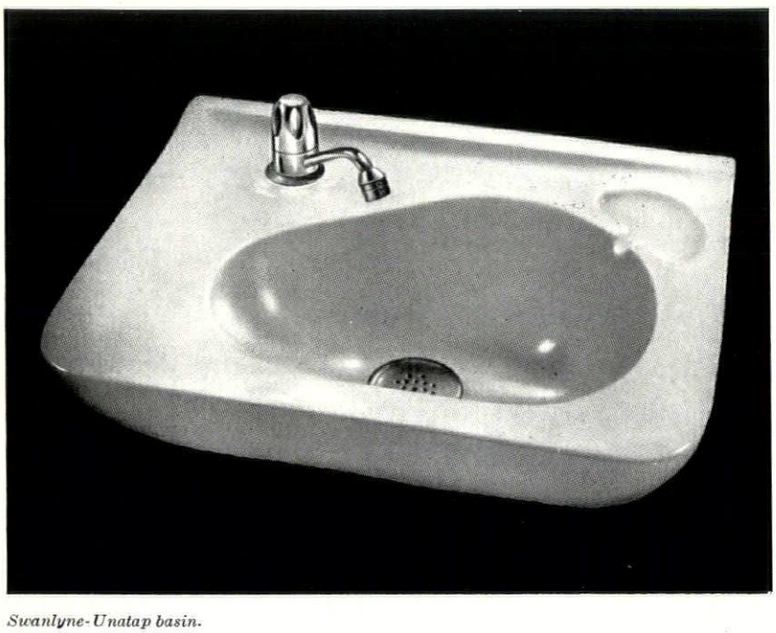
textured concrete.

Glass cladding

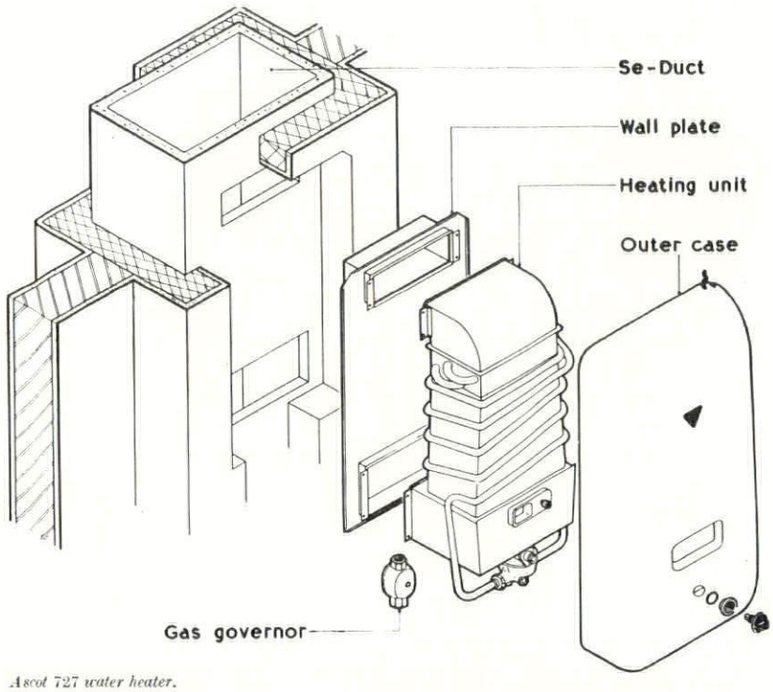
The handsome, more-colourful-than-life brochure which Pilkingtons have got out on glass cladding (edited by Thomas A. Markus, late of MIT) has one proposal to make which is quite outside the glass curtain economics controversy and concerns the incorporation of advertising within glass panels. Though neon signs superimposed on a building can have great charm (analogous to that of surcharges on postage stamps) they have the inherent disadvantage that they are open to the weather, that they are the devil's own job to keep clean, and that their presence makes the cleaning of the building behind virtually impossible. They also have the fortuitous disadvantage that they are by custom normally removed from the architect's control. This new turn in technical events gives the architect an entry where he has never been before and where—if he enters into the spirit—he ought to do very well. So that this thought may strike them with full force, they should turn to the brochure itself, which may be obtained from *Pilkington Bros. Ltd., St. Helens, Lancs.*

Spray basin

We have already commented on the 'Unatap' spray tap. It has now been realised that washing by spray is a very different process from washing by immersion, requiring a different shape of basin. Two conditions have to be met: first to receive the cone-shaped spray, second to make it possible to wash your face in the spray without hitting the tap. To meet these conditions Alfred Goslett & Co. have designed their 'Swanlyne-Unatap' basin with an asymmetric kidney-shaped bowl. Made of vitreous china, and available in white and colour, it has no overflow and a grated waste in place of plug and chain.
Alfred Goslett & Co. Ltd., 127-131, Charing Cross Road, London, W.C.2.


Swanlyne-Unatap basin.

Ascot 727 sensibly lists other manufacturers' products which can be used on an Se-duct. It is interesting to notice that when this was published (about the time of the Building Exhibition) there were four convector heaters, two forced draught heaters and a clothes drying cabinet; but there must now be more than this.
Ascot Gas Water Heaters Ltd., 255 North Circular Road, N.W.10.



Ascot 727 water heater.

Ascot on the se-duct

A factor which has always discouraged the use of gas water heaters in multi-storey buildings has been the need to supply a separate flue to each appliance. The first step to overcome this was the introduction of the balanced flue, a system whereby an appliance could both take its air and discharge its fumes outside the building. From the planning point of view, a disadvantage of the balanced flue is that an appliance must be fixed against an outside wall. Another disadvantage is that the flue terminal, however unobtrusive it may be, is one more little 'incident' on the façade which has to be accommodated. The next stage was the development of the Se-duct (named after the South Eastern Gas Board, who pioneered its use) which is really an adaptation to gas of the principle of the solid fuel 'Shunt' or 'branched' flue. The advantage of the Se-duct is, of course, that appliances can be fixed to an inside wall. It is no use having an Se-duct, however, unless you have equipment which has been designed to discharge into it. The first firm to manufacture a gas water heater on the balanced flue principle in this country were Ascot, who developed their Ascot 715 instantaneous water heater for this purpose. An instantaneous water heater is an admirable piece of equipment to use on this principle, as it takes, comparatively, a lot of air (the Ascot 715 is rated at 97,500 Btu./hr.) and when it has to take this air from the room special ventilation may be needed. The Ascot people have now adapted the Ascot 715 for use with an Se-duct, calling this new version the Ascot 727. Since the economy of an Se-duct installation must depend on its being usable by other than water heaters, their new brochure on the

Give rock a bad name

Architects who are sensitive to the overtones produced by a name may have been put off for ever when they first heard of 'Glamorock.' If so, this is in all probability a pity, for it promises to be the most interesting rendering that has come on the English market for a long time. Surprisingly enough, though the material is obtainable in about 20 different colours—mostly blacks, browns and greens—these are all produced by natural rocks and for this reason, it is claimed, will not fade. These rocks, crushed to three different finenesses to produce three different finishes, are premixed with a clear setting plastic cement and are applied in two coats to produce a finished surface which is only a matter of $\frac{1}{16}$ in. thick. The effect is admirable—provided, of course, that the surface behind is smooth and regular; for as it is more nearly allied to a 'texture paint' than to a rendering in the traditional sense, it cannot, of itself, make good irregularities. The price varies with the finish chosen, but the *finished* cost (i.e. labour plus material) is given at between 15s. and 17s. 6d. per square yard.
Surface Protection Ltd., 18 *London Street, EC3.* (*Royal* 8511.)

Infill panels

In our review of panel infillings for curtain walls published in the September 1957 issue, we lamented the fact that we were unable to include the panels of William Mallinsons because in our view these were not 'standard' panels which could be bought off the peg. It was pointed out to us subsequently that the

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It all adds up to Concrete—

In the Alderley Park, Cheshire, Research-Laboratories for I.C.I.'s Pharmaceuticals Division

(*Architects:* Harry S. Fairhurst & Son, F A R I B A)

the forms of structural design were conditioned by the various functions of the buildings. For instance . . .



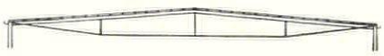
the Animal Houses have *cantilevered tapered plate* with hollow columns



the Wash-up unit a *prestressed monitor roof*



the Administration entrance hall *banded plate*



and the Workshop *welded trussed beams*

—nearly 1000 tons of reinforcement designed by

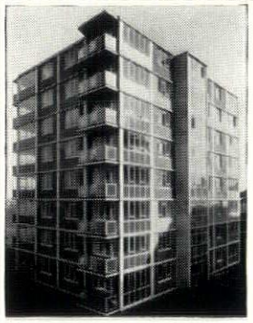
Truscon

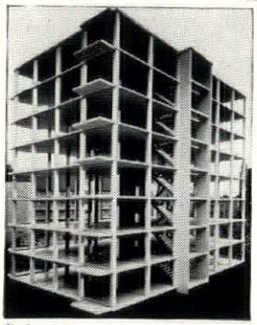
The Trussed Concrete Steel Co. Ltd., 35/41 Lower Marsh SE.1 Telephone: WATerloo 6922

ENGINEERING

PRE-CAST

The Plate System by Truscon





One of the finished blocks of Council Flats, Millpool Hill Estate, Birmingham (A. G. Sheppard Fidler, F R I B A., City Architects) compared with the model of its Plate Structure.

When we design and construct in the Plate System we provide a concrete frame without beams. We do not do this by making them into walls, or by using heavy, deep floors, or drop panels with flare-heads to the columns; but simply by designing the beams away. The Plate System is at its best with a regular grid, yet it is often the only reasonable solution when columns are irregularly placed.

The Plate System does not compress an architect's work within the framework of a stereotyped plan nor does it attempt to do his work for him. It is more than a system of design, for combined with careful planning and the use of cranes and precast components we have made it a very rapid system of construction. It is cheap in cost but not in appearance.

The outstanding application of the Plate System is to flats and offices, and recent developments have widened its scope to industrial work.

The Trussed Concrete Steel Company Limited, 35-41 Lower Marsh, London SE.1. Telephone WATerloo 6922

CONSTRUCTION

HY-RIB

Air Traffic Control Building (The Central Block), London Airport Architect: Frederick Gibberd, F R I B A Consulting Engineers Sir William Halcrow and Partners

Truscon Theorem 5



Required: Fine Floors for a fine building

The Central Block at London Airport is a fine building

.. Truscon Floors were used

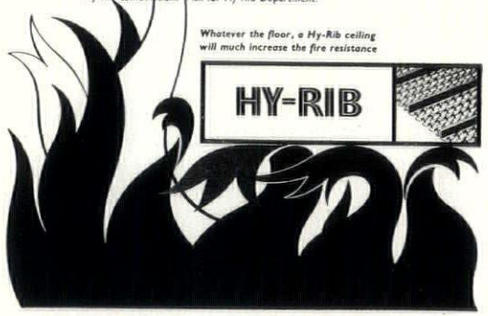
q.e.d. Truscon

The Trussed Concrete Steel Company Limited, 35-41 Lower Marsh, London SE.1 : Telephone, WATerloo 6922

HY-RIB ceiling survives four-hour FIRE test

Plaster on a Hy-Rib base is true and sound — held fast and fortified by the steel mesh and tangs. And it is a very efficient fire shield. At the Fire Research Station recently a thin concrete floor — an uncertainty for a one hour rating — qualified *with a Hy-Rib ceiling close below* for four hours fire resistance. In the last stages of the test, the furnace temperature topped 1120° C. yet Hy-Rib still held the basic hemihydrate gypsum plaster intact. We will gladly advise on the fire resistance potential of any floor and Hy-Rib combination. Ask for Hy-Rib Department.

Whatever the floor, a Hy-Rib ceiling will much increase the fire resistance



by Truscon

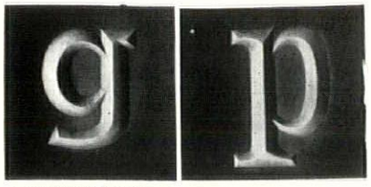
The Trussed Concrete Steel Company Limited, Truscon House, Lower Marsh, London SE.1. Telephone: WATerloo 6922

continued from page 288]

same applied to the products of several manufacturers whose names were included. To make the nature of their service to curtain walling clear, Mallinsons have now standardised the specification (but not the bounding dimensions) of a number of panel types, marketing them under the trade name 'Mallite.' These we describe in tabular form below. It must be noticed, however, that the U value is given for the *panel*, whereas it ought strictly to be applied only to the whole wall. The whole subject of what U values we may expect from completed curtain walls is veiled in mystery and for the time being we must make do with separate values for the component parts.
William Mallinson & Sons Ltd., 130-150, Hackney Road, London, E.2.

Letters carved in slate

In the article on *Small Scale Lettering* in the February issue we illustrated the lettering shown right, describing it as 'cut stone letters.' They were in fact carved in slate. Ralph Beyer, who sculpted them, has developed the *genre* primarily for *external* use, on fascias, etc. The letters can be fixed to a building or cut *in situ*, the basic cost for cutting varying between 6s. 6d. and 19s. per letter. The cost of polished slate is 30s. per sq. ft. for ¾ in. thickness.
Ralph Beyer, c/o Artists Management Association, 11, Dacre Street, London, S.W.1.



carved slate letters.

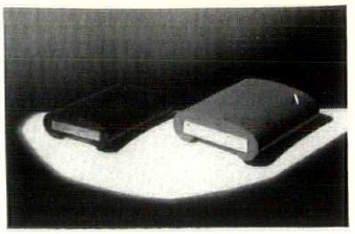
specification for Mallite panels.

facing	maximum dimensions		maximum recommended size	core material	approximate thickness	weight	thermal insulation	
	length ft.	width ft.	sq. ft.		in.	lbs./sq. ft.	K(a)	U(b)
vitreous enamelled steel	8	4	24	1 in. cork	1 1/16—1 3/16	3—4	0.30	0.20
				1 in. fibreboard	1 1/8—1 3/16	4—5		0.25
				¾ in. ..	¾—1 1/8	3½—4½	0.37	0.27
				½ in. ..	½—⅞	3—4		0.30
				½ in. asbestos (c)	½	4	0.75	0.60
wood veneer	10	4	24	1 in. cork	1 1/16—1 3/16	2	0.30	0.20
				1 in. fibreboard	1 1/16—1 3/16	2½		0.25
				¾ in. ..	11/16—1 1/16	2¼	0.37	0.27
				½ in. ..	⅝—11/16	1¾		0.30
				½ in. asbestos (c)	⅝	2	0.75	0.60
aluminium plain stucco ribbed	10	5	24	1 in. cork	1 1/16—1 3/16	2	0.30	0.20
	8	4		1 in. fibreboard	1 1/16—1 3/16	2½		0.25
	10	3		¾ in. ..	11/16—1 1/16	2¼	0.37	0.27
				½ in. ..	⅝—11/16	1¾		0.30
				½ in. asbestos (c)	⅝	2	0.75	0.60

(a) K value is for core material. (b) U value is for panel (approximate). (c) single sided panels—no backing.

Vinyl handrails

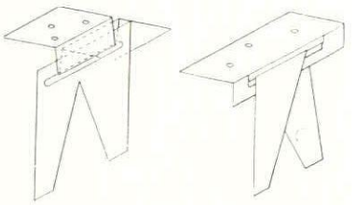
Plastics have generally proved satisfactory as architectural trim where they have no structural stiffness to provide: they make good coatings if there is something more substantial which you can 'feel' beneath them. A good use in point is as a handrail. Marleys, who were the first to take over this idea in this country, first marketed a vinyl handrail some two years ago. There were then two sizes only, to fit over core rails of 1½ in. by ¼ in. and 1½ in. by ⅜ in. They have now produced a third size to fit over a 2 in. by ⅜ in. core. This new arrival much increases the usefulness of the range as it permits 1¼ in. uprights. On the whole we have been making our rails and balusters a fraction on the flimsy side lately. Vinyl rails can take in bends with a 3 in. internal diameter and can be got in red, grey, green, blue, black, pewter and bronze. Marley themselves supply and fix. The cost is about 10s. per foot run (including wreathes and bends) for the 1½ in. rails, and about 15s. per foot run for the 2 in. rail.
Marley Tile Co. Ltd., Sevenoaks, Kent.



Marley vinyl handrails.

Economy Copper Roofing

A disadvantage of traditional copper roofing is that you must, generally speaking, form drips every 7 ft. or so across the fall. This is costly in labour and it may, on occasion, make the detailing of verges and gutters difficult. To overcome these disadvantages the Copper Development Association have evolved a version which they call 'Economy copper roofing.' This requires a harder copper to the traditional method and by incorporating an ingenious system of 'expansion cleats,' which allow the



clips for copper roofing.

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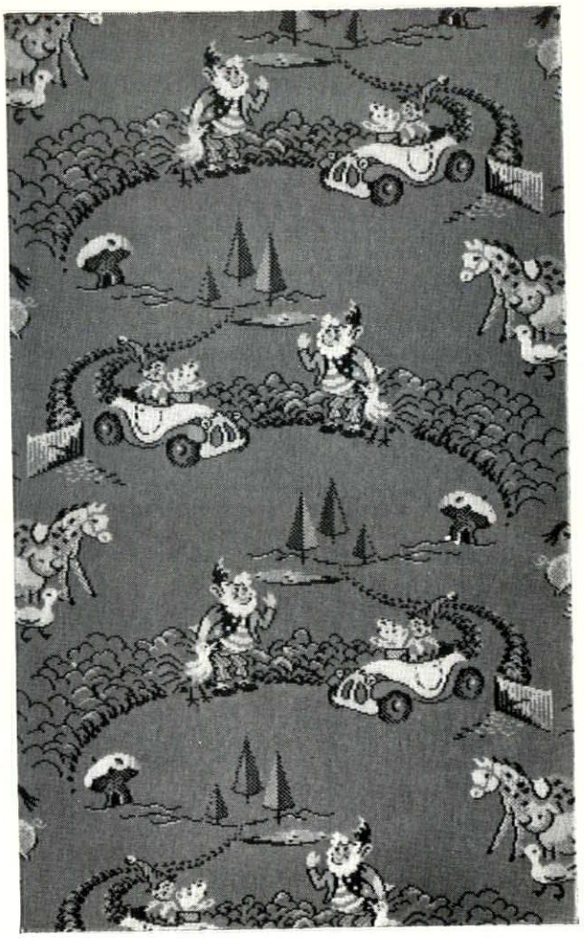


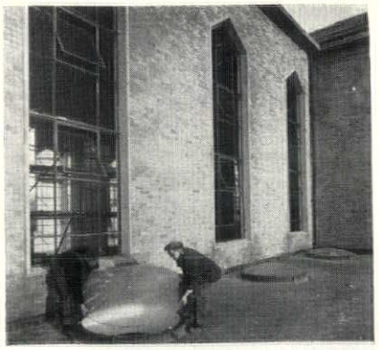
a special carpet for a special setting...

This is one example of a carpet specially woven for a client by Carpet Trades Limited, in a unique design, chosen to give atmosphere to a particular setting. The carpet illustrated is in 'Tobruk' Worsted Wilton quality, made on a soft green background, patterned in yellow, orange, blue and pink. One from a great range of Wilton and Axminster carpets made by Carpet Trades Limited, in a wide choice of qualities, colours and patterns. Ask to see them at Carpet Trades' showrooms in London, Manchester and Glasgow, or consult your supplier. You, too, can have a unique design woven specially for you. Write for details of the Service to Carpet Trades Ltd., Kidderminster.

Supplied through normal trade channels only.

Messrs. Affleck & Brown Ltd., of Manchester use this carpet in their Children's Shoe Department. The design is based on the famous 'Noddy' character, by permission of Miss Enid Blyton and by arrangement with the Noddy Subsidiary Rights Company Limited. Carpet Trades Ltd., are the only carpet manufacturers licensed to incorporate Miss Blyton's characters in Wilton and Axminster carpets.

CARPET TRADES LIMITED · KIDDERMINSTER



Quietly down the centuries, as long as men have built to express their faith, they have used daylight to enhance the dignity of the places of worship. Today, the architect can handle this natural light with more flexibility, thanks to new materials and their new applications.

PUTTING IN THE DAYLIGHT



AT ST. STEPHEN'S DALMUIR

Architect:
Thomas S. Cordiner F.R.I.B.A.

This clean-cut, deceptively simple church, built in Dalmuir, is designed to a cruciform ground plan, with low aisles to emphasise the height of the lofty nave. Maclean Metal Windows, specially fabricated to the architect's design, are used for lighting both nave and transepts. The dome lights above the aisles are also supplied by the company.

Further information about the versatility of Maclean Metal Windows will be supplied on request.

Maclean METAL WINDOWS

OF HAMILTON

MACLEAN & CO. (Metal Windows) LTD. CADZOW WORKS
LOW WATERS ROAD, HAMILTON, LANARKSHIRE
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ABERDEEN:	13 Bridge Street Tel. Aberdeen 52331.
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NEWCASTLE:	14a Pilgrim Street, Tel. Newcastle 27776.
BELFAST:	32 Ann Street, Tel. Belfast 32003.
LIVERPOOL:	39 Gardners Row, Bevington Bush, Tel. North 0491.
LONDON, W.C.1:	36 High Holborn, Tel. Holborn 2462.
BIRMINGHAM, 29:	Selly Oak, Tel. Selly Oak 1188.
SHEFFIELD:	Trinity Works, Eyre Street, Sheffield, 1, Tel. Sheffield 20162.
DERBY:	Friargate Works Tel. Derby 48227.

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sheeting to slide without loosening the fixing to the roof surface, enables lengths of up to 26 ft. to be laid in a single fall. This has the practical effect of cutting out drips on all but the widest roofs and is said to result in economies of up to 30 per cent. 'Economy' copper roofing is fully described in a handbook with this title which is available (free) on application from the CDA.
Copper Development Association, 55 South Audley Street, W.1.

CONTRACTORS etc

Offices for Sogenique (Service) Limited at Newport Pagnell, Buckinghamshire. *Architects:* Gordon & Ursula Bowyer. *General contractors:* Simcock & Usher. *Sub-contractors: Steel reinforcement:* Rom River Reinforcement Service. *Pre-stressed concrete floor and roofing units:* Costain Concrete Co. *Pre-cast concrete mullions, stairtreads and facing slabs:* Liverpool Artificial Stone Co. *Metal windows and glazing:* Aygee Ltd. *Dome roof light:* T. & W. Ide Ltd. *Roofing:* Permanite Ltd. *Rainwater pipes and gutters:* J. & R. Griffiths Ltd. *Slate facing slabs:* Setchell & Sons. *External metal gates:* A. J. Binns Ltd. *Electrical installation:* F. T. Lovell & Co. *Heating installation:* James Perkins & Son. *Sanitary fittings:* John Bolding & Sons. *Underfloor ducts:* The Key Engineering Co. *Terrazzo flooring:* Jaconello Ltd. *Cork tile flooring:* Resilient Tile Flooring Co. (Ealing). *Thermoplastic tiles:* A. R. & W. Cleaver. *Ironmongery:* D. A. Thomas & Co. *Letter box and name plate:* Dryad Metal Wks. Ltd. *Reception desk and staircase balustrade:* F. W. Clifford Ltd.

Headquarters for the Engineering and Allied Employers' Association, Birmingham. *Architect:* John H. D. Madin. *Builder:* W. J. Whittall & Son. *Sub-contractors: Steel fabric and bar reinforcement:* Guest, Keen & Nettlefold (Reinforcements) Ltd. *Special facing bricks, air bricks and sill tiles:* Blockleys Ltd. *Common bricks:* London Brick Co.; King's Norton Brick Co. *Engineering bricks:* Aldridge Brick & Tile Co. *Broughton Moor slate surrounds and marble work:* W. H. Fraley & Son. *Asphalte roofing and paving:* The General Asphalte Co. *Insulating roof screeds:* Celcon Ltd. *Reconstructed stonework and copings, granolithic floors and steps:* John Ellis & Sons. *Special steel windows, lantern lights and gearing:* Henry Hope & Son. *Special double glazing and armour plate doors:* Messrs. Glass (Coventry) Ltd. *Luve tile plastic ceiling louvres:* Harris & Sheldon Ltd. *Aggregates:* Midland Gravel Co. *Cement:* Cement Marketing Co. *Electrical installation:* B. French Ltd. *Switchgear, general lighting fittings and installation of cold cathode tube lighting:* General Electric Co. *Other lighting fittings:* The Merchant Adventurers Ltd.; Best & Lloyd Ltd. *G.P.O. and internal telephone systems:* Greenwood's & Airvac Ventilating Co. *Interal telephones:* Siemens Bros. & Co. *Electric switches:* Britmac Electric Co. *Drying cabinet heater:* E. K. Cole Ltd. *Venetian blinds and electrically controlled venetian blind:* Venetian Vogue Ltd. *Cellar drainage pumps:* James Beresford & Son. *Heating hot water and plenum systems:* Brightside Heating and Eng. Co. *Electric fires:* H. Frost & Co. *Acoustic blanket and insulating mats:* Stillite Products Ltd. *Special leatherwork and light fittings:* H. M. Roberts Ltd. *Gas services:* West Midlands Gas Board. *Gas appliances:* Ascot Gas Water Heaters Ltd. *Gas cookers and kitchen extraction equipment:* Radiation Group Sales Ltd. *Wrought iron balustrades and steel staircase:* Best & Loyd Ltd. *Special folding sliding doors:* The Bolton Gate Co. *Duct covers and general metalwork:* H. E. Breaker (Metalwork) Ltd.; Broads Manufacturing Co. *Tarmacadam paving and felt roofing:* Neuchatel Asphalte Co. *Steel work:* Charles Wade & Co. *Waterproofing compounds and mastics:* Evode Ltd. *Stone pitching:* Rowley Regis Granite Quarries Ltd. *Wood block floors:* Vigers Bros. Ltd. *Terrazzo floors and paving:* Standard Pavement Co. *Rubber flooring:* Marshall Davies & Co. *Glazed tiles:* Pilkingtons Tiles Ltd. *Tile fixing:* J. W. Meredith. *Sliding door gear:* P. C. Henderson Ltd. *Special flush and veneered doors:* Leaderflush Ltd. *Suspended ceilings:* The Expanded Metal Co. *Door furniture designed by the architect, locks and general ironmongery:* James Gibbons Ltd.; Parker Winder & Achurch Ltd. *Sanitary fittings:* Charles Winn & Co. *Plasterers:* T. Hawkins. *Plaster, plastering materials and acoustic panels:* Gyproc Products Ltd. *Plumbers:* David F. Wiseman & Sons. *Decorators:* J. Patrick & Co. *Decorating materials:* Docker Bros. Ltd.; Permoglaze Ltd. *French polishing:* A. Woodward & Son. *Furniture, carpets and curtains to the architect's design, made up and fitted by:* Hampton & Sons.; I. & C. Steele Ltd. *Special curtains designed by the architect, and woven and printed by:* Tibor Ltd.; Arthur Sanderson & Son. *Other furniture:* Bell Barn Ltd.; Restalls Ltd. *Wooden door handles to the design of the architect:* Richard Swale. *Hat and coat racks designed by the architect:* A. Edmonds & Co. *Fireplaces, designed by the architect:* W. H. Fraley & Sons.; The Griffin Foundry Fireplace & Sanitary Fittings Ltd. *Safes:* Thos. Withers & Sons. *Haulage:* C. Williams & Sons. *Scaffolding:* Norstel Ltd. *Doormats:* The Birmingham Royal Institute for the Blind. *Landscape Gardening.* Garden Developments Ltd. *Concrete flower tubs:* Stuart's Granolithic Co. *Flag pole:* Poles Ltd. *Indoor plants:* Neale Bros. (Nurseries) Ltd.

House near Cowes. *Architect:* James Stirling. *General contractor:* H. J. Greenham. *Sub-contractors: Joinery and wood flooring:* H. W. Morey Ltd. *Sanitary fittings:* Stitsons Sanitary Fittings Ltd. *Ironmongery:* A. G. Roberts Ltd. *Electrician:* F. R. Hilton. *Bricks:* W. Dibben & Sons. *Varnish and distemper:* Walpamur Co. *Insulation quilt:* Fibreglass Ltd. *Light fittings:* Merchant Adventurers Ltd.

The Bank of London & South America, Ltd. *Interior designed by:* John Wright. *General contractor:* Trollope & Colls. *Interior contractors:* Bath Cabinet Makers Ltd.; Hamptons & Sons. Trollope & Colls. *Sub-contractors: Woodblock flooring:* Acme Flooring & Paving Co. *Patent flooring:* Korkoid Decorative Floors. *Central heating:* Young Austen & Young Ltd. *Electric wiring:* Drake & Gorham, Ltd. *Electric light fixtures:* General Electric Co. *Ventilation:* Young Austen & Young Ltd. *Plumbing:* Trollope & Colls. *Sanitary fittings:* John Bolding & Sons. *Stairtre ads*

[continued on page 294

Architect : JOHN H. D. MADIN, Dip. Arch. Birm., A.R.I.B.A., Chart. Arch.



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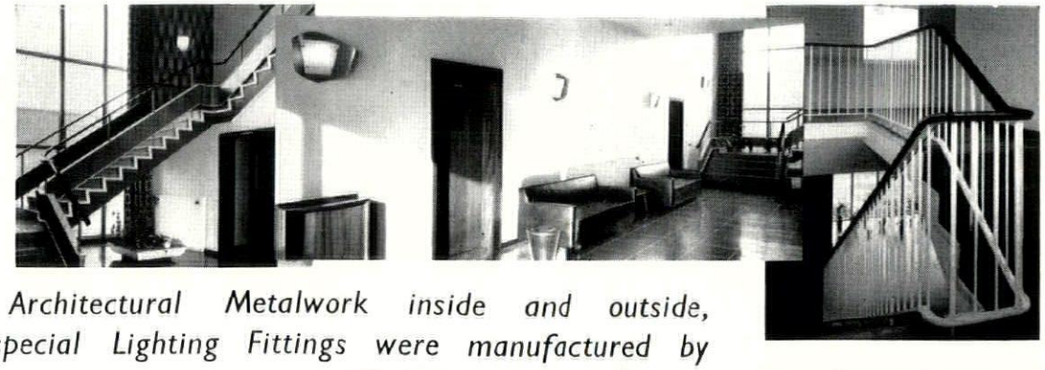

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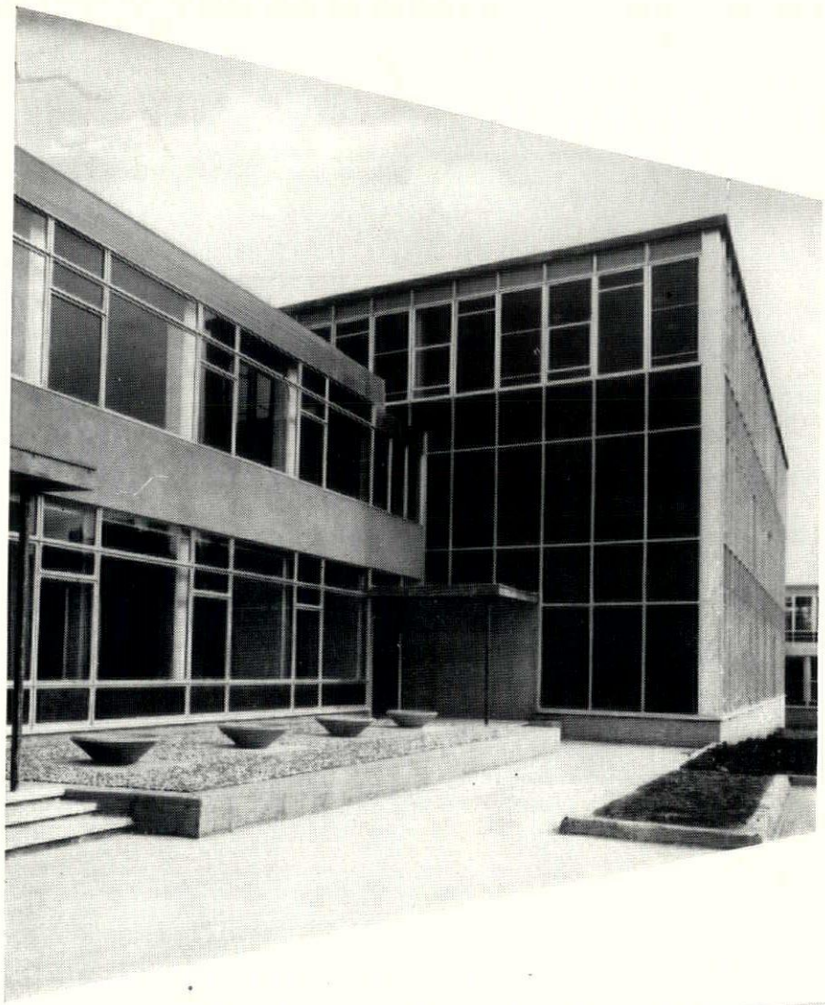

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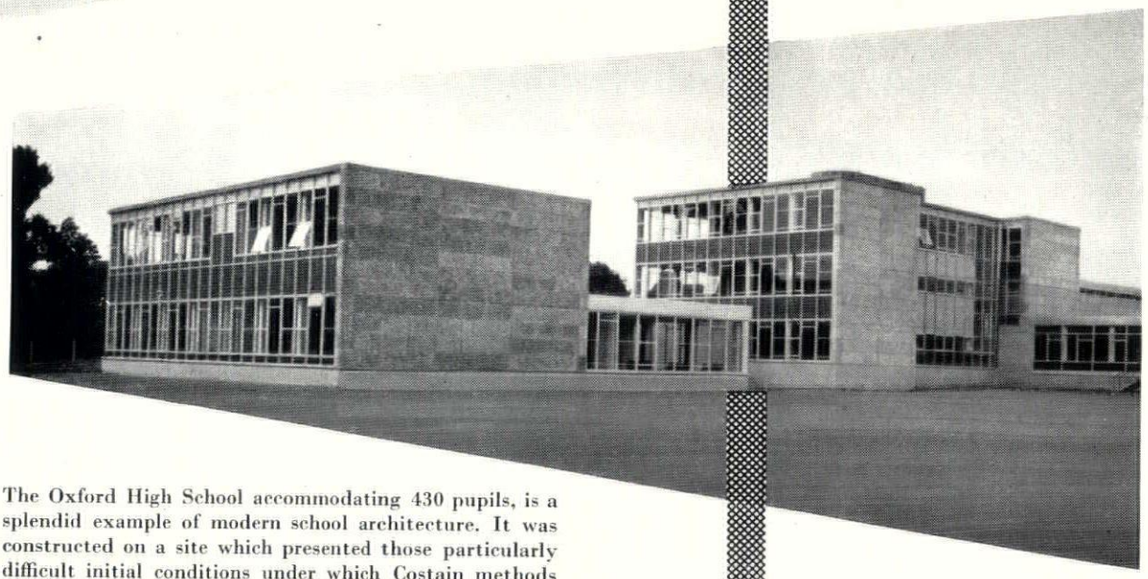

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continued from page 292]

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Middlesbrough Little Theatre. *Architects:* Elder & de Pierro. *General contractor:* John McCreton Ltd. *Sub-contractors: Site works and excavations and car parks:* Lonsdale (Tees-Side) Ltd. *Facing bricks and precast concrete: Waterproofing:* Quickset Water Sealers Ltd. *Plastering:* J. B. Rodgers (Erimus) Ltd. *Heating and ventilation:* Rowells (1924) Ltd. *Electrical installations:* C. Horne & Co. *Flush doors:* Lochead Manufacturing Co. *Structural steelwork:* Scaffolding (Gt. B.) Ltd. *Plumbing and glazing:* Watson & Coates Ltd. *Cork lino and thermoplastic floors:* Semtex Ltd. *Painting and decorating:* A. Hector Grabham Ltd. *Seating:* C. R. Harrison & Sons. *Stage lighting:* Watts & Corry Ltd. *Fire curtain and haystack lantern release apparatus:* Hall Stage Equipment Ltd. *Illuminated signs:* Emett & Co.

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Training College at Birmingham. *Birmingham City Architect:* A. G. Shepherd Fidler. *Consultants: Structural engineer:* S. Willis. *Heating, lighting and ventilation:* Hoare Lea & Partners. *Quantity surveyor:* Silk & Frazier. *General contractor:* B. Whitehouse & Sons. *Heating and hot water:* Brightside Foundry & Engineering Co. *Lighting and electrical:* Frank Hancock (1939) Ltd. *Ventilation:* Morgans Air Treatments Ltd. *Sub-contractors and suppliers: Structural steelwork:* Bannister Walton & Co. *Precast concrete floors:* Concrete Ltd. *Bricks:* Aldridge Brick & Tile Co.; Leicester Brick Co. *Asphalte tanking:* Highways Construction Ltd. *Reconstructed stone:* John Ellis & Sons. *Exposed aggregate wall cladding:* Roman Mosaic Ltd. *External rendering:* Callow & Keppich Ltd. *Stonework:* Wragg Bros. Ltd. *Metal windows:* Henry Hope & Sons. *Glazing:* Merrick & Heath. *Glass dome roof lights:* Pearce & Cutler. *Concrete roof lights:* Luxfer Ltd. *Built-up bituminous felt roofing:* Midland Asphaltic Roofing; Birmingham Roofing Felt Systems. *Insulating roof screeds:* Celcon Ltd. *Plumbing:* David F. Wiseman & Sons. *Prefabricated plumbing:* Econa Modern Products Ltd. *Engineering bricks:* Titford Brick Co.; Hadley Bros. & Taylor. *Common bricks:* London Brick Co.; Marston Valley. *Foam slag partition blocks:* William Prestwich, Dronfield. *Bellrock plaster partitions:* Bryans Adamanta Ltd. *Preformed W.C. partitions:* Roman Mosaic Ltd. *Plastering:* James Siviter. *Wall tiling:* Carter & Co. *Impervious wall finishes:* John Ellis & Sons. *Floor finishes: Wood block and strip flooring:* Stevens & Adams Ltd. *Thermoplastic tiles:* Semtex Ltd. *Cork tiles:* Cork Insulation & Asbestos Co. *Rubber tiles:* The Hemisphere Rubber Co. *Terrazzo:* Roman Mosaic Ltd. *Granolithic:* E. B. Trumper & Co. (B'ham). *Suspended board ceilings:* Midland Wallboards Ltd. *Acoustic and anti-condensation finishes:* Pyrok Contracts (Midlands) Ltd. *Paint:* Leyland Paint & Varnish Co. *Hardwood finishes:* Cellon 'Non Flam.' *Painting and decorating:* General Contractor. *Joinery:* General Contractor; Walsh Graham Ltd. *Flush doors:* Jablo Plastic Industries Ltd. *Ironmongery:* James Gibbons Ltd. *Cloakroom fittings:* Mountford Bros.; General Contractor. *Sanitary fittings:* H. O. Bennion. *W.I. balustrades, etc.:* J. R. Pearson Ltd.; Bigwood Bros. Ltd. *Lifts:* Evans Lifts Ltd. *Lightning conductors:* W. J. Furse & Co. *Electric incinerators:* The Hygienette Manufacturing Co. *Roller shutters:* Roller Shutters Ltd. *'Sylenz' cushioned floor clips:* J. C. Birch Ltd. *Inset electric fires:* H. Frost & Co.; Ferranti. *Panels and veneers:* H. Morris & Co.; Bakers of Wycombe Ltd.; Warerite Ltd.; Perstorp. *Wall and ceiling linings:* Rudders & Paynes Ltd. *Hockey pitch:* Barrans Landscape Ltd. *Fencing:* Penfold Fencing Ltd.; En-Tout-Cas; Durafencing. *Roads, etc.:* Highways Construction Ltd. *Concrete paving slabs:* James Siviter. *Tennis court surface:* Valde-Travers Ltd.; B'ham Asphaltic Pavings Ltd. *Heating and hot water: Boilers:* Beeston Boiler Co. *Calorifiers:* David Todd Ltd. *Pumps:* Holden Brooke & Co. *Stokers:* Joshua Bigwood & Co. *Radiators and rayrads:* Ideal Boilers & Radiators Ltd. *Warm air circulators:* Dunham Ltd. *Valves:* Hattersley Ltd. *Sectional tanks:* Horseley Bridge & Thomas Piggott. *Lagging:* Leroy Co. *Thermostats:* Rheostatic Co. *Mixing valves:* Walker Crosweller. *Foot sprays, shower sprays and hosereels:* Charles Wynn & Co. *Electrical: Switch gear:* General Electric Co. *Switches:* G. E. Crabtree & Co. *Plugs:* Wandsworth Electrical Co. *Conduit and accessories:* Walsall Conduits Ltd. *Paper cable:* Pirelli Ltd. *V.I.R. cable:* Glovers Cables Ltd. *Fittings:* G.E.C.; Falk Stadelmann Ltd.; Frederick Thomas Ltd.; Best & Lloyd Ltd.; Troughton & Young Ltd.; Hailwood & Ackroyd Ltd.; Hume Atkins Ltd.; Loblite Ltd. *Internal telephones:* Reliance Telephones Ltd. *Clocks:* Gents. *Special furniture:* F. Restall Ltd.; Hoskins & Sewell; Griffin & George; Pochin Ltd.; B. Whitehouse & Sons; Vincent Ladbrook.

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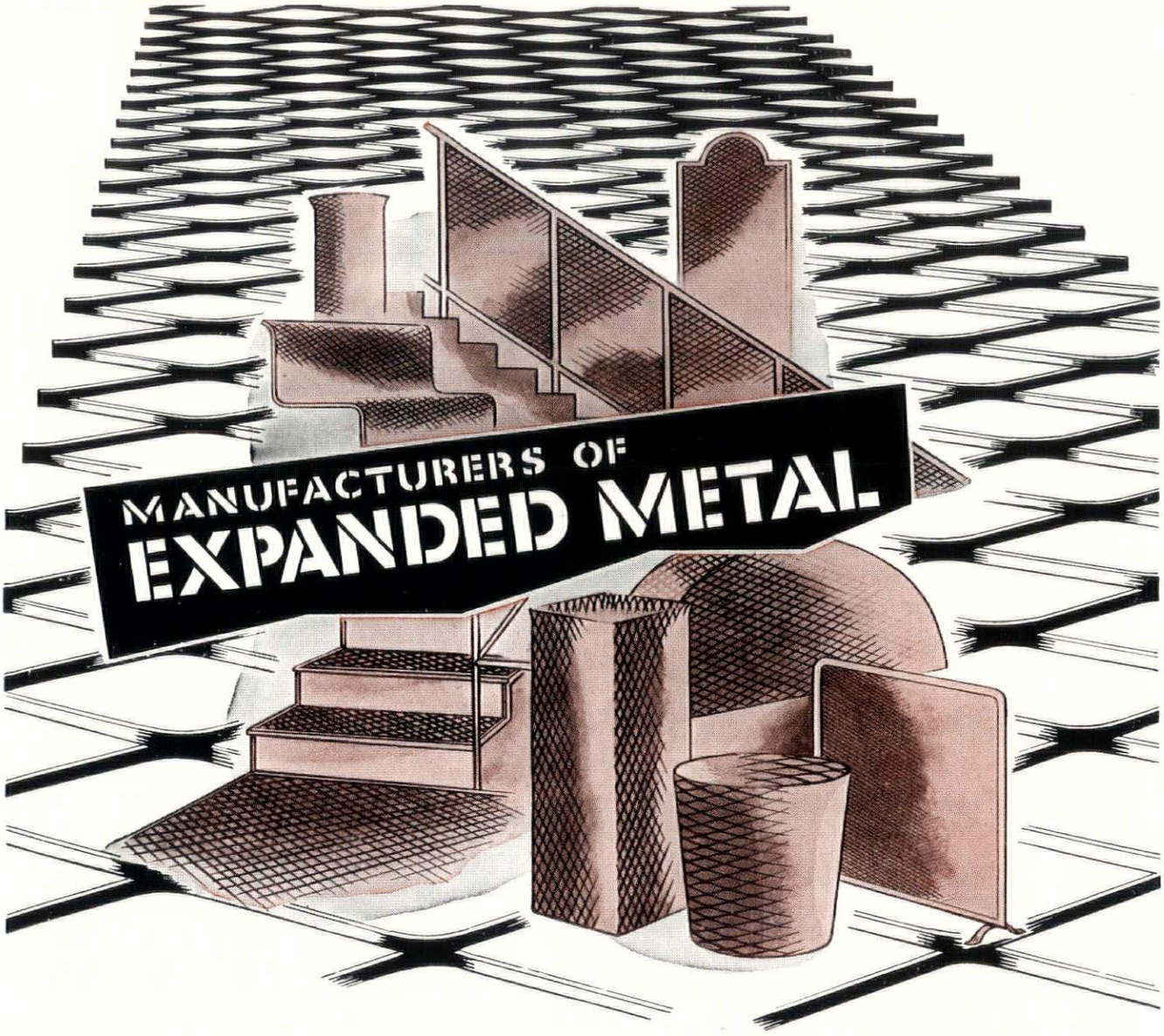

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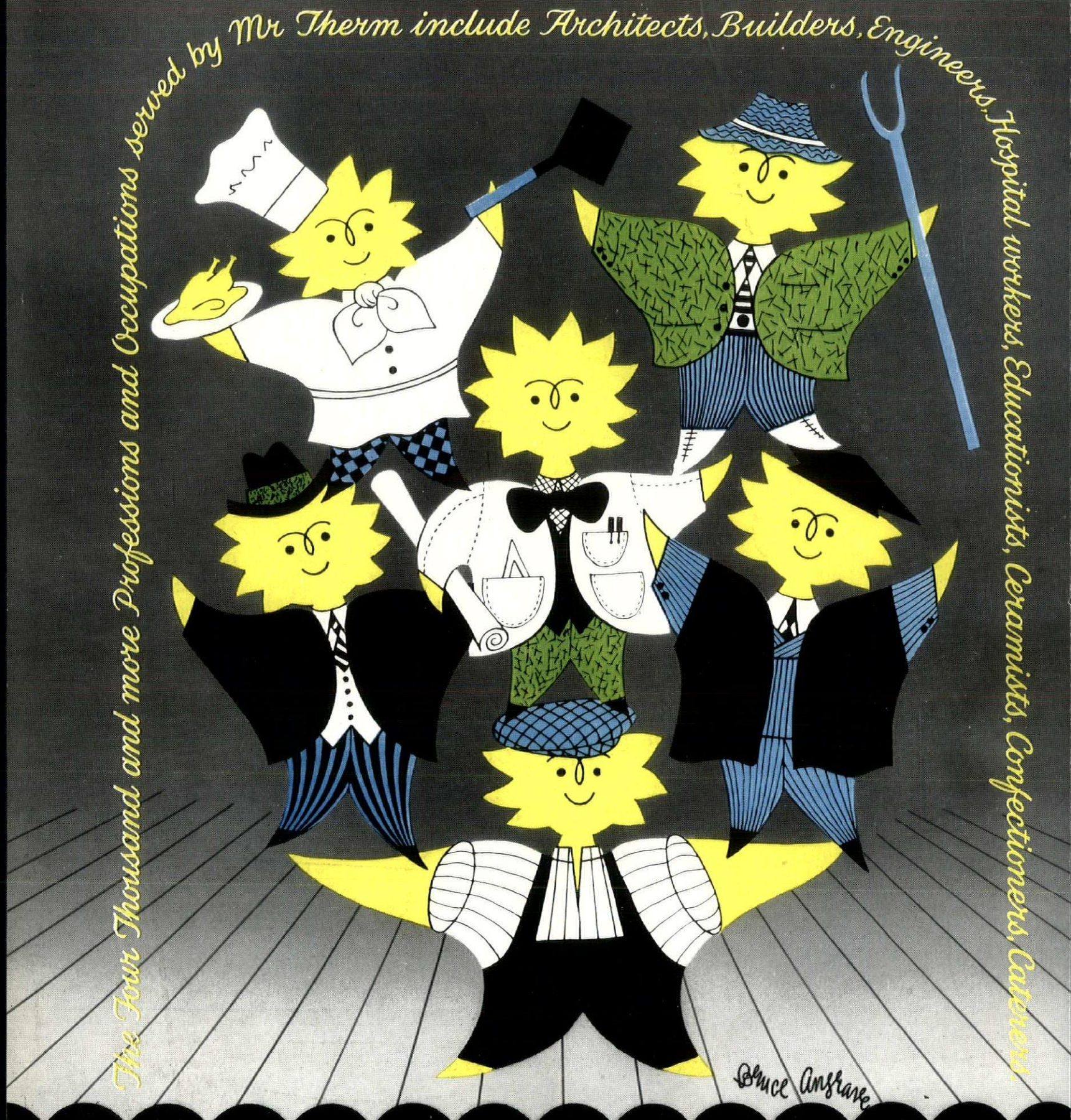

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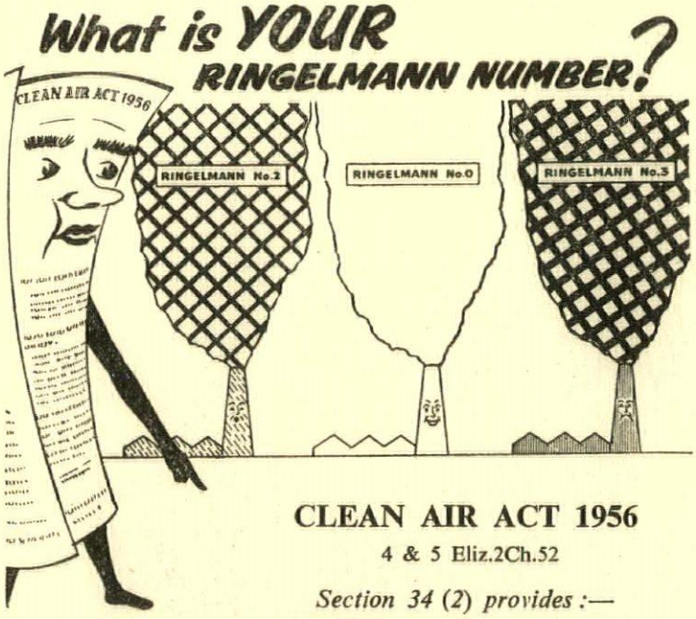

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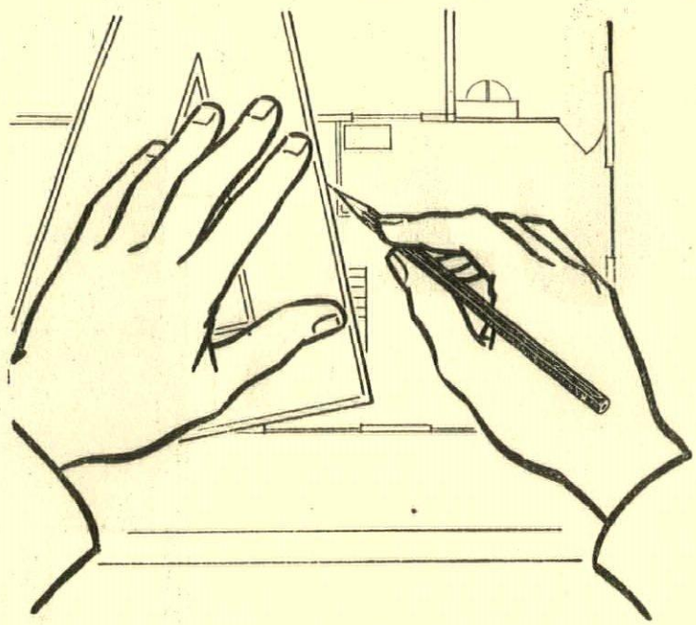

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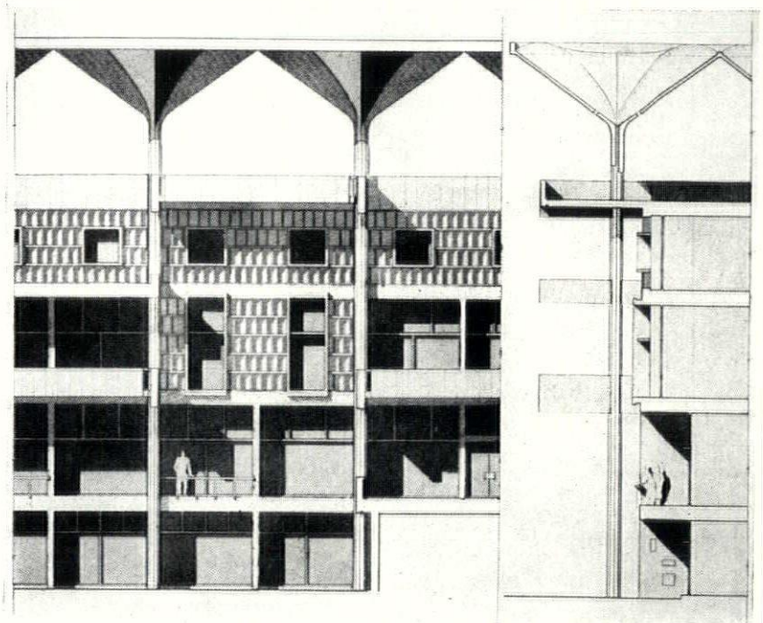
Parasols of Sert

Much of the work currently in hand by the distinguished Hispano-American architect, José Luis Sert, is in tropical or near-tropical areas, and this—coupled with clear political imperatives to acknowledge local usages in at least two cases—has resulted in some interesting variations on the theme of the architectural parasol. Unlike those by Le Corbusier at Chandigarh, which are thick and sculptural, the Sert parasols are composed of warped slabs, carried on fairly slender concrete columns—on the Ambassador's residence for the US Embassy at Baghdad 1, the parasol forms a relatively shallow layer of structure—little more than a dimpled plane—above a two-storey building, but on the Presidential palace for Havana, which has a taller, four-storey elevation, the units of the parasol are accordingly deeper, 2, and the panels of their vaults are, in fact, hyperbolic paraboloids of a recurved form that is more complex than can immediately be seen from outside (the descending curve of the panels being hidden by the depth of the edge-beam or parapet) but justifies the building's somewhat romantic designation of *Palace of the Palms*.



1, *U.S. embassy at Baghdad*



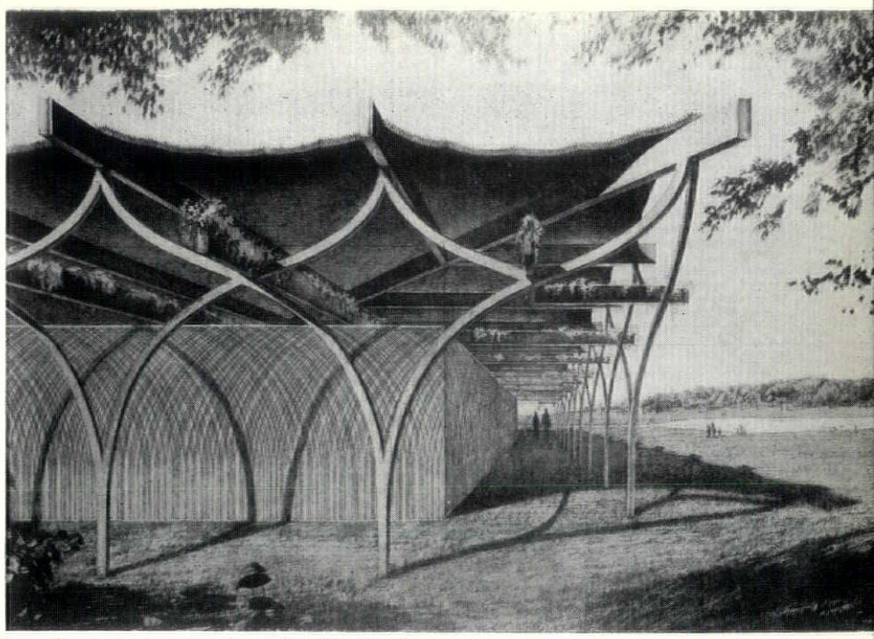
2, *elevation and section of Presidential Palace of the Palms, Havana* — *Architectural Record*

Mosaic

The visual qualities of so many architectural student-publications are either so prissily elegant or dimly non-existent that one despairs of the obvious lack of live visual training the students must be receiving. No such reservations need be entertained in connexion with *Mosaic*, published by Toronto University architecture students, which exploits the possibilities of photo-litho with almost Brutalist enthusiasm and punch, to provide a visual impact such as we have not seen since the great days of *Plan*. How refreshing it is, in such a context, to see the inevitable Olivetti advertisement put in its proper place by a layout that has nothing to fear from the competition of its advertisers, a layout which even welcomes advertisers to prominent positions in its editorial text—even if the quality of the editorial matter does not rise much above the—admittedly admirable—standard set by other magazines of the kind, it is a pleasure to re-read even the most well-worn opinions in such a format.

Ponce de Leon en Chinoiserie

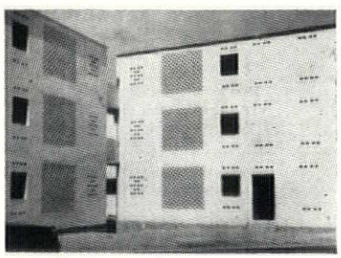
Designed to house what are claimed to be the original fountains of eternal youth sought by Ponce de Leon in the Everglades of Florida, the pavilion dreamed up by Victor Lundy for Warm Mineral Springs Inc. is intended to have a 'Spanish courtyard flavour.' However, as a European eye sees Lundy's superb drawing of its exterior, with its interlaced plywood arches, its hanging plants and scalloped roof-line, 4, it is difficult not to feel that the architect has in fact achieved an unusually graceful revival of eighteenth-century garden-house *Chinoiserie*. The pavilion does indeed have a fountain-court within, and the fountain theme is echoed in the etching of the glass-screens that surround it and can also be seen in the drawing, but once again the eighteenth-century comparison seems unavoidable—this time with the Gothick.



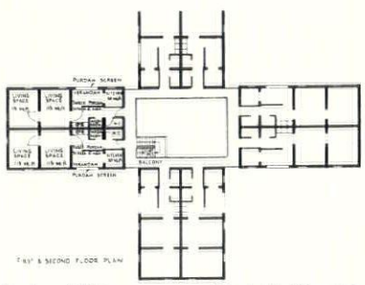
4, *pavilion for the fountains of eternal youth in Florida* — *Architectural Record*

Palladianism and Purdah

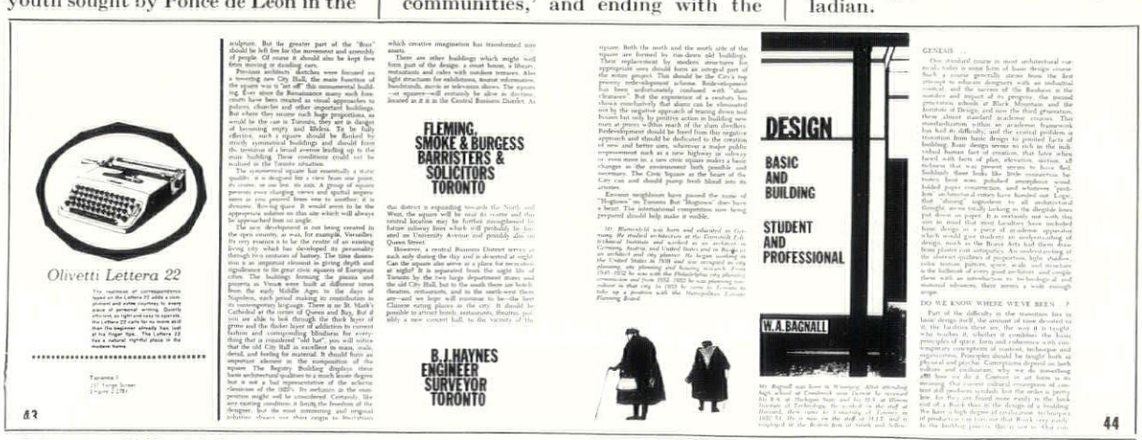
No. 49 of DSIR's *Colonial Building Notes* confirms that the work being done on planning and building for tropical areas is among the most vital and stimulating currently undertaken by the Building Research Station, and contains contributions on village-planning schools in Ghana, a paper on town-planning authorities in Malaya, reports on housing built in 1956 in various parts of the Commonwealth, and a brief, fascinating note on low-cost flats for Muslims, beginning with the daunting statement 'It is sometimes thought that the requirements of Purdah make it impossible to build flats for Moslem communities,' and ending with the most interesting piece of architecture in the report. This is a small group of Muslim flats, erected by Aden Public Works Department, which uses the purdah-screen and the needs of cross ventilation in a cool, functional-tradition manner to create a distinctive elevational pattern of large and small openings, 5, and groups of flats in four blocks around an open court, 6, in a cruciform layout that is surprisingly, but reasonably, Palladian.



5 *Muslim flats at Aden*



6, *plan of flats* — *Colonial Building Notes*



3. *two pages of 'Mosaic', the Toronto University architectural magazine* — *Mosaic*

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Preview and Current

To the Editors,

SIRS,—THE ARCHITECTURAL REVIEW must bear some of the responsibility for the disaster of post-war British architecture. The measure of this responsibility is marked by the persistent failure of the annual Preview and the monthly 'Current Architecture' either to create or even to maintain reputable standards of judgment. The criterion of 'interest' which is resorted to each month must indeed be an odd one. But the evident absence of selection in the Previews is much more disturbing. Some of the designs illustrated in this year's issue are as bad as anything put up in London since the war. Why are they there? If the issue could not be made up to its present size without them, then this should be frankly admitted: mere bulk will not mend matters. It is THE ARCHITECTURAL REVIEW'S job to discriminate, to make distinctions of value. It is here to encourage taste and to correct judgment, to make possible a fertile ground in which fine building can flourish. It is not at present doing its duty.

Yours, etc.,

ANDOR GOMME.

Cambridge.

The Editors write:

It is not for the Editors to make the claim that the REVIEW has a beneficial influence on English architecture, but they can protest that, for the purpose of stating the opposite, Mr. Gomme is being a little unfair in picking out the only two regular features in the REVIEW that are essentially concerned with news rather than criticism. It is surely part of an architectural magazine's role to report current trends and ideas, and it has clearly been stated that the purpose of the Preview issue is to do exactly this: to give an annual survey, illustrating seventy or eighty of the best designs in preparation at the time of going to press, which the Editors think it is useful to put on record. In other parts of the REVIEW (and indeed in the introductory articles in these issues) critical points of views are expressed and judgments made or implied.

Incidentally, Mr. Gomme seems to have an unexpectedly high opinion of recent London architecture, if he thinks some of the designs in the last Preview issue (he does not specify which) are as bad as anything put up in London since the war.

Churches at Coventry

To the Editors.

SIRS,—In this village we have read with great interest the article in your February number on Basil Spence's Churches at Coventry. As bell ringers, we are a little puzzled at the apparent disregard of our honourable calling. Might we please have some information on the following points:

(*a*) Are the bell towers (as they are called) stressed to stand up to a proper peal of, say, eight bells?

(*b*) Will the bell ropes stand continual exposure to the open air without deterioration?

(*c*) Will not the ringers have to pursue their calling in most uncomfortable surroundings, especially in winter?

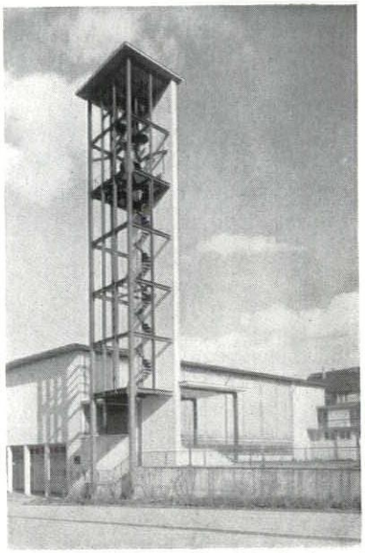
Or, does the whole design assume that in Warwickshire, bell ringing is dead? And is not this a pity?

Yours, etc.,

A. S. LEMAITRE,

Deputy Controller of No. 4 Bell.

The Belfry,
St. Mary-the-Virgin,
Polstead, Suffolk.



7, bell tower at Basle, designed by Egender and Burekhard in 1937

To the Editors.

SIRS,—The bell towers of the three Coventry Churches are intended, as the name implies, for bells—which will be installed as soon as the congregations can afford them. A peal of bells could be installed in the towers, as they are quite strong enough.

The bell tower idea was inspired by the magnificent example in Basle, where, in the tower of the steel church built before the war, the bells and ropes are exposed. My suggestion will be for nylon ropes, as I know from sailing experience, these are indestructible under very severe conditions.

If a full peal of bells was installed we could easily erect a specially designed little house for the bell-ringers. This could be sheathed in copper and made an exciting design feature.

Yours, etc.,

BASIL SPENCE.

London, N.1.

Shaviana

To the Editors.

SIRS,—After prowling through the pages of the latest addition to Dr. Pevsner's Buildings of England series and admiring his and Prof. Richmond's thorough coverage of *Northumberland*, it occurs to me the REVIEW might be interested in an addendum from a lesser-known work by Bernard Shaw. It occurs in his essay 'On Going to Church' in the January, 1896, number of that short-lived quarterly *The Savoy:* '. . . St. Nicholas Cole Abbey makes you feel, the moment you enter it, that you are in a rather dingy rococo banqueting-room, built for a city company. Corpulence and comfort are written on every stone of it. Considering that money is dirt cheap now in the city, it is strange that Mr. Shuttleworth [the vicar] cannot get twenty thousand pounds to build a real church. He would, soon enough, if the city knew what a church was. The twenty thousand pounds need not be wasted, either, on an "architect." I was lately walking in a polite suburb of Newcastle, when I saw a church—a *new* church—with, of all things, a detached campanile . . . I asked [the sexton] who built the church, and he gave me the name of Mr. Mitchell, who turned out, however, to be the pious founder—a shipbuilder prince, with some just notion of his princely function. But this was not what I wanted to know; so I asked who was the—the word stuck in my throat a little—the architect. He, it appeared, was one Spence. "Was that marble carving in the altar and that mosaic decoration round the chancel part of his design?" said I. "Yes," said the sexton, with a certain surliness as if he suspected me of disapproving. "The ironwork is good," I remarked, to appease him; "who did that?" "Mr. Spence did." "Who carved that wooden figure of St. George?" . . . "Mr. Spence did." "Who painted those four panels in the dado with figures in oil?" "Mr. Spence did: he meant them to be at intervals round the church, but we put them all together by mistake." "Then, perhaps, he designed the stained windows, too?" "Yes, most of 'em." I got so irritated at this—feeling that Spence was going too far—that I remarked sarcastically that no doubt Mr. Spence designed Mr. Mitchell's ships as well, which turned out to be the case as far as the cabins were concerned. Clearly, this Mr. Spence is an artist-craftsman with a vengeance. Many people, I learnt, came to see the church, especially in the first eighteen months; but some of the congregation thought it too ornamental. (At St. Nicholas Cole Abbey, by the way, some of the parishioners objected at first to Mr. Shuttleworth as being too religious.) Now, as a matter of fact, this Newcastle church of St. George's is not ornamental enough. Under modern commercial conditions, it is impossible to get from the labour in the building-trade that artistic quality in the actual masonry which makes a good mediaeval building independent of applied ornament. Wherever Mr. Spence's artist's hand has passed over the interior surface, the church is beautiful. Why should his hand not pass over every inch of it? . . . All that cold contract masonry must be redeemed, stone by stone, by the travail of the artist-churchmaker. . . . Howbeit, this church . . . proves my point, namely, that churches fit for their proper use can still be built by men who follow the craft of Oreagna instead of the profession of Mr. Pecksniff, and built cheaply, too; for I took the pains to ascertain what this large church cost, and found that £30,000 was well over the mark. . . .'

Yours, etc.,

PRISCILLA METCALF.

Charles H. C. Purcell

A live architectural link with the Gothic Revival was broken by the death late in February, of Charles H. C. Purcell, at the age of 84. A grandson of Augustus Welby Northmore Pugin, he was educated on hallowed ground of the Pugin connection, at St. Augustine's, Ramsgate, and after working in Dublin for a spell, joined the family firm of Pugin and Pugin at their office in Liverpool. As a designer, his practice included a large number of collegiate and ecclesiastical buildings, the last being three churches near Glasgow whose equipment he was detailing at the time of his death. Just before that, however, he had closed a Pugin circle over a century in circumference by completing the rebuilding A.W.N.'s church of the Holy Cross, Liverpool, which had been destroyed by enemy action during the War.

INTELLIGENCE

The War Office have announced the appointment of Mr. Donald Gibson as Director General of Works for the Army, sharing with an Assistant Under-Secretary of State the headship of the new military works organization set up on the recommendation of the Weeks committee.

Entry forms and further information in connection with the joint RIBA/Building Centre competition for trade and technical literature conforming to BS 1311:1955 (amended 1958) may be had from the Building Centre, Store Street, W.C.1.

The Minister of Works has made a further 38 grants to help restore historic buildings and their contents. Among the buildings are Howsham Hall, Yorkshire; Gainsborough's House in Sudbury, Suffolk; Sherborne Almshouses, Dorset; Ships' figure-heads at Tresco Abbey in the Scilly Isles, and Merchiston Castle, Edinburgh.

Architect of House in Highgate

Erhard Lorenz was born in Copenhagen in 1913, studied at the academy there and worked with Mogens Lassen and Arne Jacobsen. He later worked with Alvar Aalto in Helsinki and Michael Scott in Dublin. A member of the Association of Danish Architects, he was awarded the gold medal of the Royal Academy, Copenhagen, in 1948. He passed the R.I.B.A. special final in 1954 and has been in private practice in Salisbury, Southern Rhodesia, since 1955.

ACKNOWLEDGMENTS

FRONTIS: Eckard Kaemmerer. THREE SCHOOLS, pages 302–311: School at Wandsworth, Peter Pitt; School at Lewisham, 1–7 Mann Bros., 8–10 Peter Moro; School at Stevenage, Galwey Arphot. STREETSCAPE WITH FURNITURE, pages 312–323: Browne Arphot. HOUSE IN HIGHGATE, pages 324–328: Galwey Arphot. GEORGIAN SCULPTORS, pages 329–334: 1–3, 7, 10, 16, M. I. Webb; 4, C. Beard; 9, Victoria and Albert Museum; 15, Stearn and Sons Ltd.; 18, 19, Trustees of Sir John Soane's Museum; 20, Royal Commission on Historic Monuments; 21–28, 30, 31, Eric de Mare; 29, Warburg Institute University of London. INTERIORS, pages 335–339: 1–7, Galwey Arphot; 9–12, Keld Helmer-Petersen. YORK CHAPTER HOUSE, pages 340–342: Quentin Hughes. CURRENT ARCHITECTURE, pages 343–346: Offices at Cambridge, 1–3, Pantlin; Pithead Baths at Dudley, 4, Galwey Arphot; Cricket Pavilion at Hayes, 5, Norman Gold; House at Nacton, 6, 7, D. E. Harding. MISCELLANY, pages 347–352: Exhibitions: 1, Marlborough Fine Art Ltd.; 2, Ernest Brown and Phillips Ltd.; 3, Mr. and Mrs. Alan Reynolds; 4, Beaux Arts Gallery; 5, Photo Studios Ltd. Objects Reinterpreted: 1, 2, Henry Wood; 3, 4, Peter Chermayeff. Maxburg Munich: 1, Eckard Kaemmerer; 2, Rudiger von Reichart. African Texture: Arthur Foyle. Counter Attack: Nairn Arphot. SKILL, pages 353–358: House in Highgate, 3–5, Galwey Arphot; Continental Door Furniture, 8–10, 13–18, 20, 21, 23, 24, 28–30, 36, Toomey Arphot.

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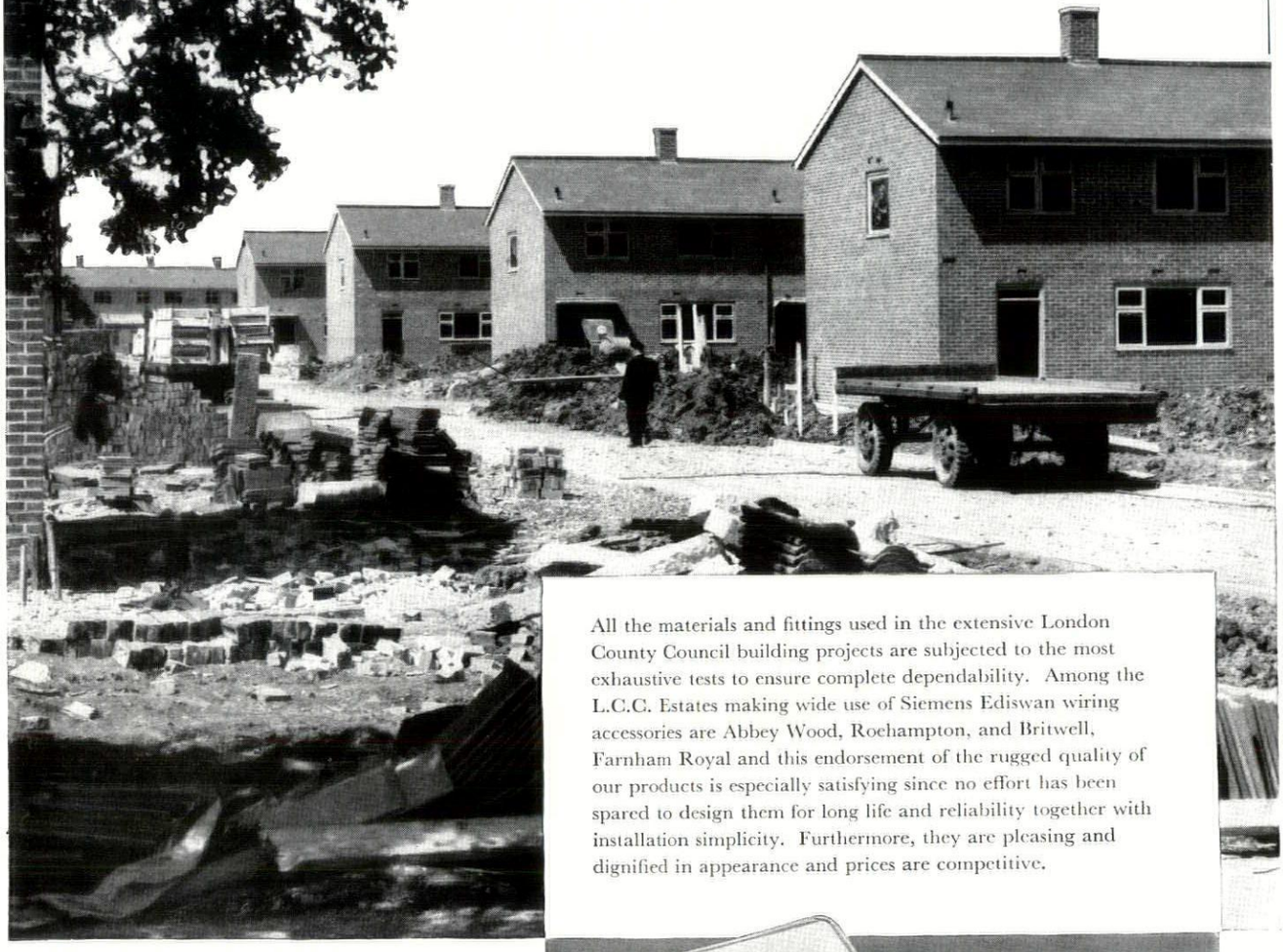

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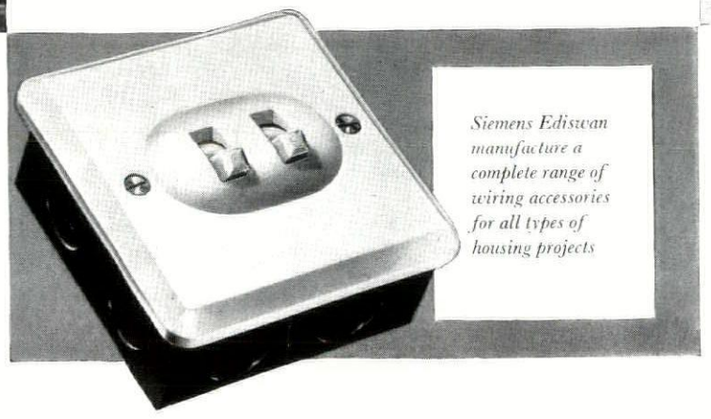

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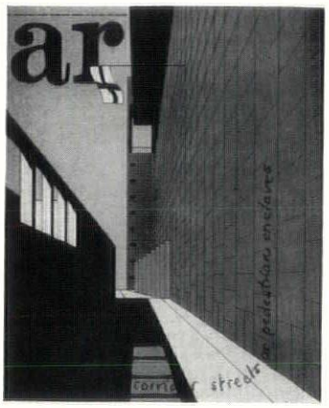

The Cover is a double image of two opposed concepts of urban planning. Viewed upright Gordon Cullen's drawing epitomises the inhuman concept of the corridor street, the noisy slot between towering buildings, where pedestrians and vehicles fight for breath and motion. Turned through ninety degrees it reveals a vision of the humane corrective to the corridor street, broad pedestrian piazzas with shelter from the weather as well as from the automobile. The re-planning of Notting Hill Gate in terms of this second concept is discussed in Kenneth Browne's article on page 312.

295 **Marginalia**

298 **Frontispiece**

299 **Man in a Hot Tin Box** *by J. M. Richards* Most attempts to plan for the motor-car fail on one simple point. If more space is created for automobiles to circulate in, more automobiles will at once appear to fill it up to congestion conditions again. Mr. Richards suggests that the reason for the multiplication of private motor-cars is not functional, but arises from the outlet they provide for instincts that could be better satisfied in other ways. He believes that we should actively discourage cars just as we have now accepted the idea of actively discouraging too scattered house building, and make wider use of an improved public transport. This may sound retrogressive, but, while motorists continue to defeat their own ends by clogging the streets and occupying land to the point where circulation and urban life become impossible, any measure that helps to turn the motor car into an asset, not a menace, is progressive.

303 **School at Wandsworth, London:** *Architect, Sir Leslie Martin*

306 **School at Lewisham, London:** *Architect, Peter Moro*

310 **School at Stevenage, Herts:** *Architects, James Cubitt and Partners*

312 **Streetscape with Furniture** *by Kenneth Browne* Recent and approved proposals for the re-development of the Notting Hill Gate area in London make it possible to re-appraise some pressing problems of street design from the pavement up. The block plan for this scheme, prepared by Cotton, Ballard and Blow, with its high and low buildings, set back at varying distances from the kerb-line, marks a small but praiseworthy break from the evil corridor-street routines of real-estate development, and this small beginning could be enhanced and made even more effective by using floorings, furniture and overhead shelter to break up the flow of both vision and pedestrians along the street. The chances are, however, that furniture in particular will be used in just the opposite sense if established routines for its siting are not also broken up. Mr. Browne makes a detailed examination of what sort of furniture this particular streetscape will have to accept, and makes positive proposals for siting and combining it in such a way that it contributes to the desired effect.

324 **House in Highgate, London:** *Architect, Erhard Lorenz*

329 **Georgian Sculpture** From doorcases and fireplaces upwards, English architecture of the eighteenth century made extensive use of the carver's art, and many famous sculptured monuments were, ultimately, designed by architects. In this miscellany of notes on Georgian sculpture, Mrs. M. I. Webb examines the collaboration of *Architect and Sculptor* from Gibbs to Athenian Stuart, and from Roubiliac to the younger Scheemakers; Professor Nikolaus Pevsner raises the problem of the elusive *Victor Sederbach* who executed the unique figures in Sanderson Miller's new entrance hall at Lacock Abbey; and Rupert Gunnis unravels the mystery of *The Carters*, father and son once thought to be the same person, who would, in that case, have been over seventy when he carved the famous monument of Speaker Chute at the Vyne.

335 **Three Interiors** *by John and Sylvia Reid*

338 **Interiors: M/S Princesse Margretha:** *Architect, Kay Korbing*

340 **An Early 14th Century Roof** *by J. Quentin Hughes* Most English chapter houses of polygonal form have a central column; York does not, and its builders were thereby faced with a roofing problem of a magnitude rarely encountered in Gothic architecture. In consequence they produced a masterpiece of mediaeval carpentry that ante-dates the only comparable work—Ely Octagon—by a clear generation, and is also the earliest provable piece of large-scale off-site prefabrication of the period. Dr. Hughes's researches have found expression not only in words, but also in a magnificent model of the roof-structure which forms the frontispiece to this article, and was also shown at the last *Triennale di Milano*.

343 **Current Architecture**

Miscellany

347 **Books**

348 **Exhibitions**

350 **Townscape**

351 **Travel**

352 **Counter Attack**

Skill

353 **House in Highgate** *by Lance Wright* Ove Arup's house, as might be expected, has several points of outstanding technical interest, and Mr. Wright here concentrates on two—the post-tensioned concrete structure, and the management of the doors and windows in relation to the surface finishes of both exterior and interior walls.

354 **Continental Door Furniture** *by John Sharp* In spite of import duties and other difficulties, door furniture from Europe continues to make big inroads into the British market, on grounds of sheer design quality, and also on grounds of price. Mr. Sharp compares the British and Continental products in a broad survey of the field and indicates the technical and aesthetic reasons for their difference in quality of design.

360 **The Industry**

362 **Contractors**

Authors *M. I. Webb* was born in 1903 and worked in the office of the Society for the Protection of Ancient Buildings 1925-31, the last two years of which she was secretary of the windmill section. From 1931-34 she was a freelance journalist specializing in architecture. She has also been secretary of the Carlton House Terrace Defence Committee, 1932, and of the Waterloo Bridge and Adelphi Preservation Societies, 1933; and worked in the Naval Intelligence Division of the Admiralty 1940-45. She is married to Geoffrey Webb (secretary of the Royal Commission on Historical Monuments). Mrs. Webb's biography of Michael Rysbrack, sculptor, with a catalogue of his works, was published in 1954. *Rupert Gunnis* is a trustee of the Historic Churches Preservation Trust, chairman of the Diocesan Advisory Committee for Canterbury, a member of the executive committee of the Society for the Preservation of Ancient Buildings and an honorary fellow of the Royal British Society of Sculptors. He is the author of the *Dictionary of British Sculptors*, 1660-1851. *J. Quentin Hughes* was trained at the Liverpool School of Architecture and gained his doctorate from the Department of History, University of Leeds. The military cross and bar were awarded for service with the 2nd Special Air Service in Italy where he was captured by the Germans and later escaped. Until 1954 he was senior lecturer at Leeds School of Architecture and is now a lecturer at the Liverpool School of Architecture and in private practice. His publications include *The Buildings of Malta*, London, 1954, and *Italian Renaissance and Baroque Architecture* in Simpson's *History of Architectural Development, Vol.* 4, to appear soon.

Directing Editors J. M. Richards, Nikolaus Pevsner, H. de C. Hastings, Hugh Casson

Executive Editor Ian McCallum

Art Editor Gordon Cullen

Technical Editor Lance Wright

Assistant Editors production, William Mackie. research, S. Lang. literary, Reyner Banham. Editorial Secretary Whi 0611-9

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FIVE SHILLINGS


haus der stoffe

Two strokes of uncommon boldness with regard to a piece of history's heritage mark the rebuilding of the Maxburg site in Munich. Firstly, the decision to redevelop the space occupied by the bomb-shattered castle as a modern pedestrian precinct, instead of merely restoring the old work; secondly, the retention of Wendel Dietrich's tower, built in the 1580's, as a staircase for the new buildings (opposite) not as a museum piece. It is a living memento, not a dead monument. Further information about this lively redevelopment scheme by Theo Pabst and Sepp Ruf will be found in a note in Miscellany.

J. M. Richards

MAN IN A HOT TIN BOX

One simple fact continues to nullify both the efforts of the road engineers and the arguments of those who insist that our road system must everywhere be enlarged to cope with modern traffic: the fact that the more road-space you provide the more motor-cars arrive on the scene to take advantage of it, so that from the point of view of congestion you are back where you started. This is a problem America in particular is having to face today, but America is postponing acknowledgment of the fallacy that the building of roads can by itself out-distance the manufacture of motor-cars, by building roads, allowing them to be flooded with motor-cars, and then building more.

Which she has the space to do. We have not; if we follow the same policy, the time will quickly come when the road-space occupied by motor-cars, moving or stationary (mostly stationary), will take up so much of the total that all territorial development will come to a standstill.

So what about an alternative policy to that which encourages more motor-cars: one which discourages them as energetically as possible? This essay is an examination of the arguments in favour of such a policy. It may sound like a completely reactionary policy, but it is not. It would be reactionary if it represented a retreat from the frontiers that progress has pushed forward on society's behalf, or if it was motivated by a wish to pretend that motor-cars hadn't come to dominate the social and physical scene—that is, by nostalgia for the peaceful days before motor-cars happened.

But planning to make any phenomenon (including the motor-car) an asset, not a menace, to society is progress rather than reaction, and the one thing we can say about the way we have allowed the motor-car, which came into being as no more than a useful

contrivance, to acquire its present disproportionate influence on our lives, is that it is the negation of planning. What we have to examine is the fallacy that the multiplication of the private motor-car is one of the given factors that planners must accept and plan for. It is not. Motor-cars are simply an artifact of our time, which society can employ in great or small numbers, according to how they suit society as a whole.

There is a clear parallel between planning for motor-cars and planning for houses. In each case the idea of planning in the interests of the community—especially the community without much expendable ground-space—involves bringing into a closer relationship units which without planning scatter themselves too widely, in order to create cohesion. In the case of housing we try to progress from separate villas swarming out into the countryside to a more organized pattern of terraces, squares and the like, and of blocks of flats, thereby freeing ground-space for other purposes. The private car, spreading itself more widely than our available ground-space can afford, is surely the exact equivalent of the single villa, and the equivalent of bringing houses into more compact groups is perhaps to make more use of public transport, but that parallel we must discuss in a moment.

Just as with houses, it is for society, and the planners to whom society entrusts the task of providing whatever controls it is willing to accept, to decide how far the individual motor-car should be allowed to spread. Planners, as we have found, can do little more than indicate to society what alternatives to existing practices there are. They have shown up the imbecility of allowing little houses to be scattered everywhere, at the whim of the house-owner but to the detriment of the community and, as a result of the public beginning to accept their arguments, we are at last building more compactly and passing legislation that helps us to insist on everyone doing the same. The planners could, and should, also show up the imbecility of allowing free rein to the individual motor-car, so that society can take action. It cannot, however, act effectively until ordinary people understand what the fight is against. The trouble about the motor-car is that it has been elevated from a convenient piece of machinery into a social symbol, and we have thus let it get outside the system of control by means of which we normally ensure that our various machines are our servants not our masters.

We have lost any judgment about the relative value of motor-cars compared with the difficulties they create, because over several generations they have been built up as the yardstick of individual success and as the best creators of self-esteem, and have thus been given an inflated social and psychological value that has no connexion with their utility as transport machines. This has come about through several causes. One is the habit of regarding motor-cars as a symbol of prosperity. Another is pressure from the motor-car industry, which to keep itself prosperous has to persuade the public of the importance of not only owning a motor-car (or several motor-cars) but of getting a new model each year, with the result that, anyway in America, the discarded motor-cars, the space they take up and the visual squalor they engender, are becoming almost as much a problem as parking the ones still in use. America, however, having space to spare, has hitherto been able to absorb this multiplication of motor-cars. Europe cannot, and the fact that it tries to do so is one of the most destructive examples of Europe's recent tendency to imitate American ways because of the glamour of American prosperity and because of its admiration for America's creative energy, whether American ways suit home conditions or not.

But there are deeper and more personal reasons than these for the all-pervading, uncritical, cult of motor-car ownership. The act of driving a car is one of the few outlets available to most people for their need to exercise personal power and assert their individuality; it is sometimes even an outlet for their sense of fantasy. Skill in driving and roadmanship, allied with the glamour of the superior vehicle, enable the ordinary person to express his innate sense of craftsmanship. Connoisseurship of cars and driving has indeed a mystique about it that is to some extent aesthetic in origin.

But such a mystique is irrelevant to the proper role of the motor-car. It is a long time since the individual operation of machines in a factory became out of date. If only from the point of view of conservation of energy, the introduction of power looms, power presses and the like was one of the biggest moves forward out of the handicraft era. The fashion for individual motor-cars for urban use, often glibly described as an essential ingredient of our mechanized world, is in fact just the opposite: a retreat into the handicraft era. Nor can it be regarded as a very advanced form of social organization when the time and energy of the occupant of each unit of what is, in effect, a mass migration city-wards every morning, is separately taken up by the task of propelling that unit. It is utterly primitive and wasteful, especially when the units are situated almost head to tail, as constantly happens. One really powerful unit at the front of the queue could pull them all, making what used to be called a 'train' before our fairly well organized transport system allowed itself to be fragmented; not, I repeat, in the interest of efficiency but as a means of relieving the psychological frustration I have just described. The degree of waste is indicated by the fact that one person riding in a private car occupies, on an average, seventy square feet of roadspace, whereas each person in a bus, even when it is only half-full, occupies seven square feet. And this is in addition to the waste of energy involved in everyone doing his own driving. Of course some people enjoy driving, even when it's the same traffic-bound journey every day, but surely the need for an outlet for the personality such as driving provides could be provided in some other, less anti-social, way.

The obvious corollary to all this, and the process that would do most to bring about the desired result (though it would have to be accompanied by a psychological process of dispelling the glamour of the private motor-car) is the improvement and *reglamorization* of public transport. Public transport has been vulgarized and made squalid by bad conditions and obsolete equipment. If my parallel between housing and transport is accepted, not only do people have to be educated to prefer public transport in exactly the same way as they have to be educated out of their prejudices in favour of isolated villa ownership, but the process must compete with difficulties equivalent to the resistance to flats that was created by flats becoming associated with obsolete slummy tenements. Public transport suffers from the same associations. But this can be put right by showing how comfortable, efficient and glamorous it can be—and adventurous. There are no end of possibilities: the mono-rail is a typical example. And to experiment with them should appeal to the idealist in us, because the ultimate aim is one of social betterment, not one of social fragmentation like the improvement of individual motor-cars and the provision of more facilities for them.

The task must be to put across the idea that public transport provides the proper means of getting in and out of cities and moving about inside them; not by the use of compulsion—measures like forbidding private cars to come nearer in than the suburbs would not work at present because they run too much contrary to popular desires—but by persuading people that organized transport, like organized anything else (from athletic competition to orchestral music) is that much further along the road to civilization than unorganized. It is no valid objection that it gets more and more difficult for public transport to pay its way. There are plenty of other public services that society as a whole has to provide for its members because they are considered necessary, even though they don't balance their budget internally: the sewage system, for example, or the health service—to say nothing of the Royal Navy. It is a matter of balancing the cost of a good public transport system against the cost of all the wasted effort and wasted time that our present over-use of private transport creates. We don't complain that the sewage system doesn't make profits and that therefore we would be justified in dealing with sewage as individuals.

If public enthusiasm for public transport were engendered by such means, what a difference would immediately be shown in our towns and cities. Their street-pattern, on which their architectural character depends, and which is nowadays condemned as inadequate, would be found to be perfectly adequate; there would be no need to destroy and disrupt them by road-widening schemes or blast them open with new highways. The parking problem, with all its frustrations, would disappear. We would no longer need to view our town architecture across a foreground of vehicles.

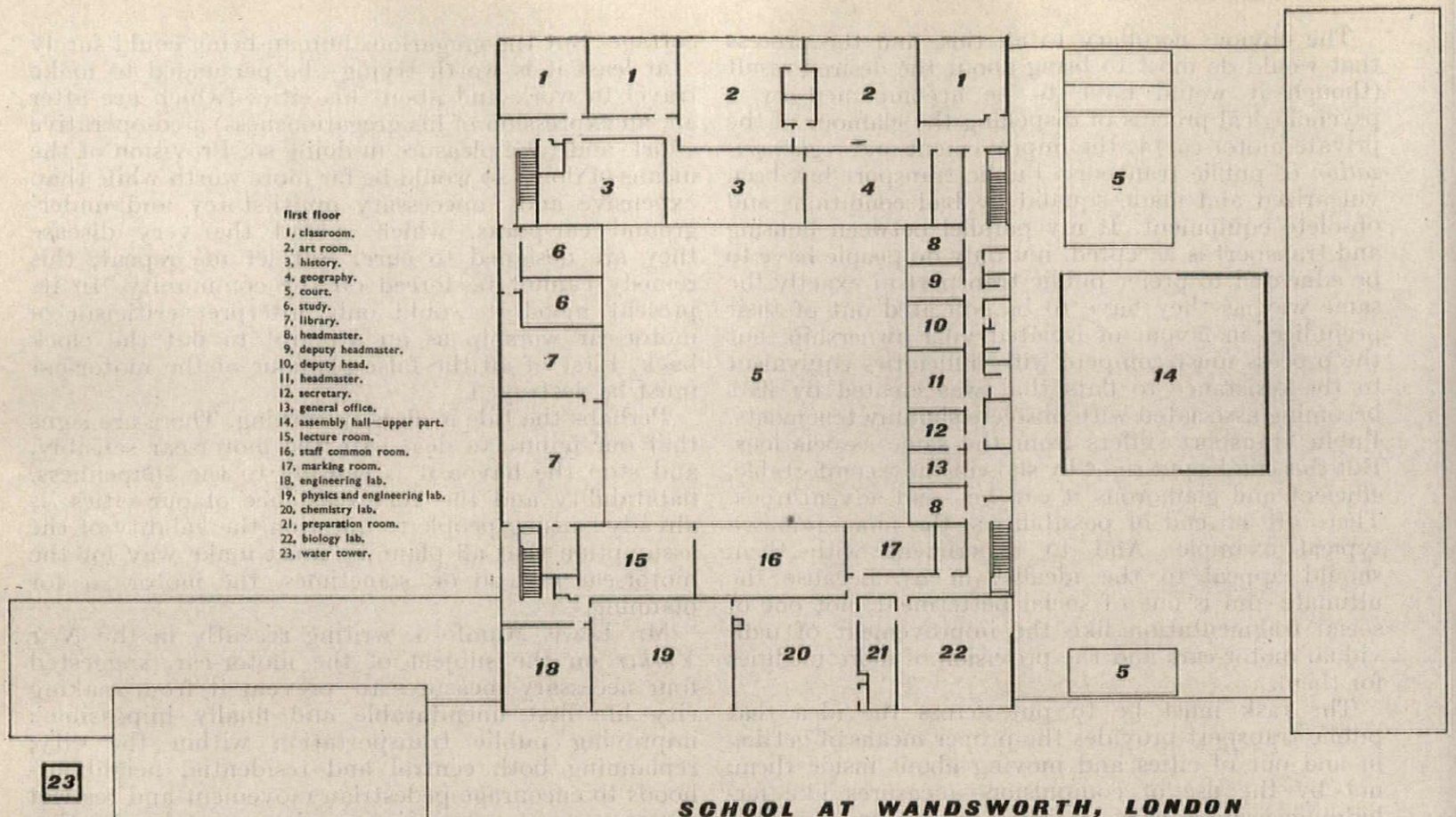
The privately owned car would still of course have its place—for private journeys and especially for travel in the country; the equivalent of the country cottage. But the gregarious human being could surely —at least it is worth trying—be persuaded to make travel to work and about his cities (which are after all, an expression of his gregariousness) a co-operative effort, and take pleasure in doing so. Provision of the means of doing so would be far more worth while than expensive and unnecessary multi-storey and underground car-parks, which spread the very disease they are designed to cure. But let me repeat, this remedy cannot be forced on the community. In its present mood it would only interpret criticism of motor-car worship as an attempt to put the clock back. First of all the false glamour of the motor-car must be destroyed.

Perhaps the tide is already turning. There are signs that our failure to deal with the motor-car sensibly, and stop the havoc it is causing to the shapeliness, habitability and the very existence of our cities, is already causing people to question the validity of the assumption that all planning must make way for the motor-car instead of, sometimes, the motor-car for planning.

Mr. Lewis Mumford, writing recently in the *New Yorker* on the subject of the motor-car, suggested four necessary measures to 'prevent it from making city life first unendurable and finally impossible': improving public transportation within the city; replanning both central and residential neighbourhoods to encourage pedestrian movement and restrict motor-car access; designing smaller cars and restricting the use of huge cars within the city; and relocating industry and business on the edge of the city to encourage cross-city traffic to take the place of the daily ebb and flow from outside.

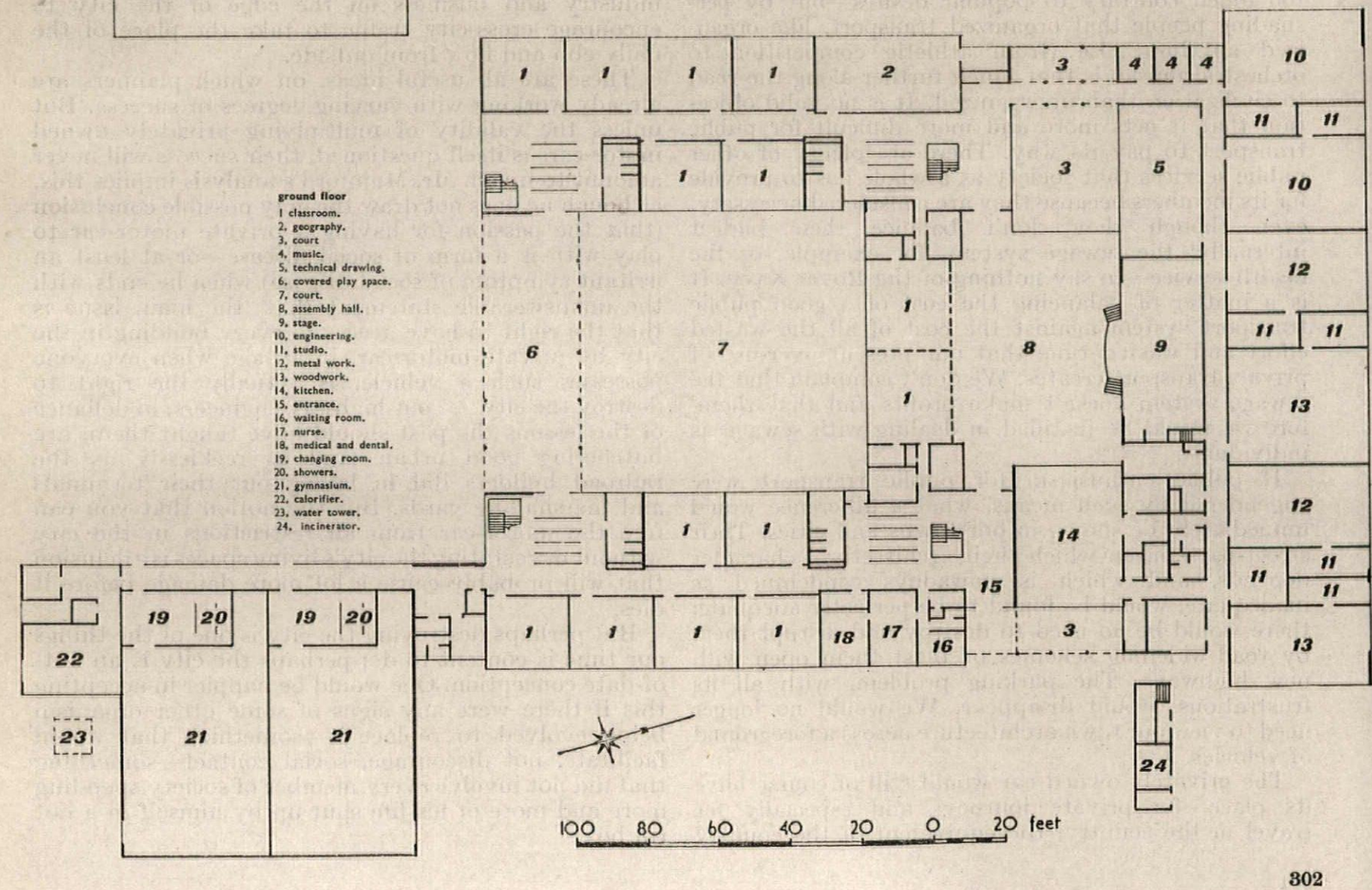
These are all useful ideas, on which planners are already working with varying degrees of success. But unless the validity of multiplying privately owned motor-cars is itself questioned, their success will never amount to much. Mr. Mumford's analysis implies this, although he does not draw the only possible conclusion (that the passion for having a private motor-car to play with is a form of social disease—or at least an irritant symptom of social disease) when he ends with the unanswerable statement that 'the main issue is that the right to have access to every building in the city by private motor-car, in an age when everyone possesses such a vehicle, is actually the right to destroy the city . . . our highway engineers, in defiance of the lessons the past should have taught them, are butchering good urban land as recklessly as the railroad builders did in laying out their terminals and marshalling yards. But the notion that you can free the motor-car from all restrictions in the city without devastating the city's living spaces is a delusion that will probably cause a lot more damage before it dies.'

But perhaps destroying the city is one of the things our time is content to do; perhaps the city is an out-of-date conception. One would be happier in accepting this if there were any signs of some other organism being evolved to replace it—something that would facilitate, not discourage, social contact—something that did not involve every member of society spending more and more of his life shut up by himself in a hot tin box.



first floor
1, classroom.
2, art room.
3, history.
4, geography.
5, court.
6, study.
7, library.
8, headmaster.
9, deputy headmaster.
10, deputy head.
11, headmaster.
12, secretary.
13, general office.
14, assembly hall—upper part.
15, lecture room.
16, staff common room.
17, marking room.
18, engineering lab.
19, physics and engineering lab.
20, chemistry lab.
21, preparation room.
22, biology lab.
23, water tower.

SCHOOL AT WANDSWORTH, LONDON

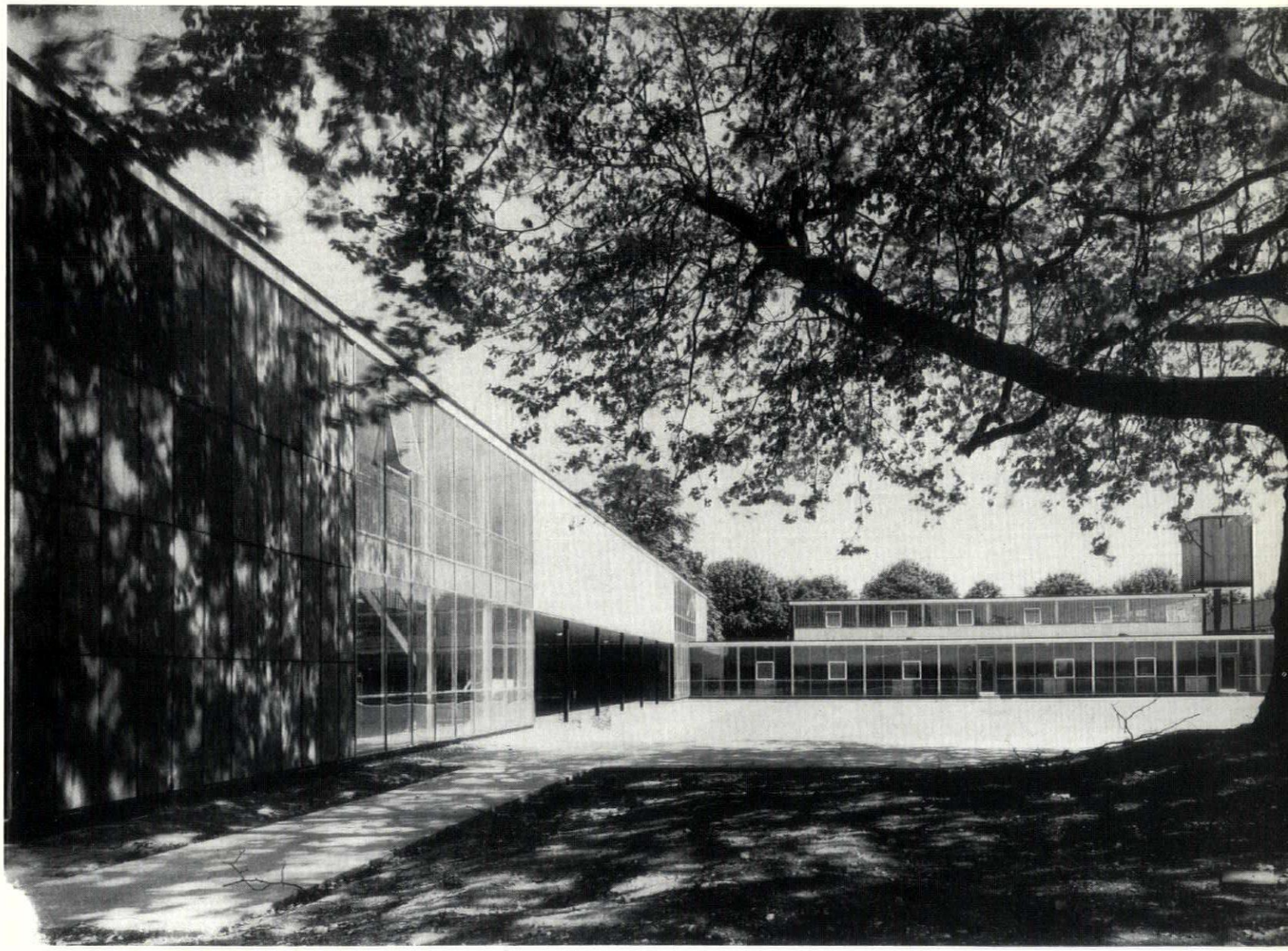


ground floor
1 classroom.
2, geography.
3, court
4, music.
5, technical drawing.
6, covered play space.
7, court.
8, assembly hall.
9, stage.
10, engineering.
11, studio.
12, metal work.
13, woodwork.
14, kitchen.
15, entrance.
16, waiting room.
17, nurse.
18, medical and dental.
19, changing room.
20, showers.
21, gymnasium.
22, calorifier.
23, water tower.
24, incinerator.

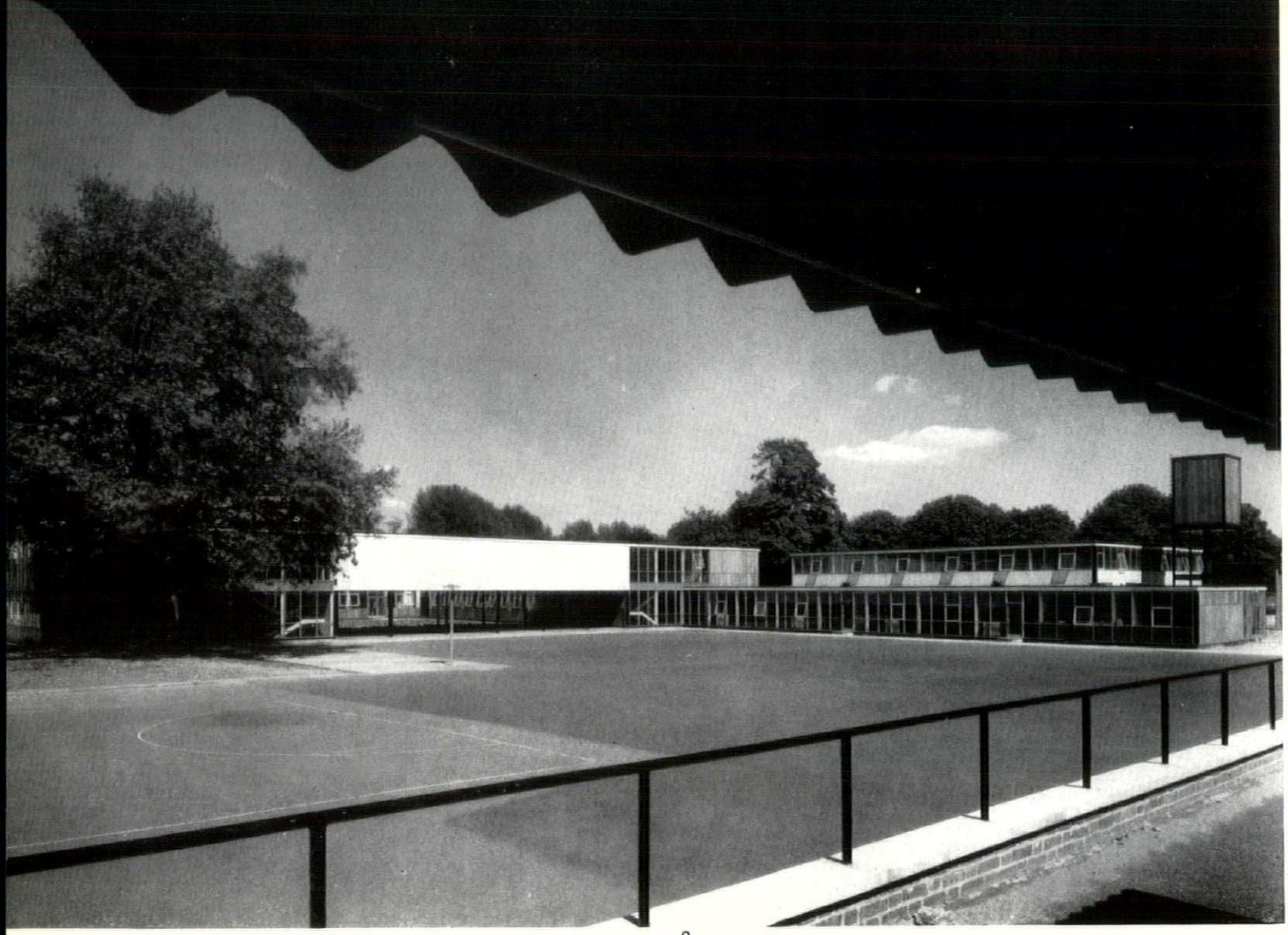
SCHOOL AT WANDSWORTH, LONDON

ARCHITECT	***SIR LESLIE MARTIN-former architect to the London County Council***
architect-in-charge	***J. M. Kidall***

1, view looking east towards the gymnasium with water tower on the right and covered play space on the left.



This school for 850 boys is off Trinity Road, Wandsworth, approached from the south through the LCC Fitzhugh Housing Estate. (AR, Nov., 1956.) The site was formerly the playing fields of the Royal Victoria Patriotic School and has a slight fall to the north with several fine trees which have been kept. The school was limited to two storeys in order not to compete with the adjacent 11-storey point blocks. The old school will eventually be



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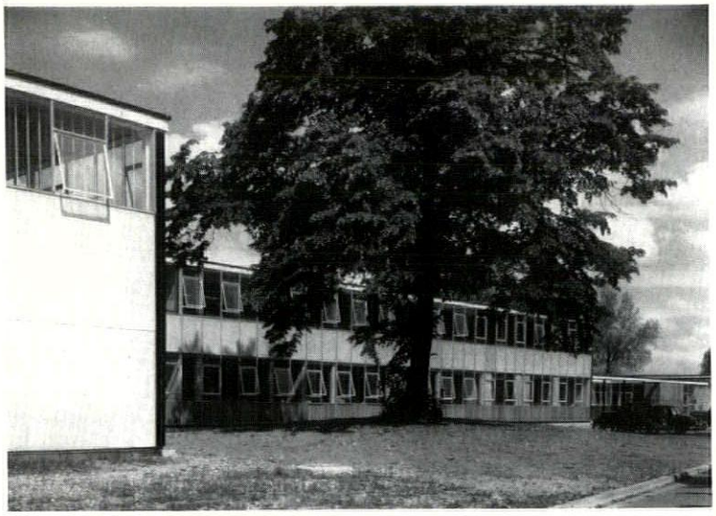
3



demolished except for the chapel and swimming pool which will be reused.

The classroom block consists of two double-banked wings facing east and west, linked on the north by two classrooms at ground level with administrative rooms over and on the south by the library at first-floor level only, thus forming an inner courtyard. The upper floor of the classroom block consists mainly of larger rooms such as laboratories, art rooms, etc., with no lateral circulation, approached by short corridors from four

2, on the facing page, view from the chapel looking over the playground to the covered play space with library above and the gymnasium on the right.
3, on the facing page, the classroom block with part of the engineering block on the left. For the classrooms the cladding generally is glazed curtain walling with coloured panels as upstands at first floor level and asbestos sheets faced with strips of western red cedar at ground level.
4, one of the four staircases leading to the upper classrooms. The floor has a terrazzo finish in two tones of grey and the treads to the stairs are of hardwood.

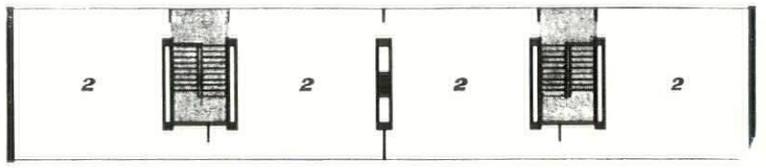
SCHOOL AT WANDSWORTH, LONDON

staircases, one in each corner of the rectangular block. The workshops which are approached through the assembly hall or under a covered way on the west are all housed in a single-storey block facing north and consist of engineering, metalwork and woodwork shops and technical drawing office.

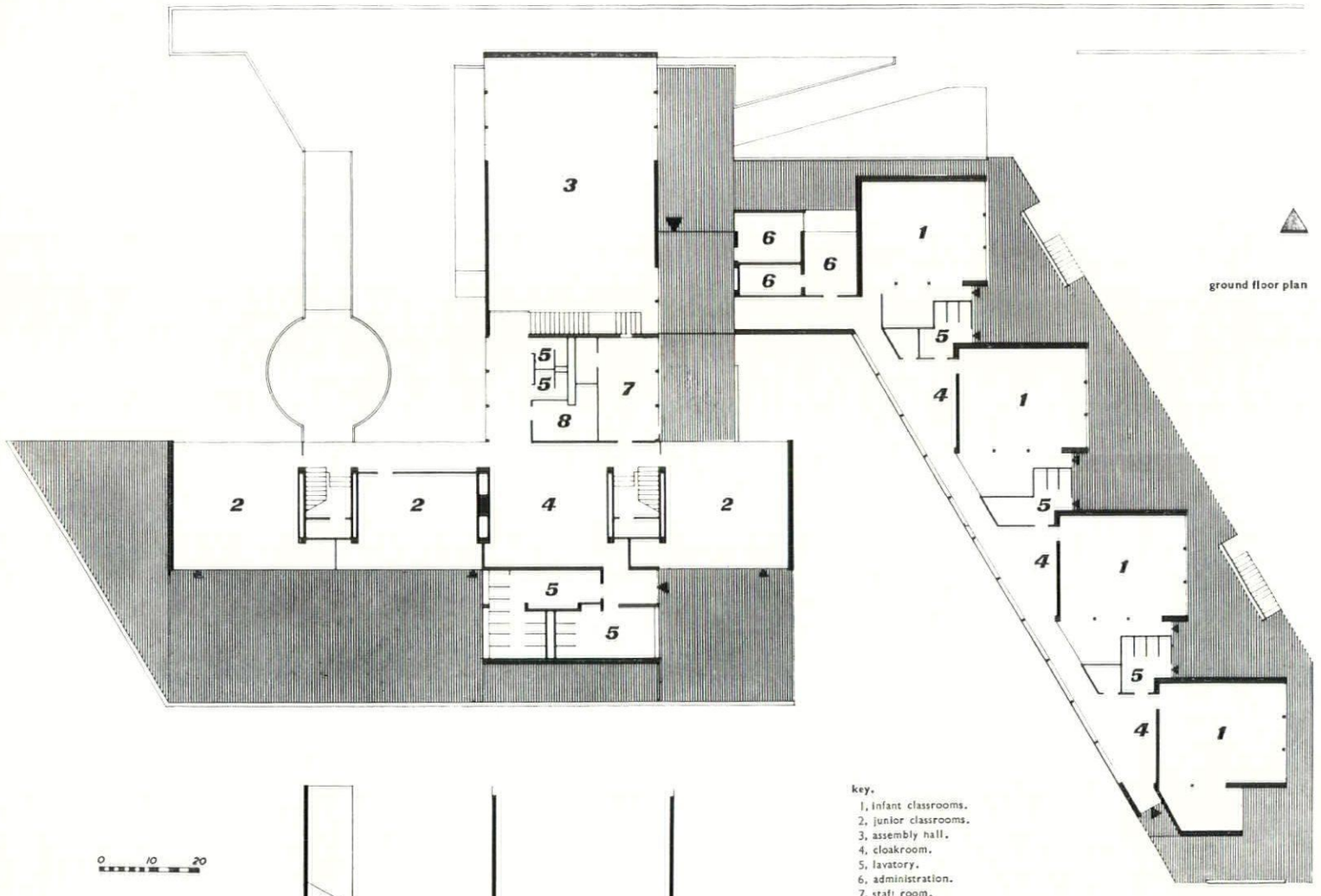
All blocks have a light prefabricated steel frame to a 40-in. module. In the classroom block the stanchions are 5-in. square box sections and all first-floor beams are 16-in. deep throughout with perimeter stanchions and main floor and roof beams at 13 ft. 4 in. centres. Secondary floor beams are at 3 ft. 4 in. centre at first floor carrying precast r.c. floor slabs. The roof is 3-in. woodwool slabs carried on steel top-hat sections spanning between main roof beams, and finished with ½-in. screed and three-layer bituminous roofing felt. The cladding generally is glazed curtain walling with coloured panels as upstands at first-floor level and asbestos sheets faced with strips of western red cedar at ground level. The solid infill is of either oatmeal or black coloured concrete slabs bolted back to the frame. In the assembly hall and gymnasium 8-in. and 4-in. columns were used carrying specially designed roof beams. All stanchions in the two-storey portion are protected against fire by a precast flexible vermiculite concrete casing 1-in. thick. Heat is provided by low-pressure hot water from a district heating unit on the Fitzhugh estate and piped through an underground duct to a calorifier room in the school.



SCHOOL AT LEWISHAM, LONDON

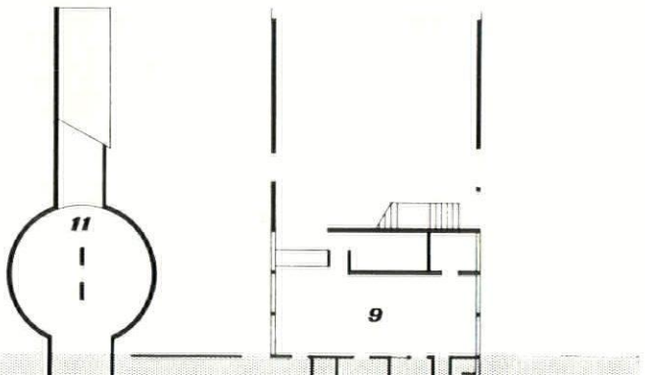


top floor plan
junior classroom block



ground floor plan

key.
1, infant classrooms.
2, junior classrooms.
3, assembly hall.
4, cloakroom.
5, lavatory.
6, administration.
7, staff room.
8, medical inspection.
9, kitchen and stores.
10, boiler room.
11, fuel store.



plan at boiler house and kitchen level with the classroom block superimposed

ARCHITECT | **PETER MORO**

ssistant architect | **Michael Mellish**

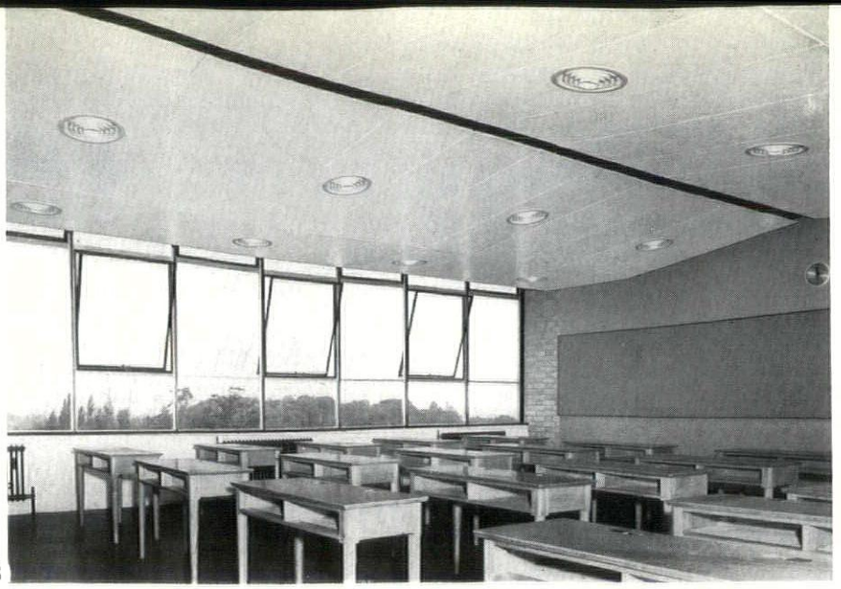
1, the junior classroom block from the north with the assembly hallon the left.



This primary school for 160 infants and 280 juniors faces east on a steep site with a fine view over Catford across Honor Oak Road. There are three units, junior classroom block, assembly hall and infant classrooms, with the junior classroom block dominating the composition. In order to admit south light and at the same time give an uninterrupted panoramic view towards the north, the junior classrooms are arranged to have direct access from staircases and have no corridors ; each classroom is therefore completely transparent. The assembly hall, which also serves as a dining hall, is directly connected to the kitchen, which is lit from two sides and cross-

ventilated, and linked to the infant classrooms by the entrance hall and administration section. The infant classroom wing is on one level without internal steps. The classrooms are staggered and are easily recognisable as individual units ; this staggered arrangement provides, internally, widenings to the corridor which serve as cloakroom areas and, externally, small protected teaching spaces. The classrooms enjoy a fine view towards the east and get south light through clerestory windows. The schoolkeeper's house is placed at the entrance to the school at the bottom of the site.

The junior block is of r.c. frame construction. The framework is set well back from the façade and its columns are contained within the staircase enclosures and partition walls. The classrooms being square, beams span from column to column parallel to the window



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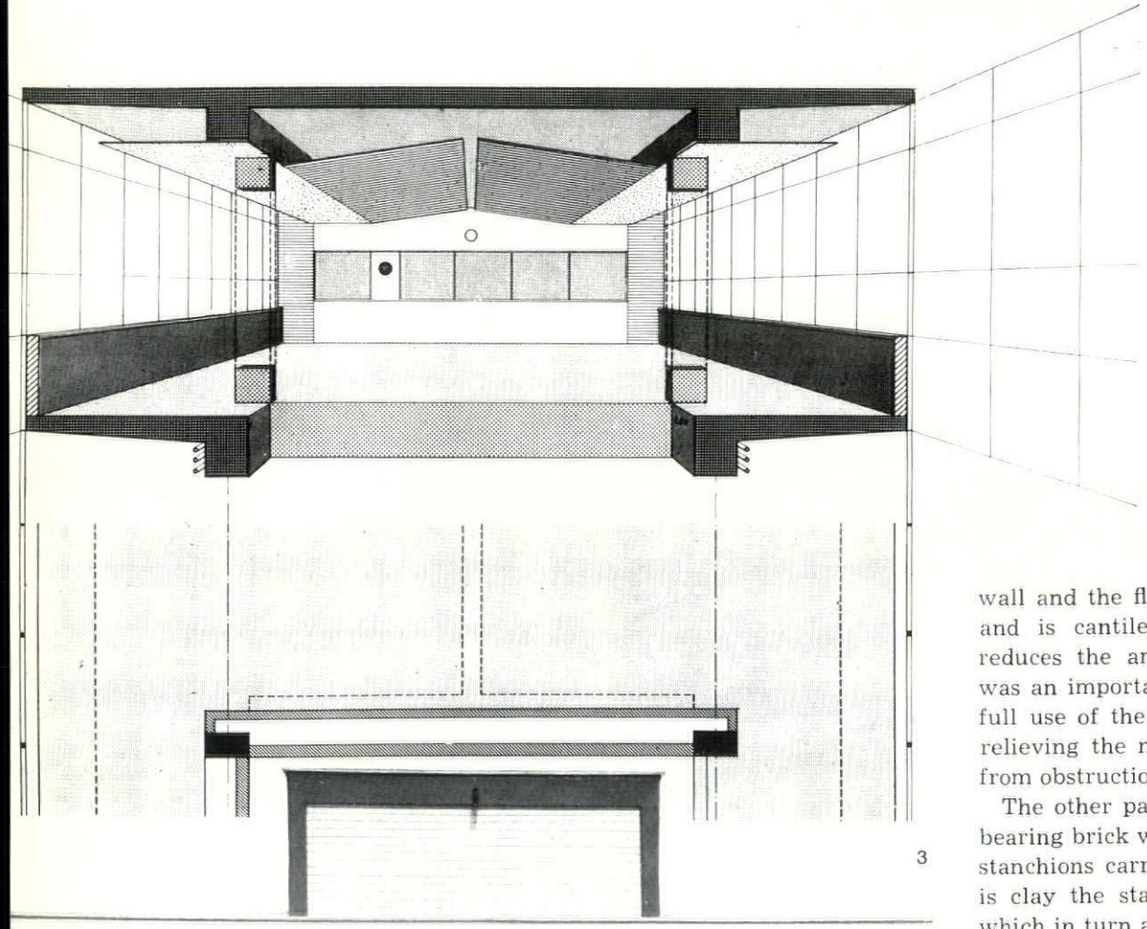


3



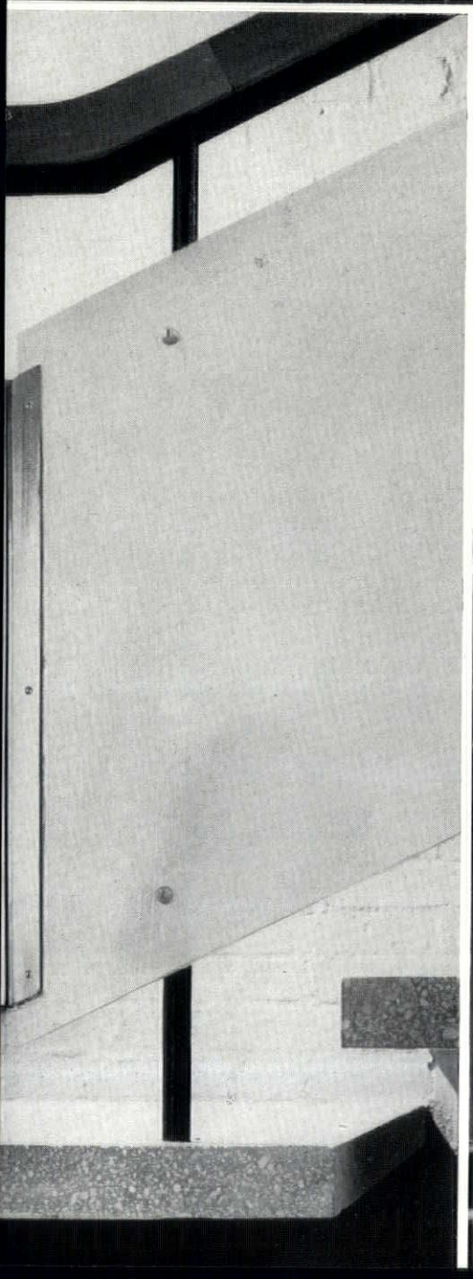
2, junior classroom showing stanchion-free wall.
3, perspective and portion of plan showing the construction of the junior classroom block and below, detail view of the south elevation showing the penetration of the internal staircase block through the roof to form the tank house.
4, the assembly hall from the west and the junior classroom block on the right.
5, staircase detail with prefabricated cantilevered terrazzo treads. The panel is painted plywood and the handrail is mahogany.
6, the stair leading from the assembly hall to the classrooms above. The wall is painted cherry red.
7, looking from the assembly hall across the entrance hall towards the infant classrooms.

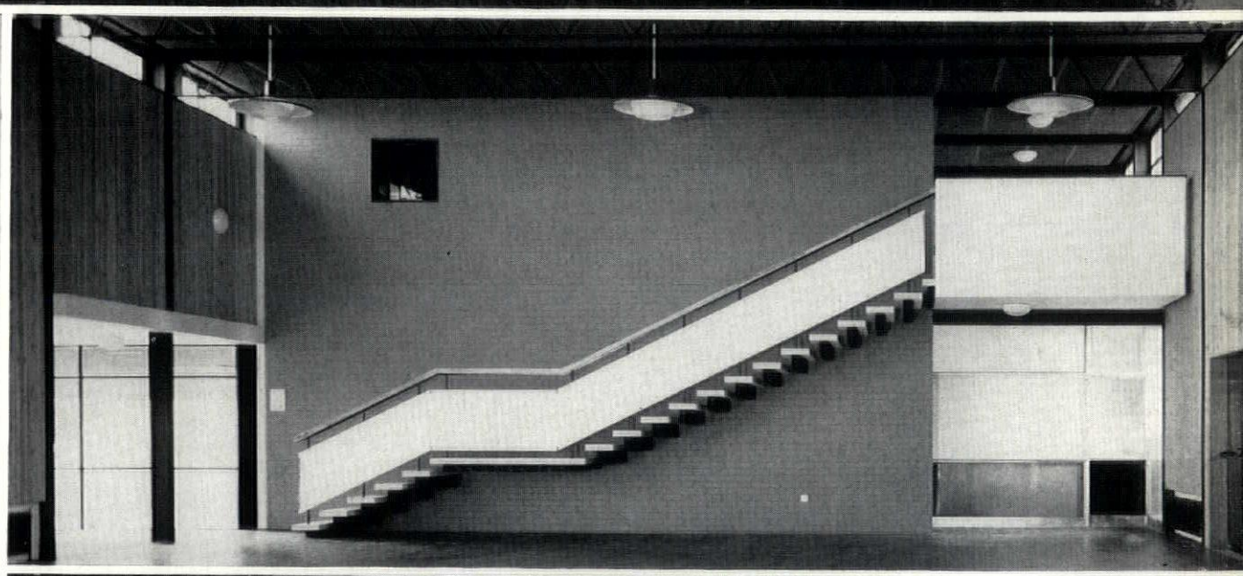
4
5 | 6
7

wall and the floor slab itself spans from beam to beam and is cantilevered beyond them. This arrangement reduces the amount of reinforcement required, which was an important consideration at the time, as it makes full use of the contraflexure, i.e. the cantilever portion relieving the main span ; thus the window wall is free from obstruction by columns.

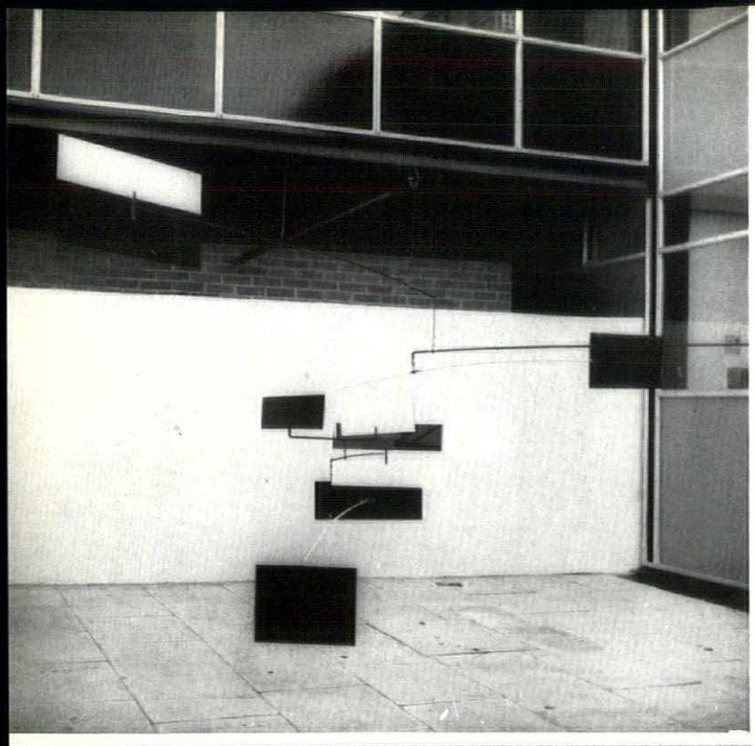
The other parts of the school are constructed of load-bearing brick walls flanking window walls formed of RJS stanchions carrying welded steel trusses. As the ground is clay the stanchion bases rest on r.c. ground beams which in turn are carried by bored piles. The steel frame is filled in with glazed curtain wall units and where complete solid infilling is required slatted plywood panels are used. The opaque coloured glazing is cast glass with ceramic enamel paint fired on to the back. The aluminium parts of the curtain walling are left untreated and all steel members are painted black. Apart from the junior classroom block roof, which is r.c. slab, the roofs are reinforced wood-wool slabs carrying lightweight screeds and are finished with three-ply felt roofing. The fairfaced brickwork is Uxbridge flint bricks. Central heating is by solid fuel boilers, with the fuel store in the shape of a drum ; the coal lorry drives up a ramp and then shoots the fuel into the fuel store from above. There is an external mural by John Verney at the entrance and a mobile and wood relief by Victor Pasmore in the courtyard overlooked by the staff room, and facing the entrance hall, and a wood relief by the same artist at the junction of the administration and infant corridors.











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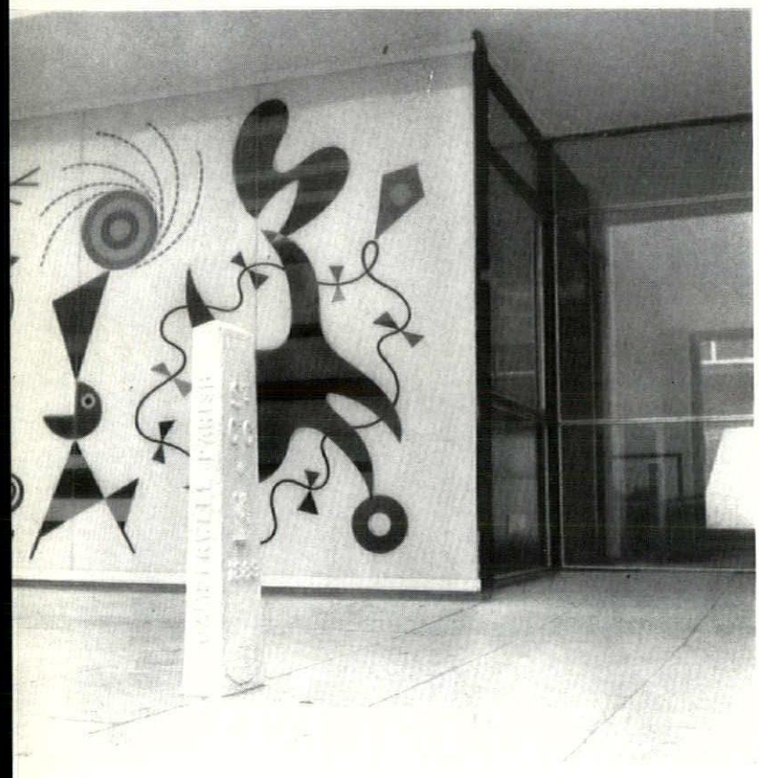
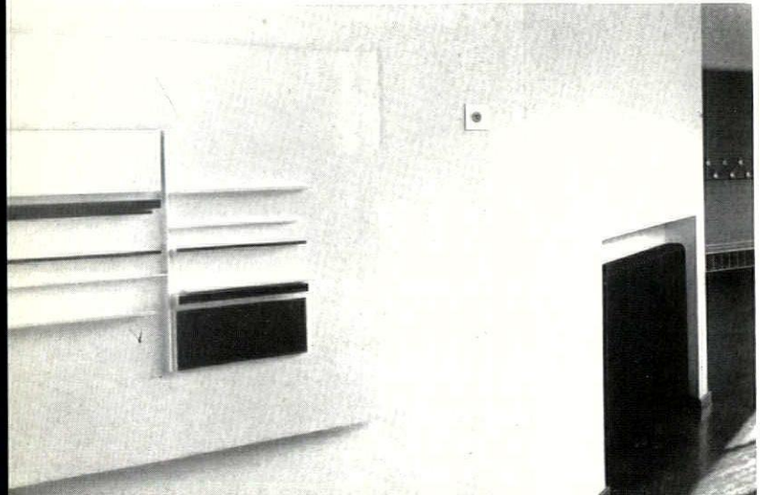


9

SCHOOL AT LEWISHAM

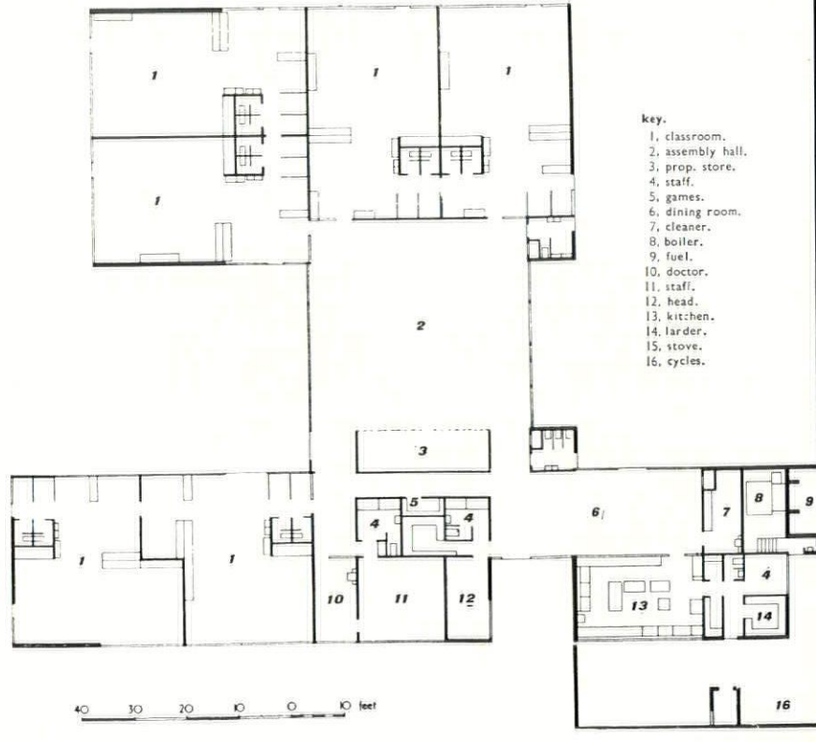
8, mobile by Victor Pasmore. 9, the entrance showing part of a mural by John Verney; in the foreground is a Camberwell bo lard. 10, wood relief by Victor Pasmore in the corridor of the infants' wing.



10

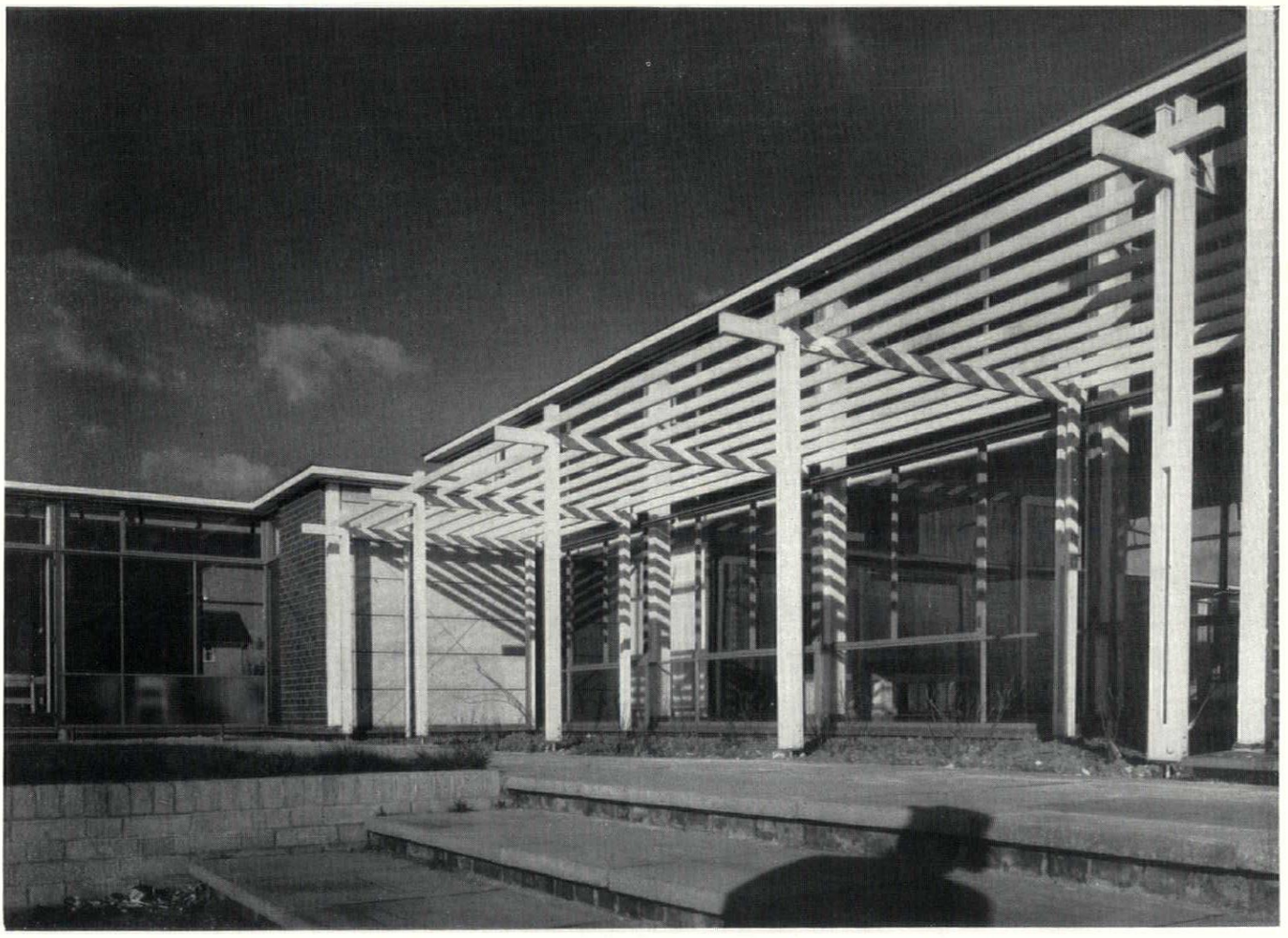
This infant school is planned to accommodate 240 children between the ages of five and eight years: it is sited on a new housing estate between the old town centre and the New Town, with an entrance from Pound Avenue. The construction is the standard Hertfordshire steel frame and curtain walling, using the 8 ft. 3 in. module. Economies were achieved by virtually dispensing with corridors and by reducing the height of the assembly hall from the usual 16 ft. to 12 ft. The latter economy was experimental but has since been repeated in other schools.

The property store, which is also used as a stage, is made up of ply-faced stud frame on light metal supports and is coloured in an abstract pattern. A pierced screen wall of Burwell white bricks has been placed around the kitchen yard, and brick has been used elsewhere as walling in contrast to the standard cladding blocks. An attempt has been made to avoid the subtopian effect of chainlink fencing by substituting standard wrought iron park railing. Although this is slightly more expensive, in a case where frontages form part of the street, the results fully justify the expense. The playcourts are attached to the school and there is a paved semi-courtyard on the east side incorporating a shallow pool.



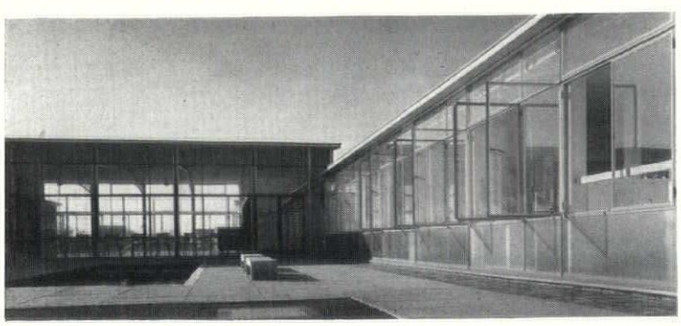
SCHOOL AT STEVENAGE, HERTS.

ARCHITECTS	JAMES GUBITT AND PARTNERS
ASSOCIATE ARCHITECT	C. H. ASLIN



1

1, the pergola on the west side of the assembly hall, which is on the right. The small square block projecting at the end of the pergola is one of the two cloakrooms serving the assembly hall and dining area.
2, a view across the pool in the main play-court towards the assembly hall. The architectural effect of keeping down the ceiling of the hall to twelve feet can be appreciated in this view.



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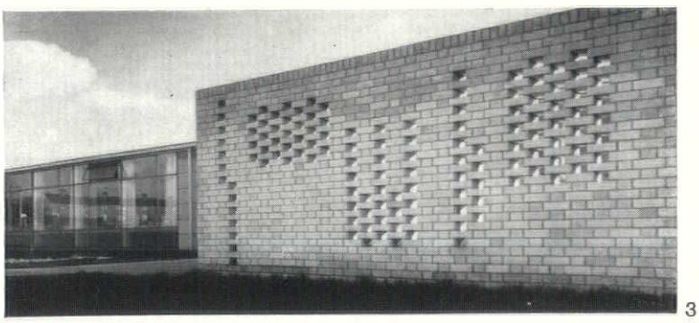
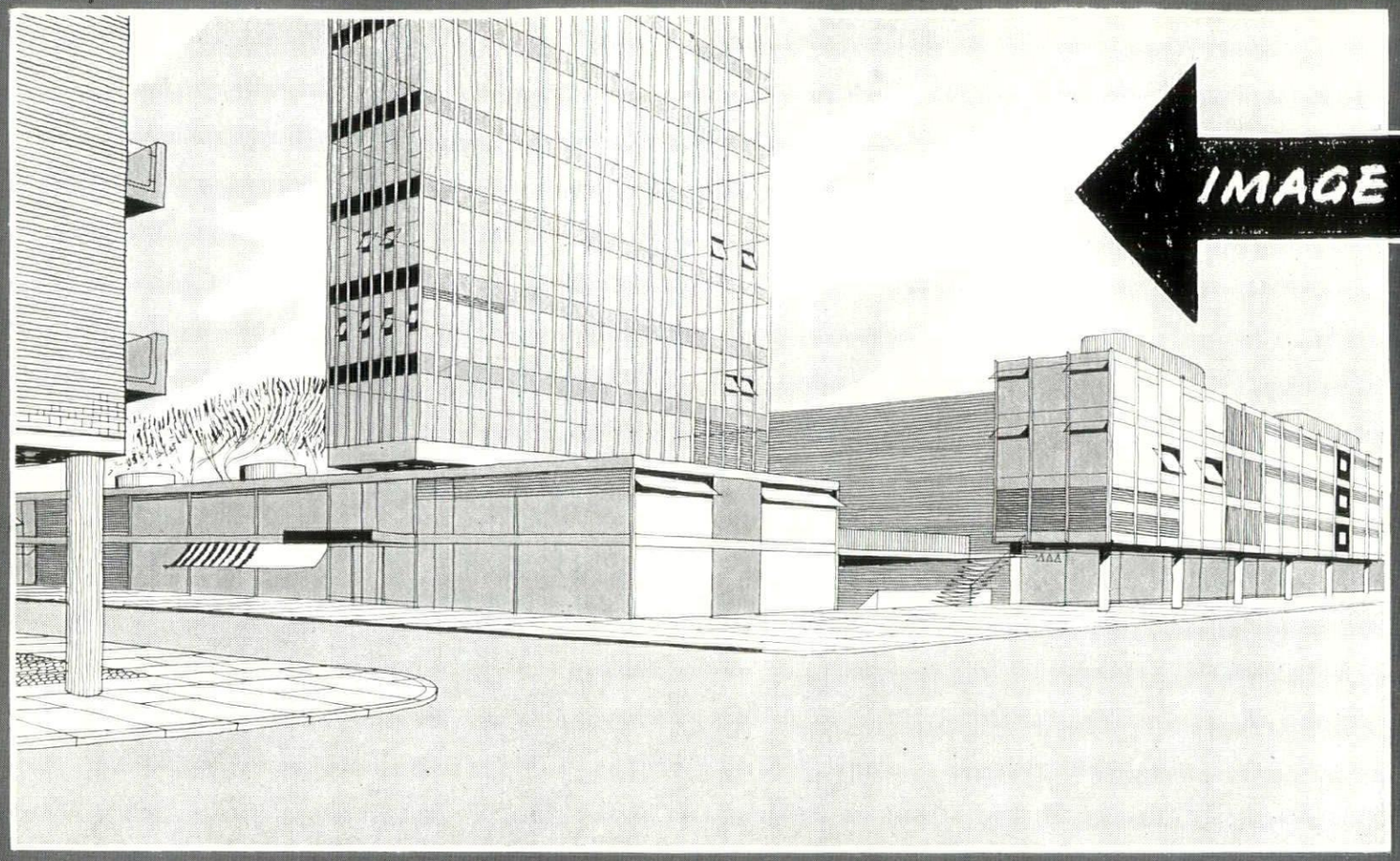


3

3, the pierced brick screen-wall of the kitchen court. Although standard Hertfordshire construction was used for this school, brick walling has been employed to give variety to the elevations.



IMAGE


MON-FRI
NO
WAITING
THIS SIDE
11·30 AM - 6·30 PM
CAR PARK
NO
LEFT TURN
NO ENTRY
POLICE
REALITY

The clear cut IMAGE of urban rebuilding (top of facing page) which the architect presents to the public (see R. A. architectural room) is just wishful thinking. The REALITY, so long as the various authorities are allowed to litter the street with unco-ordinated objects is more likely to be the man-made jungle shown below it, over which at present the architect has no control whatsoever.

Kenneth Browne

STREETSCAPE WITH FURNITURE

THE ATTACK ON THE CORRIDOR STREET AT NOTTING HILL GATE

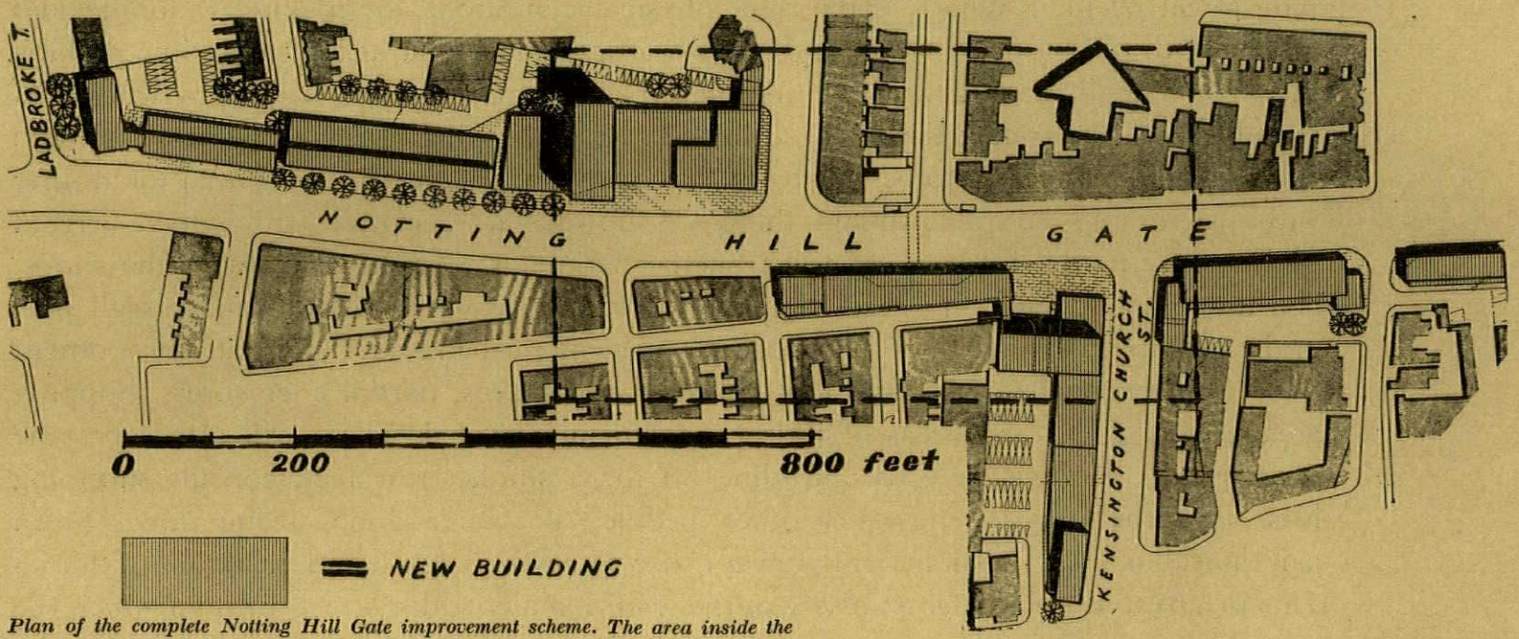
The chance to rebuild a large stretch of shopping street in London at one go and by one architect doesn't happen very often. For this reason the Notting Hill Gate Improvement Scheme, as it is optimistically called by the L.C.C., is an unusual opportunity. Especially so, since this has been a busy shopping area for a long time and has evolved a very colourful cosmopolitan character with plenty of pubs and cafés.

Such an opportunity raises the fundamental question—what should a modern shopping street be like? What are the right physical conditions for making shopping and mixing with other people a pleasure instead of a penance and at the same time making the street visually coherent? In the first place pedestrians need protection physically and visually from the traffic; especially so in the case of Notting Hill Gate which is a main traffic artery. They need to be able to get from any part of the shopping area to another without crossing the traffic stream, therefore subways are essential. If they have arrived by car, they need adequate car parks on the perimeter with easy access to the shops, and though shoppers don't need complete segregation, for traffic movement is all part of the business, they must not feel in danger of being pushed under a bus at any moment from an overcrowded footpath. For this reason enclaves, partial enclosures, shopping arcades and alleys and areas of wide pavement are needed. These will also serve the other need for somewhere to take time off for a smoke, rest feet, consult shopping lists, read the paper and watch other people, all better done sitting down (even paintings in a gallery look better that way), also somewhere to eat and drink out of doors. This means that the draughty misery of the traditional corridor street through which the shopper is sucked or blown must be avoided. The directional line of the street must be

opposed by breakbacks, piazzas, precincts, shop-lined alleys, areas of widened pavement which make these things possible and tempt the shopper to loiter, consider and select in comfort and their form should be emphasized visually by the floor pattern and by change of level.

So far, so good, but a further problem remains which has so far proved intractable and that is the disrupting effect on the street of unco-ordinated street furniture; the litter of unrelated, generally ill-designed junk with which our streets are festooned. The complexity, hurry and frantic improvisation of the modern way of life seem to have petrified in its street furniture and though attention has been concentrated recently on lighting standards, in fact, they are only part of the larger problem of street furniture generally. Nearly all the items need redesigning but even the individual pieces, such as the new bus shelters, which have been designed by well-known M.S.I.A.s are still litter if badly placed. What is needed is overall control by someone seeing the picture as a whole in order to limit the pieces, combine them and fit them into the streetscape. At present every street is littered with the old iron (or concrete) of at least half a dozen authorities acting on the maxim of 'damn you, Joe . . .' The Ministry of Transport is a particular offender in this respect, notoriously blind to the effect of its inflexible instructions on the appearance of the street; quite apart from the fact that its multiplicity of signs result in the motorist being so confused as not to see half of them and drive dangerously because he cannot watch the road. The municipal engineer, the police, the post office, the motoring clubs, etc., add to the jungle; all having their impedimenta to dump or hang somewhere and the result in the average street is chaos.

Somehow or other the whole thing has got to be simplified and in the case of Notting Hill Gate I suggest that in addition to choosing the best fittings available they should be tied in by pedestrian covered ways which not only unify them but emphasize the pedestrian enclosure, lead, shelter and rest the shopper and visually protect him from the traffic. Another campaign is needed to Clean Up the Streets and the new Notting Hill Gate would be a good place to start.

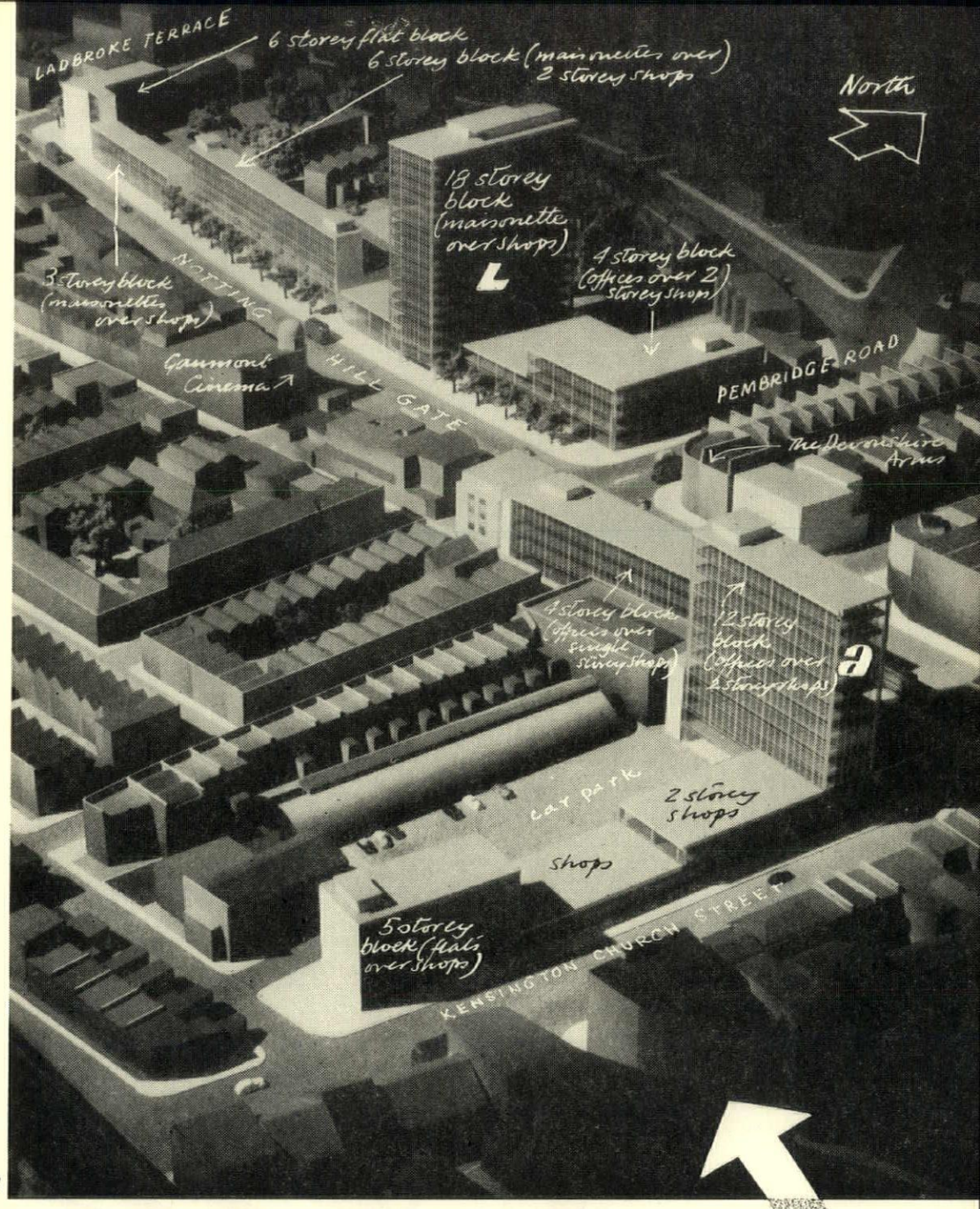


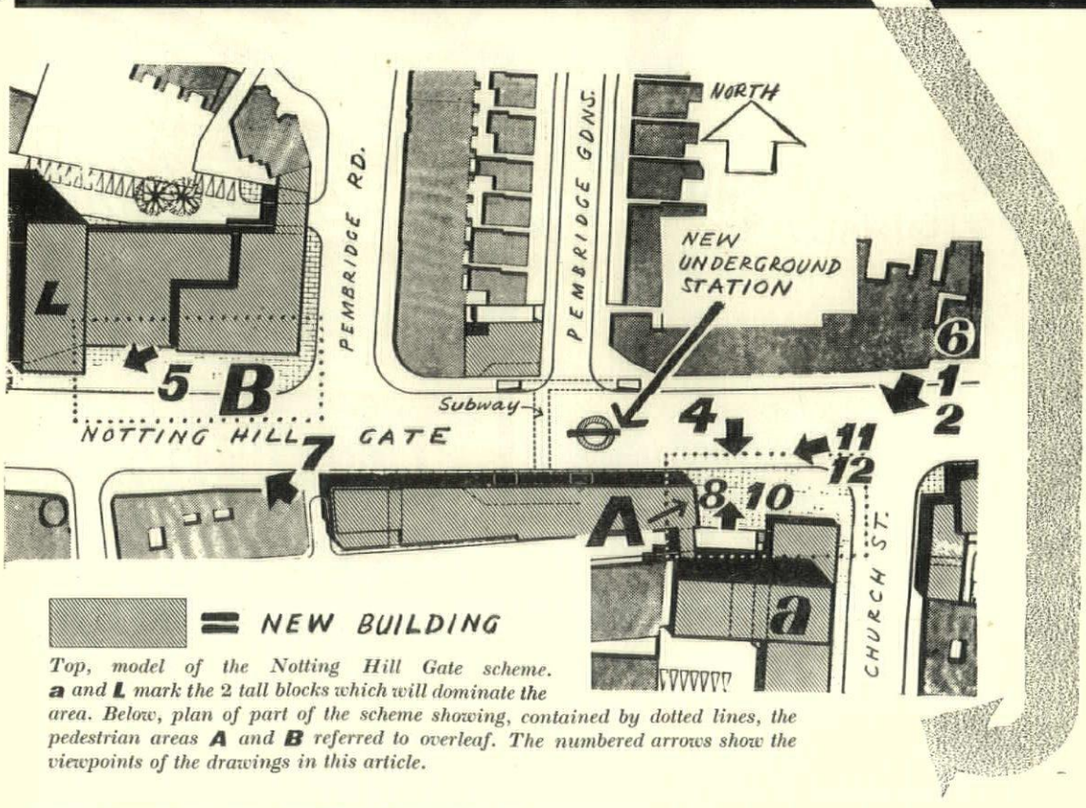
Plan of the complete Notting Hill Gate improvement scheme. The area inside the broken line is considered in this article and reproduced to a larger scale opposite.

The Notting Hill Gate Improvement Scheme* has come about as the result of an LCC road widening plan which has been in the 'pending' tray since 1910 but is now actually happening. It is aimed at relieving the frantic traffic congestion at this point where the east-west A.40 traffic (Marble Arch-Notting Hill Gate-Shepherds Bush) is crossed by heavy north-south traffic via Church Street and Pembridge Road (see plan). That it will in fact achieve this aim seems extremely doubtful since a maze of traffic lights will still be necessary; but traffic flow is outside the scope of this article. The immediate physical result is that for 600 yards along Notting Hill Gate itself buildings have been demolished on one side of the road and also for 150 yards down Kensington Church Street. In conjunction with this widening scheme London Transport are building a new Underground station under the road. This will replace the two existing stations (Central and Inner Circle) which are at present on opposite sides of the main road and invite you to risk your neck crossing the traffic artery if you want to change trains or shop on the other side. The subway of this new station with exits on either side of the road will provide a much needed link. However, a severe criticism must be made at this point. It is only half doing the job if a similar subway is not built leading to the area west of Pembridge Road, the most important area of the whole scheme and containing the tallest building (**L** on plan). If this is not done, and there seems no intention of doing it, the shopping territory will be bisected and makes nonsense. If it is provided, then the whole shopping street would be properly and safely linked and this effect of continuity would be reinforced if the subways were lined with shops and gave access to the basements of street level shops (viz. Piccadilly Underground).

The LCC as the planning authority should be praised for not accepting a corridor street of even height buildings which might have brought in greater returns in terms of £ s.d., but which would certainly have been deadly dull inhuman ones. They have made an attempt to get away from it by means of shaping and enclosure even if they have not gone as far as they would have liked. Having done so, they should now take steps to reinforce this with the street furniture and to underline enclosure by floor pattern and change of level.

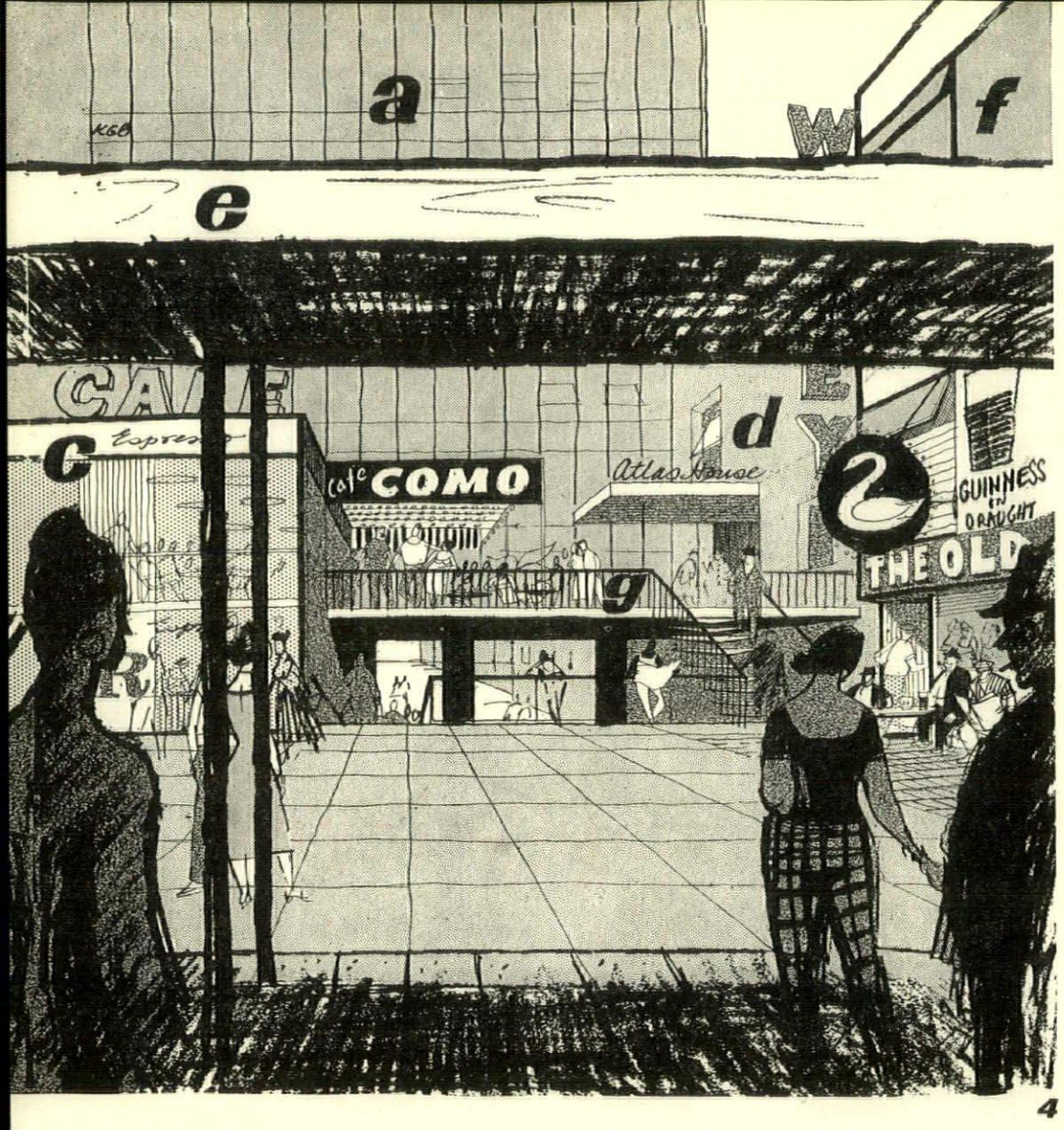
* The architects for all the rebuilding above ground are Cotton, Ballard and Blow, acting on behalf of two development companies, and a model of their approved scheme (right), was shown at Kensington Town Hall in October 1957.





Top, model of the Notting Hill Gate scheme. ***a*** *and* ***L*** *mark the 2 tall blocks which will dominate the area. Below, plan of part of the scheme showing, contained by dotted lines, the pedestrian areas* ***A*** *and* ***B*** *referred to overleaf. The numbered arrows show the viewpoints of the drawings in this article.*

Pedestrian Space



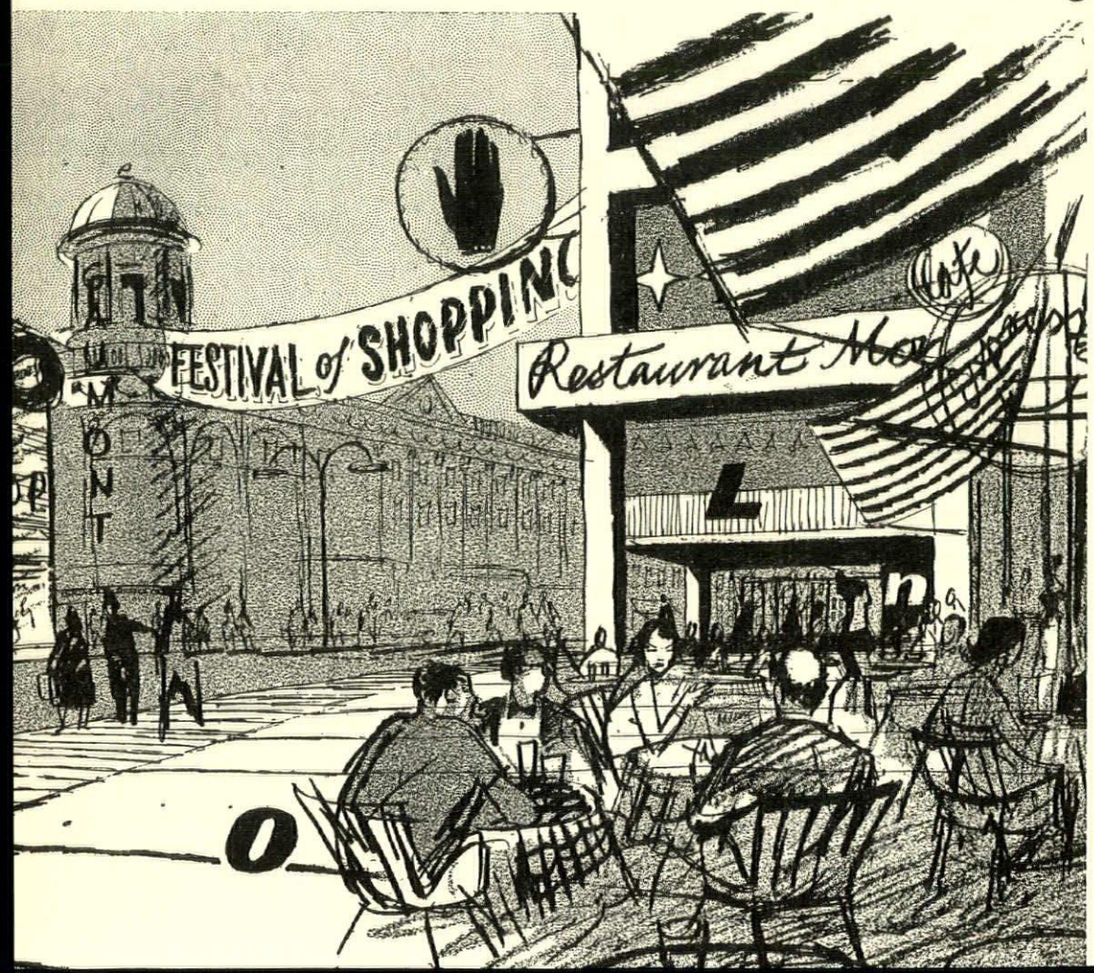
4

Two areas here by their form combat the corridor street and cater for pedestrian enjoyment. The first is:—

at the junction of Kensington Church Street and Notting Hill Gate where the pavement widens to 50 ft. The enclosure provided by the tall office block **a** *(an excellent backdrop), the corner building* **c** *and the link block* **d** *affords the pedestrian a place to chat, drink and rest his feet; somewhere to meet friends, somewhere easily described. The more invitation there is (pub* **f**, *café* **c**) *the better. The space between* **c** *and* **d** *could be retained as pedestrian territory, in spite of the access below to a car park, by jacking it up to form a platform* **g**, *thus providing the interest of changing levels, an overflow from the café* **c** *with a good viewpoint and also a street entrance to the tall office block through link* **d**. *The paving here should echo the static, non-directional character of the place. A pedestrian covered way or canopy following the curb would complete the feeling of enclosure.*

A

5

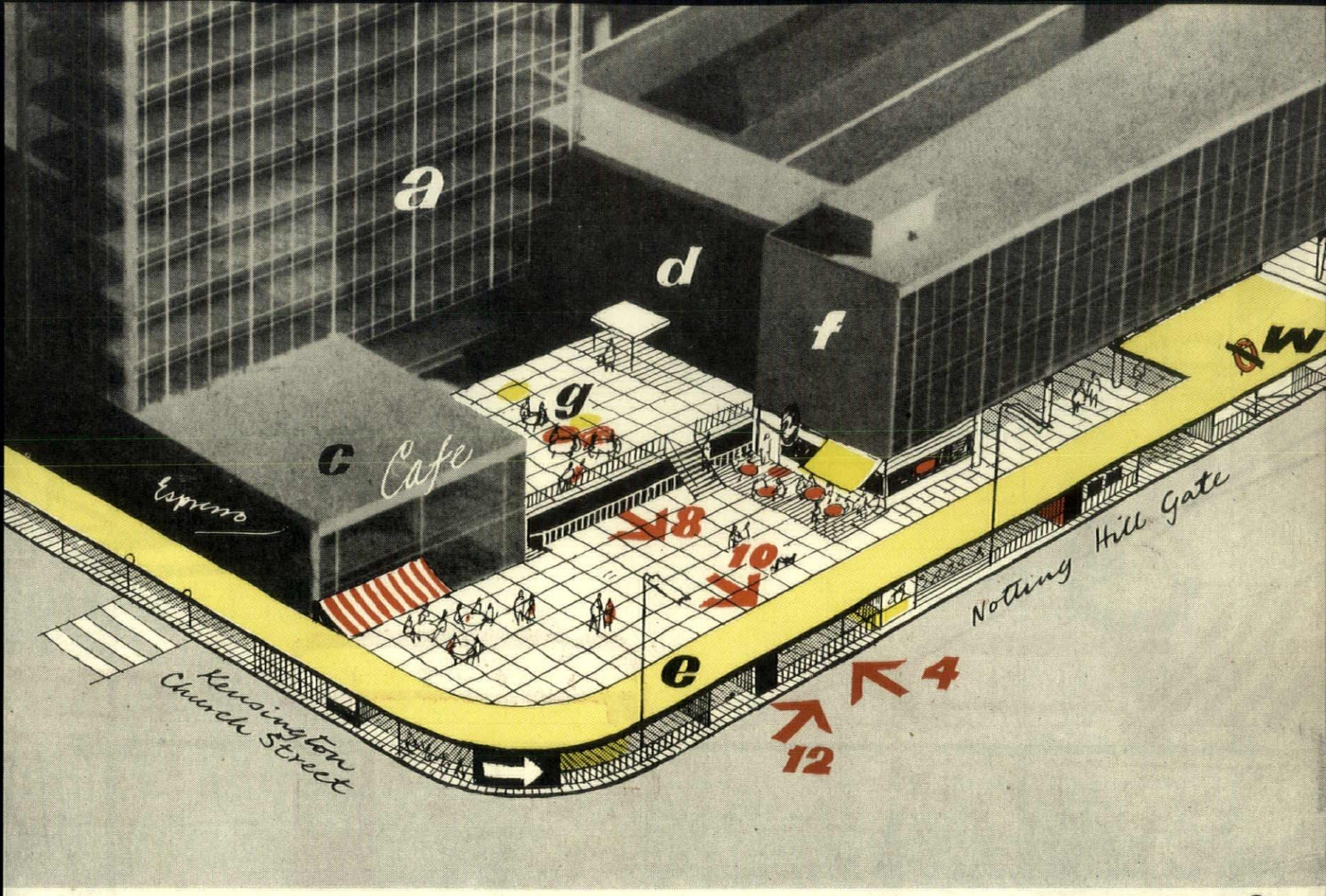


The second area is:—

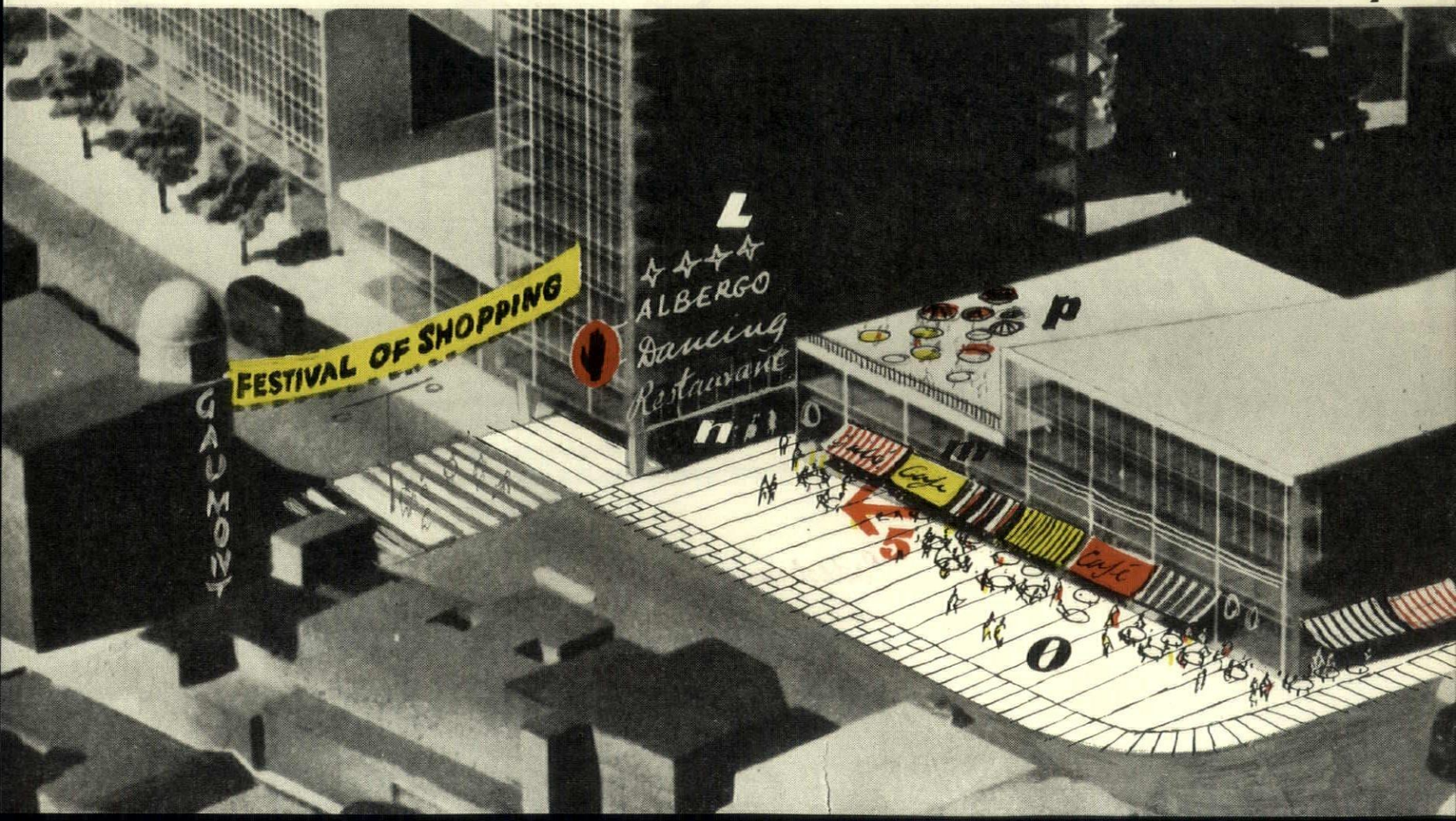
where the 18-storey maisonette block **L** *comes down at right angles to the pavement and in so doing breaks the passage-like feeling of the street. A 40-ft. pavement* **o** *gives ample space for sitting out and a row of cafés would be just the answer with as many gaily striped sunblinds and as much colour generally as possible.*

This is the area which should be linked to the Underground and area **A** *by subway, but isn't. The relaxing area should be distinguished from the footpath proper by change of paving, which should run contrary to the street line and emphasize that this is a place to stop. The banner shown linking the tall block* **L** *with the tower of the existing cinema opposite is to emphasize the point that somehow enclosure must be carried through across the street itself to knit the two areas together.*

B


a
d
f
g
c
Cafe
Espresso
8
10
e
4
12
Notting Hill Gate
Kensington Church Street

6
7


L
ALBERGO
Dancing
Restaurant
FESTIVAL OF SHOPPING
GAUMONT
p
Cafe
5
Cafe
o



8

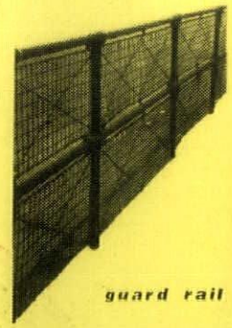
Pedestrian Space (contd.)

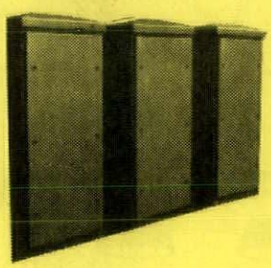
Back in area **A**, *the drawing above looks out from enclosure and shows the kind of place the shopper will welcome. This is obviously a haven from the rush and shove of the footpath, a bit of a backwater into which he can eddy and relax for a bit, exchange gossip, sink a pint, have some coffee or feed the pigeons. This is a good place to meet someone, a place you could describe. Plenty going on but no feeling that you must move with it. The pedestrian canopy seen in the background marks the limit of pedestrian territory and gives visual protection from the traffic without isolation.*

Street Furniture

Here are some of the objects found in streets whose combined effect is visual anarchy. *Completely unco-ordinated, as they are at present, they are just so much litter. Most of the things shown are in need of drastic redesigning anyway with honourable exceptions such as the lighting column (an improvement on the suspended horse-troughs and arty concrete sculpture so often seen), LPTB furniture, bollard, seat and litter basket.*

[continued on page 323

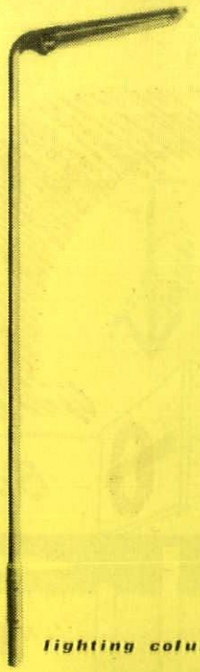

guard rail


switchgear boxes

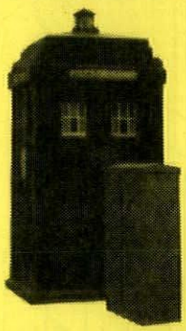

refuge light



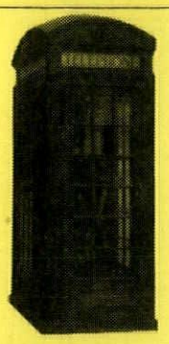
bus stop


lighting column


eighing machine

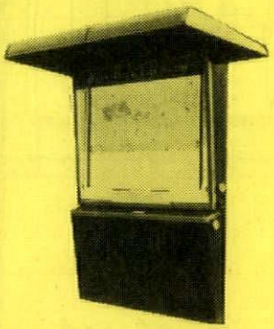

police call box


pillar-box


telephone box

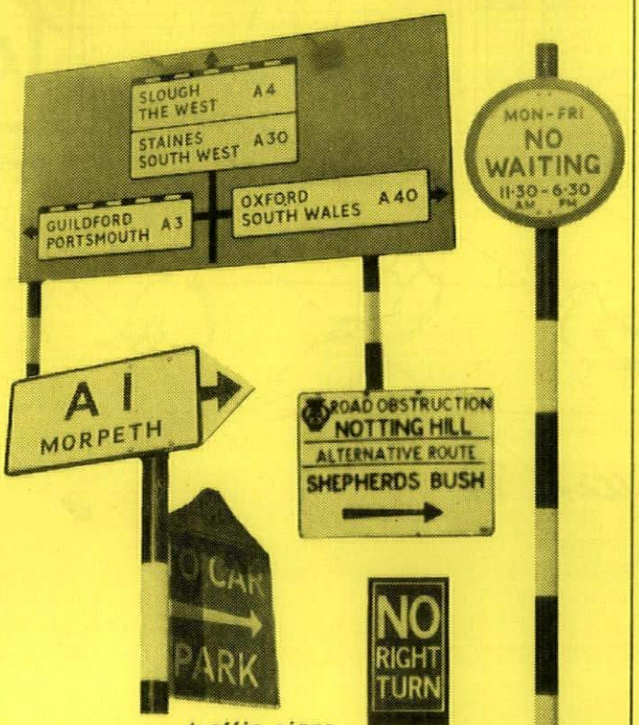

kiosk


bus shelter

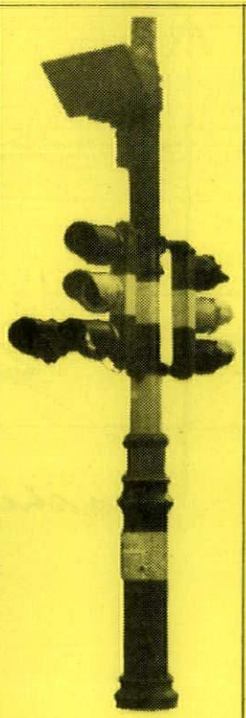

street map


e alarm


timetable



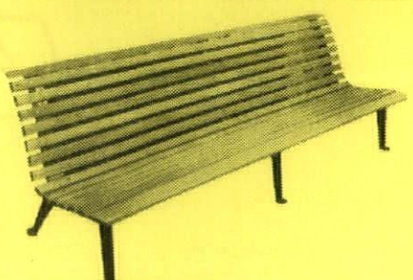
traffic signs


traffic lights


zebra crossing
beacons, refuge,


bollard


litter basket

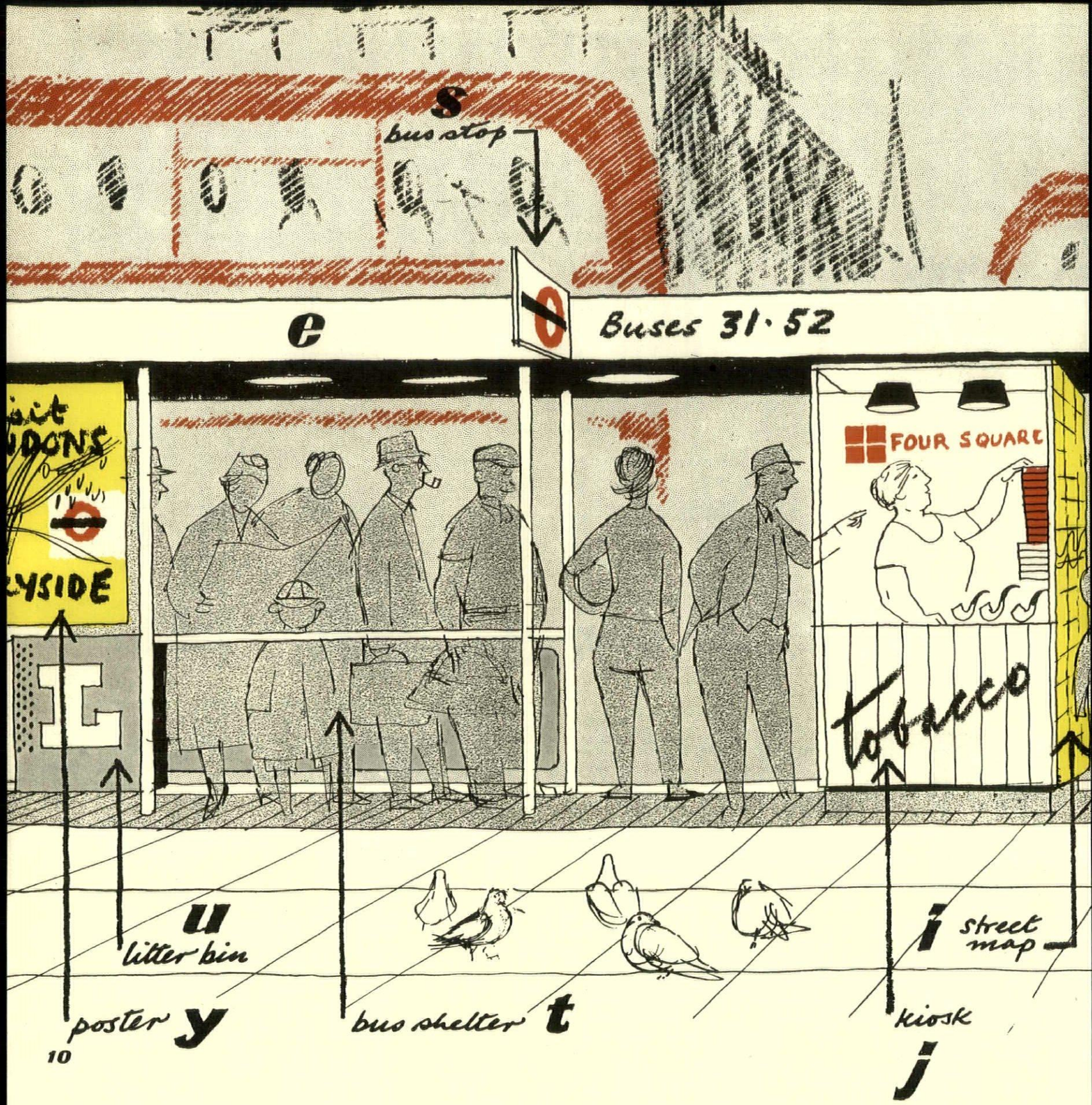

seat



guardpost



sandbin



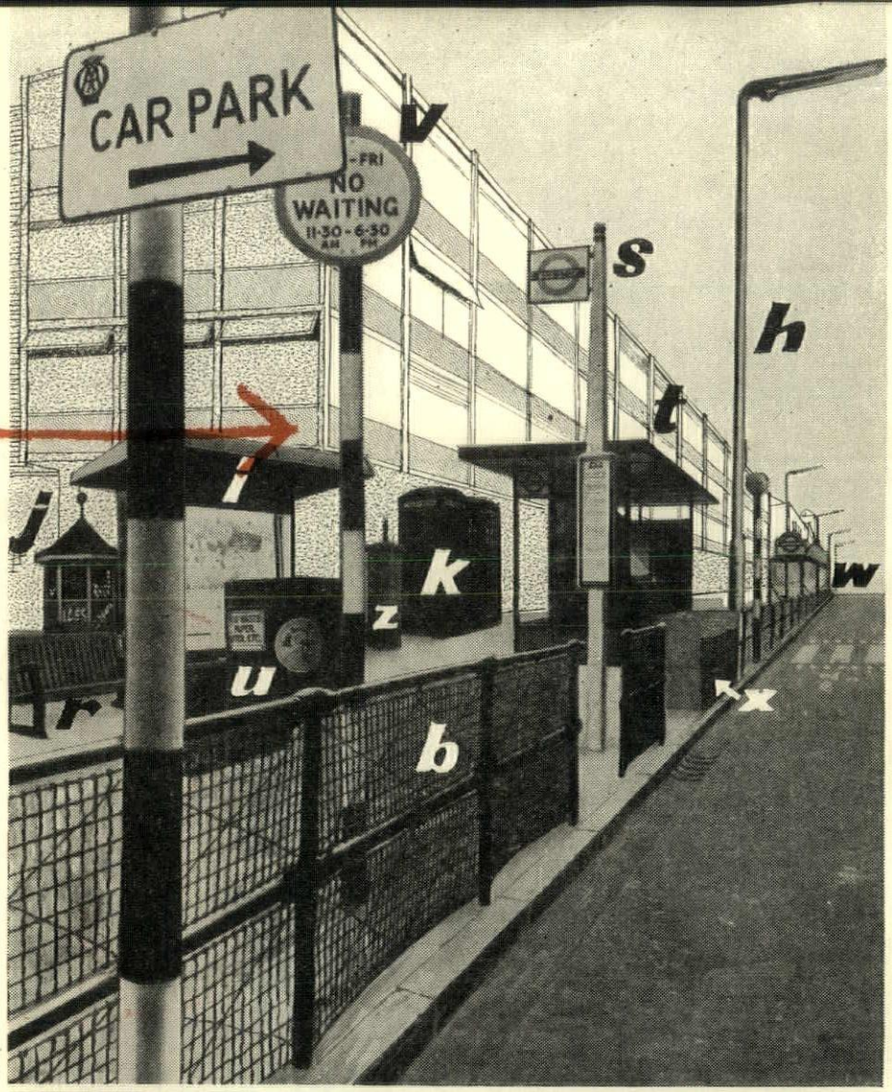
Pedestrian Canopy

Street Furniture (contd.)

Street objects accumulate by courtesy of the Ministry of Transport, the Post Office, the motoring clubs, the police, LPTB and the local authority each working to its little book of rules with sublime

DISRUPTION

disregard for anyone else and most especially for the look of the street which ends up looking like a junk heap **11, 2.** *Here each object is a separate entity competing with all the others. What is the answer? The design, simplification and co-ordination of street furniture and its intelligent positioning is a big 3-dimensional problem and it should be very much the concern of the architect and not just left to chance and the rule book. In the first place as many items as possible should be thought of early enough for them to be built in to the architecture, e.g. 'phone, police and pillar boxes, street lights on walls. Others should be combined, others eliminated.*

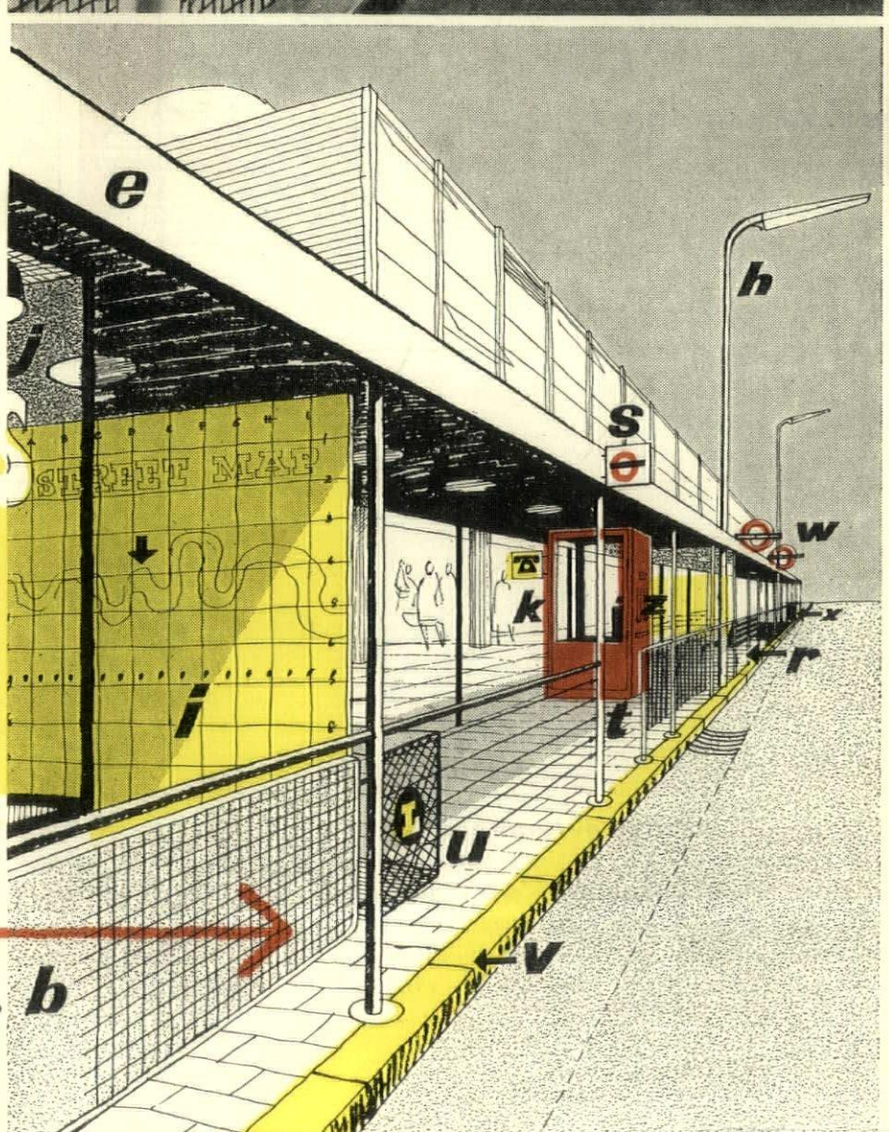


11

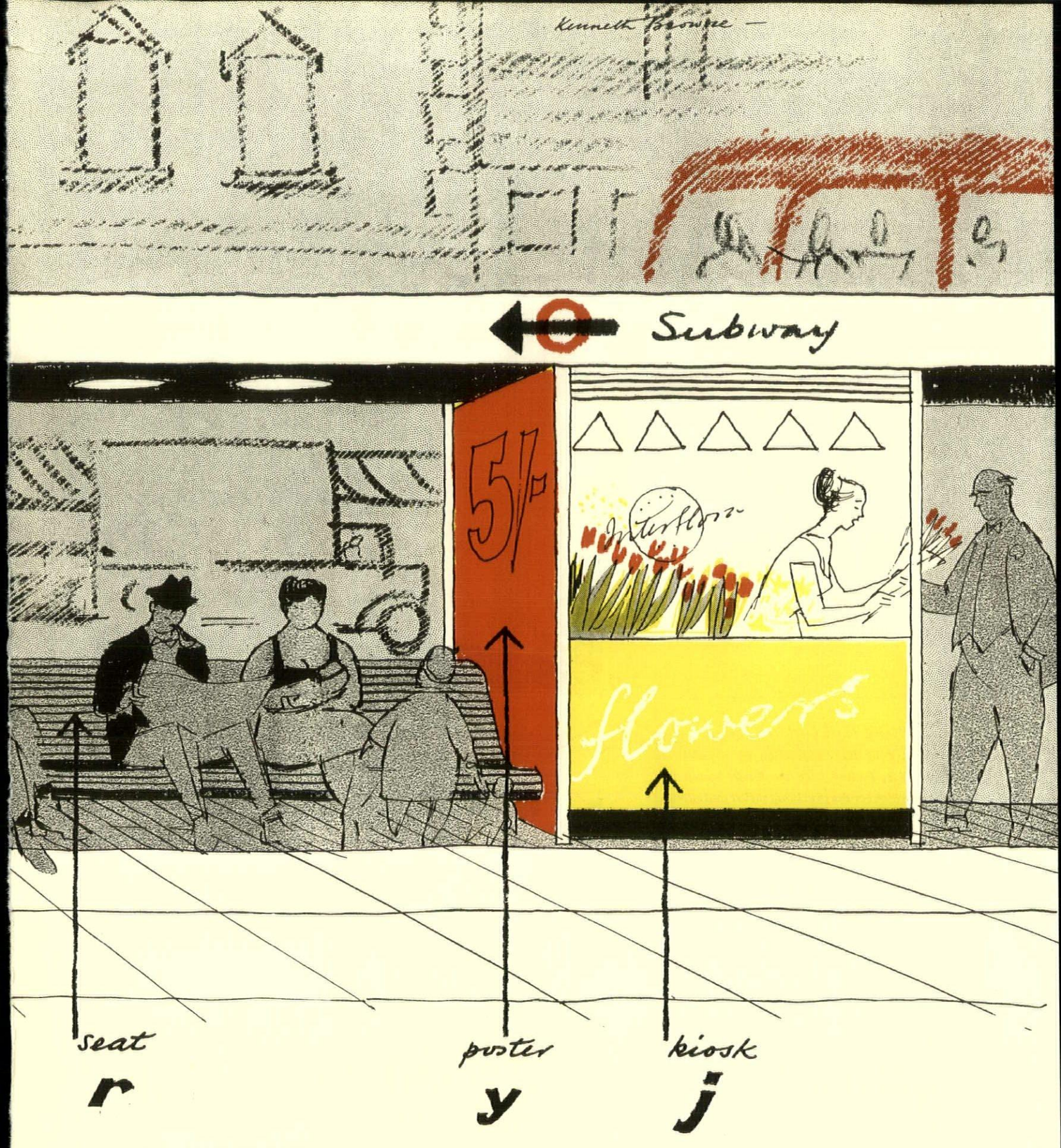
At Notting Hill Gate simplification could be obtained by the construction of a pedestrian canopy, **12,** *leading from the Underground subways* **w** *which besides providing shelter and effecting enclosure of pedestrian space could contain and knit together nearly all the objects which individually destroy the scene:—*
e.g.
***b** guard rail, **h** lighting column,*
***i** map, **j** kiosk, **k** telephone box, **r** seat, **s** bus stop sign, **t** bus shelter, **u** litter bin, **v** no waiting sign, **w** exit from Underground, **x** sand bin, **z** pillar box and stamp machine.*

In fact the more objects the merrier once co-ordinated. *An even greater simplification could be achieved if the lighting instead of requiring separate columns could be provided by a continuous strip along the fascia of the canopy. It would probably cost more but it could be done. Obviously the pedestrian canopy is not the whole answer to the street furniture problem but it does point the lesson of unification; the fitting together of all the pieces to produce a coherent thing in place of a jumble of objects.*

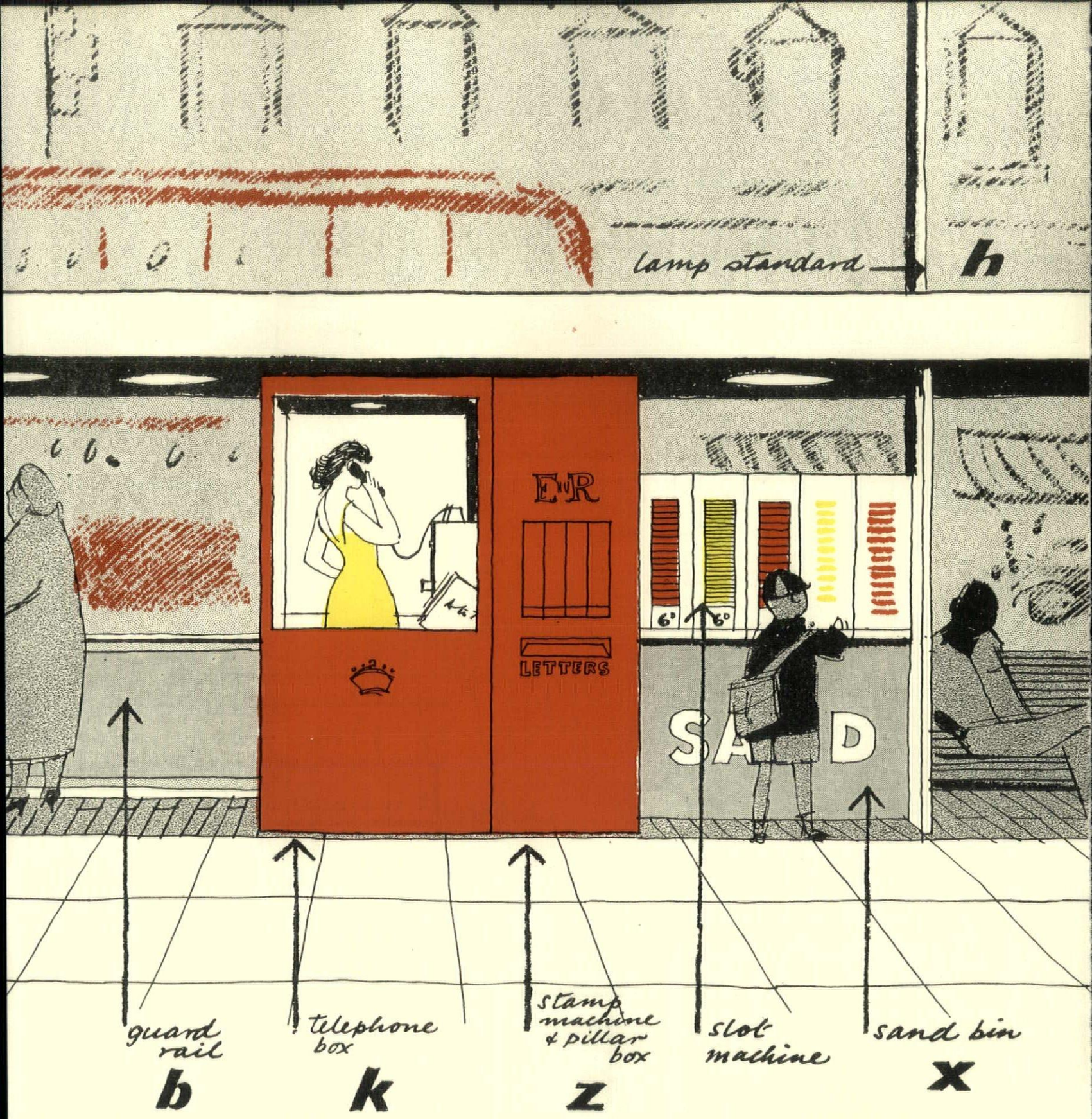
UNIFICATION



12



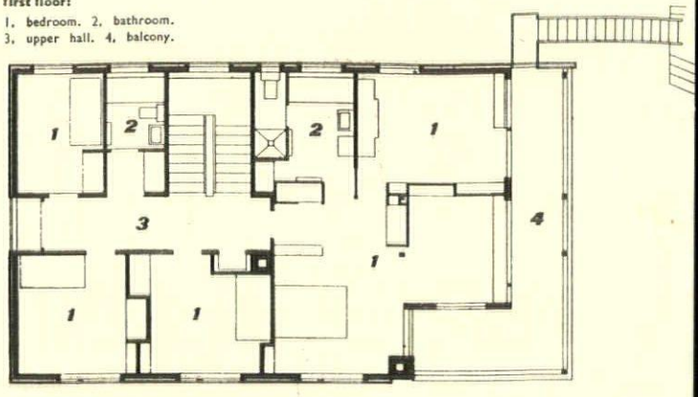
As regards ***lighting columns*** *the Ministry of Transport, on whom the local authority depends for a grant, looks at things entirely from the centre of the road and would regard Notting Hill Gate for instance as just an incident on the A40. It is true that the Ministry asked the COID to compile a list of well-designed fittings and quite a lot are now available, but, and this is the crazy part, they may never be seen because they cost a few bob more and the MOT grants are always based on the lowest tender. The fact that the better design may be cheaper to maintain is not considered. How can we get good streets under these conditions? Of course the best may cost a bit more.*



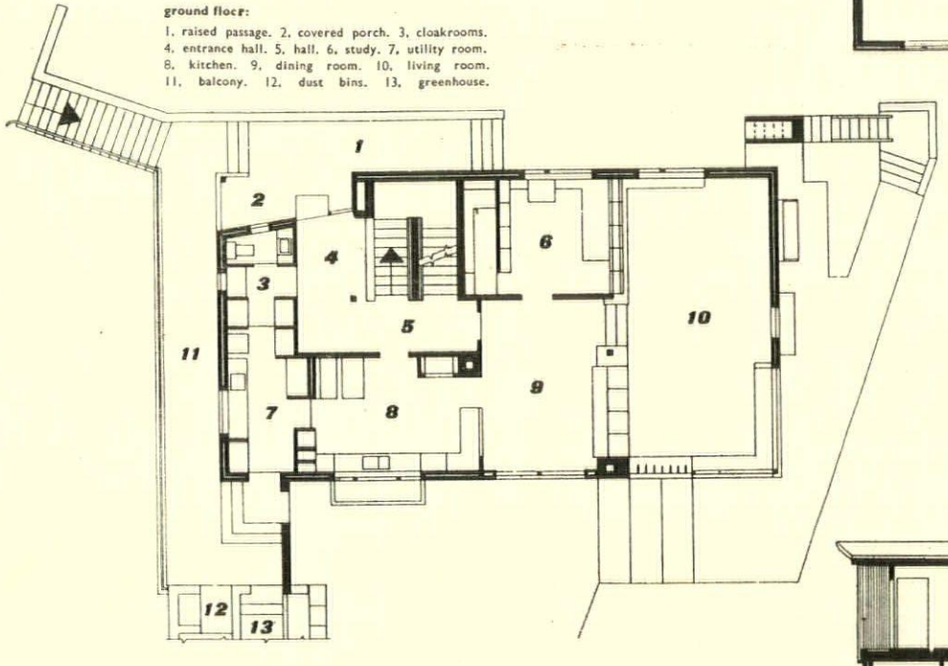
street signs *should be just what the name suggests, signs (e.g. yellow painted curb indicates No Waiting* **12,** *or P for parking) not memos. to the motorist. They must be the simplest and clearest clues he can have and become an accepted sign language.**

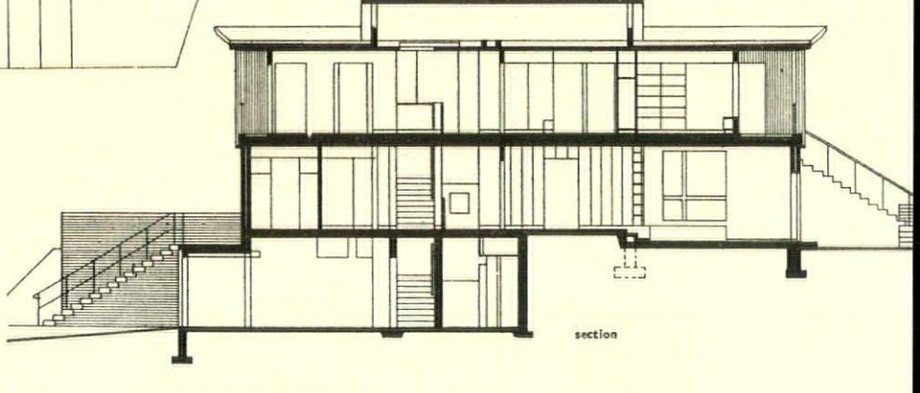
* See 'Alphabet and Image,' Gordon Cullen, AR, Oct. 1956.

first floor:
1, bedroom. 2, bathroom.
3, upper hall. 4, balcony.

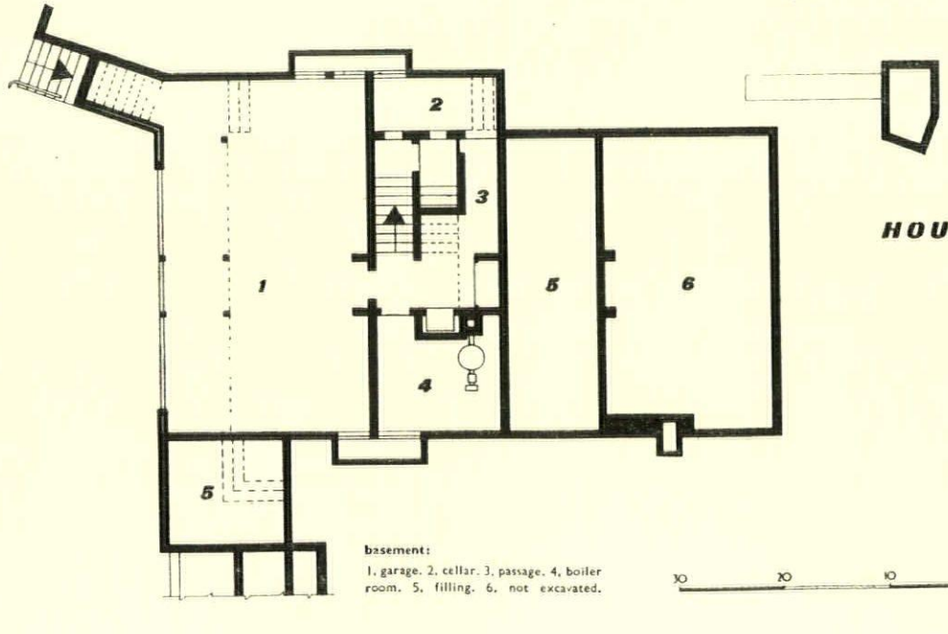


ground floor:
1, raised passage. 2, covered porch. 3, cloakrooms. 4, entrance hall. 5, hall. 6, study. 7, utility room. 8, kitchen. 9, dining room. 10, living room. 11, balcony. 12, dust bins. 13, greenhouse.





section



basement:
1, garage. 2, cellar. 3, passage. 4, boiler room. 5, filling. 6, not excavated.

10 0 10 0 10 feet

HOUSE IN HIGHGATE, LONDON

HOUSE IN HIGHGATE, LONDON

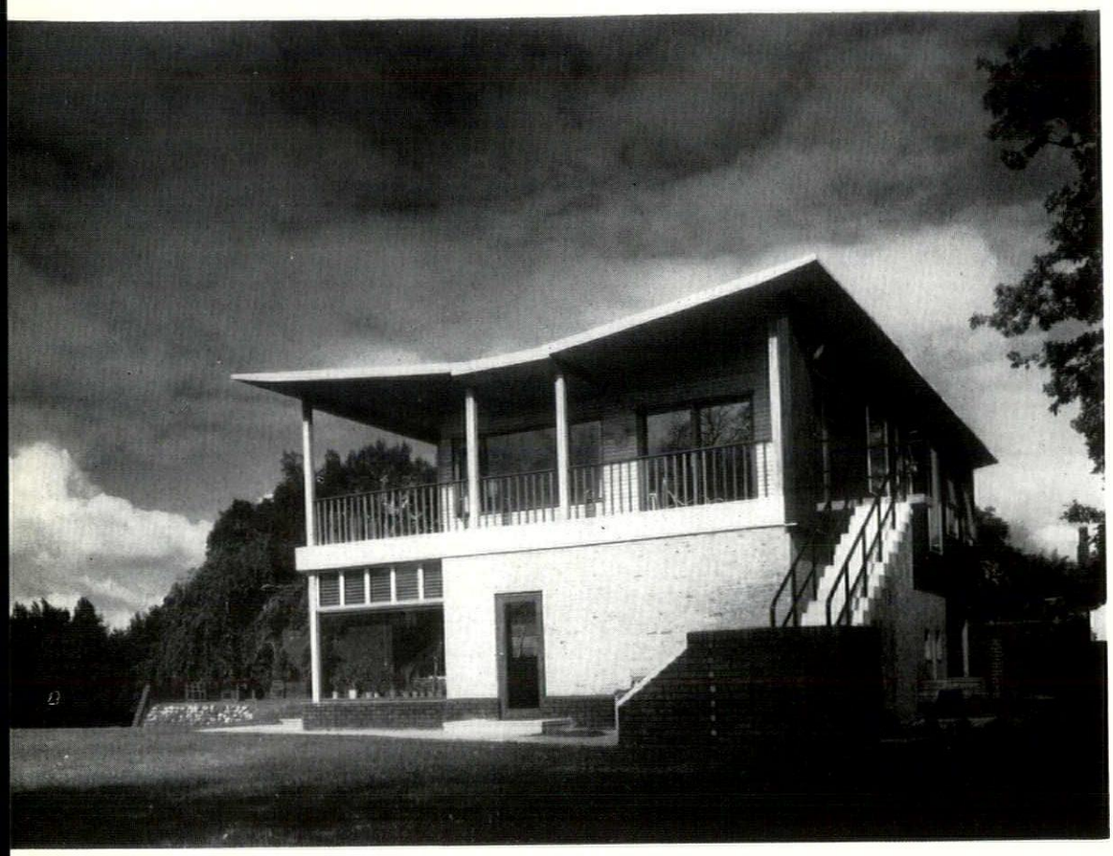
ARCHITECT | **ERHARD LORENZ**



1, view from the west; the wall at first floor level is faced with shiplapped pine vertical boarding, creosoted dark brown.

The name of the architect of this house may well be unfamiliar to British readers, since his practice is located in Rhodesia. A Dane by birth, he has worked in various offices in Scandinavia, including Aalto's and Jacobsen's, and has been for many years a friend of Mr. Ove Arup, the engineer, for whose occupation the house has been built. The project for the house was hatched during a visit to London by Mr. Lorenz in 1955 (see Skill article, page 353).

The site, which was part of the garden of a large house in the Grove, Highgate, has an uninterrupted south-westerly view over Parliament Hill Fields and



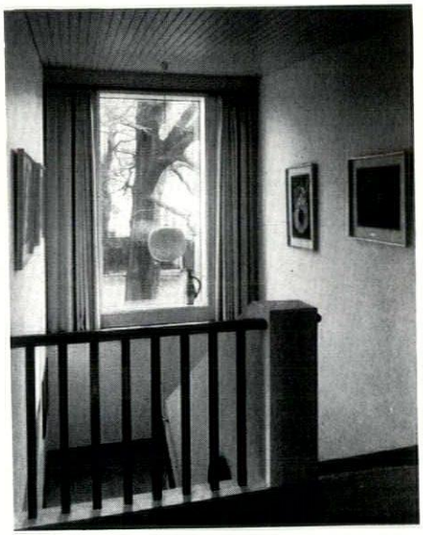
2

2, the south elevation and first floor terrace. 3, staircase from the first floor landing; the boarded ceiling is painted grey and the walls are white. 4, bedroom showing cupboards and shelves of polished doussie. The boarded ceiling is painted light grey.

Hampstead Heath ; the site slopes in this direction and the principle rooms overlook the view.

Excavation of the site was carried out at road level to house a double garage, boiler house, oil store and wine cellar which form a basement to the house. The ground-floor walls are of cavity construction with an inner skin of insulating p.f.a. blocks and yellow bricks outside ; the cavity is filled with pellets made of pulverized foundry ash. On the first floor the walls are of 6-in. insulating p.f.a. block faced externally with 3-in. by 1-in. ship lapped pine vertical boarding on battens, creosoted dark brown ; this pine wood is also used for the first-floor ceilings. Black brick with recessed black pointing is used for the plinth, greenhouse and garden walls, while the chimney is rendered with white cement. Window frames are painted white, the steel handrails to the entrance stairs, balcony and garden are black, while the basement external doors, balcony handrails and ceiling to the entrance porch are polished doussie. Artificial stone slabs pave the entrance balcony and the black ribbed tiles covering roofing felt and cork on the south balcony provide insulation for that part of the living-room ceiling.

Inside all the joinery is of polished doussie except the doors and the wardrobe fittings in the master suite which are painted white. The floors are Junkers strip fixed to battens on cork pads. Woods used are ash, beech, elm and oak which are sealed and wax polished. On the ground floor, the higher level dining and study areas are designed to be part of the living-room space ; an open fire, emptied externally, is situated in the south-west corner of the living-room. On the first floor the bedroom, dressing-room and weaving-room are also virtually one space, divided by 6 ft. 6 in. high fittings with glass above.



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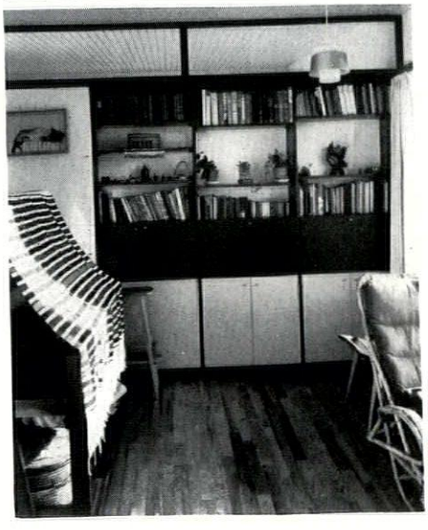
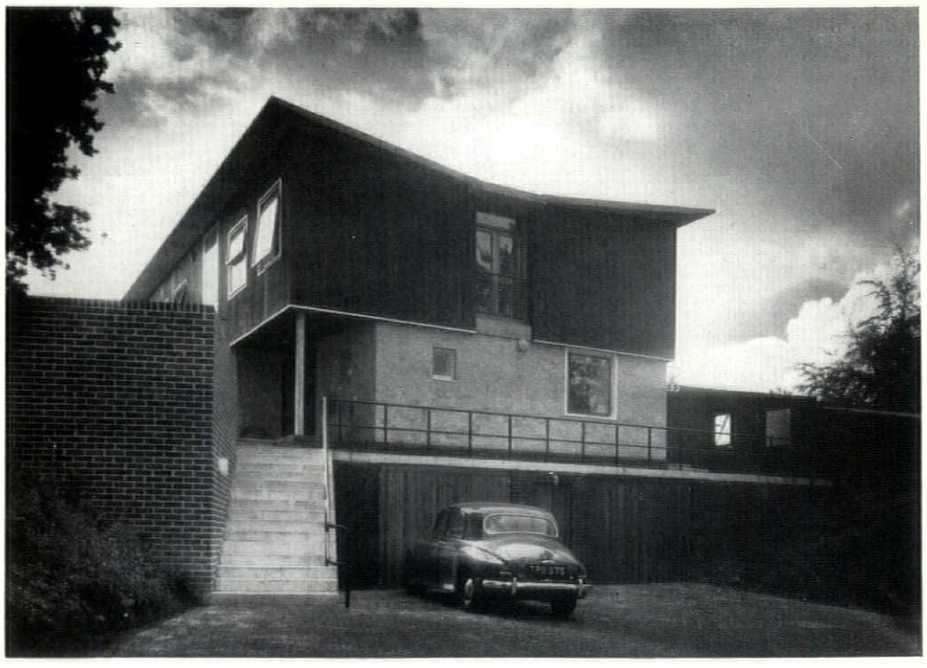


4

5

HOUSE IN HIGHGATE, LONDON



6

5, plan of the garden with inset view from the west and corner of the pond in the foreground. The road in which the house stands, Fitzroy Park, runs along the foot of the plan.
6, northern elevation with ship-lapped pine used as facing for the first floor. The window frames are white while the garage doors and balcony handrails are of polished doussie.

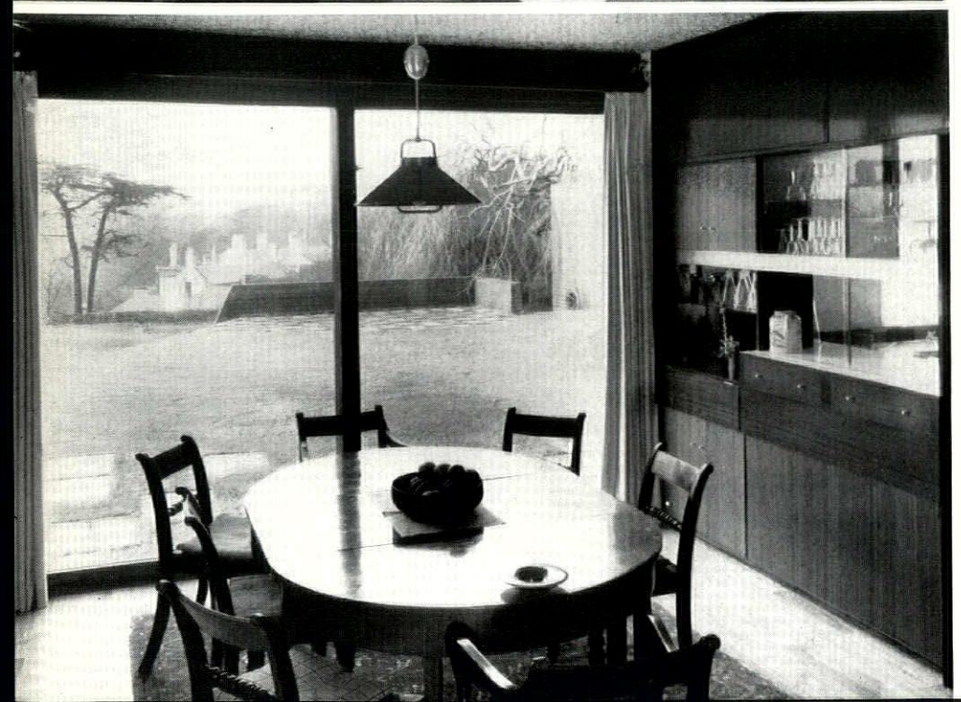
HOUSE IN HIGHGATE, LONDON



7, corner of the living room overlooking the main view to the south west. Over the fireplace is a window shielded by vertical wooden louvres.



8, the living room with the dining area on a higher level to the right. The division between the two areas forms a back to the fireside seat. The chimney is rendered with white cement.



9, the dining room showing a full height sliding glass wall opening to the terrace which overlooks a pond.

GEORGIAN SCULPTORS

ARCHITECT AND SCULPTOR

by M. I. Webb

Sculptors have frequently worked to the designs of architects, though they have also frequently altered or improved the designs to suit the technical requirements of marble sculpture. This matter of designs for sculpture is a subject that, in England at any rate, has been very little studied. There are a very considerable number of drawings for monuments, statues, and sculptural decoration scattered about England in museums and libraries, and in most cases little has been done about them beyond the rather haphazard identification of some of them with objects which they may or may not represent. If the object is architectural, e.g. a fireplace that can be identified, then the name of the architect known to have been concerned with that particular house becomes attached to it; if it is a drawing for a statue or monument, then it is usually credited to the sculptor concerned, though in fact both an architect and a sculptor may have made several drawings before the final design has been arrived at. In the more complicated and ambitious sculptural schemes the theme may even have been dictated by yet a third artist or a learned man, and for most monuments, as for most private houses, it must be supposed that the client has also expressed an opinion.

This system whereby the idea and general scheme is given, either in words or by means of a sketch, and then translated freely by the artist reaches back into the Middle Ages. Examples can be cited from France in the fifteenth century for tapestry, and in England from the sixteenth and seventeenth centuries. An instance of this is the 'devise' by Thomas Hayward, Jnr., a writer of plays and pamphlets, which was carried out by John and Matthias Christmas, the official carvers to the Navy, on the elaborate sterncastle of the *Sovereign of the Seas*, which was built in 1637. When the excessive cost of this ship was attacked in Parliament Thomas Hayward published the annotated copy of his 'devise.'

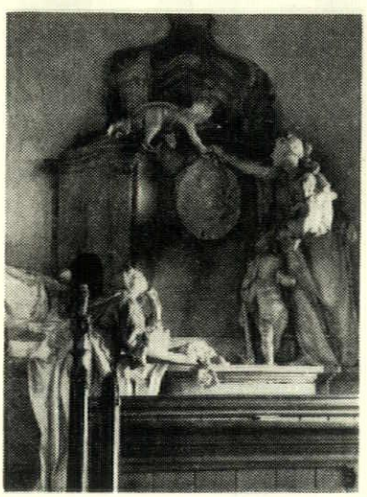
It is clear that relics of this system were continued into the eighteenth century and an example of the 'devisors' work is probably to be seen in Roubiliac's monuments to the Duke and Duchess of Montagu at Warkton in Northamptonshire. According to W. T. Whitley in *Artists and their Friends in England* 1700–1799, the learned antiquarian Martin Folkes helped to design the monument to John, the 2nd Duke of Montagu, who died in 1749. If this is so it seems probable that Folkes was also concerned with the design of the adjacent monument to the Duchess who died in 1751. On the Duke's monument, 1, the Duchess, standing on a lower level than the rest, watches Charity, with three children, hanging up a medallion portrait of the Duke. On the Duchess's monument are the three Fates, Clotho with her distaff on the left, on the right Atropos, the thread she held having just been cut, while Lachesis with her shears in one hand and the other resting on a skull, stands below: a boy and a girl are busy hanging a garland of flowers round a large urn, 2. All these figures are exceedingly graceful and beautifully carved and are among the finest examples of Roubiliac's work. The backgrounds of the monuments—one recessed and the other breaking forward, each an elaborate exercise in design in depth—are also typical of Roubiliac. Both monuments have a 'painterly' quality of the kind so much deplored in sculpture by Sir Joshua Reynolds. Though the elaborate symbolism of these monuments, particularly that to the Duchess, may indeed suggest a literary origin there seems no reason to suppose that they were designed by an architect.

Gibbs, Kent, Robert Adam and Sir William Chambers, to mention four famous eighteenth-century architects, all designed monuments, but they do not seem to have designed any to be carved by Roubiliac. The only architect with whom Roubiliac is known to have worked is Sir Charles Frederick (1709–85), who became Surveyor General of the Ordnance in 1750. Two monuments designed by Frederick and carved by Roubiliac are known, though in neither case does Roubiliac's sculpture seem to have benefited by having to conform to an architect's design, rather the reverse. The earlier of the two was probably that to Thomas Milles, Bishop of Waterford (ob. 1740), now in the new church at Highclere, Hampshire, 3. This monument, which was moved from the old church, has been mutilated, for its base, a tablet with inscription and swags, has been placed alongside instead of below the rest of it. The boy with his reversed torch is not a very good figure and, even if Frederick designed it, it seems odd that Roubiliac did not make something more attractive of the figure. Roubiliac was, however, capable of curious lapses. The monument is signed *Charles Frederick Invt. L. F. Roubiliac Sculpt.* Rather more successful is the other monument designed by Frederick, that to Lucy, wife of George 1st Lord Lyttleton, erected in 1748 in Hagley Church, 4. This is not signed but documented.[1]

James Gibbs published a number of designs for monuments in his *Book of Architecture* in 1728. Some of these he named in the letterpress, others have been identified, but many must have served as patterns which were used, probably with slight alterations, by sculptors working quite independently of Gibbs. There are several unpublished drawings for monuments by Gibbs in the Victoria and Albert Museum, some of which can be identified.

The principal sculptor who worked with Gibbs was Michael Rysbrack, who came to London from Antwerp in 1720 and who seems to have been employed by Gibbs almost immediately on important monuments which were being erected in Westminster Abbey. Rysbrack soon made a name for himself though he continued to work with Gibbs until the latter's death. Rysbrack had a great reputation as a draughtsman and dozens of his drawings have been preserved, some free-hand and imaginative, but most of them are neat and careful, though not very large, scaled drawings for monuments. Considering that Rysbrack, during the period 1725–60, was about the most famous sculptor in England, and that he did not leave much of the work on the marble to assistants, it seems almost incredible that he should also have done personally this enormous number of scale drawings; but it is impossible to doubt their authenticity. One item which helps very much in the identification of drawings for monuments is the 'scribble' which takes the place of the intended inscription, and this always seems to have a complete individuality. This 'scribble' is quite different on drawings by Gibbs, Rysbrack, or Kent, and, moreover, it remains consistently individual to its owner.

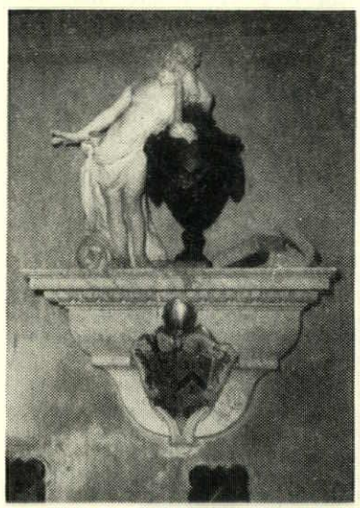
Among the unpublished drawings by Gibbs in the Victoria and Albert Museum are two showing a draped figure leaning on an urn and a third with a similar figure seated—leaning his open book on an altar. The first of them, 5, is to all intents and purposes the finished drawing for the monument erected in Westminster Abbey in 1727 to James Craggs, Secretary of State, who was a great friend of Pope's. The sculptor was Giovanni Battista Guelfi, an Italian who worked in England from about 1725 to 1734. There are several references to this monument in Pope's letters though there is no mention of Gibbs or of how the design was arrived at; but considering Gibbs' reputation at this date, and the drawing, there can be no doubt that, though Pope or Guelfi may have suggested the figure leaning on an urn, the credit for the design must go principally to Gibbs. No drawings by Guelfi are known, so it is impossible to say how much he influenced the pose of the figure, but



1, *monument to 2nd Duke of Montagu.*



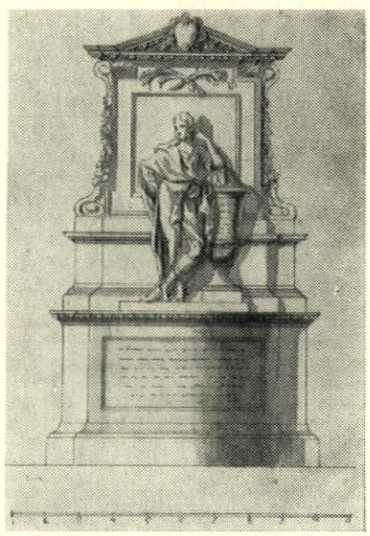
2, *monument to Duchess of Montagu.*



3, *monument to Bishop Milles.*



4, *monument to Lady Lyttleton*



5, *drawing by Gibbs for monument to James Craggs.*

[1] I have to thank Mr. Geoffrey Beard for the photograph.



6, *another design for a monument by Gibbs.*

there is a small terra-cotta model in Sir John Soane's Museum which is similar to the drawing and the finished figure. The monument, now mutilated and skied in a chapel, originally stood on the floor of the nave with a pedimented background similar to that shown in the Gibbs drawing.[2] The second drawing by Gibbs may be another suggestion for the same monument, 6. This figure leaning on an urn became very fashionable and another example is to be seen at Sherborn, Gloucestershire, where Sir John Dutton by Rysbrack clearly derives from Craggs or the Gibbs drawing with which Rysbrack must have been familiar. The Dutton monument is signed *M. Rysbrack Fecit* 1749 and it seems probable that Rysbrack designed it himself even though he was borrowing; but the dark marble pyramid behind the figure is more in character with Rysbrack's designs than Gibbs', 7. The third drawing by Gibbs illustrated here could be either another suggestion for the Craggs monument or the idea which developed into the monument, 8, to Edward 7th Earl of Warwick and 4th Earl of Holland in St. Mary Abbots, Kensington. This monu-



7, *monument to Sir John Dutton.*

ment, 9, is also by Guelfi as is proved by a receipt in the British Museum for £100 signed by Guelfi in 1730.[3] Again there is no known reference to Gibbs as the designer but the architectural setting for the monument implies an architect's hand and, considering the pose, it seems possible that it is by Gibbs, though the scroll *motif* was a favourite with Kent. Another monument known to have been designed by Gibbs is that to the first Lord Barnard and his wife and child at Shipbourne in Sussex. The church has been rebuilt and the monument occupies the entire width and height of one wall of a sort of aisle which is used as a vestry and



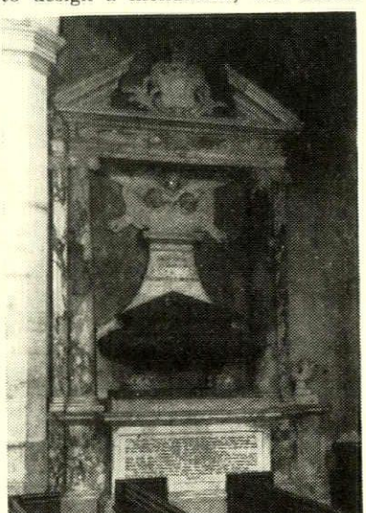
8, *design for a monument by Gibbs.*



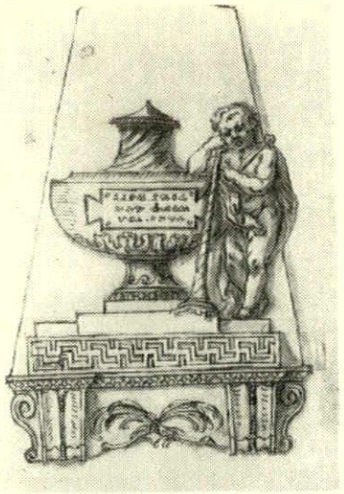
9, *monument to 7th Earl of Warwick.*

store. It is unfortunately impossible to get sufficiently far away from the monument to photograph it. The sculptor is unknown, but is probably Rysbrack.

An architect who made very little concession to sculpture, when asked to design a monument, was Leoni.

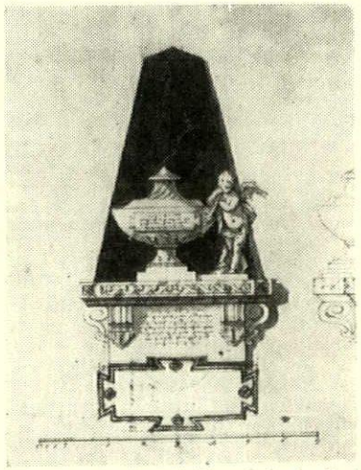


10, *monument to the Piggott family.*



11, *design for a monument by Kent.*

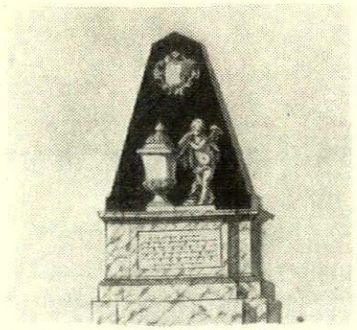
This is patent in his monument to Sir Richard Piggott and his heir Thomas Piggott and their wives. The monument is at Quainton in Buckinghamshire, and except for three cherubs' heads it is severely architectural, 10. It is signed *Leoni Archi.* He also signed the monument in the cloisters of Westminster Abbey to Daniel Pulteney (ob. 1731). This has a reclining figure and the sculptor was Rysbrack. A third monument which it is tempting to attribute to Leoni is that to Thomas Long and his wife Mary in the little church at South Wraxall in Wiltshire. Thomas Long, whose name comes first on the inscription, did not die till 1759 though his wife died in 1733. Leoni died in 1746 and it is possible that the husband obtained a design for a monument when his wife died, even if the inscription was not cut till after his own death. The monument is purely architectural with Corinthian columns and a pediment with a discreet coat of arms; a large mauvish coloured urn, not quite freestanding, occupies the centre between the columns against a background of black-flecked-brown marble. The whole is very much in Leoni's manner and not at all what one would expect to find designed in the 1760's, and though country masons and architects were often several years behind the London fashion, there is usually a slight clumsiness about such works which makes them recognizable. The Long monument, on the contrary, looks as if it was by an accomplished up-to-date architect. Again, unfortunately,



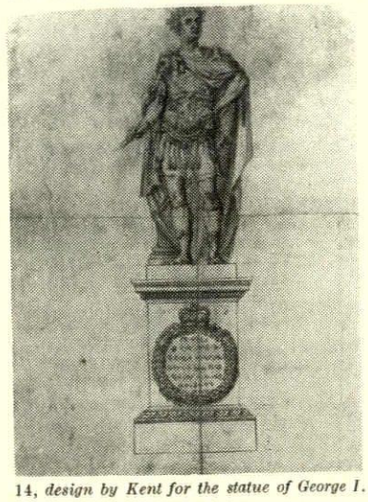
12, *alterations by Rysbrack to a design by Kent.*

it is so large and in so small a space that it is impossible to photograph it satisfactorily.

William Kent was Gibbs' chief architectural rival as regards the



13, *further alterations by Rysbrack.*



14, *design by Kent for the statue of George I.*

designing of monuments. Perhaps the two most noticeable monuments in Westminster Abbey, although they are by no means the largest, are those to Sir Isaac Newton and Lord Stanhope which close the nave and stand up against the screen. These were designed by Kent and carved by Rysbrack. They originally had a plain screen for background,



15, *statue of George I by Rysbrack.*

and the present Gothic revival screen, by Blore, has thrown them out of scale besides partially obscuring them. Vertue in one of his note-books, writes 'April 1731 Sett up in Westminster Abbey the monument of Sir Isaac Newton, a noble and elegant work of Mr. Michael Rysbrack, much to his reputation. tho the design or drawing of it on

[2] See Ackerman's *Westminster Abbey.*

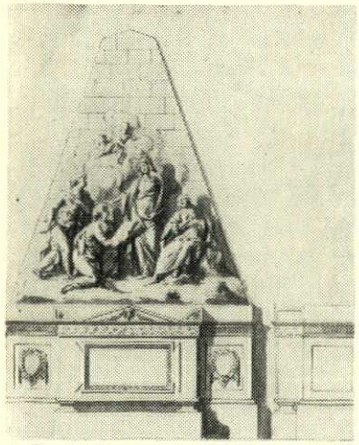
[3] MSS. Eg 1973.

paper was poor enough. yet for that only Mr. Kent is honoured with his name on it (*Pictor et Architect inventor*) which if it had been delivered to any other sculptor besides Rysbrack, he might have been glad to have his name omitted.'[4] Though Kent was commissioned to design these and other monuments and statues which Rysbrack executed, the very many drawings by Rysbrack which have survived show us that the sculptor did not scruple to alter Kent's designs, and it seems to have been Rysbrack's final version which was carried out. Comparing the relevant Kent and Rysbrack drawings it is evident that the sculptor not only tidied up and made more compact Kent's design but also removed some of the Baroque detail in which Kent had indulged, thereby making each design slightly



16, *monument by Athenian Stuart and Thomas Scheemakers to the Freeman family.*

more classical. Similar alterations are particularly evident in the three drawings for a monument with a *putto* holding a reversed torch and leaning on an urn.[5] The first, 11, by Kent, shows a boy, his left side and drapery extending beyond the line of the pyramidal background; he leans on a curious urn, holding a reversed torch, which is almost as big as himself, and the decorative mouldings are all large and bold. Then there is a Rysbrack drawing, 12, showing the same urn but the boy has acquired little wings and a torch of manageable proportions, although he still overlaps the pyramidal background which has been heightened; the decoration of the mouldings has been altered. A second drawing by Rysbrack, 13,



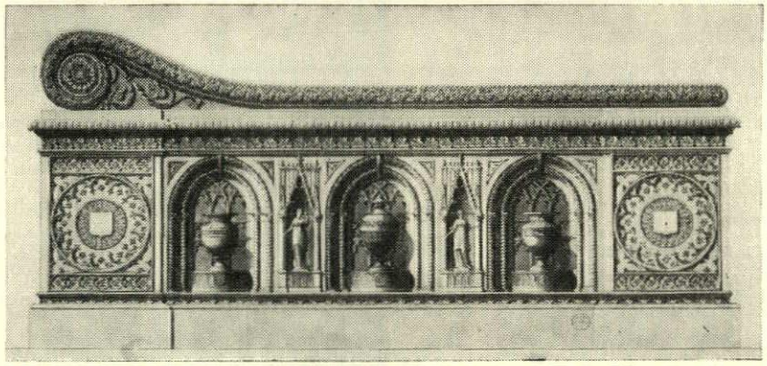
17, *drawing by Rysbrack for the monument to Nathaniel Curzon.*

[4] Walpole Soc. XXII Vertue III p. 50.

[5] The drawings are in the Prints and Drawings Department of the Victoria and Albert Museum.



18, *drawing for the monument by Carlini to Earl and Countess of Dorset.*



19, *drawing inscribed Robert Adam Architect Adelphi* 1775 *for monument to Earl and Countess of Dorset.*

shows the boy-angel well inside his pyramidal background leaning up against a much more conventional urn (reminiscent of Gibbs) and the base, which has been altered to a standing monument instead of a bracket, has become much more classically restrained.

Kent also, apparently, designed the statue of George I, now in the Law Library at Cambridge, which was ordered by the Senate in October, 1736. Rysbrack was the sculptor and Vertue records in October, 1739, 'The statue of his late Majesty K. George I carved out of a block of white marble by Mr Rysbrack near Oxford Chapple was carried thence in order to be erected on a Marble Pedestal in the Senate Room of the University of Cambridge.' Curiously, none of the contemporary references to it make any mention of Kent, but the drawing in the Victoria and Albert Museum, 14, can be identified by its scribbled inscription as being by the same hand as the drawing for the Newton monument by Kent. The statue of George I, 15, shows certain changes, most notably the right hand and arm (which is extended in the drawing) have been flexed and supported on the broken column and baton, a change of position which both improves the design and makes due allowance for the technical difficulties of the weight of marble; the breaking up of the folds of the toga is also an improvement by Rysbrack.

Two monuments are known to have been designed by Sir William Chambers, one to the Earl and Countess of Montrath in Westminster Abbey, the other to the 2nd Duke of Bedford at Chenies, Buckinghamshire, both of them being executed by Joseph Wilton.

Athenian Stuart designed a number of monuments, most of them executed by Thomas Scheemakers, son of Peter Scheemakers, though the latter carved the two monuments by Stuart in Westminster Abbey. In the south aisle of the north transept of the Abbey is a most exotic monument erected by the East India Company to Admiral Watson, which is signed *James Stuart Inv Peter Scheemakers Sculp.* In this palm trees clothe five of the columns of the lower triforium thus making three recesses; in the central recess stands Admiral Watson, the recesses to his right and left being occupied respectively by an Indian in chains and an Indian lady on her knees pleading to the Admiral. Most of Stuart's designs are more conventional and rather pretty in their very neo-classic way, as for instance the Freeman monument, 16, at Braughing, Essex.

There are several interesting drawings for monuments in the collection of drawings which came from Robert Adam's office and are now in Sir John Soane's Museum. Two of these are drawings for the monument to Nathaniel Curzon at Kedleston which was executed by Rysbrack. A drawing of the latter's also survives and it is interesting to compare these; for whereas the drawings from the architect's office show the shadows cast by the architectural features only, the sculptor's drawing, 17, shows the shadows of the architecture and also of the figures.

In the same book of drawings from Adam's office are two for the lovely monument carved by Carlini at Milton Abbas to the Earl and Countess of Dorset. One of these, 18, which is in an unidentified hand, shows the Countess wearing her coronet though there is a note on the drawing stating that it should be at her feet. This drawing shows a different base, for the marble couch is supported on four legs made up of scrolls, with a space between each scroll and in the central space an urn. The second, a much larger and more elaborate drawing is inscribed *Robert Adam Architect. Adelphi* 1775 and shows the base more or less as it was carried out, except that three urns are shown in the round-headed niches and female figures in the Gothic niches, 19, 20. It is tempting to wonder whether the first drawing is by Carlini (no drawings of his have so far been identified) except that it seems doubtful whether any good sculptor would have contemplated placing two life-sized marble figures lying full length on a marble couch which had so little to support its weight and no support at all in the centre.



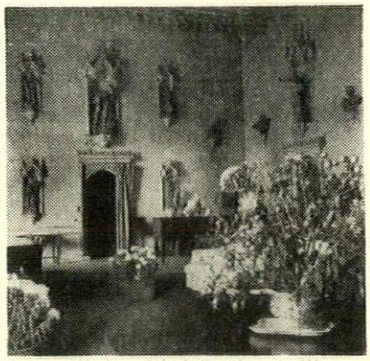
20, *monument to Earl and Countess of Dorset at Milton Abbas.*

VICTOR ALEXANDER SEDERBACH

by Nikolaus Pevsner

This note is no more than an invitation to research. The facts have been known since 1910, and nothing new can be added to them.

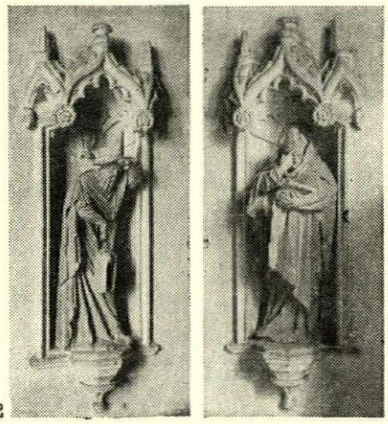
In 1754 John Ivory Talbot of Lacock Abbey in Wiltshire rebuilt the entrance hall of his house. The house and its outbuildings comprise parts of the Augustinian house founded for canonesses by the widow of William Longsword in 1232. After the Dissolution, Sir William Sharrington gave the house more or less its present shape and introduced some of the purest and most successful Italian Cinquecento details into it. Early in the eighteenth century Lacock came to the Ivory family, and John Ivory assumed the name of Talbot. In 1753 one Richard Goddard, no doubt of the Swindon family, introduced Sanderson Miller to him, a Warwickshire squire who had, in the course of the 1740's, acquired a reputation for Gothic design. The remodelling of Talbot's Hall is due to him. It still exists complete with its coved ceilings plastered with a trellis of thin rope-like ribs and quatrefoils and with a series of most curious and unexpected figures and busts in canopied niches.



21, *general view of the hall at Lacock Abbey.*

They were made in 1755 and 1756 by one Victor Alexander Sederbach who lived in London in Green Street near Castle Street, Leicester Fields. He made them of red clay, baked so that they 'ring like a Garden Pot.'[1]

This they still do; so Mr. Eric de Maré could ascertain when he took the series of photographs here reproduced. The style of sculpture is evidently not English but German or Austrian, and the aesthetic quality is not as high as the best done in palaces and churches in those



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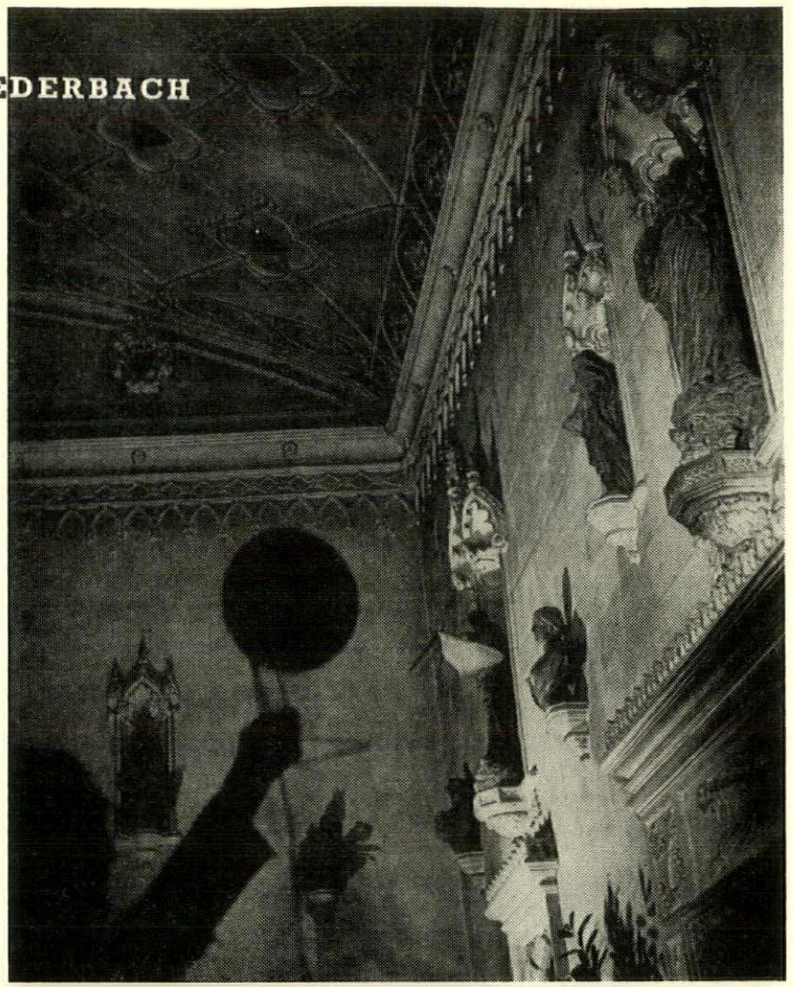
[1] See L. Dickins and M. Stanton: *An Eighteenth-Century Correspondence*, London, 1910, pp. 301–10.



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22-28, *details of some of the figures at Lacock Abbey, which are still unidentified.*

25



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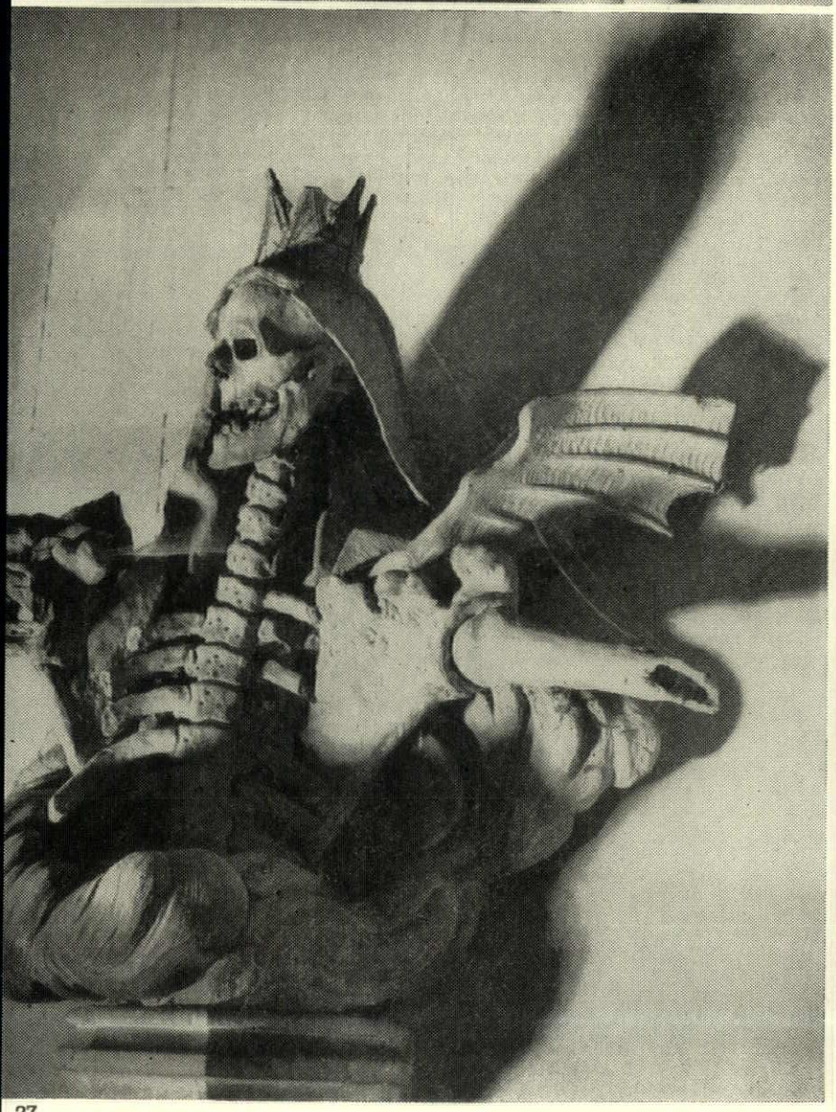

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28

countries. Sederbach's work is on the whole rough and naïve. At the same time it has in its folk conventions something sufficiently personal to be, one would think, easily recognizable wherever else it may occur.

The surprising fact is, however, that, so far as my personal knowledge goes, it does not occur anywhere else. Sederbach's name is unknown to German art historians and their dictionaries and encyclopædias. Dr. Brechenmacher, a distinguished expert on family names, tells me that the name seems to belong to the Baltic provinces. The iron curtain cannot be penetrated to search for our Sederbach there. English scholars do not seem to have met him anywhere. What else did he do in England? Garden sculpture? An unpublished passage in the Sanderson Miller correspondence now in the archives at Warwick,[2] says under March 19, 1757, that Sederbach 'had an offer of work in Holland where he Believ'd to go.' But my friends in Holland also are unaware of his name, or of work of his kind there. Perhaps he was not a sculptor originally but a 'Hafner,' a man who made tiles and decoration for pottery stoves.

We hope that in publishing these illustrations some reader might be encouraged to try and answer some of these unanswered questions. The sculptor of these weird saints and this bust of ferocious death would certainly deserve an attempt at recording his œuvre.

[2] Kindly communicated to me by Mr Anthony Wood, County Archivist, Warwick

THE CARTERS

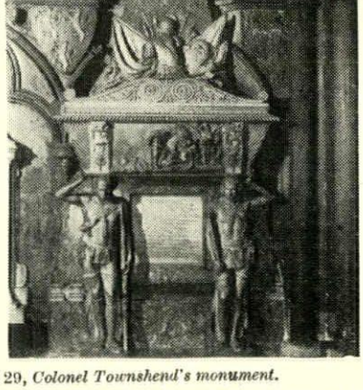
by Rupert Gunnis

In 1952, owing to the kindness of the late Sir Charles Chute, I was allowed to examine his archives at the Vyne, Hampshire, and among them found a bill from Thomas Carter for the famous monument of Speaker Chute in the private chapel of the Vyne. Hitherto the reclining figure of the Speaker had been attributed from a statement by Sir Samuel Egerton Brydges (written in the *Topographer* in 1789) to John Bacon the Elder. It is difficult to understand how the mistake arose, considering that Sir Samuel visited the Vyne frequently, but an article in *Country Life* of May 27, 1954, by Sir Charles Chute, with a photograph of Carter's actual bill, put the matter beyond doubt. Carter certainly employed assistants, but I have found no mention of Bacon (of whom several lives were written shortly after his death) working for Carter. Moreover, when the Chute monument was ordered Bacon was too well known and too well established to work for another.

What was, I must admit, very puzzling at that time, was that the only Thomas Carter one had knowledge of as a sculptor must have been, in 1775 (when work on the Chute monument started), a very old man; for according to an article in the *European Magazine* of 1803 (Vol. 11, page 178) Carter, about 1729, already had a yard of his own in Shepherd's Market; was married and, according to the same authority, borrowed from Jervase, the portrait painter, £100, a sum which enabled him to enlarge his yard, buy marble and hire an apprentice—an apprentice who later became far more famous than his master, for he was none other than the Frenchman, L. F. Roubiliac, one of the greatest sculptors who ever worked in this country. Even if Carter was able to set up on his own as a very young man indeed, he could not have been born after 1707, and was therefore nearly seventy when he started the monument of the Speaker.

Recently I have been able to solve this puzzle, and also to discover a good deal more about Thomas Carter; for it can now be proved that there were two Thomas Carters, uncle and nephew; this I found, when owing to the kindness of Messrs. Drummond, I was looking at one of their ledgers, which contained Thomas Carter's account with that Bank. There I saw that in the latter half of 1756 the account was certified by his executors. I at once went to Somerset House, where his will, dated August 1, 1756, and proved in the same year, was easily found. In this will he described himself as a 'Statuary living in the parish of St. George's, Hanover Square,' and leaves his property to his daughters, Elizabeth and Ann, the former being the wife of 'My nephew Thomas Carter, Statuary,' while the refusal of his stock in trade, etc., he leaves to his brother Benjamin, also a sculptor. Apparently the younger Thomas went into partnership with his uncle, and on the latter's death in 1766, took over his share; he did not die till 1795.

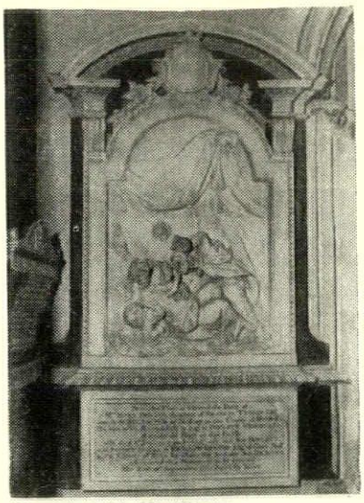
Both uncle and nephew turned out a great deal of work, and employed large staffs. In 1746 we find the elder Carter writing to Lady Oxford's agent about chimney-pieces for Welbeck, and saying he had forty workmen in his yard. Indeed, chimney-pieces seem to have been one of the principal lines of both uncle and nephew; for the elder Carter supplied the majority of the chimney-pieces for Holkham (1751–53).[1]



29, *Colonel Townshend's monument.*

The Carters no doubt supplied chimney-pieces to many more houses; for the ones I have quoted are all from bills which still exist and I have seen. Nor were these chimney-pieces unimportant works. For example, the elder Carter received £526 for one for the dining room at Welbeck, while the younger Carter was paid no less than £750 for one for Bowood, though the chimney-pieces at the latter house were designed by Robert Adam and 'Athenian' Stuart, and only carved at Carter's yard. Another house where Carter carved to the orders of an architect, was Milton Abbey, Dorset, where the designs were probably supplied by Sir William Chambers or John Vardy.

[1] Including those in the Saloon, Great Dining Room and State Bedroom, while other houses for which he provided chimney-pieces include Rousham, Oxon (1737); Longford Castle Wilts. (1739); Okeover Hall, Staffs. (1740); Mr. James West's house in Lincoln's Inn Fields (1745); Moulsham Hall, Essex (1746); Uppark, Sussex (1747); Milton Hall, Peterborough (1750); Blair Castle, Scotland (1751), and Belhus, Essex (1752). The younger Carter provided chimney-pieces for Dover House, Whitehall (1759); Saltram, Devon (1760); Shardeloes, Bucks. (1761); Sir Richard Lyttleton's house, Piccadilly (1764); Mersham Park, Kent (1766); Bowood, Wilts. (1769); Lansdowne House, Berkeley Square (1769); Milton Abbey, Dorset (1775); Carlton House (1785), and Woburn Abbey (1791).



30, *monument to Mrs. Benyon.*

The secret of the Carters' long success seems to have been that they took the trouble to choose first-class assistants. We have seen how the elder Carter's first assistant was Roubiliac. The younger Carter employed P. M. van Gelder, John Deare and John Eckstein; of the first named, Hutchins in his *History of Dorset*, 1861 (Vol. 1, page 403), writing of Van Gelder's monument to Mrs. Frampton (died 1762) at Moreton, Dorset, says that it was carried out by 'Van Gelder of Amsterdam under the direction of Messrs. Carters who, at the period, were reckoned among the first statuaries of the Kingdom.' The monument is indeed a lovely work, with the inscription framed with carvings of both wild and garden flowers. The Carters seem to have attracted foreign assistants, perhaps because their fame had spread to the Continent. While Van Gelder had come from Holland, John Eckstein, who was with Carter from about 1760–65, came over from Germany. He was the son of a wood carver of Poppenreuth, and was born in 1735; he studied first under Herr Prieffler of Nürnberg, and then, when he was about twenty-five, came to learn his craft at Carter's yard. He must have been a skilled workman, for after he had been only a short time in England he carved the relief of Colonel Townshend's death at Ticonderoga on that soldier's monument in Westminster Abbey; the rest of the monument with its figures of two Indians being carried out by his employer. Thomas must have thought highly of his assistant; for he was allowed to have his signature together with his master's placed on the monument. Eckstein must have profited by his stay in London; for on leaving this country he was appointed sculptor to Frederick the Great of Prussia.

The third assistant who we know worked for Thomas Carter the Younger, was John Deare. who was apprenticed in 1776 when he was sixteen. In a letter to his father, quoted by Smith, Deare says of Carter, 'He is just as they say, a blustering fellow, but a good man.' Deare must have learnt a great deal working for Carter; for in 1780 he won the Royal Academy Gold Medal for Sculpture. But he still stayed with Carter; for in June, 1783, we find him writing home that he was working on 'a rich tablet for a chimney-piece' for Carter. Later that year he left Carter for good and set up on his own.

I think the reason why the Carters have become so completely forgotten is because, unlike the majority of sculptors, they did not sign their monuments, save on very rare occasions, and it is only through family account books and bills that one is able to identify with certainty their works. I have recently been lucky enough to discover that from the Carters' yard came the monument, 30, to Mrs. Benyon (died 1777) at Englefield, Berks.; for in the account book of Richard Benyon (Berkshire Records DEBY. A.3) is his part payment of £100 in 1778 to Carter for this monument. As the illustration shows, 31, this is a most exciting and unusual work, it depicts Mrs. Benyon falling back dead, while one woman—a maid?—tries to support her, and two others gaze in an agony of disbelief at their dead mistress. Whether this work was designed and carved by Carter himself or one of his assistants we shall probably never know. All one can say is that the carver must have had knowledge of Italian sculpture; for the design is undoubtedly influenced by the St. Teresa of Bernini.

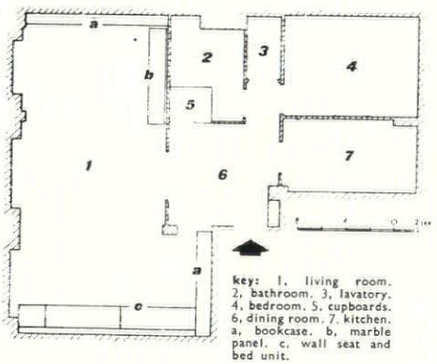
There are many monuments which one would like to ascribe to the Carters' workshop, but attributions are dangerous, though I am convinced that many important unsigned eighteenth century works in our parish churches come from the yards of both the elder and the younger Carter, which flourished for so long in Piccadilly. It is to be hoped that one day the Carters will be recognized, as they were in their lifetime, as among the 'first statuaries in the Kingdom.'



31, *detail of Mrs. Benyon's monument.*

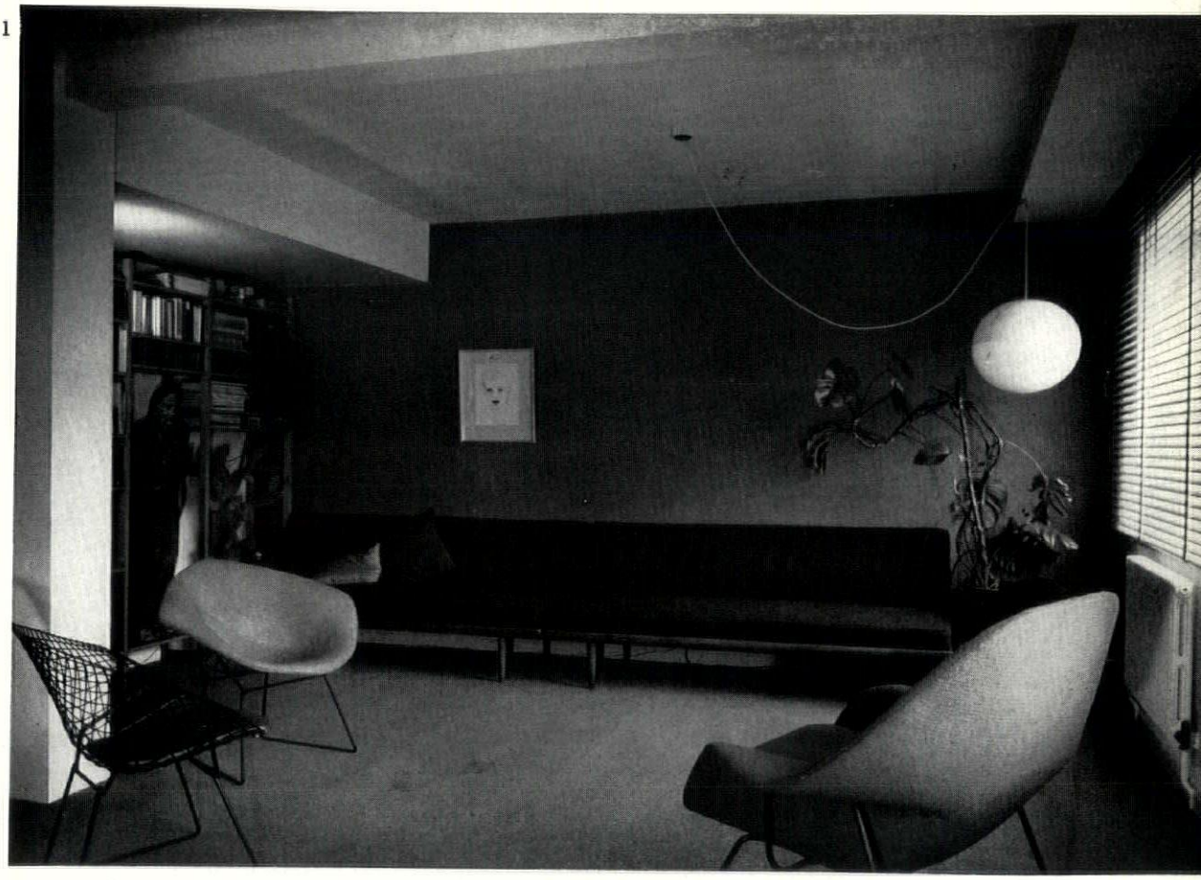
ID

INTERIORS BY JOHN AND SYLVIA REID



key: 1, living room. 2, bathroom. 3, lavatory. 4, bedroom. 5, cupboards. 6, dining room. 7, kitchen. a, bookcase. b, marble panel. c, wall seat and bed unit.

1



1, *a view of the living room, showing the wall seat which can be used as occasional beds, and a full length bookcase on the left.*
2, *opposite view to 1, with wall-length bookcase and display unit.*

2



1 Flat in Piccadilly, London, W.1

This flat at 89, Piccadilly, originally consisted of living-room, two bedrooms, bathroom and kitchen, and has been converted into a single, large living space with one bedroom and the bathroom and kitchen. What was orginally intended as the vestibule is now used as the dining-space and the ceiling level of this area is slightly

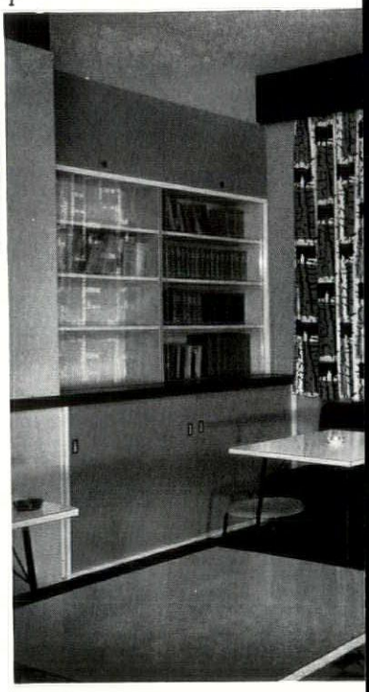


3

3. *the dining space with pinoleum screen on the left, entrance door on the right flanked by a full length mirror, to add light and an illusion of greater space.*

lower than the rest of the room. Full-length bookcases have been fitted and a long, low marble slab has also been built in. The back of the entrance door and the remainder of the wall in which it is placed has been covered with flush teak-veneered panelling.

7



4, *the left hand wall of the boardroom is flush-panelled with cherry veneered plywood. The wall opposite has a black and white wallpaper while the curtains on the right are lime yellow and black deep-textured fabric.*

5, 6, *specially-designed cocktail cabinet shown open and closed. It is veneered in black and white plastic laminate.*

2 Board Room in Vigo Street, London, W.1

A room was required which could be used as a board room, for informal gatherings, or as a private office. The window wall, painted white, is covered with lime-yellow and black deep-textured, fabric curtains which, when drawn, completely cover the whole wall. The radiators below the windows, are screened by white panels in metal frames with hardwood beads, and the opposite wall is covered with cherry veneered panels; the remaining walls are painted or papered. The teak purpose-made extendable table has a beech underframe. Cantilevered from the wall is a desk unit with a black, leather-cloth covered top and teak drawer fronts. General lighting is provided by concealed fluorescent lamps behind a baffle board fixed to a beam which crosses the centre of the room and accent lighting is provided by opal glass incandescent pendants and wall bracket fittings.

4

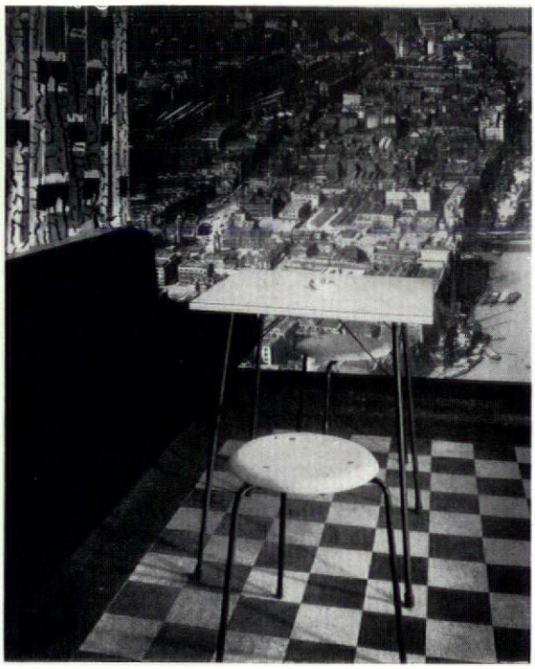


7, the curtains are red and white; the floor has black and white tiling, and the table tops are in black, yellow, grey and red.
8, detail of the air photo of London.

3 Boys Club at Stamford Hill, London, N.16

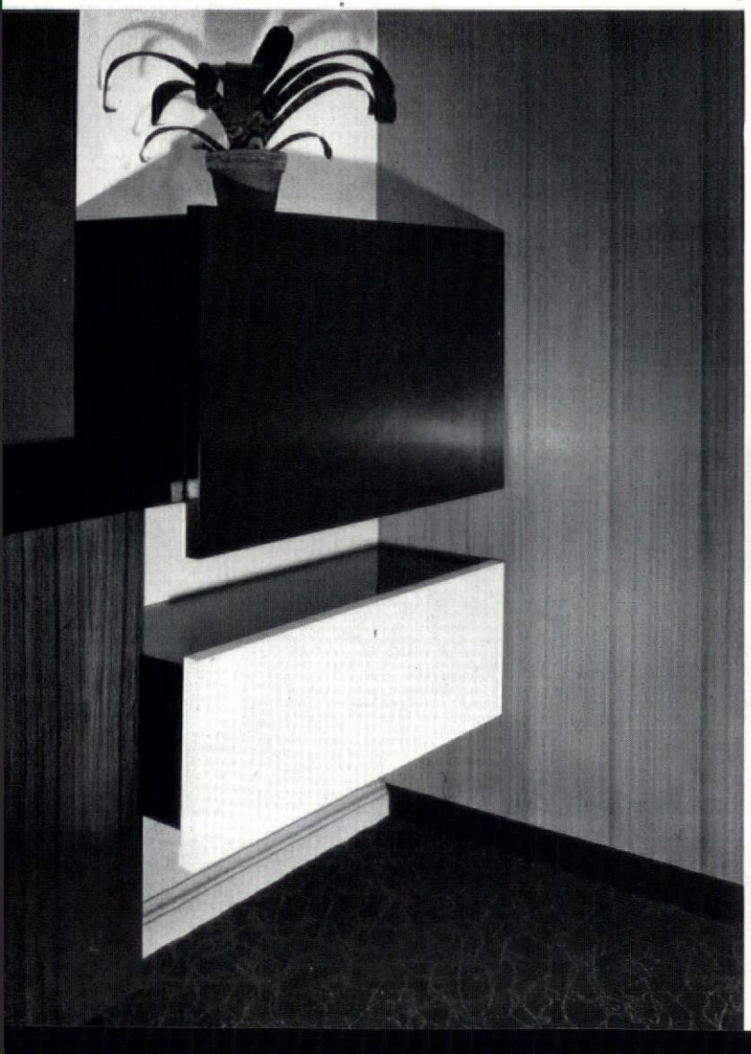
8





This room was given as a memorial by the family of one of the founders of the Club ; it is a study room designed for hard wear. The whole of the fireplace wall is veneered with plastic. An enclosed heater was chosen for safety reasons and a bookcase unit, with storage cupboards above and below, has been provided to house a small reference library and other equipment ; there is built-in seating on both sides of the room. The major feature is a wall covered with an aerial photograph of London, seen from just below Tower Bridge. The floor is covered with black and white marble lino tiles with sheet linoleum turned up to form a cove around the perimeter.

5



6





9

M/S PRINSESSE MARGRETHE

architect: Kay Korbing

This new 1,200-passenger liner is used by the Danish line DFDS on its service between Copenhagen and Oslo, and is the first Danish ship to be fitted with stabilizers. The external lines are similar to other recent DFDS boats but the interior designer was called in to co-operate with the engineers at the very beginning before the steel framing was fixed, and in fact was able to alter the construction to some extent. The first class passengers board on to an internal hall instead of a promenade deck, and there is only glass between this and the corridors and saloons to maintain the maritime effect. This is especially noticeable in the self-service cafeteria, which has a broad window aft over the ship's wake and the Sound, kept steam-free by the use of infra-red heating. Stabilizers have meant that informal light furniture could be used ; the same type is fitted to both first and tourist class rooms, the only variation being in the upholstery and curtains. The first class hall is panelled in Oregon pine ; the built-in brass light fittings were designed by the architect and the rows of lights continue into the smoking-room panelled with Brazilian rosewood ; the chair coverings are light and dark green and the black and white mural at the end is by Ole Schwalbe. The first class bar is directly connected to the smoking-room, with an end panel by Aagaard-Andersen and a mural behind the bar of cock fighting by Svend Dalsgaard. The tourist class central hall has a photo-mural of tree branches seen against snow by Keld Helmer-Petersen.

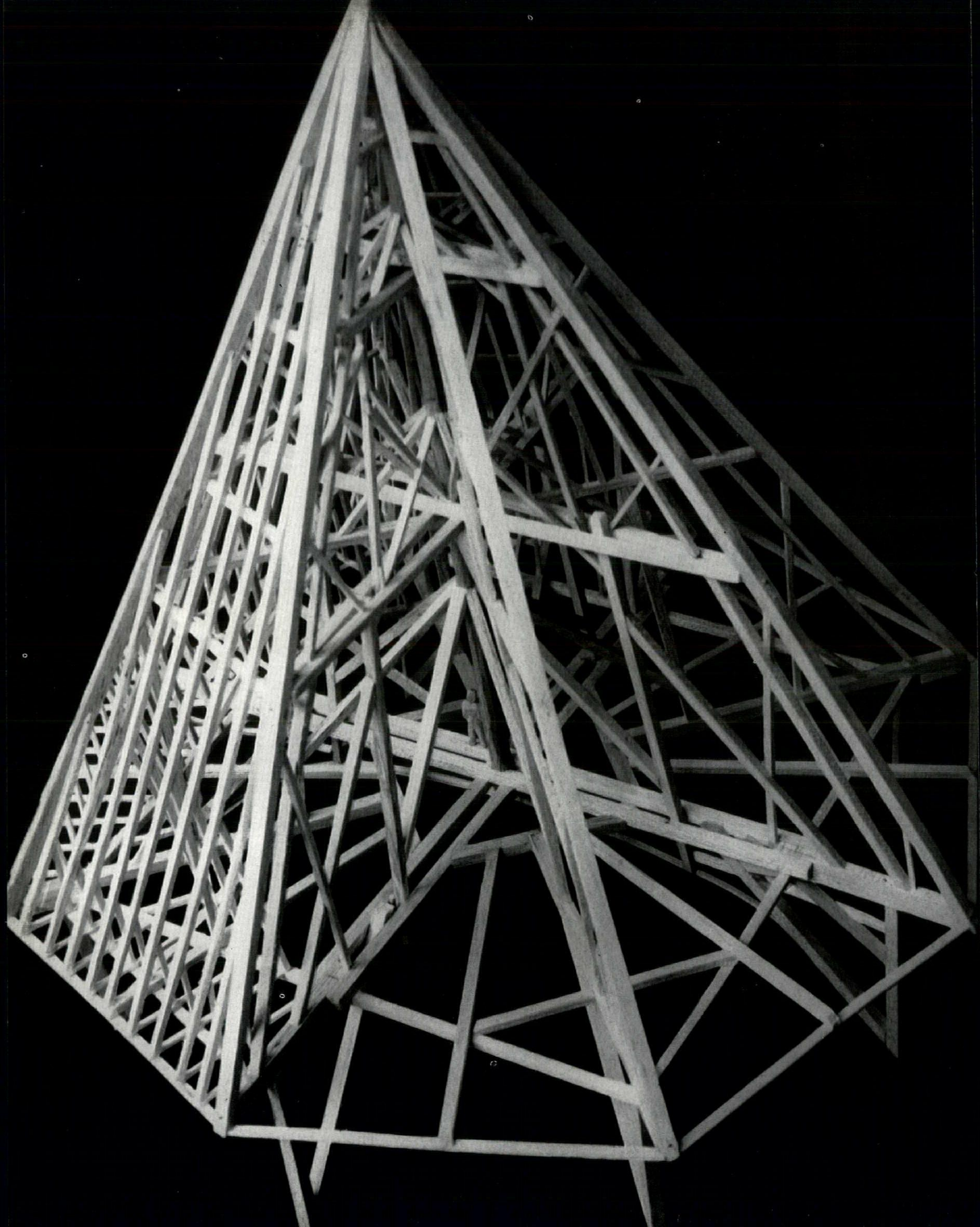
9, first class writing room. Glass on top of the door is carried direct into the ceiling profiles; the frames are anodized aluminium.
10, the first class bar and the smoking room. The end-wall decoration is by Aagaard-Anderson, while the wall in the bar is decorated with an iron relief by Svend Dalsgaard.
11, the end wall of the first class smoking room designed by Ole Schwalbe. The room is lit partly by the ordinary ceiling fittings and partly by tubes built into a dome and along the window wall of Brazilian rose-wood. Vivid greens, one light, the other dark, are used on the chairs.
12, photo-mural by Keld Helmer-Petersen, in the tourist class hall.

11 →
12

10

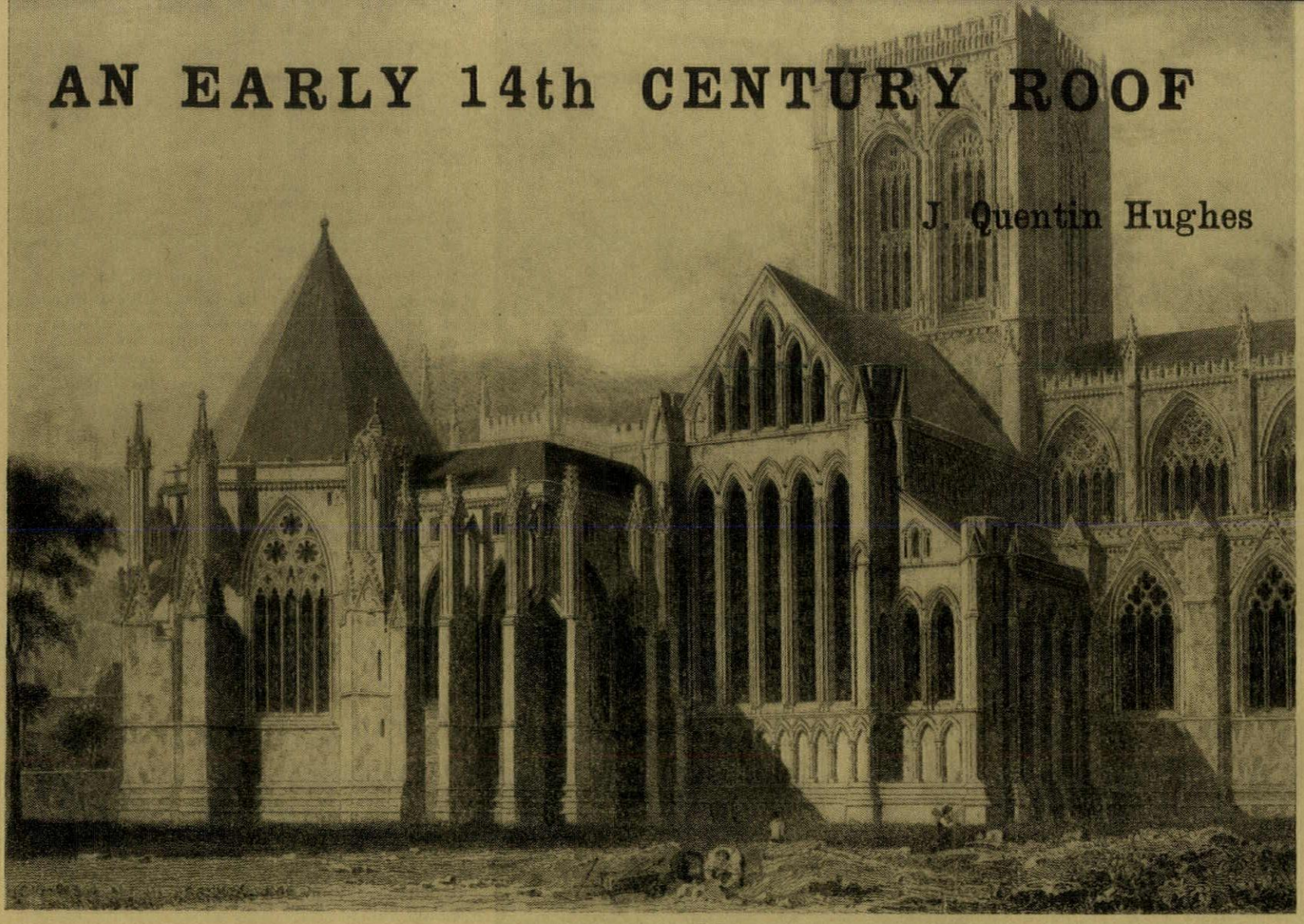






AN EARLY 14th CENTURY ROOF

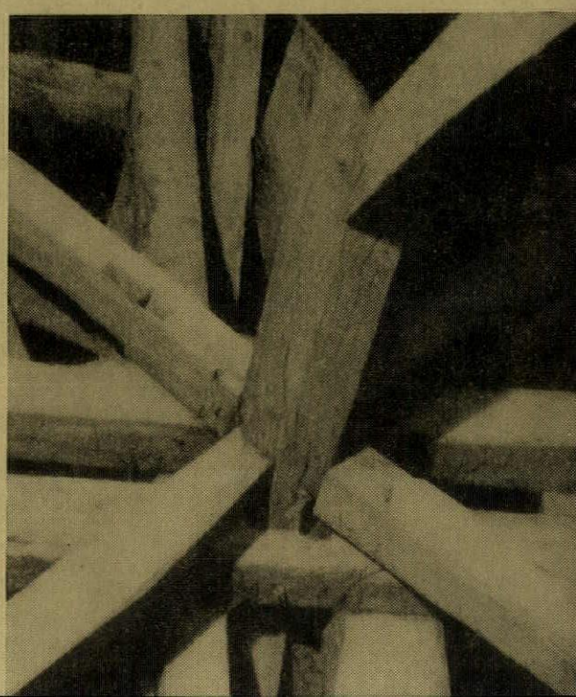
J. Quentin Hughes



The Chapter House of York Minster, seen in Britton's view of 1819, *above, has a roof-structure that is one of the master-works of Gothic carpentry. The basic principles of the structure are made visible in the model, opposite* ☜ *and its veritable timbers are shown in close-up,* 1, *below.*

Polygonal chapter-houses are an English speciality. York is different from nearly all of them for not having a central pillar. The decision to do without one put a tricky problem before the carpenters. The clear span chosen was 58 ft. How was it to be bridged? The solution is extremely ingenious, and as most of the original timberwork survives, it is worth close examination.* The work at York was undertaken during the last decade of the thirteenth century,† that is at a remarkably early date. It antedates by a whole generation the only comparable feat of polygonal timber construction, the Ely Octagon. The model illustrated was made to demonstrate the construction at York and compare it with the familiar model of the Ely Octagon. At York the roof is a vast pyramid of timber built up in three stages and carrying the vaulted timber-ceiling below. The eight principal rafters radiate from the central post, about 64 feet tall, to the corners of the octagon, 2. The central post is sixteen inches thick at the first stage, and is made up of three baulks of timber, cut to an octagonal shape, joined by scarfed joints, and pegged with wooden pegs. Each pair of principal rafters, which measure 13 inches by 12 inches, encloses nine rafters which, instead of radiating from the centre, lie parallel to one another. The central post is firmly wedged at the three main stages between double tie beams. There is a minor stage above which might be termed a fourth stage but for the fact that its function differs from those of the other three stages. They support the compressive strain of the central post and prevent the outward spreading of the principal rafters, and consequently of the whole roof. The transverse beams of the top stage, on the other hand, merely abut the central post and are not continuous from side to side. They therefore have no restraining or tying effect upon the roof. Their purpose is to provide a firm resting ground for the upper ends of the lower principal rafters which terminate at that point, and unlike the principal rafters are not carried to the apex of the roof.

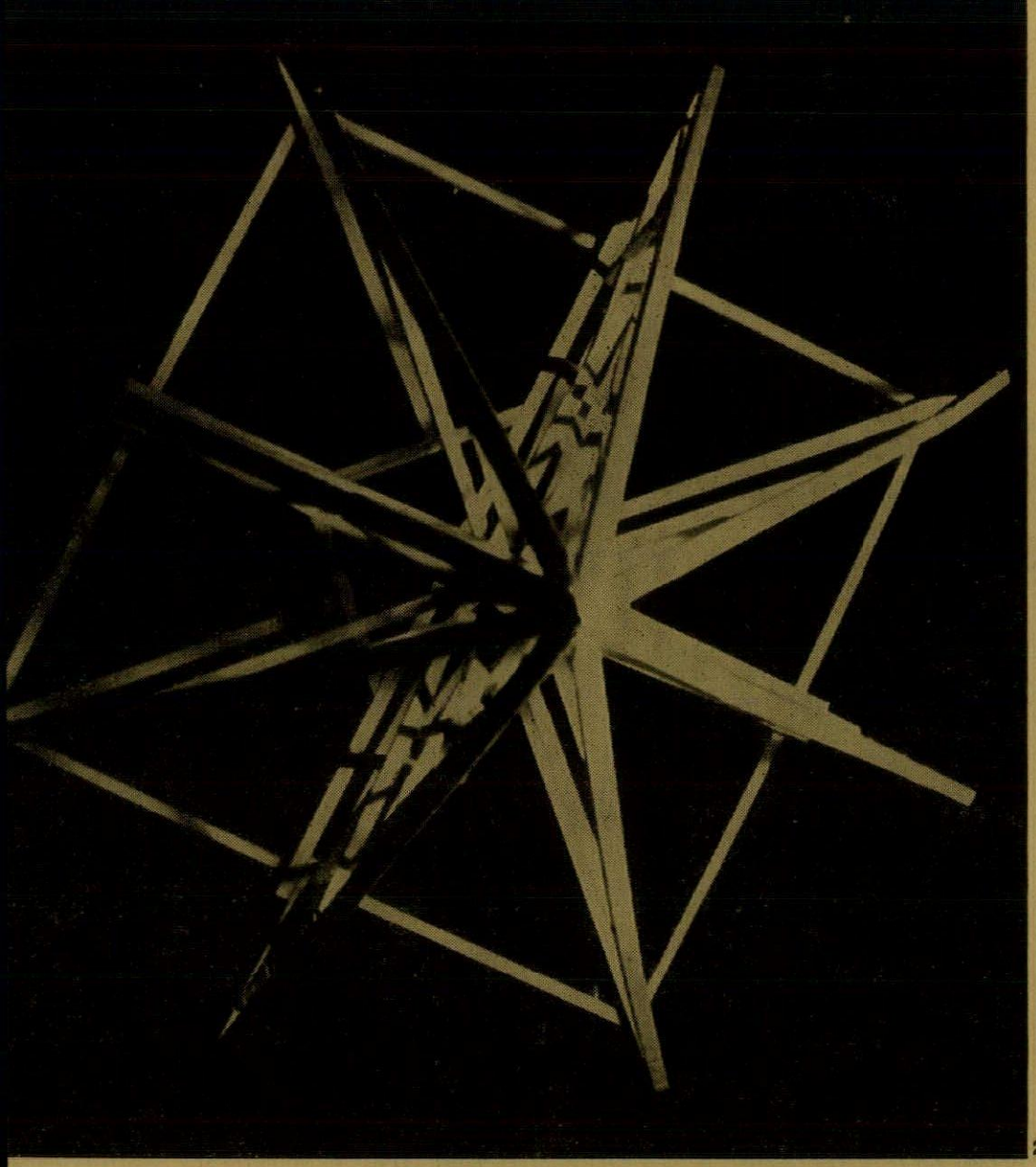
Looking at the model from below, the main double tie beams can be seen, 3, clearly crossing at right angles above the central post. These tie beams had to span 58 feet from the opposite walls of the building, but due to support extension they were required to span 64 feet and the medieval builders found that they could not obtain timbers sufficiently long for their purpose. The central post was therefore secured between two beams about 52 feet long at the first level. These tie beams carry the maximum bending stress. At each end of the double beams, single beams were inserted to span the remaining ten feet to the principal rafters. These



1

* A more detailed description of this work, which was undertaken at the University of Liverpool, will be published later.

† The title of this article is intended to refer to an approximate date of completion, rather than to the commencement of the work.



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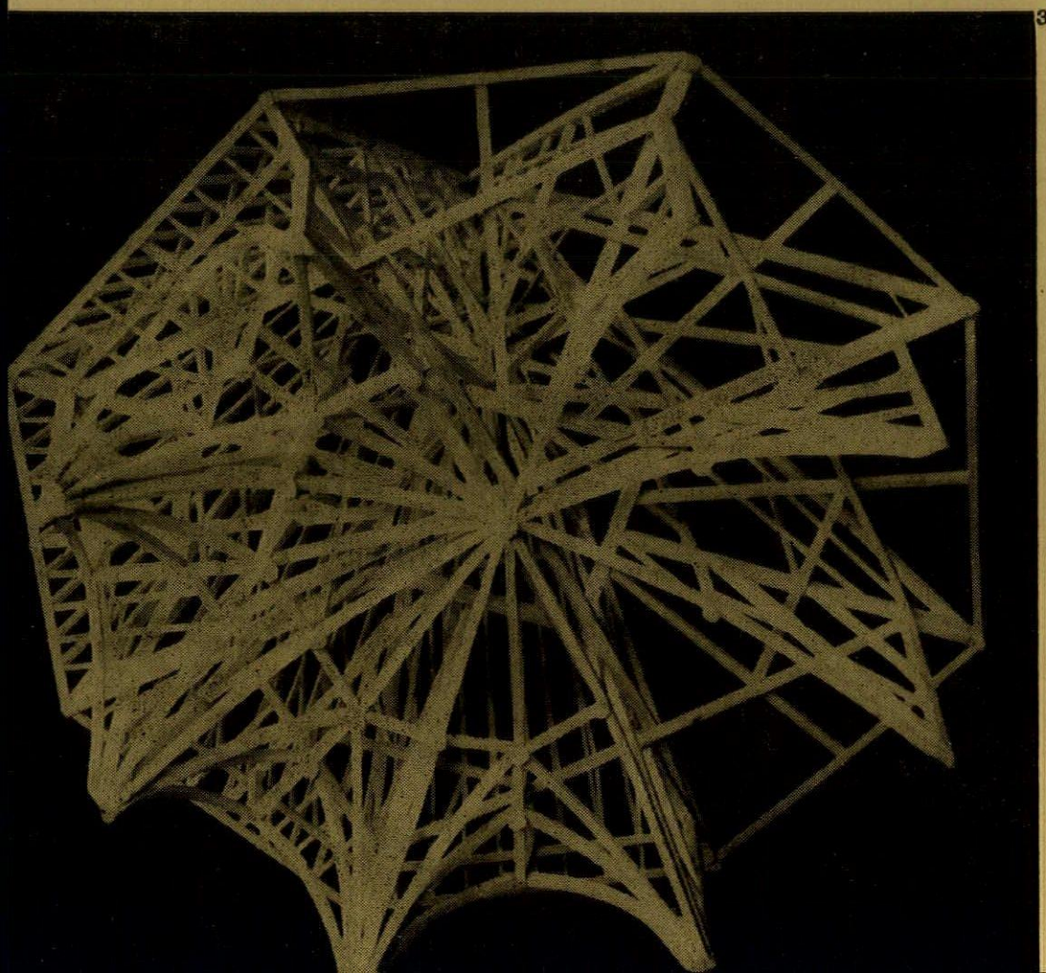


3

2, an intermediary stage of the model seen from above showing the eight principal rafters radiating from the apex of the central post.

3, the model of the structure seen from below showing, at the left, the full network of subsidiary timbers for the rafters and the framing of the wooden vault of the Chapter House ceiling.

single beams were not subjected to the same strain; in fact, the shear stress was the only factor likely to affect that portion of the tie beam. How much of these considerations affected the design of the roof we cannot judge. It seems likely that most of the carpenters' decisions were empirical rather than scientific, but the resulting analogy to a rolled steel joist, having a superimposed load at the centre, and strengthened by additional sheets of steel along the top and bottom about the centre, where the greatest compressive and tensional stresses occur, is of some interest. The arrangement of double tie beams with clamped single beams at their extremities was only necessary for the abnormally large span of the first stage. The second and third stages repeat in plan the pattern of the first stage, but there the carpenters were able to span the full width between the principal rafters with double beams constructed of unbroken scantlings. These beams pinch the king post and are bent so that they close together where they are fixed to the principal rafters. Although the pattern of these upper stages is approximately the same, the beams which lie between the arms of the octagon, on the first stage are not required and are omitted above.

The construction is essentially that of a king post truss built upon three levels. The timber vault is suspended from it. But the roof truss is not only a king-post, because beams project from the walls, and, rising diagonally, support the single beams of the tie. In this way they form a rudimentary hammer-beam truss. This introduces the principle of balanced construction.

This brief analysis shows the manifold and absorbing interest of the construction. Erection was probably as interesting, and a system of carpenters' marks was found, which proves that the timbers were prefabricated. They were cut and jointed on the ground and joints marked by distinguishing signs. Each bay of the octagon had a different sign based upon combinations of the segments of a circle used in conjunction with notches. The circular incisions are 3¼ inches in diameter and were cut with a carpenter's brace and bit. Marks were cut into either the top or the side of each of the main beams, and they enabled the carpenters to reassemble the roof correctly on the site. The first assembly may have taken place in the Cathedral Place or miles away in one of the forests; the beams being taken apart after they had been marked, hauled up aloft and reassembled in the correct position. This system of erection is not confined to York. It is known that the roof of Westminster Hall was prefabricated at Farnham in Surrey. But that was in 1395, and so York is once again ahead of comparable examples.

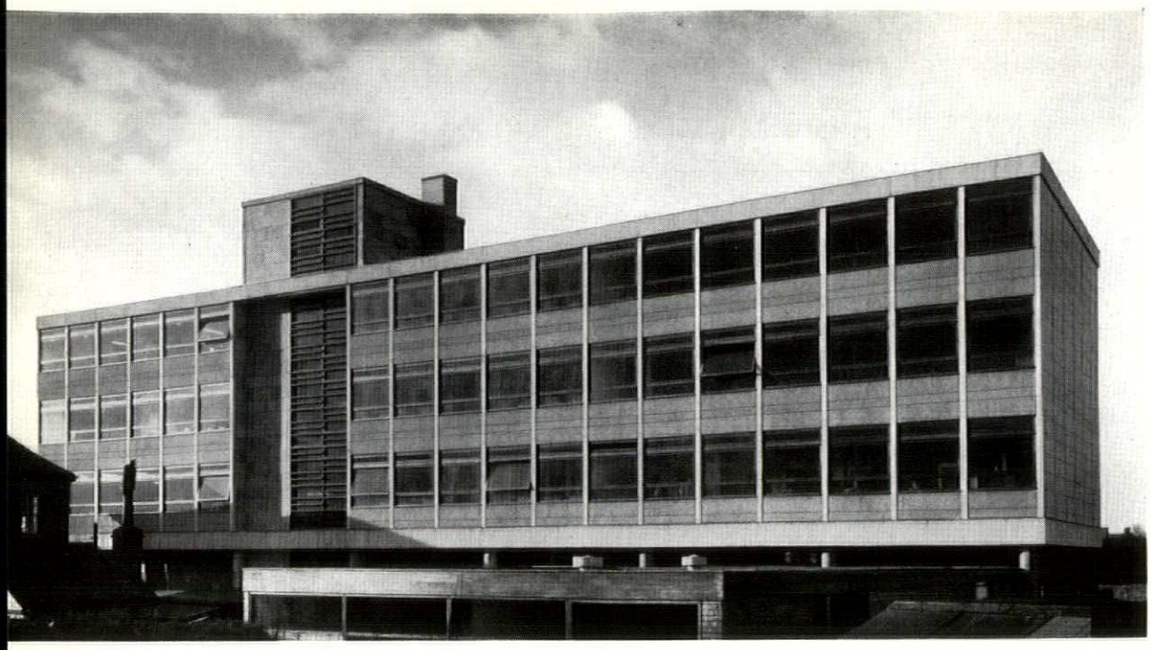


1, *west facade, showing covered entrance and recreation room beyond.*

OFFICES AT CAMBRIDGE

ARCHITECT: H. H. POWELL, EASTERN REGION, BRITISH RAILWAYS

This building provides new offices for the Traffic Manager of the Cambridge area of British Railways (Eastern Region) under their decentralization scheme on a site fronting Tenison Road near the railway station. It is divided into two parts; the ground floor contains the entrance hall, enquiry desk, service rooms, some office space and the Railway Institute. The Institute has a separate entrance and consists of a large area suitable for meetings, lectures and social events. This floor is of 'wet and heavy' construction with an in-situ reinforced concrete frame and first floor slab and with brick walls which mostly pass behind the columns leaving them free-standing. The Institute area projects at

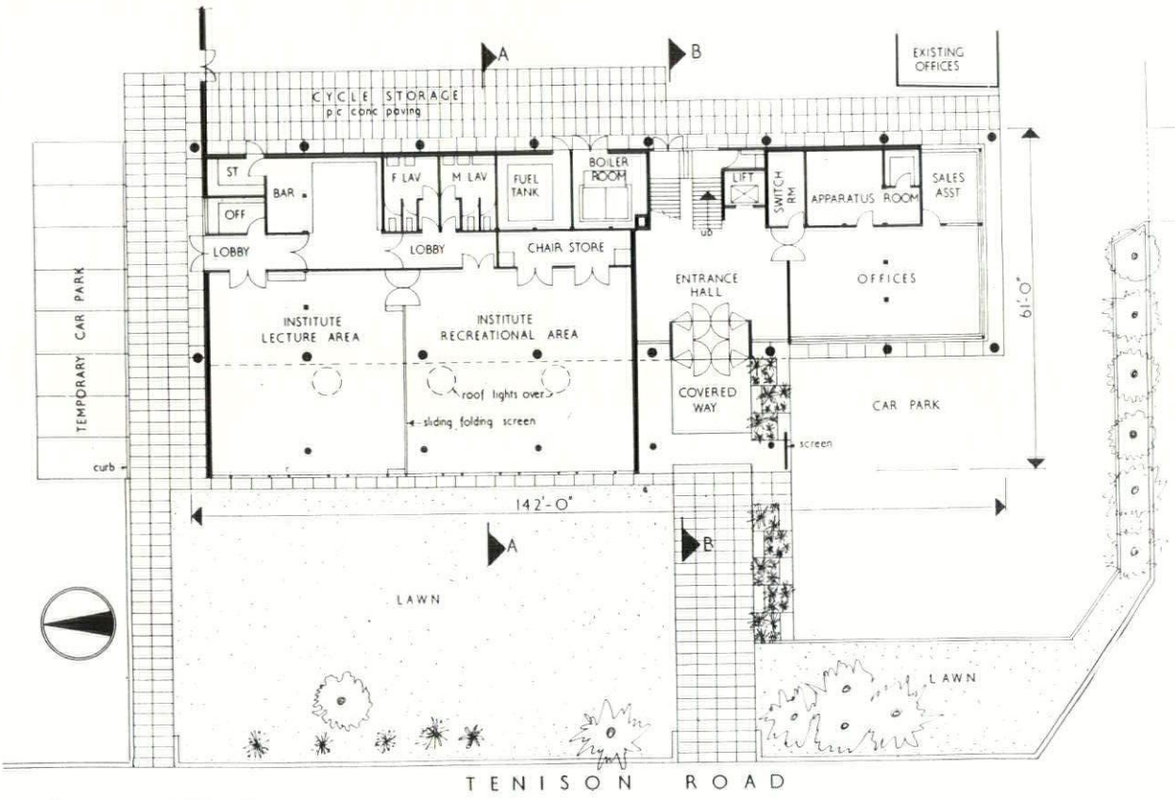


2

2, rear view, eaves fascia and first floor edge-beam are carried across the staircase window.

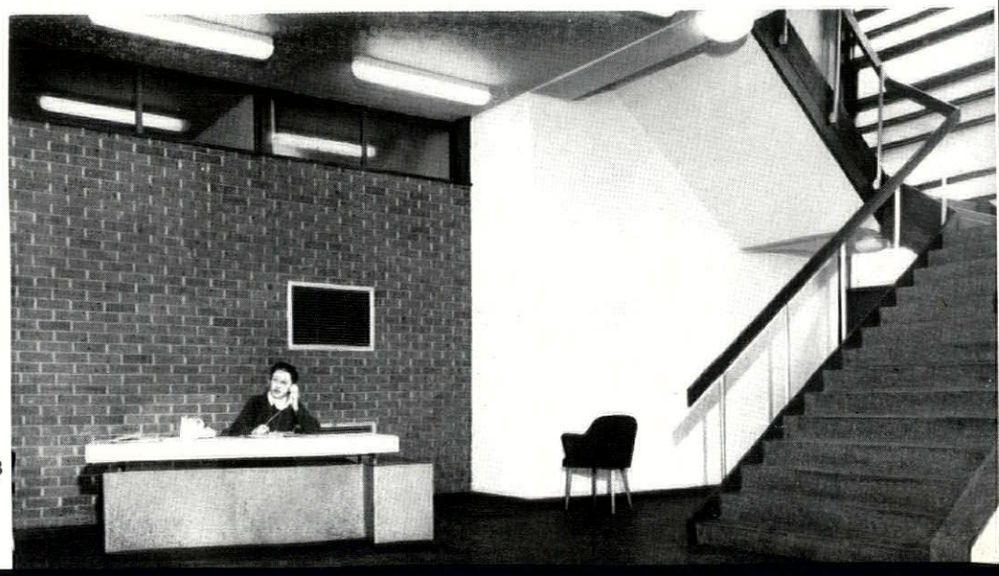
3, entrance hall, with enquiry desk and the in situ concrete staircase which has a terrazzo finish.

offices at Cambridge



ground floor plan. scale 1/32in. = 1ft.

the front of the building and its roof is continued to form a deep canopy over the front entrance. The three upper floors are all offices and are of dry construction using a patent system of prefabricated reinforced concrete, so far used only for schools. The precast prestressed concrete frame rests on the in-situ first floor slab and the external walls are faced with precast concrete panels with exposed aggregate finish and hardwood framed windows. Each floor is an open area divided by demountable glazed timber partitions on a 40 in. grid. The vertical link consists of a lift and stairs at the rear of the building with a perforated hardwood screen which runs right up the rear elevation of the building and forms an illuminated 'backcloth' to the entrance hall.



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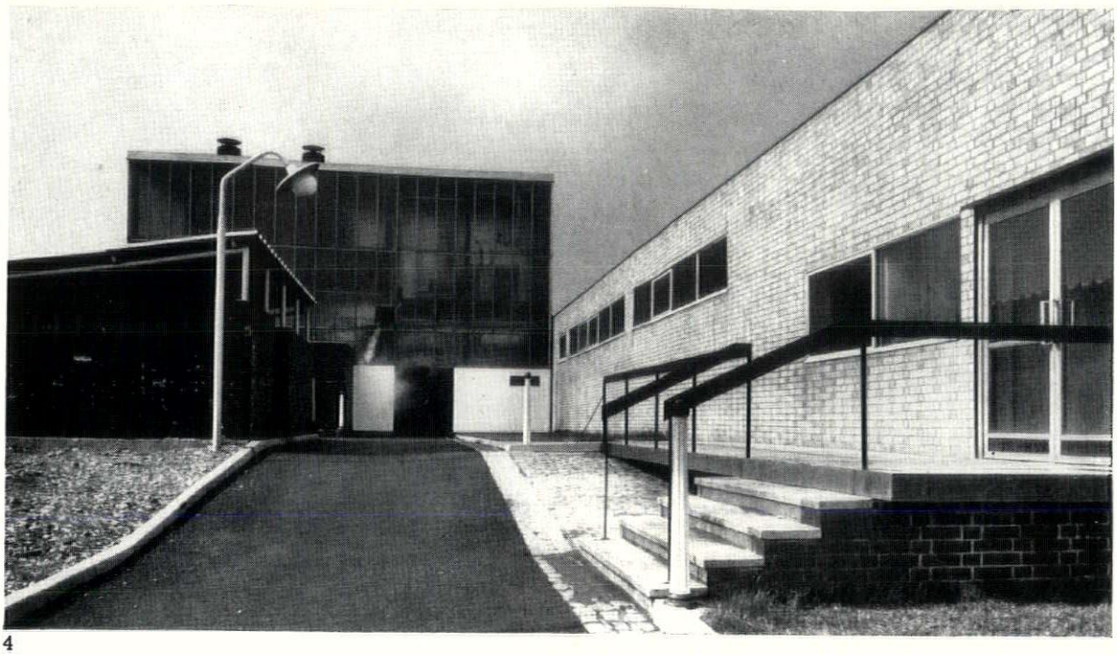


4

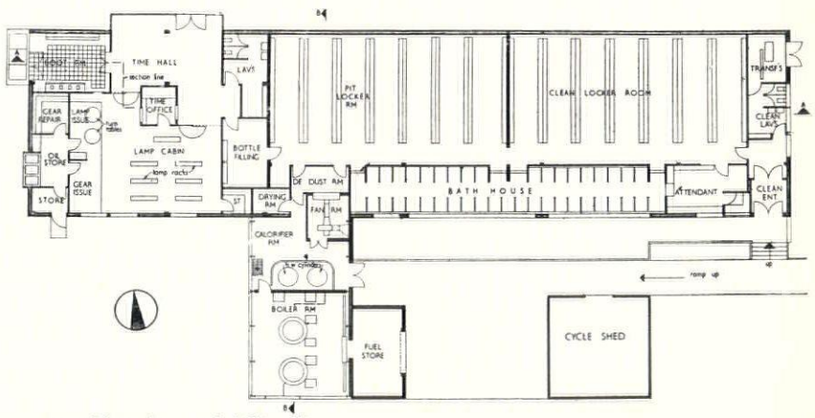
ARCHITECTS:
RICHARD SHEPPARD
AND PARTNERS

ARCHITECT-IN-CHARGE:
KENNETH STROWLGER

4, the 'clean' entrance to the locker room and showers on the right, with the boiler house plant seen through the semi-obscure glass cage beyond.

PITHEAD BATHS AT DUDLEY

A new pithead bath on made-up ground on waste from mine workings beside an old colliery in the South Northumberland coalfield. The baths have forty showers and 672 cubicles, and are split into different structural units, the boiler house and the baths themselves. Mass concrete foundations had to be piled through the waste slag to a depth of 13 ft.; reinforced concrete downstand beams span from pier to pier carrying the floor slabs and the buildings above have framed construction with columns centred above the piers. The baths have a reinforced concrete frame and in-situ reinforced concrete roof slab; the boiler house is steel framed with patent aluminium roof of troughed decking. The baths have buff cavity brickwork facing—the bricks being local and produced by the NCB—the boiler house has vertical patent glazing on a rough concrete plinth given texture by painting a retard on the shuttering and bushing the concrete to expose the aggregate.



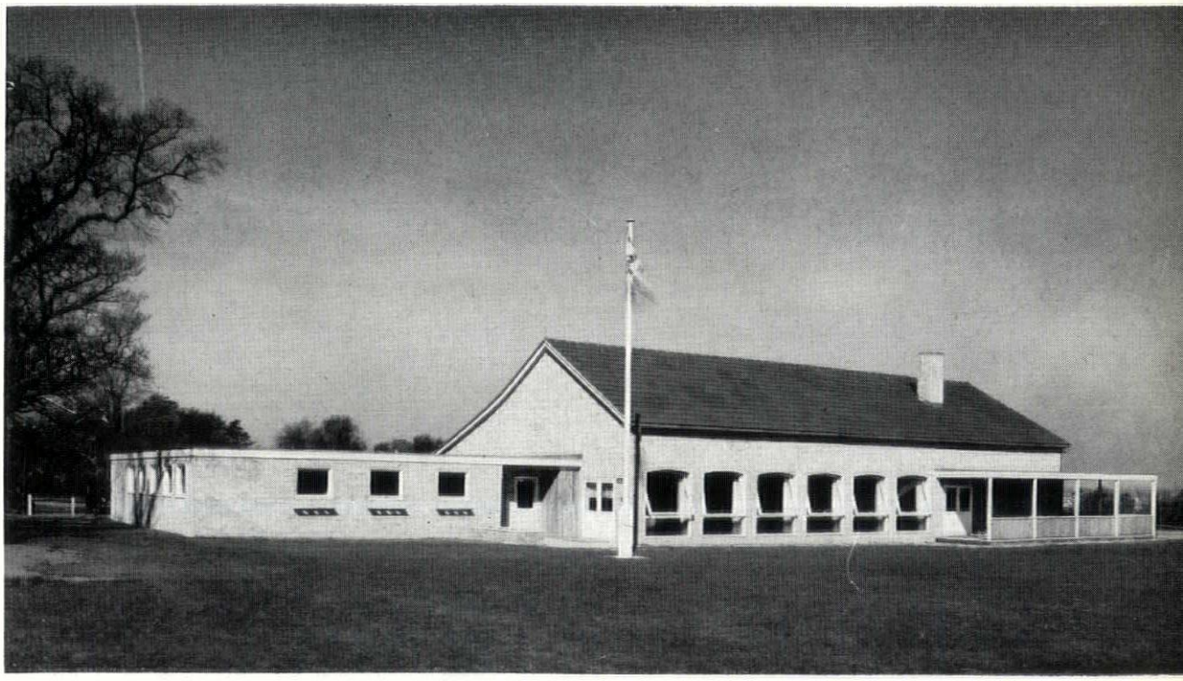
ground floor plan. scale 1/8in. = 1ft.

SPORTS PAVILION AT HAYES, KENT

ARCHITECTS: PITE SON AND FAIRWEATHER

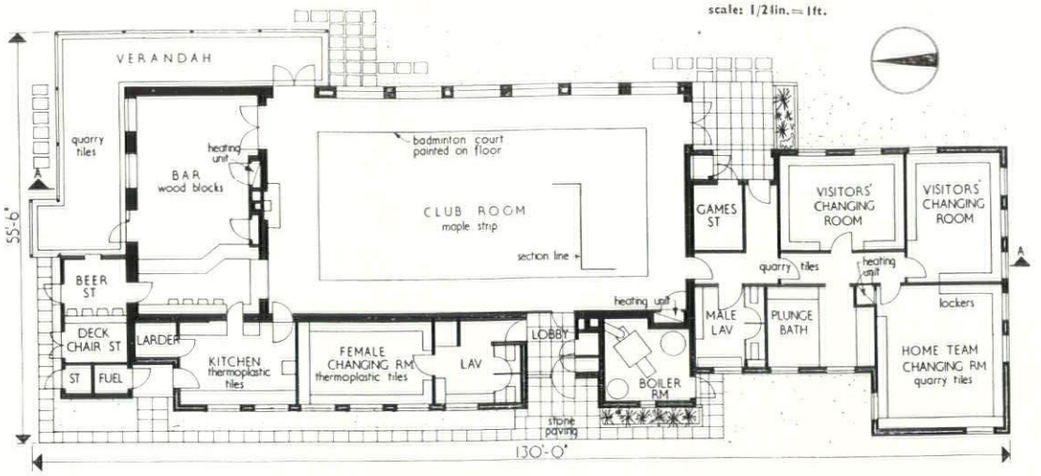
ASSISTANT ARCHITECTS: PETER BOSTON AND ALAN BLANC

This building in Barnet Wood Road, Hayes, south of Bromley, replaced two existing pavilions and had to be a social centre also with a large club room—big enough to be used for badminton—with ancillary bars and kitchens. The site has a fall of four feet from north to south with views to the north and east. The club room has a structure of three welded steel portal frames carrying a pitched roof, faced with 13 in. solid brickwork, light brown clay facing bricks. The other buildings are 11 in. load bearing cavity brickwork with timber roofs covered with roofing felt.



5, *view from the south east.*

Sports Pavilion at Hayes

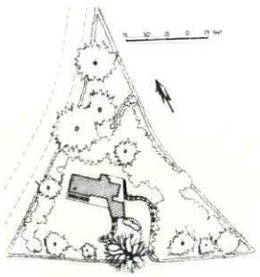


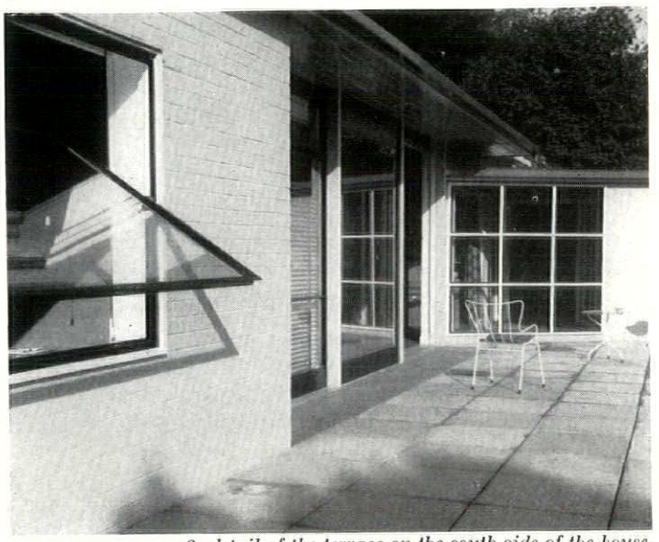
ground floor plan.

HOUSE AT NACTON, SUFFOLK

ARCHITECTS: SANDON AND HARDING

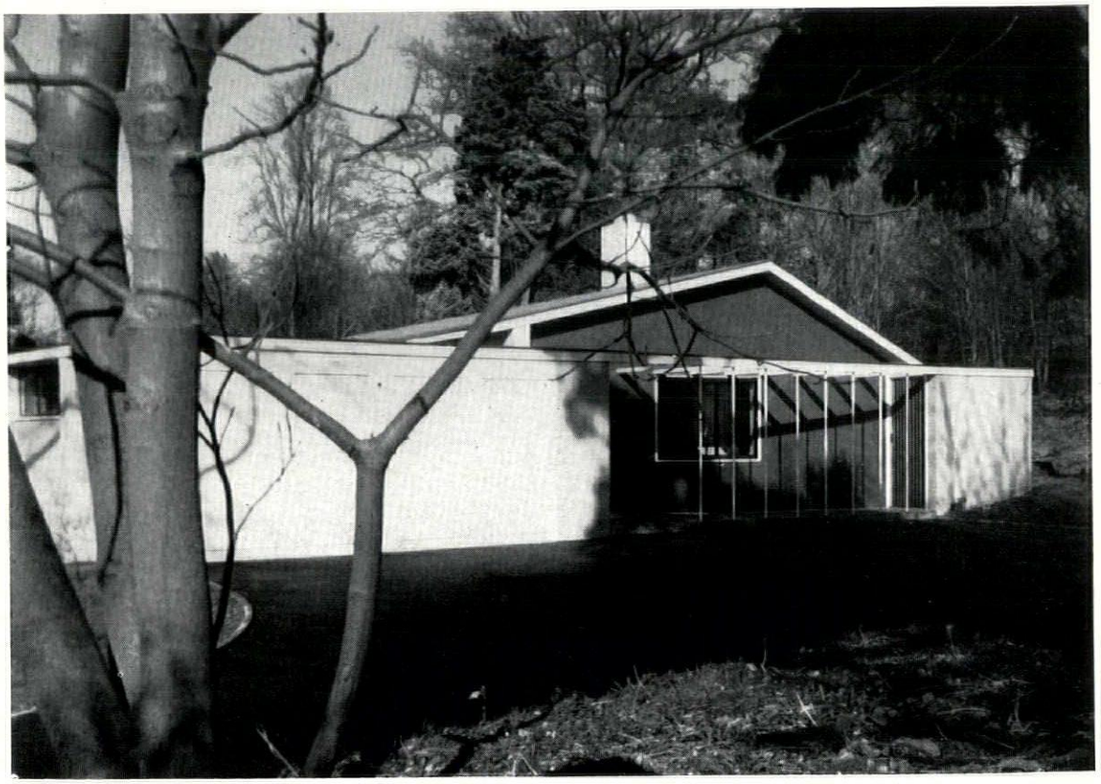
This is the architect's own house on a wooded triangular one-acre site at Shollond Hill, near Nacton, four miles S.E. of Ipswich. It was planned for a middle-aged couple to be compact (1,390 sq. ft., excluding double garage) with as many built-in fittings as possible. The entire living area, 22 ft. by 34 ft., is one room comprising sitting and dining areas, study and kitchen (with fan extraction for kitchen smells). The construction is cavity brickwork with an inner skin of foamed-slag blocks: the facing bricks are common flettons painted grey; the inset plastered gables are dark purple, the eaves and gable soffits lime green. The roof is of built-up bituminous layers finished with a plum-coloured mineral surface. The inside uses the same colours, with large surfaces generally elephant grey, occasionally white and black, and brilliant colours (purple, cyclamen, and chartreuse) confined to small areas needing emphasis. The low hall ceiling is black, the living area ceiling light blue. An automatic oil-fired boiler heats radiators throughout the house and a convector in the living room; refrigerator and boiler are combined in a fridge-heater in the larder.

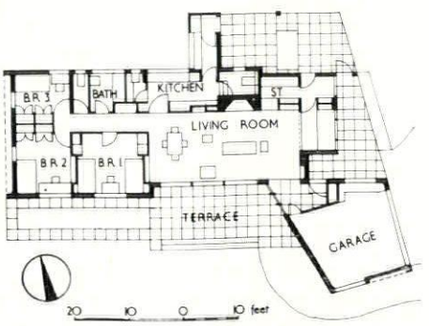




6, detail of the terrace on the south side of the house. The window and door frames and mouldings are white, the sashes black.

7, view from the south-east. The brickwork is painted grey; the plastered gable is dark purple as a background to the white pergola and the eaves and gable soffits are lime green.





BOOKS

SCIENTIST AND ARCHITECT

ROBERT HOOKE. *By Margaret Espinasse. Heinemann*, 1956, 21*s*.

Robert Hooke's diaries have been in print since 1935, but they are in any ordinary sense unreadable. Mrs. Espinasse has quarried her way through them and built up a very pleasant portrait of Hooke out of the rubble. She is concerned to show that he was not only great but good and very different from the 'melancholy, mistrustful and jealous' person of Waller's biography. She is probably right. For the rest, her book is more a series of studies of Hooke, his work and his world than a straight biography and she has thus not given us what would have been most exciting, an account of the growth and flowering of his powers. In his busiest years Hooke's output of work seems barely consistent with the fact that there were, then as now, twenty-four hours in the day. As with Wren, the temptation is to pile up the facts to show just how fantastically busy he was; whereas the biographer's real task is to show how such busy-ness became possible and natural to the man. This Mrs. Espinasse does not attempt. On the other hand she does place Hooke intelligibly in the pre-Newtonian world of English science and her accounts of the *Micrographia* and the Cutlerian lectures are admirably clear and readable.

Her chapter on Hooke as an architect, which naturally owes much to Mrs. Geoffrey Webb's study in the *Walpole Society's* volume for 1936–1937, is sound enough, but on this aspect of the man's work there is probably a great deal more to be discovered. Wren paid Hooke a salary for helping him with the city churches, and this help almost certainly went further than Mrs. Espinasse suggests when she says that it had to do with 'the actual construction, as opposed to the designing' of the churches. There are drawings for city churches at All Souls and elsewhere which are certainly not in Wren's hand and are almost certainly in Hooke's. Some of these, moreover, are initialled by Wren, which probably means that he had been shown two or three designs and selected one for approval. It would be going much too far to suggest that some of the churches are not by Wren at all but by Hooke; but the evidence points strongly to the conclusion that there were certain churches whose main features were settled perhaps as simply as by a meeting of Wren and Hooke on the site, Hooke then 'working up' the agreed idea in one or more versions which were submitted to Wren for final judgement.

It has always been slightly embarrassing to attribute *all* the churches *wholly* to Wren, especially because some are detailed in a style which has not the faintest relevance to any of his personal drawings. One has always felt that there was 'somebody in the office' who knew far less than Wren about the mechanics and refinements of the antique and far more about the rough but serviceable vernacular of Holland. Was this somebody Robert Hooke? Did he ever go to Holland? Mrs. Espinasse tells us that he 'went to sea' for experimental purposes in 1662. Is that all we know?

So far as Hooke's achievement is concerned the problem is marginal, for his architecture is elementary and sometimes childish; there is rarely any heart in it, though a delightful ingenuity does sometimes link it with the mind of one who was, as a contemporary put it, 'as great a master of mechanical inventions as any in the world.'

John Summerson

POCKET HOFFMANN

JOSEF HOFFMANN, *Architetti del Movimento Moderno, vol.* 17. *Edited by Giulia Veronesi and Josef Hoffmann. Il Balcone, Milan* 1956.

Il Balcone is going from strength to strength. After Perret, D'Aronco and Loos we have now a volume on Josef Hoffmann. The knowledge of Hoffmann, who died in 1956, is in this country usually confined to the two illustrations in my *Pioneers* and to what little text accompanies them. That is surely not enough. Giulia Veronesi, author of the *Balcone* volumes on Garnier, Oud and Olbrich, has assembled a good deal more, including the remarkable interiors of the Villa Moser and the Palais Stoclet. The latter point forward to the more classical modern manners of Italy and France in the 1930s, but curiously also to Mies, the former are so similar to Mackintosh's work that an exact date would be essential. Unfortunately we are not given one. 1901–1904 is not enough, since the Mackintosh show in Vienna took place at the end of 1900. The Art Nouveau interior of a shop of 1899–1900, one or two illustrations in Mr. Madsen's Art Nouveau book, and the terrible exterior of the Villa Moser all make it likely that the change in Hoffmann was the effect of a study of Mackintosh. Signora Veronesi goes so far as to say that by 1896 the 'suprema originale eleganza' of the Scots was 'già nota a Vienna.' That can only refer to the first article in *The Studio*. But that article dates from 1897. The whole problem is still far from solved, especially as Mr. Madsen denies its existence and thinks of parallel, independent developments.

What the nearly 50 illustrations in Signora Veronesi's book bring out clearly is that Hoffmann's part in the major European development was played out before 1910, though his style as a designer was personal enough to remain interesting to anyone who is sensitive to the Viennese dialect of an ever more classicizing Central European twentieth century idiom. Occasionally the buildings are almost of a Viennese 'Biedermeier,' occasionally they strike one as alarmingly close to Nazi ideals (page 115). But the best is delightfully and hopelessly Viennese—graceful and 'verspielt,' to use in exasperation an untranslatable term.

Nikolaus Pevsner

THE FIRST ROMANTIC

JAMES WYATT. *By Anthony Dale. Basil Blackwell*, 1956. 30*s*.

James Wyatt disparaged the design of St. Peter's, Rome, St. Paul's, London, the spire of St. Martins-in-the-Fields, and much, if not all, of Vanbrugh's work; and he was acidulously outspoken on the work of his contemporaries. Unfortunately there is little record of what the latter thought of his own talents.

Any comparison with his contemporaries, omitted for some reason in this acute study of Wyatt in favour of a brief chapter on his reputation, which is quite a different matter, will reveal surely that Wyatt's stature is overinflated.

His dislike of classical monumentality led him to produce turgid plans with exteriors dull to the point of banality, except for Stoke Poges, which was not his work entirely. Admittedly, Heaton Hall is very fine, as were his classical interiors also. In fact his decorative flair was remarkable and it is by this work that he achieved deserved fame.

Wyatt, at heart, was the first romantic architect, if one accepts James Essex as being a genuine Gothic interpreter. Therefore, it is more the pity that with the exceptional opportunities at his command, he was unable to prove himself the genius that Mr. Dale would have us believe. After all Fonthill was only a superb exercise in décor, while Ashridge was no more than a curious folly of immense panache.

With the omission of much tedious detailed description and the inclusion of some comparative analyses of the work of Wyatt's contemporaries, this interesting but slightly depersonalized book would have had a better balance.

Christopher Gotch

COMPLETE MODEL-MAKER

THE MODERN ARCHITECTURAL MODEL. *By T. W. Hendrick; Foreword by Hugh Casson. Architectural Press.* 16*s*.

To most people models are intriguing, quite apart from the designs they represent, and one realizes from this book that not the least intrigued are the model-makers themselves. Apart from the universal fascination of making things, there is endless scope for the imagination in creating ingenious effects from new and unexpected materials, in fact one needs rather the eye for capabilities and qualities of a magician, with which Picasso turned bicycle handlebars and seat into a bull's head. How-

ever, it is easy to be led astray from their great usefulness, and the serious part models can play in the process of design. They are often quite indispensable, both in developing the architect's ideas and in interpreting them to other people, so it is surprising that this is the first book devoted entirely to this subject.

The author deals thoroughly with the whole process of model-making, from a complete list of tools and equipment, and the ideal layout for a workshop, to the packaging and dispatch of the models. A wide variety of present-day techniques is described in detail and there is a very useful list of suppliers of equipment and materials, but the author constantly reminds us of the unlimited possibilities of new materials. The book is illustrated with diagrams by the author and 40 photographs of models mostly made by architects. This should be an encouragement to other architects, for though they may not achieve the technical perfection of a professional, it is they who are most likely to stress the important elements of the design and give exactly the right value to slight projections and mouldings, niceties that it is hard to expect from the professional who quite naturally is chiefly concerned with his craft.

This is an excellent reference book for all architects and architectural students, whether they are model-makers themselves or directing the making of models. May it also encourage designers to allow time for this important part of their work.

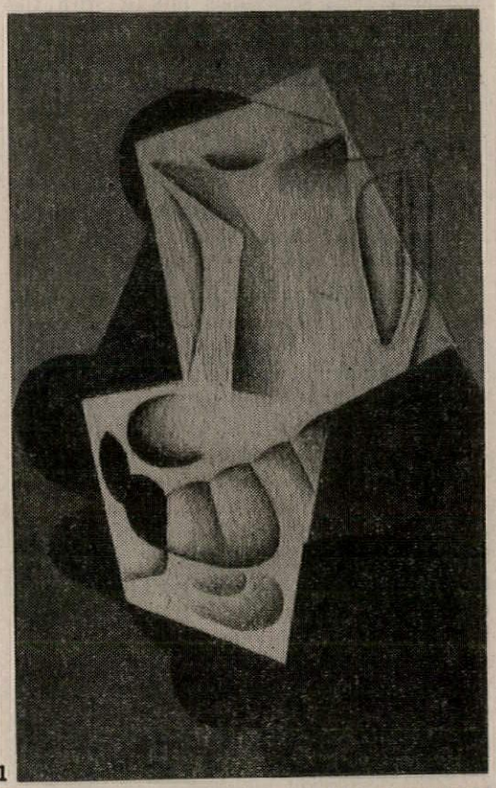
Timothy Rendle

EXHIBITIONS

PAINTINGS

The retrospective exhibition at Marlborough Fine Arts of the work of the cubist painter Juan Gris, who died in 1927 *at the early age of forty, was held in honour of Gris's principal dealer, Daniel Henry Kahnweiler.* This was an unusual event, for the bonds which unite art dealers can only very rarely have taken so gracious a form, and although it is to be hoped that no one is planning a Rouault exhibition in loving memory of Ambroise Vollard, there is no doubt that Kahnweiler richly deserved this tribute from another member of the trade. It was his practical support that enabled Gris to go on producing the works which have become so precious a merchandise.

But as John Russell remarked in his catalogue note, 'Gris was only one of the artists whom Kahnweiler took up at the outset of their careers,' and no doubt a mixed exhibition of some of the cubist masterpieces handled by Kahnweiler before the first world war might have made an even more fitting tribute. Perhaps Gris was singled out because he has never been adequately exhibited in this country, and the fifty works which were on view at the Marlborough certainly constituted the largest exhibition of Gris so far held here. Unfortunately, it laid undue emphasis upon his neo-classical phase, and the scrappy representation of his purely cubist period tended to convey the thoroughly misleading impression that it was an experimental prelude to the later work. Nevertheless the change of direction and the fall in quality were so pronounced in the work painted after 1920 that the little picture of a jug and glass reproduced here, 1—a minor example of what he was doing in 1916—took on the proportions of a major achievement.



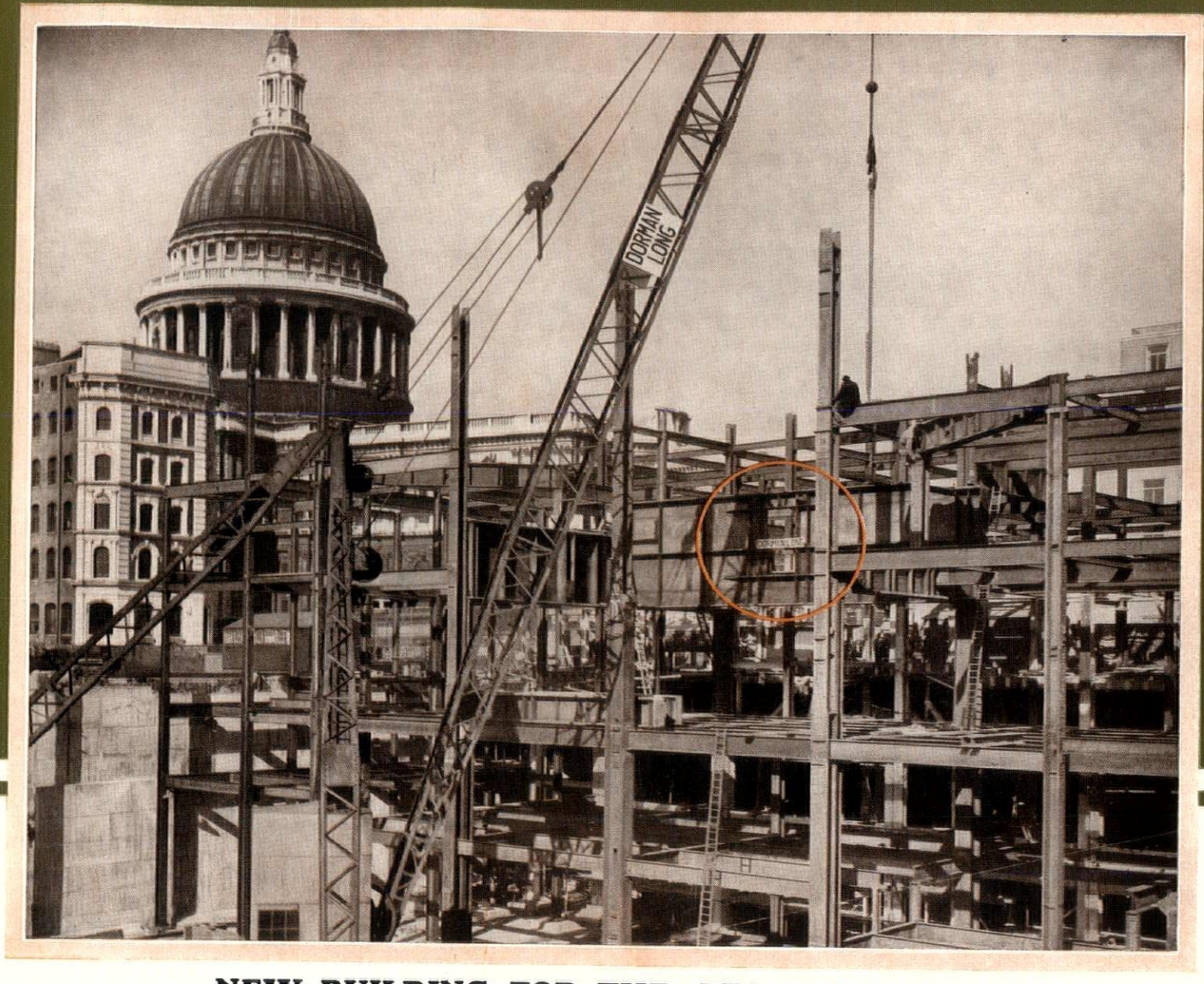
1



2

The attempt made by the school of Paris in the early twenties to create a twentieth-century classicism based partly on synthetic cubism and partly on half-baked ideas about man as a mechanism was something of a fiasco, but it claimed adherents throughout the world, and many of them, becoming set in their ways, still cling to their grotesque figurative systems with the splendid confidence of Flat-Earthers. The most curious English example is William Roberts who arrived at his present style by way of vorticism. He has a humorous eye for 'typical' scenes from English life, but it isn't always easy to tell whether he is being consciously funny or whether the comic effects are being produced by the inherent absurdity of his figurative system. 'The Baby,' 2, for instance, which was included in his recent show at the Leicester Galleries, looks like a somewhat pointless satire on the nineteenth-century theme of the rewards of poverty, but it is probably intended as a classical rendering of a universal truth.

At the same Gallery, Alan Reynolds has been exhibiting his latest landscapes. They refer with obsessive insistence to the ridge of chalk hills that runs through Kent and Dorset, but they are images of inaccessible regions formed by the mind's eye. The botanical foregrounds have been suppressed to reveal a strange pastoral no-man's-land composed sometimes of diminishing facets, sometimes of converging, undulatory furrows which give the impression that the foreground is anxious to reach the distant ridge of hills as quickly as possible. The hills themselves are not so much hills as delicately carved horizons. One can now see more clearly than before that his paintings spring from needs that are not satisfied by the pleasures of the picturesque. As I remarked in my rejected catalogue note, the persistence with which he stretches the downs across his pictures and hangs the sun or moon above them, 3, suggests that there is a primitive pictograph for a landscape at the back of his mind—a horizontal line with a circle above it—which operates as compulsively as a magic sign. This pictograph may well stand for our situation in the universe,



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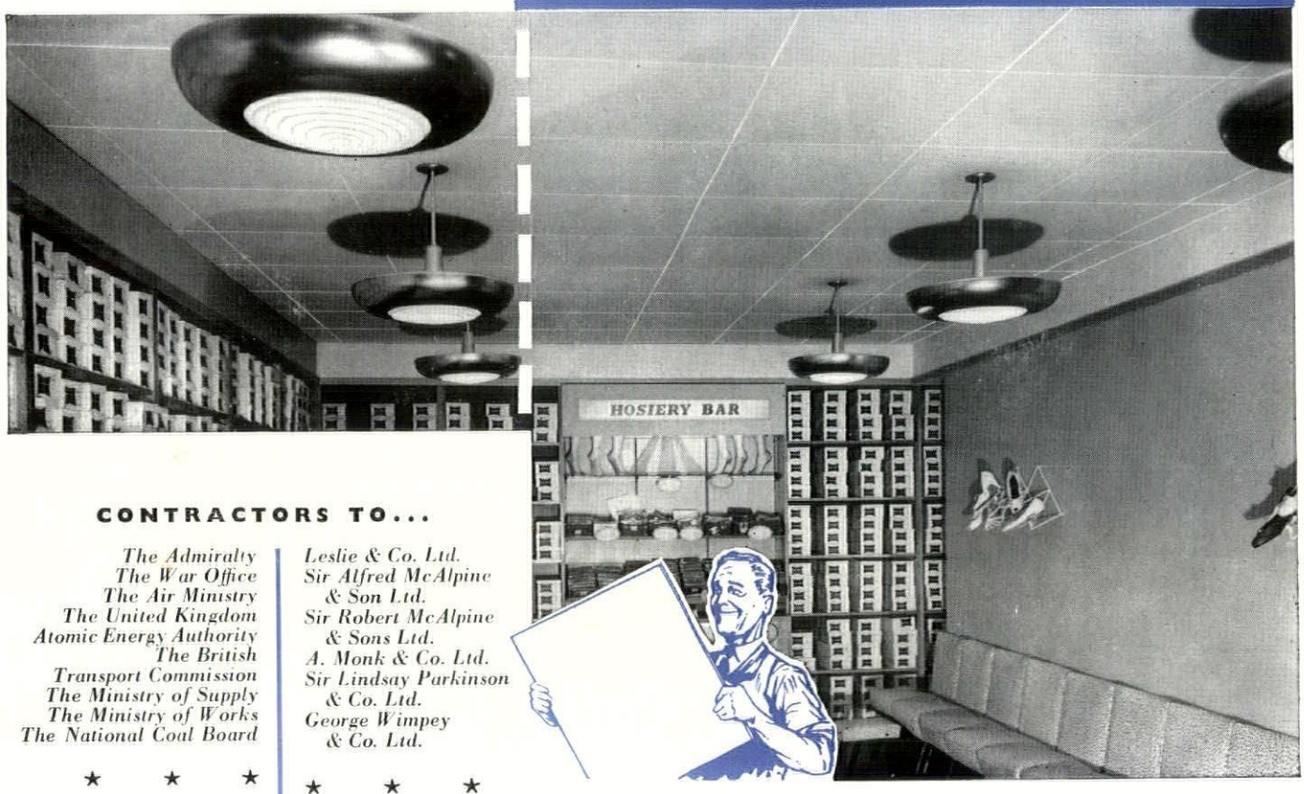

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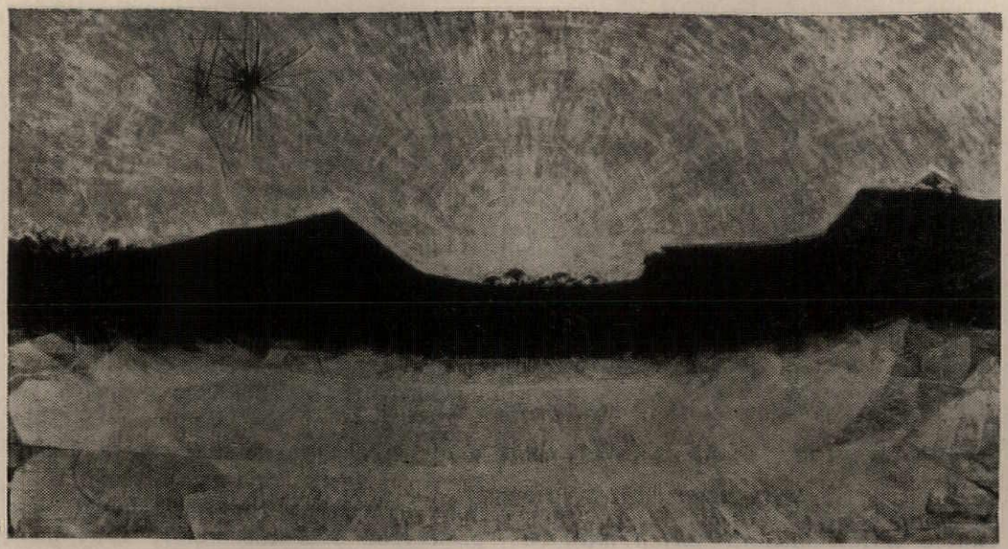
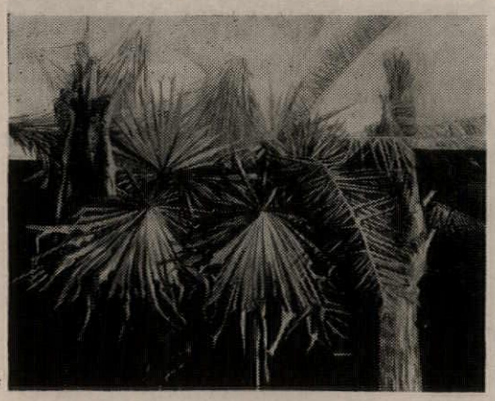


3

and if so, it is obvious that it has to be manipulated with the utmost circumspection if disaster is to be avoided. His work is a fascinating manifestation of a conservatism that goes deeper than that of his most enthusiastic admirers. His landscapes are the observation platforms of original man, whose hopes and fears were inextricably involved with the rising and setting of the sun.

Edward Middleditch is at his best when he fills a large canvas with plant life. In his painting of an unkempt field of cow parsley, exhibited two years ago, he found a contemporarily matter-of-fact way of approaching the natural scene, and by scattering his naturalistic specimens of cow parsley across almost the entire picture surface in artful emulation of the laws of chance succeeded in creating a powerful image of natural anarchy. It looked like developing into a blithely English alternative to abstract expressionism, but it remains an isolated achievement. The best picture in his recent show at the Beaux Arts—a configuration of spiky fronds



4

called 'Spanish Garden,' 4, made a tentative gesture in the same direction, but the show as a whole was very disappointing, and appeared to be the work of a literal-minded man trying to force his way into the world of poetry.

The subjects of his best drawings, which are straightforward studies of sunflowers, palms and cactus, disclose his interest in Van Gogh and Sutherland, but when he transfers them to canvas he tries to turn them into 'uncanny signs' by putting them into clumsy and melodramatic juxtaposition with starry skies or huge butterflies, or a braying donkey, which 'intrudes' in the manner of Sutherland's 'Intruding Bull;' and outrageously enough, these coarse and over-large paintings, which reduce his well-drawn specimens to the level of the most banal of literary symbols, appear to have been inspired by the visionary subtleties of Odilon Redon.

Roger Hilton's abstracts look unpre-



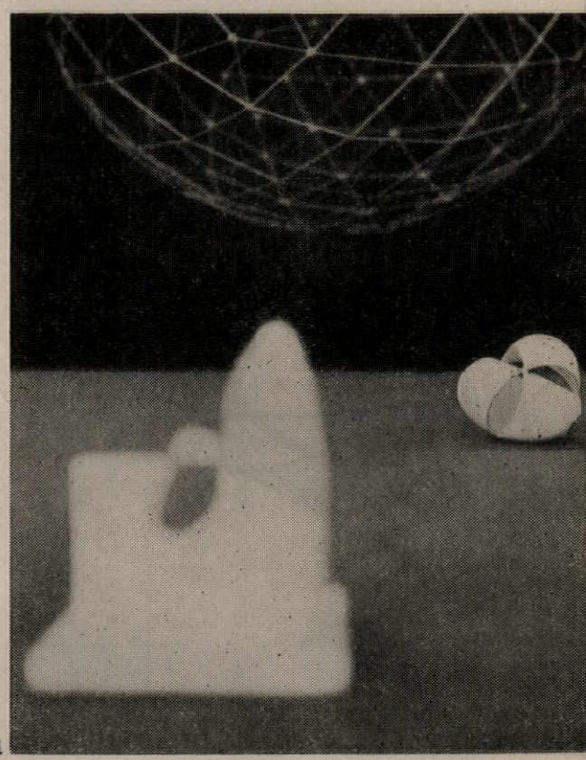
5

possessing in a distinguished sort of way. He paints non-figurative pictures with evident signs of stress and torment which manage to suggest that he is struggling to give a faithful account of something not far removed from Cézanne's 'little sensation'—but a 'little sensation' about his own personality as a painter rather than about nature. Most of the pictures in his show at the ICA bore the dates of their execution as substitutes for titles, and the one called 'October, 1956,' 5, gropes and blunders in a marvellous way, and records his doubt, distaste and delight with a queer, muffled eloquence.

Robert Melville

OBJECTS RE-INTERPRETED

Three-dimensional models of mathematical functions must be ranked among a very select body of ever-renewable totemic objects, like the Eiffel tower, racing cars, Gabun masks and Times Square by night, that every generation of modernists must discover and re-interpret for themselves. Such interpretations are never in terms of the ambiente in which the object was created—few ever investigate African ritual or Grand Prix strategy—but in terms of the intellectual and aesthetic pressures of their discoverers' own time. At least one view of a recent exhibition staged by Harvard architectural students* of the models in the collection of the Harvard Mathematics department gives a clue to what these pressures are at present, 1—



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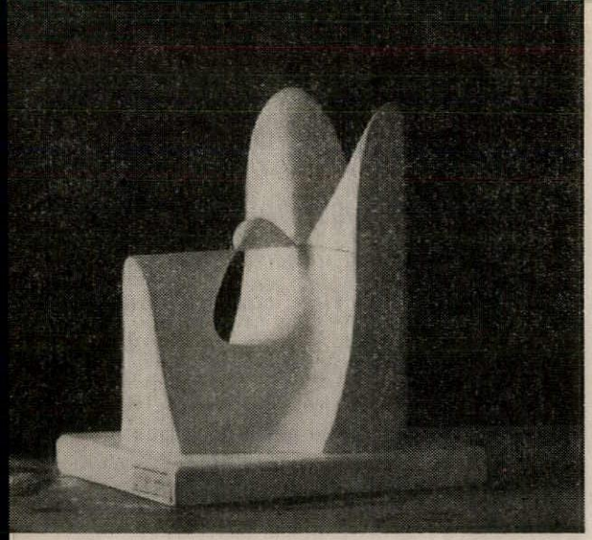
objects isolated on an indeterminate surface while a spheroid looms above, creating a science-fiction image whose real import, one suspects, is the current prestige of non-Euclidian geometries. It is well worth noting that some of these models, such as 2, go back to the early years of the century, and that the present generation of Harvard mathematicians are apparently uninterested in them, whatever architectural students may feel, whatever engineers like Catalano and intellectual freebooters like Buckminster Fuller may say.

At least one of the functions of such an exhibition is to be corrective, and a metal and string model of $z(x^2—y^2)=ax^2—by^2$

* Peter Chermayeff, Robert S. Gordon, Henry Wood.



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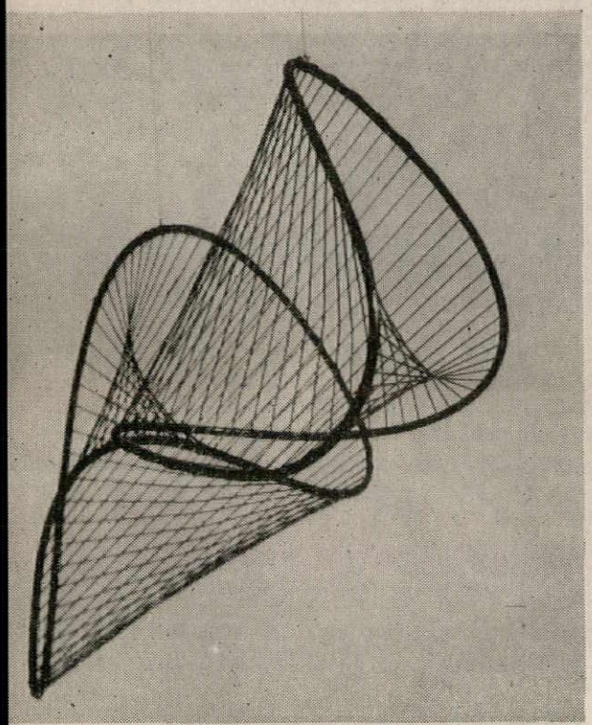

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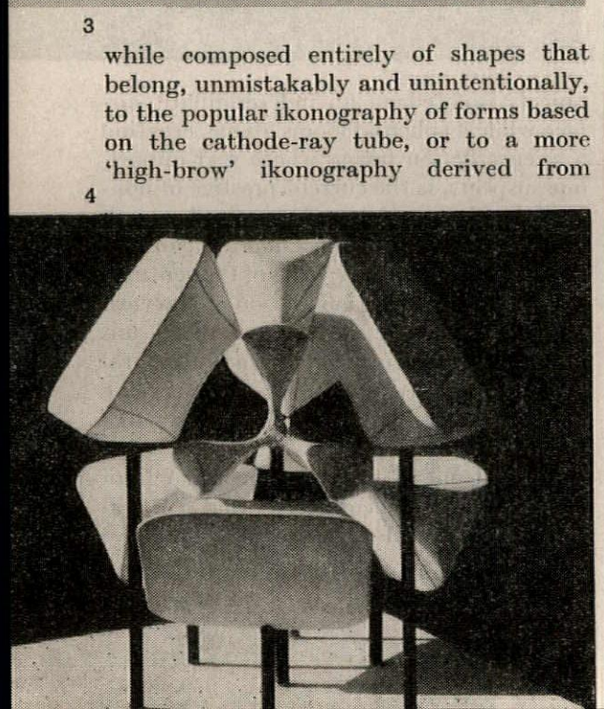


4

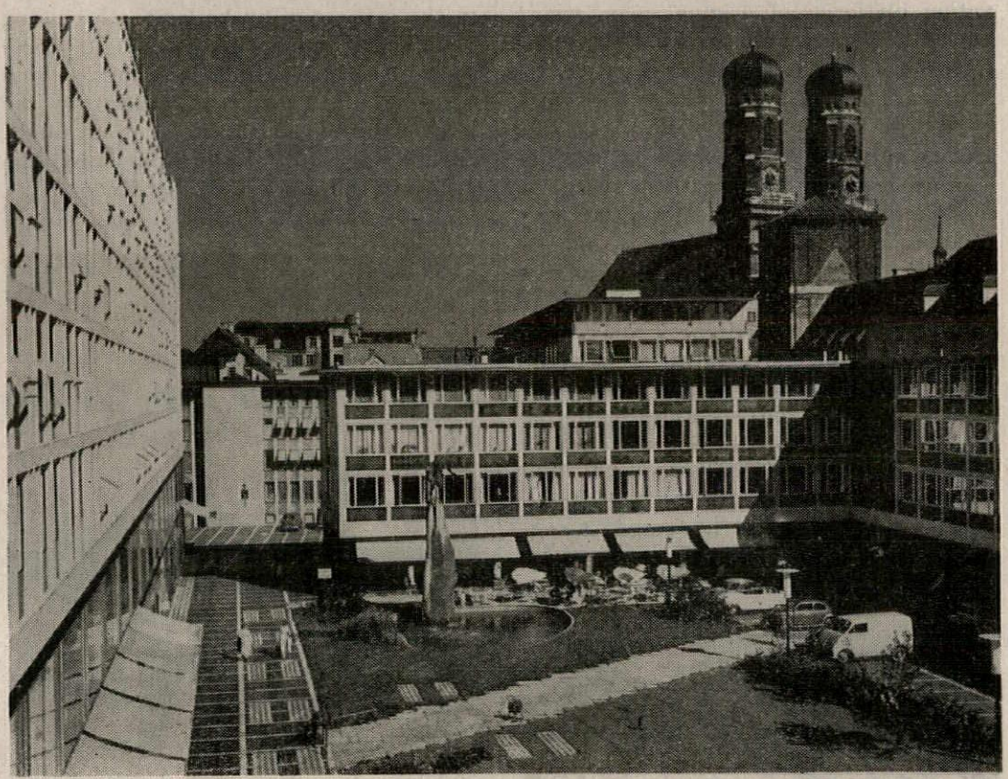
D'Arcy Thompson's *Growth and Form*, nevertheless reveals a complicated, three-dimensional freedom in their disposition in space, that far outstrips even the least inhibited aspects of either Fine or Popular art. P.R.B.

TOWNSCAPE

THE MAXBURG, MUNICH

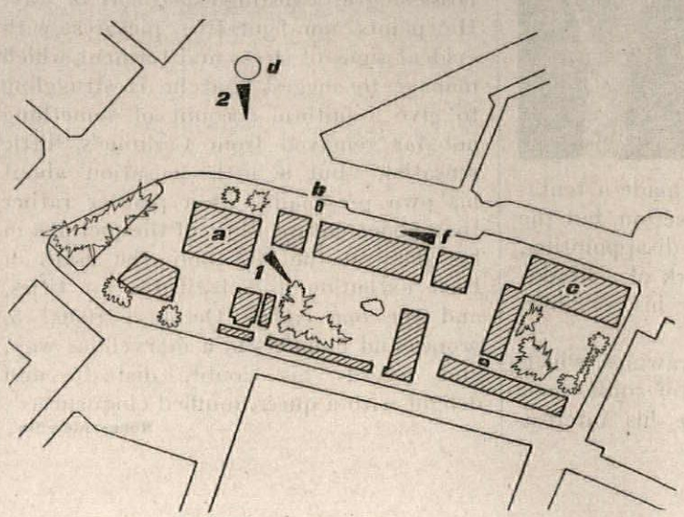
An ancient German town-planning maxim reminds us that Wer da bauet an der Strassen, muss die Leute reden lassen, *which may be approximately Englished as "If you build in public, you must let the public have its say." This venerable adage has been much employed in connection with the rebuilding of the Maxburg in Munich,* the old fort, bombed and demolished, that stood in the heart of 'historic' Munich and once formed part of the city walls. Its replacement by a pedestrian precinct of shops and offices, roused considerable opposition, the prize-winning schemes of Theo Pabst and Sep Ruf, which were telescoped to give the executed design, 1 and plan, caused real distress to that kind of *gemütlich* German opinion that, thirty years ealier, had hounded the Bauhaus from Weimar.

The lever of the argument was the tourist trade; who would come to Munich to see an *Allerweltsglaspalast*, these people asked, when they could see similar glass palaces all over the world? They have received a double answer; one from the illustrations of the new Maxburg that have begun to appear, as one of the attractions of Munich, in the world press; the other from the old Maxburg itself. The surviving tower that has been retained, 2 (and



1

1, the internal piazza of the rebuilt Maxburg site in Munich, with the gable of the Carmelite Church just visible at the left, and the towers of the Frauenkirche beyond, right.



viewpoints
f, frontispiece, page 298.
1, illustration 1.
2, illustration 2.

buildings
a, courthouse.
b, Dietrich's tower.
c, Carmelite Church.
d, Wittelsbach fountain.

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2

2, Wendel Dietrich's tower, the only part of the old Maxburg to survive, seen over the Wittelsbach fountain.

frontispiece to this issue, p. 298), so brilliantly as a live memorial to the vanished past, is far from a uniquely Munich object. The neat geometry of its coloured plasterwork, that mates so happily with the neat geometry of the contemporary buildings that it serves as a stair tower, must have been even more international, at the time that Wendel Dietrich built it in the late fifteen-eighties, than the new buildings are, for the style was already domiciled in France (e.g. Fontainebleu) as well as its native Tuscany. The tower as it stands is not only a masterly piece of putting old with new and a reminder of Munich's vanished past, it is also a persistent ridiculer of the folly of 'Keeping in Keeping.'

M. Santiago

TRAVEL

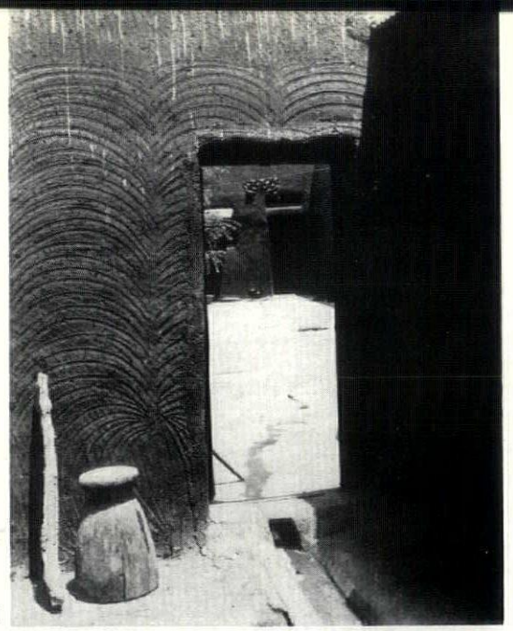
AFRICAN TEXTURE

Mud is the traditional building material of the African. In Nigeria the full range of mud buildings can be seen from the single storey shack in wattle and daub to the Emir's palace, but in the Northern Provinces in particular the possibilities of the material have been exploited to their fullest extent. In Kano City Moslem tradition and African ingenuity combine to produce textures and highly decorative relief work which represent traditional art and craftsmanship at the height of their development.

Here is an unadorned mud wall, 1, in a merchant's house. The texture is formed with broad sweeps of the builder's hand and is an efficient precaution against crazing in the sun.

The Old Native Treasury, Kano, 2, has a blank façade, except for small high windows, surmounted by phallic symbols and overhanging waterspouts. The whole remaining wall space is covered with a loosely designed Islamic fret.

This house in Kano, 3, is more recent. In



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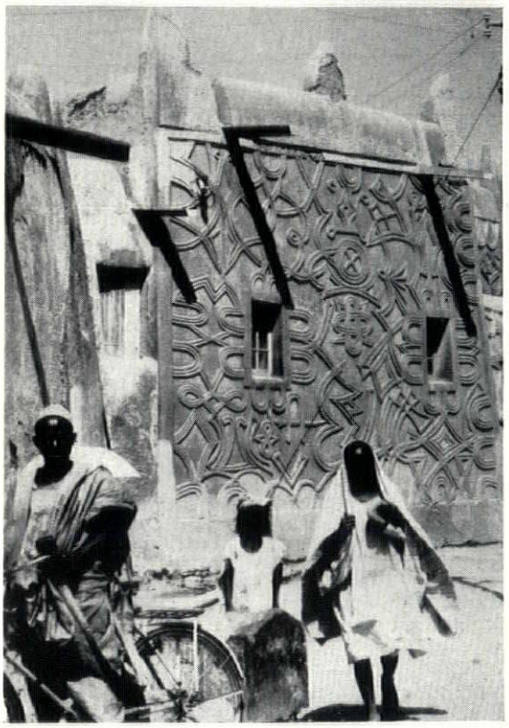

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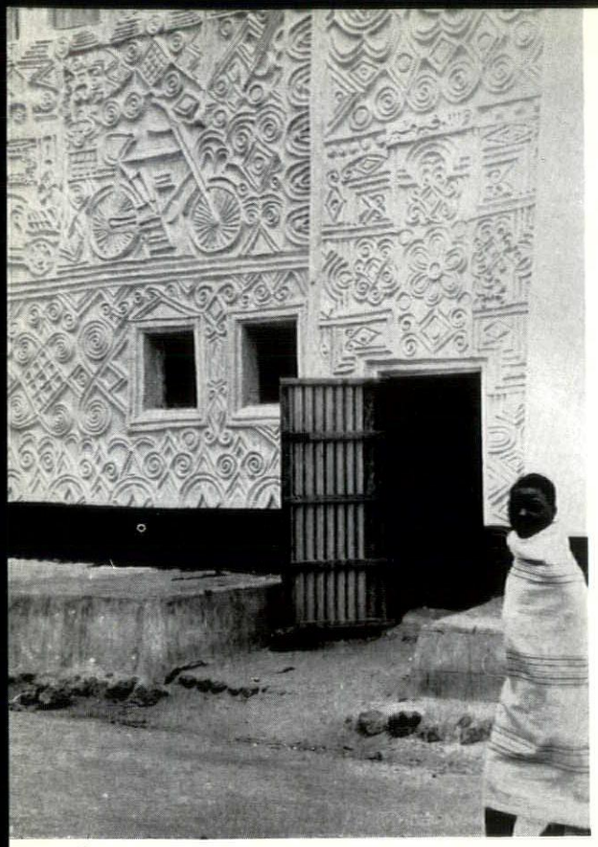

4

modern work such as this the relief is more formalized in design and general arrangement.

Windows are small to cut out the high glare coming off the sun-drenched ground. To reduce reflection ceilings are often given an all-over pattern similar to that applied to external walls.

4, is an example of recent europeanization. A bicycle and a motor car serve as the central motifs against a traditional background. **Arthur M. Foyle**

COUNTER-ATTACK

62. West Bretton, Yorks W.R. (*Surveyor's Dept., County Council and Ministry of Transport*). Here is nonsense, 1, on A.637 near West Bretton: how many more signs are there going to be saying the same thing? This is presumably a result of the Ministry of Transport regulations permitting larger signs; what a strange attitude of mind that doesn't take down the old



1

when putting up the new. Another consequence of these signs is that they are now no longer in scale with the triangles above them. The M.O.T. issued no instructions about the triangles, and no local authority has bothered to look for itself. so that the result is another set of absurd miscouplings.

63. Abbey Street, Faversham, Kent (*Town Council*). Abbey Street, one of the finest streets of its kind in the south of England (see AR, July, 1956) may now be saved. After years of neglect the Housing Committee have recommended to the Council a face-lift for the whole street. This is splendid news, particularly as it may have been partly due to the original S.O.S. in the REVIEW: we hope that Faversham will find this to be a paying proposition—in terms of increased tourist traffic and saving of expense on new housing—as well as a worthwhile one; it deserves to.

64. Hinkley Point, Somerset (*County Council*). The widening of the lane to Hinkley Point atomic power station has on the whole been fairly painless (like the road to Bradwell: it is intended to illustrate both in greater detail when the sites are finished). For most of the length new hedge-



2

rows are being planted, but in two cases concrete posts and wire have been used, with disastrous effects on the pattern of the countryside. The first case is where farmers asked for it as the hedges were too much trouble, 2; this seems unreasonable as they are being compensated for the loss of land anyway, and in any event a better type of fence ought to have been found. The second case is to provide sightlines at corners, 3; this seems com-



3

pletely absurd when there will be very little traffic on the road after the power station is built: like the attempt to demolish buildings at Stoke Ferry (AR, January, 1958) it will increase the danger by giving the impression that people can roar out of the side road with impunity. This is a classic case of blindly following a rule of thumb. The lay-bys are also far too grandiose and permanent, 4: if they have to be provided whilst construction is in progress they need only have been roughly metalled without a kerb (another rule of thumb applied blindly) so that earth could



4

have been shovelled over when the lay-by was no longer needed.

65. St. Nicholas Church, Bristol (*Diocesan Board and City Council*). St. Nicholas was a famous 1750 Gothick building, now blitzed; the tower and spire are to be kept but the nave walls (still complete and sound) are to be demolished and a garden laid out on the site. This would be disastrous to the views of the unblitzed part of Bristol from the south because the walls of St. Nicholas are a vital part of the foreground. It is also utterly unnecessary, for if the building cannot be roofed over and used as an assembly room, a garden inside the walls would have far more value as an oasis than one surrounded by traffic, and would be partly out of the weather into the bargain.

66. High Wycombe, Bucks. (*Arts Association and Borough Council*). The Arts Association asked the Borough Council in 1956 and 1957 to hold a meeting to report progress on replanning the town centre. This very reasonable request was met first by a polite refusal and then by local government obstructive tactics—'if the Association desired to take the matter further they should set down their views in writing.' They did so, in a punchy memorandum summarizing what was wrong with High Wycombe. We hope it will produce a better civic spirit among the borough officials; for what can possibly be gained by refusing a public meeting to explain the council's plans? In fact if the A.40 traffic could be diverted around the centre there might be a magnificent opportunity for a pedestrian linear market between church, Guildhall and Shambles: the townscape here—when you can see between the cars—is among the best in the Home Counties.

Progress Report

10. Westgate Fields, Chichester (*AR Oct.* 1957). The result of the Public Inquiry has been announced: of the two schools proposed by the County Council only one is to be allowed, at the west end of the Fields, and the Minister has removed from the Development Plan that portion of the Ring Road which crosses the Fields, a remarkable step. This is very encouraging, as it means that more than half the Fields will remain as they are, i.e. rough pasture, not tidied up as 'public open space.' If the school buildings are put at the extreme west end of the site and the playing fields are given the minimum of fencing the effect on the Fields could be reduced still further. The best solution might be a hedge on the boundary line and single trees planted beyond it to carry the eye through to the countryside beyond the railway. The Counter-Attack bureau played a large part in opposing the proposals; in fact counsel for the County Council paid it a large and doubtless unintended compliment in saying that if it had not been for the Counter-Attack bureau it is unlikely that there would have been an inquiry. The bureau will report on the effect of the new school when it is built.



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SKILL

OUSE IN HIGHGATE *by Lance Wright*

night be expected when the client is a technical wizard of the re of Ove Arup, the house that Erhard Lorenz has designed for in Highgate, described on page 324, offers more than one point of ical interest, in terms of over-all structural conception, in post-oning techniques, and in the handling of door and window trim.

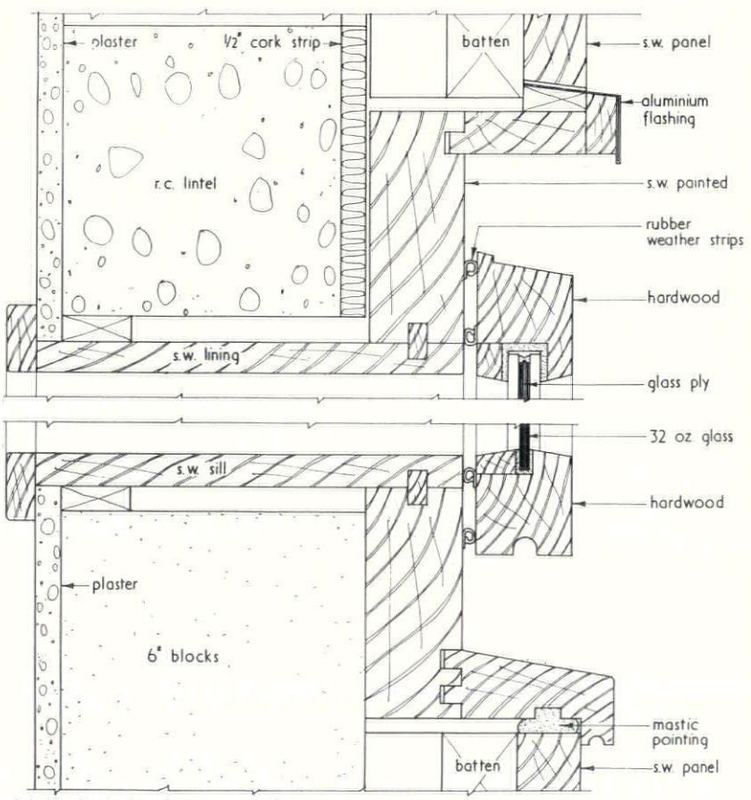
e first point concerns the struct- This comprises reinforced con- floors and roof articulated to a spine beam running down ong axis of the plan and sup- d, beneath the spine, on slender ns, and round the periphery on loadbearing walls, partly olumns. The concrete inter- te floor provides a convenient or underfloor heating and the themselves provide a base for nternal skin of insulating p.f.a. s.

nsioned 'pencils'

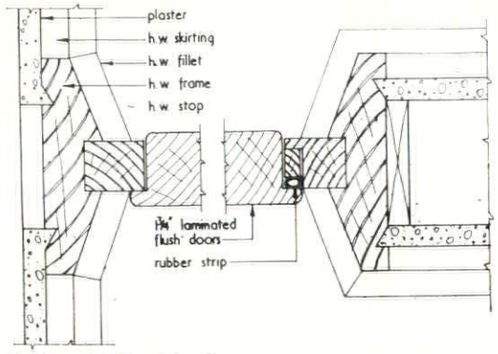
art from this the house was the occasion for trying out a ique involving the use of pre- ed concrete 'pencils.' These are . square rods of prestressed te pretensioned in the factory eans of one 0.2 in. high tensile The value of these 'pencils' is hey provide a foolproof means cing reinforcement in concrete f ensuring an adequate cover. e concrete, being factory-made, reliable quality and the work- nave only to lay each 'pencil' the shuttering to ensure that the reinforcement falls in the right position in the slab depth. The ultimate application of this idea is in under-developed countries where site labour is an uncertain quantity. In this particular application it has the advantage that it can be used in conjunction with a low strength concrete with a high insulating value. The same 'pencils' were also used to tie back the facing slabs of a retaining wall.

Door and window trim

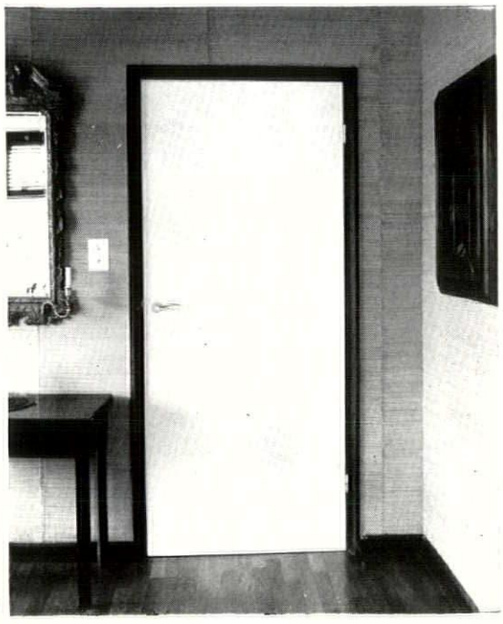
The second point to notice is the architect's approach to door and window trim. The problem he set himself was how to provide the uninterrupted linings of the 'twenties with the technical knowledge of the 'fifties. This is done, in the case of the windows, by breaking the lining back against the outer face of the p.f.a. blocks (see drawing) and by hinging the window (which is double weatherstripped and, where the occasion calls for it, double glazed) to the 'window fascia' thus formed. The effect of this, externally, is to give the window a double frame; the effect internally is to remove the bulk



1, *detail of window head and cill* (see photos 4 and 5, over page).



2, *door details at jambs.*



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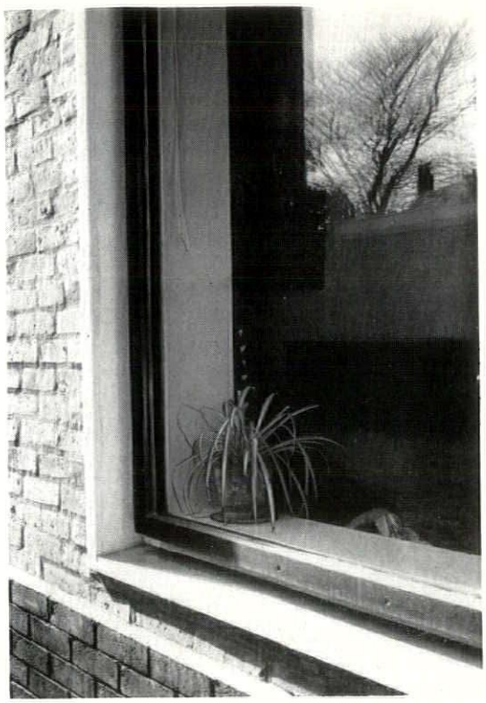

4



5

3, *internal door detail.*
4, *window detail, exterior.*
5, *window detail, interior.*

of the frame altogether from the line of vision, and to leave only the dark hardwood internal bead visible.

Another unusual detail which belongs to the same family of effects is that of the internal doors. Instead of rebating the frame the architect has chosen to rebate the door. This means that from the inside of the room, the door masters the frame and the frame appears as a recess between door and wall. This is partly an illusion deriving from the fact that the frame itself is of hardwood, for the frame in f jects forward to master the edge. It represents an in reversal of the Georgian pr letting the door recede bringing the frame forward. I is to make the door appea convenient means of closing the wall, but as an independe Lastly, since the door is plac middle of the wall thickne appear the same from both s

CONTINENTAL DOOR FURNITURE

by John

What is the matter with the British hardware industry? Why do so many British Architects choo hardware abroad? Reviewing the all-important field of door handles, John Sharp describes examples he has been able to find, both Continental and British; and, in answer to our q suggests that the British trouble is due first to our habit of springing the handle from the or plate instead of from the lock, and second to our unwillingness to employ good de

On looking through a random selection of British and Continental catalogues, one is struck by the vast ranges of some of the British ones, wherein one may be lucky to find two or three reasonable designs, in contrast to the limited selection in their continental equivalents, of which a high proportion are acceptable. Of course, there are exceptions to this on both sides, Dryad being a fine example of a limited, carefully selected range, to which new additions are made only for very good reasons. It is a pity that the British stock lines have to be so numerous and so mediocre—a result presumably of the desire to cater for every eventuality and mode of expression, as there is no doubt that the handles and locks are well made of sound, hard wearing material; and it may well be that, with a vigorous and enlightened design policy in bronze ware, they may be able to reciprocate the present increasing import of aluminium handles from the continent.

It is now over five years since the more interesting ranges of door furniture were seriously imported, when their fresh appearance, exciting forms and high quality of finish won an acclaim that has gained in strength ever since. British manufacturers, conscious of this but not understanding the full background of the designs, decided that they could at least do the same, if not better, and a number of new British handles were introduced which are exact reproductions of the lines of the most successful continental lever handles. They are offered in the full range of materials, including bronze, but it is interesting to note that there is in fact very little call for the latter.

As the handles appeal by their fresh line, so the rosettes, plates, and escutcheons appeal by their simplicity. The possibility of a small circular plate is the result of the positive, non-play methods of fixing of the handle spindles, common to all continental manufacturers. Many of the Swiss and German designs have been specially commissioned, and it is surely time that our ironmongery producers stopped copying their continental rivals and commissioned some native designs.

There are a few basic technical differences between British tinental practice which ha borne in mind when compar made. . . .

British and continental pr

British lock practice seem been based on the use of a operation. As the knob is symmetrical, it is not esse it be returned to the same after each operation; and cheaper locks, at least, th limited amount of free play the follower and the other the latching mechanism handles, on the other hand, returned to a horizontal and the British practice is t handle with a return spring riding any free play that t be in the lock, and relieving return spring from any othe 1, 3. This practice has le almost universal use of free with British lever handles, there is no direct fixing bet handles on each side of the all the loading comes on t

[continued on



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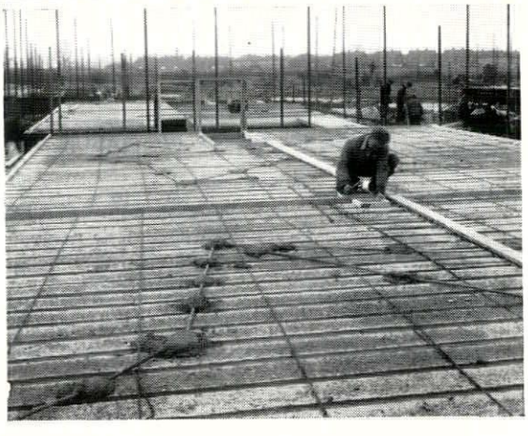

4,300 sq. yd. of BISON Prestressed Composite Flooring were used in the erection of these blocks.

The shallow BISON Prestressed Planks are laid over the floor area and electrical and other services are buried in the *in situ* topping— a finishing screed only being required. Total floor depth on the clear span of 12 ft. 9 in. is only 4 in. thus giving an overall reduction in thickness of 3 in. This reduction in depth saved one brick course in each block.

The Planks' ease of handling is illustrated by the fact that even without scaffolding, four men could lay a block in a morning. Only simple propping is required as the planks are put into position.

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continued from page 354]

securing the plates or rosettes; in effect, this means that only large plates are possible, for with small plates which do not clear the body of the lock only short screws can be used, and these are easily pulled off.

Continental practice, on the other hand, seems to have been based on the universal use of lever handles. This fact has influenced the design of locks so that, with the handles, they form an integrated operating mechanism, with no unnecessary duplication of components. Any possible free play in the following mechanism is eliminated, and stronger springs than in British practice are used, which are capable of returning even a heavy, eccentrically loaded handle to the normal horizontal position, 2. A number of devices have been evolved for securing the two handles to the spindle and so obtaining a direct transfer of load through the door to the rosette or plate on the other side. There are two main types—those that secure the spindle to the handle, 4, 5, and those that give through fixing between the plates, 6, 7.

continental door handles

In the survey that follows a few examples of the products of the main exporting manufacturers are described. Most of the important ones have agents in this country, but a few examples are shown that may only be obtained direct from the manufacturers.

SWEDEN By far the largest producer of door furniture in Scandinavia is Stenman A.B., which is part of an international concern producing a complete range of hardware articles. They use mass production processes as far as possible, and so are able, despite import duties, to be highly competitive.

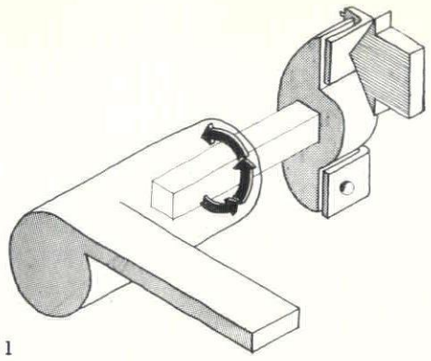
They have a range of low cost designs that are based on tubular forms, the shank being a simply bent, drawn brass tube, on to which is fitted a grip of brass or plastic, all the metal being finished with chrome. The rosettes are circular and of die-cast brass; all the handles are through fixed by methods 5 or 6. 8 is a simple, all metal version, 9 has a wooden grip.

A refined rosette is also available that has a screw cap to cover the heads of the through fixings.

These cheap handles have just that quality of simplicity and directness that should arise from the application of mass production processes to such articles, and which is so lacking in the equivalent British product. There is also a selection of die-cast brass, and of sand cast nickel silver handles, which are both finished in bright nickel plate, 10. The through fixing that is supplied with the circular rosettes of these handles necessitates the use of the same company's locks, but both are readily obtainable in this country.

GERMANY Most of the German manufacturers work in aluminium alloy, using the sand-casting process followed by the necessary finishing and polishing. The aluminium is anodized to give a hard-wearing protective and colouring layer. There is usually a colour range from silver through deep gold to black to choose from. This anodizing is then given an additional protective layer—usually applied in several coats—of very hard clear lacquer.

The traditional handle is a very flamboyant affair, 11, with a positive termination to the shaft, from which descends an S shaped lever, which is crowned by an operating pad. This heavy looking and assymetrical handle demands a positive lock spring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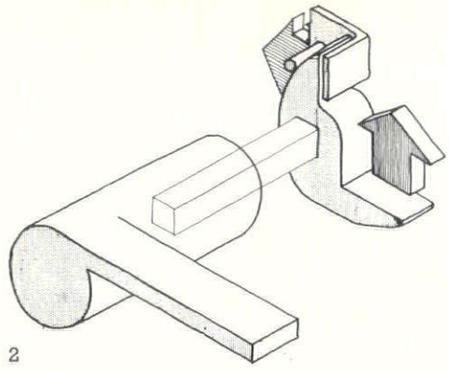
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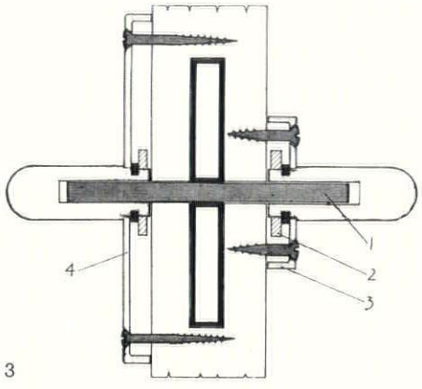

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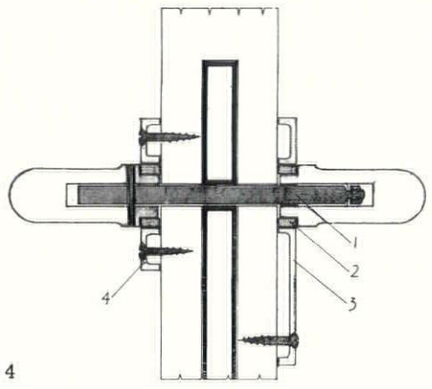

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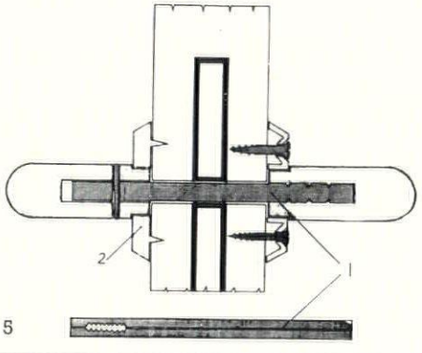

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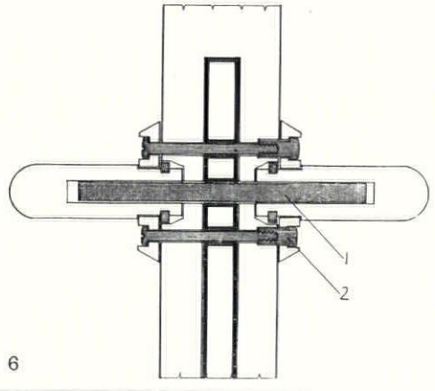

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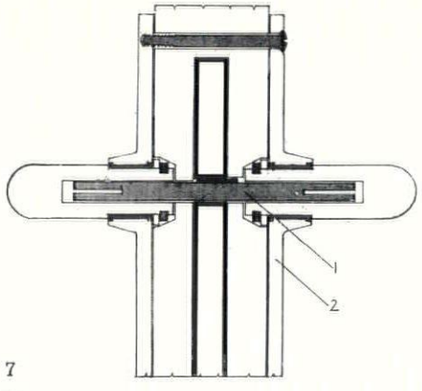
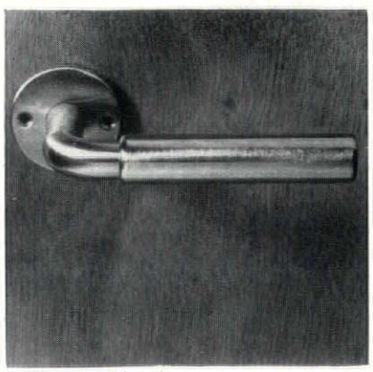
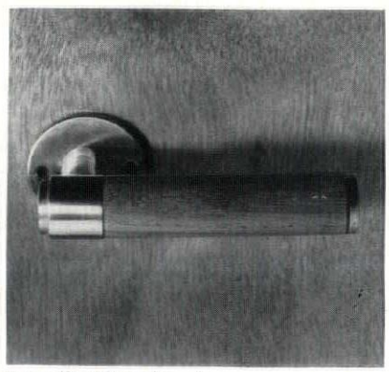


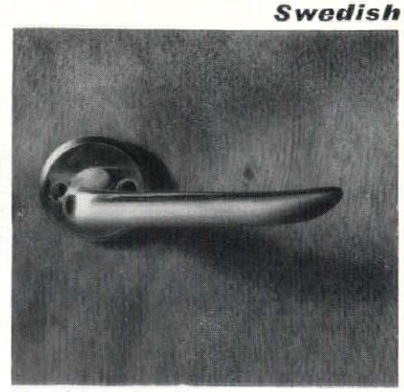
7

1, *British practice; lever retained in horizontal position by spring device in rose.*
2, *Continental practice; lever maintained in horizontal position by follower spring in lock.*
3, *British spindle; 1, free spindle; 2, spring loading; 3, rose with short screws; 4, long plate with long screws missing lock.*
4, *Wehag spindle; 1, handles held to spindle by patent spring and pin device; 2, oil impregnated iron bearing; 3, short screws to retain position of rose; 4, one screw to hold long plate.*
5. *Wehag, Tekeverken spindle; 1, spindle wedged in one handle and taper pin fixing to fine adjustment in the other; 2, spike or screw fixing to the rose.*
6, *Stenman, Tekeverken, Wehag, Post and Eger spindles; 1, free spindle; 2, through screw fixing between roses. These require the use of special lock sets.*
7, *Ogro spindle; 1, free spindle with open spring ends and a wedge in the follower; 2, through fixing between plates —screws show on one side only.*

Swedish


8, *simple metal handle.*


9, *handle with wooden grip.*


10, *nickel plated handle.*

to maintain it in position, and hence it has dictated the development of the locks.

This form has given rise to many of the successful current patterns, which still maintain the positive termination to the spindle and a broad end to the handle that is inviting and receptive to the hand, 12.

The plates and rosettes show a freedom of form that is not apparent in the British ranges, largely due to the presence in them of springing mechanisms. The simplest form is the circular plate, with the fixing screws shown; a refinement has a screw cap that covers them with very little increase in thickness, 13, 14. The matching escutcheons to these rosettes are of the same dimensions. Combined escutcheons and plates also show the advantage of the positive spindle fixing, in that only one screw is used, 15. Some of these plates are assymetrical about the vertical axis, and when well designed, complement the handle form.

Simplicity is also achieved in some of the larger plates by the use of through fixings so that on one side of the door no screws are visible at all, 16.

There are at least four German concerns producing handles of a high order of design.

Wehag This range, including doorstops, letter plates, etc., have been available for some time in this country. Cast aluminium is universally used, and in order to eliminate the wear that would occur between the handle and the rosette, a special oil-soaked porous cast iron bearing is incorporated as a standard fitting. Through fixing is also used for rosettes and plates.

This firm has a patent method of fixing the spindle described in 4, one handle being secured by a taper pin, and the other by a wedge washer. Otherwise they use the split spindle and taper pin method, 5.

15 shows a highly successful design by Schumacher that by means of a skilful balance of form, creates a handle of considerable beauty. 17 shows one of a range of three simple handles, where the flat operating pad fuses easily with the round spindle; despite the use of large radii the design remains crisp.

Ogro The products of this firm are newly available in this country. They are normally available as aluminium castings, but may be obtained in solid stainless steel. The plates have been adapted to take a spring loading device to comply with British practice. Where through fixing of roses is required, matching continental locks are obtainable, 18.

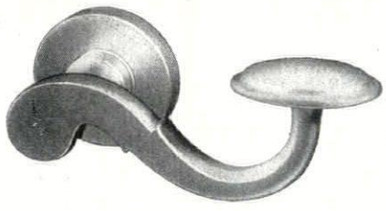
An interesting back plate incorporating a cylinder lock with a lever handle is shown in 19. This can only be used with a German yale lock, specially designed with a long bolt for centre mounting on a door. A cranked handle that has a very pleasant line with a screwless plate.

Ernst Nofen This is a smaller concern that has no agency at present. It markets an interesting handle, 20, that is symmetrical about the horizontal axis, and has a straight cut on the corner to give a thumb bearing, the section so produced repeating the plan at the end.

Sidleen This is a British trade name for another German firm, who have recently introduced a range over here. The handles have Nylon bush bearings, and they are being marketed with specially adapted British locks, having a smaller spindle hole and a stronger spring, with positive loading on the follower. The rosettes and plates have been adapted to take

[continued on page 357

German



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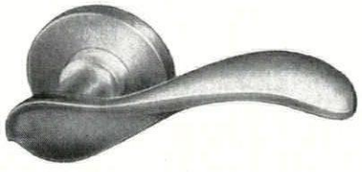

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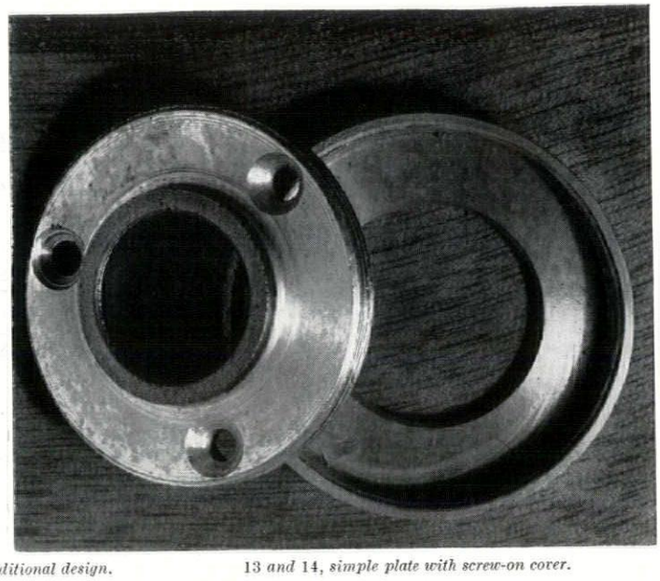
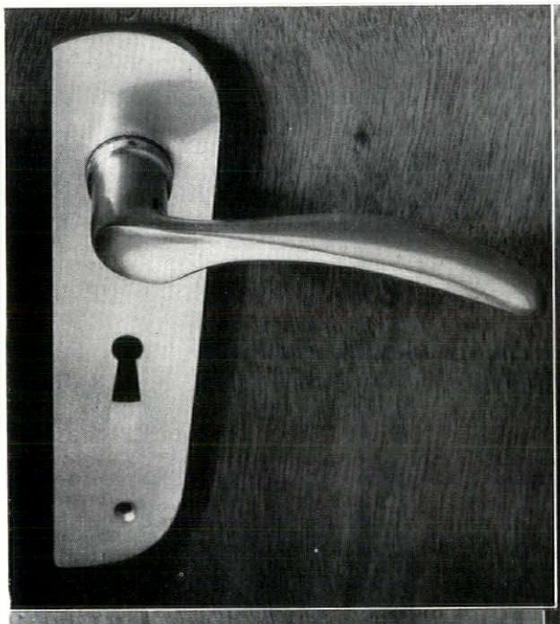
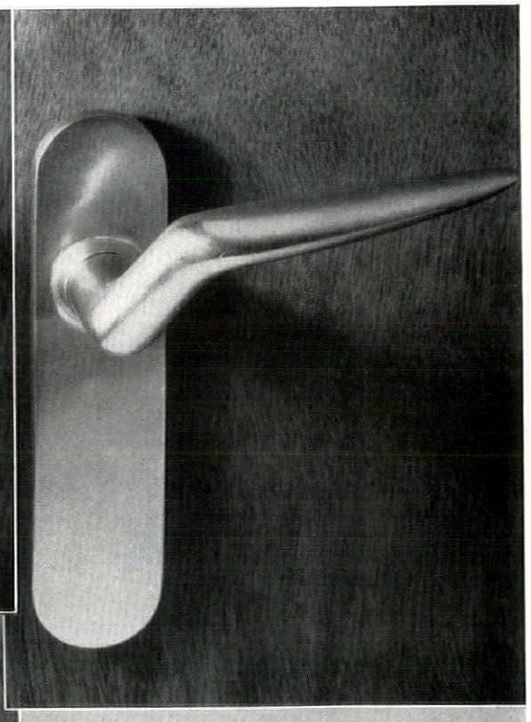
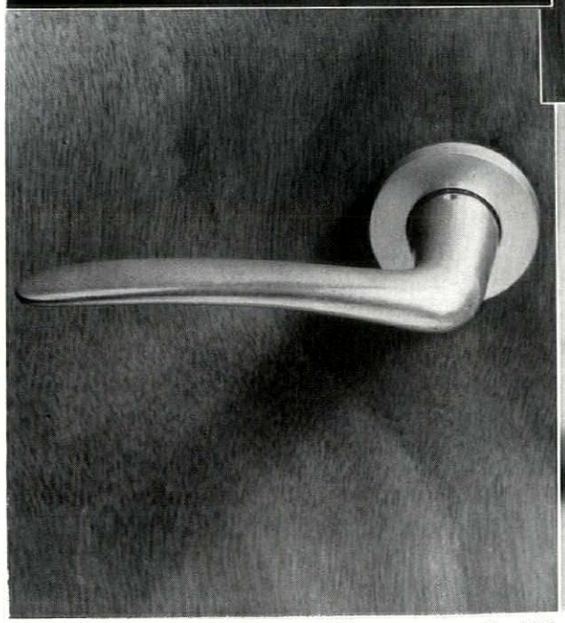


11, *traditional German design.* 12, *development of traditional design.* 13 *and* 14, *simple plate with screw-on cover.*



15, 16





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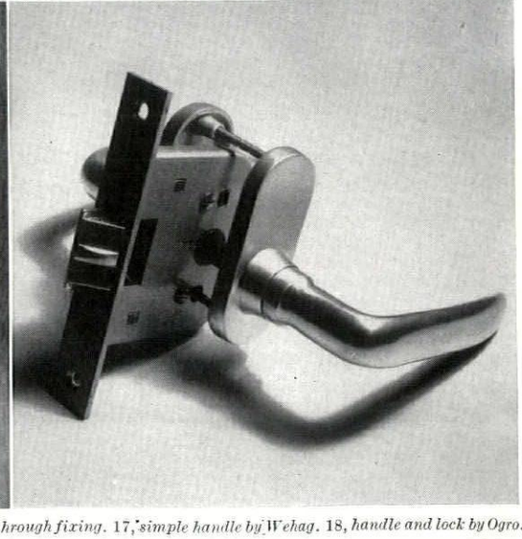

15, *handle with combined escutcheon and plate by Wehag.* 16, *handle with through fixing.* 17, *simple handle by Wehag.* 18, *handle and lock by Ogro.*

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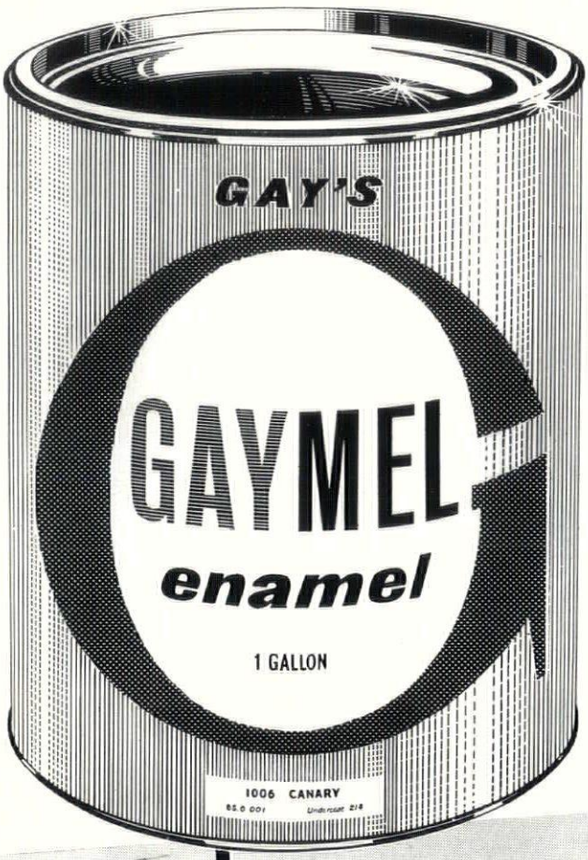

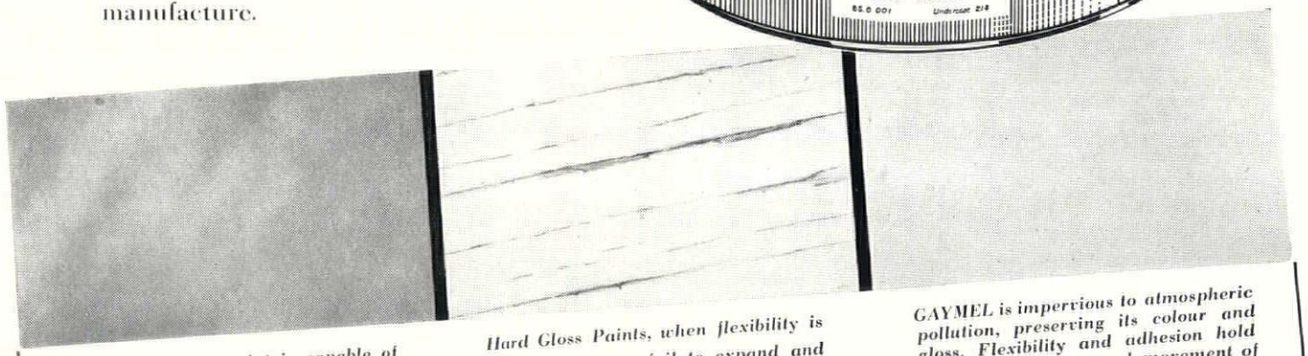

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L.C.C. Brandon Estate. Southwark. Hubert Bennett, F.R.I.B.A., Architect to the Council.

British Railways, Great Eastern House, Cambridge. H. H. Powell, B.Arch., F.R.I.B.A., Regional Architect (Eastern Region) British Railways.

Monsanto Chemicals Limited. Oil additives engine test laboratories, Newport.

St. Aidens Church, Speke, Liverpool. Architect: Bernard A. Miller, B.Arch. F.R.I.B.A.

Office Building. Architect: Richard Sheppard & Partners.

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continued from page 356]

British Key forms, but otherwise they retain the lightness of the German patterns, 21. The agent is making a special feature of a light golden anodizing finish that has the appearance of nickel silver.

HOLLAND *Post and Eger* produce a range of aluminium fittings that are particularly resistant to sea atmosphere corrosion. They use the split spindle and through-screwing between plates or rosettes for fixing, the rosettes having Nylon bushes. They have agents in Britain. The handle forms generally follow German patterns.

FRANCE A chromium plated handle of considerable refinement is amongst the range produced by the Paris firm of Fontaine, 22.

DENMARK We have found one Danish example: a stainless steel handle, 23, fabricated from sheet material and designed specially for hospitals and for use in corrosive atmospheres.

SWITZERLAND There are only two firms of interest to us in Switzerland and they produce a range of die-cast, German silver handles, many of which are of a high order of design. They are solid handles and therefore relatively heavy. The finish is either a polished nickel plate or a very pleasant dust nickel plating which has a goldish tinge with a matt surface. A particularly pleasant handle in use, especially when set low, is that manufactured by *INCA*, shown in 24. It has a subtle plan form. The normal practice is to fix the split spindle permanently into one handle, and fit the other by the pin and toothed slot method, so transmitting the load through the door. These spindles are of narrower section than British ones, so must either be wedged in the lock, or special locks must be used. In keeping with this the rosettes are either circular or of the minimum sized round-headed diamond or rectangular forms necessary for provision of two small retaining screws.

These handles may be obtained direct from the makers in Switzerland, who have no agency in Britain.

British door handles

Up to a few years ago it was almost impossible to obtain door furniture of any great merit, either in variation of colour, finish or form. During the last year or so there has been an improvement in the position and now, by careful selection, there is a fair range to choose from and we might well be led to suppose that this has been caused by a change of heart on the part of the manufacturers; and that the proud boast of a few years back that nothing new is possible in lever handles has been proved wrong by a process of analytical design. Alas, the evidence is to the contrary. Much that is new from British manufacturers in the last few years is either a copy on the broad lines of, or even in some cases exact reproductions of, continental designs.

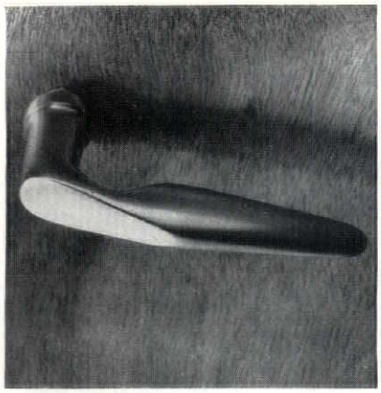
Dryad's new handle, 25, is probably the most significant British design. It is both pleasant to hold and visually satisfactory. The rose contains a spring loading mechanism, and has a projection to meet the handle shaft and a patent fixing device that only shows screws on one side.

Gibbons will produce special handles to architects' requirements in any material, and in fact have a range owing much to German originals that were specially commissioned. However, they have

German



19, *plate incorporating handle and cylinder lock by Ogro.*

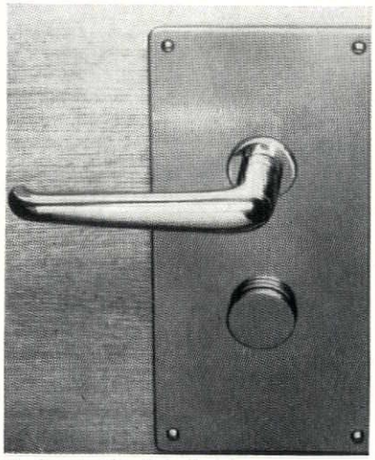


20, *handle by Ernst Nofen.*



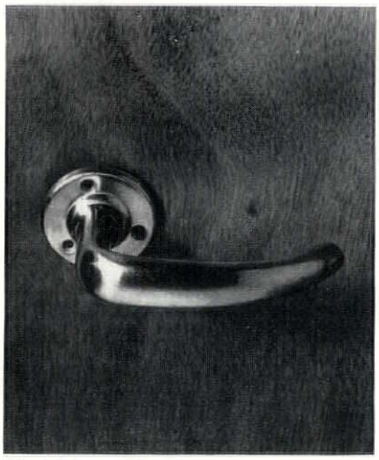
21, *handle by Sidleen.*

French



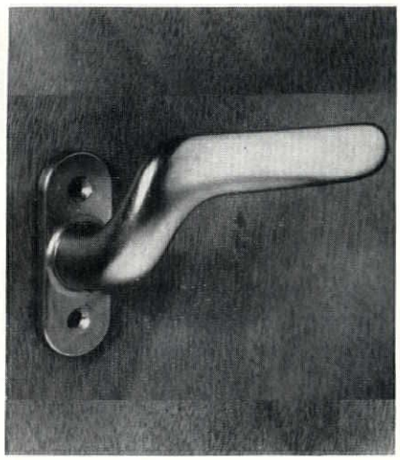
22, *chromium handle by Fontaine.*

Danish



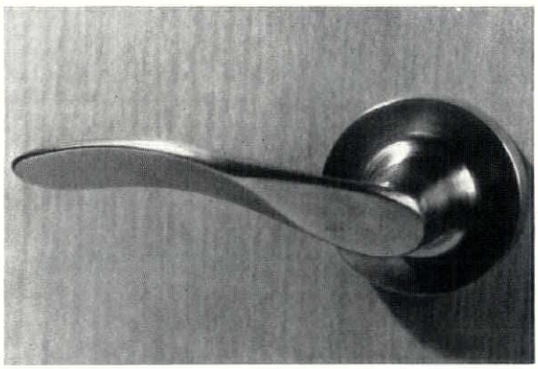
23, *stainless steel handle.*

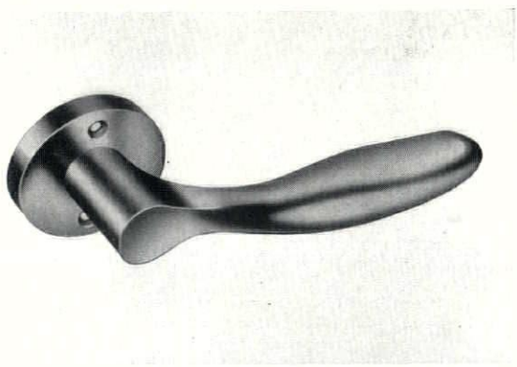
Swiss



24, *polished nickel handle by INCA.*

British





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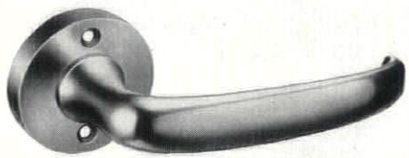
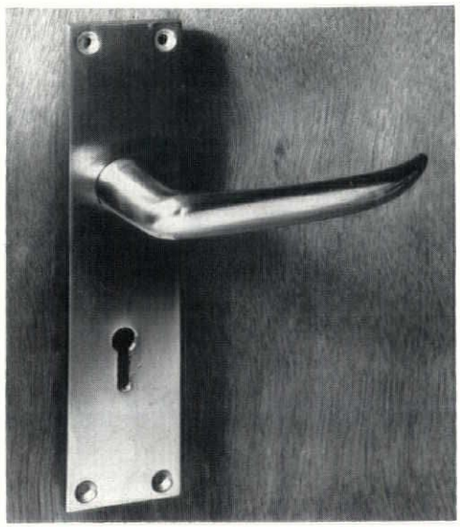


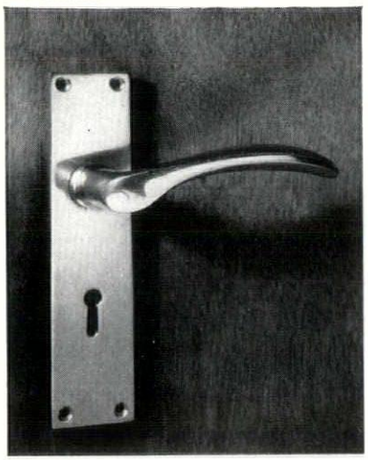
25, 26



28

25, *new Dryad design.*
26 *and* 27, *handles by Gibbons.*
28, *spring loaded handle by Parker, Winder and Achurch.*

British



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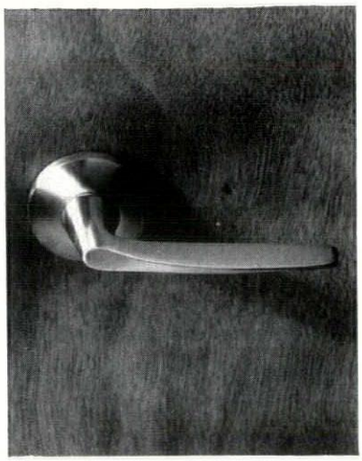

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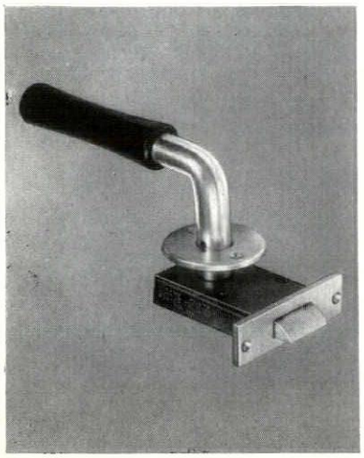

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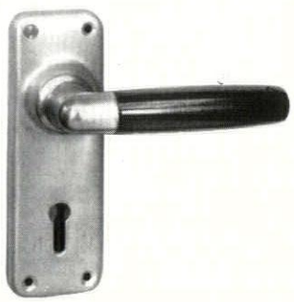

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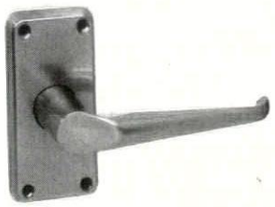
31



32



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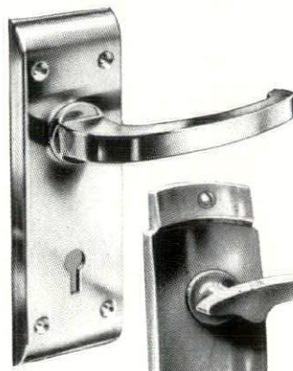

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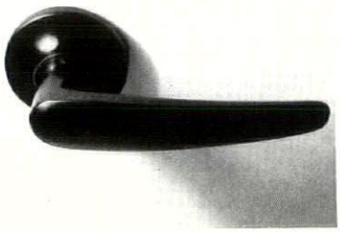

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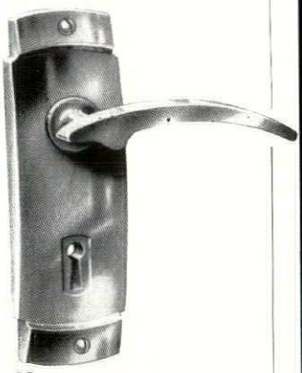

38

29, *another handle by Parker, Winder and Achurch.*
30, *handle by Ernest Newman with spring loaded rose.*
31, *handle by K. S. Neale.*
32, *bronze handle by Edwin Showell.*
33, 34 *and* 35, *handles by Cartwright showing Swedish influence.*
36, *plastic handle by Evered.*
37 *and* 38, *typical examples of bad design.*

several good designs of their own of which 26 and 27 are examples.

The rosettes have spring loading devices in them, and are normally used with Pitt spindles. Gibbons have also introduced a screw-on cover to cover the fixing screws, but because of the spring loading they are very bulky in appearance.

Parker, Winder & Achurch wisely offer long plates with their spring loaded handles, 28. This design owes much to a Stenman original, 10; while another, 29, owes much to a Wehag design, 6.

Ernest Newman produce an excellent design, 30, which has a spring loaded rose with a screw cover. This example is in nickel silver.

K. S. Neale are producing a limited selected range that promises to be good if the present trend is continued. 31 is an attempt at an integrated design of plate and handle, that, despite its shortcomings, is quite successful.

Edwin Showell have also introduced some new designs, some of which owe much to German inspiration, 32. This pleasant example that has a wide operating end is in bronze with a BMA finish.

Cartwright have similar designs to the Swedish handles, 33, which lose in their clarity of form when fitted with a normal vertical plate, 34. Their range is interesting and includes combinations of wood and metal and plastics and metal. 35 is a new design, specially commissioned to be an answer to the continental imports. The designer seems to have tried too hard; the sharp lines are not pleasant to feel and they do not contribute to the form.

N. F. Ramsay have a limited range of designs in a special aluminium alloy known as Marinalium, that is highly resistant to sea atmosphere.

Evered have in their plastic range a 'continental pattern' which is a pointer to the refined possibilities that are open in plastics, 36. It uses the pin and tooth grip, 7, for fixing.

However, despite these foregoing examples, it is depressing to find, advertised in a recent architectural magazine, a new *design suitable for contemporary interiors*, 37, showing a complete lack of understanding of any design precepts, not only being visually ugly, but uncomfortable to use, with a flat plate quite lacking in form. One's depression increases on looking at the rest of the range of this company, a subsidiary of an American firm, 38 being a typical example.

list of manufacturers and agents

Swedish	
Tekaverken AB Aug Stenman AB	Charles R. Kirk, 66 Cannon Street, E.C.4.
German	
Wehag	Alfred G. Roberts, 182 Upper Thames Street, E.C.4.
Ogro	H. & C. Davis, The Pavement, S.W.4.
Erno	Ernst Nofen, Heligenhaus, Dusseldorf.
Sidleen	Associated Brassfounders Ltd., Old Oak Lane, London, N.W.10.
Dutch	
Post and Eger	H. & C. Davis, The Pavement, S.W.4.
French	
Fontaine	Fontaine et Cie, 181 Rue St. Honore, Paris.
Danish	
Ruko	Charles R. Kirk, 66 Cannon Street, E.C.4.
Swiss	
(Injecta AG) INCA	Teufenthal, Aarau, Switzerland.
British	
R. Cartwright & Co. Ltd.	17 Fleet Street, Birmingham, 3
Dryad Metal Works Ltd.	Sanvey Gate, Leicester
Evered & Co. Ltd.	23 Albemarle Street, London, W.1
James Gibbons Ltd.	St. John's Works, Wolverhampton.
K. S. Neale	Machin Road, Erdington, Birmingham, 23
Parker, Winder & Achurch Ltd.	636 Broad Street, Birmingham, 1
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THE INDUSTRY

Asphalt Handbook

From the point of view of this column an established material like asphalt is at a disadvantage, since there is nothing new to be said about it. The Natural Asphalte (*sic*) Mine-owners and Manufacturers Council make up for this by saying what there is to be said with unrivalled clarity and comprehensiveness. For this, as readers may remember, they were awarded a 'certificate of exceptional merit' by the RIBA and the Building Centre in the trade literature competition last autumn. Their latest publication is the fourth edition of *Application of Mastic Asphalte* which covers the three subjects: Roofing, Tanking and Damp-proof Coursing, and Flooring. With literature like this to be had for the asking the architect has no excuse for making mistakes.
The Natural Asphalte Mine-owners and Manufacturers Council, 94-98 *Petty France, S.W.*1.

Quarry Directory

We have received a copy of a new publication *The Quarry Directory*, published by the British Stone Federation. This sets down under each major stone type (i.e. granite, limestone, sandstone and slate) the names of all the quarries now working commercially with the addresses of the owners. Note, *all* the quarries, not merely those owned by members of the Federation. This is a useful reference and may be obtained from *The British Stone Federation*, 70 *Victoria Street, London, S.W.*1.

Wimpey Builds

When the history of the 'forties and 'fifties comes to be written, historians will have to take care to notice how much of the development of our technical knowledge is due to a small number of very large organizations. If they omit to do this they will have no excuse, for it has become the custom for these great organizations to issue publications from time to time describing what they have done. One such—perhaps the most handsome of them all—is *Redevelopment in Wimpey No-fines Concrete*. This is a record of what this pioneering Coventry firm have been up to: it is a very proud record, amounting to 86,349 dwellings completed prior to December, 1956. The book contains photographs, many of them in colour, progress photographs, finished exteriors, interiors, staff at work, plans, diagrams, typical details of no-fines construction and charts. It is of limited use to architects in the sense of supplying technical information, since its object is not so much to explain how things should be done as to give confidence that Wimpey's can do it.
*George Wimpey & Co. Ltd., Hammersmith Grove, London, W.*6.

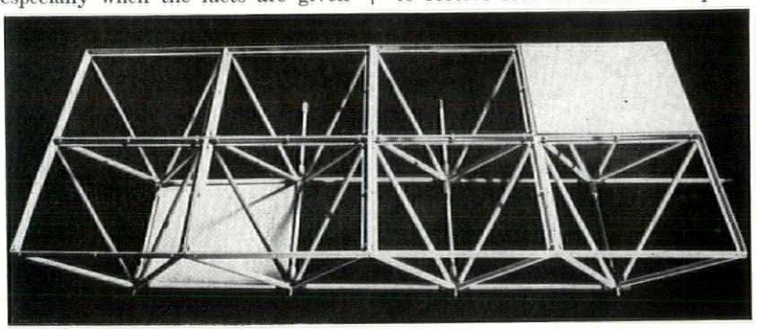
Plumber's Hardware Described

One of the most interesting pieces of recent trade literature is a booklet published by Associated Builders Merchants Ltd., entitled *Building and Plumbing Economics*. This title is misleading; for what the booklet really does is to take in turn the various standard products which ABM have launched and to discuss their history and the motives which led them to be modified to their present form. The reader is given interesting and clear accounts of little contests with foreign competition, freightage regulations, water boards, and not least of all the BSI (who are, for instance, entertainingly trounced for having standardized the plastic w.c. seat without having taken adequate counsel—and with disastrous results). Not all the standard products marketed by ABM will be approved of: the ABM sink, for instance, has great advantages. It is cheap to make, as it has a back waste you can put a pail underneath without fouling the trap, and its overflow is beyond reproach—but it looks terrible. In this, however, it is the exception; for on the whole ABM products have a good visual quality. But whether the architect finds himself in full agreement with each final product or not, it is of immense value to him to hear about its antecedents and why it takes the form it does; the more especially when the facts are given to him (as they are here) in the language of the Information Sheet and not that of the advertisement. This booklet can be obtained from *Associated Builders Merchants Ltd., Peters Hill, Upper Thames Street, London, E.C.*4.

Space Frames Off The Peg

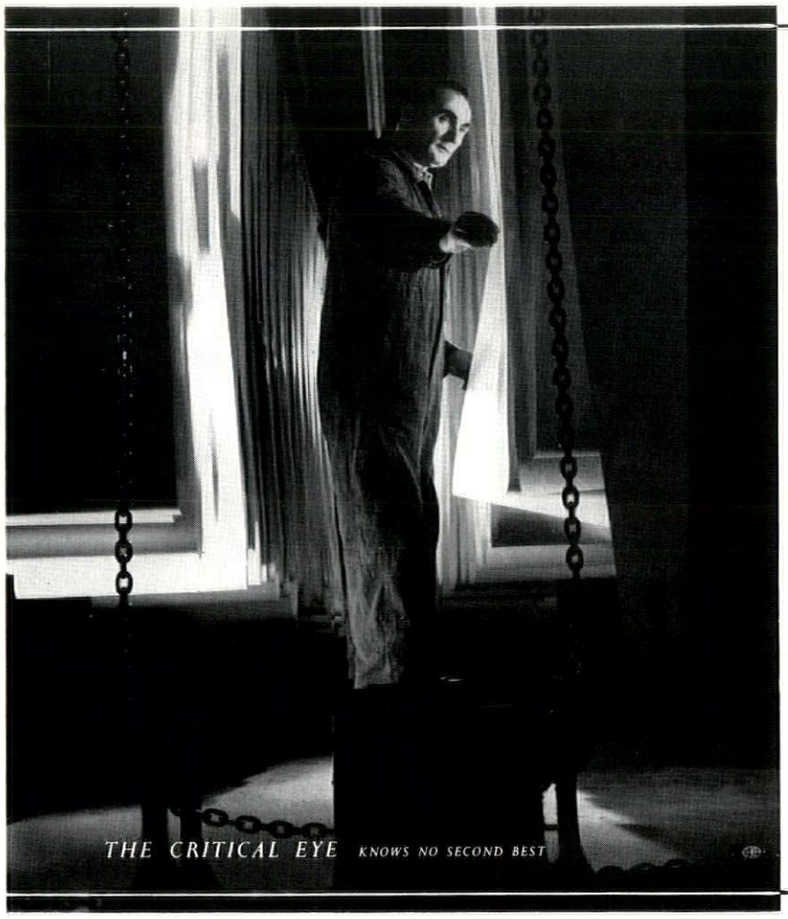
It is surprising that our increasing need of wide spans, coupled with our appreciation of the structural advantage of continuity and the economic advantage of mass production, have not led, long before now, to the marketing in this country of a space deck system. This lack has now been supplied by Space Decks Ltd., who are marketing a steel space frame made by the locomotive manufacturers, Denings of Chard.

The units of this space frame (called 'Space deck') comprise a hollow square (4 ft. by 4 ft.) of rolled steel section, to the corners of which are welded four standard tubes. These meet at a point which thus becomes the apex of an inverted pyramid. The 'apex piece' to which these tubes are welded is threaded to receive four tie bars. The square



1, *detail of space deck with two panels fitted.*

[continued on page 362



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continued from page 360]

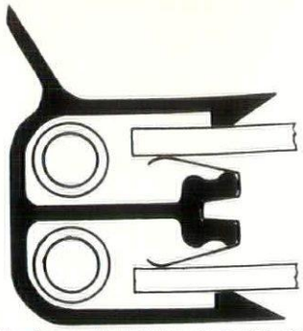
frames which form the top surface of each unit are bolted together and the apices of each unit are joined one to another by means of the tie bars. The whole can thus be put together on the ground by unskilled labour and can be lifted into place by crane. There are two standard depths: 3 ft. 6 in. for roofs and 4 ft. 4 in. for bridges. Spans of up to 200 ft. can be covered. One particular advantage of this type of construction is that the designer has great freedom in the placing of supports. Cost varies inevitably for each job, but the company quote an approximate price of 4s. 6d. per sq. ft. for spans of 60 ft. and 10s. per sq. ft. for spans of up to 200 ft. both supplied and erected. *Space Decks Ltd., Locomotive House, Buckingham Gate, London, S.W.*1.

Aluminium Sash

Though aluminium has much to be said for it as a material for making windows, it is generally considered to be expensive because the raw material itself is expensive. Any approach, therefore, which aims at confining the aluminium to the delicate parts seems likely to prove successful. That is what has been done by Aluminium Building Components Ltd., who in their 'Warwick' range of double-hung sash windows combine aluminium sashes and sash case with standard EJMA wood surrounds. An interesting aspect of this system is that the sashes themselves have no side framing: the glass merely passes into the side rails where it is clipped against the bearing surface by stainless steel weatherstrips (see drawings).
Aluminium Building Components Ltd., Central Chambers, Weston-super-Mare, Som.



2, the fine tolerance to which the window is manufactured makes it a reliable mechanical component. The interlocking meeting styles and the capillary grooved head and cill members help to make the window completely waterproof.



3, the glass, unframed along its height, slides in the side rail between the flanges of the aluminium extrusion and the stainless steel non-deteriorating weatherstrip, assisted by stainless steel helical springs.

CONTRACTORS etc

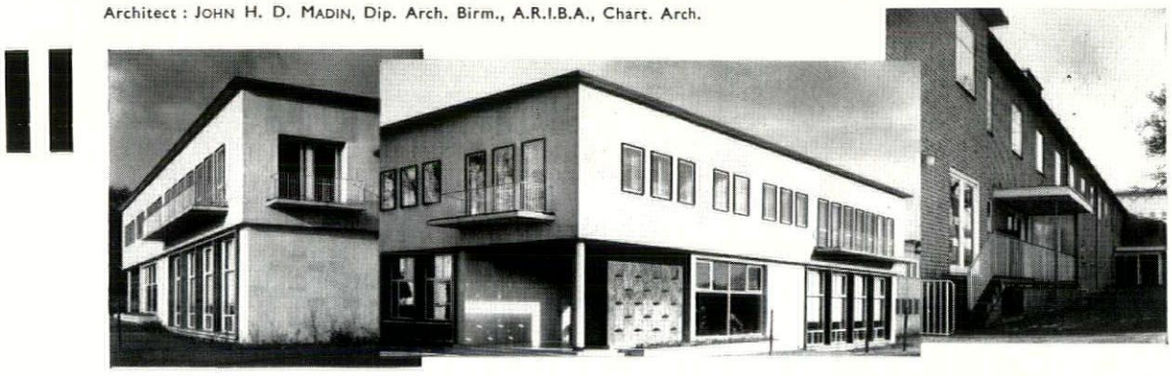
Fairlawn Primary School, Lewisham, S.E.23. *Architects:* Peter Moro in collaboration with the LCC. *General contractors:* E. H. Smith (Croydon) Ltd. *Sub-contractors: Structural steelwork:* Humphries Hollom Ltd. *Heating installation:* A. G. Manly & Co. *Metal windows and curtain walling:* Henry Hope & Sons. *Electrical installation:* Grierson Ltd. *Felt roofing:* Vulcanite Ltd. *Balustrades and railings:* Allen & Greaves Ltd. *Suspended ceilings:* G. C. Horsburgh & Co. *Precast terrazzo:* Kendell's Flooring Ltd. *Sanitary fittings:* Stitson's Sanitary Fittings Ltd. *External timber cladding and internal timber cladding:* Leslie Bilsby Ltd. *Precast paving slabs:* The Liverpool Artificial Stone Co. *Ironmongery:* Alfred G. Roberts Ltd. *Metalwork:* A. Arden & Co. *Wood block flooring:* Vigers Bros. Ltd. *Quarry tile floor and wall tiling:* Roberts & Burling Ltd.

Fairlands Infant School, Ste *Architects:* James Cubitt & Pa in association with C. H. Aslin, County Council. *General contr* Ekins & Co. *Sub-contractors: frame:* Hilis (West Bromwich *Roof deck:* Universal Asbesto Co. *Heating installation:* Weat Heating Systems Ltd. *Windows* iner Sons & Co. *Wall blocks:* Mac (Products) Ltd. *Wood bloc thermoplastic floor:* Hollis Bros *Roofing felt:* Permanite Ltd. *doors:* Jayanbee Joinery Ltd. *tian blinds:* Tidmarsh & Sons. *plaster:* Claridges (Putney) Ltd *adam playcourt:* Constable, H Co. *Ironmongery:* James G Ltd. *Gates:* Hills (West Bron Ltd. *Electrical installation* Bysouth Ltd.

L.C.C. Spencer Park Sec School. *Architect:* Professor Sir Martin, M.A., Ph.D. *Genera tractors:* Gee, Walker & Slate *Sub-contractors: Steel frame, concrete and timber cladding slabs and woodwool roof:* Hills Bromwich) Ltd. *Heating vent hot water and gas:* A. G. Ma Co. *Cold water and fire se* Gee, Walker & Slater Ltd. *El services:* Thorpe & Thorpe *Sanitary fittings:* T. A. Harri *Pressed steel water tank:* Brait & Co. *Ironmongery:* H. & C. & Co. *Precast concrete duct* Atlas Stone Co. *Tar paving:* A. Hobman Ltd. *Terrazzo paving partitions:* Mosaic & Terraz *Cork flooring:* Korkoid Dec Floors. *Linoleum:* Michael N Co. *Accotile flooring:* Newchat phalt Co. *Timber strip floor:* Bros. *Timber block floor:* Holli Ltd. *Joinery fittings:* Gee, Wa Slater Ltd. *Waterproofing:*

[continued on p

Architect : JOHN H. D. MADIN, Dip. Arch. Birm., A.R.I.B.A., Chart. Arch.



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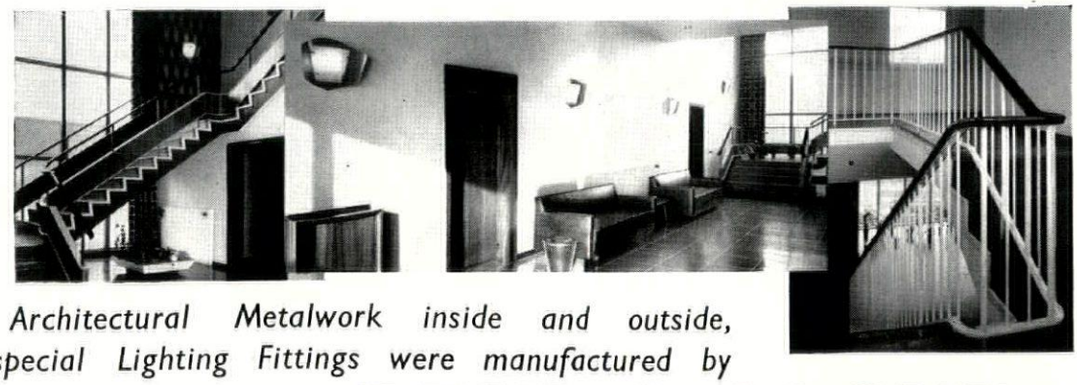

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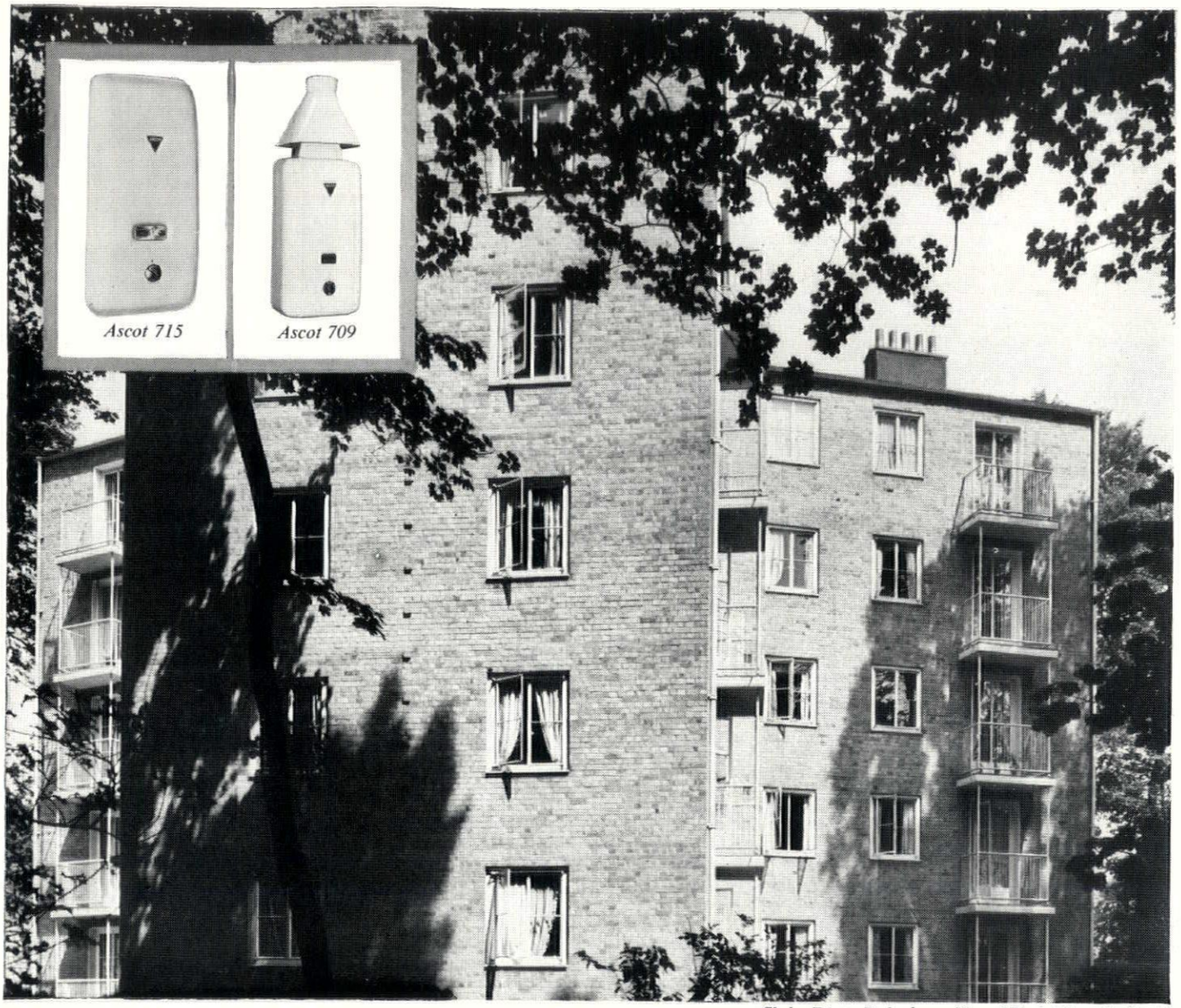

Chulsa Estate, Beckenham: View of Block 3 from the South.

ASCOT IN NEW HOUSING (6)

Beckenham Borough Council's Chulsa Estate in Crystal Palace Park Road, Beckenham, comprises 172 flats and maisonettes in 13 blocks. Ascot multipoint instantaneous gas water heaters were chosen to give a comprehensive hot water service to each of these since the flexibility and compactness of Ascot installations enabled the architects to make the best possible use of the space available for the Estate.

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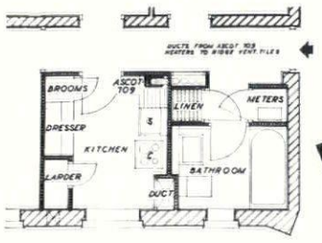
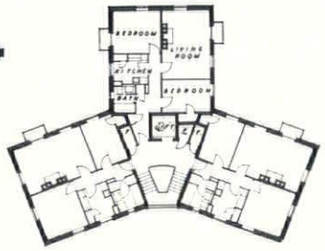


TYPICAL KITCHEN & BATHROOM PLAN



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continued from page 362]

Ltd. *Roofing felt:* Durable Asphalte Co. *Vermiculite ceiling panels:* Milsoms Ltd. *Acoustic tiles:* H. W. Cullum & Co. *Sliding screens in assembly hall:* E. Hill Aldam & Co. *Window control gear:* Teleflex Ltd. *Roller shutters:* Potter Rax Ltd. *Staircast, balustrades and kitchen hood:* R. Smith (Horley) Ltd. *Fume cupboards sliding doors:* Quicktho Ltd. (1928); *Entrance gates:* T. W. Palmer & Co. (Merton Abbey). *Cycle stands:* Alfred A. Odoni & Co. *Plastic letters and numerals:* The Lettering Centre. *Paints:* Jensen & Nicholson Ltd. *Cement glaze:* Cement Glaze Ltd. *Wallpapers:* Coles, Sandersons, J. Line; Arthur Sanderson & Sons; John Line & Sons. *Clover leaf perforated hardboard:* Bech, Neale & Co. *Wareite photographic mural:* Bakelite Ltd. *PVC fabric over stage and on rear folding doors:* ICI. *PVC fabric under servery counter:* Ioca Ltd. *Monoseal treatment to western red cedar cladding:* Turner, King & Shepherd Ltd. *Phenoglaze to internal woodwork:* Nufinishes Ltd. *York stone pavings:* Johnson Wellfield Quarries Ltd. *Art stone pavings:* Modcrete Ltd. *Stage curtains designed and made by* Gerald Holton.

Mr. Arup's House, The Grove, Highgate. *Architect:* Ernard Lorenz. *General contractor:* John Laing & Son. *Sub-contractors: Heating and hot water installations:* Benham & Sons. *Plumbing and cast iron drainage:* J. H. Shouksmith & Son. *Electrical installations:* Holliday, Hall & Stinson. *Plastering:* Pollock Bro. (London) Ltd. *Wall and floor tiling:* S. A. Forbes & Son. *Glazing:* Aygee Ltd. *Hoist:* The Titan Lift Co. *Linoleum floors:* Catesby's Ltd. *Tarmacadam:* General Asphalte Co. *Metal balustrading:* Scaffolding (Gt. Britain) Ltd. *Aluminium windows:* Williams & Williams Ltd. *Juncker's parquet floors:* James Webster & Bro. *Insulite glazing:* Pilkington Bros. Ltd. *Built-in joinery work:* Andrew A. Pegram Ltd. *Precast concrete steps:* Girlings Ferro Concrete Co. *Paving:* Nonslip Stone Co. *Sanitary fittings:* Adamsez Ltd., Shanks & Co.

Interiors, Flat 13. *General contractors:* Fredk. Sage & Co. *Curtains and carpets:* Catesbys Contract and Export Ltd.

Ekco Board Room. *Alterations, decorations and furnishings:* Catesbys Contracts and Export Ltd. *Lighting fittings:* George Forrest & Son Ltd.

Stamford Hill Boys' Club. *Decoration, furniture and fittings:* Catesbys Contract and Export Ltd. *Lighting fittings:* Rotaflex (Great Britain) Ltd.

Offices, Tension Road, Cambridge. *Architect:* H. H. Powell, ARIBA. *General contractors:* Gilbert-Ash Ltd. *Sub-contractors: Wood block flooring (Alufloor):* Bennetts Wood Flooring Ltd. *Electrical installation:* Bective Electrical Co. *Felt roofing, tanking and lining:* Cambridge Asphalte Co. *Plumbing installation:* T. R. Freeman & Sons. *Lightning conductor:* J. W. Gray & Son *Terrazzo paving:* Jaconello Ltd. *Glazing:* Mustill Wallis & Co. *Quarry tiling:* Parkinsons (Wall Tiling) Ltd. *Suspended ceilings:* J. A. R. Robertson. *Painting:* Sharrocks Arnold Ltd. *Plastering and screeding:* W. A. Telling Ltd. *Heating installation:* Weatherfoil Heating Systems Ltd. *Cement glaze:* Regent Surfaces Co. *Aluminium balusters:* Amalcraft Ltd. *Founders and smiths:* Broads Ltd.; Clark, Hunt & Co. *Sanitary ware:* John Bolding & Sons. *Window frames:* Davis Ridley & Co. *Aggregates:* M. Dickerson Ltd. *Fletton bricks:* Erith & Co. *Facing bricks:* S. A. Hunter Ltd. *Metal rolling grilles to bar:* Haskins Rolling Shutters. *Fibre ducting:* Key Engineering Co. *Hollow clay, partition blocks:* London Brick Co. *Precast lavatory partitions:* Mono-Concrete Ltd. *Ironmongery:* Alfred G. Roberts & Co. *Incinerators:* Saniguard Appliances Ltd. *Joinery:* W. E. Stromeyer Ltd. *Sanitary fittings:* Stitson's Sanitary Fittings. *Dome lights:* R. Seddon & Sons. *Artificial stone coping:* Tidnams Ltd. *Rubber link matting:* Tyre Products Ltd. *Cannel reinforcement slabs:* Thermacoust Ltd. *Rod reinforcement:* G.K.N. (Twisteel) Ltd. *S/G pipes, bricks, etc.:* Travis & Arnold Ltd. *Paving slabs:* Wettern Bros. (Manchester) Ltd. *Metal cycle shelters:* Alfred A. Odoni & Co. *Lighting fittings:* Falk Stadelmann & Co.; G.E.C. Ltd.; Benjamin Electric Ltd.; Wardle Engineering Co.; Troughton & Young (Lighting) Ltd.; Courtney Pope Ltd.

Pithead Bath, Dudley Colliery, Northumberland. *Architects:* Richard Sheppard & Partners in collaboration with J. C. Spooner. *General contractors:* Middlemiss Bros. *Sub-contractors: Asphalt:* Limmer & Trinidad Lake Asphalte Co. *Reinforced concrete:* G.K.N. Reinforcement Ltd. *Bricks:* N.C.B. Northern (N. & C.) Div. *Roofing felt:* Wm. Briggs & Sons. *Glass:* Elders Walker & Co. *Patent glazing:* S. Warner & Son. *Structural steel:* Durham Steelwork Ltd. *Central heating, boilers:* Hope's Heating & Engineering Co. *Door furniture:* A. G. Roberts & Co. *Casements:* James Gibbons Ltd. *Roller shutters:* Mather & Platt Ltd. *Paint:* J. Denton Ltd.

Sports Pavilion and Social Centre, Hayes, Kent. *Architects:* Pite, Son & Fairweather. *General contractors:* W. L. Cooke & Co. *Sub-contractors: Reinforced concrete:* Johnson's Reinforced Concrete Eng. Co. *Bricks:* W. T. Lamb & Sons. *Roofing felt:* F. J. Prater Asphalte Co. *Tiles:* E. F. Williams Ltd. *Glass:* James Hetley & Co. *Wood-block flooring:* Stevens & Adams Ltd. *Artificial stone:* Girlingstone. *Structural steel:* Dawnays Ltd. *Patent flooring:* Marley Tile Co. *W.C. Partitions:* Venesta Ltd. *Central heating:* Weatherfoil Heating Systems Ltd. *Stoves:* Broad & Co. Ltd. *Electric wiring and fixtures:* Hume Atkins & Co. *Door furniture:* Alfred G. Roberts Ltd.; Stafford Furniture Ltd. *Casements:* Tomo Trading Co. *Window furniture:* Tomo Trading Co. Nettlefold & Moser Ltd. *Roller shutters:* G. Brady & Co. *Sanitary fittings:* John Bolding & Sons. *Tiling:* The Surrey Tile Co. *Wallpaper:* Primavera. *Mats:* Tyre Products Ltd. *Signs:* Drakard & Humble Ltd. *Paints:* Hadfields (Merton) Ltd. *Slate hearth:* Bingley & Son & Follit Ltd. *Bronze plaque:* The Lettering Centre.

House at Nacton. *Architects:* Sandon & Harding. *Builders:* Carter Brothers Ltd. *Heating engineers:* H. Warner & Son. *Roofing sub-contractors:* Wm. Briggs & Sons. *Electrical fittings:* Merchant Adventurers, Ltd.; George Forrest & Son, Ltd.; G.E.C. *Paints and plastic emulsion:* Permoglaze, Ltd.

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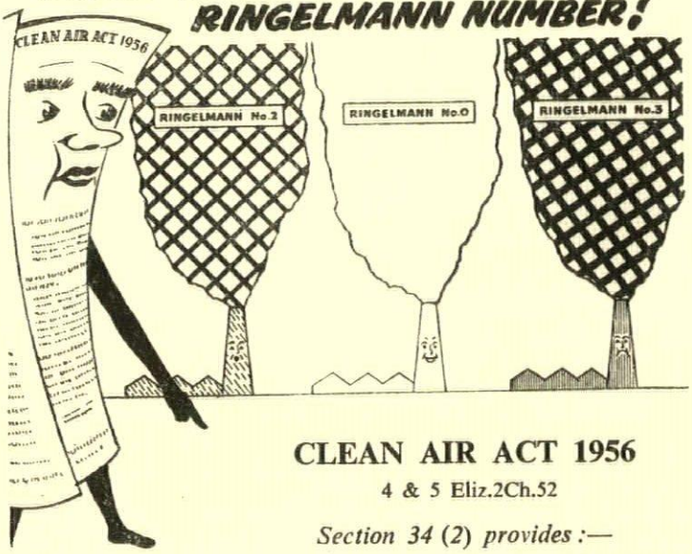

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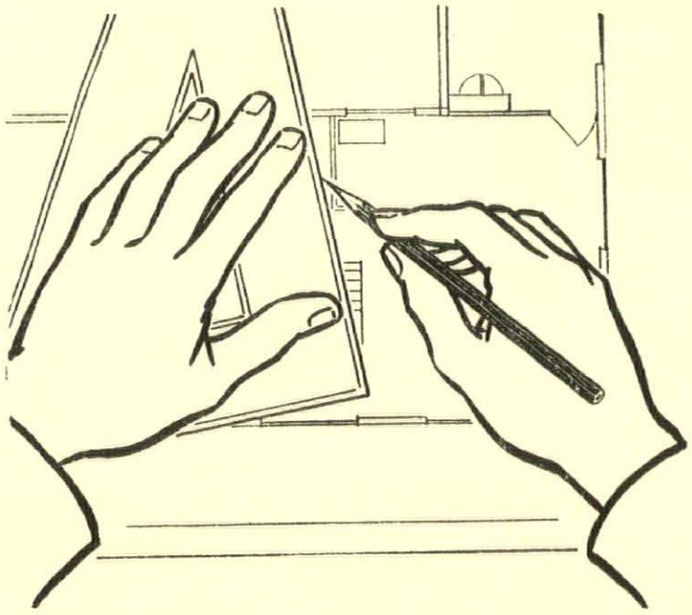

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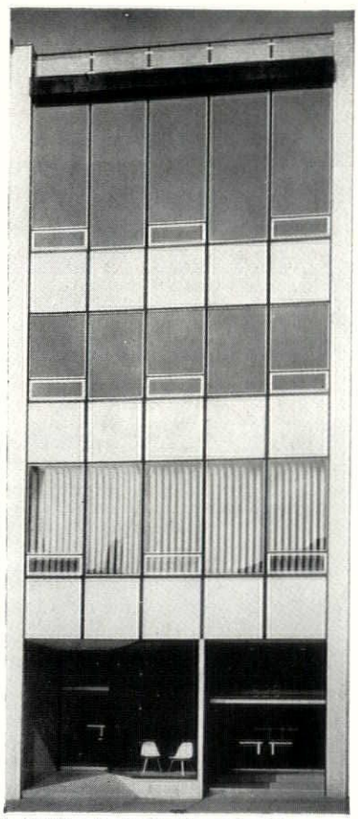
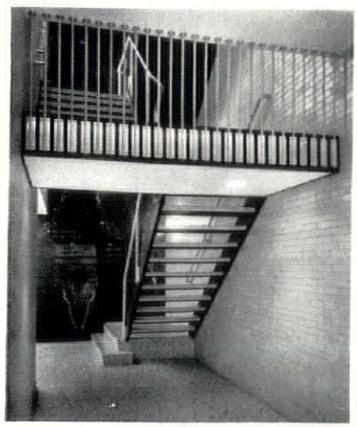
MARGINALIA

Local Fifty-four

The social and welfare centre for Building Service Employees' Local 54, New York City, is remarkable not only for its skilful and elegant application of curtain wall aesthetics to a facade of domestic scale, 1, but also for its architect, Giorgio Cavalieri, a Venetian now settled in the USA who has insisted on running a practice of the European type, rather than involve himself with the organizational giantism which grips so much US architectural design. The resultant combination of craftsmanly attention to individual details with high technical finish is as apparent in much of the interior, 2, as it is externally, and the reader will probably experience no surprise in learning that Cavalieri also designed an Olivetti showroom, in San Francisco, and was awarded the Architectural League gold medal for it.



1, *Building Service Employees Local 54.*



2, *staircase of Local 54.*

There and Not There

In his classic *Glas im Bau*, published in the late 'Twenties, Arthur Korn observed that the truly unique quality of glass as a walling material was: Es ist da, und es ist nicht da—and proceeded to interpret this ambiguity in a number of different ways. In the age of patent glazing we have become accustomed to this state of affairs in the realm of practical experience, but it has rarely reached such explicit demonstration in the eye of our accepted arbiter of aesthetics, the camera, as in this view of the rear façade of Hans Fischli's new building, 3, for the Basle Furniture Co-operative. The glass wall, though visible, is almost completely devalued as a visual entity, it is transparent only where it reflects solid objects, and the holes punched in it by opened windows appear more 'real' than the substance of the glass itself. It emphasizes that in spite of the sophisticated and perceptive observations made on glass by its early protagonists, it is still a material that we use in almost complete ignorance of its visual character.

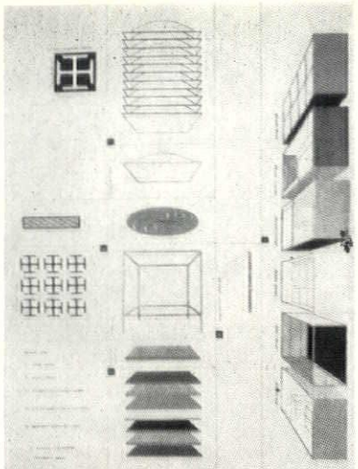


3, *rear of the Basle Furniture Co-operative.*

Once More the Industrialized House

For over two years now a research group in the well-known US design office of George Nelson & Company has been re-investigating that favourite theme of *avant-garde* American designers, the industrialized house. The 'rules' governing their approach were tough, and disfigured in places by short-reach thinking—as in an embargo on natural materials ('The problem is design for production, not romance') as if anyone standing downstream of Buckminster Fuller in the mainstream of progressive US architecture could be unromantic about synthetic materials. Nevertheless, the results have been promising, and as elegant as anything else from the Nelson office, without producing any strikingly new solutions.

The basic element of the design is a 12 ft. by 12 ft. by 12 ft. cube formed of lengths of a complex aluminium extrusion, and a number of optional floor and wall panels, roof covers and service packages, the whole presented as a catalogue, 4, rather than as a specification, somewhat after the manner of the design of the Eames house (AR, Marginalia, May, 1957). These cubes and their interspersed service packages are then fitted together on a fairly scattered plan—echoes here, 5, of Bruce Goff's 1952 cube-house in Florida (also AR, May, 1957)—chiefly for the sake of obtaining a higher degree of sound insulation than is possible with

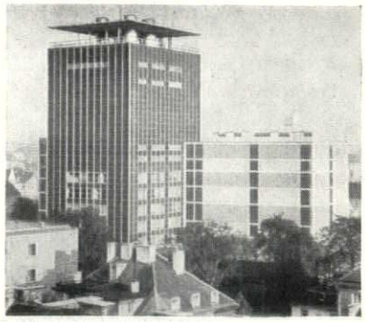


4, *catalogue presentation of house components designed by George Nelson and Co.*

continuous light-weight structure. This additive, patio planning probably receives its greatest justification, however, from its clear sympathy with the kind of interiors generated by this catalogue-option approach, all under translucent domes carried above strips of ventilating grille-work, 6, these last two devices stemming from the proposition (an arguable one) that the functions of lighting, ventilating, and providing views are too diverse to be served by the old-fashioned window alone.

District Heating in Munich

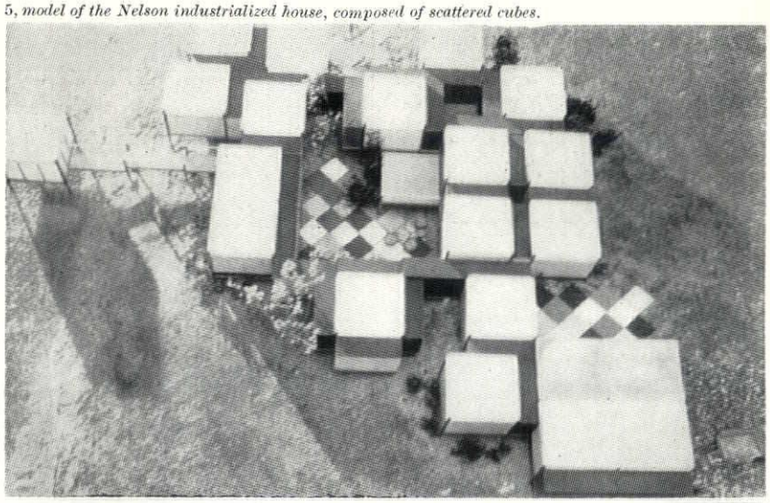
English discussions of the siting of power-stations tend to proceed on the assumption that all industrial plant is inherently evil, and ought to be banished from human ken. Germans appear to think otherwise, and a new plant for power and district heating in Munich, designed by the engineer Karl Hencky and a team of architects, has been deliberately located in a densely built-up urban area, towering conspicuously, 7, above the surrounding buildings. The philosophy of this decision is perfectly straightforward and humane: it is cheaper, and more efficient, to transport coal in trucks than it is to distribute heat through over-long insulated pipe-runs, and it is practicable to filter the smoke from a single large plant, but not from a host of domestic chimneys—a centrally located plant thus helps toward a cleaner city.



7, *Munich power plant tower.*

The filter-plant dominates the design of the building envelope and, as the section shows, 8, occupies the bulk of the tower-block, the cleaned effluent emerging through short chimney-stacks, and the risk of smoke blowing down being obviated by an 'aerodynamic roof' to

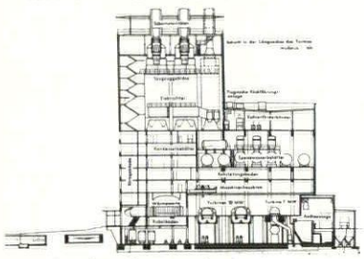
5, *model of the Nelson industrialized house, composed of scattered cubes.*





6, *interior, showing ventilating grille below the dome.*

straighten airflow over the top of the tower. The external treatment of this upstanding block suffers no false modesty and makes no attempt to 'keep in keeping' with the Biedermeyer and Biedermeyer-revival buildings around it—the tower is of partly-glazed curtain-walling, the boiler and turbine house is of exposed r.c. frame construction with infill of tiling. Nevertheless it has a properly urban character and is as important a contribution to power-station aesthetics as Hans Hoffmann's carefully landscaped hydro-electric plant at Birsfelden, illustrated in AR, July, 1957.



8, *section through power plant.*

Wiener Stadthalle

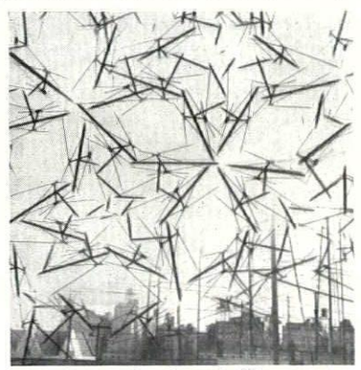
The closed competition in 1952 for a municipal sports stadium for Vienna was so clogged with leading talents that the first prize had to be split and even Nervi's project received only an honourable mention (but was illustrated in AR, August, 1955). The divided first prize went to Alvar Aalto, for a design with particularly brilliant tent-like section, 9, and to Roland Rainer for what is now, but was not then, a more conventional solution, 10. All things else being equal, the fact that Herr Rainer is Viennese gave him a margin over even the great Aalto, and it is his design that is now nearing completion, 11—two gigantic ramps of tiered seats, in concrete, flanking an independent gantry structure carrying the roof and services over the playing area, and all wrapped in a vast skin of metal cladding that effectively conceals the differentiation of the parts within.

New Work at Trinity

After a considerable period of obscurity and doubt, some information has at last been released about the rebuilding plans of Trinity College, Cambridge. The 1954 scheme by Powell and Moya, though approved by a small majority at a College meeting, has been abandoned in the face of energetic lobbying by a section of the Fellows, and a new scheme, approved by an unstated majority, and with the backing of the Fellows' lobby, has been substituted, to the designs of J. S. L. Smith, of Husband and Company, an 'umbrella practice' of engineers, surveyors and architects from Sheffield. The new scheme provides for rebuilding behind the existing façades of property in Trinity Street, and will be virtually invisible from outside the College, while toward the inside it will present elevations whose appearance may be judged from references to a bow window, a coat of arms, low ratio of window to wall, and a non-bearing brick cladding disguising both the structure and the functional layout behind. A sketch of this scheme was published, with a statement by the Senior Bursar, from which the above information was extracted in the *Trinity Review*, Lent, 1958, p. 22.

Weegee's Aerial Space-frame

The possibilities of manipulated photography have been discussed in AR before now (e.g. stressed negatives by Nigel Henderson, Feb., 1952) but their use as a technique of visual criticism seems to have been left to the US photographer Arthur Fellig, better known for his combination of stressed prints with kaleidoscopic lenses to produce humorous caricatures under the *nom-d'objectif* of Weegee. Recently, the use of the pattern-making potentialities of his technique has been adapted for printed textiles, and among material



12, *kaleidoscope lens image by Weegee.*

reproduced in *Interiors* when this development was announced was a Weegee prospect of urban television-scape, 12, that seems to carry with it a back-handed compliment to the geodesic space-frames of Buckminster Fuller.

The Hampstead Society

Among the most active of the associations to protect the visual amenities of particular localities is the recently formed one that has taken guard over the 'intellectual belt' of NW3—The Hampstead Society. The original stimulus came from the controversy over Hampstead Civic Centre, in which, as an *ad hoc* pressure group, they lobbied successfully for a contemporary design. After this, at their inaugural meeting as a regularly constituted society, Dr. Pevsner directed the audience of a hundred not to forget the rest of the borough for the sake of the 10 per cent that forms 'the village.' Since the society had already decided to consider all aspects of the visual environment together, this left them with an enormous field in which to campaign, but, for the present, they are concentrating their activities on two main projects—a detailed case-study of Flask Walk (Council neo-Georgian one side, spec-builder on the other) and an over-all development plan in the hope of influencing the Council and the LCC—though they are, of course, fully engaged in the inevitable skirmishes over lamp-standards, lopped trees, etc. Those interested in the work of the society, should write to the secretary, Christopher Gotch, 30 Greenhill, Hampstead, NW3.

CORRESPONDENCE

Plate Glass Shop Front

To the Editors,

SIRS,—Miss Mary Eldridge traces the history of 'The Plate-Glass Shop Front' (AR, March, 1958) back to a book of designs published in 1828. May I draw attention to the earlier pioneer work of J. B. Papworth?

The details are set out by Wyatt Papworth in a biography of his father: *John B. Papworth, Architect to the King of Wurtemburg*, privately printed at London in 1879. Round about 1822–23, he wrote, 'the shopkeepers of London were improving their Fronts for the better exhibition of Goods, discarding the small squares of "best Newcastle Crown Glass" for the larger dimensions afforded by Plate glass, expensive though it then was, in consequence of the high duty upon it. The introduction of the new invention "Gas" also enabled a larger display to be effected. Many opportunities were afforded Mr. Papworth to show his skill in this line of architectural design, which has been thought beneath the consideration of the man of taste, and such works not fitted to be allied with his name. . . . In London, few, if any, men of note had as yet attempted much improvement on the old-fashioned shop-front. Mr. Papworth's designs, humble as they may now appear to be to us who are accustomed to the large decorative display of the modern shop-front, were in his day greatly admired, and helped to create a taste for better architecture in this class of building.'

His earliest work of this kind seems to have been 'designs of a novel character for shop-fronts' at the premises of Collinge's, engineers, in Westminster Bridge Road. In 1822–23 'he designed a far larger front' for F. & R. Sparrow, tea-merchants, at 8 Ludgate Hill; 'the whole front of the house was decorated after the Chinese manner, including all the openings and the shop-front.' The next commission, for Turner & Clarkson, 17 Coventry Street, excited much attention; other designs were made for 29 and 117 Piccadilly; while the shop-front of Messrs. Duppa, house decorators, of 314a Oxford Street, 'had so picturesque an effect, and exhibited so much novelty of design, that, as I have been assured, it proved an attraction to the profession as well as to the public.'

Papworth's skill in combining the effects of gas-lighting with novel designs in glass led to another notable pioneer work: the rebuilding of Thompson & Fearon's gin-shop at 94 Holborn Hill, 1829–32. 'This façade,' remarks the biographer, 'was long considered a feature of art in that formerly inartistic and undesirable locality.' It was, he states firmly, 'the earliest of the gin-palaces.' H. McG. Dunnett (*Inside the Pub*, AR, Oct. 1949) appears to credit the design to Stephen Geary, who specialized in laying out cemeteries. Except that gin-palaces helped to provide more work for the undertaker, there would appear to be no connection.

This gin-palace is a recent casualty of Modern Improvements. As Fearon's, 39 Holborn Viaduct, it was described as 'having stood on its present site for at least 150 years,' by H. E. Popham, *The Taverns in the Town*, 1937. It was last recorded at the same address in Maurice Gorham's *Back to the Local*, 1949. A monster office block now occupies the site.

Yours, etc.,
BRIAN SPILLER.

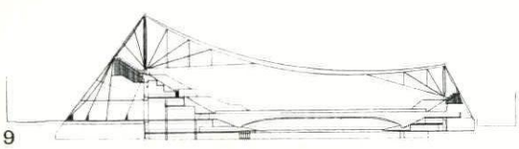
Westminster, SW1.

House in Highgate

In the article on Mr. Ove Arup's house in the May issue it was not mentioned that all the internal fittings, comprising: Kitchen Table, All kitchen and Utility Room fittings, Kitchen-Dining fitting, Dining-Living fitting, Study-Living fitting, Bathroom fittings and Fittings in Master suite were designed by Stallard and Walker, ARIBA, who also carried out the site supervision, and that the Garden layout was designed by Humphrey Wood, ARIBA.

ACKNOWLEDGMENTS

ART NOUVEAU SCRIPT, pages 369–372: 10–15, Photo Stober. HUBS WITHOUT WHEELS, pages 373–392: Vallingby, 1–3, 6, 7, 10, 11, G. E. Kidder-Smith. Harlow, page 383, top, Galwey Arphot; below, McCann. route a, 1–5, Galwey Arphot. route b, 1–3, Wainwright; 4, 5, Galwey Arphot. route c, 1, Galwey Arphot; 2, Wainwright. route d, 1, 2, Galwey Arphot; 3–5, Wainwright. route e, 1–4, 6, Galwey Arphot; 5, 7, Wainwright. Market Square, 1, 2, Galwey Arphot; 3, 4, McCann. 5–11, Galwey Arphot. TOWERS OF LEARNING, pages 393–398: frontis, Toomey Arphot; 1, National Buildings Record; 2, 15, 16, The Builder; 4, Bedford Lemere and Co. Ltd. INTERIOR DESIGN, pages 399–404: Caledonian Hotel, 2, Ideal Studio; Shoe Showroom, Priscilla Conran; Studio Flat in Athens, 8–11, Philip Boucas. WESTMINSTER REVISITED, pages 405–409: Cullen Arphot. CURRENT ARCHITECTURE, pages 410–416: Offices at Beckton, Galwey Arphot; House at Newstead Abbey, W. E. Middleton and Son; Sailing Club at Beadnell, Galwey Arphot. MISCELLANY, pages 417–422: Exhibitions, 2, Whitechapel Art Gallery; 3, Marlborough Fine Art Ltd.; 6, E. J. Power collection. Shutters, Blinds and Umbrellas, 3, Photo Anderson; 4, H. Dearstyne; 8, R. P. Way. Counter Attack, Nairn Arphot. THE INDUSTRY, pages 428–432: 1, 2, Stewart Bale Ltd.; 3, Sam Lambert.



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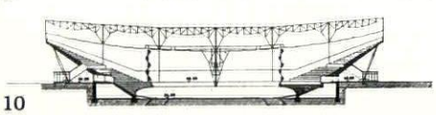
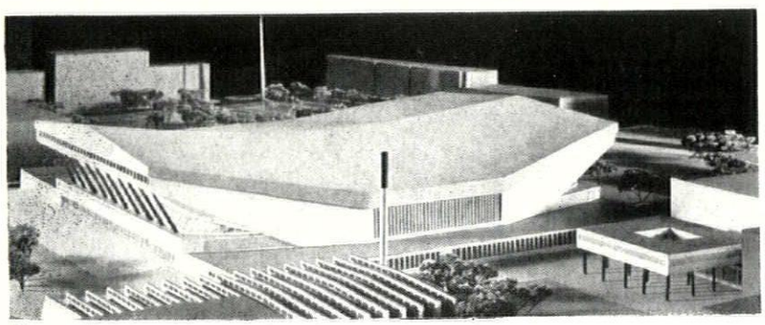


10

WIENER STADTHALLE

9, *section through Alvar Aalto's design.* 10, *section through Roland Rainer's design.* 11, *model of the Rainer design which is now nearing completion.*



11



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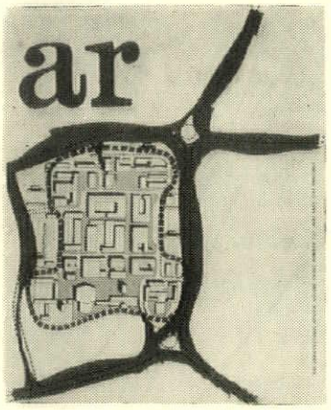
THE ARCHITECTURAL REVIEW

Volume 123 Number 737 June 1958



The Cover, drawn by Ian Hodgson, demonstrates the basic circulation-planning of the Town Centre at Harlow. A ring of motor roads, shown in red, mark the limit beyond which shoppers' cars may not penetrate; the motorist must leave his car in one of the car-parks and, like a man passing through the gates of a walled city, enter a world on a different scale—the pedestrian scale of the inner precinct, shown cross-hatched. An illustrated comparison of Harlow Town Centre and that of its Swedish contemporary, Vällingby, begins on page 373 of this issue.

365 **Marginalia**

368 **Frontispiece**

369 **Art Nouveau Script** *by Roswitha Baurmann* As the recent studies of Art Nouveau in the ARCHITECTURAL REVIEW will have suggested, lettering and typography were two arts in which some of its most significant pioneering symptoms appeared, because it was one of the first points at which creative artists made their influence felt on the useful arts. Dr. Baurmann, surveying the subject from its earliest beginnings in McMurdo's Century Guild publications, reveals not only the influence of 'fine' artists, as such—Whistler, Lautrec—but also of handicraft techniques such as woodcuts and brushwork on the letter forms that were evolved, culminating in van de Velde's view of line as translated gesture—a view that sounds very modern but derives, in his case, from a study of another artist who influenced Art Nouveau, Georges Seurat.

373 **Hubs without Wheels** Whatever may be thought of the over-all planning of new towns and satellite suburbs like Harlow, in England, and Vällingby, in Sweden, serious attempts have been made in both these cases to give them lively and effective urban centres. The two hubs—Vällingby built outwards from its railway station, Harlow turned inwards on to its open market—are compared and illustrated here with plans, descriptions and extensive photographic surveys.

393 **Towers of Learning** *by David Gregory Jones* The tall, brick Schools of the late nineteenth century, designed in their immediately recognizable School-Board style, that tower above the smaller buildings of south and east London owe their great height not only to the restricted sites into which they had to be packed, but even more to the determined views of the man who designed most (and the best) of them—E. R. Robson, first architect to the London School Board. Mr. Gregory Jones puts Robson's views in the context of their time, including the views of other designers like Basil Champneys, and shows how they led to the schools being envisaged as landmarks (in every sense of the word) of a secular culture. But they were more than this, and he also examines and describes the remarkably original and workable architectural character of some surviving examples.

399 **Interiors: Chandelier, Caledonian Hotel, Edinburgh:** *Designers, Robert and Roger Nicholson*

401 **Interiors: Shoe Shop in Regent Street, W.1:** *Designers, Conran Contracts*

402 **Interiors: Studio in Athens:** *Designer, N. Hatzikyriakos-Ghika*

405 **Westminster Revisited** *by Gordon Cullen* Most attempts to visualize the precinctual character of what the REVIEW has called *Westminster Regained* are thwarted by the rude gash of Victoria Street, at variance with the earlier street-pattern, aligned on no ancient monument, and bringing the building lines up to a knife-edged angle on that side of the Abbey forecourt that most needs to be treated as an enclosing wall. However, plans for rebuilding nos. 1-19 Victoria Street, offer the possibility of remedying this planning solecism, and Mr. Cullen shows how a deflection of the street-line and a re-grouping of buildings (due for replacement anyhow) could achieve a major improvement.

410 **Current Architecture**

Miscellany

417 **Books**

418 **Exhibitions**

420 **History**

422 **Counter Attack**

Skill

424 **The Geometry of Shade** *by Michael Brawne* Howard Dearstyne's note in *Miscellany* (page 420) records what was done to control the sun in history, Mr. Brawne here explains what can be done to control the sun with geometry. Apart from any mechanical aids at the architect's disposal, a great deal can be done by means of simple mathematics and geometrical diagrams to build a high degree of sun-control into the very plan and section of a building, and this article gives examples of these techniques in use.

428 **The Industry**

432 **Contractors**

Authors: *Dr. Roswitha Baurmann* was born in Karlsruhe on March 26, 1926. Her father was a Russian prisoner of war. Until 1948 she was an apprentice photographer in her father's blockmaking firm in Karlsruhe, then she studied art history, history and archaeology in Freiburg and Munich and graduated in 1956 and produced a thesis *Script in Art Nouveau.* She became an assistant in the Institute of Art History at Freiburg University and has recently been working in a voluntary capacity at the Staatlicke Kunsthalle in Karlsruhe. *David Gregory Jones* trained at the A.A. school, qualifying in 1949. Since this date he has been with the LCC Architects Department, at first on schools and, since 1955, on housing. At the moment he is job architect for the group of six 18-storey point blocks going up at the Brandon Estate, Southwark. He was a prize-winner in the Golden Lane Competition—4th prize—and won AA Essay prize in 1954 with a study of the early work inspired by Webb of the LCC Architects Department. He is the editor of *Keystone* and lives with two other architects and their families in Webb's Red House at Bexley Heath.

Directing Editors J. M. Richards, Nikolaus Pevsner, H. de C. Hastings, Hugh Casson

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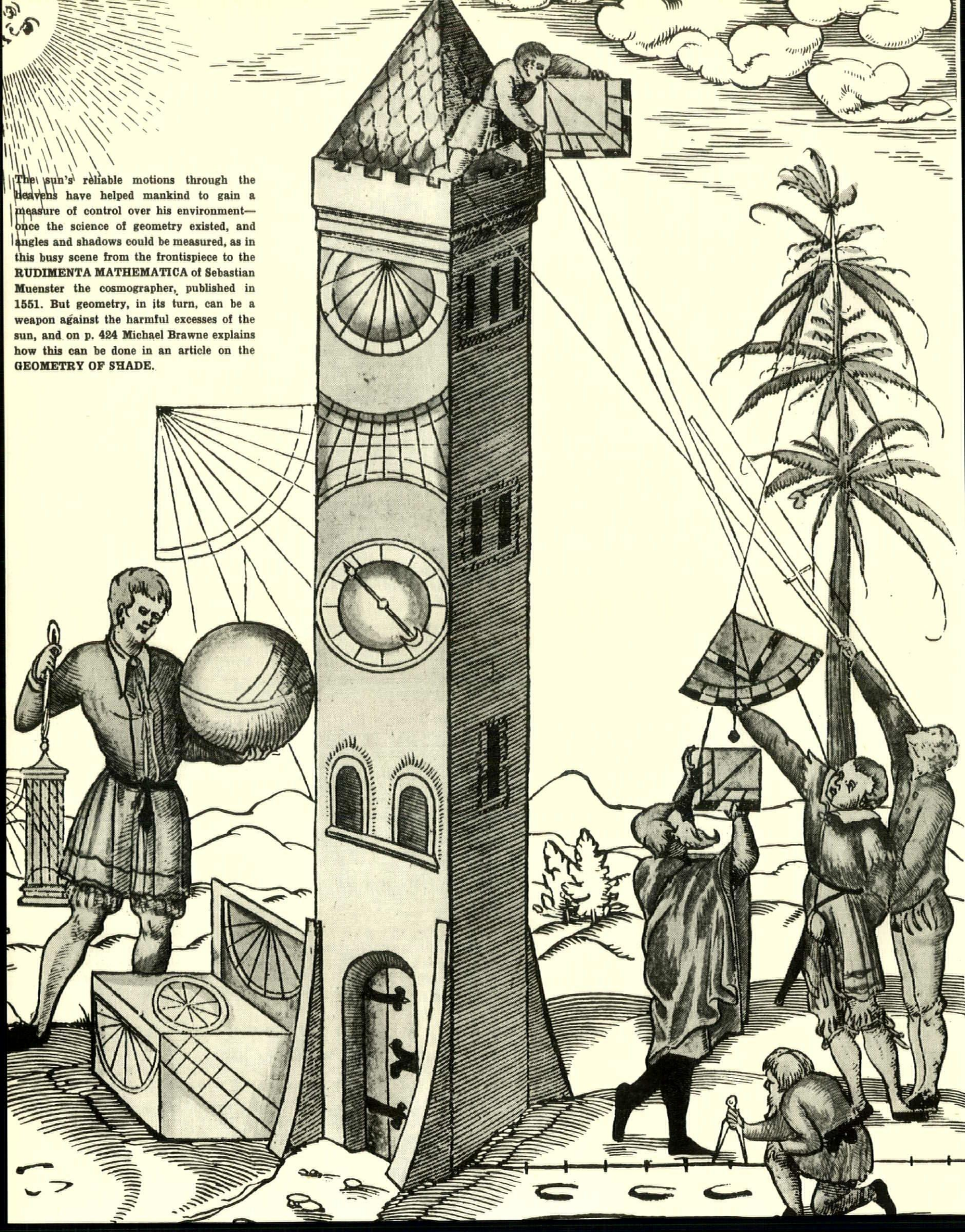
FIVE SHILLINGS



The sun's reliable motions through the heavens have helped mankind to gain a measure of control over his environment—once the science of geometry existed, and angles and shadows could be measured, as in this busy scene from the frontispiece to the **RUDIMENTA MATHEMATICA** of Sebastian Muenster the cosmographer, published in 1551. But geometry, in its turn, can be a weapon against the harmful excesses of the sun, and on p. 424 Michael Brawne explains how this can be done in an article on the **GEOMETRY OF SHADE.**

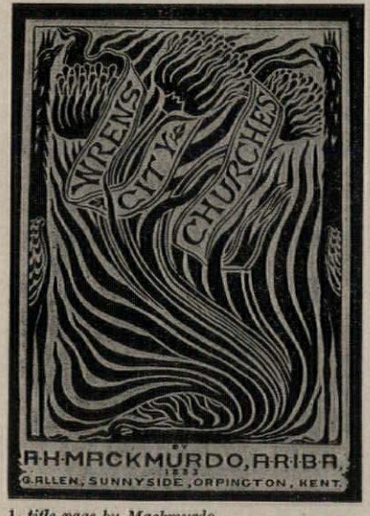
ROSWITHA BAURMANN

ART NOUVEAU SCRIPT

Arthur H. Mackmurdo together with Herbert P. Horne and Selwyn Image founded the Century Guild in 1882. [See N. Pevsner: *Pioneers of Modern Design*, second edition, New York, 1949, and R. Schmutzler, in THE ARCHITECTURAL REVIEW, August, 1955, p. 109, etc.]. Their intention was to revive art in handicraft which had perished under the impact of the machine. In this intention they were at one with William Morris and the Pre-Raphaelites with whom Mackmurdo and Image remained in the friendliest relations for a long time. But whereas Morris as a designer and producer of furnishings and later also of books, confined himself to the restoration of the best standards of work of past centuries, the programme of Mackmurdo and the Century Guild went far beyond this. In the field of graphic production in particular, Morris's achievement was in continuance of old traditions, Mackmurdo arrived at forms so completely new that they must be regarded as the beginning of Art Nouveau.

1884 is the date of the first year of the Century Guild's *Hobby Horse;* Mackmurdo discussed the production with Emery Walker, entrusted the printing to the Chiswick Press, chose Caslon as the type for it and insisted on hand-made paper. [N. Pevsner: THE ARCHITECTURAL REVIEW, vol. 83, 1938.] Aymer Vallance, in 1899, recognized the pioneer role of the Hobby Horse—started six years before Morris's Kelmscott Press—by saying: 'The earliest number, under the date April 1834, was, at the time of its appearance, a work quite unique of its kind. Never before had modern printing been treated as a serious art, whose province was to embrace the whole process, from the selection and spacing of the type . . . to the embellishment of the book with appropriate initials and other decorative ornaments.' [*Studio*, vol. 16, pp. 183, etc.]. In the *Hobby Horse* each number and, of course, each page were treated as a whole. The decoration of the first number consists exclusively of some wood-cut initials by Image and some smaller wood-cuts. Image always tried to achieve unity, but he was rarely quite successful, while Mackmurdo, in the few works of graphic art for which his authorship is certain, proved in style and particularly in lettering an astonishingly mature mastery.

The woodcut on the title-page of his *Wren's City Churches*, 1, of 1883



1, *title page by Mackmurdo.*

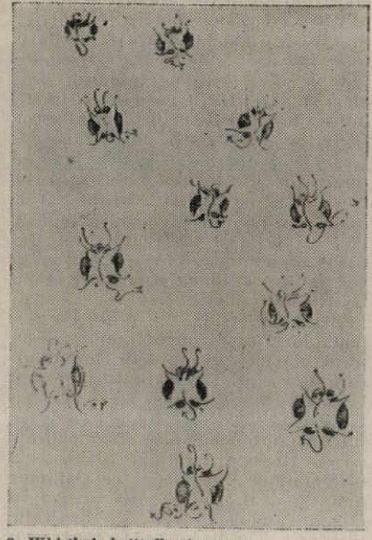
has been recognized as a milestone by Dr. Pevsner and accepted as such by Mr. Schmutzler. The oblong of the picture is framed by two highly stylized peacocks; at its base are name of author and particulars of publication. At its top there is nothing to close the composition equally firmly. The lettering below is in capitals. The type is drawn grotesque with each letter taking up a more or less square space. The picture itself with its flame-like or octopus-like S-curves is familiar. The original must have been done with a brush. The words Wren's City Churches stand on a kind of scroll. Their type is Roman capitals. But bars taper, contract and expand. Everything seems in motion. The letters are full of life and tension. There is no fixed rule for the appearance of a letter. The C appears three times in different forms, the S twice. The reason may be a conception of perspective or, indeed, the undulating



2, *signet of the Century Guild.*

character of the whole scroll. A similar case is the signet of the Century Guild, 2. On a black ground given the shape of a leaf with flaming indentations appears a white poppy on a curved stalk. The letters C and G twine round stalk and leaves. The letters are again broad and their bars expand and contract. Letters and vegetable forms are treated as on the same level of reality against the black ground. This unification of subject matter and lettering appears here for the first time. Artists of Art Nouveau were going to apply it often.

The innovations of Mackmurdo are so radical that one must try to investigate whether he can have acted under the stimulus of the art of any predecessor. In the literature so far on the subject there is only one hint. Dr. Pevsner in his article on Mackmurdo quotes from a letter which Mackmurdo wrote to him: 'When Whistler had his first one-man show, I helped him with the arrangement. He took meticulous care in placing each drawing or each etching in its place. The impression of the gallery upon entering was startling.' [N. Pevsner: *Journal of the Royal Institute of British Architects*, vol. 49, 1942, p. 94.] Now Whistler, with his enthusiasm for Japan and



3, *Whistler's butterfly signature.*



4, *Connie Gilchrist, by Whistler.*

his faith in composition for composition's sake, had indeed something to contribute to the evolution of script as well. Out of his initials JMW which in his early works he used as a signature, he began, in 1863, to evolve the celebrated butterfly in which the individual letters almost lose their identity, 3. [E. R. and J. Pennell: *The Life of J. McN. Whistler*, London, 1908, p. 125.] The butterfly became an important part of Whistler's paintings. Not only its form, but also its colour and its position became significant. Nothing could be more characteristic than the fact that there are unfinished pictures of his in which the butterfly is already complete. The relation of Mackmurdo's CG to these butterflies seems convincing.

As an example of Whistler's style of lettering the Connie Gilchrist of 1876 may be illustrated, 4. The script is Italic capitals, drawn with the brush as the Chinese and the Japanese did. Here also the technique and the results are similar to Mackmurdo's (see the N and the E in particular).

It is also likely that Mackmurdo was stimulated by Whistler's brush-script to use the brush for his woodcuts. Moreover, Whistler's idea of a composition as a whole instead of a sum of individual parts must have appealed strongly to Mackmurdo.

However, one other artist must have inspired Mackmurdo's attitude to ornament and script as much as



5, *page from The Dial designed by Ricketts.*

Whistler: Blake. Blake's part in the creation of Art Nouveau has been elucidated by Mr. Schmutzler. [ARCHITECTURAL REVIEW, August, 1955.] In the second number of the *Hobby Horse* appeared a facsimile of Blake's *Little Tom the Sailor*. Mackmurdo's comment to it is: 'What a marvellous sample of typewriting is the ballad written with a brush, full of stopping-out varnish on the pewter and while as legible as ordinary types, every letter has a naïve expression, capital letters flaunt capriciously down the page each giving a defiant little kick of its own.' [*Hobby Horse*, 1886, p. 159.]

Mackmurdo did not remain alone in his ideas on graphic art. Some five to ten years later other artists began to appear and other journals to be created in which similar tendencies were active, without dependence on Mackmurdo and also, it must be admitted, without the intensity of his title-page of 1883. The most important personalities are Charles Ricketts and Mackintosh. *The Dial*, the journal of Ricketts and his friend Shannon, came out in 1889–1897. Ricketts also illustrated books



6, *title page of The Dial by Ricketts.*

(Oscar Wilde's *Sphinx* and Longus's *Daphnis and Chloe*, 1893) and in 1896, the year of Morris's death, he started his own printing press, the Vale Press. In the first number of *The Dial* is a page with a square illustration without any text, 5. The profile of a man appears in the right corner. His hair is blown across nearly the whole space of the picture in flame-like forms. The artist was clearly more concerned with the undulations of lines than with his subject-matter. In the bottom right corner is his monogram, composed so vigorously and rigidly that the impression is of a signet rather than a mere monogram.

Ricketts also designed the title-page of *The Dial*, 6. It is a woodcut incorporating the lettering. Unity of the composition is achieved, although the letters are not homogeneous. They have far-stretching ascenders and descenders in common, but lack a sense of coherence. Even so, they herald certain peculiarities of later Art Nouveau lettering.



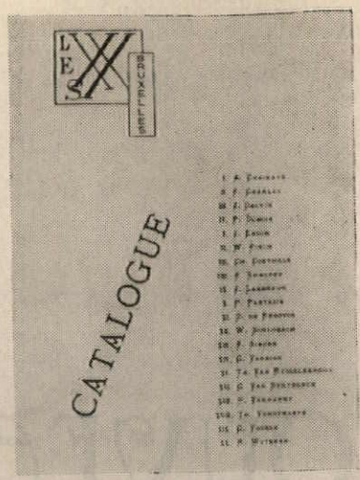
Of the two principal Continental countries in which Art Nouveau flourished early, Belgium and France,



7, *title page by Felicien Rops.*

France made her most significant contribution in the art of the poster. [J. Meier-Graefe: Der gegenwärtige Stand des Buchgewerbes in Paris und Brüssel, *Zs. f. Bücherfreunde*, vol. I, 1897; J. L. Sponsel: *Das moderne Plakat*, Dresden, 1897.] Jules Chéret was the leader from the early 'seventies to the early 'nineties. In matters of composition he was an innovator, but lettering, down to the time of the posters of 1894, he left to his draughtsman Madaré. [Sponsel, l.c., p. 20.] His texts are brief and easily understood. They are placed in the picture so that they can be taken in without effort.

Belgium during the crucial years had more importance than Paris in most matters and also in those concerning script. The mediator between France and Brussels was Félicien Rops (1833–98). He lived mostly in Paris and belonged to Baudelaire's circle. He began in the 'fifties as a lithographer influenced by Daumier and Gavarni. In 1858 he turned to etching. As a Belgian by birth he joined *Les XX* in 1884, that pro-



8, *title page with signet by Khnopff.*

gressive group which was founded in Brussels in 1883 and of which more will be said later. His attitude to lettering can be exemplified by the title page of *La Chronique à la Chambre par Petrus*, published in 1870, 7. A bearded dwarf gapes at a puppet show. In his hand he holds a grotesquely long quill. All objects are placed at an angle and overlap each other. Each object is named in thin Roman capitals. The letters here as well as in *La Chronique à la Chambre* are still in the tradition of French book illustration of 1840. The word Petrus is different. The letters have soft rounded contours isolating them from the background, from which they do not differ in any other way. The forms of the letters are curiously doughy. Their height as well as their width vary according to the available space. Where much space was left, letters grow to an excessive length.

No more of Belgian events need be commented on, until we come to the year of the establishment of *Les XX*. The group had neither a common idea nor a common programme. 'Voyez ou l'on va' was their motto. They held annual exhibitions and invited foreign artists to them. The catalogues of the exhibitions are of considerable typographical interest. For the first catalogue, that of 1884, 8, Fernand Khnopff, a member, designed the signet which appears on the title-page. The letters are in no way exceptional, though their arrangement is, with the S of Les cutting into the left serifs of the two Xs of Vingt, with the increasing size of the l, e, s, of Les and the boxed-in-vertical grotesque letters of Bruxelles. The same signet is used in a characteristically modified form for Khnopff's title-page of the catalogue of 1890, 9. The letters are now placed more organically, they are more ornamented, and one hook connects the bottom left-hand serif of one of the two Xs with the S. Also, the letters of Bruxelles are done rapidly with a fine brush and in imitation of Chinese characters.



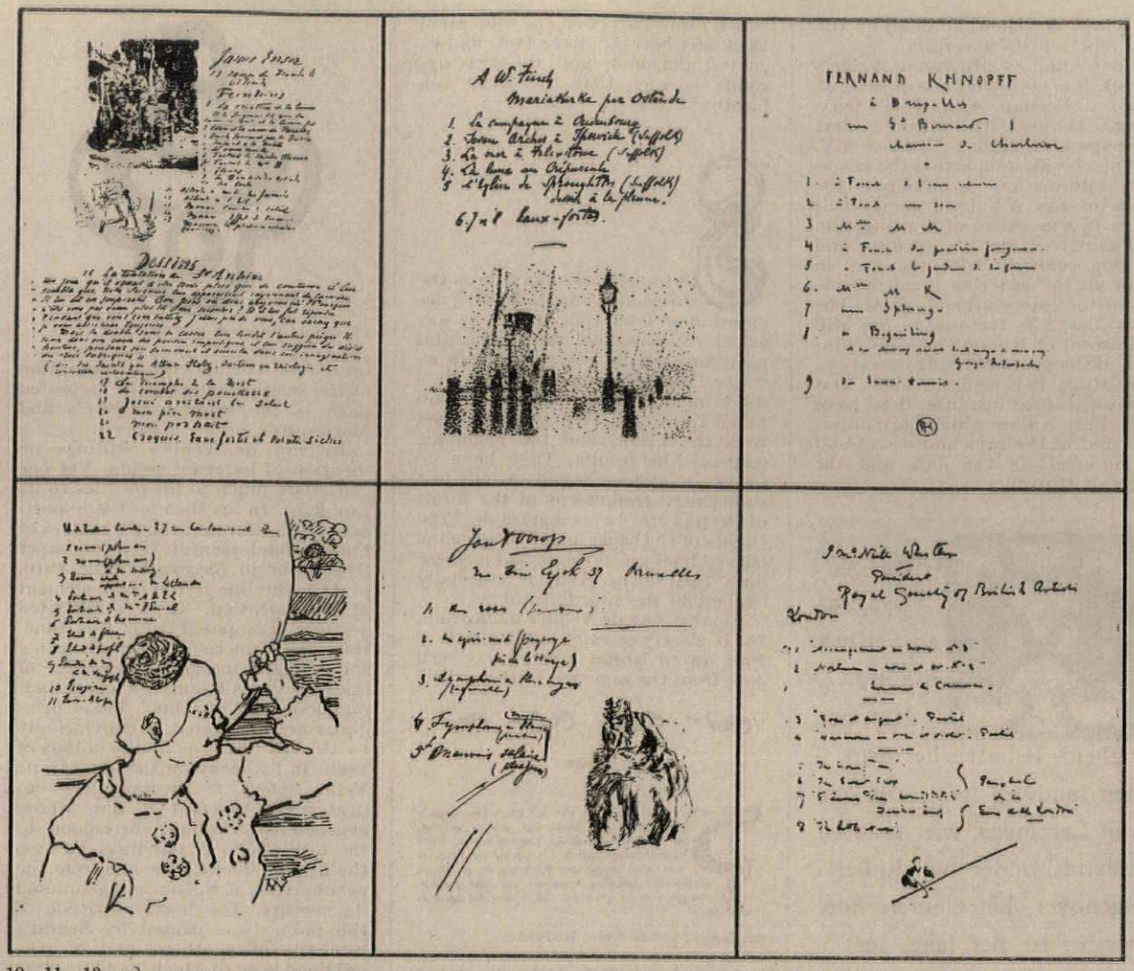
16, *catalogue page by Anquetin.*

More important still, in any comparison between the title-pages of 1884 and 1890, is the fact that the whole page in the second catalogue is pulled together more firmly. What is the explanation of this change of script and composition? Khnopff was a painter, and in his pictures English influence is obvious. So it is not surprising that the title-page of 1890 also shows elements not familiar in Belgium at the time but frequent in Belgium at the time but frequent in England. It must be remembered that both the *Hobby Horse* and *The Dial* existed in 1890.

Startling as the progress from the title-page of 1884 to that of 1890 is, 1890 was not the year of the first or the most important typograph-



9, *development by Khnopff of title page for Les XX.*



10, 11, 12, 13, 14, 15, *pages from the catalogue of Les XX in* 1888, *designed by Ensor, Finch, Khnopff, Toulouse Lautrec, Toorop and Whistler.*

ical innovations in the catalogues of *Les XX*. In 1888 they had brought out a catalogue which rightly made a great stir. [O. Maus: *Trente années de lutte pour l'art*, Brussels, 1926, p. 69.] In it every artist exhibiting was given a page to list his works in his own handwriting and with his own layout. This whole idea is, of course, eminently significant in our context, and since the pages are drawn by such artists as Ensor, Finch and Khnopff, all three founder members of *Les XX* and by foreign visitors such as Toulouse Lautrec, Toorop and Whistler, and since, in addition, they are almost unknown, they are illustrated here, 10–15, even where they are of no specific relevance for the evolution of Art Nouveau script. However, our page of the catalogue is, indeed, of the greatest relevance: that by Louis Anquetin, 16.

His drawing is surrounded by verticals and horizontals which do not form a complete frame. They are broken in places, once to make way for the initial of Anquetin's name and twice to allow the drawing itself to extend beyond them. On the left it is a pillow that overlaps the frame. On it lies a girl whose small round face is hardly visible for the undulating streams of her hair. The script is basically a normal written script, but the writing is very irregular with sudden fatter and thinner lines or words. The whole lettering is convincingly and yet apparently quite casually of a piece with the drawing.

Anquetin was a member of the École du Petit Boulevard which had formed in 1887 and to which Toulouse-Lautrec, van Gogh and Bernard also belonged. But Anquetin was in those early years its moving spirit. [H. H. Hofstätter: *Die Entstehung des 'Neuen Stils' in der französischen Malerei um* 1890, Dissertation, Freiburg i. B., 1955, Chap. 6.] A typical painting of his is *Bus-Horses* of 1889, the year in which *The Dial* was started, 17. The way in which the manes of the horses are blown into the picture so as almost to make us forget what they really are is so closely similar to the page illustrated from the first number of *The Dial* that a borrowing on the part of Anquetin must be suggested. Here may well be the very point where inspiration from English graphic art among this group of French painters and then amongst the young Belgian artists began. But there are no further works in France and Belgium in which script plays an essential part, and so nothing need be shown here until we come to Toulouse Lautrec's posters and the graphic explorations of van de Velde.

In the case of Toulouse Lautrec, it can be shown that his interest in lettering was awakened only by the problems inherent in poster design. The difference between Toulouse Lautrec and Chéret is that Lautrec draws his letters on the lithographic stone as part of the process of drawing the figures and setting of the poster and together with it. This is proved by the fact that in all the various stones needed for preparing the parts of the composition which will appear in the individual primary colours the lettering is contained. Only one of Lautrec's posters can here be illustrated, 19. In the *Divan Japonais* of 1892 the type is Roman drawn in dark outlines only. Inside the outlines all is white. The short strokes into which the outlines are broken up give the letter a restless, frayed, accidental appearance, an effect no doubt intended. The composition of the *Divan Japonais* is typically Art Nouveau, especially in the identity in terms of pattern between the letters and the fish.



17, *painting by Anquetin in Bus-Horse.*



18, *poster by Toulouse Lautrec.*

However, of van de Velde a good deal more must be said. He was born in 1863 and died less than a year ago. The members of *Les XX* first noticed him in 1886. [O. Maus, l.c., p. 49–50.] He was mentioned as a skilful painter by Rysselberghe and Heymans. In 1889 he joined, at the same time as Georges Lemmen [*ib.* p. 84.] Before he joined he had followed the Neo-Impressionists round Seurat. Then, after an illness and a crisis, Finch, who belonged to the group round Seurat but who was of half-English descent, drew his attention to Morris and the Arts and Crafts. [Maus quotes a letter from Whistler which shows that Finch knew Whistler; *ib.* p. 48.] So van de Velde decided to turn from art to decorative art. Seurat had said: that an artist's first preoccupa-



19, *title page by van de Velde.*

tion before his canvas ought to be to decide 'quelles courbes et quelles arabesques vont en découper la surface.' [J. Rewald: *G. Seurat*, Paris, 1948, p. 55.] Such notions must have impressed van de Velde greatly. He was also in touch with van Gogh who met Seurat in this same year. [A. M. Hammacher: *Catalogue of the Kroller-Müller Museum*, Otterlo.] In addition van de Velde speaks of inspiration received from Japan and also from Puvis de Chavannes, whose work is 'the matrix of the ornamental.' [*Die Renaissance im Kunstgewerbe*, 1901, p. 44.] But in spite of undergoing this variety of influences, he yet managed to remain entirely himself.

His first piece of graphic art containing lettering is the title-page to Max Elskamp's book *Dominical*, 19. It is a woodcut and was made in 1892. That the drawing was done with the brush is unmistakable in the softness and roundness in which the lines start and in their curves and scrollings and taperings. The motif may be light dunes in front of a dark sea, but it is entirely drawn into a linear composition in two dimensions. The word Dominical is written in capitals with all uprights gently bent and with the angles of M and N turned into curves.



20, *title page by van de Velde.*

The script is somewhat small on the page and a little uncertain.

If one enquires into van de Velde's sources, it is clear that one of these at least was Belgian. As early as 1891, Georges Lemmen had made his first title-page to a catalogue of *Les XX*, 20. This, besides imparting the necessary information symbolizes the claims of *Les XX* by placing their names in the centre of a rising sun. This contrived identity of form and meaning connects with the way in which all the lettering is an organic part of the compositional whole. The words *Les XX* themselves are still reminiscent of Khnopff's on his catalogue of the year before. However, on closer study it becomes evident that the letters of for instance, 'Les' have a new flow, a flow which harmonizes with that of the rays and waves and the numerals of the date and the letters of Bruxelles.

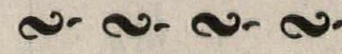


21, *vignette by van de Velde.*

In 1893, some members of *Les XX* founded the magazine *Van nu en straks*. Among them were Lemmen, van de Velde, Finch and van Ryssel-berghe. In the first number there were small pieces by them, mostly vignettes. The layout of the number is pleasant. On page 17 the initial M of the word moeder is by van de Velde, 21, Moeder is Flemish for mother and hence perhaps the four heart-shapes against which he set the fat uprights of his M and the fifth which forms part of it. The contrast of thickness between these two double-curved diagonals and the two uprights is such that the letter can hardly be read.

So forceful must have been the impact of van de Velde's decoration of 1893, that in 1896 he was asked to undertake the ornamental part for a whole year of *Van nu en straks*. The initials and the tail-pieces used in the present article are all taken from this. They were designed with the brush, and the technique controls the results. They have no frames or accessories and are only just sufficiently reminiscent of the forms of letters to be recognizable. The shapes of the background between the curved lines are as significant as these lines themselves. That is especially evident in the two different Ss.

Finally, van de Velde's monogram, 23. It closely resembles the initials of *Van nu en straks*, and it may well date from the same year. [It was first



Rouw

I

EEN elleboog steunend op de tafel, liet Paula haar tragisch bleek gezicht, in kommerlijk gepeins gefroust, tot tegen de lange slanke vingeren zinken. Strak staarden haar oogen in den scherm der lamp, in wier schel afgeperkten lichtkring de geelblonde geaureoolde krullekop opglanste van haar jongetje, gebogen over een groot wit blad, waarop hij figuurtjes krabbelde.

22, *typical van de Velde headpiece.*

published in *Dekorative Kunst* in 1899.] The three initials H, v, V are stylized into an ornamental totality and placed without any concomitants against the white of the ground. The H is made of one line and is reminiscent of a 5. The outer V is of trefoil shape, the inner is placed concentrically and provided with a bold loop. The three lines do not overlap anywhere. Van de Velde designed his letters as part of posters, title-pages or pages in magazines. They were never done as script for script's sake and have no special prominence in



23, *van de Velde's monogram.*

his œuvre. The underlying conception of the relation of script to decorated page is the same as Blake's and Mackmurdo's.

In van de Velde's writings no mention of lettering occurs. Yet one can relate much in his theories to its problems. In his theories the importance of the line and the interaction of lines is fundamental. [See the paper 'Die Linie' in *Essays*, Leipzig, 1910, p. 41.] The line is the basic element of his creation, it is 'translated gesture.' Compared with this function the function of representing something is marginal. Sequences of lines are the outcome of a 'commanding desire for rhythm.' These principles are illustrated as convincingly by the tail-pieces as by the initials of 1896. In his essay on the line van de Velde refers to Seurat: 'He endeavoured to find a line whose characteristics would correspond to the new efforts of our time. He was the first to liberate the line from the peculiarities of romantic rhythm and its accents. The hostile attitude of the public was caused by Seurat's principle of synthesis and of pre-ordained laws to which his silhouettes had to be subordinate.' In exactly the same way the letters themselves in his initials of 1896 are subordinated to laws of linear construction. That constitutes their fascination and endows them with a power beyond the limits of a dated phase in the development of lettering.



HUBS WITHOUT WHEELS

The completion of the Market Square at Harlow, the first and most vital section of the eventual town centre, invites an appraisal of the town-planning practices that helped to create it. However, standards of comparison are not easy to find, and even that highly-regarded yard-stick, the town centre of Vällingby, is one that needs to be used with caution.

Harlow is an independent satellite town, and was not intended at any stage to be a commuters' dormitory for London; Vällingby, on the other hand, is a sort of super-suburb of Stockholm, which is intended ultimately to have some independent life of its own, but such an independence was not, so to speak, built into the planner's brief from the start.

Nevertheless, comparisons can be made at close range, leaving on one side, for the moment, the larger picture of social policy, and there are striking similarities between the two. Both accept the presence of large areas of car parking so disposed as to isolate some part of the market area from the rest of the town, and both try to re-establish contact between market and town by a prospect of tall towers of flats seen over the parking zone. At Harlow the link is tenuous because there is only one such tower-block, while at Vällingby the different pattern of Swedish living has made it possible to create a rank of such towers, whose presence is made more appreciable by their being sited on rising ground. Vällingby has a further advantage in that the location of the commuters' railway station in the middle of the square physically guarantees a certain amount of

bustle and life at all hours that the trains run, whereas Harlow runs some risk of 'going dead' after the shops have shut.

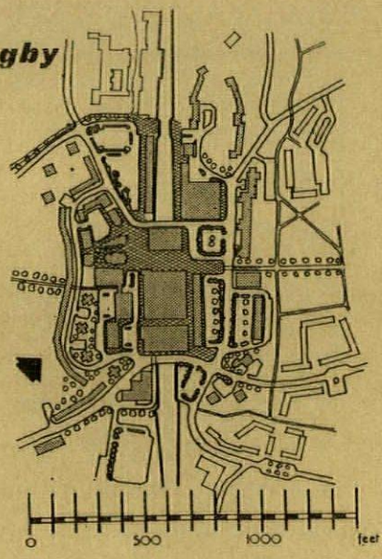
On the other hand, the planning of Harlow's centre is richer, both spatially and topologically. In spite of the picturesque roofscape of the two central blocks at Vällingby, they remain essentially a couple of isolated monuments in the middle of an open piazza across which the shopper must walk some distance to the other shops, cinema, etc., situated on the perimeter.

Harlow, on the other hand, has its blocks of shops disposed so as to frame an almost completely enclosed and sheltered square, across which short pedestrian transits interlace through a live shopping area of stalls and booths. At the western end of the square pedestrian circulation leaves ground level and ramifies into a series of first floor bridges and balconies. This usage, which can be paralleled in other, similar developments in England (e.g. at Coventry) has much to recommend it. Not only does it disentangle different streams of pedestrian circulation at points of congestion, but it also makes for a more efficient utilization of the buildings without the complication of extra access stairs, and it also follows naturally from the now firmly established practice of locating maisonettes, with their front doors at first-floor level, above rows of shops. Indeed, further development of the idea of such high-level pedestrian circulation might clear more ground space for car-parking and vehicle turn-rounds, and thus lead to more compact planning than either Harlow or Vällingby can yet show.

COMPARATIVE LAYOUT OF VÄLLINGBY AND HARLOW CENTRES

Vällingby Centrum offers social, commercial and cultural services to an estimated ultimate population of 100,000. The scale of these services is suburban, and a station on the rail link with central Stockholm forms part of the centre, which is

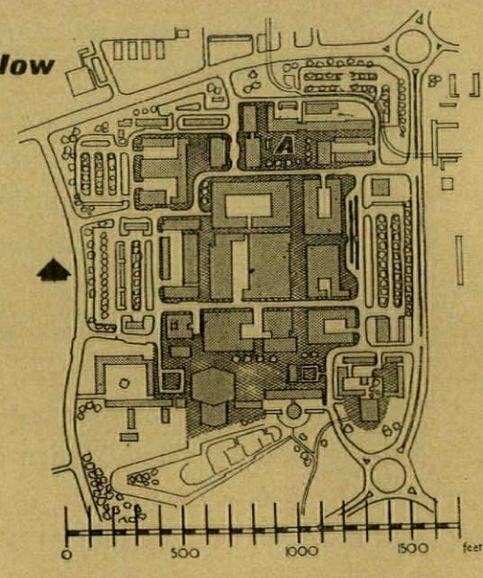
Vällingby



planned as a sequence of three large blocks of buildings, islanded in a broad piazza ringed by smaller structures.

The High, Harlow, serves a New Town population of ultimately 60,000 on central, rather than suburban scale, including large department stores, and thus draws in shoppers and others from an unspecified catchment area beyond its own boun-

Harlow



daries. The basic planning concept is of pedestrian walks and piazzas threaded between blocks of buildings, isolated from vehicular traffic by a ring of car-parks.

Vällingby



2, Vällingby Centrum, seen from a tower-block on its eastern side, looking the main pedestrian concourse.

Though the planned suburb of Vällingby has an intended population of 23,000, its town centre is intended to serve also four other suburban areas —Rackstra, Blackeberg, Hasselby Strand and Hasselby Gard—already built or under development, that should give an ultimate total population of some 100,000. The five areas together do not, however, constitute a satellite town, but a new city sector, contiguous with existing developments under the Stockholm master plan.

Since only about twenty-five per cent of the population will work in the new development at first, Vällingby centre has the dual function of serving as a transit point for commuters as well as a cultural, administrative and commercial centre for the new neighbourhoods. The two functions are closely, indeed physically integrated, since the main blocks of shops and offices are situated directly above the Tunnelban, *and have access to its sidings below ground, and the exit from the station delivers travellers directly to the pedestrian concourse that runs up to the public buildings on the south-west side of the centre. The bus station lies immediately adjacent to the station on the other side, and is flanked by the main car-parking area.*

The main square, with the railway beneath it, occupies the bottom of a shallow valley with the ground rising more or less steeply on either side. The public buildings—Town hall, theatre, cinema, library, etc.—are distributed up this slope at the western corner of the square, and make a separate enclave around their own car park, with steps leading down to the main concourse. At the opposite corner, pressure of parking needs led to the decision not to build all the shops originally intended for that site, but to lay out the main car park mentioned above. At the northern and southern corners, residential accommodation is brought close up to the centre itself, in the form of ranks of tower blocks (those to the north having shops and offices underneath) standing on the first slopes of the rising ground.

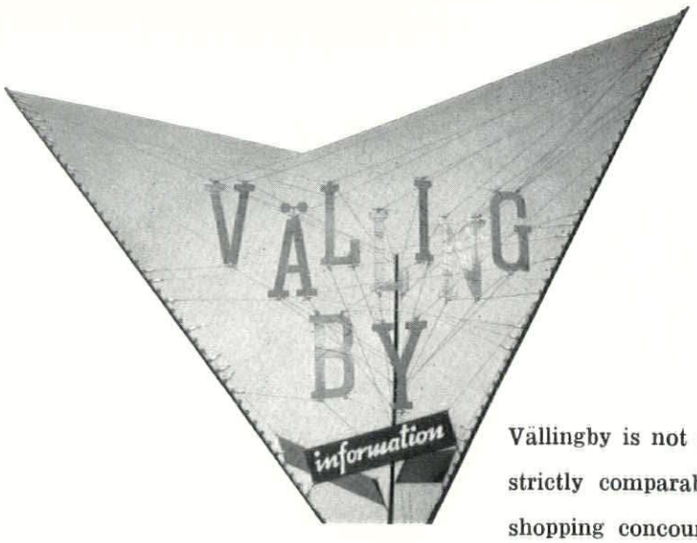
Thus, in spite of the fact that it is completely ringed by motor roads, the square is kept in close touch with the housing that surrounds it

key
a, offices and shops.
b, department store.
c, underground station.
d, offices.
e, offices.
f, theatre.
g, cinema.
h, assembly rooms.
i, church.
j, town hall.
k, library.
m, youth centre.
n, sunken garage.

0 100 200 300 400 500 FT

3, air view of the central area at Vällingby from the south, showing the relationship of the Centrum to the surrounding housing.





Vällingby is not a satellite town but a planned suburb: its central area is not, therefore, strictly comparable in social function with that of Harlow. Nevertheless, a pedestrian shopping concourse with offices and public buildings has many visual and architectural problems in common with any other concourse containing similar buildings, and it is these common problems that form the basis of the confrontation of the two schemes on the pages that follow.

1. the western corner of the pedestrian concourse, seen from the top of the staircase serving the first-floor restaurant of the main block of shops. The station building is seen to the right. Photographs by G. E. Kidder Smith.

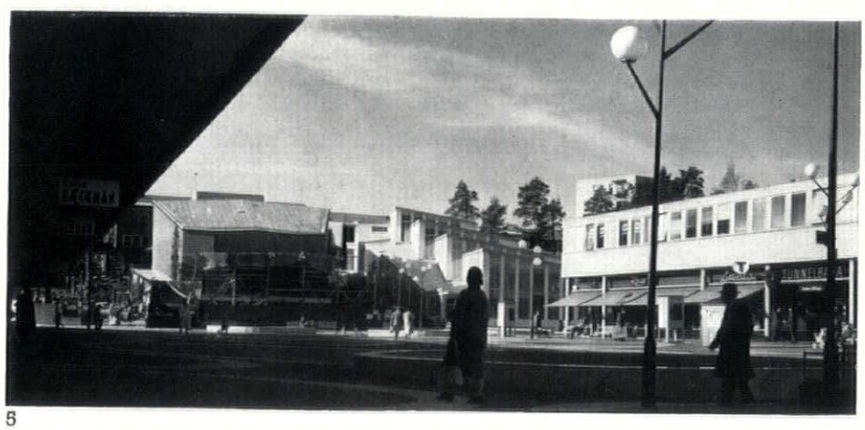


4

4, the station building, by Magnus Ahlgren, left; the main pedestrian concourse; and the block of shops by Backstrom and Reinius, right. Although the structure of this last block is a very regular system of columns and beams, rising from the level of the railway below, full advantage has been taken of functional differentiation above ground level to create a diversified sky-line. 5, a view in the opposite direction, with the station on the right, and the uncompleted cinema and assembly rooms beyond.

Vällingby

in its park-like setting, one specific point that was borne in mind by the planners being that the lighted windows of the surrounding apartment blocks would keep the central area visually alive at night, after the shops and offices were closed. Throughout those residential areas, circulation is laid out on Radburn principles—that is, motor-cars, cyclists and pedestrians have their own independent routes to travel on, and this system is continued right into the centre, being brought into the square on the north-eastern side through a tunnel that leads under the motor road, and connects the main pedestrian concourse with the area of greenery set aside for festivals and entertainment.

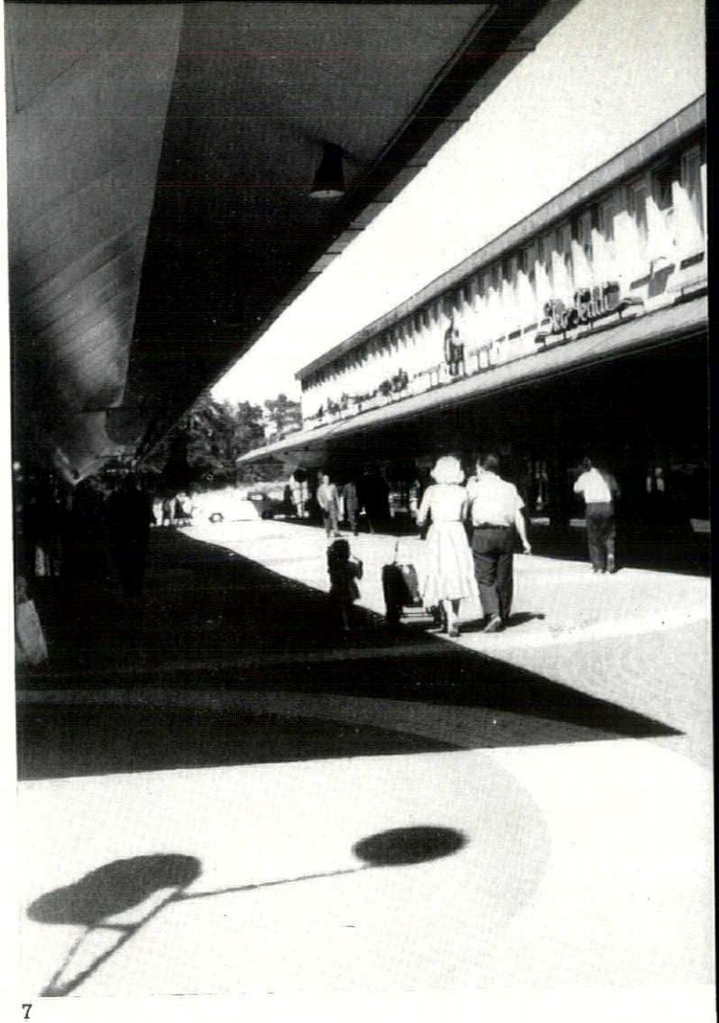


5

Vällingby



6



7

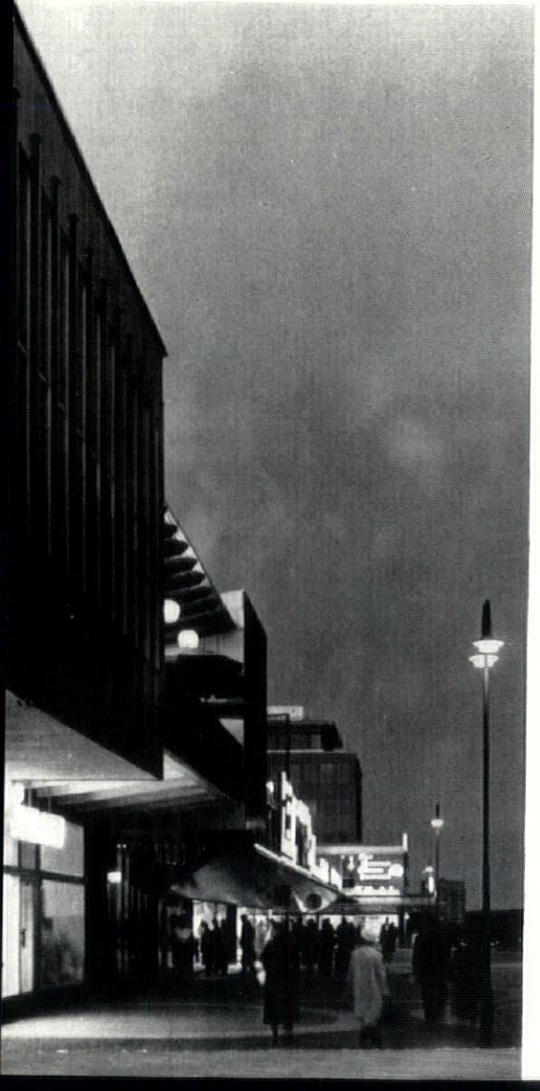


8

6, the main block of shops, with the mixed block of two-storey shops and six-storey offices beyond, and another mixed-occupancy block, of shops and social services offices, right.
7, a view through the narrow concourse between the two blocks of shops toward the main car-parking area beyond.
8, shoppers and hanging signs under the canopy of the main block of shops; a similar canopy shelters the windows of the further block, beyond the narrow concourse. Some of the signs, both hanging and illuminated, at Vällingby, have been criticised by foreign observers, but their general quality is extremely lively, and they do much to build up the animation of the total scene.



9



10

9, at the western corner of the main block the standard canopy is replaced by the overhang of the first-floor restaurant. At the far end of the concourse is one of the towers of flats by Jarl Bjurström, beneath which runs a single-storey group of offices and shops.
10, a night view, taken from the same viewpoint, but looking along the other face of the block. Between the two projecting parts of the restaurant is a first-floor balcony. Note the earlier type of street-lamp, later replaced by the 'tree' pattern seen in other illustrations.

Vällingby



11

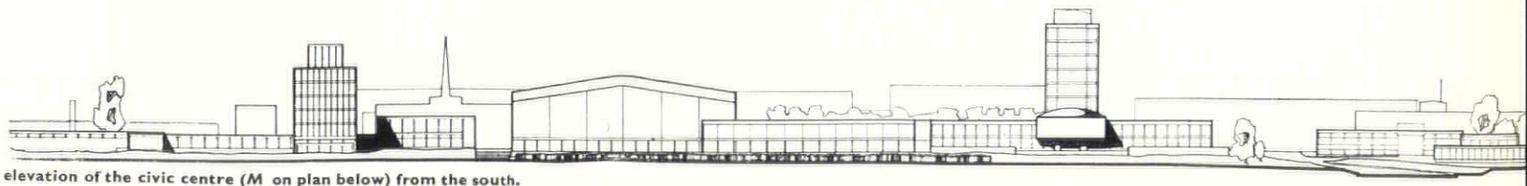


12

13

11, the booking-hall of the Tunnelban (underground railway) connecting Vällingby with central Stockholm.
12, one of Bjurström's tower blocks seen from the northern corner of the station building.
13, the platform of the Tunnelban from the low-level walk to which access is gained by the flight of steps seen in 1, p. 375.





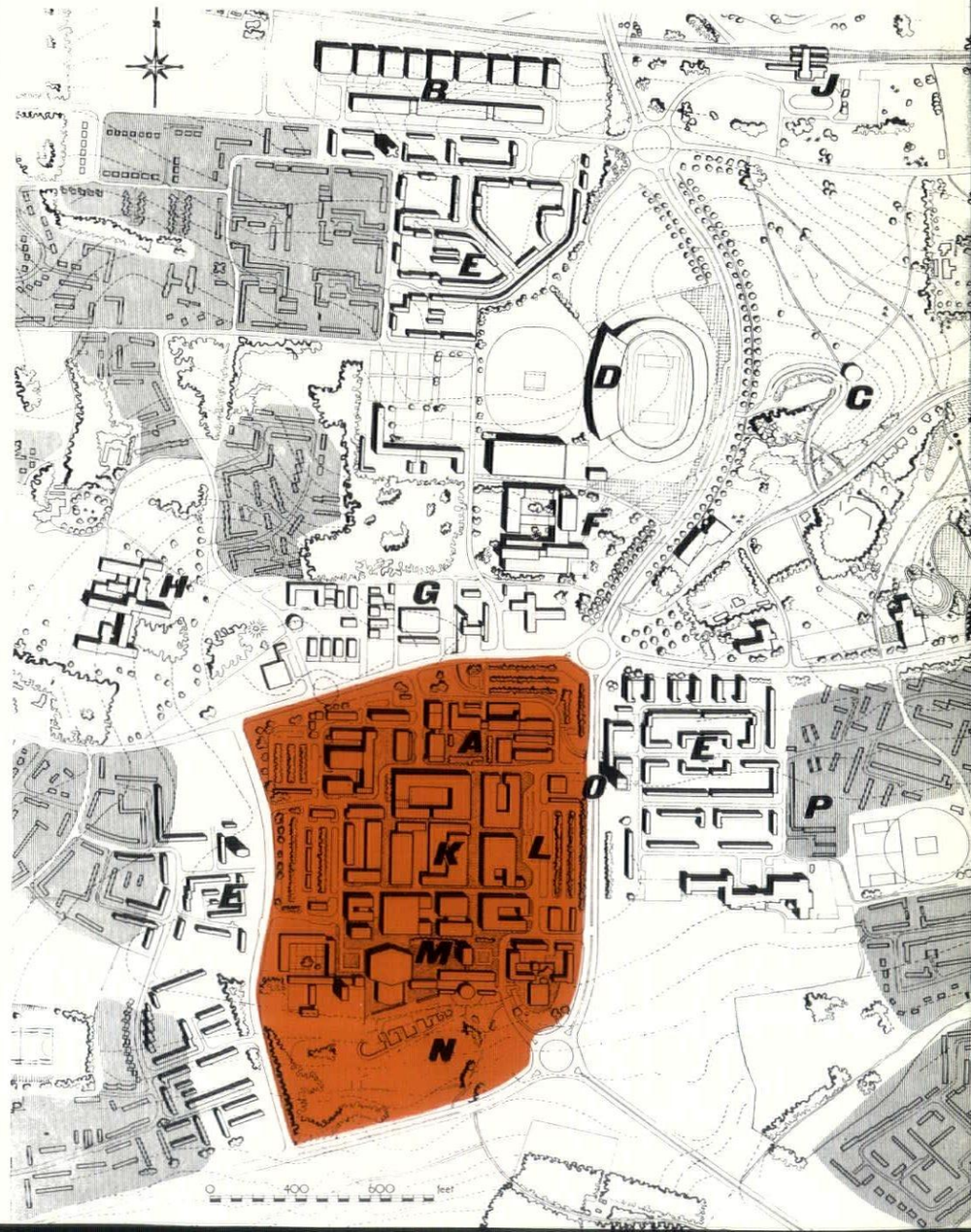
elevation of the civic centre (*M* on plan below) from the south.

Harlow is not a suburb but a complete town, and it must provide all cultural, administrative and commercial services short of those proper to a metropolis. In planning the whole central area (see map below), all these have been brought together in such a way that their overlapping interests help vitalize the urban scene which comes to a climax in The High (coloured on the map). In the commentary which starts below the Architect-Planner, Frederick Gibberd, discusses the planning and architectural principles behind the design.

HARLOW

PLAN SHOWING TOWN CENTRE (COLOURED) AND CENTRAL AREA

key				
A, market square.	C, town park.	G, service area.	L, bus station.	P, mark hall, Netteswell neighbourhood.
B, warehouse and service industry.	D, sports area.	H, hospital.	M, civic centre.	
	E, housing area.	J, railway station.	N, formal garden.	
	F, offices.	K, shopping.	O, main town road.	



functions of the central area

In order that the town centre will be at all times alive and busy, as many different activities as possible are drawn into its orbit. Unlike the unplanned town, buildings like the sport stadium, hospital and the swimming pool are all associated with the central area.

The central area extends from the railway station on the centre of the northern boundary of the town to a plateau on the top of the hill where the main business and civic centre dominates the rest of the town. The disposition of the parts is shown on the plan (right) and is broadly similar to the original sketch design. The old railway station Burnt Mill has been redesigned by the Railway Executive and adjacent to it, on the west, lying alongside the track is planned an area for warehouses and service industry. The town park extends to the south of the town from the Stort Valley and is formed from an existing valley of irregular contour and attractive character.

The swimming pool and open air dance floor sharing restaurant facilities are to be provided at the head of the valley by the Urban District Council. The existing hamlet is retained and two sites have been reserved for hotels, one near the Station and the other near the business centre.

The town sports area is to the south of the service industrial area and forms an extension of the town park. Above the sports area and towards the top of the hill is an area reserved for those ancillary services that require a central position, but are best kept out of a shopping centre as they tend to devitalize it. Buildings already constructed in this area are the fire station by the county architect and the health centre by the development corporation; before long a start will be made on the bus garage and telephone exchange. A service area is set aside for those workshops and warehouses that have close affinities with shopping and a ten acre site is reserved for special buildings. To the west in splendid parkland and near to the health centre will be the 300 bed hospital by Easton & Robertson, upon which work has now started.

patterns of circulation

The centre is still the focus of the town's traffic system, but it has been redesigned to give the pedestrian priority over the motor car in the inner core. The plan (below) shows the space pattern.

The north-south dual carriageway road keeps through traffic out of the centre. A roundabout at the south connects up to the two radial approach roads from the south-east and south-west and gives access to the Civic Centre. A roundabout at the north connects up to the east and west roads, railway station and the future motorway on the north.

A secondary north to south road is made on the west side of the centre, but here there is a split 44 ft. carriageway so that there is a close link with the adjacent neighbourhood.

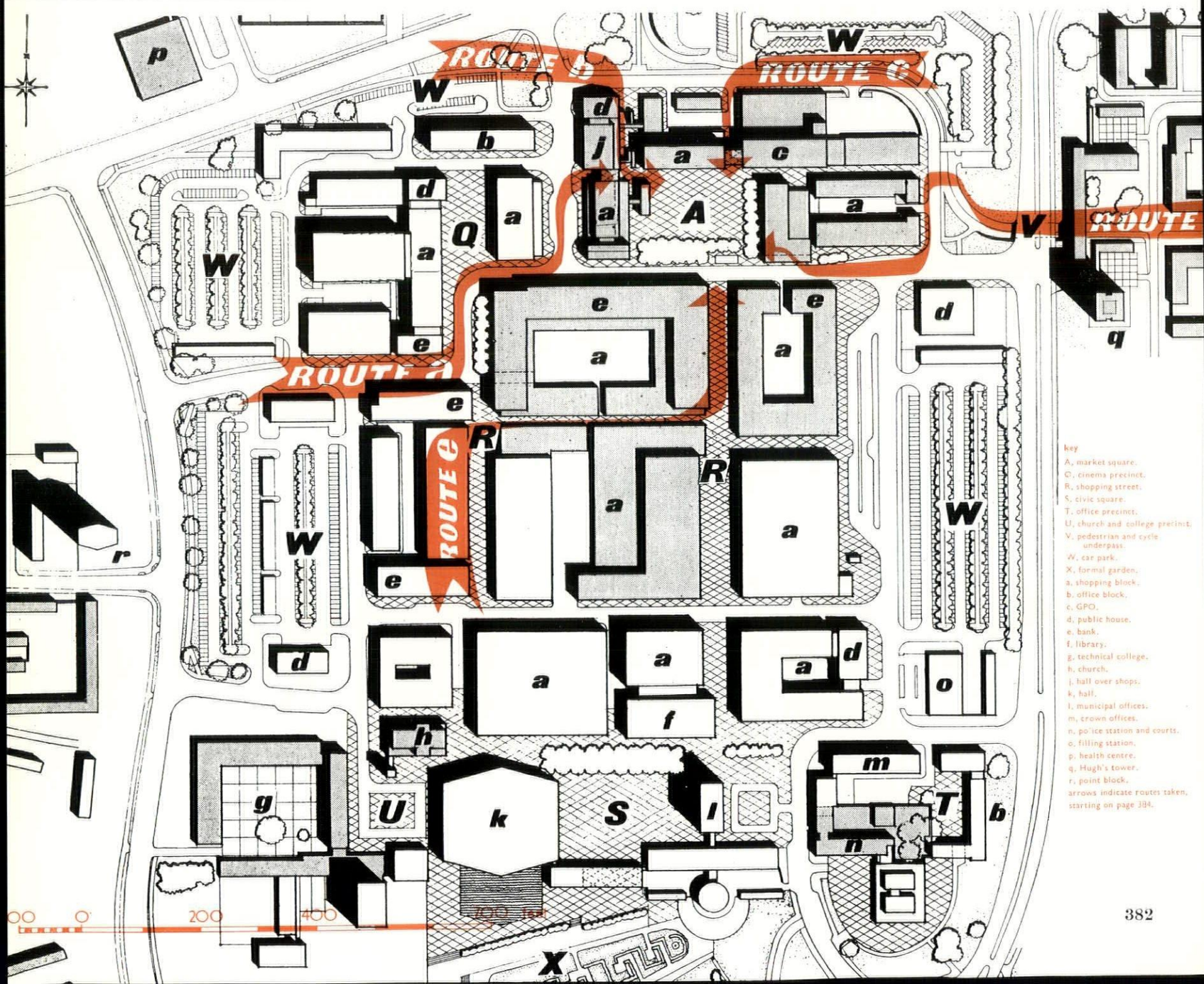
The area thus defined by the main road system is roughly rectangular in shape and of 84 acres. The centre itself turns its back on the roads and looks inwards towards the pedestrian core.

Between the main roads and the centre are broad parking belts connected together by a 30 ft. wide inner periphery road. Numerous pedestrian short cuts connect the parking belts to the inner core. The motorist can thus drive reasonably close to his destination and park without difficulty—one of the reasons for the centre's popularity on market days. The total number of car parking spaces is 2,000 and there is space for expansion. It will be seen from the plan that there are no public parking areas in the heart, the object being to draw off the motorist immediately he leaves the main town road. There is access from the periphery roads to the service courtyards of the various building groups. The service courts apart from giving access to the individual buildings provide parking spaces for tenants' motors and cycles. Buses are excluded from the centre, except on the east side where the bus interchange station is situated on the periphery road where it has immediate access to the heart of the shopping centre: a proposal to site the bus station in the market square was fortunately resisted. The character of this arrangement is entirely different from that of existing towns. Instead of driving between buildings that get progressively denser and denser, one drives rapidly between areas of equal density to arrive at the centre which is seen as an even and compact building mass across an open space. The experience is somewhat similar to coming upon a mediaeval town with its fortifications and moat.

The independent footpath and cycle system designed for the town is linked to the centre by underpasses from the north, south and east. The east entrance is marked by a tall flat block, Hughs Tower, and the cycle track passes under the adjacent three storey flat block. A similar flat block will indicate the west entrance, and that on the north is marked by the tower of the Fire Station.

The underpasses lead into the internal road system on which cycle parks are situated and cycle racks are placed at the entrance to the various pedestrian precincts.

PLAN OF HARLOW TOWN CENTRE WITH COMPLETED BUILDINGS SHADED



Harlow: General Manager. B. Hyde Harvey, Architect-Planner, Frederick Gibberd. Executive Architect, Victor Hamnett. Chief Engineer, O. W. Gilmour.

The following architects worked on the town centre: Senior Architect, A. J. McCowan. Architect-in-Charge, H. Tikten. Assistant Architects: D. S. Roberts, D. G. Fenter, W. G. Reed, J. A. Graham, K. G. Ellis, G. A. Hewlett.

Stone Cross Market, Harlow, was not completed until almost a decade after work on the town began, and adjoining areas of The High are still incomplete. The general principles of town design are still, broadly, those described in the ARCHITECTURAL REVIEW for March 1948, but modified in the direction apparent in a further article in May 1955. By that time a clearer view of performance and usage in such areas had been gained through the trial run at the Stow neighbourhood centre, and although the delay in building the main centre had imposed short term hardships on the early inhabitants, they have been rewarded, in the long run, by a more subtle and humane design. Also, the town had 30,000 citizens by then, and was becoming an established regional centre, so that from the beginning, Stone Cross Market presented an air of business and bustle. The photographs below show two views of the square on market day. Right, a roadside direction sign.



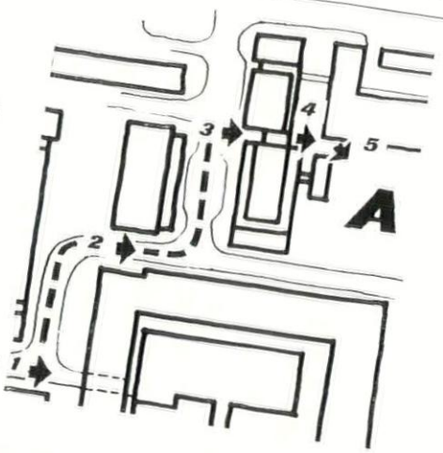


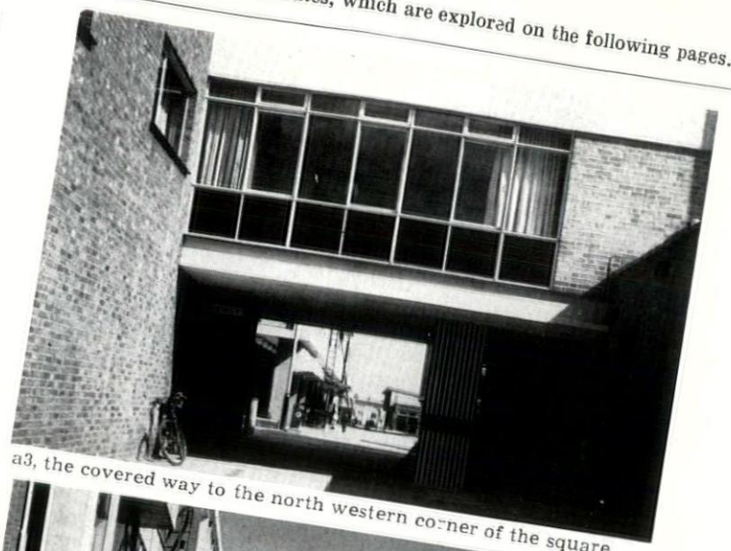


Harlow

Wheeled and pedestrian traffic penetrates Stone Cross Market (A on each map) along carefully designed routes, which are explored on the following pages.

The first route approaches the market square from the west, first following the vehicular access along Westgate and Northgate, turning into the square proper by the covered way at its north western corner.

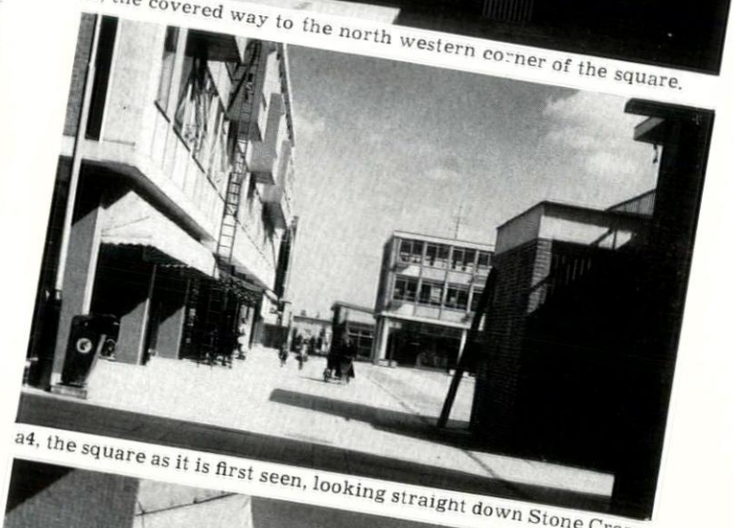




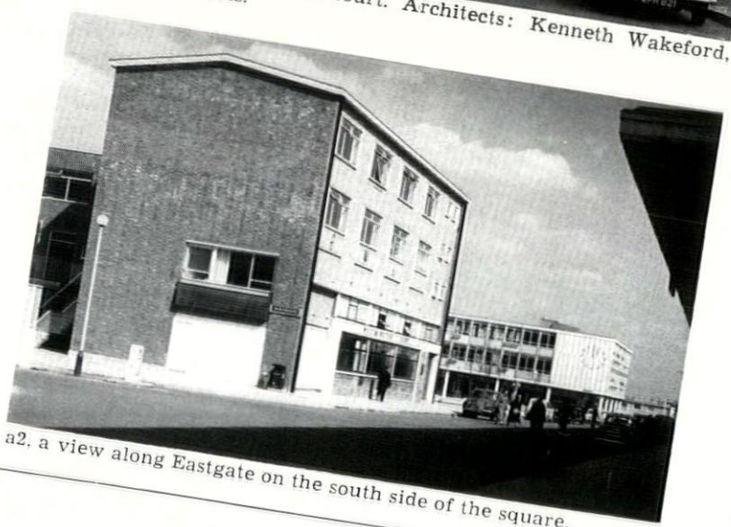
a3, the covered way to the north western corner of the square.



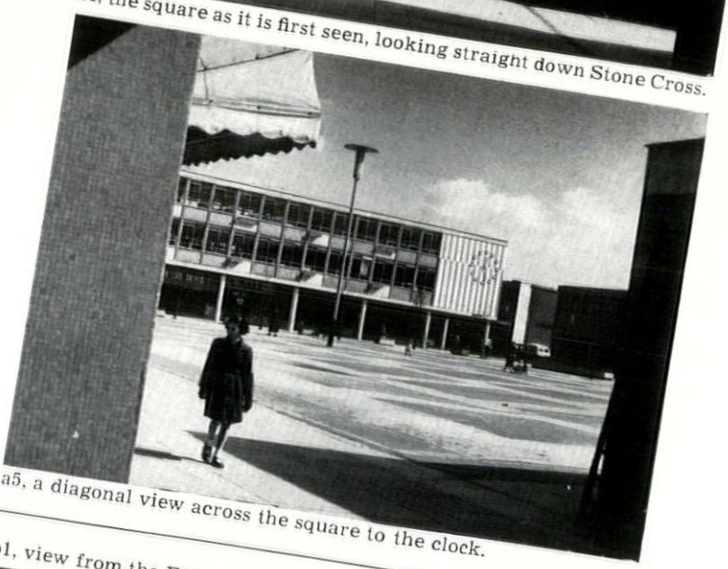
a1, entrance to service court. Architects: Kenneth Wakeford, Jerram & Harris.



a4, the square as it is first seen, looking straight down Stone Cross.



a2, a view along Eastgate on the south side of the square.

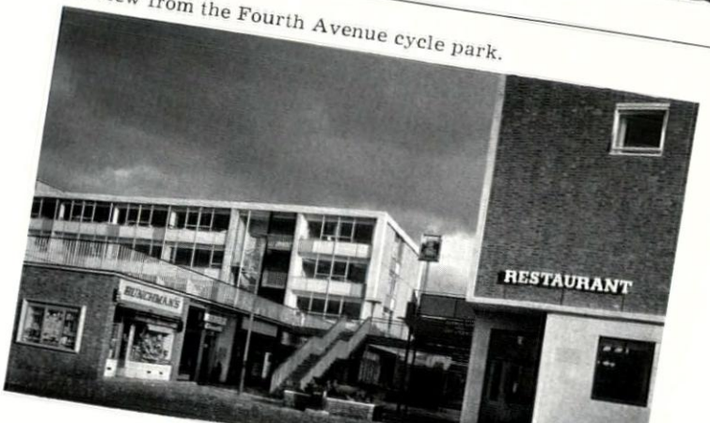


a5, a diagonal view across the square to the clock.

The second route enters the square by way of the precinct of local shops, from the north, next to the Painted Lady public house, and at the point of maximum three-dimensional interest, where stairs lead up to the high level galleries.



b1, view from the Fourth Avenue cycle park.



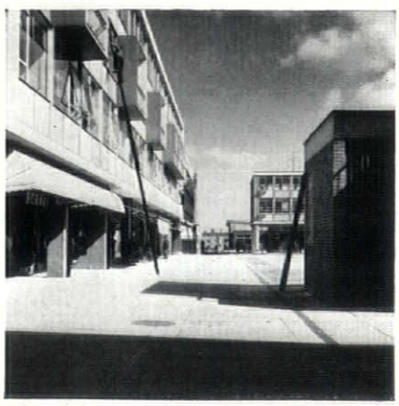
b2, the stairs up to the galleries, between the Painted Lady and the back of Market House.



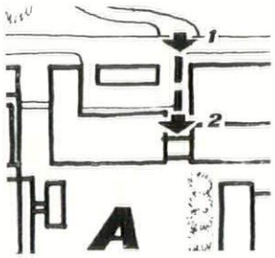
b3, between the two sets of stairs, with steps up to the main market level beyond.



b4, 5, at the point of entry to the market proper, the view straight ahead leads to Eastgate, and to the left is the same as in a4.



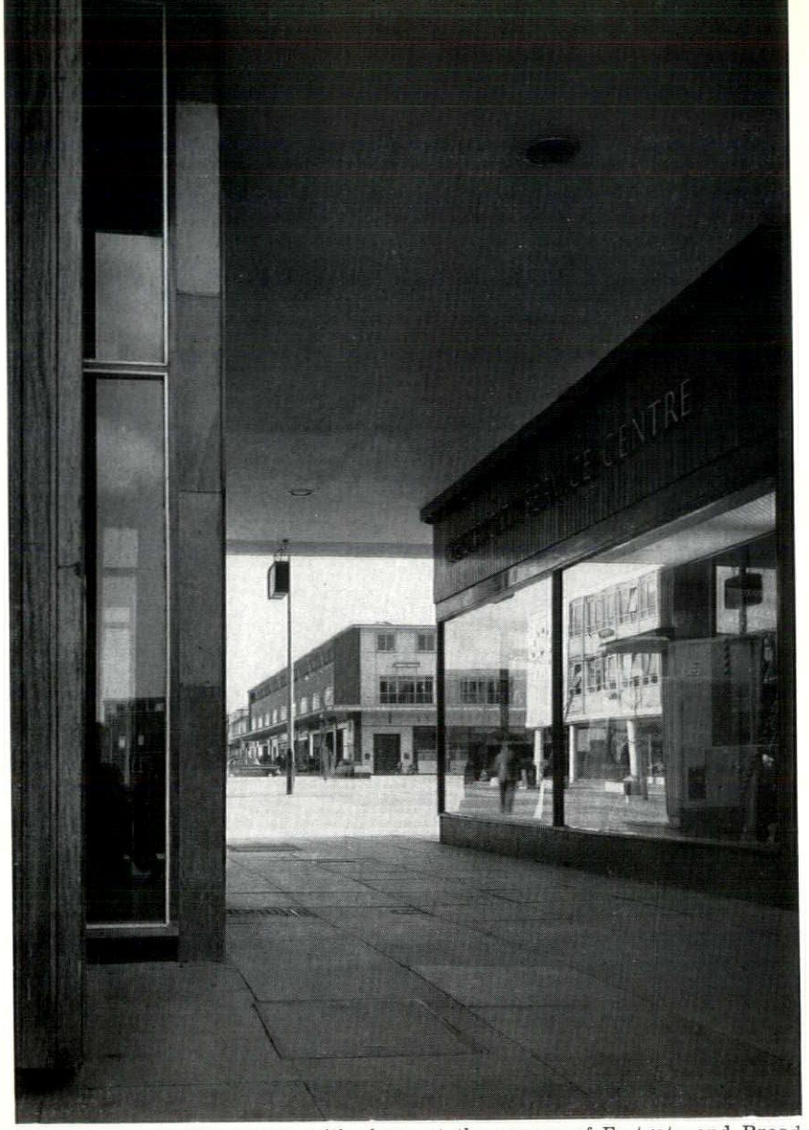
route c



Pedestrians and cyclists coming to the market square by the main underpass below Fourth Avenue are delivered directly to the entrance that debouches near the north eastern corner, in line with Broad Walk.

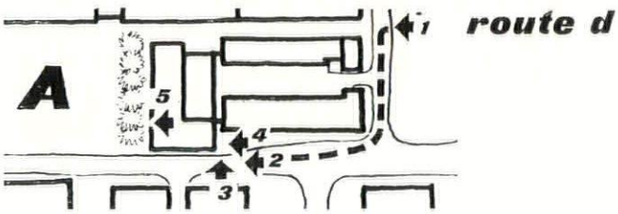


c1. the back of Market House seen from the service road that rings the square on the north.

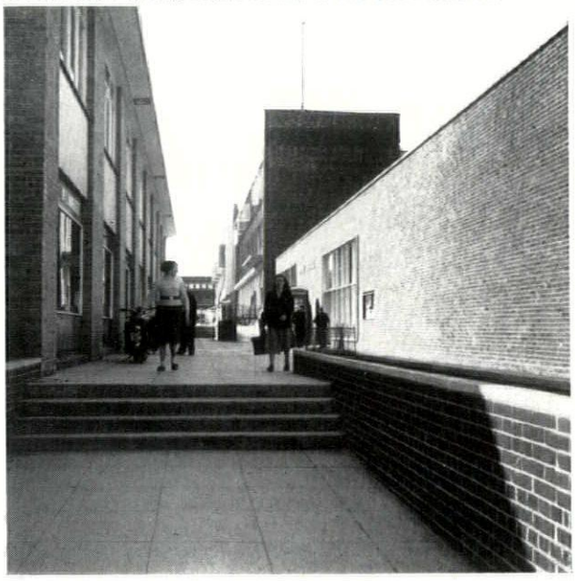


c2. the entry to the square, with shops at the corner of Eastgate and Broad Walk beyond.

route d



d1. the view along Stone Cross toward the market.

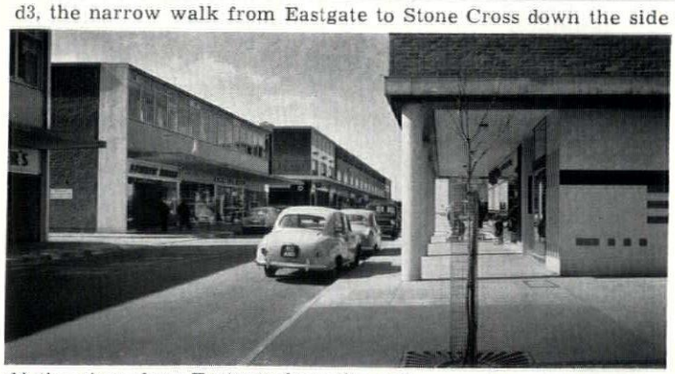


The approach from the east, under Central Avenue, offers two lines of entry to the market; either along Stone Cross, past the Post Office, entering by the north east corner, or to the south, along Eastgate, entering the square under the clock on Adams House.



d2. Eastgate, from the corner of Terminus Street (the bus station), with Adams House at at the right.

d3, the narrow walk from Eastgate to Stone Cross down the side of Adams House.



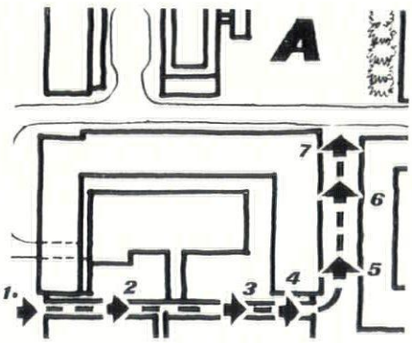
d4, the view along Eastgate from the east.

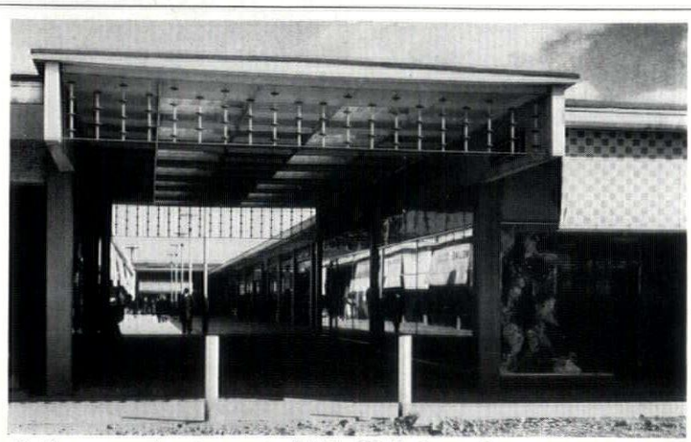


d5, the square seen from under the corner of Adams House, looking toward the galleries and stairs at the north-western corner.

An alternative route of approach from the west and south is provided by Little Walk, a narrow shopping precinct that traverses the centre of the High and then northward along Broad Walk.

route e





e1, the covered entrance to Little Walk from the west.



e2

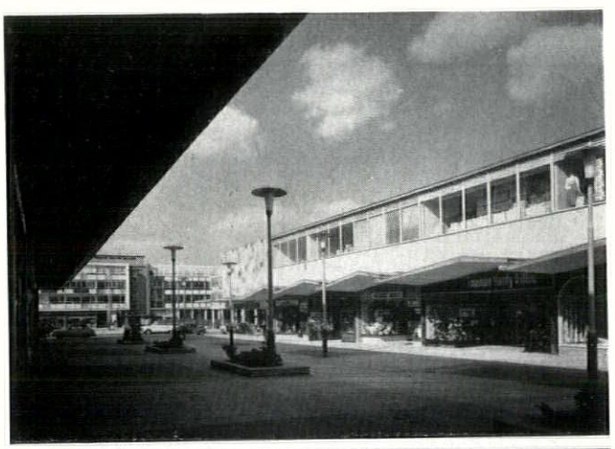


e3



e4

e2. 3. 4. left. progression along Little Walk and under the portico at its eastern end. Although the Walk is neither roofed over nor gated at the ends, the effect of these two porticoes is to make a 'little world' with its own scale and character as surely as if it were the Burlington Arcade—buildings designed by Kenneth Wakeford, Jerram & Harris.





e5, 6, above, progression along Broad Walk toward its northern end, with a view of Stone Cross Market across Eastgate. The scale here is comparable to the Lijnbaan in Rotterdam, with canopied shops along either side, but there has been no attempt at the Lijnbaan's regularity and standardised detailing, and it will be seen that the canopies on either side are of different design; the block on the right was designed by Seymour, Harris & Partners. The view from the end of the Broad Walk into the Market Square is shown at the top of the facing page.

e7 Stone Cross Market seen from the end of Broad Walk, with Market House, left, the Post Office, designed by Eric Bedford, Chief Architect to the Ministry of Works, centre, and Adams House, right.

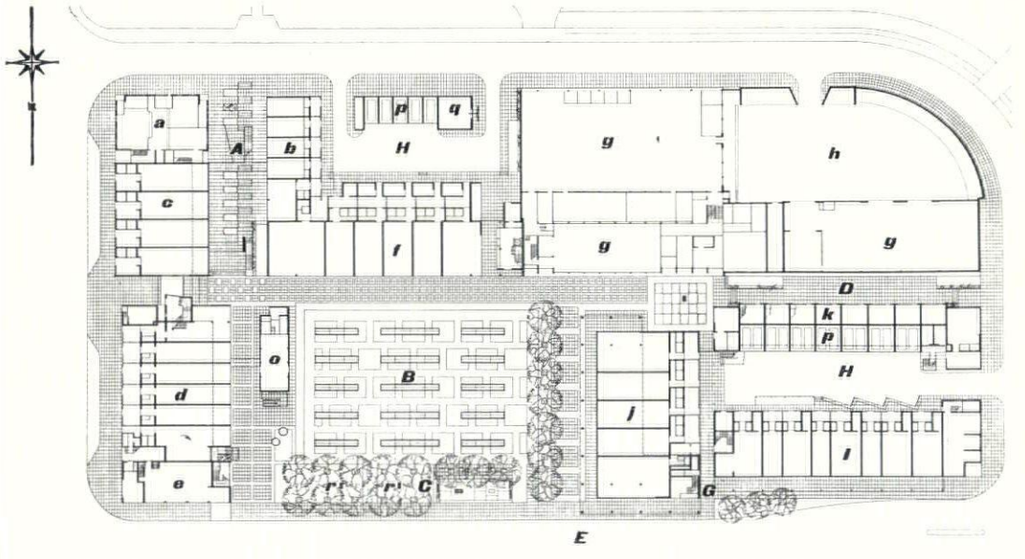
The Market Square (*plan right*) *is a large rectangle* 250 *ft. by* 220 *ft. on an east to west axis. A road (East Gate) passes across its southern boundary to give vehicular access for setting up the stalls and to provide an internal cross connection, thereby freeing the rest of the market place and the adjoining precincts for pedestrians. The view into the Square down East Gate is narrowed by building over the pavement, and the view out of the Square on that side is closed by Hughs Tower.*

The long northern side of the Square, Market House, is four storeys high, the other two sides being three storeys only. The southern façade of the square, across East-gate, is broken by the entrance to Broad Walk, giving a visual extension of the Square into the principal shopping street. Openings through the other three sides of the Square are either at ground level or are masked at the corners so that the walls around the Market place appear to be continuous and the space is given greater definition, while the narrow openings through precincts entering the Square prevent it from being draughty and give spatial contrast and surprise to the shopper entering the Square from the adjacent parking belts.

One side of the principal entrance to the Square from the north, through the narrow

[*cont. on page* 391

MARKET SQUARE (ground level)



key
A, north shopping precinct.
B, market square.
C, sitting area.
D, east shopping precinct.
E, east gate.
F, broad walk.
G, pedestrian short cut.

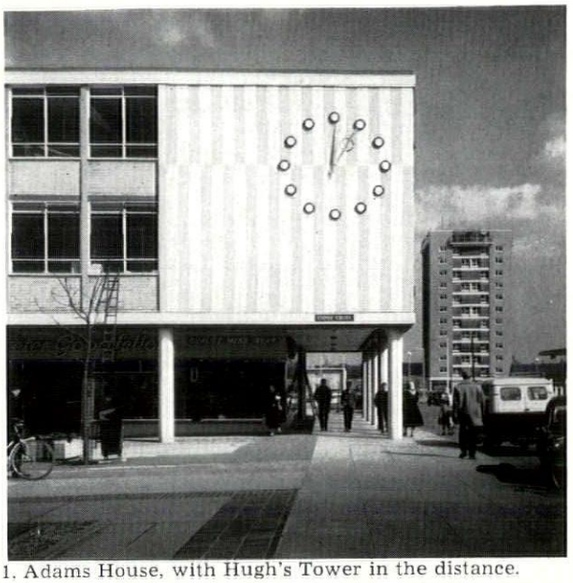
H, service court.

a, public house, the Painted Lady.
b, shops, single floor.
c, shops, hall over.
d, shops on two floors, offices over.

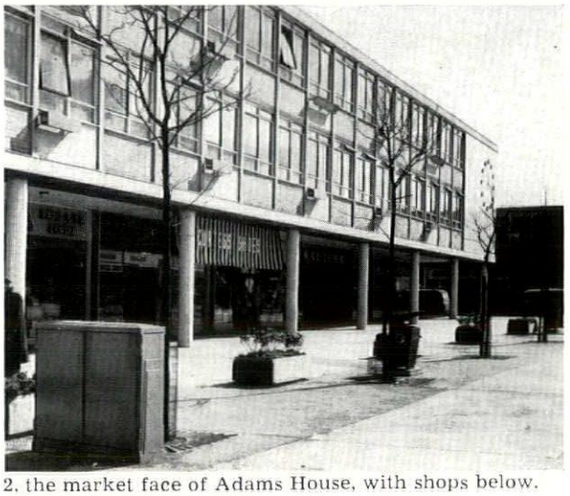
e, Westminster bank.
f, market house, shops and three floors of offices.
g, G.P.O.
h, G.P.O. yard.
j, Adams house, shops with offices over.
k, service shops, workshops over.

l, shops with offices over.
m, shops on two floors.
n, shops on three floors.
o, café.
p, garages.
q, public lavatory.
r, sculpture.

Harlow



1. Adams House, with Hugh's Tower in the distance.



2. the market face of Adams House, with shops below.



3. above the confusion and bustle of the market, the regular grid of the front of Market House makes a background of order.

4. a view through the central alley of the market emhasizes the planned manner in which the competitive cstentation of commerce, in both permanent and temporary buildings, stops at first floor level.



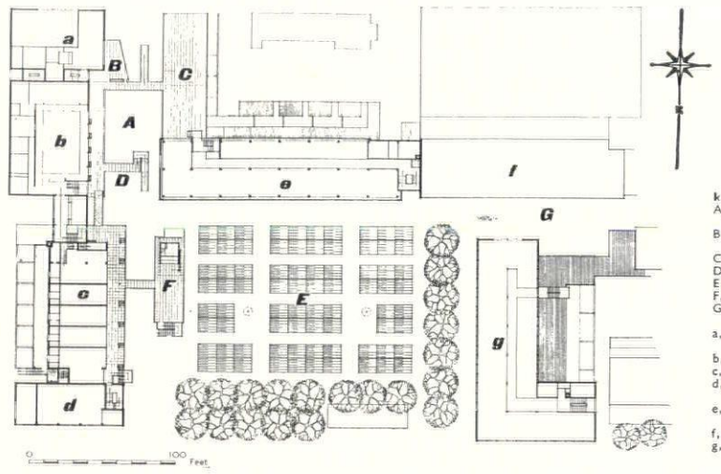
cont. from page 389]

shopping precinct, is extended to form the west side of the Square and the need for first-floor shops and a meeting hall gave an opportunity to form a first-floor terrace. Since there are no problems of building lines in a new town, the terrace is extended to form an outdoor drinking space for the Pub and a further space for outdoor refreshment is provided by the flat roof over a café.

There are two shopping parades of a special character: the first floor terrace overlooking the Market Square and the east precinct, part of Stone Cross proper, adjacent to the Post Office. The first-floor terrace is for shops in which window display is not of paramount importance — hairdressers, oculists, photographers, and the east precinct is for 'service shops', that is shops with a small ground floor area with a large workshop over for making and mending.

Shopfronts have been treated as part of the window displays, and no restriction was placed on their design except where they were so bad that it was thought that other shopkeepers might object. Definition is given to the shopping views and distinction from the general architectural scene by projecting

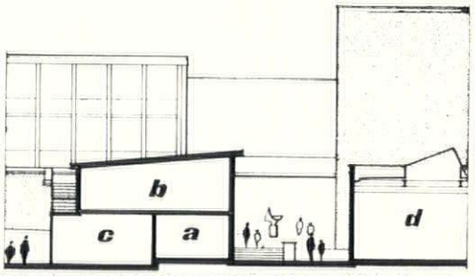
MARKET SQUARE (upper level)



canopies or by recessing the shop frontages in arcades—the horizontal plane puts the lid on the ground floor design.

The market space itself is a sub-division of the main space 160 ft. by 120 ft. It is

[cont. on page 392



Section through east shopping precinct (D on plan on p.389), looking west.

key
a, service shops.
b, workshops to service shops.
c, garage.
d, G.P.O.



5, one of the pair of staircases up to gallery level between Market House and the Painted Lady.





6, view northward from the upper gallery of the Rows, towards the tower of the fire station, designed by Harold Conolly, the County Architect. 7, staircase, roof-terrace and access bridge of the restaurant.



8

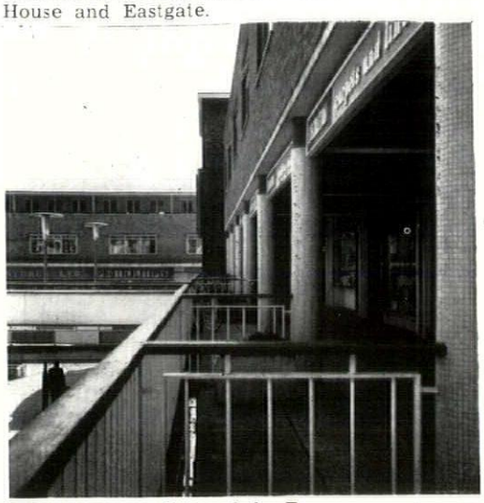


9

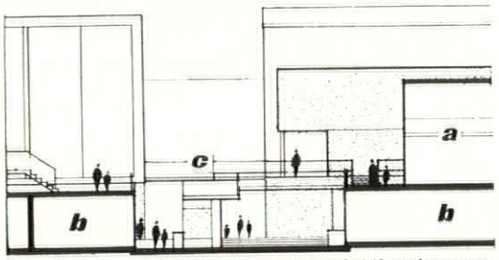


10

8, looking along Stone Cross from the upper gallery of the Rows.
9, the pedestrian bridge leading from the Rows toward the Painted Lady, at gallery level.
10, the stairs at the end of the restaurant, looking toward Adams House and Eastgate.



11, the upper gallery of the Rows.



key
a, Stone Cross hall.
b, shops.
c, bridge and terrace.

The section looks south down the north shopping precinct (A on plan on page 387), and shows the upper gallery of the Rows.

cont. from page 391

formed by belts of trees on the south and east sides and by the café on the west. These have further formal uses; on the east the trees form an avenue to the main entrance of the Post Office and the short cut to the car park; on the west the café is placed so that it extends the north precinct into the Square itself; and on the south the double row of trees help to form a sitting area, out of the bustle of the Market Square. There are sub-divisions of the sub-division. Thus a portion of the sitting area opposite Broad Walk is partially enclosed by low stone walls to contain a bronze sculpture group some twelve foot high now being made by Ralph Brown.

There are from fifty to sixty market stalls, the majority being 8 ft. by 3 ft. of tubular metal construction designed so that they can be folded and wheeled away, and covered with yellow or orange canvas awnings. The stalls are laid in parallel series to form aisles across the square and the awnings are designed so that rain runs down between the aisles and not, as is usual, on to the shoppers in the aisles.

The paving patterns have been worked out to express both the character and function of the spaces, thus in Broad Walk the regular paving pattern that reflects the character of the parade is broken by diagonal lines at the intersection of the cross precincts.

There is an over-all design for advertising; apart from utility objects like refuse bins, cycle racks and lamp standards, there are seats, flower boxes and sculpture being provided by the Harlow Arts Trust.

DAVID GREGORY-JONES

TOWERS OF LEARNING



Ever since Sherlock Holmes, travellers on the high railway viaducts of London have noticed, towering bulkily above the two-storey rows of workers' cottages, the red brick Board Schools, like the one at Rotherhithe, above. In the article below, Mr. Gregory-Jones discusses the social aspirations and aesthetic determinations, as well as the financial pressures, that drove the London School Board's first architect, E. R. Robson, to build so high—and so well.

At Eltham, in south-east London, one of the County Council's new Comprehensive Schools, freshly completed, stands like a friendly castle above the luxuriant gardens and red tiled roofs of surrounding suburbia. Consciously or through force of circumstance the architects of this school have brought up to date a tradition in civic design powerfully established in the Board schools of the last century. E. R. Robson, the first architect to the London School Board and the designer of dozens of these schools, quite specifically intended them to be landmarks in the urban scenery, dominating their surroundings and expressing the aspirations of their age in the same way as the spires of mediæval England had done. Restricted sites may indeed have driven him to build up, but the use of every architectural means at his disposal to intensify the effect of height was quite deliberate: windows were tall and narrow, steeply-pitched slate roofs were furnished with multitudes of lovingly elaborated gables, turrets and soaring fluted chimney stacks, while storey heights were pushed to the 'maximum necessary.' The reasoned deliberation with which Robson emphasized the height of these schools is characteristic of his approach to architecture. In all 'good architecture,' he said, 'there is no vagueness, no indecision, no doing of things by accident, no drifting helplessly from one idea to another. The artist first grasped his building comprehensively as a whole, with a clear definite intention of what he meant to say . . . and he conveyed his meaning and purpose on the face of his work, every moulding and member, window and door architrave, cornice and sculpture being, in his hands, so many opportunities for proclaiming his intention.'

E. R. Robson was born in 1837, in Durham, of which his father had been three times mayor. He worked for three years at the bench to gain some practical knowledge of building construction before becoming a pupil, first of a local architect, then of Sir George Gilbert Scott. Scott's office was one of the breeding grounds of that reaction against strict revivalism of which Robson's own work was such a good example. Working there with him were Bodley and Garner, later to be the designers of the London School Board offices on the embankment near Cannon Street Station, Graham Jackson, whose work at Oxford University and elsewhere has the stylistic freedom if not the vigour of Robson's board schools, and J. J. Stevenson, designer of the Red House in Bayswater Road, 1—built eight years after its namesake in Bexleyheath and likewise one of the pioneer buildings in the late nineteenth century movement that was to place English domestic architecture at the head of the world.

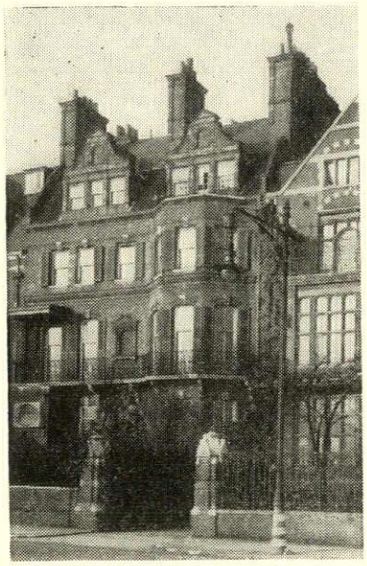
Robson's first important appointment was in his home city where he was for six years architect to the Dean and Chapter of the Cathedral. He restored the central tower, and is reputed to have frustrated Gilbert Scott's ambition to give it a steeple. From here he moved to Liverpool where he was surveyor to the Corporation for seven years. The only work issued under his signature at Liverpool that the author has seen is the Municipal Offices, 2. A contemporary describes the style as 'Corinthianesque, treated freely'—and very horrid it looks too. While at Liverpool Robson was forbidden, under the terms of his contract, to undertake private work. He insisted on being freed from this restriction when he took up his post as Architect to the London School Board, and ran a considerable private practice at the same time as he was pushing through a huge programme of school building.

This is where J. J. Stevenson returns into the picture. Soon after Robson's appointment the two architects entered, for a short period, into partnership. Although Stevenson had no official connection with the School Board, he claimed in his book *House Architecture* that he had been responsible for the design of a few of the earliest board schools. Robson, however, according to his son, stated that he had been 'occupied often in the afternoons rubbing out what John (Stevenson) had done in the mornings.' Taking into account both the character of Robson's earlier work at Liverpool and the fact that Stevenson's house in Bayswater Road had been designed in a close forecast of the so-called Queen Anne style developed in the board schools, it does seem likely that Robson owed a great deal to his partner and that the remark just quoted was made in a rather disgruntled mood.

The London School Board was established in 1870 following the passage of Forster's Education Act. Among the earliest members of the board was Edwin Chadwick who took his duties sufficiently seriously to write a long report on the construction of schools, in which he suggested a system of hollow interlocking concrete blocks for walls and floors with 'iron uprights and ties on the Crystal Palace principle.'

After a preliminary period during which buildings were hired for use as schools—we read of warehouses and a rice mill being adapted—the board

embarked on a big programme of school building in 1872. Robson had been appointed Architect to the Board in the previous year, but at first his duties were concentrated on research and site acquisition. It had been hoped that suitable sites could be acquired by advertising for them, but in fact only one very unsatisfactory site was bought in this way, and the board was embroiled from the first in the complexities of compulsory purchase orders, arbitration, compensation and the like.



1, *the Red House, Bayswater Road, by J. J. Stephenson.*

The first thirty schools erected by the board were all designed in competition. Six different architects were invited to compete in closed competition for each single school, the only reward offered being to the winners who got the job together with their normal five per cent fee. Consequently by August 1872, the board had at its disposal the ideas of 180 architects on the subject of school design. Out of all these schools designed in competition only one gave a foretaste of the future. Its architect was Basil Champneys and it used to stand in Harwood Road near Eel Brook Common in Fulham, 3. It was opened in November, 1873. Its plan was elementary—three superimposed schoolrooms each with a single attached classroom—but its architecture was advanced, and it can claim the distinction of being one of the very earliest schools designed recognisably in the 'L.S.B. style.'

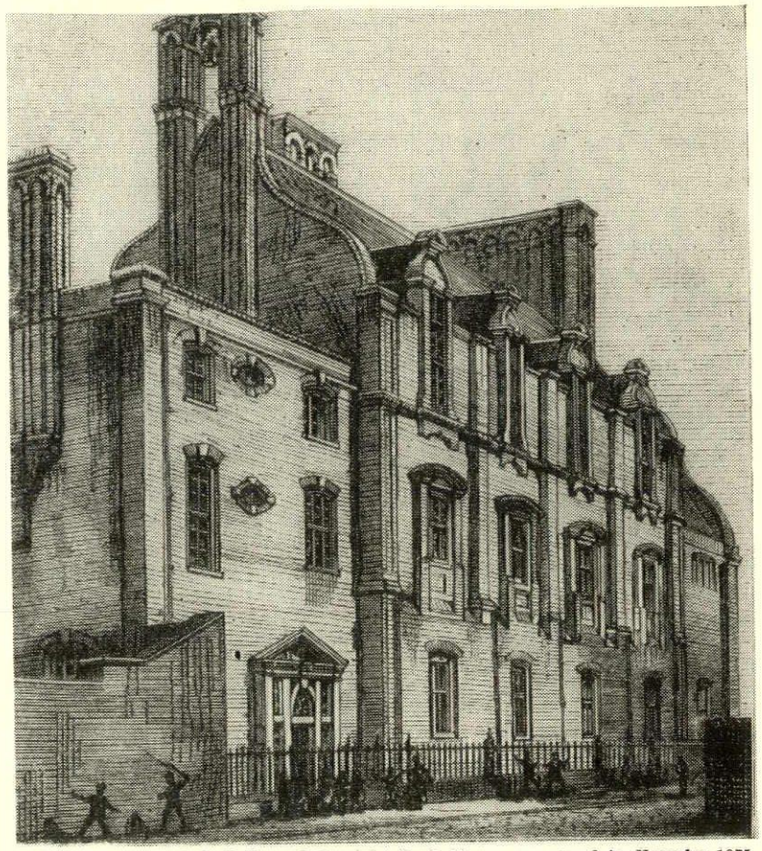
In a talk given in Liverpool in 1888, Champneys gave his opinion as to the principles of limitation which architects might adopt if they were to bring a little order into the chaos of contemporary building. He wished architects to make their work as English as possible, as simple as possible and to abjure unwholesome efforts for originality—'at a premium in the present age of keen competition.' These principles had been firmly observed in the Harwood Road school. Its originality was of the unforced kind in which use is made of a traditional language to say new things. It was strongly national in style, being derived from the early period of the Renaissance, which, in England as in all the countries of northern Europe, assumed marked individual characteristics.[1]

The style of Champneys' own work at Newnham College, Cambridge, built a good fifteen years later, was forecast in every respect in his Harwood Road school. Thus, at a date when working class tenements were still of the most institutional grimness—the Peabody Trust had been at work since 1861, and it was to be a full quarter of a century before the LCC architects would be bringing some humanity into housing—elementary schools were being built that not only compared with contemporary buildings for the bourgeoisie in their architectural quality—educational standards, space standards, provision of playing fields, etc., were a very different matter—but which led the way in their architectural style. What the London School Board did in the 'seventies Oxford and Cambridge did in the 'nineties. This may well demonstrate the importance which ruling circles attached to education—in particular to the need for improved educational standards among the workers in British industry—but it is also a tribute to the determination of the Board, subject as it was to continual sniping on account of supposed extravagance, and to the vision and drive of its architect.

In common with many of the younger architects of the mid-'seventies Robson was thinking along the same lines as Champneys. 1873, the year during which the first schools erected by the L.S.B. were opened, also saw the completion of Norman Shaw's New Zealand Chambers, 4: the year was described by *The Architect* as 'the first . . . of the Queen Anne revival,' which it deplored, particularly as expressed in 'several of the schools (of the L.S.B.) which show what the style can descend to when limited to simplicity and severity.' It is, of course, partly the 'simplicity and severity' of these buildings which appeal to us today. But their qualities



2, *the Municipal Offices, Liverpool.*

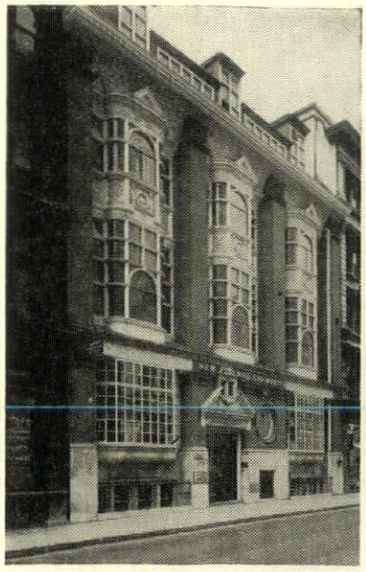


3, *Harwood Road School, Fulham, designed by Basil Champneys, opened in November* 1875. *The first clear demonstration of the main elements of the Board School style—red-brick revival of seventeenth century vernacular detailing, most of it placed high on a compactly designed block.*

are rooted in something more solid than a mere reflex action dictated by the need for economy. Unlike much contemporary work in the 'Queen Anne' manner, in which charm and elegance appear as the most sought-after qualities, these early board schools have a weight and a seriousness that set one in mind of the work of Philip Webb (or even of Berlage). This weight and seriousness is partly an expression of Robson's own character—he admired as one of the key qualities in architecture 'rigidity . . . a particular aesthetic quality opposed to easy softness, incoherence or languid beauty, and having for a result the stamping of the work with a vigorous character'—but also follows from his determination to be clear as to his architectural objectives. The style of his schools was not adopted at the dictates of fashion, but after experiment and careful thought as to what the objectives of an architect designing a modern elementary school should be. In his book on School Architecture, published in 1877 and for long a classic on its subject, Robson recorded this thought. After emphasizing that the architect's first job is to understand how his building will be used he then poses the architectural problem as follows.

Schools could not be expensive, and, in London, this meant that they must be built in brick. Nevertheless, they were 'henceforth to take rank as public buildings . . . planned and built in a manner befitting their new dignity,' and they should have an architectural character that was immediately recognizable as their own. What was to be the content of this new architectural expression? 'It is clear that a building in which the teaching of dogma is strictly forbidden can have no pretence for using with any point or meaning that symbolism which is so interwoven with every feature of church architecture as to be naturally regarded as its very life and soul. *In its aim and object it should strive to express civil rather than ecclesiastical character.* A continuation of the semi-ecclesiastical style which has hitherto been almost exclusively followed in England for National Schools would appear to be inappropriate and *lacking in anything to mark the great change which is coming over the education of the country.*' If the Gothic revival architecture of previous Victorian schools was to be abandoned as inappropriate what was to be put in its place? Was it necessary 'to abandon all indigenous architecture and to seek something wholly new or "original"?' (It is interesting that this concept should occur at all to a mid-Victorian architect. Robson may have been thinking of the sort of 'non-period' ornament used by Digby Wyatt at Paddington Station, for instance.) Robson did not think it was necessary to abandon tradition: 'History shows that, in all previous cases, new wants have been met by new developments of the—prevalent manner of building. Our difficulty lies in the fact that, considered as a vernacular or universally-practised art, architecture has not had a being for many years and there is, consequently, no prevalent architecture of good type from which to develop.' The causes of this decline of architecture as a vernacular art lie in the operations of the 'speculative builder whose soul is occupied by the scale of rents which he can extract from his scantily-built mansions,' in the 'ill treatment of the builder's workman' and the consequent 'lack of sympathy between him and his employer' that has 'too often erased the instincts of good workmanship' and, lastly, in the decadence of 'the old spirit of unity' not only in the building industry but among the architects, who, 'from having a wholesome rivalry in the same direction' have come to 'wage a war of different and conflicting styles.' Robson's aim,

[1] Robson, while condoning Champney's use of brick because of the adjoining common whose greens showed it off to advantage, was critical of the use of red brickwork in London. He considered that yellow London stock brick, being less pervious, stood up better to the London climate, and consequently built his schools principally in this material with red brick only used—along with stone—in dressings and decorations. Interpretation of what had been a monochrome style in terms of a variety of materials gave Robson's schools their starting point of individuality—though it should be said that Robson more than once urged 'the cultivation of an eye for colour' on his fellow architects, so that the structural polychramy of his schools derived from a more positive aim than weather resistance alone. Experience showed that even the limited use of soft red brickwork in moulded ornament was unwise: much of this work in the earlier schools is now eroded beyond recognition by atmospheric pollution. It is possible to explain the less sympathetic character of later L.S.B. schools by the architects' attempts to find materials appropriately hard and unyielding.



4, *New Zealand Chambers, by Norman Shaw.*

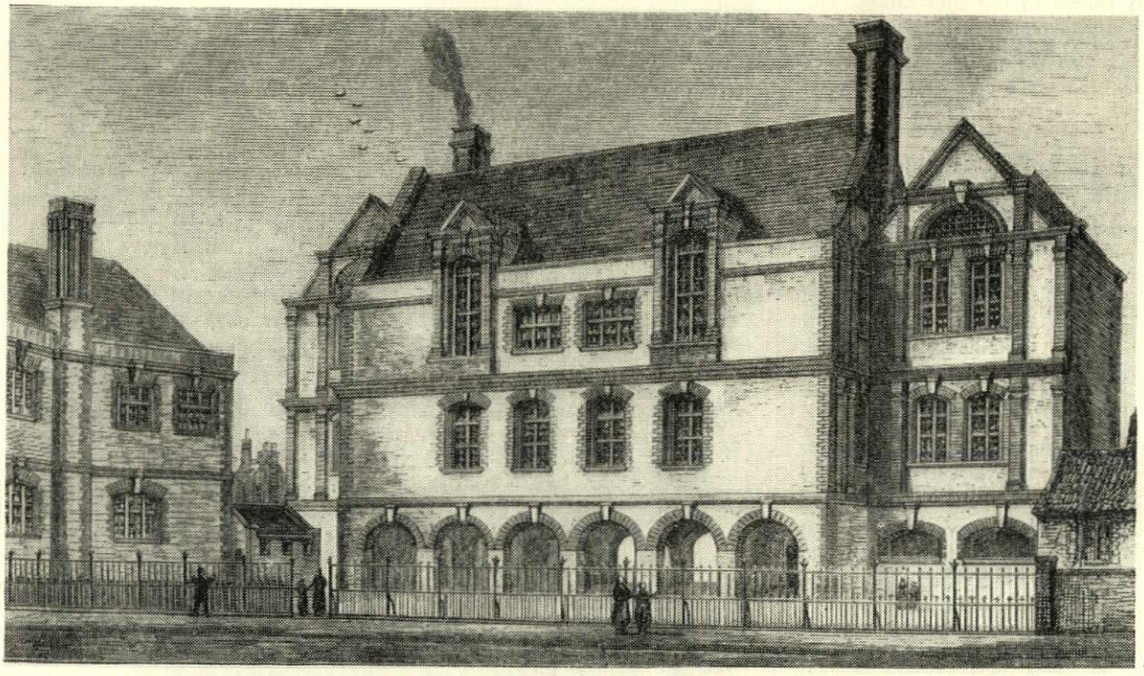
then, was to look back over history, past the competitive society in which he lived and which had wrought such havoc on architecture, to the most recent period when there had been a truly vernacular architecture that might make a helpful starting point in the design of modern schools. 'The only really simple brick architecture available as a foundation is that of the time of the Jameses, Queen Anne, and the early Georges. The buildings then more nearly approached the spirit of our own time, and are invariably true in point of construction and workmanlike feeling. Varying much in architectural merit they form the nucleus of a good modern style. In looking to the architecture of this period as a basis, a servile copyism need not be attempted, for it may not be impossible to accept its spirit and yet to clothe our rendering with new form and a higher sense of architectural being.' 'Specimens of good and thoughtful brickwork in sufficient number still remain scattered among the old architecture of the city and its suburbs, to form the basis of a good style suited to modern requirements. Hackney and Putney, Chelsea and Deptford all furnish old examples.' The style was not dead: for it was still the preponderant style of London, particularly among the 'plainer and less expensive buildings' which were the intimately known settings for countless lives. Thus adherence to its spirit was not an arbitrary act of style-mongering: As well as arising from a careful analysis of the content to be expressed in the architecture of the new board schools Robson's approach marked a conscious acceptance of the genius loci of London—an act of consolidation in an age of disruption.

After a year's experience of building schools designed in limited competitions the board decided to call a halt: Not only was it becoming difficult to find 'superior architects' who were prepared to compete on this basis, but also continual 5 per cent fees were becoming irksome. It was decided, quite rightly, that now that the initial period of trial and error was coming to an end, the ratepayers would get better value for their money, if Robson himself (who 'had given abundant showing of his qualities') were made responsible for the design of all the board's schools. Robson's salary was raised to the astounding level of £1,000—the fact that he owned a house in the Paragon at Blackheath brings home the dramatic decline in status of even the most eminent salaried architects since those days—and from then until his retirement in 1889, he was personally responsible for every one of the schools erected by the board. Late in 1872 he complained to the Board that, with his present staff of eight draughtsmen and juniors (at £80 to £200 a year) it was only possible to complete the drawings for one school a week, but that if this staff were increased by less than one half its cost output would be doubled. After a great deal of argument the board agreed to increase Robson's staff to fifteen—including two tracers, a clerk and 'a boy at five shillings a week'—and with this force at his disposal he could, by October 1876, point to an achievement of 134 new schools completed with 40 more on the ground or contracted for. Cost of production worked out at about 1 per cent compared to the 5 per cent which private architects had been paid—and at this time there were no consultants, not even clerks of works to be paid in addition.[2] This saving could be almost exactly balanced against the increased cost—5 per cent—of a building of some architectural pretensions over the barest piece of mere construction, as was discovered when the board made a careful study of the economics of architecture in response to complaints by local residents that an unusually plain new school was an eyesore in their neighbourhood. It was decided that, in future, the board must be prepared to pay for good architecture.

This dramatic reduction in costs of production in the architect's office could only have been won by treating the board's work as a programme: plans and detailing were increasingly standardized and there was the minimum chopping and changing of architectural character. By sheer Victorian ruthlessness the L.S.B. achieved a far higher degree of standardization than most education authorities have achieved since the last war. Although the L.S.B. schools vary from very plain building to the greatest elaboration according to the openness of their sites, it cannot be said that, in practice, Robson was over-anxious about tailoring each school to suit its locality. The positive result of this is that these buildings strong in personality, do a very great deal to set a stamp of unified character on the hodge-podge of Victorian London.

Several early board schools were sited in Deptford—a neighbourhood of tough habits in those days, where it was sometimes necessary to give police protection to building workers on the new school sites. It is not surprising that the voluntary school organizations had not penetrated

[2] The policy of not employing clerks of works was reversed after the board had lost a law-suit in which Robson had been sued for damages following structural failures due to the use of foundation concrete not of the mix specified. It emerged during the hearing that Robson had been kept so busy in the design of new schools that he had often been unable to visit his sites until the jobs were completed. More was brought into the board's affairs by the clerks of works than efficient site supervision. On at least three occasions in 1876 the formal opening of a new school was enlivened by a choral performance conducted by the clerk of works on the job.



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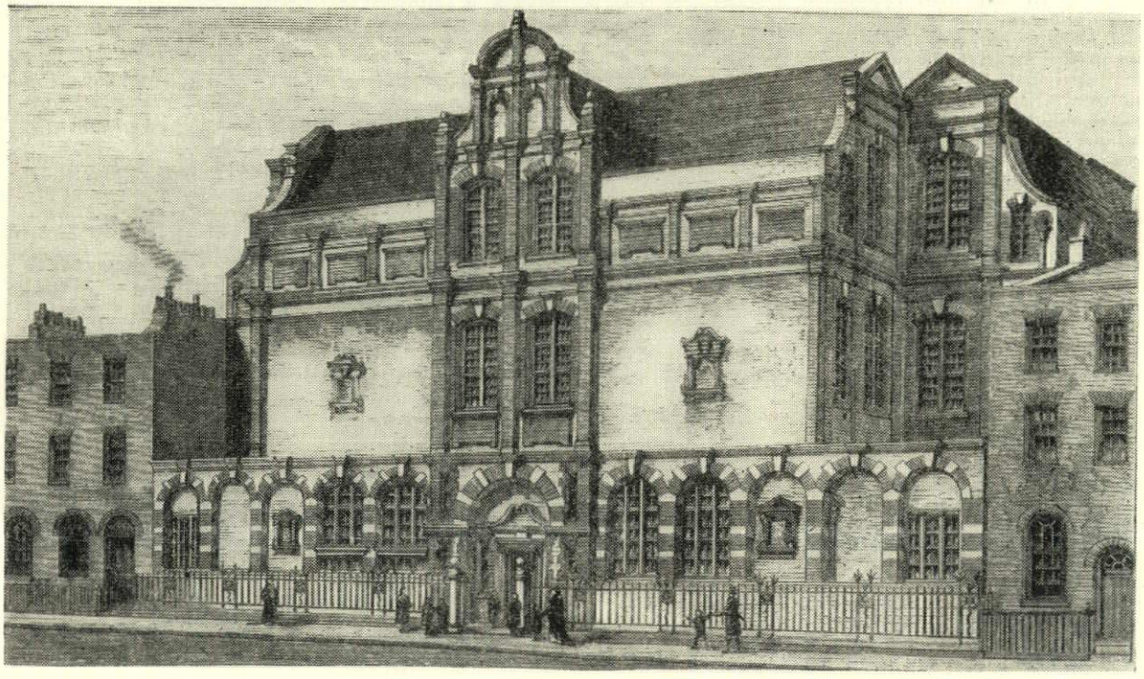

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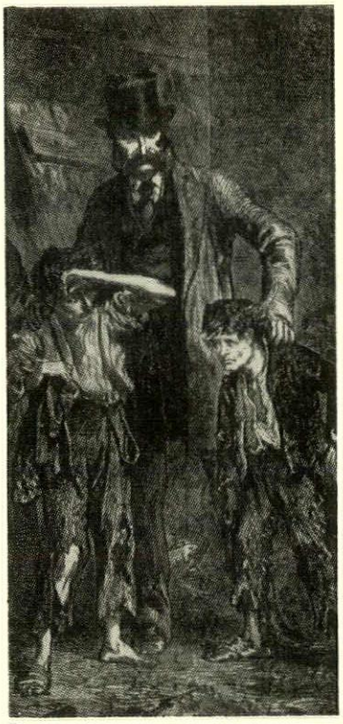
5 and 6, *Anglers' Gardens School, above, and Aldenham Street, below, both the work of E. R. Robson, and both opened in 1874. Two versions of the U-plan layout evolved by Robson to accommodate the pupil-teacher system. The open arcading which makes a ground-floor play-space at Angler's Gardens was not feasible at Aldenham Street, where this space was taken up by the infants' school.*

much into the district! The first school of Robson's designing to be completed was in this area, at Creek Road. It was opened in July, 1873. Although it is no longer standing, contemporary descriptions make it clear that it was very similar in planning and appearance to the two schools at Anglers Gardens, 5, and Aldenham Street, 6—both opened in August, 1874—which are illustrated.

These schools were planned at a time when the pupil-teacher system was still being employed; this system was no doubt barbarous, but it could lead to pleasant external architecture. The long school-rooms were planned with windows in the end walls and in the centre of the external long wall, so that as many desks as possible were lit from the side. This meant that there could be large areas of blank wall at the ends of the main façades which gave them breadth and repose. In the 'nineties most of the early schools, designed for education on the pupil-teacher system, were converted to provide self-contained classrooms, so that the Aldenham Street school now presents a slightly different appearance to that shown in the illustration. The execution of the alterations carried out at this time was admirable.

The grimness of which these early board schools are so often accused is—at least so far as their exteriors are concerned—the grimness not of the individual buildings, but of nineteenth century capitalist London and the conditions which it imposed on the architect. With their constricted sites wrested from the midst of slum housing—one-third of an acre for 1,200 children was by no means exceptional—set in the grimiest parts of London with never a tree in sight, it is remarkable what Robson and his office did achieve. Imagine either of these two schools with plenty of space around them, with decent playgrounds and the greenery of trees and grass to show off the yellows and reds of their brickwork, imagine their sculptured red brick un-pitted by atmospheric pollution and their woodwork white for more than a few months after redecoration. It is a pleasant picture amply borne out by the rare occasions when an L.S.B. school is placed near an attractive open space, such as the school near Myatts Fields in Camberwell. It is important that the best of these early Board Schools should be treated with reasonable respect: the principle to be followed would seem to be that, unless additions in the modern manner can be clearly articulated from the original structure, then the style of the original should be adhered to. Substantial demolition may often be necessary to achieve a clear relation of new and old. One of the greatest services that could be rendered to these buildings would be to open up their forecourts, so often enclosed behind forbidding prison-like fortifications, and to replace at least some of the surrounding asphalt with trees, grass and planting. Exterior woodwork should be maintained a fresh white, and the decorative possibilities of the interior should be revealed by the bold use of colour. In this way the architecture would be given a chance to express its humanity. So far as the interiors are concerned the exceedingly high rooms of these schools are undoubtedly oppressive for small children, but it is difficult to see how adequate lighting could have otherwise been achieved with classes of sixty children and with the limited window widths available in load-bearing brick walls. Edwin Chadwick said that a school should be 'an implement



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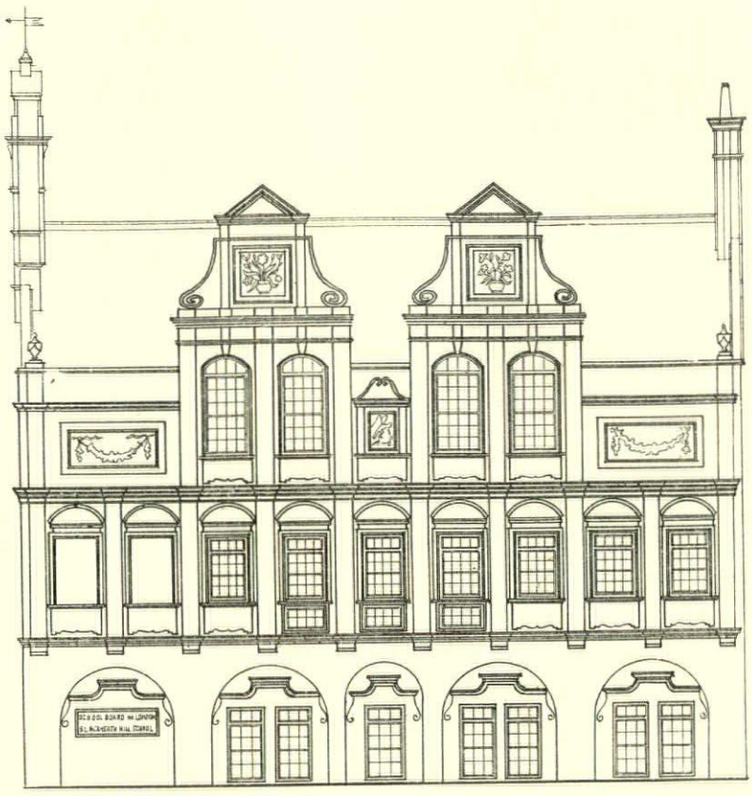

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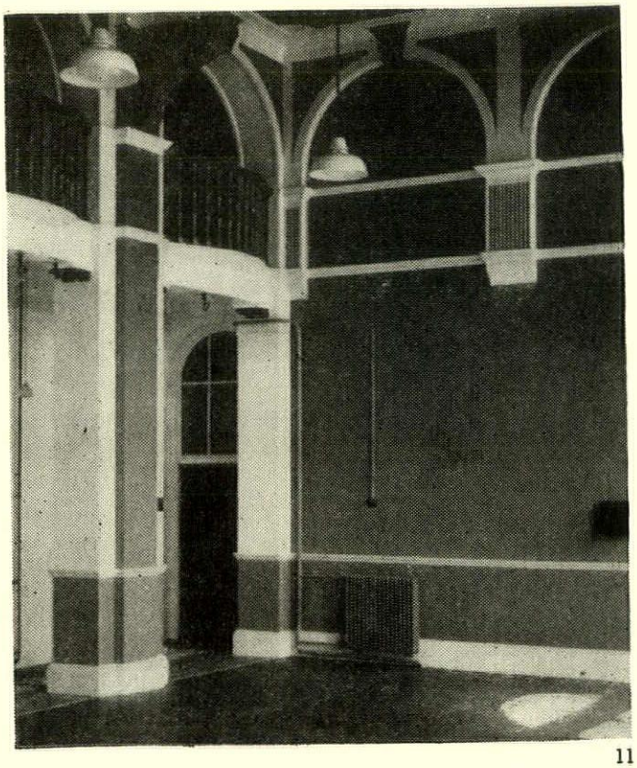
7, the School Board Man, seen here through the eyes of an Illustrated London News *artist, represented the enforcement branch whose activities filled Robson's architecture with ragged pupils—whose lack of social graces required both teachers and architects to temper humanity with toughness.*

8 and 9, the end of the pupil-teacher system, and the change-over to self-contained classes, required alterations to the internal arrangements of Board Schools that were almost as drastic as the enlargements required by increasing numbers of children, but these alterations and enlargements were carried out in the spirit and the style of the earlier work, as at Blackheath Road, above and right, where the third gable of the main run of the roof continues the original work so sympathetically as to cause no appreciable break in the facade, 10. *Behind this block was a large square 'keep' containing three superimposed halls and an art-room.*

11 and 12, *Berger Road School, Hackney, opened in* 1878, *shows Robson's style in its maturity; the hall below, with its bow-fronted balconies set in the arcading of the girls' school access-gallery, gives an*



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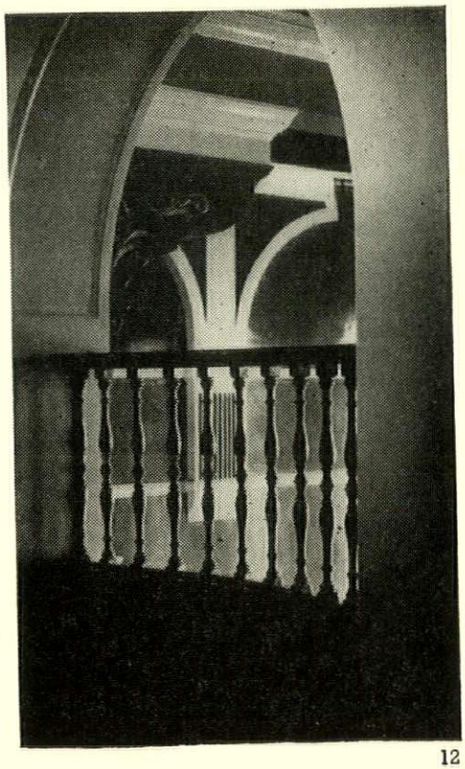

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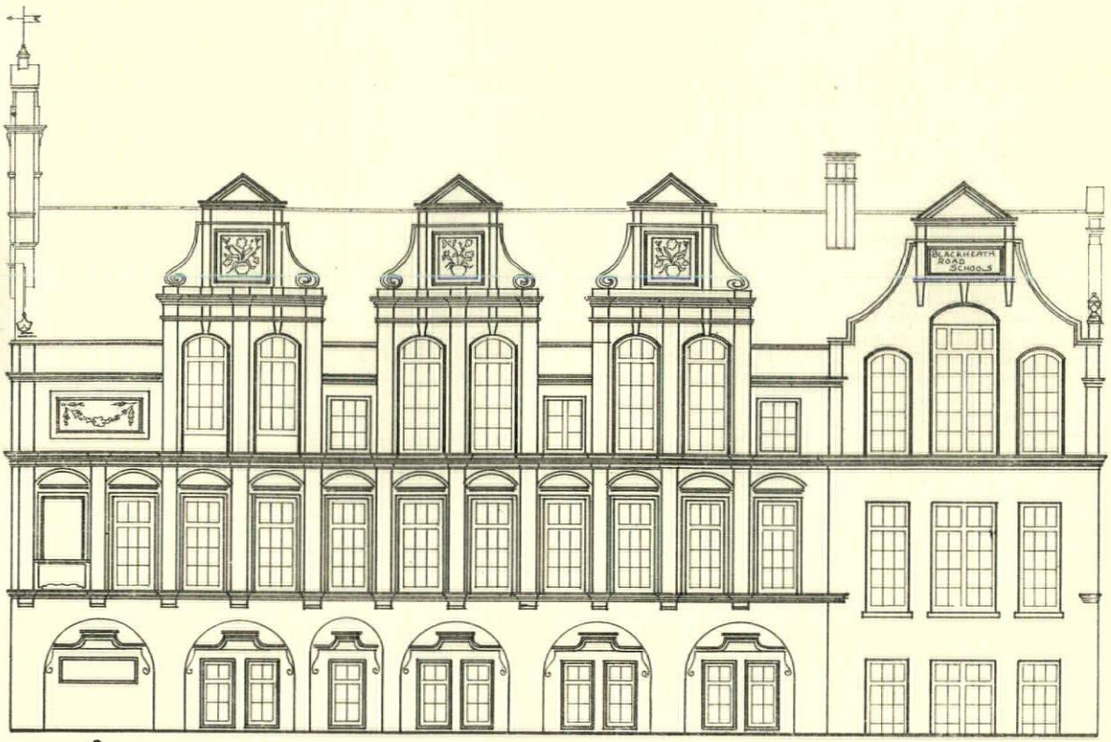

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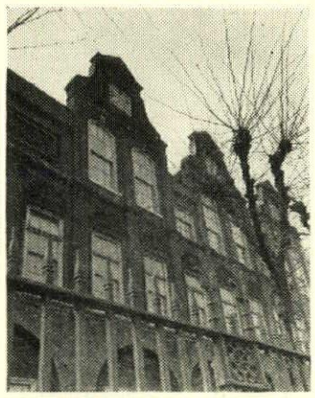
excellent idea of his qualities as a three-dimensional designer, and of the quality of his detailing, which has been much enhanced by recent sympathetic redecoration by the LCC Architects' Department.
13, *the exterior of Berger Road School also emphasizes the qualities of the mature style—not only its tall gabled silhouettes and the relationship of the different storey-heights, but also the way in which the central position of the hall is marked by the class-room wings that stand, end-on, at either side of it, and the blank, urn-crested wall of the girls' play-area above it is rendered as an attic storey.*



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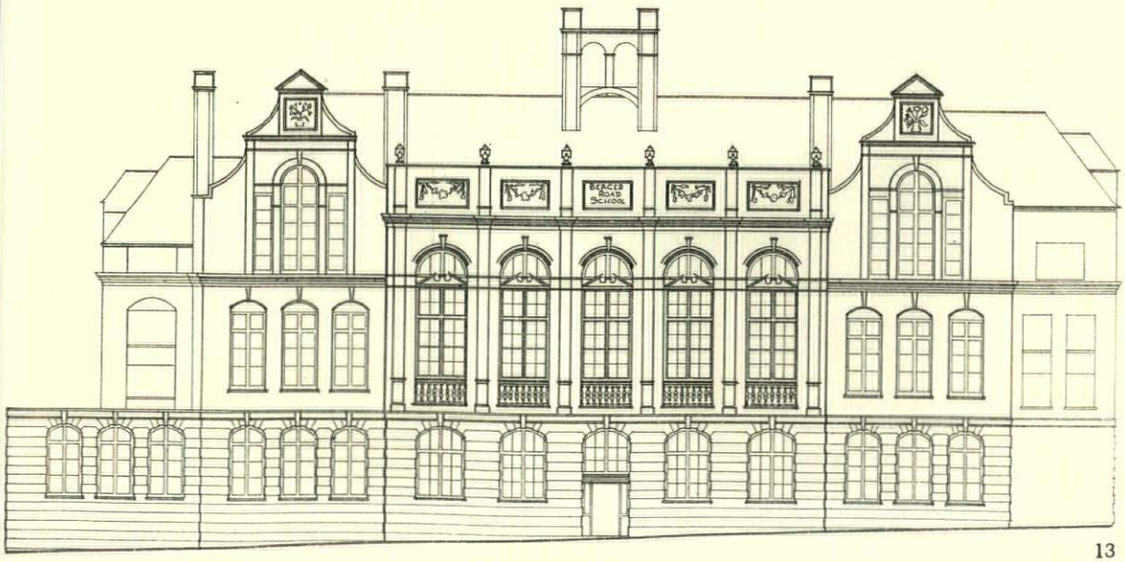

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fashioned by the best practical sanitary science,' and the overpowering importance he attached to 'hygiene' was typical of contemporary educationalists. In the circumstances they may well have been right. Glazed brick and hard easily cleaned surfaces were favoured at the expense of acoustics and warmth of appearance and in the result humanity was often lacking. Nevertheless, the L.S.B. schools can boast of many splendid interiors (where rescued from the cream, brown and green paint of later generations), in particular the galleried school halls, rising through two or even three storeys, which were nearly always, a befitting their function as focus of the school's life, treated with greater richness than any other room.

The Berger Road school in Hackney, 13, possesses a particularly fine school hall, which is now shown to great advantage by its recent redecoration at the hands of the General Division of the LCC Architect's department, in which a most brilliant use has been made of colour. The school also merits study because it is a typical example of Robson's work at its most mature. The school dates from 1878, by which time classrooms for instruction by separate adult teachers were being provided instead of large schoolrooms for instruction on the pupil-teacher system.

The school is a typical 'three-decker' for 1,200 children, with the infants at ground level, boys above and girls on the top. Each floor consists of six classrooms planned on three sides of a large central space. On the ground floor this space was planned as the infants' covered play area.[3] On the first floor was the school hall, rising through one-and-a-half storeys with a tall arcade on the long side, in which was inserted a gallery which gave access to the girls' classrooms, 11, 12. (This gallery, with its bow-fronted balconies opening on to the hall below, was the only internal connection between the boys' and girls' departments, suggestive of young Romeo and Juliet possibilities!) Above the hall, rising into the pitch of the roof, was the girls' covered play area which was top-lit.[4]

The plan is eminently workable and economical, and it has a straightforward simplicity that the modern architect will find sympathetic.[5]

As with the Champneys school already described the external architectural elaboration of the Berger Road school is concentrated at high level. Unfortunately the Berger Road school has suffered particularly badly from the erosion of its decorative brickwork through atmospheric pollution.

What little decoration—as opposed to architectural embellishment—there is in schools of this period was carefully placed for maximum effectiveness. Although not as highly

[3] As in many other schools this playground has now been adapted as an Assembly Hall.

[4] Between the two classrooms on the long side of the Assembly Hall are inserted staff rooms, two being placed one above the other in each classroom storey height. This favourite planning device, leading to a bay of different function and scale on elevation, was usually treated rather playfully. At Berger Rd. there is a small V-shaped projection. There is a school in Ashmead Way, Lewisham, that rises almost sheer above the railway cutting, where this staff room strip has a semi-circular oriel becoming a circular turret above the roofline. This must be one of the most inconveniently sited schools in London—suited only to a train-spotters' club—but it does provide a most dramatic picture seen in sharp perspective looking up from a passing train!

[5] An intriguing school was planned in 1873 but never executed for reasons of cost, in which the second floor was carried on cast-iron columns so that the entire first floor comprising school hall, two big school rooms and two classrooms, could be thrown into one space by means of sliding partitions.

standardized as the internal detailing —Robson found mechanically reproduced decoration, such as moulded terra cotta, lifeless, without the animation of handwork—remarkable consistency exists in the way decoration was used. It always appears set in panels or cartouches and the subjects are similar from job to job, 14. Pre-eminent are the title panels which include the initials of the L.S.B. and perhaps the date. Fifty years ago Lethaby complained



14, *badge-panel of the Millbank Schools, typical of Robson's functional-decorative detailing.*

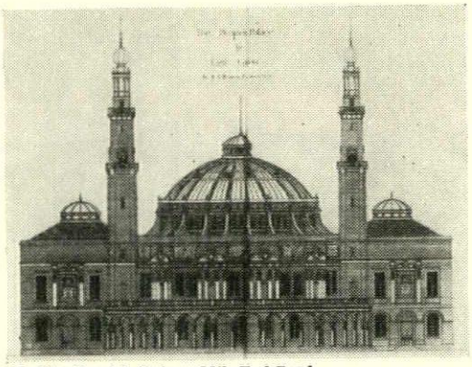
that the decorative possibilities of lettering and inscriptions on buildings were insufficiently exploited, and the same is abundantly true today. Local authorities and others might take a leaf from the L.S.B.'s book and make it a matter of course to label and date their buildings.

In addition to the title panels the board schools made use of three other types of cartouche. There were swags and trophies cut in brick or stone, rarely just conventional; there were floral patterns among which a series of designs of flowers in pots, carved in brick or inscribed in stone, were particularly good, because, although nearly always set at the very summit of the buildings, the designs are bold enough to read from ground level while retaining grace and sufficient delicacy. Deep cutting into white stone is probably the secret, so that shadow and the holding of London grime come to the designer's assistance. There was a piece of engraved sculpture in the South Bank exhibition, but because the material was dark and the lines were fine, it did not tell from more than a few feet. Robson also made use of a few figural bas-reliefs cut in brickwork—such as the 'Knowledge overpowering Ignorance' designed by McCulloch and was repeated in several schools. (It was recut every time from the same model, not cast). These latter are neither so intrinsically good nor architecturally so effective as the title panels or the floral designs, and the figures in them look absurdly small.

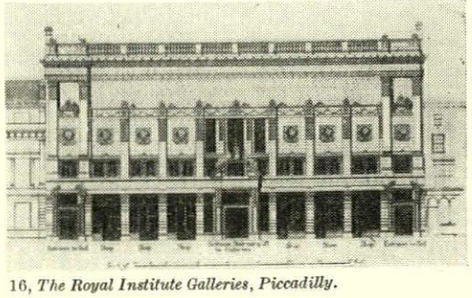
The amount of work turned out by Robson and his office was so vast that it is only possible to look at a tiny fraction of it. Yet what has been shown ought to be sufficient to place Robson's achievement within the general picture of nineteenth century architecture. It would a mistake to consider him a great stylistic innovator. His search for an architecture that, while rooted in tradition, should not be hag-ridden by the conventions of any one period, was made in common with a fair number of architects working in the 'seventies, and was not pursued with the single-mindedness of Webb, for instance, to whom the fluctuations of style in Robson's work away from the school board would have been incomprehensible. Others before him had realized the potentialities of the Carolean vernacular—a style combining Gothic and Renaissance in one body, so to speak—as a basis from which to develop. In 1866, Nesfield had blazed the trail, almost by accident, with a charming gatehouse at Kew Gardens which picked up the style of the adjacent palace; this was followed with a succession of buildings similar in character, including a Grammar School at Newport in Essex that might have been by Robson himself. J. J. Stevenson's Red House dated from 1868, and the likelihood of his influence on Robson has already been suggested. Basil Champneys had been designing in the 'L.S.B.' style at least as early as Robson. Norman Shaw was building Lowther Lodge and New Zealand Chambers just as the first board schools were going up.

Robson's achievement, on the other hand, lay firstly in his incisive analysis of his objectives, his ready understanding of the challenge which new social demands had placed before him; secondly, in his prompt understanding that designers such as Champneys and Stevenson had hit upon a stylistic approach that might be developed in answer to this challenge; thirdly, in the superb confidence and virility with which he and his staff carried through the development of this style, giving power and sometimes grandeur where its originators could only achieve charm; and, lastly, in the truly Victorian drive with which he pushed a vast programme of work to completion with architectural standards of the very highest order maintained throughout.

Robson's private work, both during and after his days at the school board, was extensive. The foundation stone of his very enterprising design for the People's Palace in Mile End Road was laid in 1886. *It was similar in character to Bentley's Westminster Cathedral but much less earnest. The main hall was approached through a pillared rotunda flanked by two towers so tall and slender that they could reasonably be called minarets, each sporting a gilded cupola. Remembering the importance Robson attached to clarity of intention his admiration for the Greeks is not surprising. Among his recent predecessors he much admired the work of 'the late Mr. Thomson of Glasgow' —Greek Thomson. Robson himself experimented with the free use of Greek motifs in the Institute of Painters in Water Colours in Piccadilly. Ruskin admired this building for its freshness and for the purity of its proportions. The large area of blank wall, indicating the top lit exhibition space behind, is unequivocably accepted as the key feature of the facade, while the decoration by portraits of artists shows the same sense of the appropriate which we see in his schools. Robson was an ecletic, but a functional one, in that his shifts of style were an outcome of the varied uses and settings of his buildings rather than of mere whim or fashion.*



15, *The People's Palace, Mile End Road.*



16, *The Royal Institute Galleries, Piccadilly.*

right, detail of dining room chandelier, 14 ft. long and 8 ft. across, made entirely of brass. Each fitting contains 37 lamps of 40 watts each, and were made in three parts which connect into one another. There is a connector at each junction and the top 4 lamps are a pilot device on separate switches. Inset: a sketch of the chandelier.

chandelier: Caledonian Hotel, Edinburgh

designers: Robert and Roger Nicholson

This is a redecoration of the dining-room and lounge of the nineteenth-century Caledonian Hotel at Edinburgh. The dining-room has a trompe l'oeil mural (a technique which has been neglected in recent interior design) covering 4,000 sq. ft. of the walls and painted on canvas sections by Roger Nicholson, assisted by Jehan Dahly and Gordon Davies. Since the 1930's this room has had a false ceiling, and above this the original ceiling, decorated with roundels and elaborate plasterwork, has remained almost unblemished. This false ceiling has been removed and the original ceiling restored.

There are four brass chandeliers in the dining-room, enamelled deep blue and pale yellow; each contains thirty-seven electric lamps and are 14 ft. high and 8 ft. wide. Numerous technical difficulties had to be overcome in the making of the chandeliers. The first was one of wiring; a large diameter tube down the middle of the fitting with junction boxes would have looked too massive and after much thought the wiring was brought to the minimum thickness capable of taking the load and run in series so that at any point there were no more than two wires down the centre tube and no junction box



One of the four brass chandeliers, enamelled deep blue and pale yellow. Each contain thirty-seven electric lamps and are 14 ft. high and 8 ft. wide. The ceiling is in pale blue and white, decorated with golden eagles and gilded roundels.

was required. Thickness was then determined by strength, resulting in a 1 in. diameter tube. The horizontal members were welded to a 3 in. diameter steel boss, and the curved ones were welded into the main stem.

In order to get the chandeliers into the hotel, each was divided into three sections, the largest 8 ft. x 4ft. The joints finally used differed from the one shown on the drawing ; one tube now overlaps the other, with a bolt through both. Access to wiring and the replacement of bulbs has been allowed for.

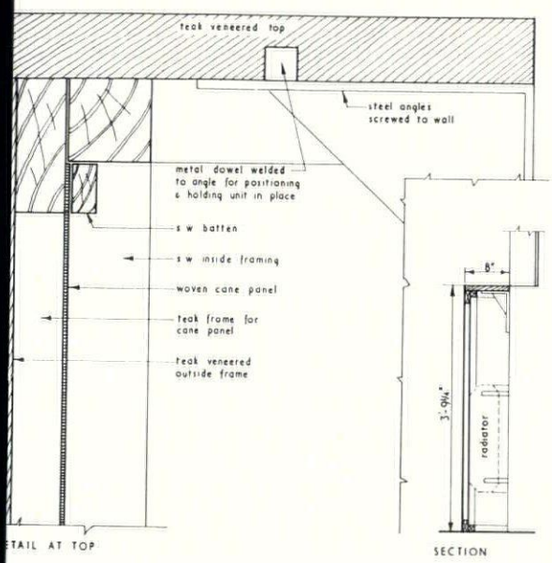
The original design provided wiring which could take either 25-watt or 40-watt bulbs—it was first intended to use 25-watt but this was later changed to 40-watt, which is nearly 1,500 watts per fitting. The top four lights are run on a separate circuit as pilot lights.

Shoe Showrooms in Regent Street W1

designers: Conran Contracts

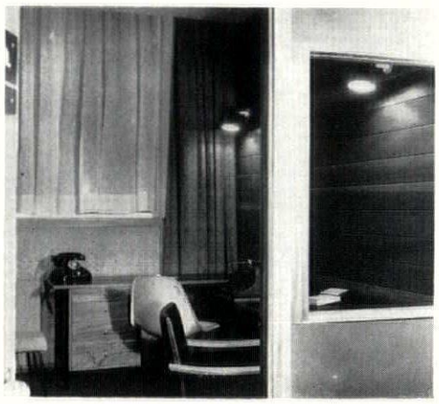
3, general view of the office.
4, office detail, showing radiator cover formed in teak veneered asbestos board with stretched cane front panels (detail, below left).

This showroom was designed to show a large number of shoes as effectively as possible in a confined space and on a small budget. The long freestanding display units are carcassed in teak and the cabinets contain storage space for shoe boxes. The sloping display shelves above have a highly polished resin finish, to prevent damage to the soles of the shoes, which are held in place by heel rails wrapped in felt and sunk in the surface of the shelves. The shelves are supported on triangulated satin chrome brackets, adjustable on keyhole strips. The radiator covers occupy the full width below the windows in the showroom and office, and are of teak veneered asbestos board with cane front panels. One wall of the office is formed of solid walnut planks laid horizontally. In the showrooms the general finishes include a pine board ceiling,



ETAIL AT TOP

SECTION



3

rich printed velvet curtains and grey carpet. The end wall is covered with stretched fabric, grass cloth and photostats. The colours are blues, greens and the natural tones of the grass cloth and pinoleum, to form a background to the leather and to the strong colours of the ladies' shoes. Over-all lighting is by tungsten spotlights and pendants; fluorescent tubes wired through the members light the display shelves.



4



SHOE SHOWROOMS IN REGENT STREET, WI

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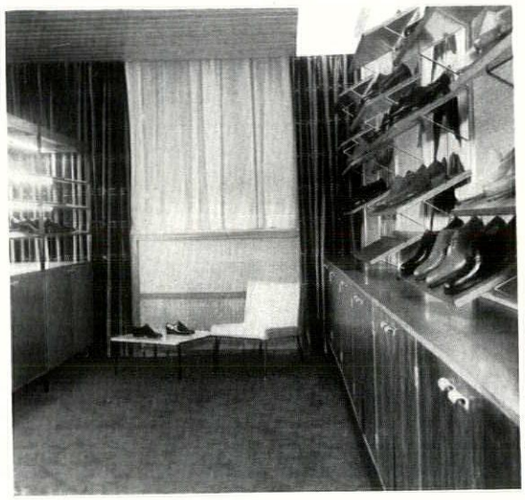


6

5. the showroom with long freestanding display units lit by fluorescent tubes wired through the frame members. Stretched fabric, grass-cloth and photostats provide the background.
6, cane-covered radiator and printed velvet curtains. On the left and right the sloping shelves of the display units are supported on triangular satin chrome brackets, adjustable on key-hole strips.
7, the pine-board ceiling with tungsten spotlights to balance the strong lighting from the display units and give over-all illumination.



7

Studio in Athens

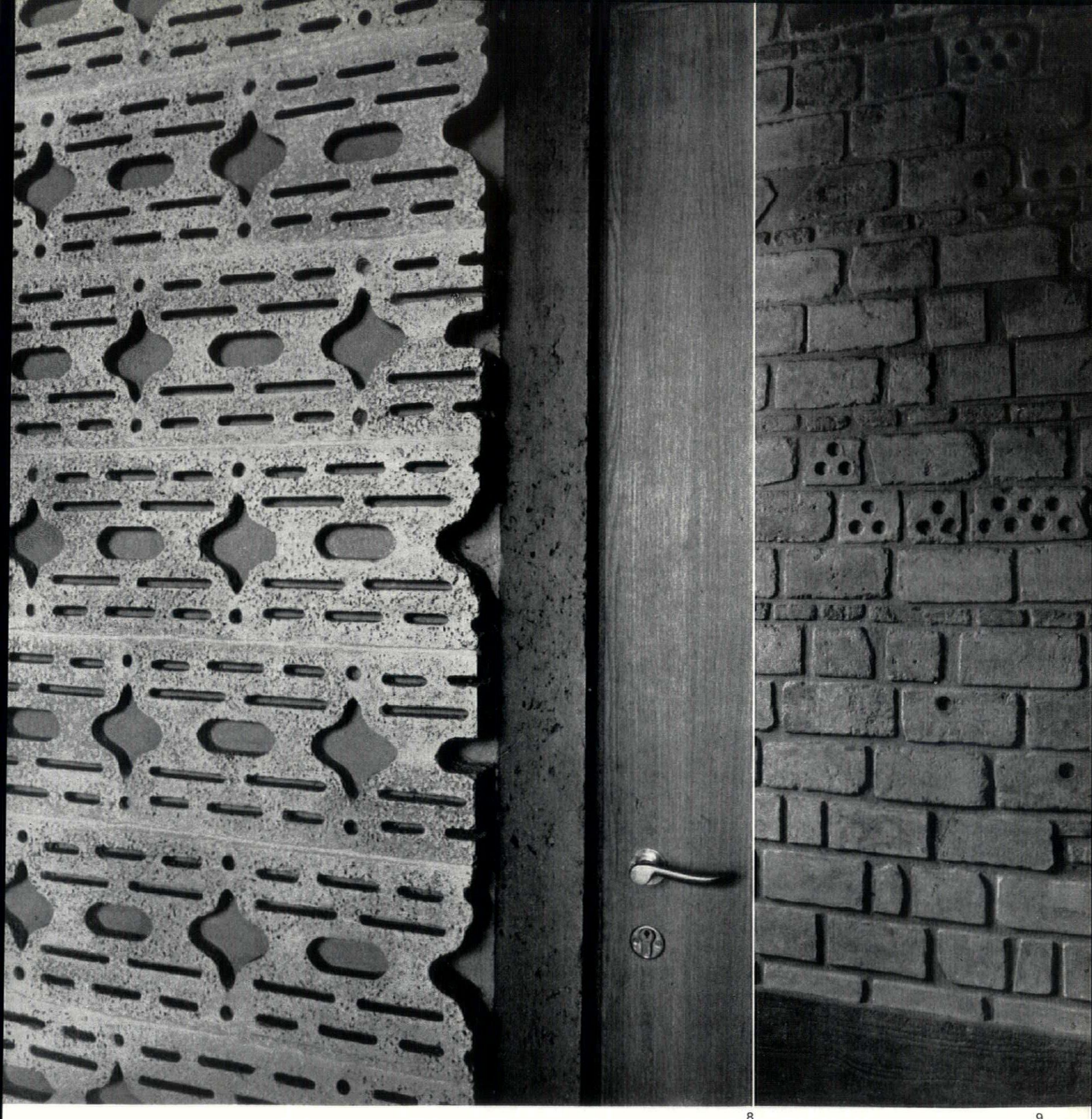
designer: N. Hatzikyriakos-Ghika

A small top-floor flat and the roof terrace above, in an apartment-block with an obtrusive concrete frame, formed the basis of this studio in Athens, designed for his own occupation by the painter Ghika, with the assistance of two of his students from the Faculty of Architecture.

It was impossible to suppress or disguise the concrete frame where it obtruded into the existing accommodation: it was necessary to turn it into an architectural virtue, and the solution evolved was applied in the new rooms as well. The general aim was to emphasise the impression of a massive post-and-beam construction; new beams were inserted, over-thick columns were split, visually, by deep grooves down the centres of their sides and an air of rough strength was given by chiselling over all concrete surfaces. To keep the ceiling in character, its plaster was hammered over to give an equally rough texture. Specially blended light enhances the grey of the structure and the white of the ceiling. The effect of this exposed structure and these rough textures could perhaps be called Brutalist, but the manner in which they have been created, like the manner in which the walls have been treated, deviates from the Brutalist axiom of using materials strictly 'as found'.

Wall surfaces are also textured, usually by the repetitive surfaces of brickwork or building blocks. Some of the walls are in fair-face brick, left in its natural colours or painted green, yellow, blue; others are of common pierced bricks, with their perforations randomly plastered in, or even completely filled, sometimes in combination with deeply cut channelling to show an appreciable thickness of terra-cotta-coloured mortar, and others again are faced with a type of pierced block used for earthquake-proof construction, but here sliced and set on edge to form a pattern with a repeat as large as the most generously-scaled wallpapers.

These rough and three-dimensionally patterned surfaces form an admirable contrast to the cork tiling of the floor, and an equally effective background to the *Empire* furniture which constitutes the bulk of the movable pieces, except for the purely functional tackle, such as drawing boards, used by the painter. There is, in addition, a certain amount of built-in furniture, some in wood, some—like the door-cases—of concrete.

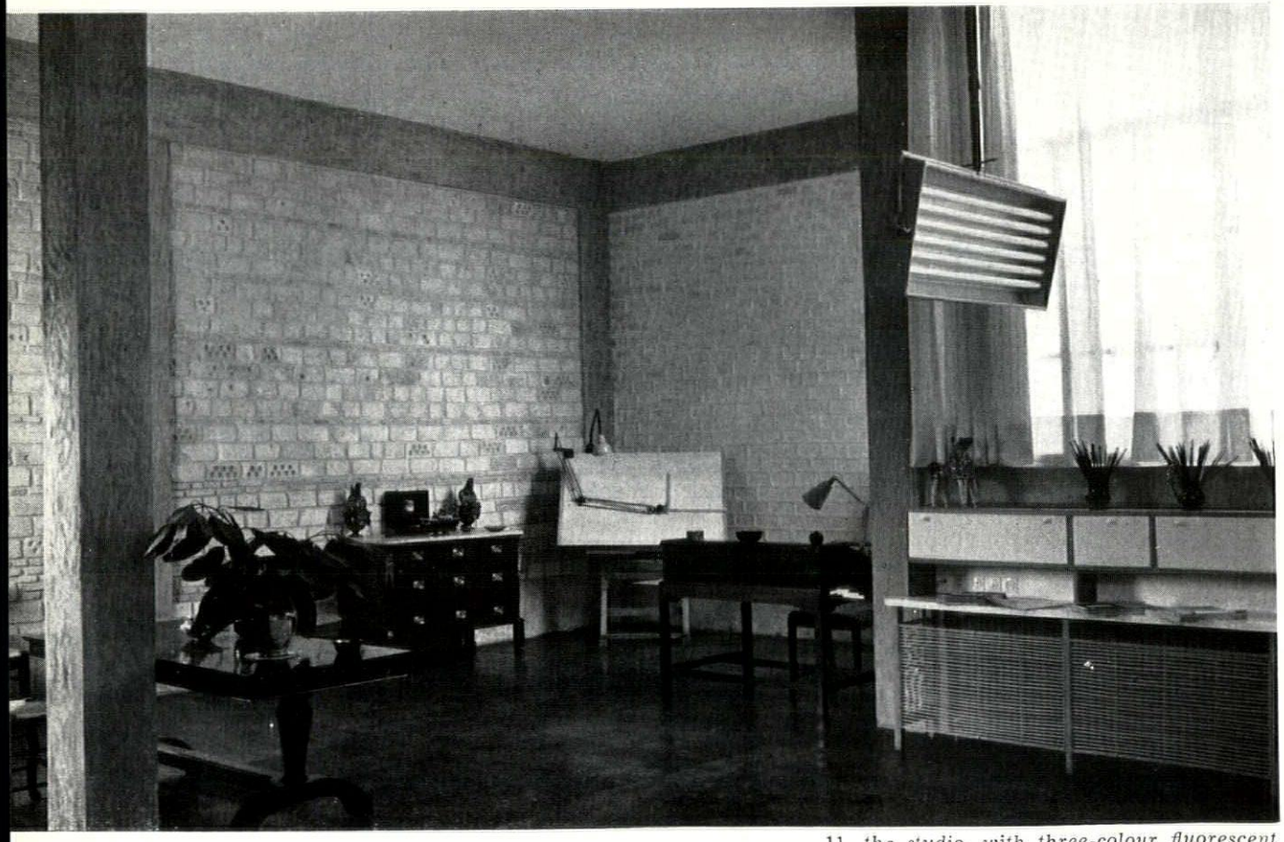


8 9

8. *detail of east wall in the living-room. The material is of large* 50 by 25 *cm. concrete blocks made for earthquake-proof construction. The blocks were sliced and placed vertically to show the patterns which are normally not seen. Concrete is used for door frames.*
9. *detail of wall in studio of salvaged cement and clay bricks. The mortar is coloured terracotta.*



10. *the south-east corner of the living-room. To the right are sliding glazed doors with concrete chiselled framing on a rough mortar wall painted white. The floor is of green plastic*



11. *the studio, with three-colour fluorescent light which can be moved along a railing in the ceiling and turned in any direction; contact is made along the rail to eliminate wiring.*

Gordon Cullen

WESTMINSTER REVISITED

Ten years ago* the REVIEW published its plan for the precinct of Westminster—Westminster Regained. Today it returns to the same field with a more modest but a more sharply focussed objective. It returns in the hope that some tiny fragment of urban drama may be salvaged out of the piecemeal, day-to-day, unrelated and unco-ordinated renewal of property (one can hardly call it redevelopment) that is taking place over the years—in the precinctual area.

Plans are prepared for the rebuilding of 1-19 Victoria Street which leads to the west front of the Abbey. I went to see the architect who explained to me his ideas for the layout of the building vis-a-vis the Abbey. I went away and tried to link his development with other contingent buildings which must soon be ready for rebuilding and to link both with the precinct of Westminster. The results are shown on these pages. It is, I believe, the last time for fifty years that the chance to redeem this part of London will come our way.

There are several approaches to Parliament Square, the core of the precinct, and of these those from Millbank and Whitehall can be accepted as fitting (worthy and suitable curtain raisers) to the scenes they eventually unfold.

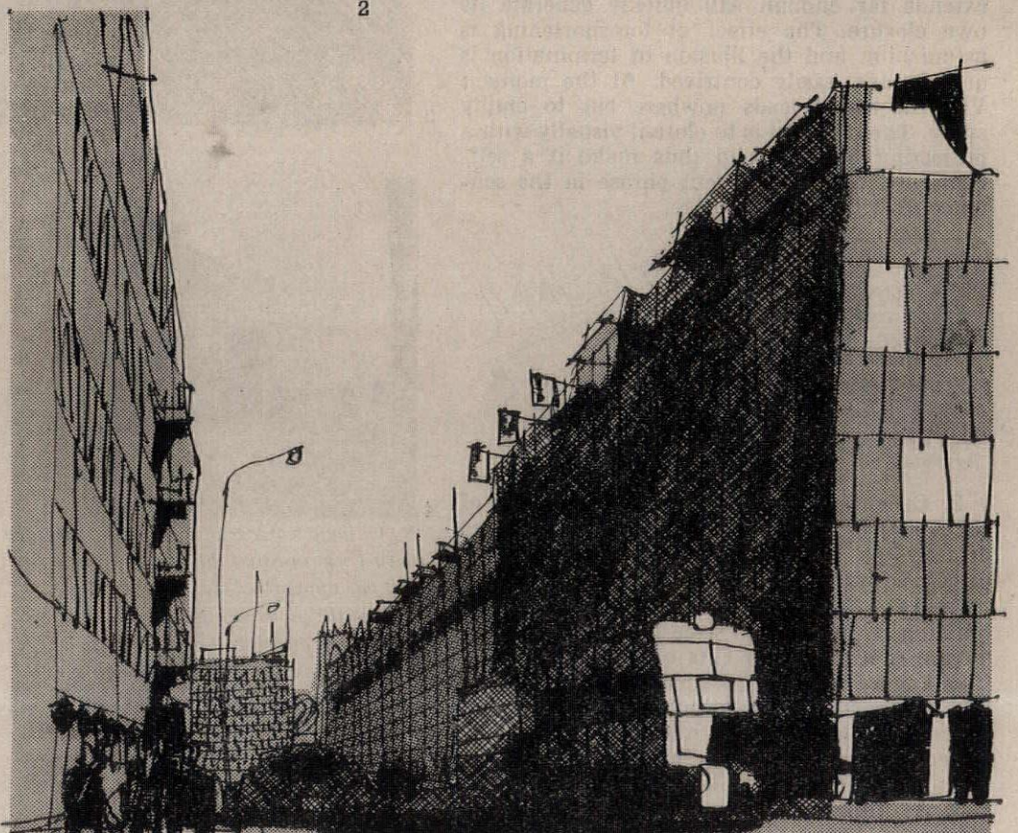
There is another entrance, that from Victoria Street, which is disappointing and intractable. It is an uncompromising diagonal straight line leading nowhere; not a single monument or spire can be seen, nothing but open sky and a Victorian office building. The whole sequence of views which it throws down from Broadway (the first glimpse of Westminster) right into Parliament Square is simply a list of alienations. The road is like a stranger striding morosely and ill-mannerredly through a group of people in animated conversation. And it is so insistent, this traffic route, that it dominates the group and destroys all relationship. The sense of enclosure and precinctual pattern are simply brushed aside and scorned.

* Westminster Regained. AR, November, 1947.



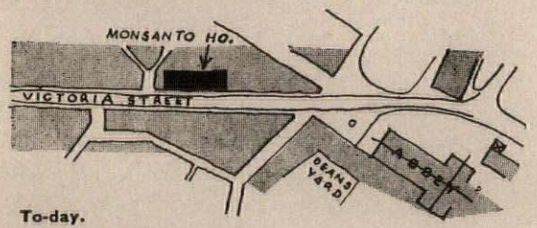
1 *On the left, 1, is the Victoria Street of today before it debouches into Parliament Square. On its right-hand side lie Nos. 1–19 which are to be demolished and rebuilt. Taking advantage of this development the* REVIEW *puts forward a scheme for the area, the first result of which would be to close Victoria Street visually so that it becomes a coherent unit as shown below, 2. (Note that the elevations of the development of 1–19 Victoria Street shown in these drawings are purely diagrammatic. They will be designed by the architect, Mr. Ronald Fielding, later.)*

2

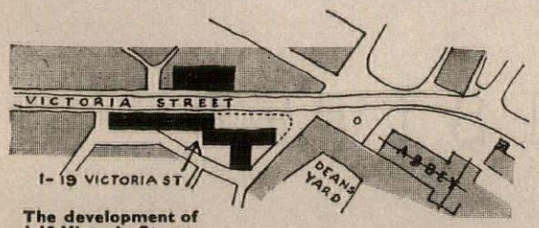


The key to the problem lies in this road. The road must participate in the precinctual pattern as we move forward and not disrupt it. This can be done by the most modest of gestures just as sympathy or understanding can be communicated by a movement of the eyebrows.

Having seen the proposed disposition of the new building for nos. 1-19 Victoria Street it is



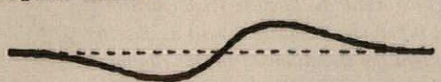
To-day.



The development of 1-19 Victoria Street.

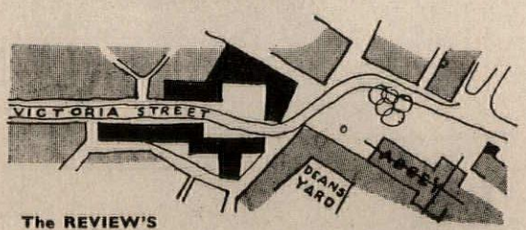
possible to capitalize on this plan. The proposal made here is to realign Victoria Street from Monsanto House to the roundabout in Parliament Square. At present it is a straight line, thus :—

I propose this :—



The following is a list of the advantages which will flow from this simple gesture.

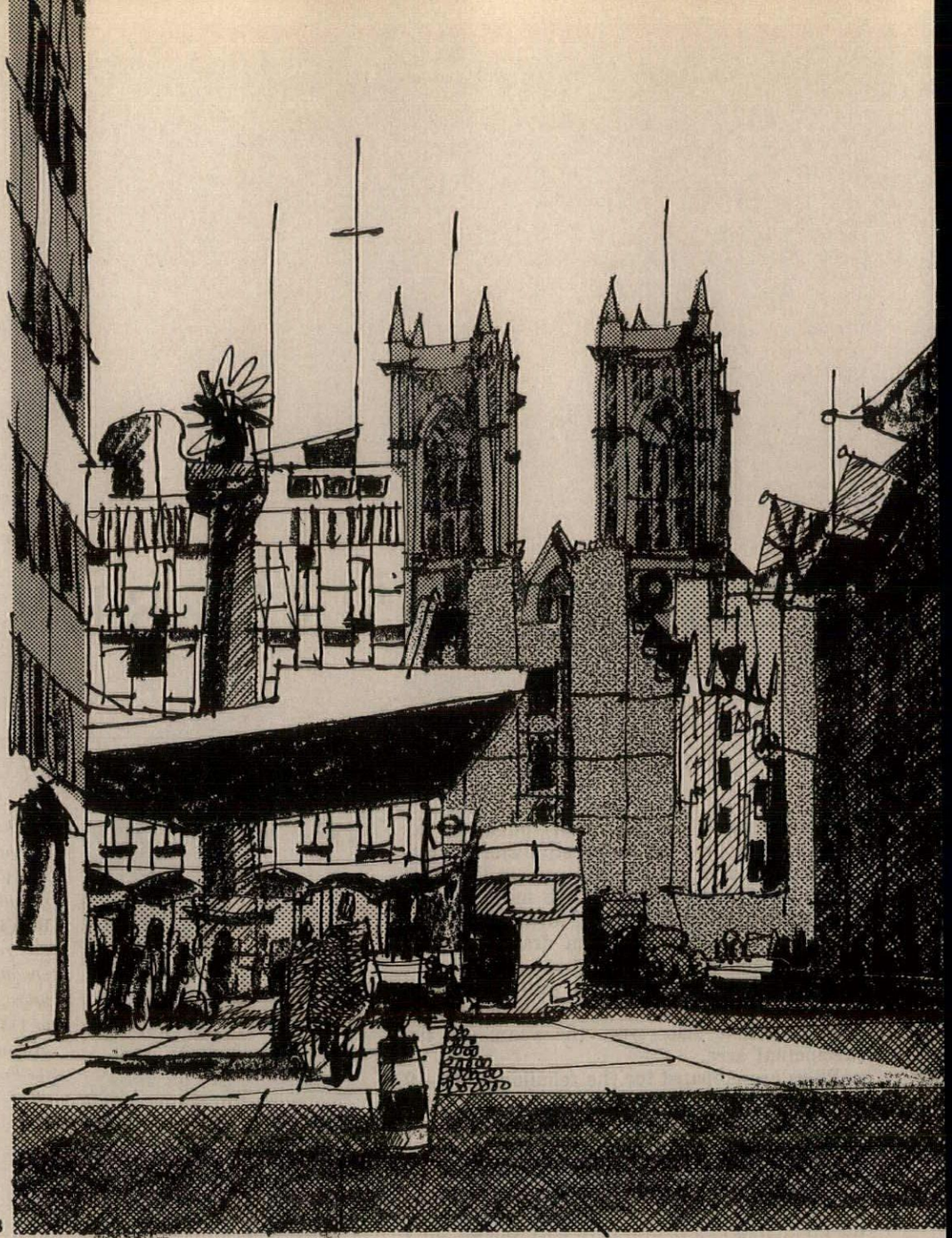
1. A slight deflection of road alignment if it extends far enough will quickly generate its own closure. The effect of foreshortening is astonishing and the illusion of termination is quickly and easily contrived. At the moment Victoria Street leads nowhere but to empty space. The proposal is to close it visually with a projecting building and thus make it a self-contained unit, a coherent phrase in the sentence. It will end in a square.



The REVIEW'S proposal.

2. On entering this square the West front of the Abbey is revealed more fully. The road aims directly at the twin towers—at last some directness, some clarity. Interposed between us and the Abbey, however, is the small Scott building which acts as scale maker and as one advances it gradually cuts off the West front. This square is made possible at the expense of filching part of the forecourt of nos. 1-19. Taking the larger view, however, surely it is better to have open space in the sunshine than overshadowed by a tall building.

3. At this point, leaving the square, the



3



4



5

By taking advantage of the proposed plan for 1–19 Victoria Street the road is realigned so that one approaches the Abbey head-on through the punctuating enclosure of a new square, top drawing, 3, instead of sliding aimlessly past the Abbey and into the void as at present, photo above, 4. On the right we see how the dramatic situation is coiled as Scott's little building cuts out the West front of the Abbey, right 5, and all the buildings crowd together at the point of transition.

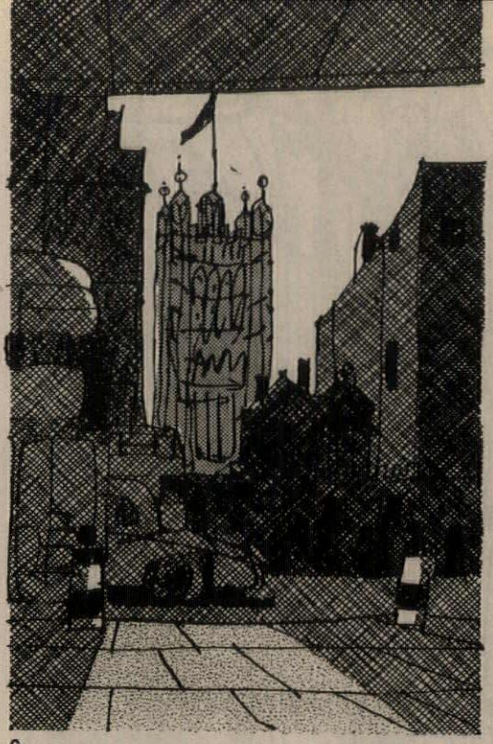
road bears left and enters the Abbey forecourt. The great West front is now finally and suddenly revealed after you pass through the narrows. This space is now an enclosure since the concentration of radial streets which suck the views has been broken and the wound staunched.

4. The most exciting views occur just at this point. It is a place of visual fireworks. Not only does the Victoria Tower suddenly and unexpectedly appear in a space between two buildings but the whole miraculous enfilade of towers and monuments crowd together jubilantly. It is one of the great views and the space is pedestrian.

5. The new road alignment will throw the available open space decisively into the visual possession of the Abbey thus resolving the present ambivalency.

6. The new arrangement of building at the junctions of Victoria Street and Tothill Street will result in the creation of that most essential element, a west wall to the Abbey forecourt. At present there is a needle point, a concentration distracting vistas.

These benefits, all of which will help to establish a precinct, flow from the road alignment. That this can be done without major expense and without slowing traffic is clear.



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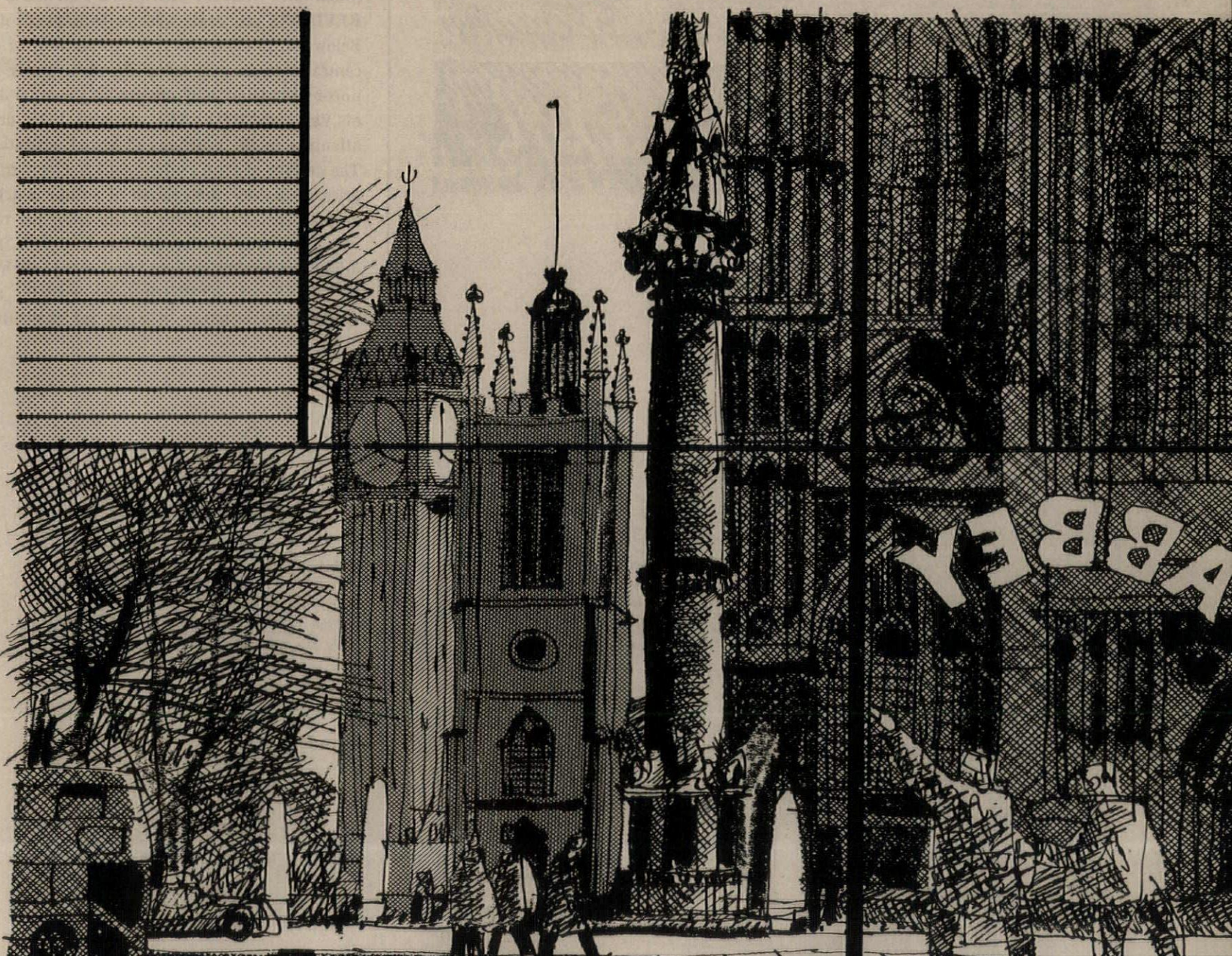
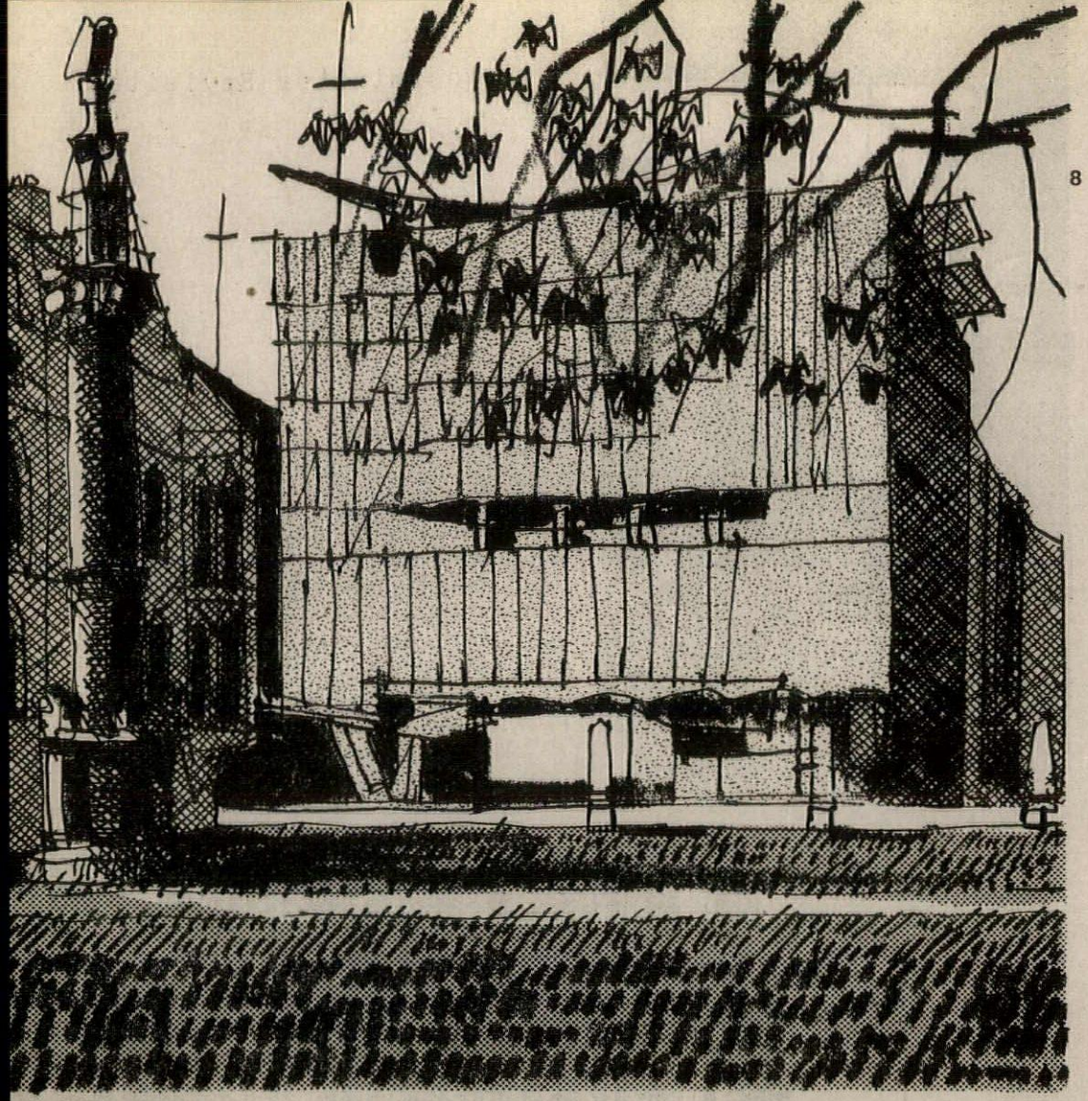
In the moment of transition from the unity Victoria Street to the new and astonishing unity of Broad Sanctuary, quite suddenly half a million cubic feet of masonry, the Victoria Tower, swings into view and is lost again, left 6, *as the whole jubilant enfilade of towers, masts and monuments is revealed, below* 7, *one of the great views of Europe. View? It is more like organ music.*

7





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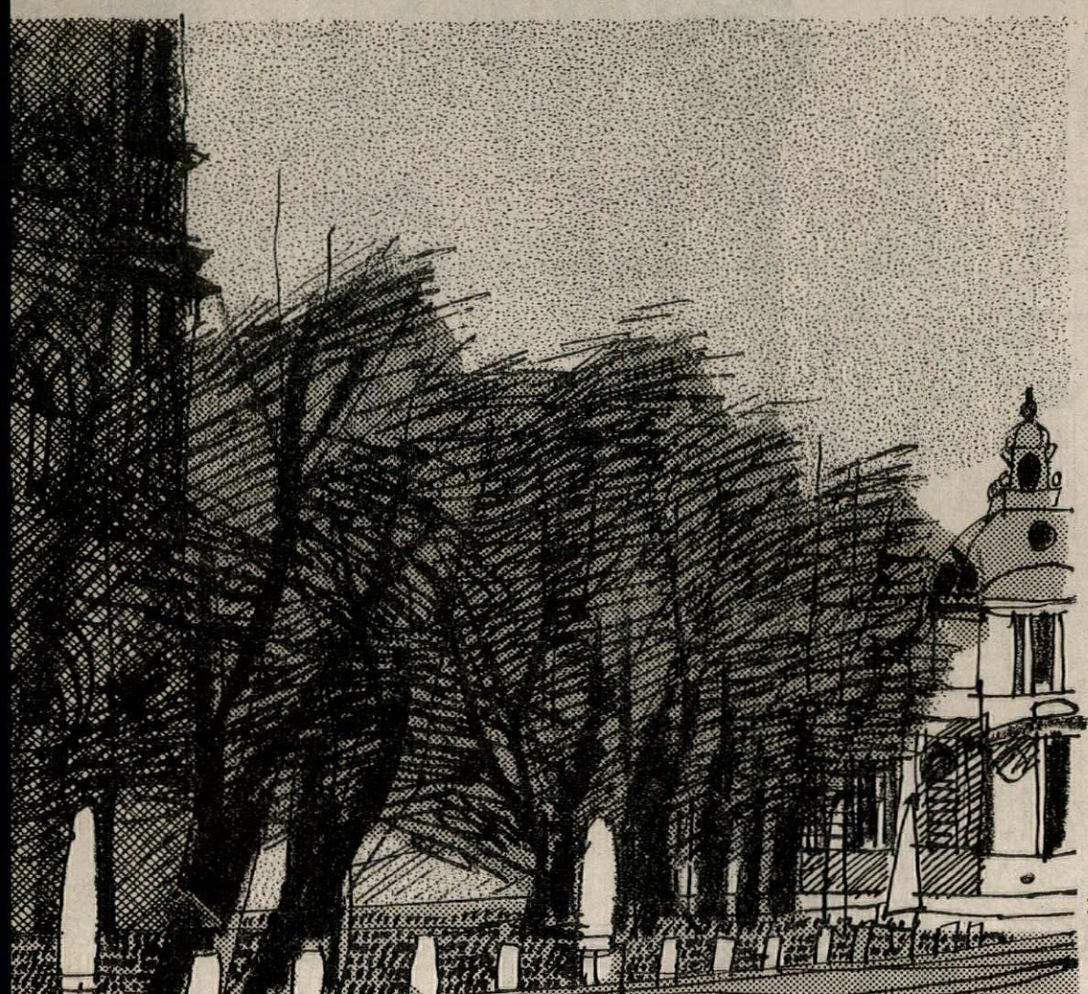
9

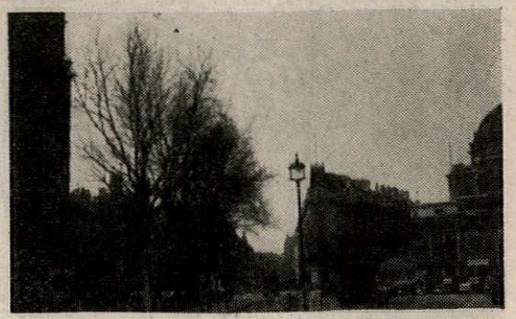
Once inside Broad Sanctuary we find that it begins to live up to its name at last. For although it is still busy with traffic, two major changes have taken place. First, it has become a visual enclosure, thanks to the proposed new building which closes Victoria Street, left 8, *and the yawning wound, above* 9, *is staunched.*

On the facing page the air view, *a*, shows in rough form what the area would look like if the REVIEW'S proposals were to be implemented. Below, *b*, in comparison is the air view of the central area as it is today showing clearly the uncompromising and disrupting diagonal line of Victoria Street. The arrowed lines draw attention to the positions of visual advantage. The gesture of road realignment is a very small price to pay for the release of so much urban drama. The slow curves of the realigned road will in no way hinder the flow of traffic, and might profitably reduce the speed slightly, for the heart of Westminster visually and symbolically is hardly a stock car racecourse.



10

Secondly, the available open space has been thrown into the possession of the Abbey. There is a great deal to be said for a ground surface which stretches right up to the black stone buttresses. The further this ground stretches, the further the magic of the Abbey stretches. This ends the present ambivalency, the tendency to split the open space on to both sides of the road and thus reduce its authority, the contrast can be seen in 10 *and* 11 *below.*



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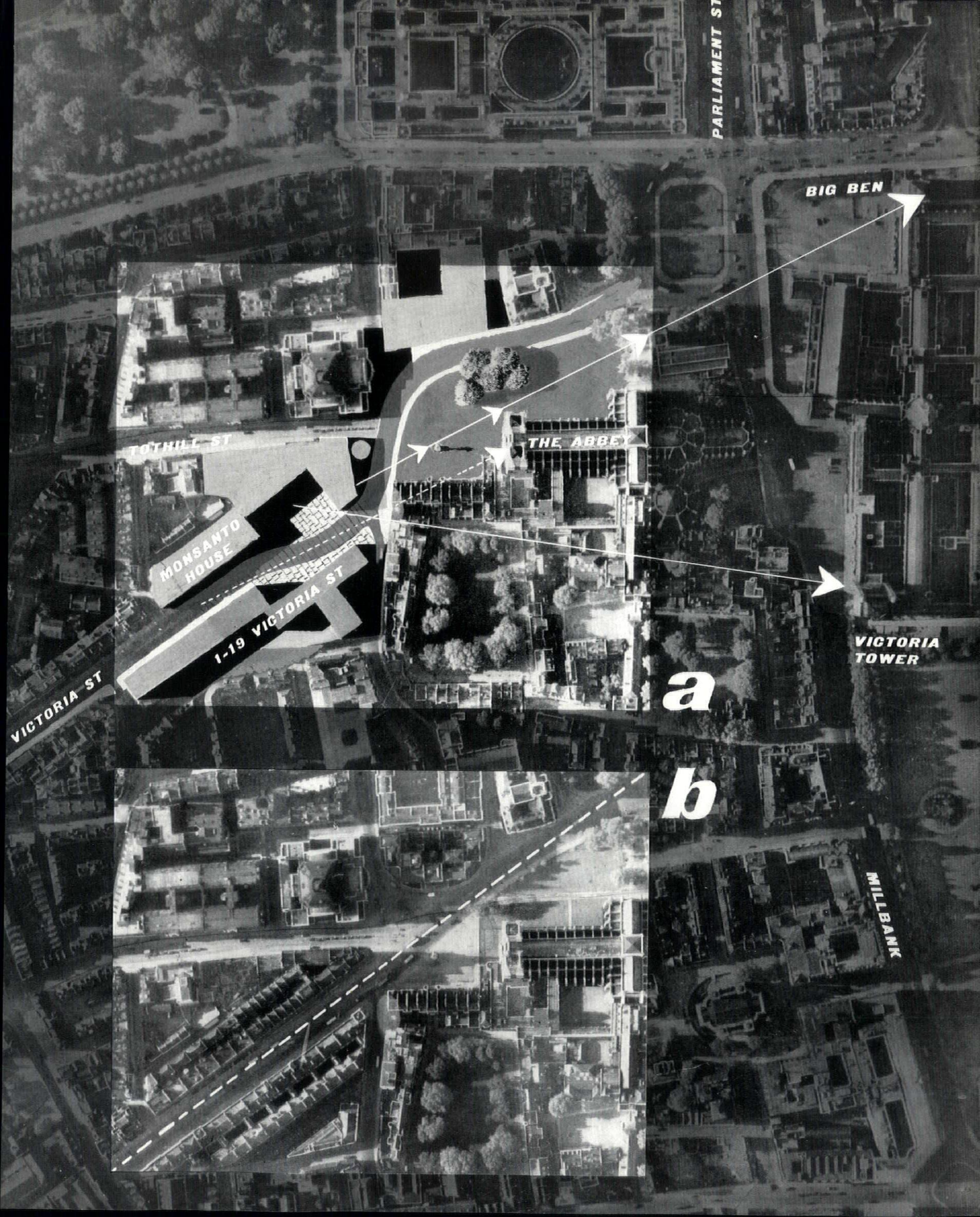
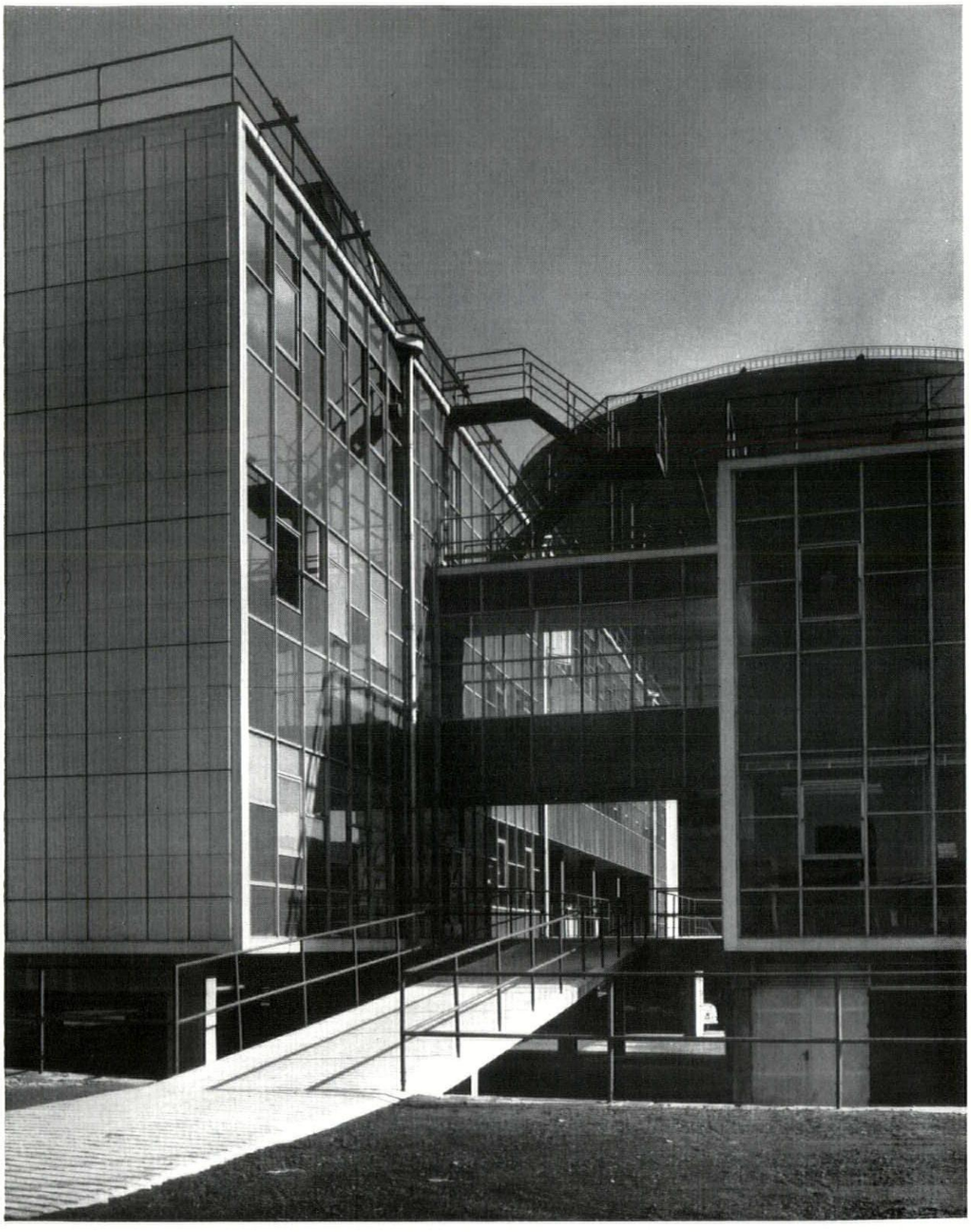

PARLIAMENT ST
BIG BEN
TOTHILL ST
THE ABBEY
MONSANTO HOUSE
1-19 VICTORIA ST
VICTORIA ST
VICTORIA TOWER
a
b
MILLBANK

OFFICES AT BECKTON

ARCHITECT: ELIE MAYORCAS



1, *the link between the two office blocks seen from the west, with the bridge leading to the main entrance, which is at the left on first floor level.*

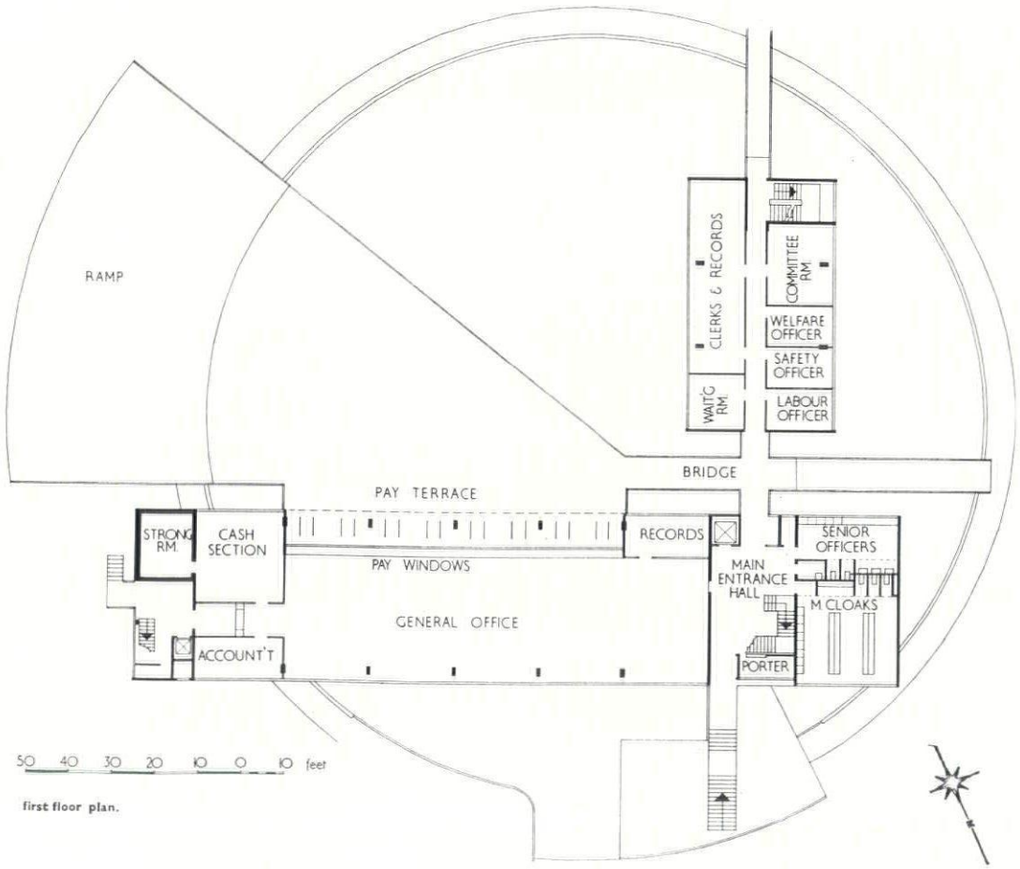
This administration block at Beckton Gas Works, East Ham, replaces temporary accommodation which had been in use since the original building was blitzed in 1940. It houses the station engineering staff and counting house and includes canteen and games rooms and an underground emergency works control room.

The site faces the main approach road and is a disused gas holder foundation, consisting of a cylinder approximately 200 ft. internal diameter and 30 ft. deep at the perimeter, with a raised central dumpling, the whole built in mass concrete backed by puddled clay. The surrounding ground is waterlogged and of very poor bearing quality. Provision of the lightest and airiest possible working conditions in the centre of an industrial area was the aim. The building has been designed to allow for future expansion by the addition of two floors on each wing.

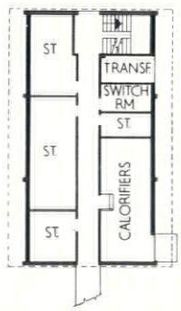


2, *detail of the glazed link and the curtain walling of the main block from the east.*

Offices at Beckton

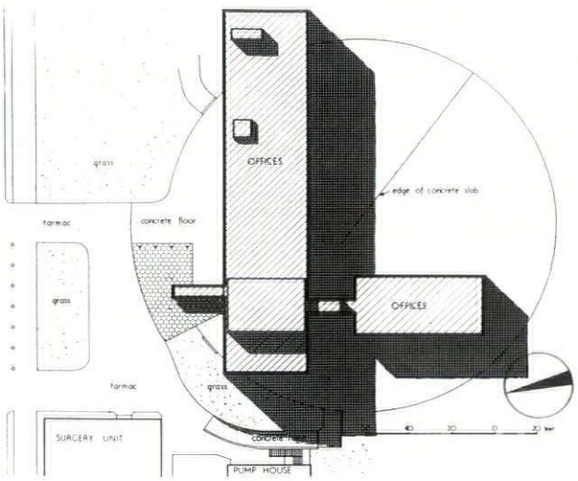


first floor plan.



ground floor plan.

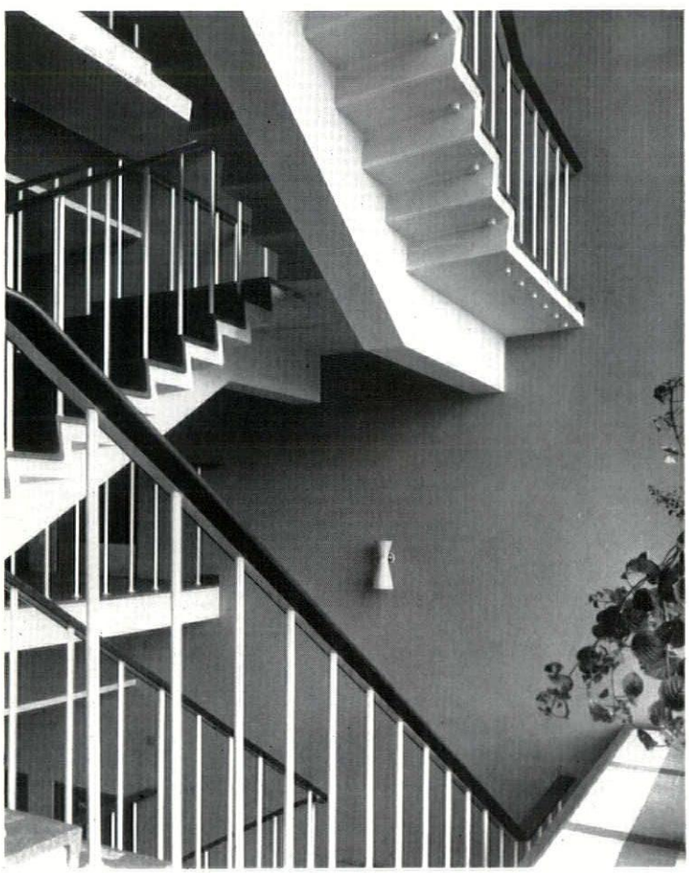
Offices at Beckton



site plan.



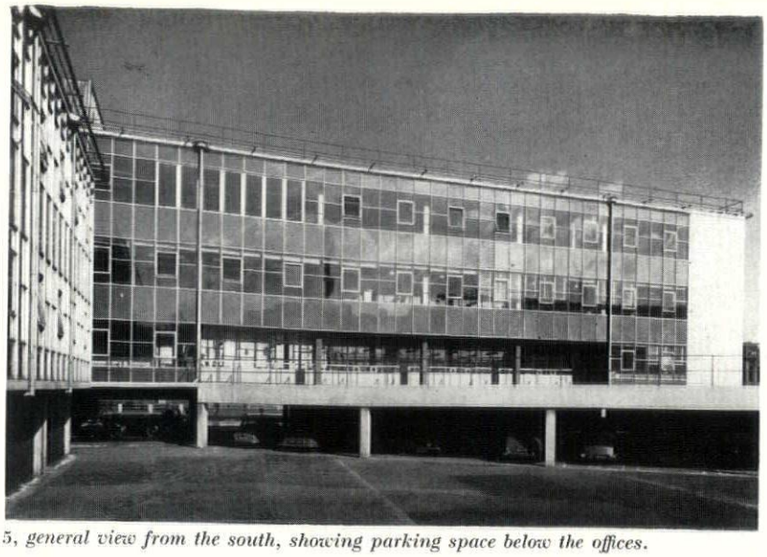
3, *main office block from the ramp leading up to the pay terrace which is recessed under the facade of the building.*



4, *detail of staircase.*

The entire building is designed on a 40-in. module: the structure is a monolithic reinforced concrete frame with reinforced concrete floors and roofs and hollow-pot infilling, with the frame supported on precast reinforced concrete piled foundations. Staircases and fire break walls are also reinforced concrete monolithic with the structural carcase, but shuttered up and formed subsequently. The external cladding is aluminium curtain walling with infill backed spandrel panels; the concrete walls are externally faced with faience slabs, while the penthouse on the main roof, which houses the storage tanks and ventilation plant, etc., is steel framed for future removal, and clad with aluminium sheeting and decking and patent glazing. The internal partitions are generally 2 in. thick, lightweight demountable units, formed of compressed straw and hardboard facing with timber 'dropper' units for wiring chases. The flush doors are veneered in African mahogany with satin silver anodized ironmongery and mahogany door frames or linings.

Thermoplastic tiles with in situ terrazzo on the main staircase are mainly used for the floors. Suspended ceilings over all office areas are aluminium panels, left natural; the roofs are covered with multi-ply bituminous felting and tarmacadam finish. The Pay Terrace is finished with 2 in. tar paving, laid on top of a rubber bituminous membrane, incorporating woven fibre glass cloth.



5, *general view from the south, showing parking space below the offices.*

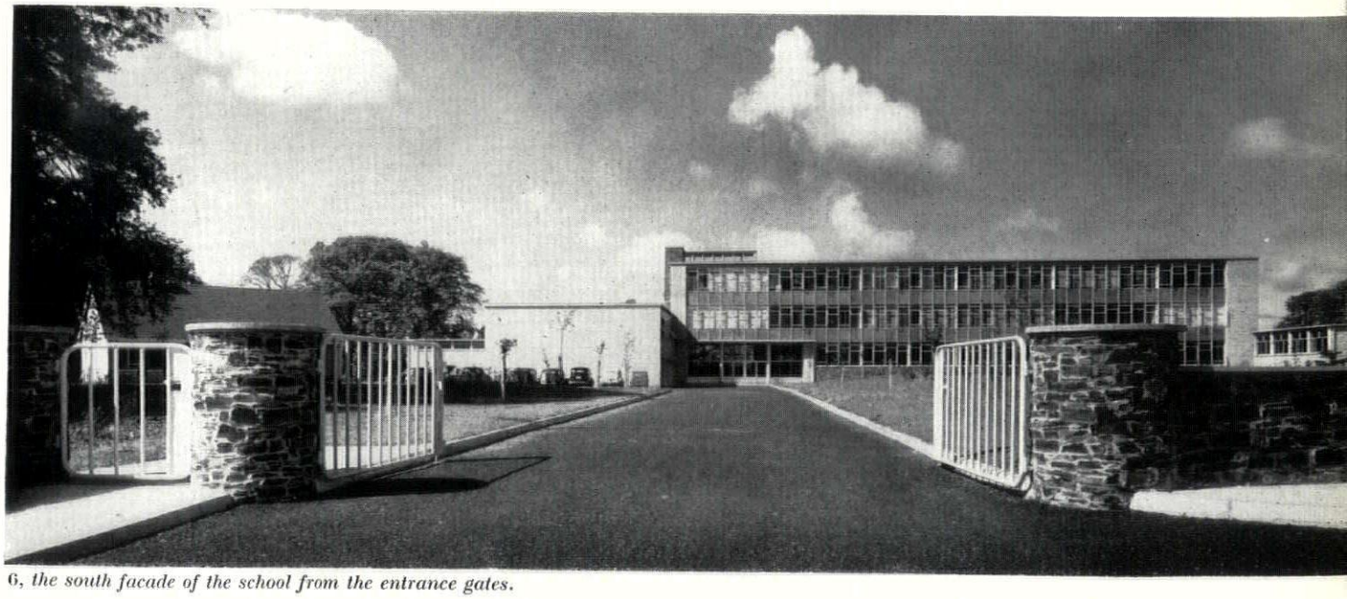
Offices at Beckton

Steam from the works provides the domestic hot water and heating. There is mechanical ventilation and heating is by the plenum system. There are also radiant heating panels in the ceiling soffits of the offices, to offset heat losses through the fabric of the building. Lighting is mainly fluorescent. Service pipes, ducts, etc., are concealed in the space between the suspended ceilings and soffit of the floor slabs, the beams being specially designed to permit their passage. The ceiling panels are removable for access to services. Telephone services are run in fibre ducting laid in the floor screed, to give flexibility for future connections.

SCHOOL AT WADEBRIDGE

ARCHITECT: F. K. HICKLIN, COUNTY ARCHITECT

ARCHITECT-IN-CHARGE: H. DOOTSON

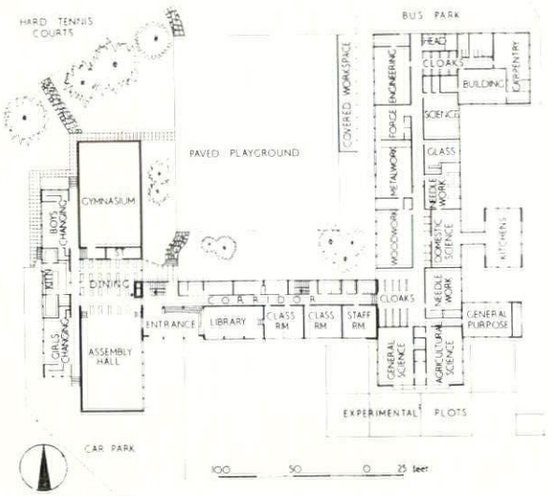


6, *the south facade of the school from the entrance gates.*

This secondary mixed school for 600 children is on a fairly level site on high ground north of Wadebridge, with a very gentle slope to the west. For a number of years the secondary school will remain 3-form entry and the remainder of the building is used for further education. Most of the teaching spaces face south in one three-storey block served by staircases at either end. The assembly block contains the gymnasium and assembly hall, separated by a



7, entrance and curtain walling of classroom block.



ground floor plan

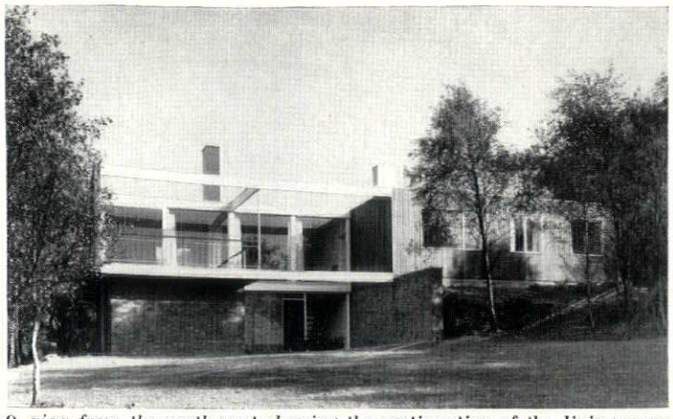
very large stage, which is used for dining; practical accommodation and workshops, temporarily used for further education, are in a single-storey block to the east of the site. The building generally is of cross wall construction, which has proved to be very economical, roofed with lightweight concrete slabs on timber joists. The principal facing material is reconstructed stone, but some local natural stone has been used in panels. Heating is by radiators, with air heaters to the assembly hall and gymnasium only. The boilers are oil fired.

8, entrance hall with library beyond and stairs leading to assembly hall on left.



HOUSE AT NEWSTEAD ABBEY

ARCHITECTS: BARTLETT AND GRAY



9, *view from the north-west showing the continuation of the living room wall along the terrace to form a wind screen.*

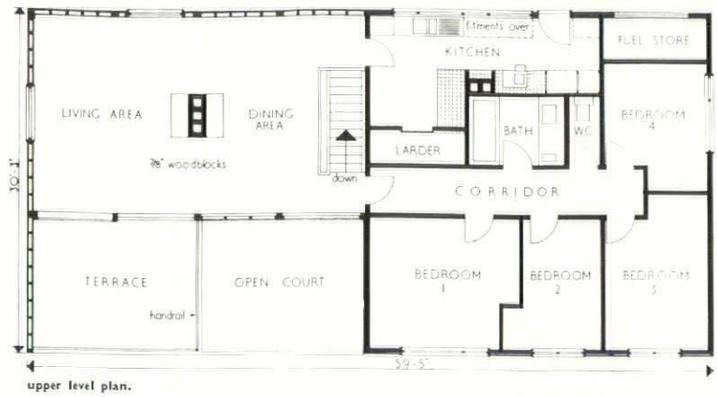
The house is on an eleven-acre wooded site near Newstead Abbey, between Nottingham and Mansfield, with views to west, east and north. It provides four bedrooms and a living-dining area made as large as possible, connecting with an open court and a terrace facing west, all on the upper floor; the living room wall is continued along the north side as a wind screen. The lower floor contains garage, workshop and hall and is built on 4 in. lightweight loadbearing blocks; the upper floor is clad with 1 in. tongue and groove boarding on 2 in. by 1 in. battens, incorporating top and side hung timber framed opening



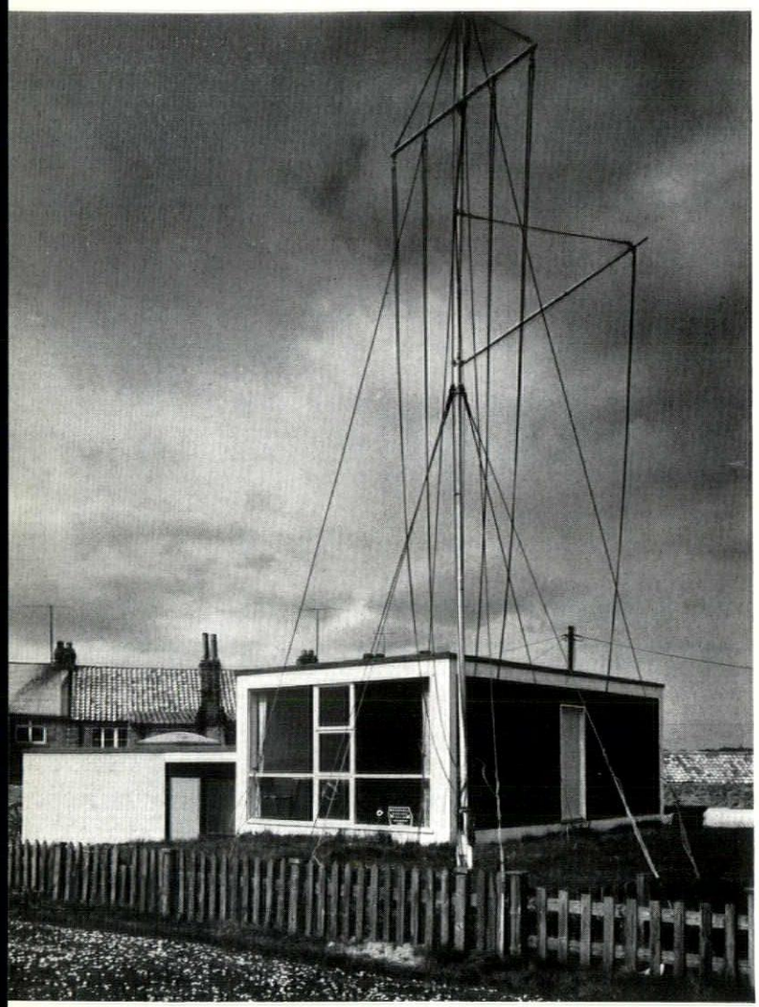
10, *detail of the open courtyard, showing the hall and the open staircase leading to the main rooms on the first floor.*

House at Newstead Abbey

lights. The first floor is 7½ in. *in situ* reinforced concrete: the roof has 1 in. tongue and groove boarding with glass wool blanket insulation laid on timber joists, finished with three layers of bituminous felt and aluminium trim. The contract price was £5,945.



upper level plan.



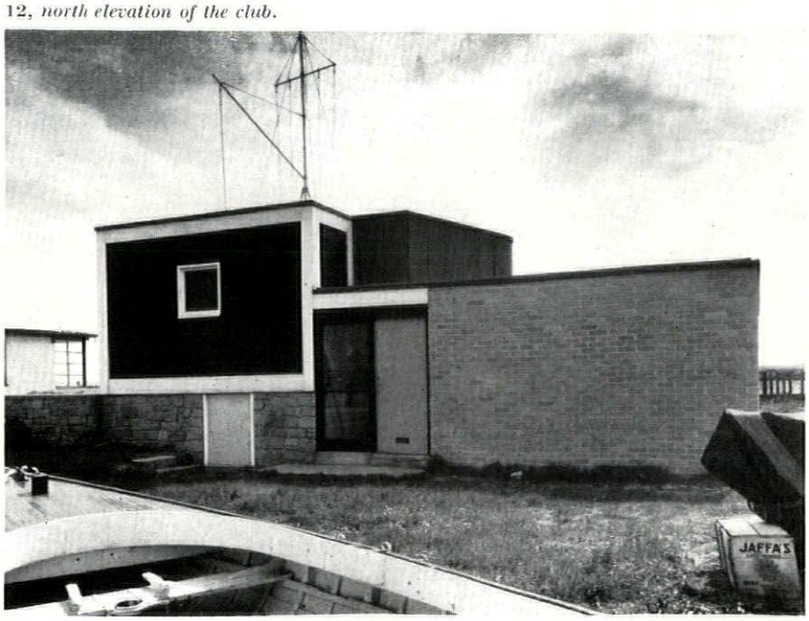
11, *view from the south-east with the large lounge window looking onto the dunes.*

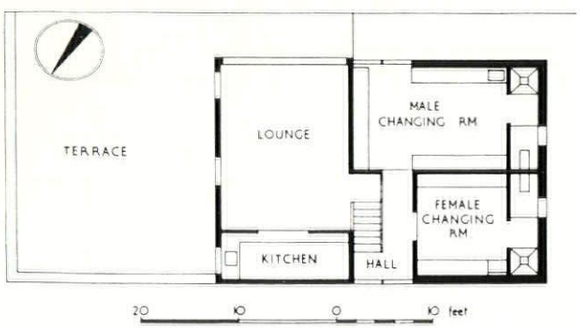
SAILING CLUB AT BEADNELL

ARCHITECTS: RYDER AND YATES

This sailing club was built for £1,300 on a site half way up the Northumberland coast with a main view over the sandhills to Dunstanburgh Castle. The requirements were for a club lounge, two changing rooms (male and female), a small entrance hall and a store for spars and sails. To gain a view over the sandhills it was necessary to raise the floor of the lounge 5 ft. above the general level of the site; the space under this raised floor was used for storage. The low level, consisting of entrance hall and changing rooms is built of brickwork on a concrete floor; the lounge is timber boarded on a wood frame raised on a random rubble plinth that forms the walls of the store. The woodwork is painted black and white and the doors are yellow ochre. The roof of felt is in two colours: the flat surfaces are green and the vertical faces of the curved tank room are dark red.

12, *north elevation of the club.*





ground floor plan.

BOOKS

LAST OF THE GIANTS

ISAMBARD KINGDOM BRUNEL, *By L. T. C. Rolt. Longmans, Green and Co. 25s.*

Brunel, who, like the mercurial Pugin, was half-English and half-French, was a dramatic and colourful figure in a dramatic and colourful age and it is a surprising thing that no one has written his complete life story before—not even the moralising Smiles.

It is true that his eldest son wrote a biography of a heavy, filial piety which appeared in 1870 and that in 1938 there was published the family tribute, *The Brunels, Father and Son*, written by I. K. Brunel's grand-daughter, Lady Noble; but these are limited and incomplete. Now Mr. Rolt, an engineer turned writer who first gained fame with his best-selling *Narrow Boat*, has produced a workmanlike, well-organized and gripping story in this his first biography, for which he has drawn largely on original and unpublished sources.

The tale is told simply and without affectation. It not only deals with the engineering works—the Great Western Railway (with its masterly bridges, its revolutionary broad gauge and its cathedral-like terminus at Paddington), the three iron ships, the prefabricated hospital buildings for the Crimea, the unfinished Clifton Bridge—but it reveals, as no other work has done so far, the vivid personality of the diminutive body who was a giant in an age of giants, one of those men who were never afraid of bold experiment, of bearing with fortitude enormous burdens of responsibility, and of generating a driving, purposive enthusiasm which could carry them through years of arduous labour, continual and uncomfortable travel, physical danger and very little sleep.

The book gives us an early and revealing sight of Brunel when, at the age of twenty, he had taken over from his ageing father the supervision of the construction of the Thames Tunnel. The river water suddenly burst into the Great Bore, as it had been called, and young Brunel, though half-drowned, badly injured and quite resigned to dying, was able to appreciate the scenic effect; for, as he recorded later while recuperating, 'the roar of the rushing water in a confined passage, and by its velocity rushing past the opening was grand, *very grand* . . . the sight and the whole affair was well worth the risk. . . ."

Another revealing glimpse comes in a domestic scene. Brunel had accidentally swallowed a half-sovereign while entertaining the nursery with conjuring tricks and he was slowly choking to death. An operation on the wind pipe proved useless and he then applied his engineering skill by devising an apparatus which whirled him round violently, finally dislodging the coin by centrifugal force.

We see him staunchly fighting through the years for his broad gauge line; supervising the raising of one of the enormous bow trusses on his Saltash Bridge in a tense atmosphere of silence; accepting defeat at last on his abortive atmospheric railway in the west country; hurling sarcastic remarks at the dull, timid and obstructive bureaucrats of the Admiralty whom he heartily despised; finally we see him as a dying man determined to survive until his last and greatest 'chateau d'Espagne,' the *Great Eastern*, was safely at sea.

Behind his toughness we occasionally glimpse the sensitivity of the artist and behind his spirited enthusiasm a deep melancholy which was not always under subjection. 'In this unhappiness,' writes Rolt, 'in a nature so intensely proud and gifted with so vivid an imagination, we have, surely, the key to his extraordinary energy. Doubt and pessimism which might have driven weaker natures to apathetic despair or to orgies of self-indulgence drove Brunel into a fury of creative activity.'

The author concludes on a sad philosophical note: 'The historian of the future will assuredly see Isambard Brunel as the key character of his century, the archtype of the heroic age of the engineer and the last great figure to appear in this, the twilight of the European Renaissance. . . . He and his generation bequeathed a sum of knowledge which, like his great ship, had become too large and too complicated to be mastered any longer by one mind. Consequently, all scientific and technical development thereafter depended upon specialization to an ever increasing extent. The result has been that while the collective sum of knowledge has continued to increase at a prodigious rate the individual sum has so seriously diminished that, to paraphrase Goldsmith, while machines have multiplied, men have decayed . . . the process of specialization has by perpetual reduction destroyed that catholicity of intellect without which civilization cannot survive.'

Perhaps we can pick up a crumb of hope for the future in the very fact that this view is now conscious and articulate, not least among the educationists. **Eric de Maré**

CONCRETE THRILLER

THE WORKS OF PIER LUIGI NERVI. *Introduction by Ernesto N. Rogers. Architectural Press, 56s.*

It is a new phenomenon that one of the most brilliant architects of an age should not be an architect but an engineer. Perhaps it might be said that the same was true during the fifty years of Telford, Brunel and Paxton, and that Paxton was not even an engineer. But the Crystal Palace, even by the most rabid defendants of the equation of function and beauty, is admired for the ingeniousness and inventiveness behind it rather than for the aesthetic achievement accomplished by them. Brunel wanted to garnish the Clifton Bridge with Egyptian decor. And Telford? His case is indeed similar to Nervi's at first sight. He handled a new and fashionable material, cast iron, with as much originality as Nervi handles his one and only chosen material, concrete. He was as much fascinated by sweeping spans as Nervi, and created as much elegance and stability by them. But there is one fundamental difference. Telford's structures were not admitted as architecture by his contemporaries. So he could pioneer unnoticed and untroubled by the specialists in aesthetics and the conoscenti. Nervi's buildings are buildings just as those of any architect anywhere—exhibition halls, a stadium, a factory, a warehouse, a skyscraper-office-block, a covered swimming pool. The only parallel we have in this country is Sir Owen Williams—admittedly on a minor scale, though coming close to a major one in the factory for Boots the Chemists in 1932. Those exactly were the years in which Nervi also emerged. One heard of him first as the architect of the Florence Stadium with its 65 ft. projection of the roof and its two interlocked helical staircases swinging unsupported through space. He was forty then. After this came the famous hangars of Orbetello with their 120 ft. span. All the rest of his major works were done when he was over fifty-five, mature works not lucky accidents. They represent a wide range of possibilities, most of them hardly tried out for architectural purposes before, and a number of them structurally so novel that Nervi could take out patents for them. Yet they are all clearly members of one family, characterized, aesthetically speaking, by certain favourite motifs or features: very heavy low supports, arches tapering like Maillart's bridge arches, and beams set lozengewise, a little like those of the German lamella roofs of light timber, built in the early thirties, or beams set parallel like curved rafters and longitudinally connected by boldly curved 'purlins' so as to obtain an effect of corrugation. The spans are up to 240 ft. in the biggest of the Turin exhibition halls and up to 600 ft. in projects for a railway station and an airport. The widest steel span of the nineteenth century was Broad Street Station, Philadelphia, with 300 ft., Milan Station has a concrete span of 240, and Telford's amazing design for London Bridge 600. So it is not bigger spans that make Nervi what he is, not necessarily better spans either, but spans of an aesthetic character never achieved before him and initiating something that in the work of younger men, like the architect Nowizki and the engineer Candela, seems to amount to a new architectural aesthetic of the mid twentieth century. There lies Nervi's greatest triumph. It is an architect's, that is a visual creator's, as much as an engineer's. And this

is where an unexpected piquancy comes in. Nervi will not admit any intentions of visual creation. He insists that all he does is 'costruire correttamente,' the title of his most recent book. In this he seems curiously detained by the aesthetics of the twenties and early thirties. Perhaps what detains him is the fact that so many little Nervis, for the sake of nothing but novelty, play with the kind of visual thrills which in Nervi's own *oeuvre* are the outcome of close calculation, astringent intellectual discipline and genius. Structural acrobatics is what he calls the Nervism now rampant in most countries. His argument is that with the means of today's technology, pretty well anything can be done, but that the justification of each piece of visual innovation lies in its practical and economic advantages. But, it must be answered, the eye cannot perceive them, and as far as aesthetics are concerned, surely the eye must remain judge. So the reason why Nervi's unprecedented forms in concrete are aesthetically better than the next man's is not that they are correctly constructed but that they are the outcome of genius.

N. Pevsner

CATHEDRAL HISTORY

THE ENGLISH CATHEDRAL THROUGH THE CENTURIES. *By G. H. Cook, Phoenix House, London,* 1957. 45*s.*

The excellence of Mr. Cook's previous books on chantry chapels (1947) and parish churches (1954) is due largely to the wealth of information they give on the social aspects of medieval architecture. The merit of his new book lies again in the chapters dealing with such matters. He is especially interesting on the constitution and the functions of the English cathedrals and the evolution of the diocesan system, and he presents much illuminating material on the building methods of the Middle Ages in England. It is a pity that he did not confine his book to subjects of this kind and devote all his space to them. The over 100 pages on architectural history proper are less necessary, since we have Mr. Harvey's volume, and they come less easily and comfortably to Mr. Cook. Proof of that is his curious treatment of the Canterbury choir, Wells and Lincoln under Transitional and not Early English, of the Wells chapter house under Early English and the Wells Lady Chapel under 1320–65. On the problem of who designed the medieval cathedrals he is old-fashioned and reproduces the late G. G. Coulton's views unquestioningly. Yet what Coulton and others have proved is only that clerics were scarcely ever masons, not that they could not design—in the sense of suggesting to the masons the principal elements or effects of some *novum opus*, as Alan of Walsingham did for the Ely octagon.

Mr. Cook includes among his cathedrals those which, like Bristol, Gloucester, Oxford, Peterborough, Southwark and Southwell, were not cathedrals in the Middle Ages. This is clearly an advantage for the continuity of his narrative, and it remains a disadvantage that churches as important for an understanding of the development of architecture in England as Tewkesbury and Westminster could not be included. The story is carried up to the present day with the new work in such places as Sheffield, Bradford, Blackburn, and with the new cathedrals of Liverpool, Guildford and Coventry. No doubt is left as to where Mr. Cook's sympathies are. Liverpool is his frontispiece, Guildford receives his most enthusiastic praise, and even of Blackburn he writes that it will be 'a noble building' in which 'new and old are combined in a perfect harmony of design,' whereas in the case of Coventry all that can be said is that he tries to be meticulously fair.

The book has 115 illustrations in half-tone and 28 in line. Most of the latter are plans, a great asset, as all the old and eight of the new cathedrals are represented in this way. It is a pity, however, that the plans are not reproduced all to the same scale, which could easily have been done.

S.T.S.

IDEAL PERSPECTIVES

THE VANISHED CITY. *By Oliver Lawson Dick and Robert Carrier. Hutchinson,* 63*s.*

This is mainly a picture-book of 'views'; reproductions of seventeenth- and eighteenth-century engravings, from certain collections in the British Museum, of the London that is gone: palaces and prospects, squares and the river, hospitals and livery companies' halls—with a few added flourishes that never existed at all except in polite perspectives on paper. There is no mud, no Gin Lane. It is a vanished ideal of London, shown in a handsome if somewhat muddled volume for the drawing-room table. Alas for the Georgian Group—few architects are mentioned.

First a grain of salt for the wide-open spaces in these engravings: London was more spacious then—and that is one aspect of the 'Vanished City' we must mourn—but not all that spacious. Lavish perspective was one of the view-maker's favourite props, and nothing enhanced one's pride in a city or a house like an engraved view with a few extra acres thrown in. This book conveys so well that lively inflation of civic and personal pride accompanying the growth of a great city.

Mr. Lawson Dick's narrative is gracefully written in a most digestible folk-tale manner. The well-worn facts are pleasantly interwoven with unfamiliar and curious ones so that they communicate, in the hundred pages allowed him, some sense of the texture of all this panorama.

The publisher's production department has obviously given the book a great deal of care and attention. The 130 engravings selected by Mr. Carrier have been beautifully reproduced by an expensive process on delectable paper, laid out with the text in a way that will perhaps ensure inclusion among next year's Fifty Best Books. But was it ever referred to the publisher's editorial department? Where so much care has been expended, aimed at popular sale in the three-guinea class, must there be sloppy information? Were the comments on Ranelagh and the Pantheon on pages 44 and 53 really made by *Robert* Walpole? Shouldn't even a picture-book be too sophisticated in 1957 to give the York Water Gate to Inigo Jones or the Dorset Gardens Theatre to Wren, or Whitehall masques to a 'Ben Johnson'? And 'Drury Lane Theatre in the Eighteenth Century'—is it Wren's, Adam's, or Holland's? Georgian-fanciers get more sophisticated all the time.

Editors can save authors from blurring things. The text on page 58 is allowed to say that the bridge in St. James's Park 'even today . . . is unexpectedly solid,' so that the Duke of Wellington could trundle guns across in case of Chartist riots. But I think His Grace and the Chartists had gone away before the bridge was built in 1857, and now the bridge has gone away, not being solid enough, perhaps before this book reached page proof. Not every engraving is labelled. If one wonders what a building is, it means scanning the too-short list in front for the page number—if the designer didn't ditch the folio on that page. Admittedly this is a book for the incurious, but people who get interested in the history of London *become* curious.

Priscilla Metcalf

EXHIBITIONS

PAINTINGS AND ETCHINGS

When I was trying to think of something favourable to say about the exhibition called 'The Christian Vision,' which opened at the Redfern Gallery in Easter week, I was listening with one ear to a broadcast on the impressive Catholic ceremony of the Tenebræ, held in memory of the darkness that descended upon Golgotha, at which the candles are gradually extinguished until only one remains alight to symbolize Christ as the Light of the World. It brought to mind those marvellous paintings by the seventeenth-century master Georges de la Tour, included in the winter exhibition at Burlington House, in which the figures are illuminated by a solitary candle. La Tour's extraordinary pictorial inventiveness was imbued with a quality that Maritain calls 'prudence' and Berenson calls 'ineloquence,' and his mild but relentless observation of human beings in youth, maturity and old age is transformed by a charitable and simplifying light that is like the promise of redemption.

But La Tour's kind of Christian humanism was already a great rarity in the seventeenth century, as the bulk of the pictures in the Burlington House show all too amply demonstrated, and I mention La Tour's work only to remark upon its remoteness from the atmosphere in which the clutter of twentieth-century Crucifixions, Last Suppers, Depositions and Holy Faces at the Redfern have been produced. The writer of the Redfern Foreword takes an ecclesiastical sniff at this atmosphere and finds that it smells of



Babcock House, Euston Road, London.
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Main Contractors: Holland & Hannen and Cubitts Ltd.

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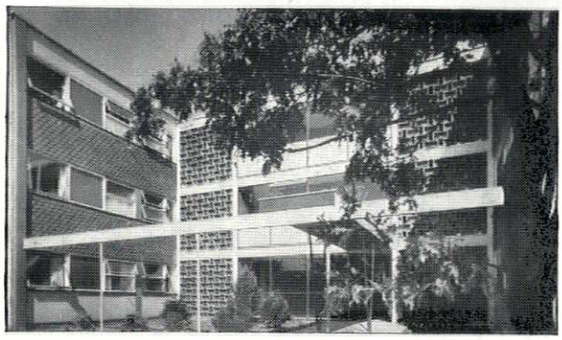

Flats at Parkley's, Ham Common.
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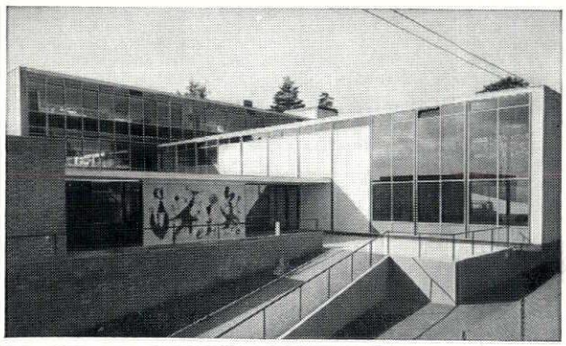

Fairlawn Primary School, Lewisham, for the London County Council.
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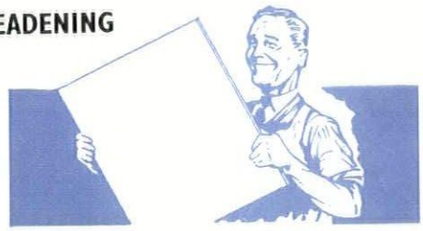

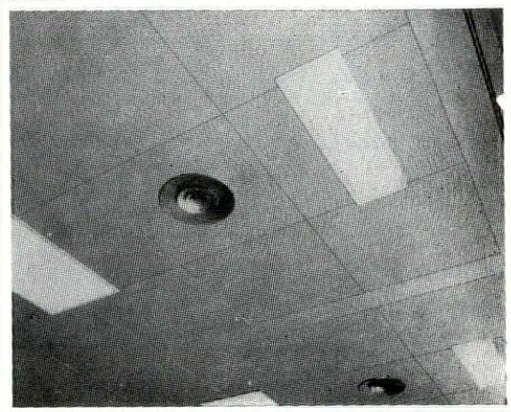

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unregenerated flesh: 'In the breakup of the European idea which has now reached its widest effect the two decisive factors have been, first loss of the Church as the guardian of truth, second the loss of respect for man's true nature—the humanities.' In the context of an exhibition called 'The Christian Vision' he couldn't very well leave it at that, but the full note of triumph in his concluding words is somewhat unexpected: 'That we have among us today artists who have grasped the double principle of divine truths and human dignities is to be seen again and again in the present exhibition.'

I see it all quite differently: I see these exhibitors as a mixed bunch of cubists, tachists, expressionists and eccentric contortionists pretending to communicate with society by borrowing a symbolism which carries so great a weight of associations that it does its own communicating, regardless of the way in which it is depicted.

Bernard Buffet's cold and vacuously elegant etching of 'The Paschal Lamb,' 1,

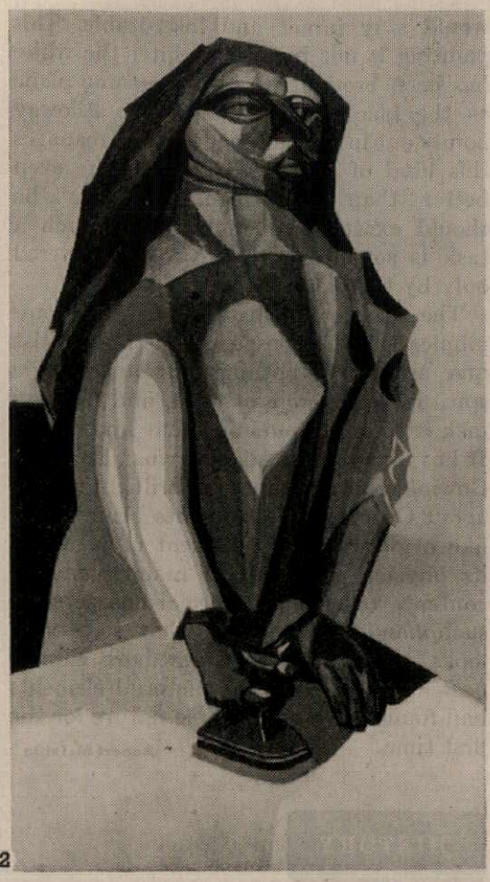


1

is, nevertheless, an efficient emblem. On the other hand, Ceri Richards's pleasantly sensual, creamily tachist, faintly figurative picture could do with a conspicuous brass plate on the frame, stating that it's a Deposition; without it, one doesn't instantly recognize this painting as an example of the new Christian Humanism.

From this point of view it's clear that Robert Colquhoun's recent painting of a woman ironing, 2, would easily qualify as the work of an artist who has grasped 'the double principle of divine truths and human dignities': if it were given some such title as 'Christ at the Ironing Board' the shadow on the chin would instantly turn into a beard.

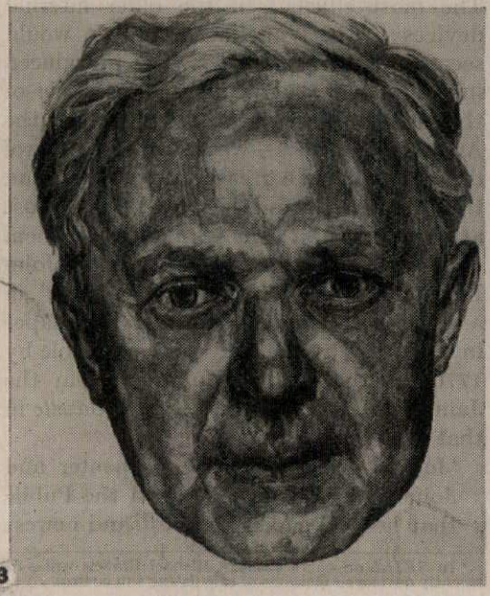
Colquhoun's Retrospective at the Whitechapel Art Gallery looked as effective as most of the shows that are held there, and I imagine that if first-rate presentation and a splendid catalogue were as important



2

as prestige most painters would rather have a Retrospective there than at the Tate. Colquhoun's figurative system, elaborated in the 'forties, was one of the ast contributions to the cubo-expressionist synthesis, and I fear that it has lasted no better than any of the others. Consciously or otherwise, all the unnatural-looking formal devices for the figure which stemmed from cubism and vorticism have been expressions of the loss of respect for the idea of mankind's redeemability; but with very few exceptions they have proved to be inadequate vehicles for generalizations about the human condition.

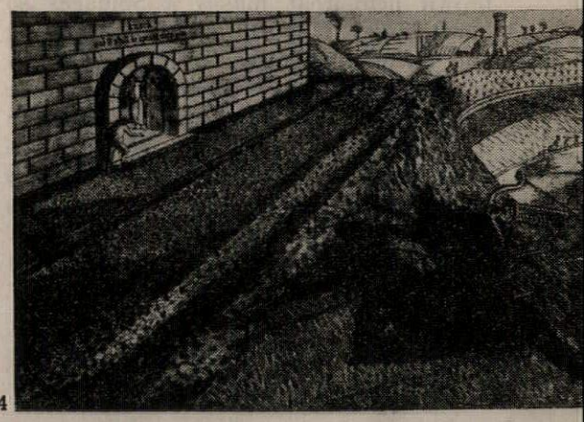
Lucian Freud, who recently held an



3

exhibition of portrait heads at Marlborough Fine Arts, has been able to give a much more pursuasive account of the human condition by using an illusionist technique. Most of the illusionist painters of our time are slippery virtuosos who practise their stupid magic for a wealthy and witless section of the community, but in the case of Freud it is the means by which he makes a precise record of his minute scrutiny of the skin and hair covering a living human head. He is still working on the portrait reproduced here, 3, and it is a long way from completion. The thin, slow patches of paint coagulate on his canvas like a major grafting operation, and when the re-made countenance finally emerges it is a spitting image that makes one's mouth go dry, for he deprives the human face of its right to remain half-hidden. He is not cruel, but his neutrality is almost a sin against the Holy Ghost. No one comes out unscathed: exposed to his neutral stare, the men and women who posed for La Tour would become unfit for salvage.

I shall never quite forget the misery into which I was plunged, many years ago, by the illustrations in a Victorian edition of 'The Pilgrim's Progress.' They rose up from the pages like rags of cold grey fog, and I did not reach the Celestial City. Now that I have seen at the St. George's Gallery the eighteen large etchings which comprise Peter Peri's 'Pilgrim's Progress Suite,' I shall try again. These plates are full of life and movement and contain many devices no less simple and telling than Belzebub's double shadow (not, I think, mentioned by Bunyan) in the



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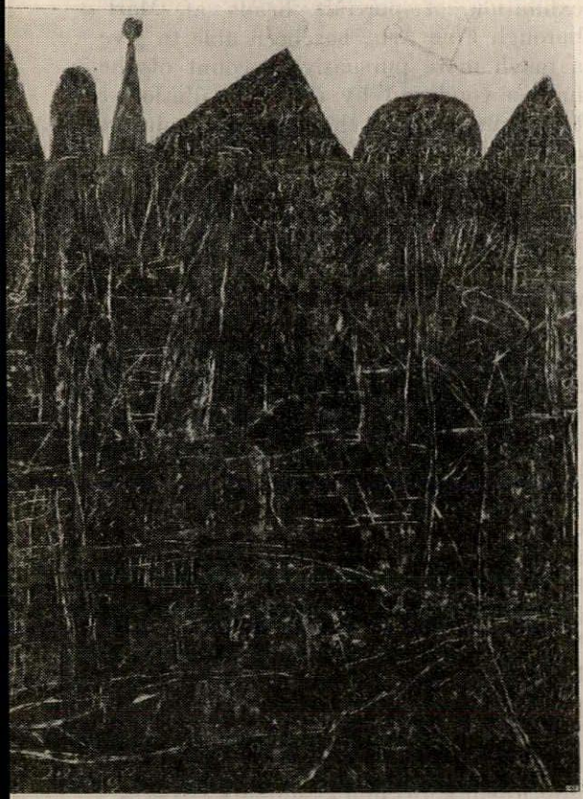
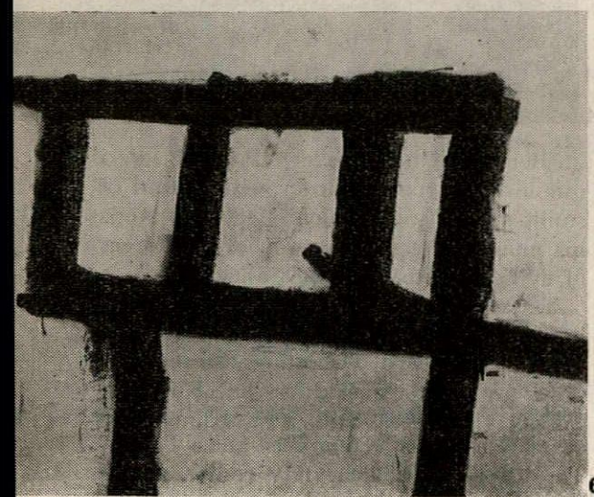
incident at the Wicket Gate, 4. Peri unfolds Christian's journey with a kind of sunlit spaciousness which effectively stops his imaginative presentation of the forces of evil from stealing one's allegiance.

Yet another selection from the seemingly inexhaustible Power collection has been on view at the ICA. This time, the pictures were by five Americans—de Kooning, Pollock, Rothko, Still and Kline—and two Europeans—Dubuffet and Tapies. The Tapies looked cleverly confused and



5

vaguely erotic. Dubuffet's 'Facade Landscape,' 5, was a handsome old roué of a picture, and would hold its own iu any contemporary European show: in the presence of the New York pictures it looked tired, overworked, over-sophisticated and too derivative. But I reproduce Franz Kline's 'Painting 1952,' 6, without much hope of being able to say why it totally eclipsed the Dubuffet. I do not know how to praise this work. It's in black and white, and the black is without that artful brown hem that makes a Soulages so bewitching. It is stark, unprepossessing and uncommunicative. As far as its uncommunicativeness is concerned, I suppose it wouldn't be difficult to shine a torch in its eyes and get the wobbly black girder-like structure to make false confessions about demolitions, abandoned projects, insecurities, marks on the void and so on, but the picture wouldn't be affected; it would stay intact and inscrutable. This painting is not black on white: the white has been brought up into the same plane as the black, and as Lawrence Alloway points out in the catalogue, Kline manages this kind of backgroundless picture even better than Mondriaan. But why he should exert so much toil upon such a task is something that can be answered only by the picture's own look.



6

The artist who has an itch to communicate is only a pseudo-artist. The artist qua artist has nothing but an esoteric spiritual knowledge of form, and his only task is to go on pursuing that knowledge. It has always been so, and what Professor Gowing recently and so brilliantly said about Georges de la Tour fits Franz Kline like a glove: 'Every element of painting, its physical material, its manner and its content, takes on a special character in such hands, a character that sometimes looks primitive, with a new-born clumsiness about it, as if the pictorial elements had found their own simple nature for the first time.'

Robert Melville

HISTORY

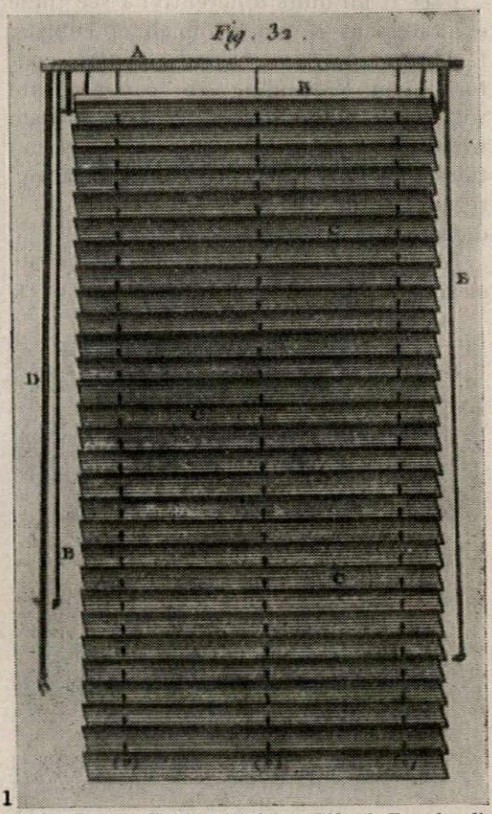
SHUTTERS, BLINDS AND UMBRELLOES

Sun control*, in both its functional and its aesthetic aspects, engages the attention of modern architects to an increasing extent, and has been treated more than once in the pages of the REVIEW. Most methods of sun control, like so much else in contemporary architecture, can be shown to have come down to us in the main stream of the functional tradition.

In general, sun control devices fall into two groups—the internal and the external. The most efficient of the older internal devices is the Venetian blind. It would seem that Venetian blinds were introduced into England shortly after the middle of the eighteenth century. They reached the American colonies—where all sun control devices assumed a greater importance than they had in the mother country—almost at once. The first colonial mention of them occurs in an advertisement placed by John Fisher, 'Cabinet-Maker from London,' in a Charleston, South Carolina, newspaper in 1767; in Virginia they were available by 1770, as the following notice, from the January 18 issue of the *Virginia Gazette* in that year shows:

> 'Joshua Kendall House Carpenter and Joiner Begs leave to Inform the Public that he . . . makes the best and newest invented *Venetian* SUN BLINDS for windows, that move to any position so as to give different lights, they screen from the scorching rays of the sun, draw up as a curtain, prevent being overlooked, give a cool and refreshing air in hot weather, and are the greatest preservatives of furniture of anything of the kind ever invented.'

We know what eighteenth-century Venetian blinds looked like and how they worked because both Diderot and Roubo show examples of them in their illustrated encyclopædias, the former in his *Recueil de Planches*, vol. 7, 1, and the latter in vol. 1 of plates of his *L'Art du Menuisier*, 2. Both books were printed in Paris in 1769.



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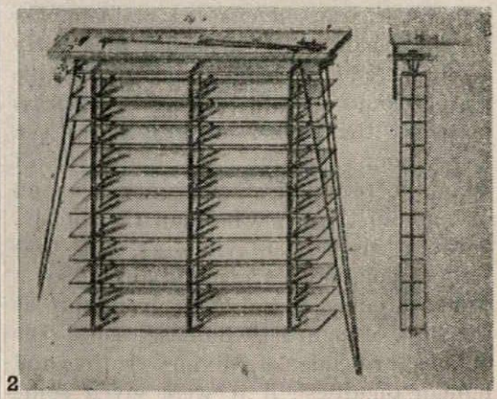
1, *drawing of a Venetian blind from Diderot's* Encyclopedie (1769).



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2, *Roubro's representation of a Venetian blind* (1769). *The Venetian blinds in Christ Church, Philadelphia, some of which are said to have survived from the eighteenth century, are constructed and operate in the same manner as this one.*

In the eighteenth century Venetian blinds were always placed inside the window. But in 1836 we find Edward

* In *SKILL* on pages 424–428 Michael Brawne writes on recently developed methods of calculating sun control.



STEEL

and the modern single-storey factory

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Architect : Noel Heppenstall Esq., L.R.I.B.A., Huddersfield.

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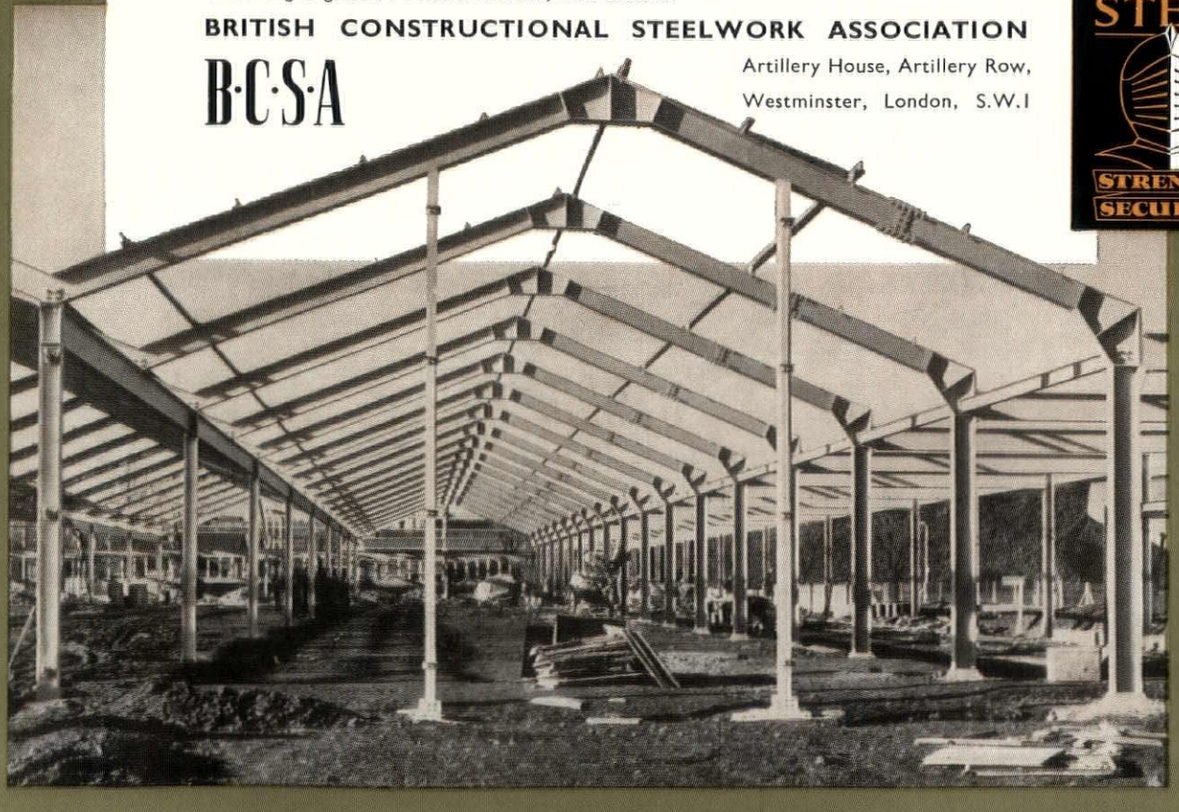

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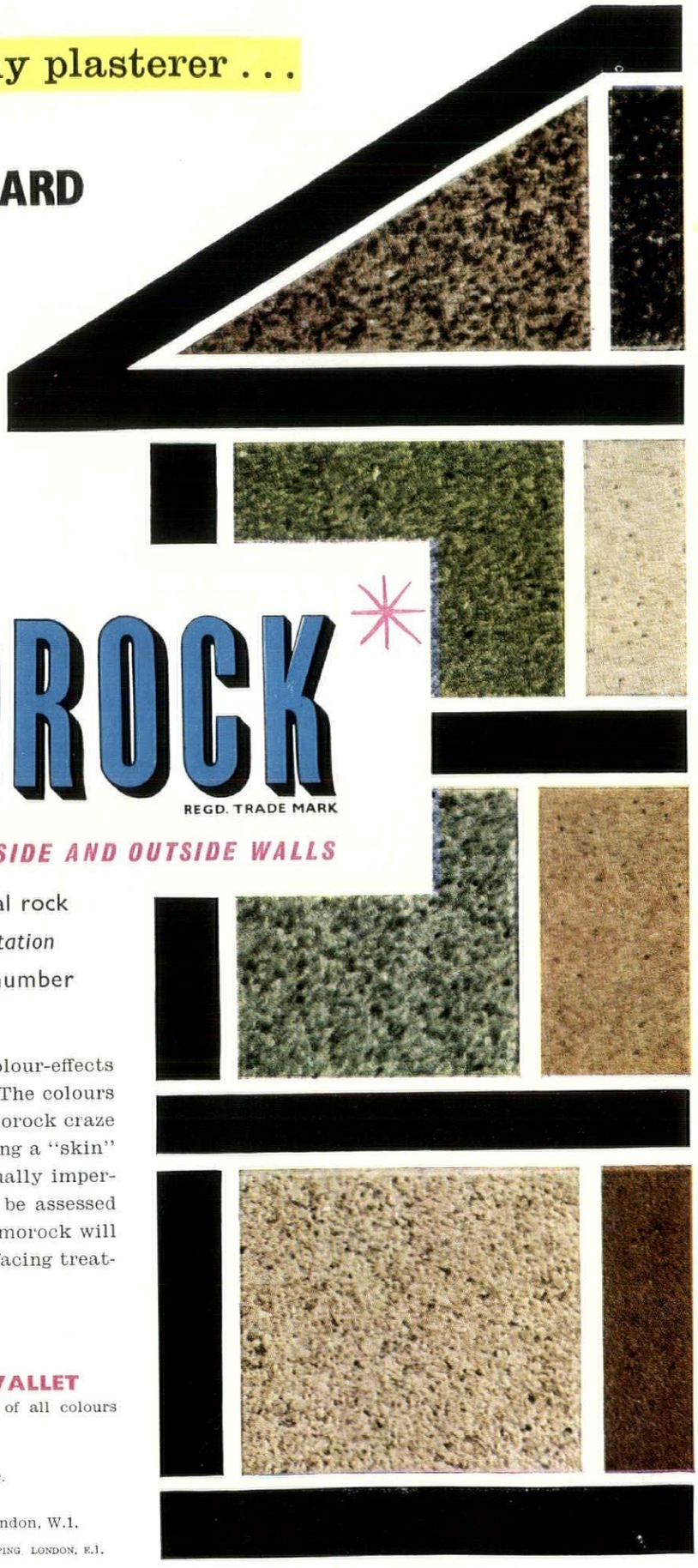

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Shaw, in his *Civil Architecture* (Boston) urging that they be placed outside:

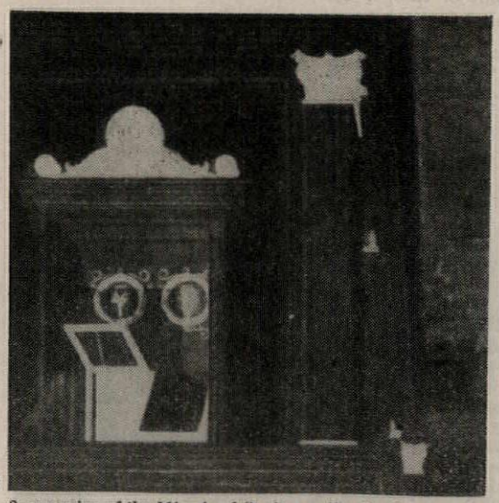
> '. . . what we call Venetian blinds ought to be placed on the outside, and not on the inside of our windows. On the inside, they keep off the glare of the sun's rays, but not the heat, which communicates to the air of the room, warming it just as much as if no blind intervened. On the outside, the blinds reflect and repel the heat as well as the light, and the air within the room preserves a desirable coolness of temperature.'

An external jalousie of the sort that Shaw presumably had in mind, serving both to intercept the sun's rays and when lowered to secure the window against entry, is in widespread use in Germany today.

External sun control devices are of greater antiquity, as well as more efficient, than those of the internal group. According to Larousse's *Grand Dictionnaire Universel du XIX Siècle* (1865), awnings hung from the outside heads of window openings were used by the early peoples of the Orient in lieu of window sash; they were at first made of straw matting and later on of goatskin, linen, canvas and other materials. Then there is plenty of evidence that the Romans employed awnings of one sort and another. A mosaic from the Temple of Fortune at Praeneste, dating from between 80 B.C. and A.D. 200, depicts a temple with a great fabric awning depending from its pediment. Again, a Pompeian fresco of the 'fourth style' (A.D. 50–79), now in the National Museum at Naples, shows a circular amphitheatre with a cloth awning suspended over the tiers of seats on one side, such as we know to have been used also over the Colosseum and the theatre at Orange.

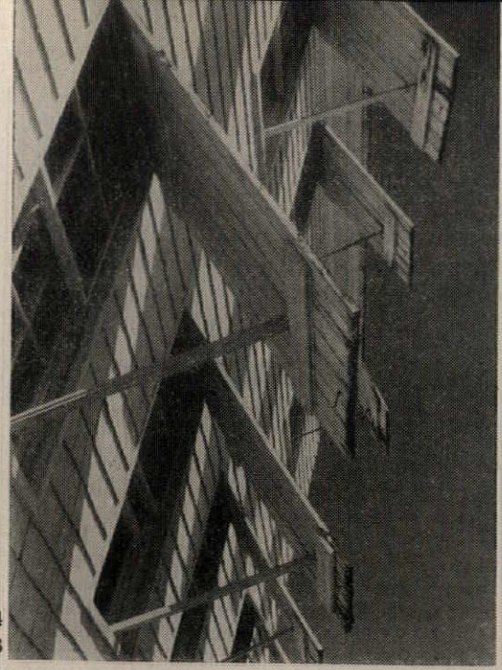
In paintings of the Italian masters of the fifteenth century we find a top-hinged awning-like blind which was held open by means of a wooden prop, 3, 4. This awning-blind was rigid and evidently consisted either of boards held together with cleats or of a wood frame covered with fabric. Such top-hinged shutters became common in England. According to C. F. Innocent (*The Development of English Building Construction*, Cambridge, 1916), glazed windows were rare in the British Isles until the middle of the seventeenth century and window openings were provided with top-hinged wooden shutters which were originally known as windows (wind-doors). When glazed sash came into general use, these boarded shutters were retained for reasons of security as well as sun control. In America they have remained in common use down to the present and may be seen on many a beach house, 4, and, unaccompanied by sash, on tenant farmers' huts in the south. One form, widely distributed in the West Indies, is louvred, 5, and this traditional type has been employed by modern architects, 6. Yet of wooden shutters the side-hung type, solid or louvred, was by far the most usual in eighteenth-century England and her colonies. At first the slats of the louvred shutter were always fixed. By George III's reign, however, the louvred shutter with movable slats operated by a rod to which each slat was attached had been invented. A shutter of this type is illustrated in vol. 9 of plates in Diderot's *Encyclopedie* (1771), 7.

The fabric sun-blind was widely used in England in the eighteenth century and



3

3, *a version of the Miracle of St. Bernardine by the Master of 1473, in the gallery at Perugia. The painting shows top-hinged blinds in use on unglazed window openings. These rigid awnings are still found in Italy and elsewhere.*



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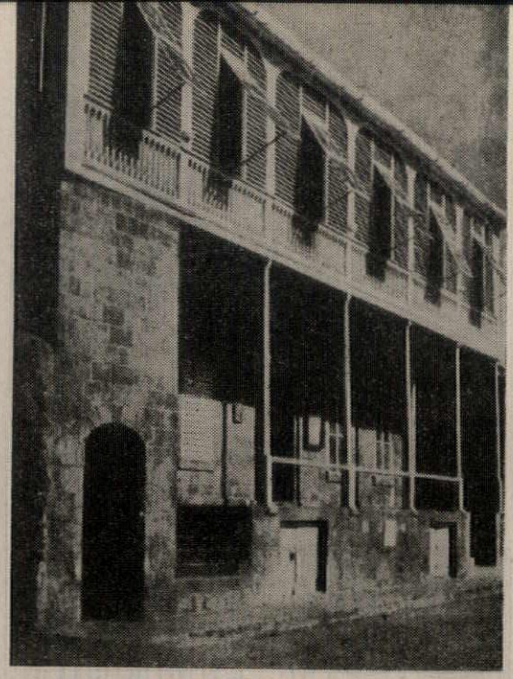

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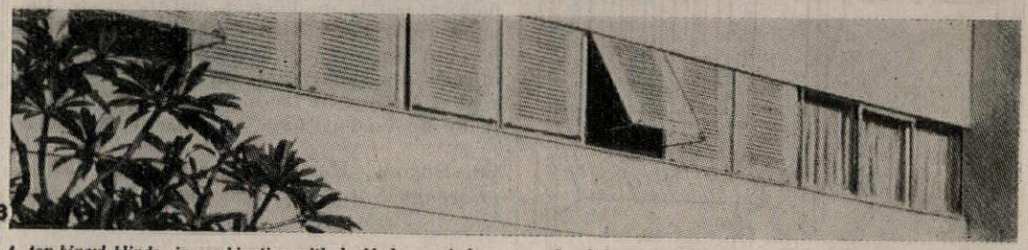
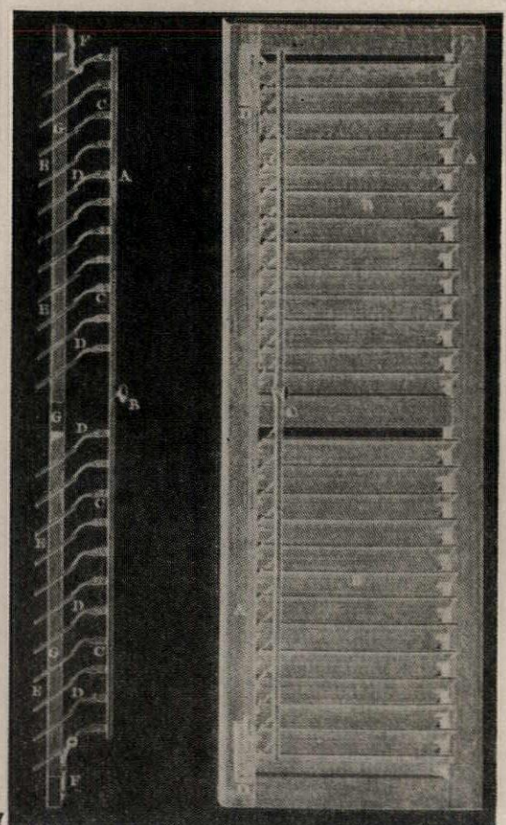


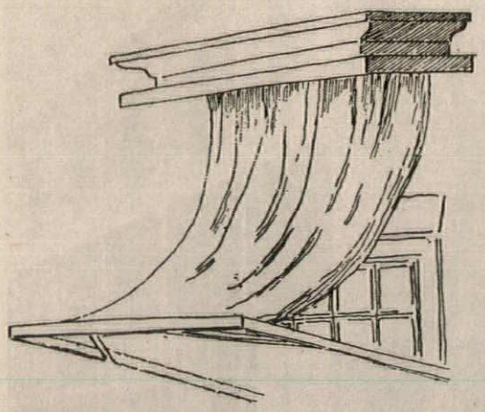
6

4, *top-hinged blinds, in combination with double-hung windows, on a beach house at Nag's Head, North Carolina. When raised, the blind acts as a sun shade; when lowered, in stormy weather, it protects the opening against wind and rain.*
5, *louvred awning-blinds are used throughout the islands of the Caribbean. This building is the Treasury and Customs office at Charlestown, Nevis.*
6, *this modern Brazilian house with its row of louvred awning-blinds, above a continuous wall opening, bears a striking resemblance o the Treasury at Charlestown.*



7

7, *shutter with movable slats, from Diderot's* Encyclopedie. *The page on which it occurs also shows the internal mechanism of an automatic blind (rolling shade in U.S.A.), 'a quite recent invention' in 1771 when the volume appeared.*



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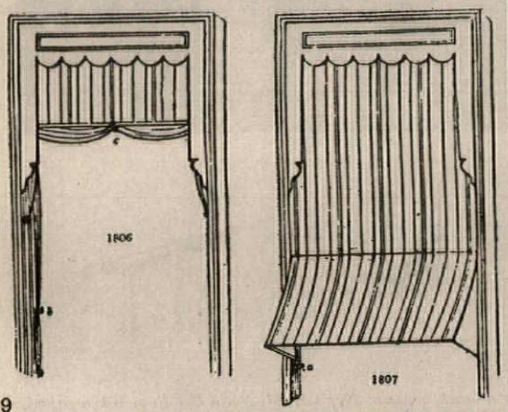


9

8, drawings showing an awning and its frame, possibly similar to the 'Umbrellow frame' mentioned in the excerpt from the accounts of the College of William and Mary. The sketch is copied from an illustration in The South Parade at Bath, *published by F. Molton in* 1784.
9, the so-called 'bonnet blind,' drawn up and let down. These drawings, from J. C. Loudon's An Encyclopaedia of Cottage, Farm and Villa Architecture *show what was 'considered the best description of cloth outside blind' in* 1853 *when the book was published.*

appears in many prints of the period. One form of sun-blind when drawn up fitted under an overhanging hood, 8. Even less conspicuous when not in use was the 'bonnet blind' illustrated in J. C. Loudon's *Encyclopædia of Cottage, Farm and Villa Architecture* (third edition, London, 1853), 9. It is worth note that the sun-blind was one of the several things to which the eighteenth century applied the term 'umbrello.' The *Oxford English Dictionary* gives three examples of this application, and recently, in studying the accounts of the College of William and Mary at Williamsburg, Virginia, the present writer came across the following entries for 1766–67:

[1766. Ms. torn. - - - - - -]ge. . . . D*r* to Jn*o* Saunders . . .
To a new Umbrellow frame & making a cloth for it - - - - - - £ - 12 [ms. torn]
To putting up Six Umbrellows - - - - - - 2 -
[ms. torn] 6th . . .
[Ms. torn - - - -]g 1 Umbrellow frame & puting [ms. torn] - - - - - - . . .
8*th* To a new Roller for an Umb*w* puting it up - - - - - - - - - - - - 2 .6
Aug*t* 5 . . .
To making new Cloths for 2 Umbrellows & puting them up - - - - 6 .-

Strangely enough, these entries would seem to constitute the only direct evidence we have that fabric sun-blinds were used in colonial Virginia.

Howard Dearstyne

COUNTER-ATTACK

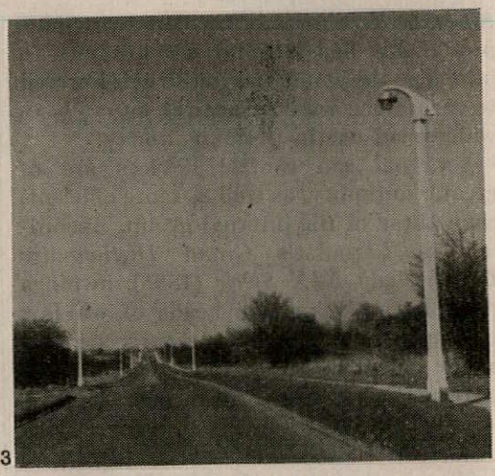
67. Stevenage New Town (*Development Corporation*). Gossip fences (or anti-gossip fences) six feet high are being erected at the request of tenants who want privacy. That is fine, except that they are being built around all the gardens. Why? Surely the answer is to build fences only where they are wanted and not to make a rule of what should be a convenience. The point is basic to designing every part of mass housing; people are different, and the greater the number of choices that the architect can build—not just 'houses' and 'flats' but dozens of types of each—the better the result will be, visually as well as socially. At the moment the New Towns really are dwellings for a statistical average man.

68. Bushey, Herts, and Banstead, Surrey (*Borough Surveyors*). The recent gallant fight



1

by A. E. Matthews to prevent an ugly post, 1, being put outside his house at Bushey has revealed another skeleton in the municipal cupboard—apart from the permanent skeleton that the officials don't seem to care two hoots about the wishes of the people they are supposed to serve. The standard selected is not now on the COID list—though it was at the time of selection. These brand-new posts at Banstead, 3, going through open country purely for the sake of uniformity, incidentally—are examples of another bad design, also no longer on the COID list. How long is this going on? Any borough official who cared anything for his town would cancel the order if a standard was taken off the approved list—but then any borough official who cared for his town would never have picked on these designs in the first place.



3

69. Ware, Herts (*Urban District Council*). Ware doesn't know how to look after itself. Since 1950 a set of gaps has appeared in the town to be filled only by inappropriate flower beds and bad borough engineer's furniture. The latest is a huge site at the east end of the main street, which is obviously to be built on a splay; the inevitable fussy accompaniment has appeared on the pavement, 4. Five years ago this view, 5, on a side road was a wall and cottages; now it is only a windy desert with a too-large public lavatory and a too-wide footpath. Any large-scale features that remain, such as grass, are gnawed at, rat-like, made petty and fussy, 6 and 7. The other side of the story is that the people (often old) in the cottages are rehoused farther away where they feel out of things, using up more of the countryside and multiplying the traffic problems.

70. Wadhurst, Sussex (*Local societies*). A self-explanatory good idea from Wadhurst, 2,



2



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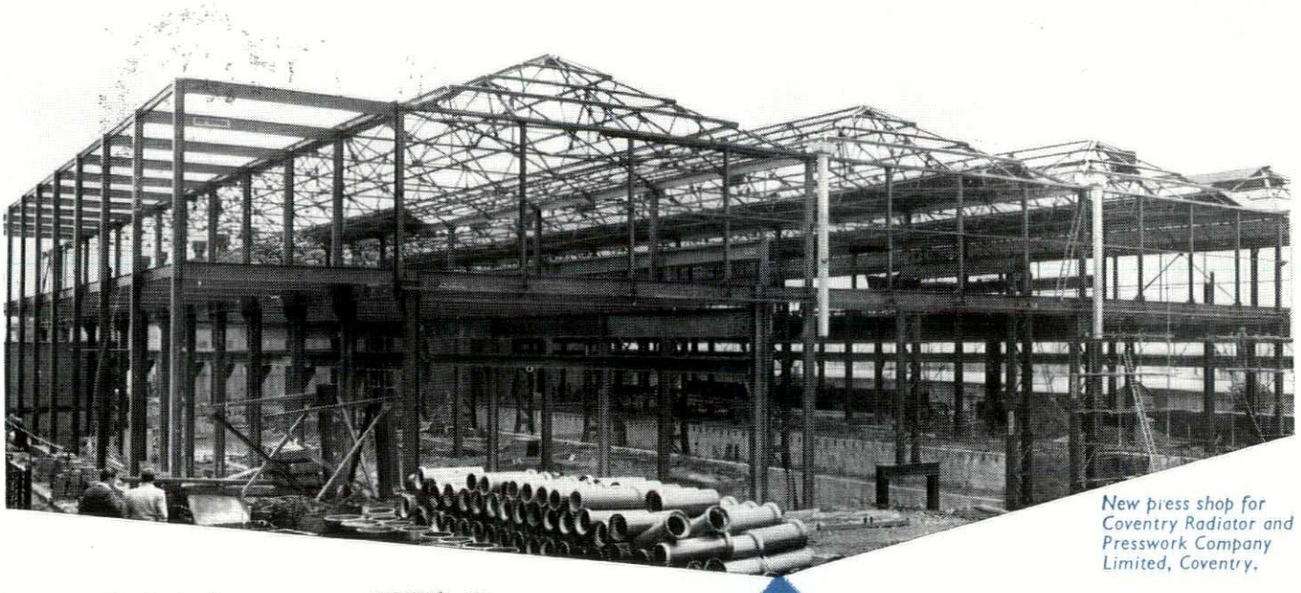

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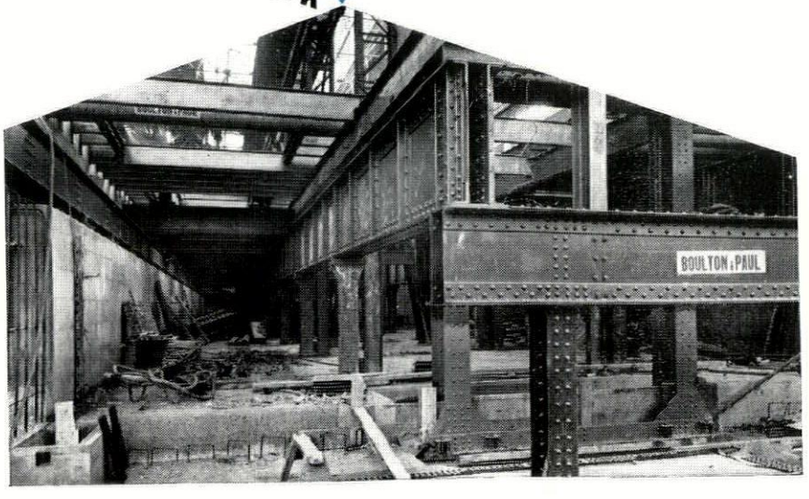

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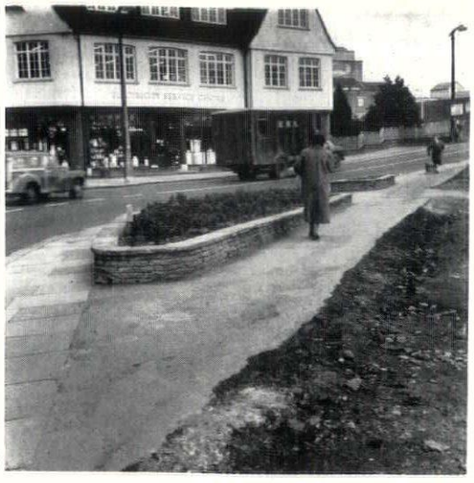


4



5



6



7

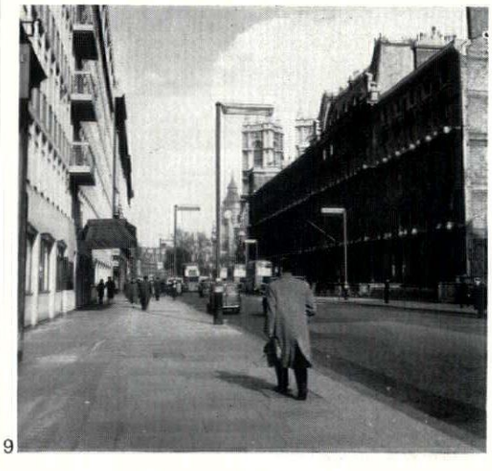
which ensures that everyone knows what is happening and makes them look at the view in question. Here the landowner made no objection to the notice board; in similar circumstances many of course would object, but there is no reason why a local authority should not allow such a sign on the roadside.

71. Wadhurst, Sussex. Also at Wadhurst is this gap in the village centre, 8, where a Meteor night fighter crashed into the main street a couple of years ago. Most of this land is owned by a brewery, and the site is a difficult and subtle problem in what re-creating the heart of the village effectively is; it is a problem deserving the attention of the best architects we have. Why not an open competition?



8

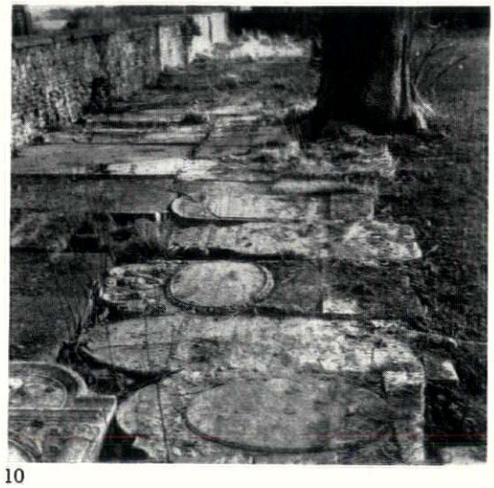
72. Westminster, London (*Borough Engineer and City Council*). Below, 9, is one of the views described by Gordon Cullen on page 405 as it actually appears from today's Victoria Street; lamps first and the Abbey a poor second. It is an amazing thing that Westminster of all boroughs should have chosen the heaviest available design with which to belabour its main roads: Lower Regent Street, Piccadilly, Shaftesbury Avenue and Knightsbridge have all been beaten up like this in the past year. The difference is clearest in Tottenham Court Road where Westminster's



9

fluorescent troughs crash through up to the borough boundary to be followed by St. Pancras with sodium lights in a restrained adaptation of their old lights: the standard of illumination is identical. This is a very poor performance by what ought to be one of the most enlightened of boroughs—a borough which as yet has no Civic Society; the least it can now do is to get a better model for the remaining main roads such as Whitehall; not an unhappy rehash of the old designs as used in Parliament Square but a genuinely up-to-date elegant thin standard: they do exist.

73. Sutton St. Edmund, Lincs (*Parish Council and Diocesan Advisory Committee*). The grubbing up of churchyards is one of the nastiest evidences of subtopian mentality, with the old pattern of gravestones smoothed away for 'convenience.' The churchyard at Sutton St. Edmund, north of Wisbech, now looks as though a tractor had got in by mistake, 10, which is all the sadder because it was originally full of first-rate local eighteenth-century headstones of a type sometimes found in the Fens—at Gedney and March for example. These are now hugger-mugger at one end in a barbarous and brutal jamming together in which some have been cracked and all are exposed to maximum weather effects: not an improvement to be proud of.



10

74. Beauly, Invernesshire (*Burgh Council*). It is rare enough that one improvement would transform a whole town centre, but this is true at Beauly. At the moment the simple houses on either side and the unexpected Cistercian abbey at the end are quite overawed by the heavy-handed municipal mess in the middle, 11; remove



11

it and the tiny demure centre would start to be a town square again. This bit of clumsiness appeared in Outrage and hasn't mellowed in three years; A9, which runs up one side of the square, could easily be demarcated by changes in the road surface. The smaller the burgh, the lighter the treatment it must have—and this thumping great railing would outstare Union Street, Aberdeen.

SKILL

GEOMETRY OF SHADE *by Michael Brawne*

One of the more important aspects of recent architectural thought is the realization that a great many facets of design can be determined by methods of calculation. This has, of course, been commonplace for over a century as far as structure is concerned, but is relatively new in the various forms of environmental control. Light, temperature, humidity, air movement and sound are all amenable to this method. Knowledge of solar control is evidently of great importance in dealing with the first two of these conditions. What has, however, prevented the general application of such knowledge has been the lack of a simple design tool which would make the calculation of shade straightforward enough to be used in the day to day work of the practising architect. The solar charts developed by the Olgyay brothers and discussed in this article would seem to have overcome this shortcoming. These were first described in 1953 *and have now been fully published in* 'Solar Control and Shading Devices', *Olgyay and Olgyay* (*Princeton University Press; London: Oxford University Press* £5.0.0.). *Howard Dearstyne writes on sun control in Miscellany on pages* 420–422.

Facts about the relation of the building and its openings to the sun are important in all climates. Where there is little sun, overhangs, glare control devices, trees, neighbouring buildings, need all to be placed so that they do not obstruct the sun. It is probably significant that a great deal of research on insolation and shade calculation has in fact been done by Pleijel in Sweden. Where, on the other hand, there is a great deal of sun, shade devices must be accurately constructed so that they obscure the sun completely during the period that its heat is excessive. Three facts need, therefore, to be determined:

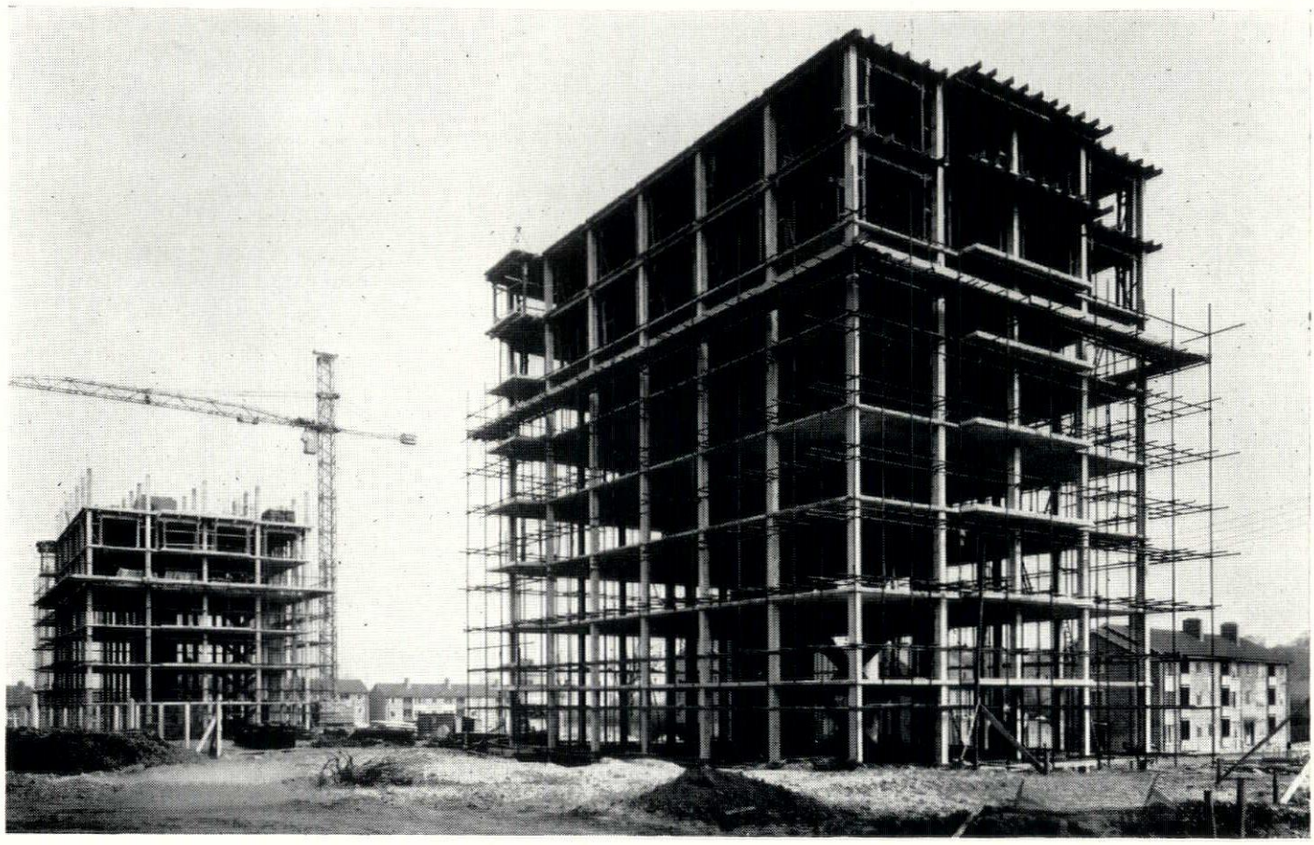
1. The position of the sun throughout the day at all times of the year.
2. The amount of shade given by an obstruction at any particular time.
3. The amount of direct and diffuse radiation present at any time due to the sun.

The three charts described later deal with these situations. Used together they answer any of the problems of solar control likely to be encountered.

Several methods of shade calculation have been developed in the past. A few are described for example in Fry and Drew's book on 'Tropical Architecture in the Humid Zone' and several more are shown in Aronin's 'Climate and Architecture.' These calculations fall into two groups: those which demand the making of a model and its testing below an artificial light which simulates the sun, and various two-dimensional devices like protractors and charts. Few offices have the time to make and test models, especially as shading devices have first to be guessed and then tested under certain critical sun angles. Two-dimensional design tools like charts or protractors would, therefore, seem to be the only feasible method. Their

[continued on page 425

Construction in progress



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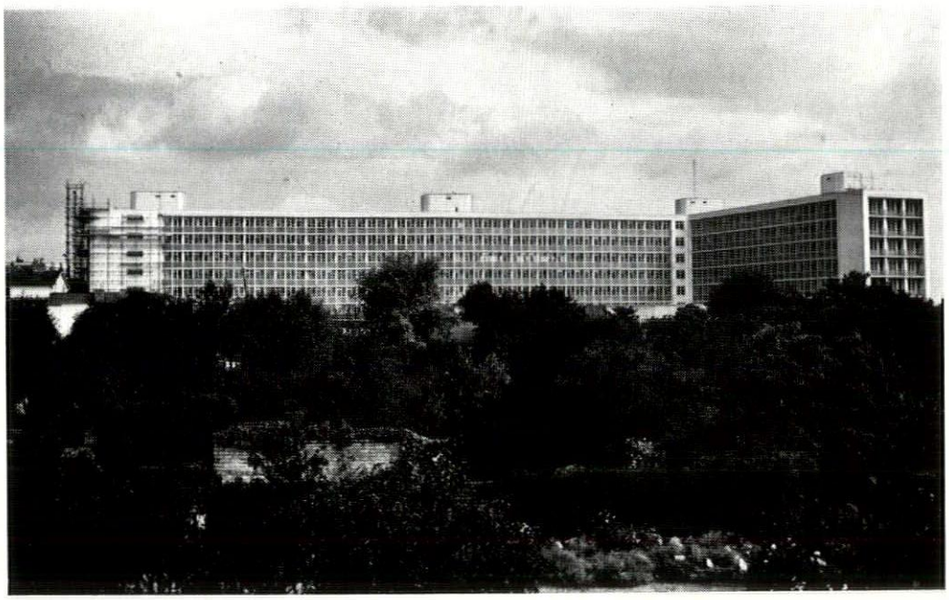

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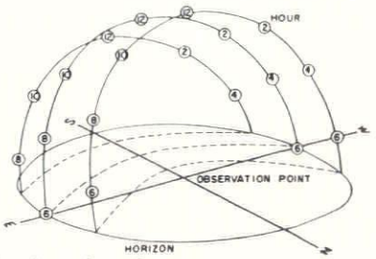
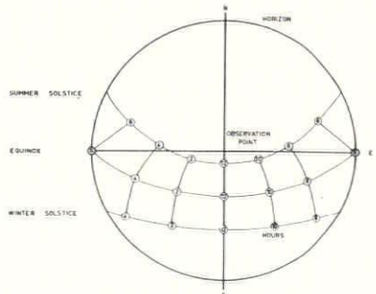


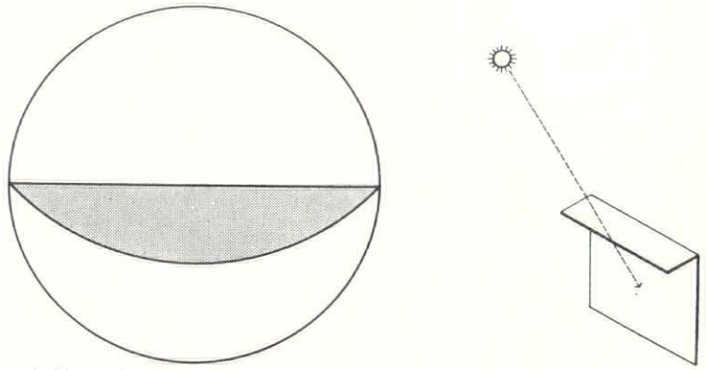
1, *the imaginary sky-vault.*



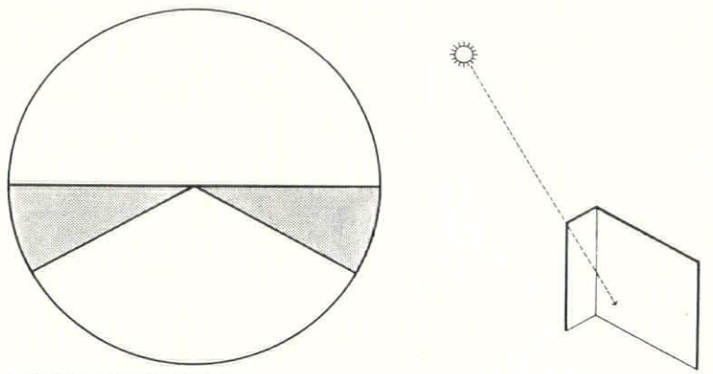
2, *the sunpath diagram, the projection of* 1.



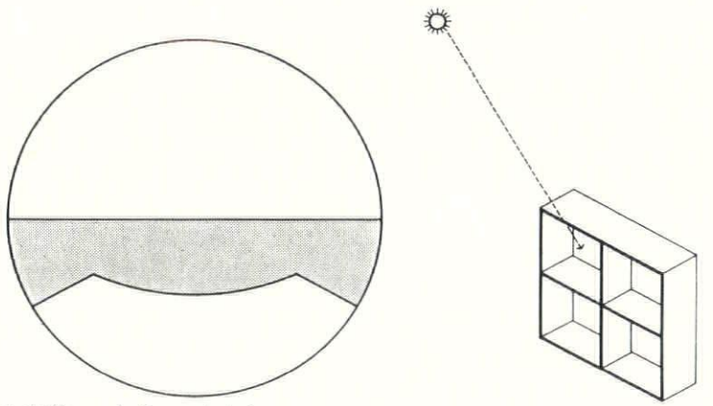
3, *Rockefeller Plaza photographed with equidistant lens system.*



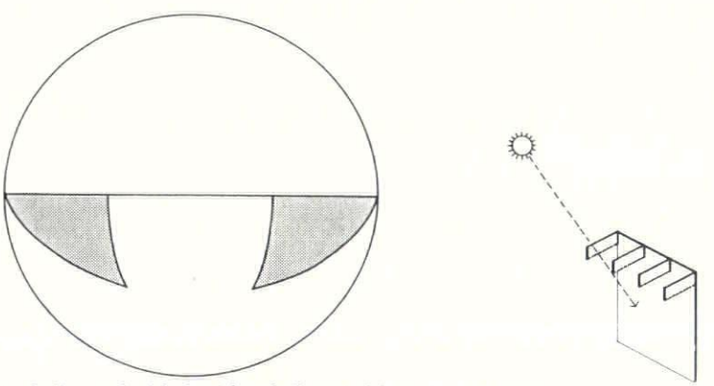
4, *shading mask of horizontal projections parallel to the wall.*



5, *shading mask of vertical fins.*



6, *shading mask of egg-crate devices.*



7, *shading mask of horizontal projections at right angles to the wall.*

continued from page 424]

use poses the problem of reducing a three-dimensional sphere, the sunpath, to a two-dimensional obstruction. It is a problem similar to that of drawing a map. If the same projection, in the cartographic sense, is used for the shading masks produced by the various obstructions as well as the radiation data, the three charts will be comparable and may be used together.

Sunpath

The Olgyay charts use the equidistant projection in which the altitude angles of the sun appear equally spaced on the diagram, 1. This projection gives the most legible charts, 2.

The circumference of the circle represents the horizon, the centre the position of the observer.

Shading Mask

If obstructions are now plotted to the same projection, various shapes will have the following characteristics:

1. Horizontal overhangs parallel to the wall become segmental lines, 4.
2. Vertical fins at right angles to the wall become radial lines, 5.
3. Eggcrate devices become a combinations of 1 and 2, 6.
4. Horizontal projections at right angles to the wall become segmental lines at right angles to those given by overhangs, 7.

These characteristic distortions of the equidistant projection are clearly demonstrated by the photograph of Rockefeller Centre, 3, taken with a camera having an equidistant lens system. In each of these charts the position of the line is dependent on the angle the extreme edge of the device subtends to the opening to be shaded. Thus the chart does not dictate the form which the shading device is to take, it merely determines its relation. A few examples may help to make this clear. An opening requires an overhang with the following shading mask, 8, i.e. the edge of the overhang should be at an angle of 70° to the base of the opening. This shading mask can be achieved by a solid projection, 9 (a), by a louvred overhang (b), by tilted louvres (c), by louvres hung in front of the opening (d), by a series of horizontal fins (e), by an external venetian blind (f), or any other configuration satisfying the critical condition. The choice of the shape is purely the architect's responsibility and these charts in no way restrict architectural expression.

The characteristic outlines of horizontal and vertical projections are,

for simplicity, combined in a single chart, 10. The lower half shows the segmental lines given by horizontal projections parallel and at right angles to the wall, the upper half the radial lines of vertical fins.

Radiation

Empirical data exist on the amount of direct and diffuse radiation present on a vertical surface due to sunlight falling on it out of an unobstructed sky at a given angle. These data have been tabulated by the American Society of Heating and Ventilating Engineers and are given in BThU per hour per sq. ft. They are purely dependent on the angle of incidence and the chart, 11, again plotted on the equidistant projection, may therefore be used for any latitude.

The figures represent radiant energy only and have, of course, nothing to do with the air temperature which may exist at the place being investigated. They are particularly important when calculations for heat gain in airconditioned buildings are being made.

The radial line drawn at an arbitrary position on the chart, 11, tabulates the total radiation on a horizontal surface. This amount is again related to the angle of incidence, being greatest when the sun is directly overhead, i.e when the sunbeams have the the shortest path through the atmosphere. These values are naturally of interest when the effect of sunlight on roofs is being considered.

The three charts just described make possible the complete design of an accurate shading device together with a calculation of the amount of heat energy excluded. Before, however, the limits of a shading device are to be established it is important to know at what times of the year shade is in fact needed.

Human comfort is a complex condition not easily measurable. If three elements, temperature, humidity and air movement, are isolated it does become possible to make some generalizations about tolerable upper limits for sedentary lightly clothed workers in the temperate zone. Before these upper limits are reached, however, the cooling effect of shade is welcomed. It has been generally agreed that a shading device will prove useful if the dry bulb temperature reaches 70°F. Occasionally, as in the tropics, it may be desirable to provide 100 per cent shading, irrespective of temperature, so that none of the structure should have a chance to absorb heat which it would re-radiate later. In other parts of the tropics it may, on the other hand, be preferable to delay shading in the early morning so as to give the sun a chance to evaporate the heavy film of moisture which has been deposited during the night. In every instance, shading, like so many other aspects of design, depends on an awareness of climate.

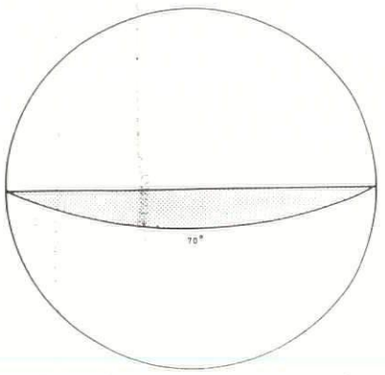
Examples

In the following examples the use of these charts is demonstrated for three characteristic localities; London, Phoenix and Lagos.

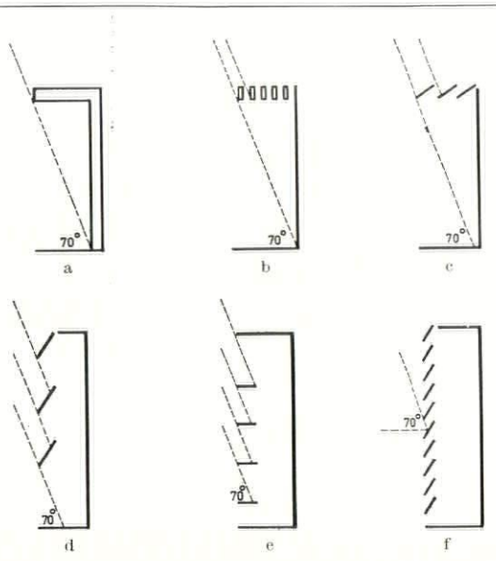
London. Lat. 52° approx.

The temperature exceeds 70°F on an average on about 45 days during the year and all of these days occur between April and October. Thirty-six of these days are, however, in June, July and August so that if shading is to be considered it may well be expedient to confine it to these three months. Temperatures above

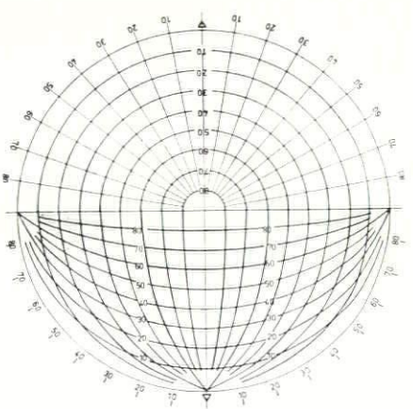
[continued on page 427



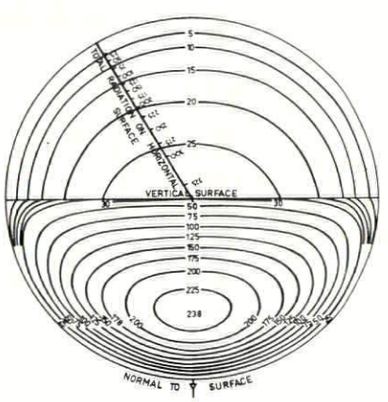
8, *shading mask for horizontal projection at 70°*



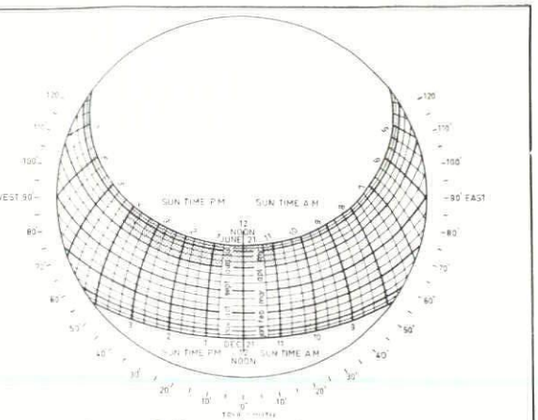
9, *various devices which give a shading mask as 8.*



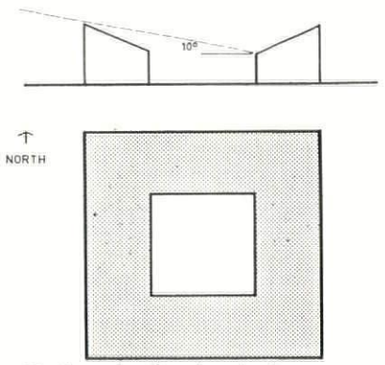
10, *shading chart.*



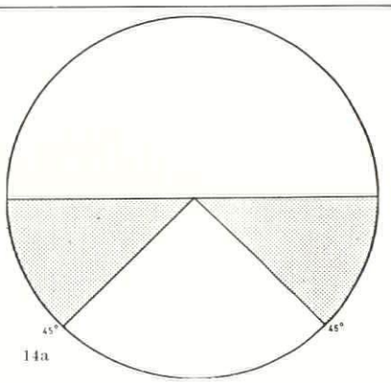
11, *radiation chart, total radiation in BTU/hour/sq. ft.*



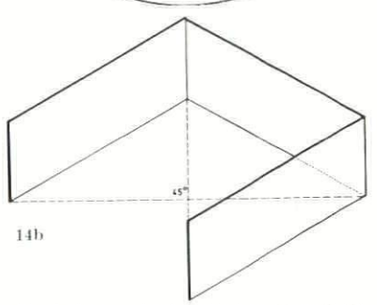
12, *sunpath diagram for London.*



13, *plan and section of courtyard.*

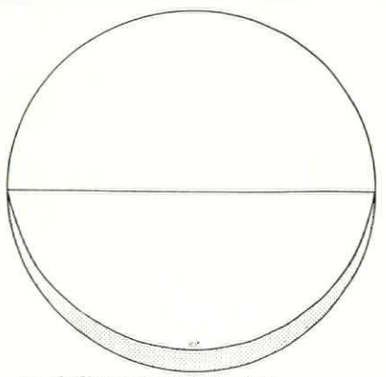


14a



14b

14, *shading mask (a) for the two side walls (b).*



15, *shading mask due to the ridge.*

Britain's Pavilions at the Brussels Exhibition are

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HOWARD V. LOBB & PARTNERS, F/F.R.I.B.A.

Industrial Pavilion and Britannia Inn:
EDWARD D. MILLS & PARTNERS, F/A.R.I.B.A.

The "Fox & Hounds" Bar:
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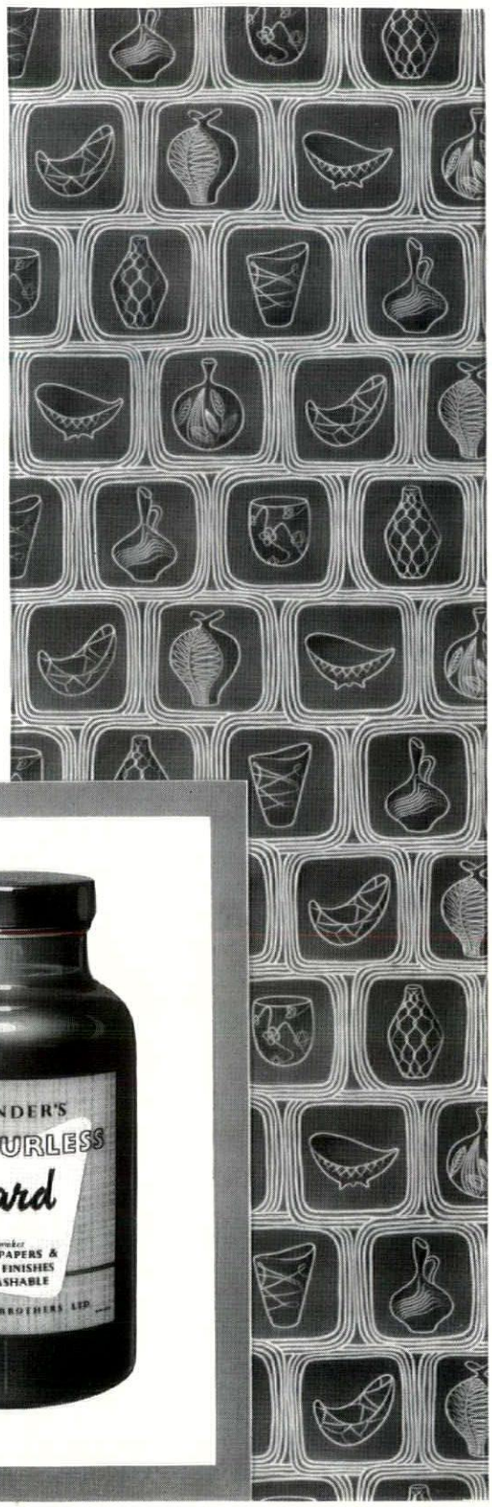

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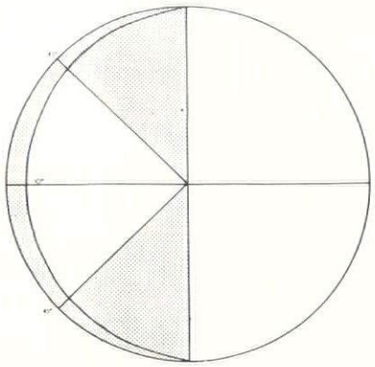
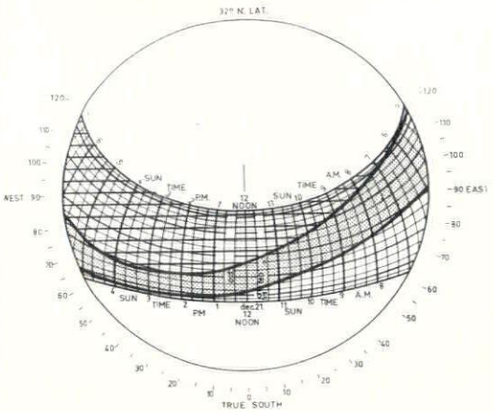
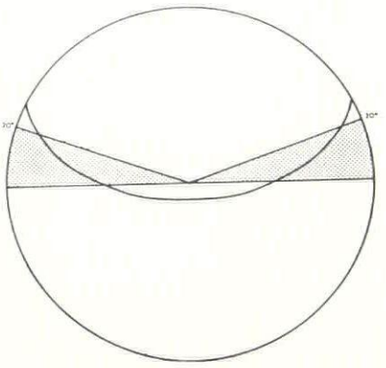


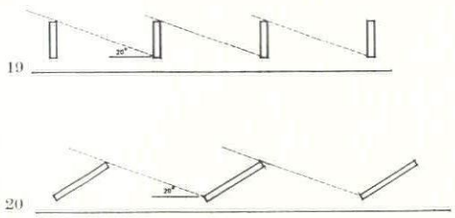
16, *combined shading mask of* 14 *and* 15.



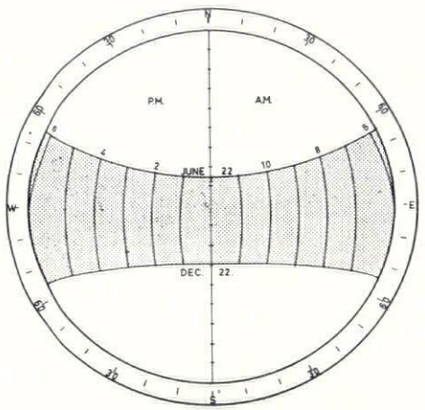
17, *sunpath diagram for Phoenix, Arizona.*



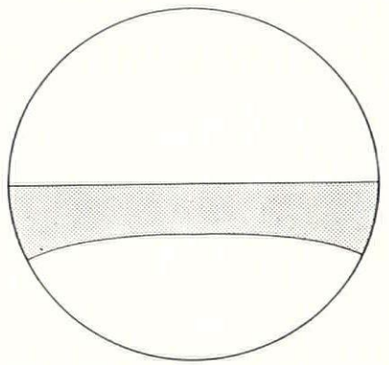
18, *sunpath and possible mask for a north wall.*



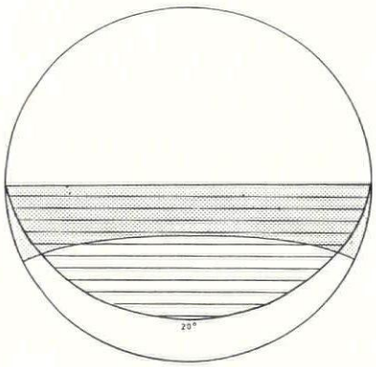
19 *and* 20, *vertical fins giving mask as* 18.



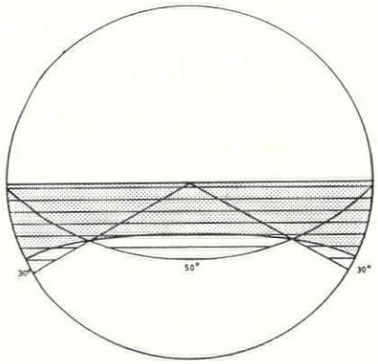
21, *sunpath diagram for Lagos, Nigeria.*



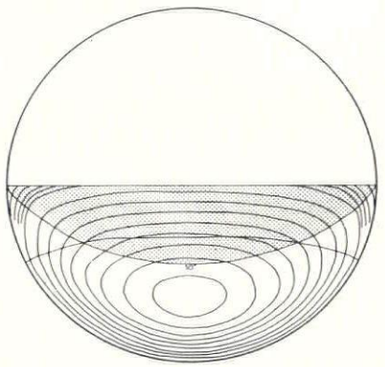
22, *sunpath for south wall.*



23, *possible shading mask for* 22.



24, *alternate shading mask for* 22.



25, *partial shading mask and radiation diagram.*

continued from page 426]

70°F are also most likely to occur between 11 a.m. and 4 p.m. so that the sunpath diagram for London showing the possible overheated period would take the form outlined in 12. Whether or not shading devices would be worthwhile for such a short period of the year does, to a great extent, depend on the occupancy of the building. The case is somewhat analogous to that recently described by Markus for thermal insulation. It would seem, for example, extremely questionable whether shading would be needed in a school which is unlikely to be in use during a large part of this critical period. It may on the other hand be extremely worthwhile in south facing restaurants with a large occupancy during the middle of the day.

Unfortunately any fixed shading device which excludes the sun during June, July and August will also do so in April and May, since the path of the sun is symmetrical about June 21. These earlier months are, however, quite cool, having between them only about four days on which the temperature rises above 70°F. It would seem important, therefore, that shading devices in this country should be adjustable if desirable sunshine is not to be excluded.

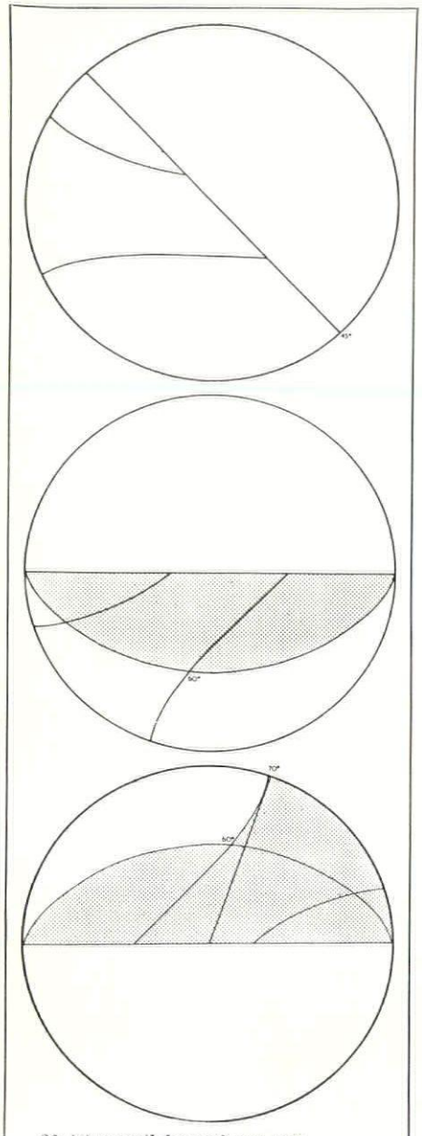
In fact the design check which most often needs to be done in this country is the reverse one, namely to ensure that obstructions do not exclude the sun from spaces in which it may be wanted. An example may show how the charts help in such check.

A courtyard 20 ft. by 20 ft. has the whole of the west wall in glass up to an 8-ft. ceiling. The roof is a one-way pitch and the ridge subtends an angle of 10° to the top of the glass opening, 13. It will be seen that the north and south walls are equivalent to two fins subtending an angle of 45° to the opening, 14 (a), which have a shading mask, (b). The ridge is equivalent to a horizontal obstruction parallel to the wall which, unlike an overhang above the opening, will have segmental shading masks moving inwards from the circumference of the chart as the angle becomes larger. In this case the mask will be as in 15. If these two masks are now combined on a piece of tracing paper and this sheet put over the London sun chart at the correct orientation the amount of sunlight penetrating the opening can be immediately discovered, 16. It will be seen that in December the sun will not reach the opening at all, in November, and January a very small amount will hit it for a few minutes about 3 p.m. and that this time will gradually increase until it is 2½ hours in September and March and five hours, from 2 p.m. to 7 p.m., at mid-summer.

Phoenix, Arizona. Lat. 32°

The desert climate of Phoenix has a considerable overheated period, the temperature being continuously over 70°F from the beginning of June to the middle of September and for large parts of the day in March, April, May, October and November. The sunpath diagram with the actual overheated period superimposed takes the form shown in 17. As in the case of London, shade is needed rather more in the second half of the year. The dark dotted area on the chart shows the dates on each side of June 21 on which shading is needed, the light area those in the latter half of the year only.

Evening temperatures in the sum-



26, (*a*) *sunpath for south-west wall.*
(*b*) *shading mask of horizontal overhang.*
(*c*) *shading mask of* (*b*) *and vertical fin.*

mer are over 90°F and persist in the eighties up to midnight. The late afternoon sun must, therefore, be obstructed. This is especially true of north walls which are liable to have large openings as this is otherwise the most advantageous orientation.

A north wall will have an outline giving the overheated period as in 18. If a piece of tracing paper is put over this it can be seen that this area will be obscured by two radial lines at an angle of 20° to the opening. Regular spaced fins as in 19 will provide adequate shading to a glass wall. Their size and distance apart is purely a matter of ratio. These fins will, of course, also cut out the early morning sun during the first part of the year when temperatures have in fact not yet reached 70°F. This could be overcome by tilting the fins so that they obscure the west sun, but let in the east sun, 20.

Lagos, Nigeria. Lat. 7°

In the tropical climate of the West Coast of Africa shading will be needed throughout the year. Even in the coolest month the average daily minimum temperature is 73°F, the average daily maximum is 82°F, so that the entire sunpath diagram, 21, is equivalent to the overheated period and needs to be obscured by the shading mask.

Upper and lower limits of comfort vary of course to some extent between inhabitants of the temperate zone and those of the tropics. The West Africa Building Research Station, conducting experiments in Accra, recently showed that a selected group of Africans found 75°F dry bulb the lower limit of comfort, 80°F the optimum and 85°F the upper limit. Fully acclimatized Europeans may also react in very much the same way.

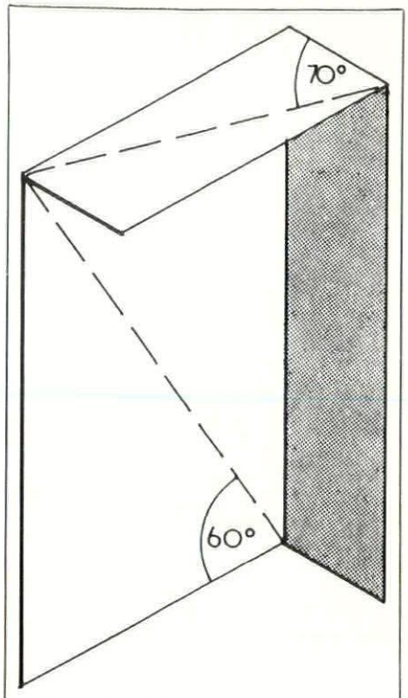
If a south wall is considered it will have a sunpath of the shape shown in 22, which needs to be obstructed. This outline is best drawn on a piece of tracing paper which can be put over the shading mask diagram, 10. A number of possible shading methods can now be devised.

An overhang at an angle of 20° will obscure most of the sunpath diagram, 23, except for very small areas in the early morning and late afternoon. This shape is obviously uneconomic as it provides a great deal more shade than is actually needed. An alternative solution might be to have an overhang at an angle of 50° and vertical fins at an angle of 30° which together give a shading mask which in this case totally obscures the sunpath, 24. There is again a duplication of shading. If the building is air-conditioned it may be important to check whether it would be cheaper to omit the vertical fins for example and impose an additional load on the plant. If a combined diagram of the sunpath and shading mask for an overhang of 50° are superimposed on the radiation chart, 25, an opening will in the worst month, December, receive about 225 BThU for every square foot of opening in the morning and the same amount in the evening. This total additional load of 550 BThU per day for every square foot of opening has to be equated in cost against the price of vertical fins.

It may be worthwhile as a summary of the discussion to take a further example and work out a shading device step by step.

An opening in a south-west wall in Lagos requires shading.

1. Take a piece of tracing paper and put it over the sunpath diagram.
2. Draw the wall as a line at the correct orientation through the centre of the circle.
3. Outline the area of the sunpath between this line and the circumference, 26 (a).
4. Superimpose this outline on to the shading mask diagram with the wall horizontally through the centre.
5. An overhang at an angle of 60° will obscure part of the sunpath, 26 (b). The opening is still unshaded in the late afternoon.
6. Swivel the tracing paper through 180° so that it lies over the radial lines.
7. A fin at an angle of 70° will obscure the remainder of the sunpath, 26 (c).
8. Three-dimensionally this takes the form of an egg-crate, 26 (d). The dimensions of the egg-crate are, of course, not determined. It could be a series of balconies with floor height fins or a screen composed of louvres no larger than those used in luminous ceilings.



26, (*d*) *three dimensional form of* 26 (*c*).

The method described is by far the simplest and most thorough so far developed. After a few examples have been worked out, it is only a matter of minutes before an accurate shading device can be designed. Sun and shade play an important role in human comfort and any method which shows the relation between these and architecture is therefore of considerable importance if the design attitude which Neutra among many others has for so long advocated —planning with a full awareness of the biological implications—is to be translated into architecture.

THE INDUSTRY

Curtain Walling Handbook

As Michael Brawne and Alan Craig pointed out in their article on curtain walling ('Walls off the Peg,' AR, September, 1957), the great advantage of the Holoplast curtain wall is that it can be erected from assemblies rather than components. A possible limitation is that it has been conceived primarily as a framework to hold phenolic panels. It is therefore encouraging to note that in Holoplast's most recent brochure ('Holoplast Curtain Walling') the framework is clearly regarded as having a life of its own, independent of the panels, and that details have been developed specifically to incorporate glass facings in front of phenolic panels and horizontally pivoted hardwood windows. The light alloy window range has also been enriched by the introduction of a horizontal sliding window and of a vertical sash. This is all to the good, for clearly the more words are put into the Holoplast architectural phrasebook the greater will be the variety of occasions on which the language can be used.

Holoplast Ltd., 116 Victoria Street, London, S.W.1.

The Marley Pantechnicon

It is a long time now since the Marley Group first claimed the attention of architects with their concrete tiles; and though architects have been aware that they have persistently added product after product to their range, most would be surprised to learn how wide this range now is. This is now easy to find out since the Marley Group have at last issued a comprehensive catalogue with the title 'Marley Products 1958.' This is a useful office reference, not only because of the many interesting products it contains, but because of the businesslike information it gives on how they should be used (and in some cases how specified). Marley have always been great people for easing, speeding up and cheapening traditional building; and it is probably fair to say that each of its divisions has this end chiefly in view. Even if the architect may decide in the end that he does not wish to use the 'rationalized traditional' solution to a problem, it is always of value to him to know what this solution is, even if it is only to obtain a yardstick of basic cost.

There are too many interesting subjects in this catalogue to mention each. Among those which your reviewer found particularly worthy of note were the trough valley tile, which seems to offer a much more satisfactory way of forming a valley in tiles than the ordinary method; the woodwool insulating set for insulating cisterns to BS417, the Marleyrail vinyl handrail (which has already been commented on in these columns) and the Marley No. 6 Underlayment for laying under floor tiles instead of a cement screed.

This last is a masterly innovation which cuts both the necessary thickness between tile and floor and the drying out time. In the section dealing with the works of Marley Concrete Ltd. there were three products which could come in very useful: the concrete clamp silo, the portable retaining wall sections and the concrete cesspool.

The more ambitious products of this division are less successful. The concrete garages, roof trusses and cycle sheds, whatever their practical virtues, are badly out of scale and ungainly in detailing. How splendid it would be if the production skill which they evidence could be allied to an equal sensibility in design. Let us hope that now all products are lined up in a comprehensive catalogue, the few uglies will be replaced.

The Marley Group, Sevenoaks, Kent.

Development in Precasting

The industrialization of building has taken two main lines of development: the first is the evolution of a

[continued on page 430

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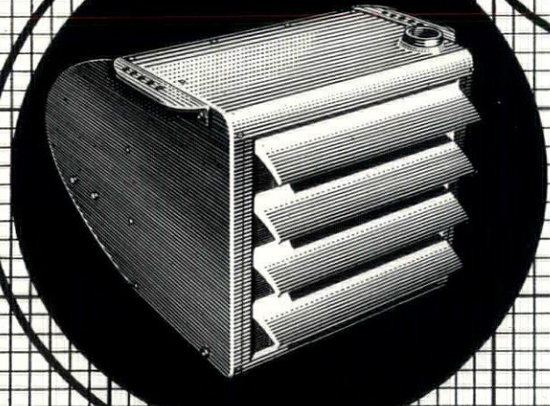

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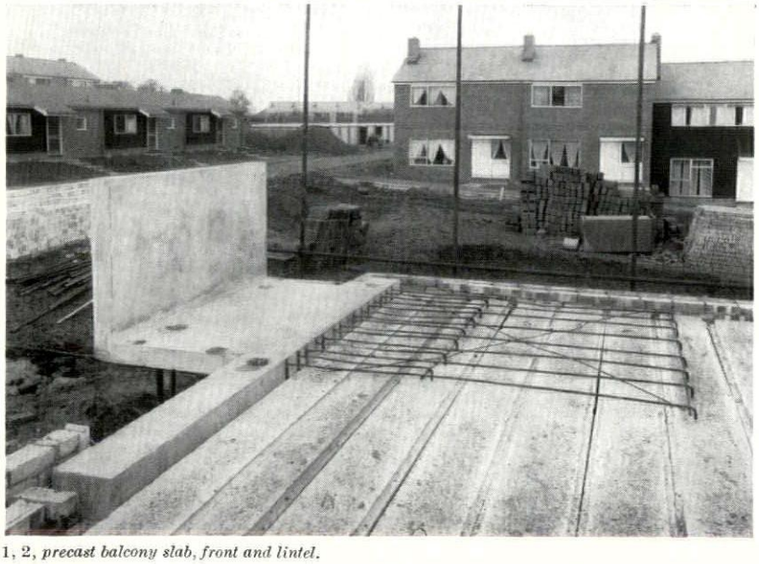

1, 2, *precast balcony slab, front and lintel.*

continued from page 428]

lightweight architecture built of factory-made components which can mostly be manhandled on site; the second is the development of more formidable handling equipment which enables traditional heavy construction to be factory made and brought on to the site in large components. A good example of this last is the balcony slab, front and lintel, illustrated in the photographs on the left. This is one of a series which have been made for three-storey flats at Basildon by Concrete Ltd., the architects being Basil Spence and Partners. The unit comes on to the site with the reinforcement bars which are to anchor it to the slab bent upwards for ease of transport. When the unit is in position these are then bent down till they lie parallel with the precast concrete plank floor. A screed is then laid over the planks, thus both tying in the balcony and converting the floor into a composite part precast, part *in situ* construction of the type we associate particularly with this firm. The advantage of this way of proceeding will be readily appreciated by architects; not only is it very expeditious, but it ensures that two very nasty joints are made under really adequate supervision. The front panel of the balcony is bush hammered.
Concrete Ltd., 16 *Northumberland Avenue, London, W.C.2.*

A New Delicacy in Melamine

Among the makers of patterned materials for buildings, few are as attentive to architects' requests as Bakelite Ltd. We have already commented in this column on their 'architectural patterns' (July, 1957) prepared for Warerite melamine sheet. Since the Building Exhibition the Warerite range has been further extended to include a new set of smaller scale patterns, two of which we illustrate to full size below. This exploitation of the small scale pattern in melamine sheet is a sensible development. In the first place it differentiates the material finally and decisively from wall paper, for patterns with this degree of fineness could not be reproduced in wallpaper; second the fineness of the pattern seems appropriate to the fineness, hardness and smoothness of melamine sheet. *Some* patterning is evidently necessary, for otherwise slight irregularities of plane tend to be noticeable; but a delicate repetitive pattern which reads rather as a texture seems more likely to achieve the ends of good modern



3, *new Warerite design, to full scale.*

continued on page 432

the foundation of stability

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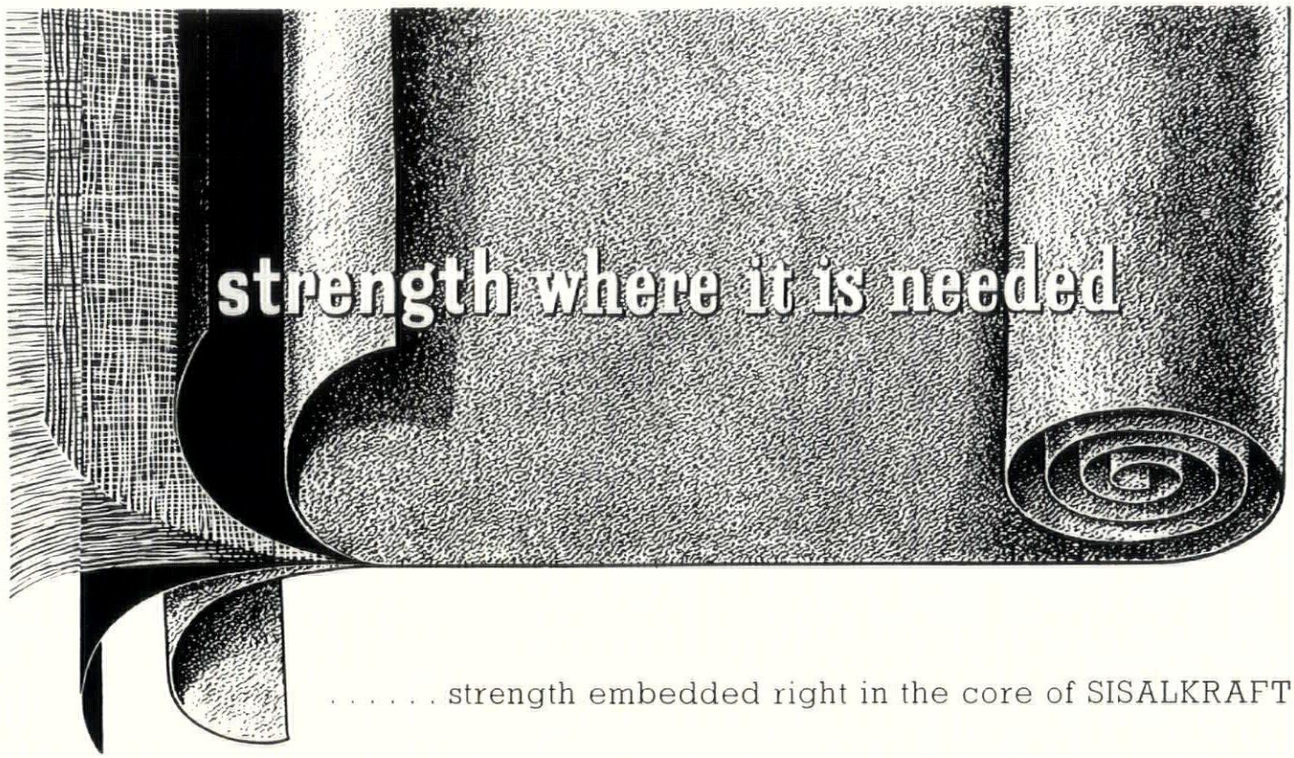

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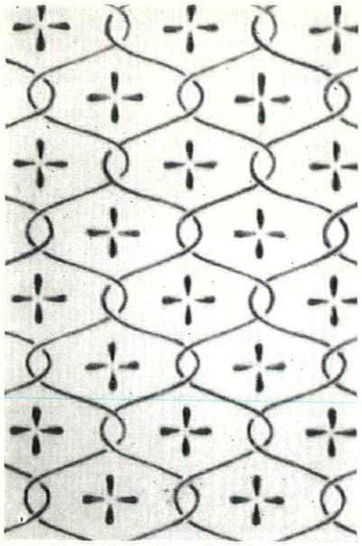

4, *another full size Warerite design.*

architectural detailing than a larger and more insistent pattern. These new additions should have a long and useful life.
Bakelite Ltd, 12–18 Grosvenor Gardens, London, S.W.1.

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Harlow—Hughe's Tower. *Architect:* Frederick Gibberd. *General contractor:* George Wimpey & Co. *Sub-contractors: Roofing:* Frazzi Ltd. *Floor finishes:* Marley Tile Co.; Langley Tile Co. *Plumbing:* Matthew Hall & Co. *Electrical installations:* Electric Contractors (London) Ltd. *Windows:* Williams & Williams Ltd. *Glaziers:* Aygee Ltd. *Lift:* Evans Lifts Ltd. *Lightning conductor:* Wm. & R. W. Bacon Ltd. *Weatherstripping:* Chamberlin Weatherstrips Ltd. *Ironmongery:* W. N. Froy & Sons. *Electric heaters:* Heatrae Ltd. *Gas installation:* Eastern Gas Board. *Granolithic paving:* Malcolm McLeod Ltd. *Balustrading to roof:* Williams & Williams Ltd. *Gas fire surrounds:* Edward Marshall Ltd. *Paints:* Sherwoods Paints Ltd. *Painters:* C. Hastings Ltd. *Plasterers:* T. F. Rooney Ltd.

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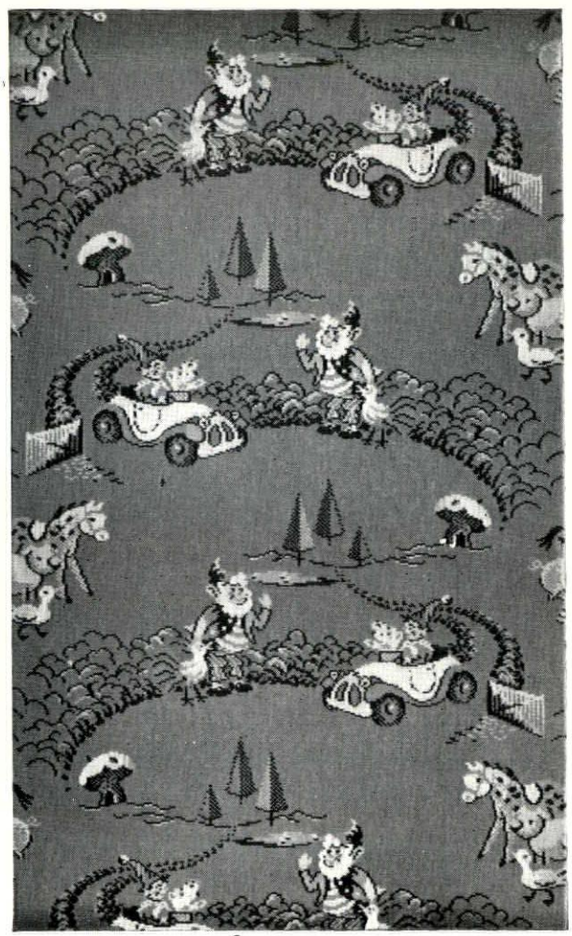

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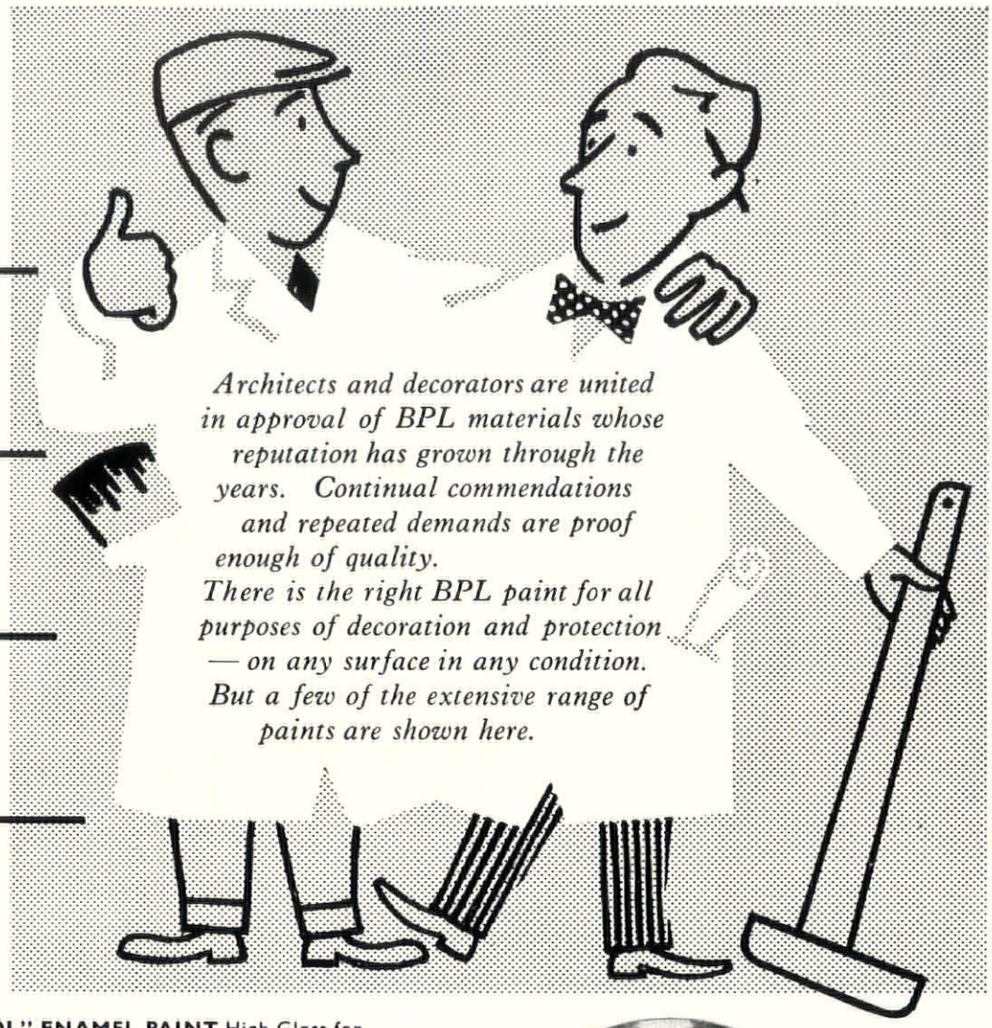

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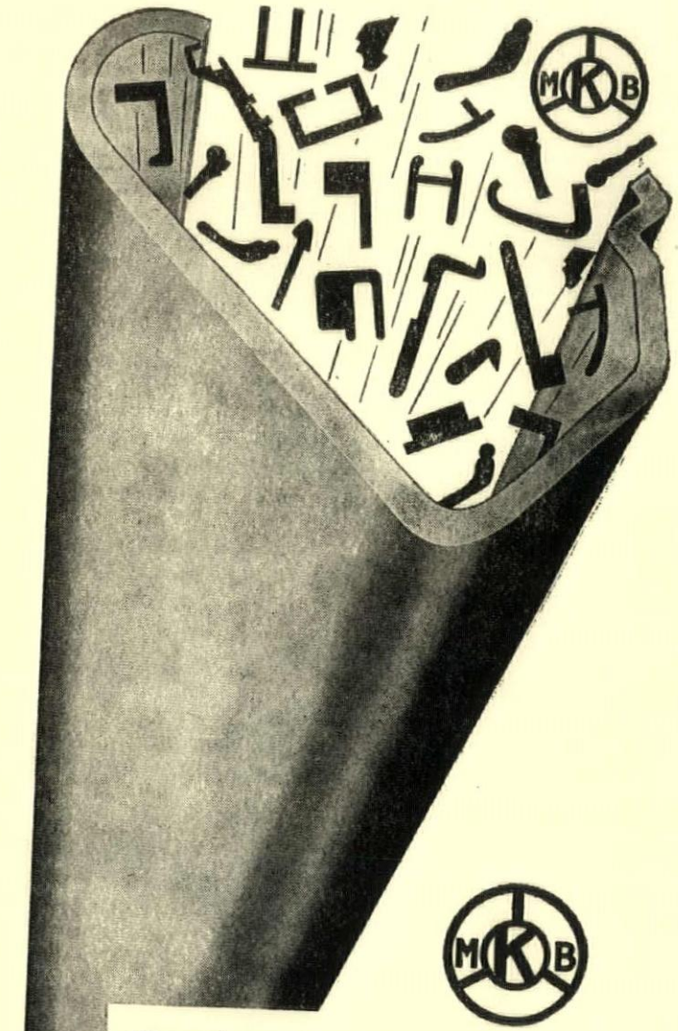

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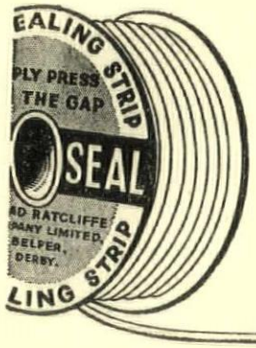

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