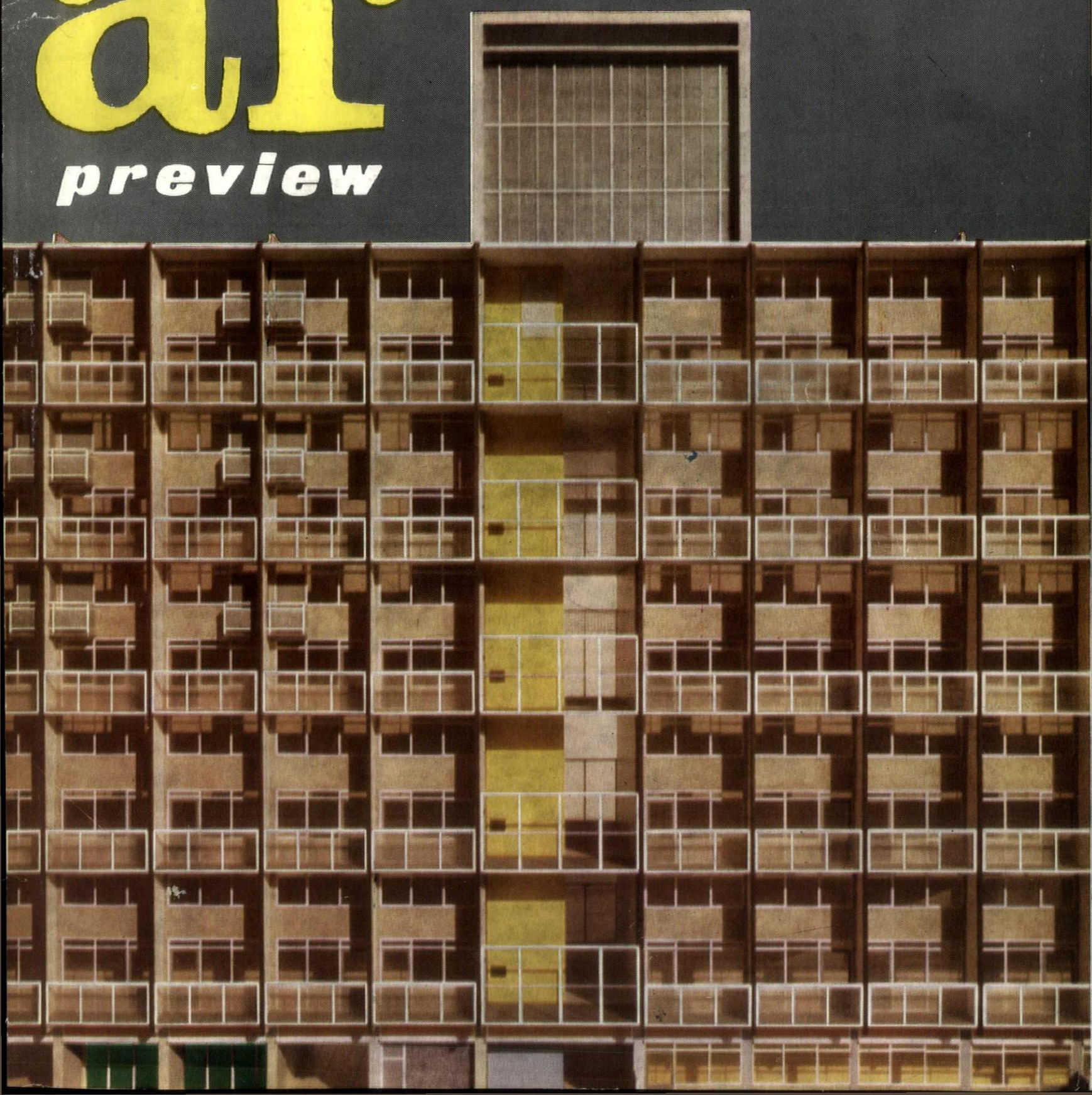
THE ARCHITECTURAL REVIEW VOLUME CXIX
NUMBER 709 JANUARY 1956 FIVE SHILLINGS

ar

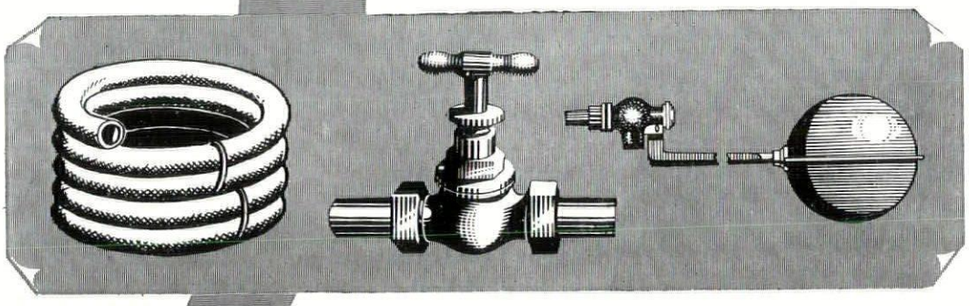
preview



WHEN IT'S A QUESTION OF QUALITY

specify *T. & W. Farmiloe, Limited.*

for Sheet Lead, Lead Pipe, Brasswork and Sanitary Fittings



Manufacturers for over a hundred years, Farmiloe's have earned an enviable reputation for first-class workmanship plus the finest materials.

SHEET LEAD AND LEAD PIPE
for all purposes and to any appropriate B.S. specification.

SILVER COPPER LEAD PIPE
to B.S.S. 1085.

LEAD TAPE AND WIRE

COMPO PIPE, LEAD TRAPS AND BENDS

SOLDER
plumbers', tinmans' and blowpipe to B.S.S. 219.

LEAD WASHERS
for galvanized iron roofing.

BRASSWORK
Cast Plumbers' Brasswork to Architects' specification.
Large size valves of all kinds, ½″ to 3″ Stopcocks and ½″ to 4″ Ball-valves a speciality.

SANITARY EARTHENWARE AND FIRECLAY
and all complementary fittings.

Our Technical Department is at your disposal for advice and information

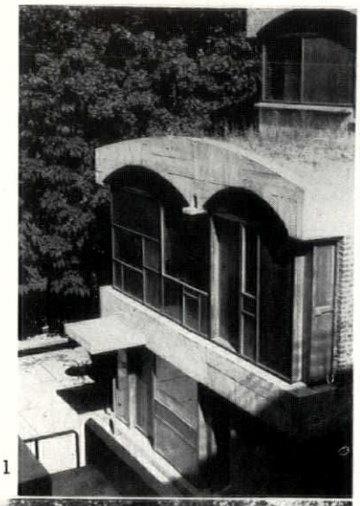
T. & W. FARMILOE LIMITED TRADE MARK NINE ELMS BRAND TRADE MARK **WESTMINSTER, S.W.1**

Tel : VICtoria 4480

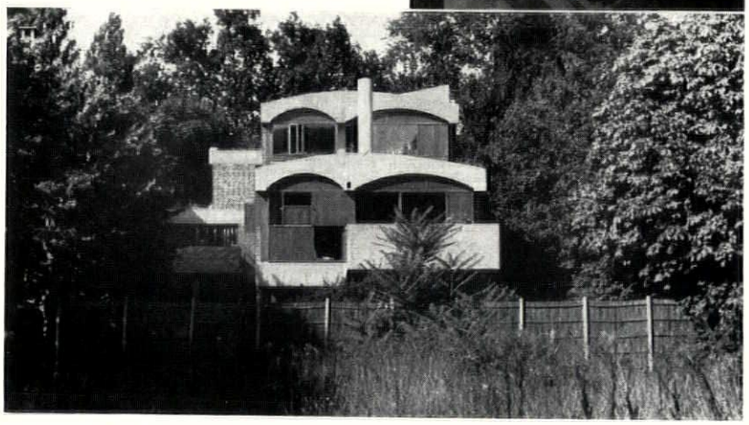
L.I.

MARGINALIA

JAOUL COMPLETED. LeCorbusier's remarkable *Maisons Jaoul* in Neuilly are now completed and the bare structure of ponderous vaults and load-bearing brick which appeared in the illustrations to James Stirling's article in the ARCHITECTURAL REVIEW for September, 1955, can now be seen in enclosed and habitable form. The open ends of the cave-like interiors are closed by panelled patterns of transparency and opacity, 1, formed of windows, shelving and cupboards, and grass is already growing on top of the vaults as intended. The effect of this infilling is to make the whole structure appear much lighter, as may be seen by comparing 2 with views from the same vantage point of the unfinished building, and both massing and surface qualities are now nearer to his intentions as they appear in the published drawings.

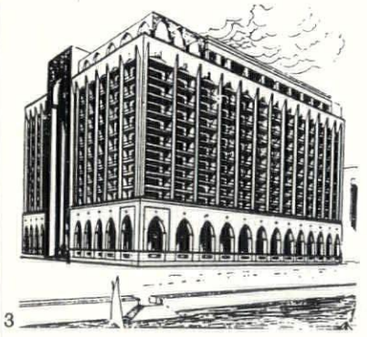


1



2

DESIGN BY THE NILE. Contrasting approaches to the design of luxury hotels are shown by two recently published projects for Cairo. Shepheards Hotel is to be rebuilt (architects Elias Shaghoury and Ahmed Fuad), after its destruction by fire three years ago, in a quasi-Saracenic style, 3, which seems to be a rather muddled attempt at keeping in keeping with a local flavour which was always rather suspect anyhow, and will boast arcades of pointed arches at ground and roof terrace levels. Sandwiched between these two slabs of Orientalism, the façade will have the sun-breaker, every-room-its-private-balcony treatment which has been made unavoidable on hotels of this class in hot-climates by the activity of the Hilton Hotels organization, who will also be represented in Cairo by the new Nile Hilton, 4, 5. This will be entirely in the international Hilton manner (architects James McKeown and James Filson), and, as at Istanbul, will make concessions to local traditions in its ancillary structures only, even if not in the precise forms—mural friezes, statues and lotus-capitalled columns—which appear in the model.

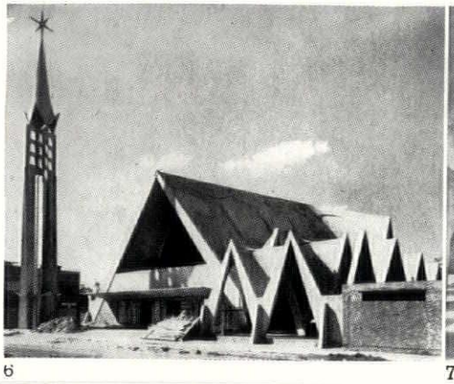


3

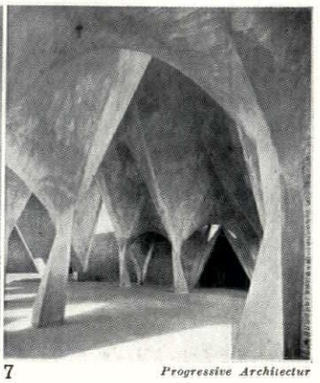
4

5

FOLDED-SLAB CHURCH. The brilliant Hispano-Mexican engineer Felix Candela continues to justify his assertion that the post-and-lintel orthodoxy in reinforced concrete is a harmful restraint on design (ARCHITECTURAL REVIEW, September, 1953) with buildings of extraordinarily inventive forms. The new church of the *Virgen Milagrosa*, 6, in Mexico City represents one of the most bizarre shapes yet created by the application of his favoured vault-form, the hyperbolic paraboloid. This form, which has the valuable property of being generated from straight shuttering members, creates an interior, 7, whose aspects can have no equal outside the work of Antoni Gaudi, or odd corners of early cubist paintings by Picasso. These formal resemblances to the work of Spanish masters of an earlier generation are not necessarily coincidental by-products of structural mathematics for Candela is famed for making most of his design 'by eye,' by an intuitive sense of structural form, and carrying out precise calculations, as a justificatory exercise, at a later date.



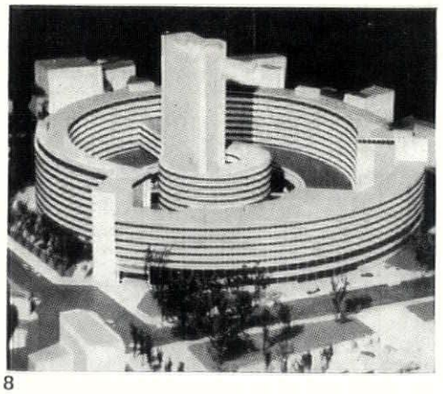
6



7

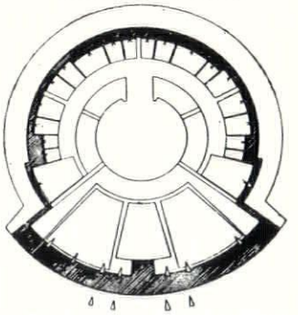
Progressive Architectur

RADIO CENTRE FOR PARIS. A monumental and unmistakably French contribution to the problem of the design of broadcasting centres (ARCHITECTURAL REVIEW, August, 1955) is now reported to be under construction on the Quai de Passy, Paris. The design, by Henry Bernard, a Rome Prize winner, was selected in a national competition in 1952, and in its circular form, 8, its highly rationalized separation of circulations, and the placing of control rooms and record-stacking at its centre it seems to stand solidly in the French tradition of ideal plans as seen in the work of Boullée and Ledoux. More immediately interesting to practical architects, who may find themselves at some time grappling with a similar design-problem, is the ease with which the circular plan, 9, absorbs those normally unconformable elements, three wedge-plan auditoria (seen in the lower part of the plan).



8

Below, the 2nd floor, showing (dark area) circulation for visitors, and access to public rooms.



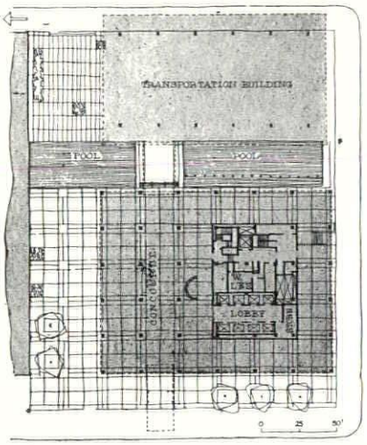
9

Forum (Amsterdam)

MILE-HIGH CENTER. An impressive example of the 'new' real-estate development at work in USA is provided by Mile High Center, a recently completed office block in Denver, Colorado, financed by the celebrated William Zeckendorf. Eschewing several practices that are thought to be unavoidable in speculative central-area developments, it makes no attempt to cover the whole site, thus avoiding set-backs on upper storeys and enabling the architect, I. M. Pei, to erect a neat square block whose walls lift twenty-two floors sheer and unbroken, 10. Furthermore there are no shops around the base of the block at pavement-level, where it has been largely opened out to form a covered entrance-concourse to the offices; 11, the shops have been dismissed to a separate concourse at basement level

10

under the exhibition hall, whose curved vault is visible in the foreground of the illustration. The wall-treatment of the main block is also unusual, with its carefully contrived 'weave' of grey-toned main-structure members and tan-coloured subsidiaries, and has been carefully worked out to present the same visual pattern at night when illuminated from within.



11 *Architectural Forum*

The Art of Re-issuing III

Two recent additions to the growing bibliography of classics put back into circulation (AR, *Marginalia*, August and October, 1954) are Lethaby's *Architecture* (Oxford, 18s.) and Gropius's *The New Architecture and the Bauhaus* (Faber, 15s.), but classics though both may be—and classics of the empirical, functional, *sachlich* approach to architecture, in both cases—they could not present a stronger contrast. The contrast in the matter is well known—a common admiration for engineering and a suspicion of taste, aesthetics and style they both have, and the expected emphasis on purpose and structure—but whereas Lethaby propounds his philosophy by means of a discursive time-journey from predynastic Egypt to Tower Bridge, Gropius is his usual magnificently a-historical self—apart from a single reference to Schinkel, the creation of the world seems for him contemporary with the foundation of the *Werkbund*.

But it is in the artifices of reissuing that the contrast is most formidable. *Architecture* comes in a slightly larger format than its original 'Home University' publication, completely reset, and with a preface and epilogue by Professor Basil Ward which, like the streamlined nose and tail of a restyled automobile, facilitate its penetration into our contemporary modes of thought—and its eqully rapid exit therefrom. The shock effect of a period text is vitiated if we are left at the end, not with a characteristically Edwardian statement of faith in engineering, but with over-familiar illustrations of the Ministry of Health in Rio, Lakeshore Apartments and the *Unité* at Marseilles. The same is not true of *The New Architecture and the Bauhaus*. Not only is the blunt impact of Morton Shand's pugnacious translation left unbuffered, but the new edition has been printed directly from the standing type of the old, on the same size page, on the same quality paper, and in the same wrapper by Moholy-Nagy. The resultant impact is so forceful that the reader is transported violently back to the dogmatic 'Thirties, and takes in his stride such observations as 'So much for technique!—But what about Beauty?' as if they were the common coin of architectural commerce to this day. Gropius Unadorned hits us much harder than Lethaby with a New Look.

Gossip

In the November issue of *Vogue*, we read: 'PEOPLE ARE TALKING ABOUT . . . the Knightsbridge dustman who wears a discarded Lock riding bowler to protect himself from the bins and who rates the rubbish on his beat "'Igh class—full of broken glasses" . . . Norfolk reeds and a thatcher going to America to put a new roof on Miss Pamela Woolworth's home . . . *Outrage*, a special issue of THE ARCHITECTURAL REVIEW, about the Subtopia that our beautiful green England may fast come to be—a sharp reminder that all of us (not only public bodies) have an aesthetic myopia about the country we love. . .'

Although this is what we expect, we are sincerely touched by the right-minded attitude of the Bright Young Things. We may weep together over the fact that the people who matter in this context are not ourselves, but the self-styled Things in Suburbs (see the review of *Outrage* in *The Croydon Advertiser*); and they regard us, along with the broken glass, as high-class rubbish.

John Rodker

John Rodker, who died aged 61 in October, was a poet first, a publisher later. The boundary line between the two parts in his life runs about the year 1925. He contributed to *The Egoist*, *The New Age* and other journals, was a friend of Ezra Pound and published some T. S. Eliot as early as 1920. His publishing was done under various names: Ovid Press, Imago Press, Pushkin Press. It was never extensive and always idiosyncratic. He published the English edition of Restif de la Bretonne's *Monsieur Nicolas*, Powys Mathers's translation of *The Thousand and One Nights*, much psycho-analytical material including an edition of Freud's works in German to replace what the Nazis had burned, and also—which in the obituaries published after his death has not been sufficiently stressed—Le Corbusier's *Vers une Architecture* and *L'Urbanisme* as early as 1925 and 1926. Both books were translated by Mr. Frederick Etchells. John Rodker was quiet and unassuming, yet of great personal fascination and not without authority; extremely widely read, and neither born for, nor running after, success.

Hans Knoll

Few personalities can have been quite so characteristic of furniture design and interiors in the post-war years as Hans Knoll. Though a German by birth, he will be remembered as one of the key figures in the epoch in which America returned a compliment to Europe, and having absorbed what the old world could teach her about design, gave it back increased ten-fold through such mechanisms as Hilton Hotels, U.S. Embassy buildings—and Knoll International. It was in Cuba, on business in connection with Knoll International Havana, that Hans Knoll met his death in a car accident, and his presence there was typical of the world-wide penetration of his commercial activities, in the wake of the spreading reputation of his products. Although Knoll Associates, the unique organization which bracketed designers into the firm almost as full partners, was formed in 1946, the Hans Knoll Furniture Company dates back to 1938, the year of his arrival in the USA, and before that he had been president of Plan, still remembered as pioneers of contemporary furniture in England. Through Knoll Associates he commissioned work from nearly every major furniture designer, and furniture from many great designers in other fields—he put Mies van der Rohe's *Barcelona* chair back in circulation, introduced various sculptors—Bertoia, Noguchi—to the field of furniture, brought Albini into the American field and, most notably, put on the market Eero Saarinen's magnificent moulded plastic armchair which, with Charles Eames' famous chairs, was the true herald of the American renaissance of furniture design. He was only forty-two, but had built up a formidable reputation and a considerable commercial organization.

CORRESPONDENCE

To the Editors,

SIRS,—Dr. Pevsner's review of recent church art in Germany (ARCHITECTURAL REVIEW, October 1955) may be a necessary reminder of how backward most of the designs are which are placed in English churches by artists specializing in ecclesiastical art, but he ought to have mentioned that work of the same quality as the best in Germany is not entirely lacking. I enclose a photograph of an altar made last year by the sculptor Ralph Beyer for the Chapel of the Royal Foundation of St. Katherine at Shadwell.

Yours, etc.,
FRANCES RUMBOLD.
4, Stepney Green, London, E.1.

To the Editors,

SIRS,—It is difficult to quarrel with so disarming a critic as Dr. Pevsner, but I feel bound to point out an illogic in his review of my *English Mediaeval Architects* in your October issue. Dr. Pevsner sets out to clarify his belief in 'the essential anonymity of mediaeval architecture,' yet concludes that 'anonymity in the Middle Ages is not absence of designers, but either absence of sufficient information for designers to come to life as personalities, or absence of a sufficient demonstration of personality to make names essential for an understanding of style.'

Surely absence of information is not 'essential,' but merely accidental, anonymity; and equally surely, such an absence of information might occur in relation to any period, however full of demonstrable personality, owing to the haphazard destruction of records. If the names of Renaissance designers had been lost, as indeed many of them have, understanding of their style would be (in some cases is) only possible on a basis of analysis and attribution to specified 'Masters,' just as has been done in the study of painting.

What I ask is that the study of our mediaeval architecture should be pursued on the same lines until the limit of stylistic attribution (even if it be only to Masters X, Y and Z) is reached. Only then will it be possible to *prove* whether or no there is 'a sufficient demonstration of personality' to place Gothic architecture on precisely the same footing as that of other periods. Personally, I have not the slightest doubt that this demonstration of personality will then be forthcoming.

Yours, etc.,
JOHN H. HARVEY.
Little Bookham, Surrey.

Intelligence

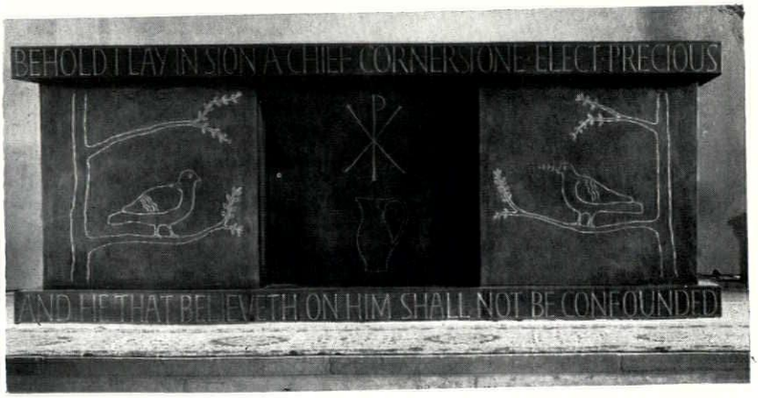
The Architects' Benevolent Society has announced details of a competition for the design of new dwellings for Old People at East Horsley, Surrey, to be submitted by 6th April, 1956. Two premia, of £100 and £75, will be awarded.

According to *Das Münster*, September-October, 1955, the City of Krefeld has made Mies van der Rohe's Langer House of 1928 an historical monument. It will now be looked after by the City authorities and probably used for exhibitions of modern art. In addition a Mies archive will be established in the house.

Mr. F. G. West has been appointed Deputy Architect to the LCC.

ACKNOWLEDGEMENTS

COVER: Galwey, Arphot. MARGINALIA, page 1: Jaoul, J. Stirling; page 2: altar, J. Gay. FRONTIS, page 4: Toomey, Arphot. PUBLIC BUILDINGS, page 11, top: City Engineer, Liverpool; page 13: Elsam, Mann & Cooper; page 14, top, Galwey; bottom and page 16, top, J. McCann; page 19: Galwey; page 20, Elder and de Piero. POWER STATIONS, page 27: LCC Housing, page 31, bottom: City Engineer, Liverpool; pages 34-5: Arphot; page 36: Galwey; page 40: Fox Ltd.; page 41: Galwey; page 42, top: Fox; page 44: S. W. Newbery; page 45, top: C. Tait; bottom, Briggs; pages 51-2, Galwey; page 55: Wainwright; page 56, top: M. Boys; bottom, Arphot. EDUCATIONAL: Elsam, Mann & Cooper; page 65, top: A. Cracknell; page 66: Wainwright. Architects, page 73: S. Lambert; page 74: Armstrong & MacManus, S. Lambert; Livett, Toomey; Kitson, Parish, Lidgard & Pyman, Toomey.

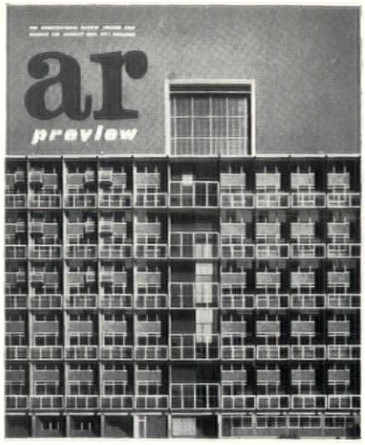


Altar, Royal Foundation of St. Katherine (see above).

THE ARCHITECTURAL REVIEW

Volume 119 Number 709 January 1956

SPECIAL PREVIEW ISSUE



The cover illustrates a model of a block of maisonettes at Picton Street, one of the London County Council's newest housing sites in Camberwell (see pages 36-37). It is one of fifty-two projects, at present under construction or shortly to begin, illustrated in this third special Preview issue of the REVIEW.

1 **Marginalia**

2 **Correspondence**

4 **Frontispiece**

5 **Foreword**

1 **Public Buildings**

8 Town Centre: Basildon *Noel Tweddell (Architect to the Development Corporation)*
10 Branch Library: Harold Wood *H. Conolly (County Architect)*
10 Multi-Storey Car Park: Liverpool *Ronald Bradbury (City Architect)*
11 Church Hall: Surbiton *Kenneth Wood*
12 Swimming Bath: Wythenshawe *Leonard C. Howitt (Manchester City Architect)*
15 Telephone Exchange: City of London *Ministry of Works*
15 Police Station and Court: Harlow *Frederick Gibberd*
16 Police Station: Birmingham *A. G. Sheppard Fidler (City Architect)*
17 Theatre: Ealing *W. S. Hattrell and Partners*
18 Theatre: Middlesbrough *Elder and De Pierro*
21 Church: Leicester *Basil Spence and Partners*
22 Hospital: Crawley *Yorke, Rosenberg and Mardall*

2 **Power Stations**

23 Power Station: Elland, Yorks. *Kitson, Parish, Ledgard and Pyman*
24 Power Station: Killin, Perthshire *Robert H. Matthew*
25 Power House: Beckton *London County Council*

3 **Housing**

28 Neighbourhood: Stepney *London County Council*
30 Flats: Hove *Eric Lyons*
31 Maisonettes: Liverpool *Ronald Bradbury (City Architect)*
32 Housing, etc.: Regents Park *Armstrong and MacManus*
34 Flats: City of London *Chamberlin, Powell and Bon*
37 Maisonettes: Camberwell *London County Council*
38 Flats: Highgate *Eric Lyons*

4 **Office Buildings**

39 Offices and Shops: Albemarle Street *Ernö Goldfinger*
40 Offices, etc.: New Cavendish Street *Gollins, Melvin, Ward and Partners*
40 Offices: City of London *Trehearne and Norman, Preston and Partners*
43 Offices: City of London *Trehearne and Norman, Preston and Partners*
43 Civic Offices: Leeds *R. A. H. Livett (City Architect)*
44 Offices: City of London *Easton and Robertson*
44 Offices, Shops, etc.: Shaftesbury Avenue *Sir John Burnet, Tait and Partners*
45 Office and Warehouse: London *Douglas and J. D. Wood*
46 Offices: Fetter Lane *Edward D. Mills*
47 Offices, Shops, etc.: St. Martin's Lane *Basil Spence and Partners*

5 **Industrial Buildings**

49 Industrial Offices: East Ham *Elie Mayorcas*
50 Factory Offices: Derby *Basil Ward (of Ramsey, Murray, White and Ward)*
50 Factory Offices: Birmingham *Ernö Goldfinger*
53 Factory, etc.: Slough *J. Douglass Mathews and Partners*
53 Factory : Eastleigh, Hants *Edward D. Mills*
54 Television Laboratories: Enfield *G. A. Jellicoe and Partners*
57 Factory: Wigan *J. Douglass Mathews and Partners*
58 Factory: Swindon *Bertram Carter*
59 Factory: Welwyn Garden City *Louis de Soissons, Peacock, Hodges and Robertson*
59 Factory: Ellesmere Port, Cheshire *Farmer and Dark*

6 **Schools**

63 College of Further Education: Harrow *C. G. Stillman (County Architect)*
63 Technical College: Redcar, Yorks. *Gollins, Melvin, Ward and Partners*
64 Secondary School: Oswestry *Richard Sheppard and Partners*
64 College of Further Education: Harlow *Frederick Gibberd*
67 University Layout: Nottingham *G. A. Jellicoe and Partners*
68 Grammar School: Beighton, Derbyshire *Architects Co-Partnership*
69 Secondary School: Sowerby Bridge, Yorks. *James Cubitt and Partners*
69 Secondary School: Swinton, Yorks. *Robert H. Matthew*
70 College of Further Education: Bromsgrove *Yorke, Rosenberg and Mardall*
71 Comprehensive School: Dulwich *London County Council*
72 Secondary School: Lewisham *Archard and Hardy*

73 **Architects in this issue**

78 **Contractors, etc.**

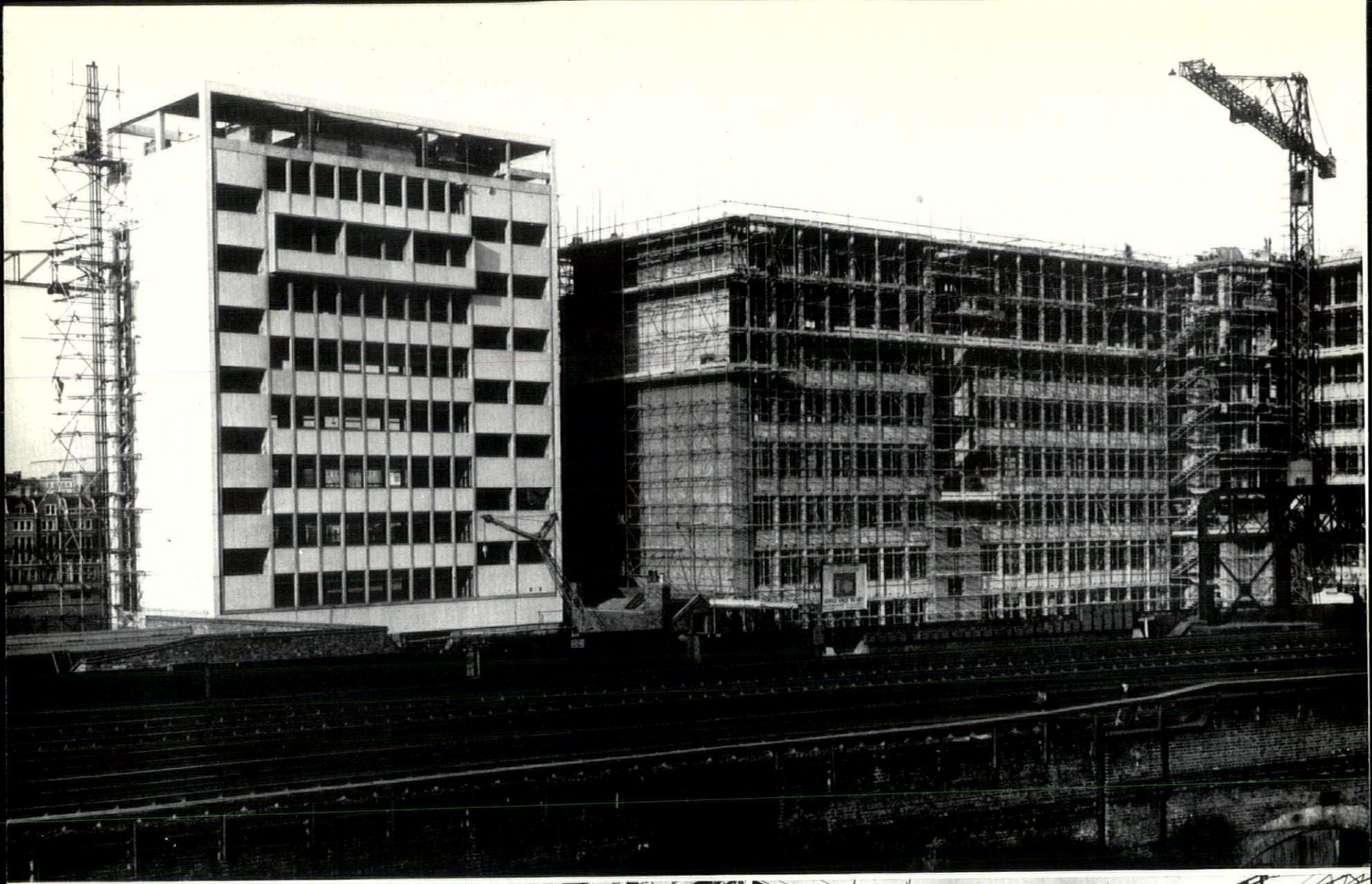
Directing Editors J. M. Richards, Nikolaus Pevsner, H. de C. Hastings
Executive Editor Hugh Casson
Art Editor Ian McCallum
Assistant Editors Gordon Cullen
production, Ian Nairn. research, S. Lang. literary, Reyner Banham. Editorial Secretary . . Whi 0611-9

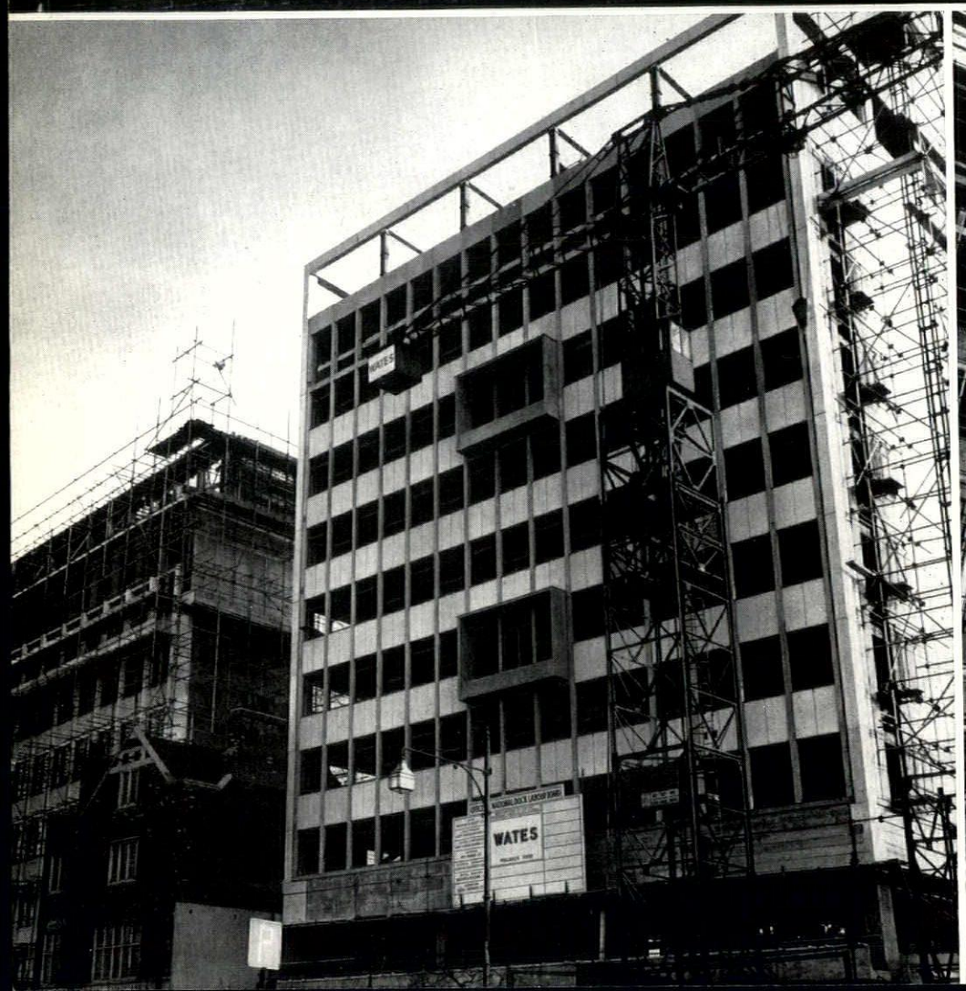
SUBSCRIPTION RATE: The annual post free subscription rate, payable in advance, is £2 18s. 0d. sterling, in U.S.A. and Canada $9. An index is issued half-yearly and is published as a supplement to the REVIEW.

THE ARCHITECTURAL REVIEW

9-13 Queen Anne's Gate, Westminster, S W 1 · Whitehall 0611

FIVE SHILLINGS




WATES

No 21
JOHN PINCHES
WATES

The Preview issue of the Review, now an annual event, is not concerned with architects' dreams but with actual building projects which, at the time of publication, are either already begun or shortly due to begin. Opposite *are two of the projects that were illustrated in the corresponding issue to this a year ago and are already well on the way to completion: two office buildings on the Albert Embankment, London, by T. P. Bennett and Son, and by Frederick Gibberd. Top, from the railway; bottom, from the riverside roadway.*

FOREWORD

Whenever the question is asked: how can the quality of contemporary architecture be improved? one answer—perhaps one among several, but one of the most important—must always be: by building and yet more building. The practice of their craft is the only thing from which architects can really learn, whatever the pedagogues may say and do, and the difficulties modern architecture has experienced in the last few years in evolving for itself a mature, universally applicable idiom, one that goes beyond the mere exploitation of technical novelty and is capable of carrying a coherent message to the eye, have largely arisen from the restrictions the national economic situation has imposed on building.

Architectural practice has been limited to a very few types of building, and to those in quantities far short of what are needed. Architects' imaginations have been stifled by having to plan for cheapness and little but cheapness. They have had to develop a minimum mentality. But now at last there are signs of better opportunities ahead; indeed in the foreword to the equivalent issue to this one, published a year ago, it was already possible to record the abandonment of the war-time system of building-licences and to express the hope of a far less restricted field of architectural practice in the immediate future. Those hopes have been fulfilled. Architects are engaged on a greater variety of buildings than at any time for nearly twenty years. This issue, for example, begins with a section devoted to public buildings, of which there were quite a number to choose

from—a year or two ago there would have been none—and other sections illustrate power-stations, university projects and office and commercial buildings, all of which are being designed and executed on a substantial scale.

If the architectural profession as a whole is now entering a period of several years during which building in real quantity, unrestricted as to variety, is allowed to go forward (and what is more important if the main sphere of activity is to be transferred from the drawing-board to the site), then the right conditions are being created for a steady increase in architectural competence, and the opportunity is being created to transform the somewhat tentative and esoteric idiom of modern architecture into a universal idiom possessing the rich variety of resources that term suggests. Cost remains, of course, a dominating consideration, but within limits the need to watch costs provides a valuable discipline and encourages the original, rather than the routine, solution. Granted the continued need to keep down the cost of individual buildings, the picture as a whole has changed radically in the last year or two, whether we assess the situation in terms of the money being spent or in terms of the number and size of new projects.

If it is thought that to say so is to paint too rosy a picture, let some figures indicate whether or not the present time deserves the title of a building boom—anyway in comparison with the post-war years. In 1949 the total amount spent on building and civil engineering works was 1,198 million pounds. It has been rising steadily since, especially in the last three years, and the 1954 figure was 1,858 million pounds. The 1955 figures are not yet available, but there is no reason to believe the increase is not continuing. What is more, of the 1949 total, 575 million represented new work; of the 1954 total 1,149 million represented new work. So if this only is taken into account (and it is new building projects, under construction during 1955 and 1956, that we are particularly concerned with here), the figure during these five years has been almost exactly doubled.

A building boom is of limited value to the development of better architecture unless it offers the opportunity to experiment. The projects illustrated on the following pages indicate no lack of such opportunities in present-day practice. New avenues are constantly being opened up, which are giving architects the chance to widen their range of expression at the same time as they increase their experience. Some of the projects represent well-established types of building—theatres, civic offices, swimming-baths, hospitals and the like—which circumstances have prevented our constructing since the war; others represent altogether new types of building—multi-storey parking garages, for example—which attempt to solve problems that have only recently come to the fore. And while new avenues are opening, they are not doing so at the expense of old ones; the types of building to which architects have been compelled to give most of their attention lately continue to be in great demand—in fact in even greater demand. The number of houses completed in Britain (excluding Northern Ireland) rose from 197,627 in 1949 to 347,605 in 1954—not all, unfortunately, designed by architects, but the figures give an idea of the rate at which building activity increased and is still increasing.

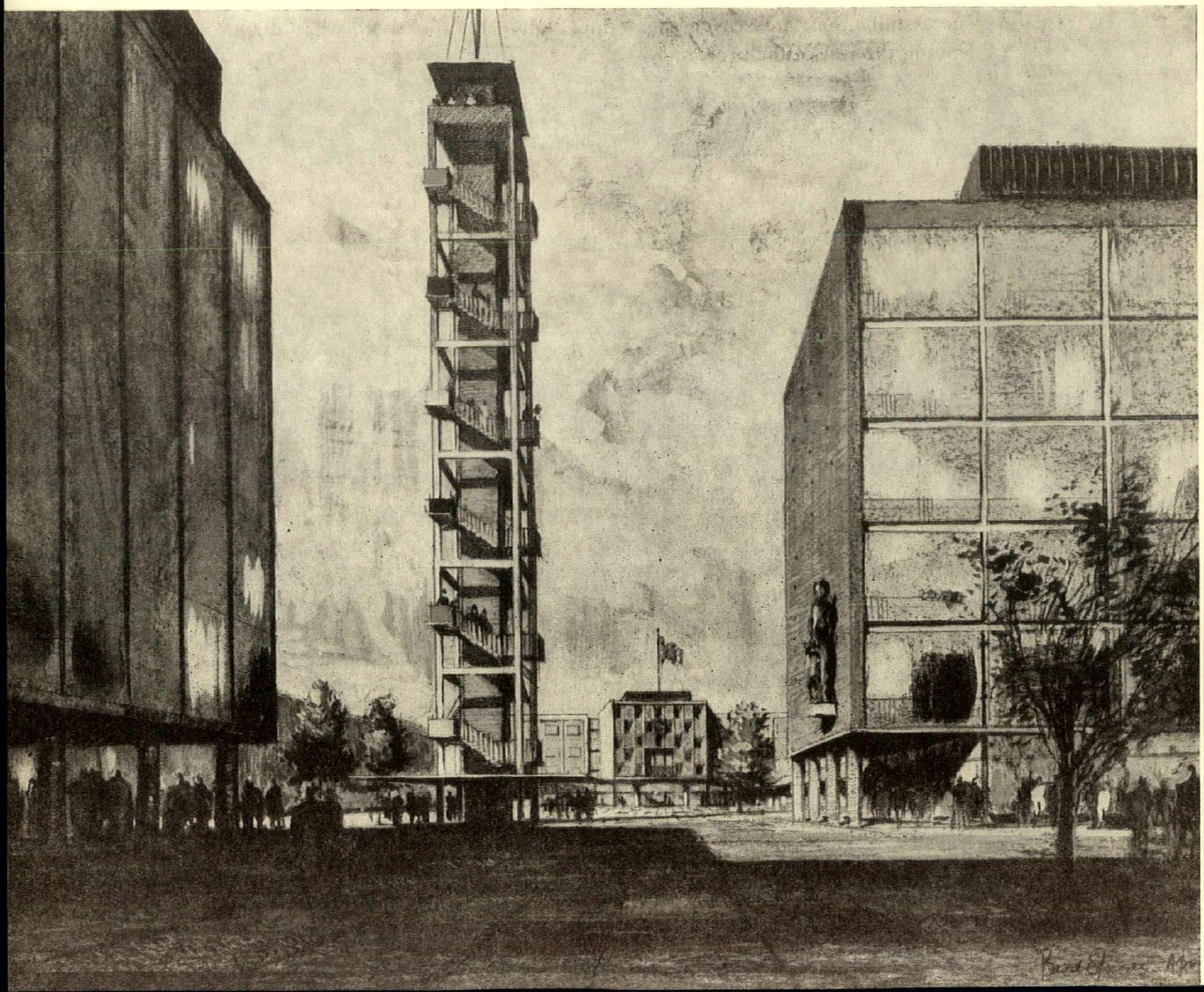
The number of new industrial buildings completed in 1949 was 1,006 (giving a floor-area of twenty-one and a half million square feet); the number begun was 1,330 (area, over thirty-two million square feet) and the number of new industrial buildings approved was 2,442 (area, nearly sixty million square feet). So the increase in activity was already showing itself then. But by 1954 the number completed had increased

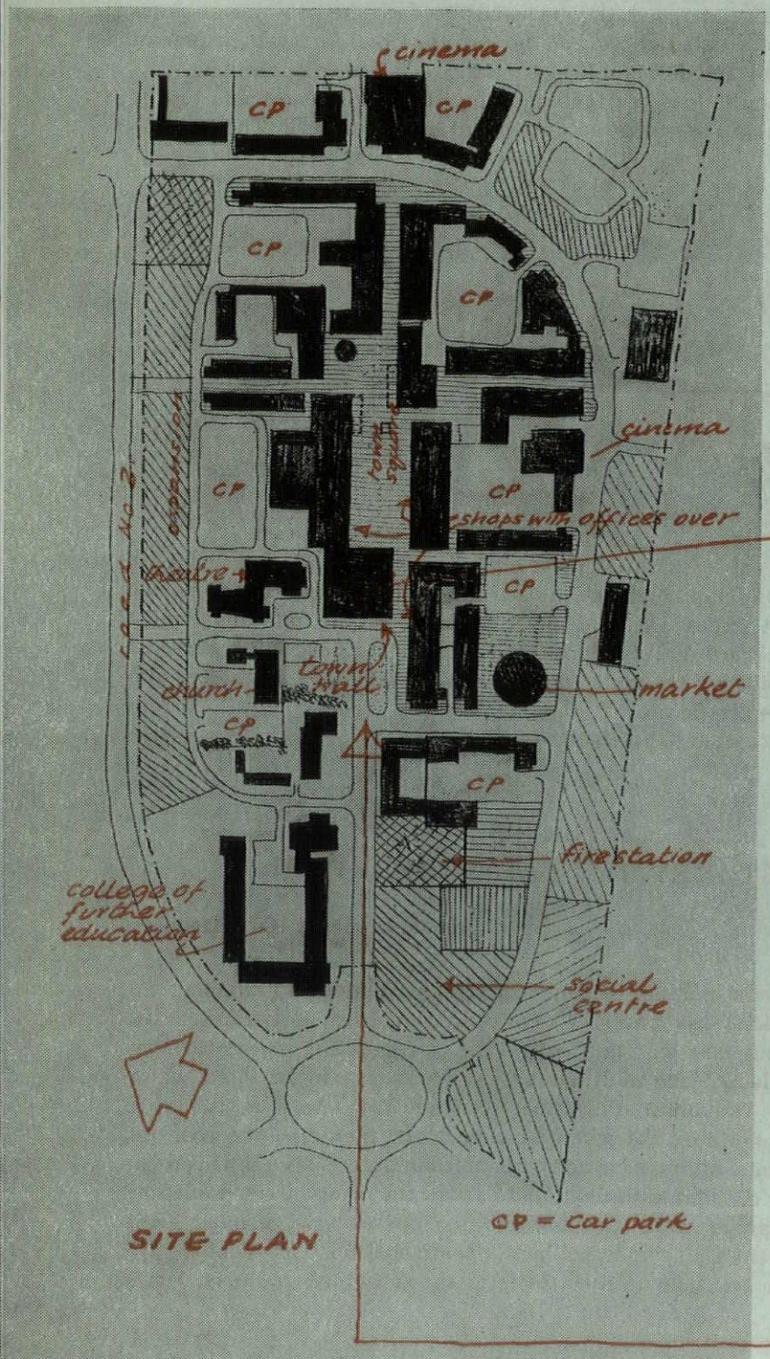
to 1,702 (area, thirty-eight million square feet), the number begun to 2,131 (area, forty-five million square feet) and the number of new projects approved to 2,705 (area, not far short of seventy-one million square feet). As regards educational building, the value of primary and secondary schools approved rose from £14,657,000 in 1948 to £51,286,000 in 1954, and of other schools from £246,000 in 1948 to £1,258,000 in 1954. Moreover, in the first five months of 1955, the figures were £46,124,000 and £1,938,000 (as against £39,584,000 and £850,000 for the same months of 1954); so here again the increase in activity is continuing, for the rising figures of new buildings *approved*, industrial as well as educational, represent a greater number of buildings in the contract or constructional stage at the moment of writing.

It is this mixture of widening experience of familiar paths and the chance to branch out along new ones that makes the present such a moment of opportunity. The projects on the following pages represent those most worth noting of the many that architects are engaged upon. So, as well as giving the news of important new buildings, this issue serves the purpose of enabling the present generation of architects to judge how successfully they are seizing this opportunity and to see in what direction they are leading the rest of the profession.

1 PUBLIC BUILDINGS

Preliminary sketch for the town centre at Basildon new town, looking into one of the squares, which will be for pedestrians only. In the foreground is a clock-tower. The drawing is by Basil Spence, who is consultant to the development corporation for the central area.



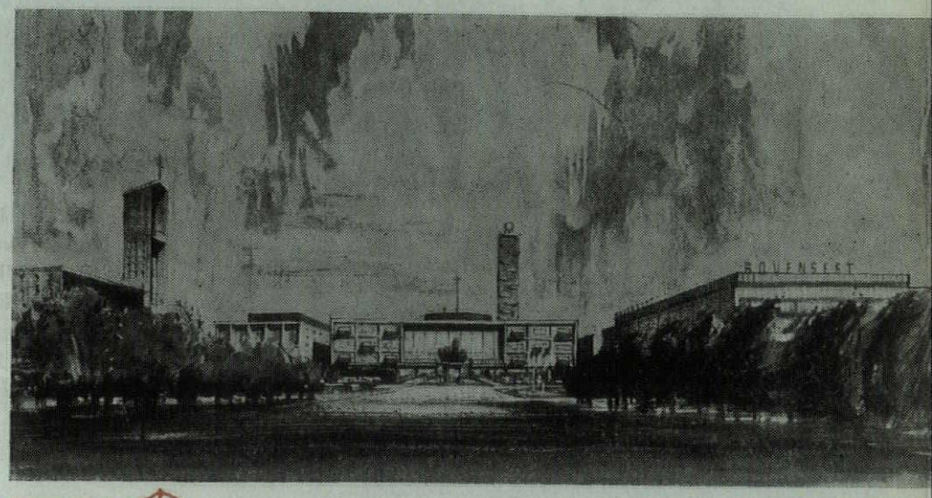


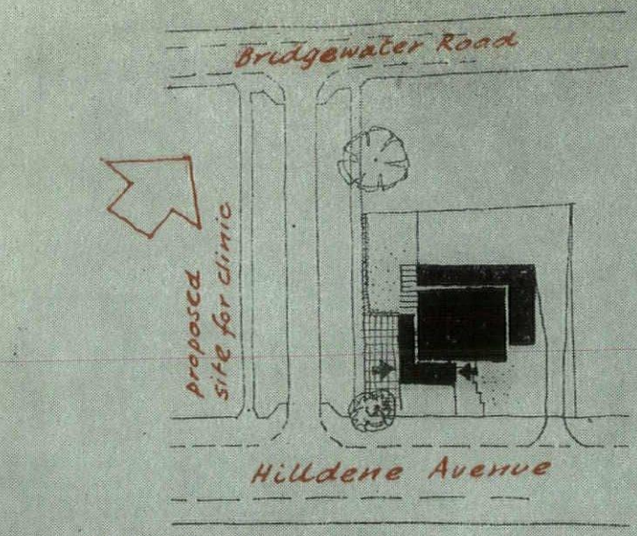
TOWN CENTRE: BASILDON

Noel Tweddell (chief architect to the Development Corporation)

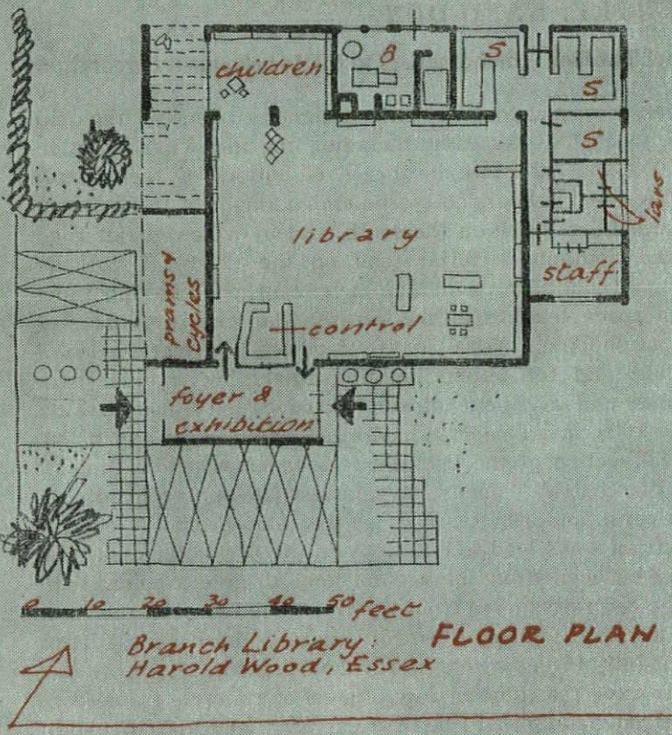
The town centre of Basildon is being designed to serve a regional population of about 130,000-150,000, including the in-town population of about 100,000. The site lies on the level bottom of the central basin of the town and is bounded by the embankment of the London-Upminster-Southend railway on the south, and by a new major road looping off the Southend arterial road on the north. It will be surrounded on all sides by residential neighbourhoods having independent spine roads leading to the centre. The plan provides for 300,000 sq. ft. of shopping, 85,000 sq. ft. of offices, a market, a small number of flats, and for public buildings including a town hall, church, cinemas, and a college of further education; also parking space for some 2,000 cars. Ten acres have been reserved for expansion. The commercial section of the layout has been arranged so that all shops within the central 'island' have pedestrian approach only in front and car parks and service roads at the rear. From the central squares, pedestrian ways lead to bus stops on the perimeter road. The town hall may be opened on the ground floor to give a colonnaded approach to the central squares from the ceremonial way on the west side. A clock tower in the main central square will be a focal point in the predominantly three- or four-storey development.

Buildings are expected to be mainly of steel or concrete frame construction. External cladding will be in stone, brick and glazed curtain walling. The frame construction will be allowed to dictate a certain





SITE PLAN



Branch Library: Harold Wood, Essex FLOOR PLAN

formality in design, but extensive use of colour will be encouraged.

The design illustrated has not yet received Ministry approval, but it is hoped to start on the first section of the town centre this summer. Deputy chief architect: Anthony B. Davies. Senior architect: John N. Graham. Consultant: Basil Spence.

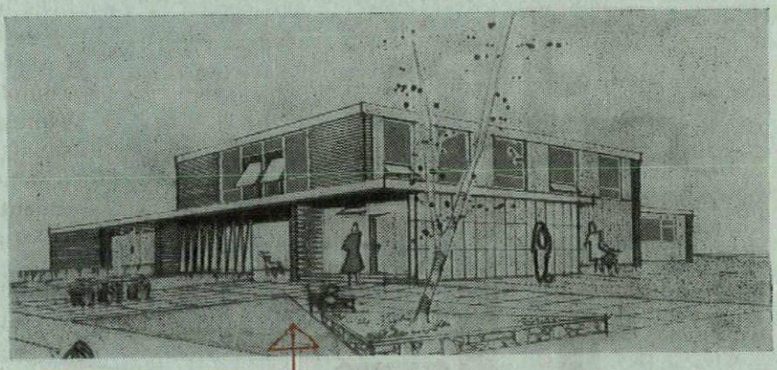
BRANCH LIBRARY: HAROLD WOOD, ESSEX

H. Conolly (County Architect)

The first of a number of branch libraries of a similar size to be built in Essex by the county council. It is in Hilldene Avenue on the new LCC estate of Harold Wood, near Romford.

Bookcases are confined as far as possible to the walls, the only island fittings being those used to form a reference section. The central space contains tables and easy chairs. The children's library has a lower ceiling (8 ft.), so as to be in scale with child height. A glazed screen gives access to a paved outside reading area, and a view on to a rendered wall, which will be decorated by mural painting. The blank external wall of the entrance hall is faced in precast concrete slabs and forms a background to a piece of sculpture.

Construction is load-bearing brickwork, concrete beams and timber joists, carrying 2-in. thick building board as a roof deck. The latter is



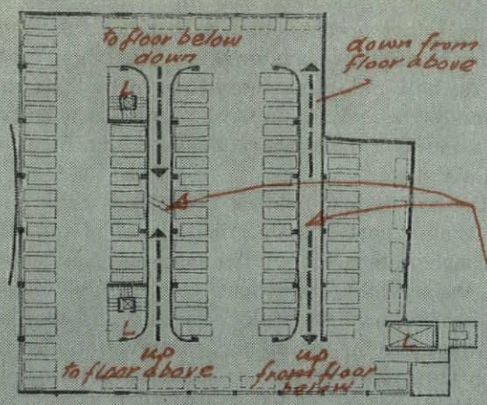
surfaced direct with three-layer bitumen-bonded felt, finished with in-situ granite chippings. The underside of the building board and the joists is left exposed in the lower portions of the building, whilst the main library has the underside of joists closed with acoustic board. The floor of the main compartment is wood block; the remaining floors are plastic tile.

Work is expected to begin this month or next.

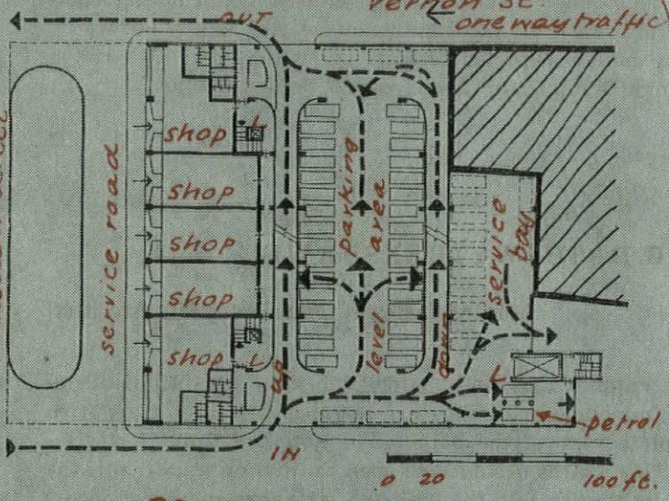
MULTI-STOREY CAR PARK: LIVERPOOL

Ronald Bradbury (City Architect)

The first of a number of similar buildings planned to augment the existing official car parks, which consist mainly of bombed sites, and are being used only until such time as rebuilding makes them no longer available. The multi-storey car parks are to be sited where they will be convenient to business centres. This one is in Tithebarn Street. The building has seven parking floors, including the roof and two basements, giving a capacity of approximately 600 cars. It consists of a series of simple decks (apart from the shop accommodation) with low barrier walls at the edges and open above, glazing being confined to the shops and ancillary accommodation. The whole of the ground-floor frontage is given over to shops (which could be let as



UPPER FLOOR



GROUND FLOOR

Car Park: Liverpool

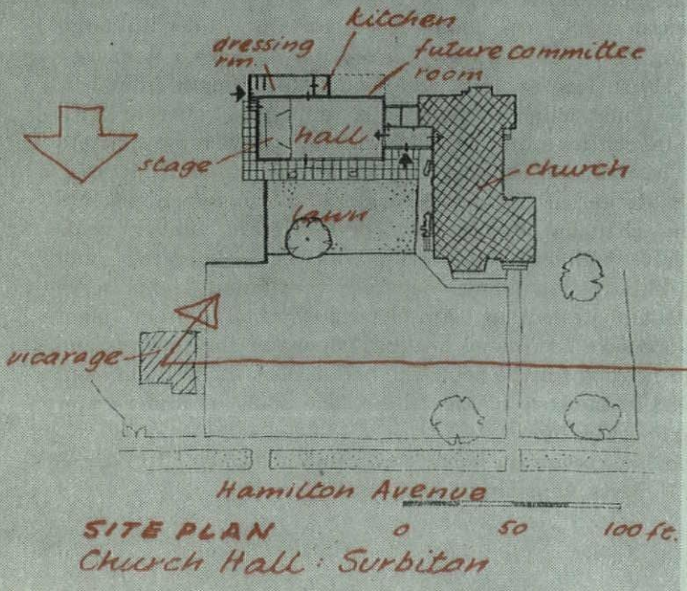
five separate individual shops, or as one or more larger shops) except for an area set aside as a service bay with petrol pumps and the usual facilities. Vertical circulation for cars within the building is by means of single-way straight ramps at a slope of about 1:11. Two parallel sets are provided 55 ft. apart, so that a continous circular traffic movement can be maintained up and down, traffic in each direction progressing from one tier of ramps to the next at each floor level. This method causes the minimum of interference with the traffic moving into the parking bays. Three staircases and two passenger lifts are included for access to the parking floors. The entrance and the exit are on opposite sides of the building, though at quiet periods it is proposed to use the entrance for both purposes.

Construction is reinforced concrete throughout. Provisional Ministry approval has been received, and work leading to the invitation of tenders is in progress. In preparing the scheme the City Architect has worked in conjunction with the City Engineer and Surveyor.

CHURCH HALL: SURBITON

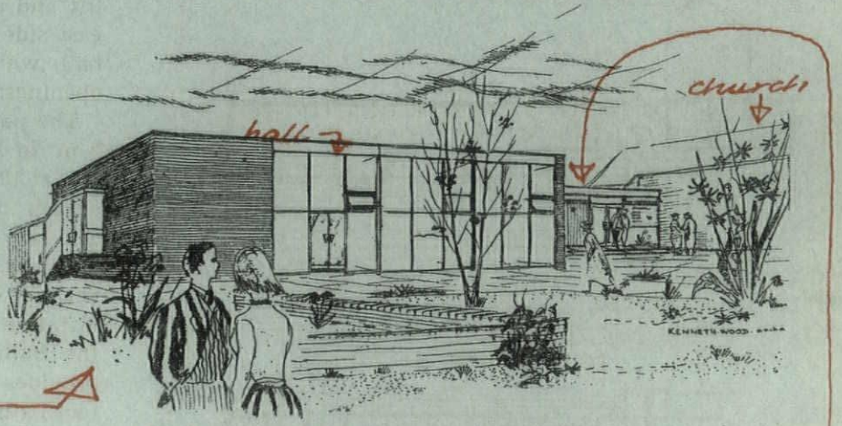
Kenneth Wood

To release the existing hall-church of St. George's, Tolworth, so that it can fulfil the purpose of a church exclusively. The site is fronted by a large open space which is to be developed as gardens. The side of the hall overlooking this space is fully glazed and there are high-



SITE PLAN

Church Hall: Surbiton

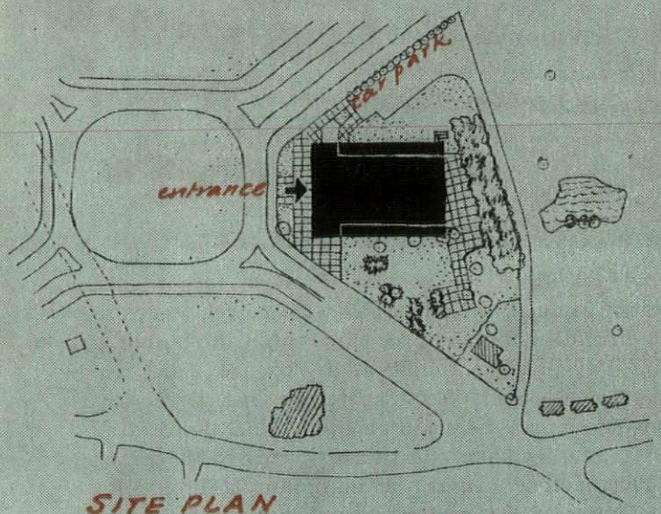


level windows to the south where the site abuts the backs of pre-war suburban housing. The hall, which is to serve many activities and seats 250, has been placed at right-angles to the church with a common entrance foyer of lower height to act as an articulating link

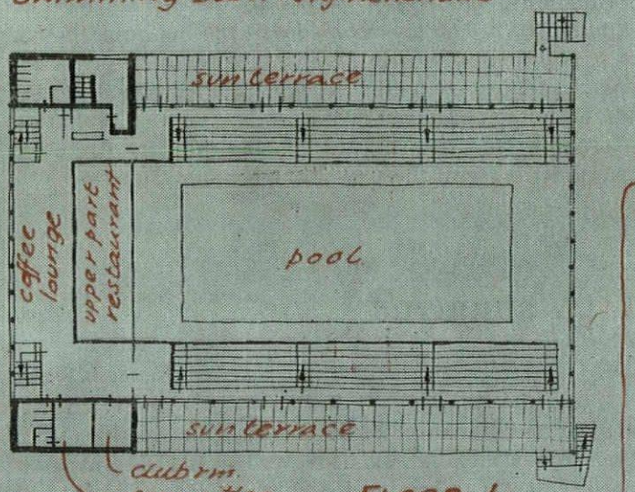
between them. This link also includes lavatories for both sexes, it being intended to use the adjoining existing ladies' vestry as an occasional cloakroom. Other accommodation includes the stage, with storage space under, backstage lavatories and kitchen, the latter serving direct into the hall and into a committee room. This room will also be used for Sunday school, as dressing-rooms, as a refreshment room during dances and as a midweek clinic. A second meeting room will be added at a later stage.

Construction of the hall is load-bearing brick end walls and intermediate laminated timber portals supporting a roof of tanalised prefabricated timber trough units in 4 ft. widths, spanning between the portals and containing the services. The other elements have load-bearing brick walls or load-bearing insulating block faced with cedar boarding left natural, with framing to the glazed garden elevation also in cedar. Drainage is in pitch fibre pipes. Roofs are surfaced with spar-finished built-up felt, and the floors are of polyvinyl or, if finance permits, woodblock in the hall itself. Heating is by low-pressure hot water from a solid fuel boiler in the existing church boiler-house, floor-panel heating and radiators. Local gas water-heaters supply hot water.

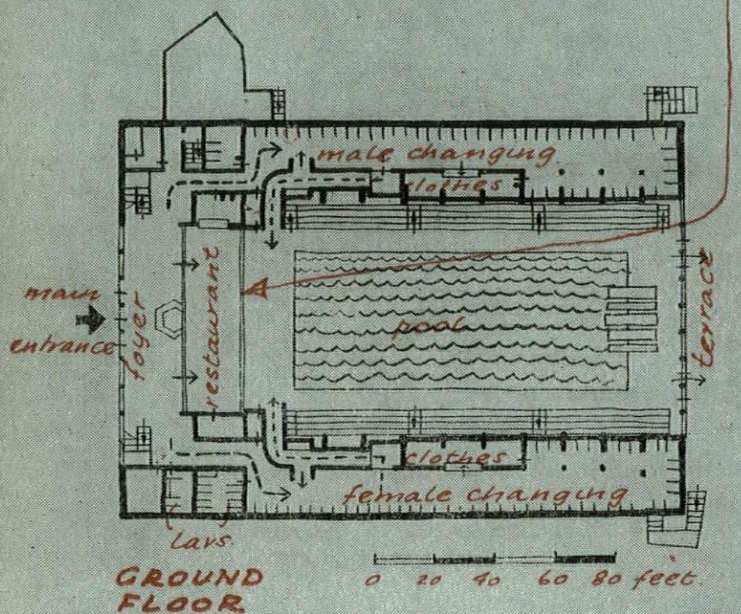
Work on the hall is expected to start early this year. Associated architect: Henry Blyth. Quantity surveyor: Donald Sawyer.



SITE PLAN
Swimming Bath: Wythenshawe



FLOOR 1



GROUND FLOOR

SWIMMING BATH: WYTHENSHAWE

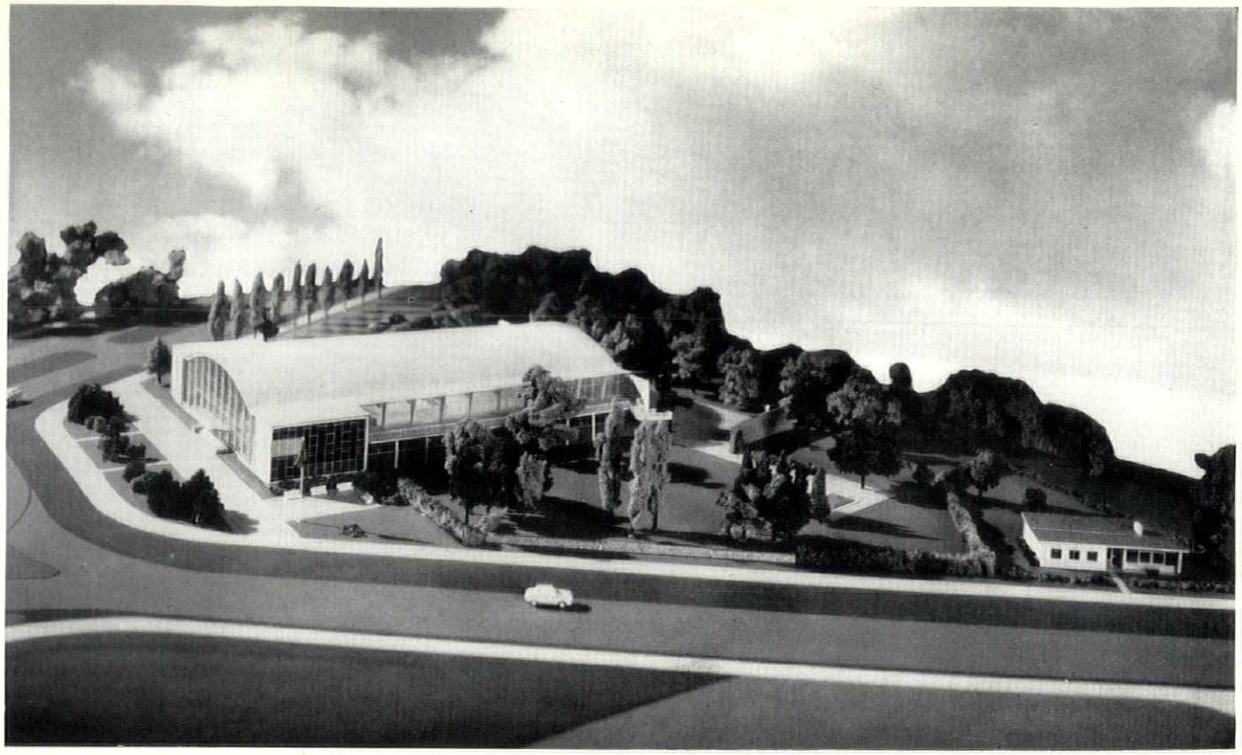
Leonard C. Howitt (Manchester City Architect)

The bath is entered through a hall which runs the full width of the building. Immediately behind this entrance hall is a café, from which a complete view of the bath-hall is obtained through a glass curtain wall. This wall is designed to open, so that on gala nights the café area can be thrown into the bath-hall. The dressing accommodation for bathers is directly accessible from the entrance hall and has been placed in the space immediately below the two terraces of permanent seating which run the full length of each of the two longer sides of the bath-hall. Permanent seating is provided on these two terraces for approximately 1,100 spectators, and this can be increased by a further 150 by placing one row of chairs in front of each bank of permanent seats. There are 140 dressing cubicles, in addition to the space allocated for the use of school children.

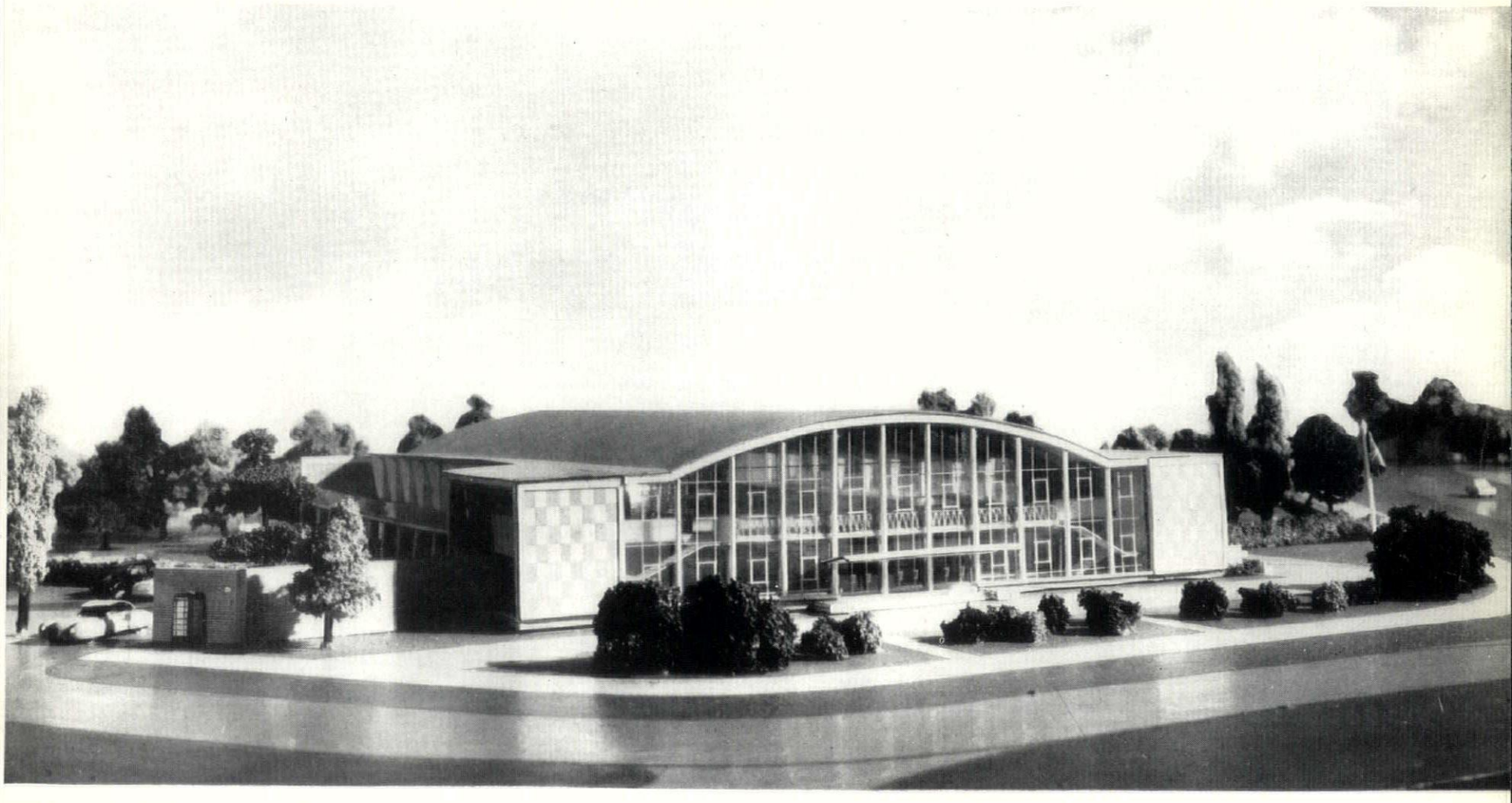
Staircases lead off the entrance hall to the spectators' seating, the committee room, club room, promenade lounge, kitchen and lavatories, all of which are at first-floor level. The kitchen is served by a goods lift and separate staircase, connected with the staff entrance on the east side of the building. A large part of the end wall of the bath-hall, which faces south, is a double glass curtain wall with large openings, giving on to the lawn at rear for use on very hot days.

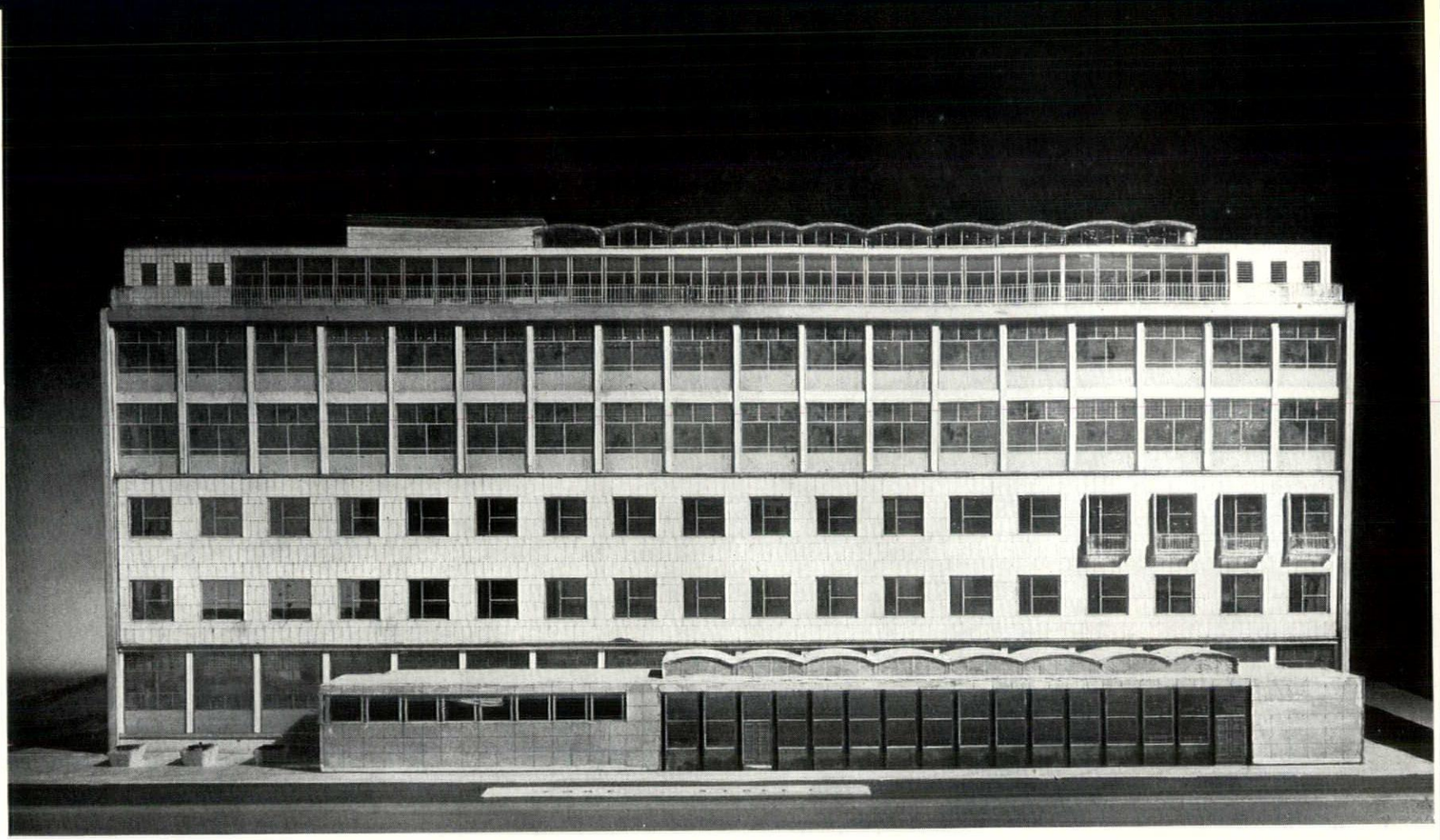
The pool is 110 ft. long by 48 ft. wide and falls in depth from 3 ft. 3 in. to 12 ft. Construction throughout is reinforced concrete, with ribs at 13 ft. 4 in. centres spanning the bath-hall, with precast concrete ceiling units between. Walls and ceiling are acoustically treated. The side walls are glazed and the end walls glazed between concrete mullions. The changing rooms have prefabricated timber walls between concrete mullions. Engineering services include the usual filtration and chlorination plants. Separate ventilation plants serve the bath hall and restaurant. An electric thermal storage plant provides low-pressure floor-panel heating, hot water for showers and foot baths and heating for the pool. The bath-hall is lit by fluorescent tubes concealed in the cove of the ceiling. The pool has under-water lighting for gala occasions.

Construction is expected to begin this month. Deputy City Architect: S. G. B. Roberts. Assistant in charge: G. Carter.



Covered swimming-bath at Wythenshawe, Manchester, by the city architect. Above, from one side of the triangular site. Below, the main entrance front.

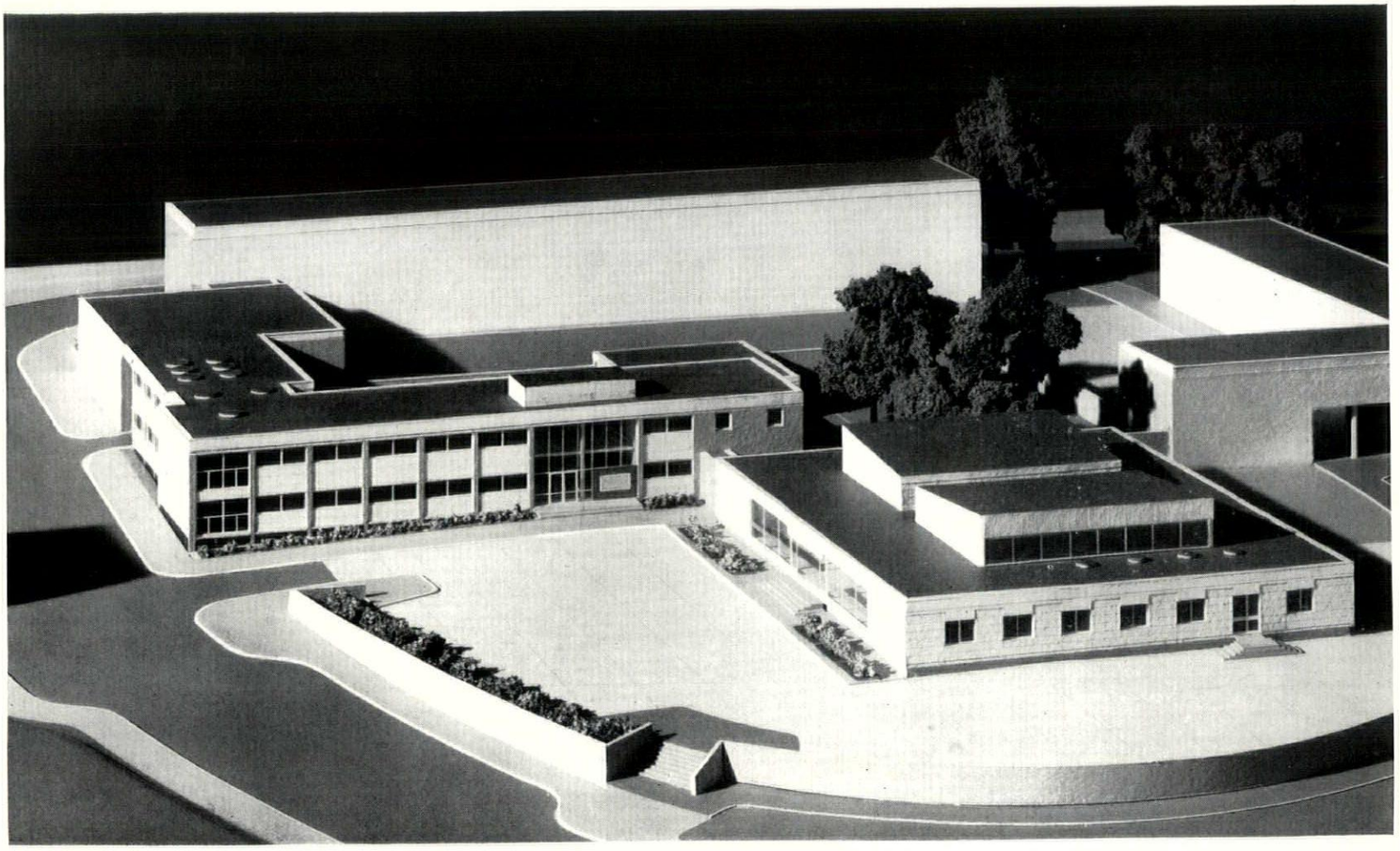


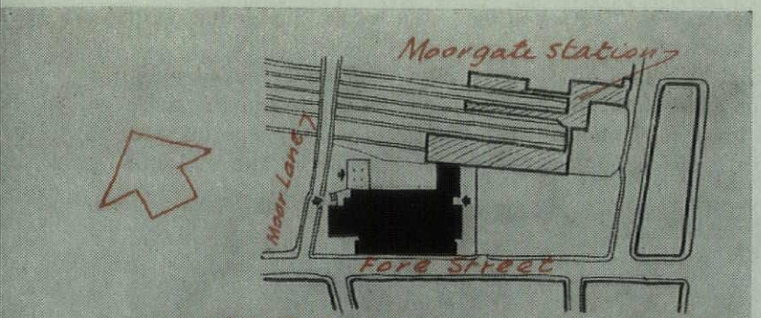


Above, telephone exchange at Moorgate, in the City of London. The lower building in the foreground is a post-office.

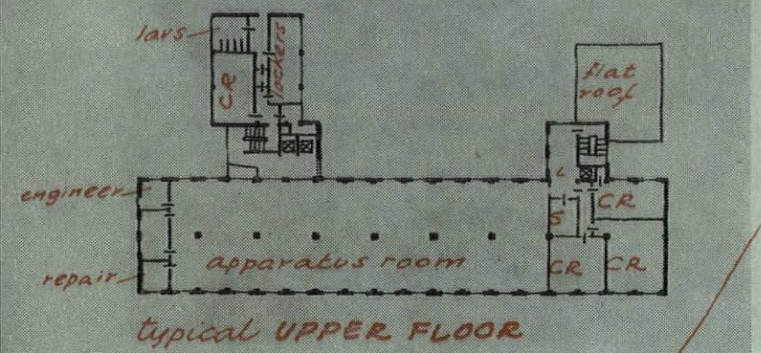
1. PUBLIC BUILDINGS

Below, police station and magistrate's court-house at Harlow new town. The buildings shown in block form behind are the proposed Crown offices and a block of offices for professional purposes.

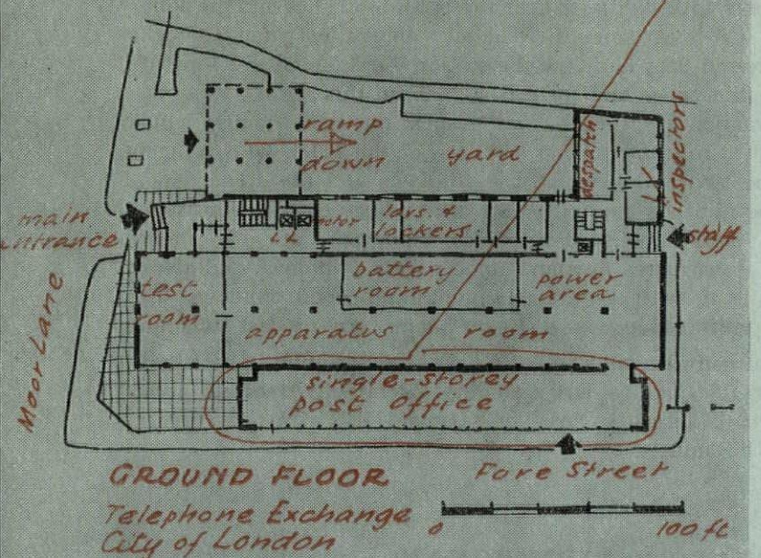




SITE PLAN



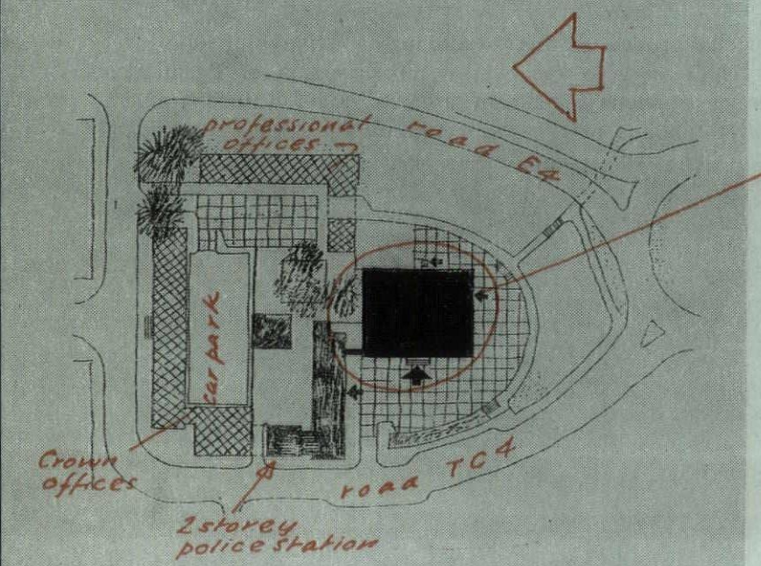
typical UPPER FLOOR



GROUND FLOOR

Telephone Exchange
City of London

0 100 ft



SITE PLAN

Police Station & Court Harlow

TELEPHONE EXCHANGE: CITY OF LONDON

Ministry of Works

A main telephone exchange in Fore Street, E.C.2, together with a branch post-office planned as a single-storey block on the Fore Street frontage. There is a frontage of about 220 ft. on the north side of Fore Street at the corner of Moor Lane and bounded on the north by Moorgate Station. The site is part of the devastated bomb-damaged area to the west of Moorgate.

The branch post-office has a counter length of 72 ft. and the usual enquiry, accounts and clerical rooms. The telephone exchange has five main floors above ground on the Fore Street frontage and six floors above ground in the rear block adjoining Moorgate Station. Approximately 29,000 sq. ft. of floor space will accommodate automatic exchange equipment, 7,500 sq. ft. will be occupied by manual board switchrooms and a further 3,600 sq. ft. will be given over to training; the fifth floor consists entirely of welfare accommodation and the remainder of the space above ground is to accommodate ancillary clerical staff. A cable chamber of about 4,500 sq. ft. will occupy part of the basement whilst the remainder will accommodate a telephone linesmen's service centre reached by means of a ramp from Moor Lane. There is a sub-basement under part of the building. The main entrance to the exchange is from Moor Lane. There is a staff entrance from Fore Street Avenue.

The building is of reinforced concrete frame construction, faced with Portland stone. The one-storey block, on the Fore Street frontage, is faced in polished slate; this same material is used at the main entrance in Moor Lane and for the sub-frame of the Portland stone panel on the Fore Street frontage. Faience tiling is proposed for facing tank rooms, lift enclosures, etc., at main roof level; opaque coloured glass is introduced to add colour in the lower panels of the glass infilling at third-, fourth- and fifth-floor levels.

Approximate starting date is March, 1956. Senior architect-in-charge: G. R. Yeats.

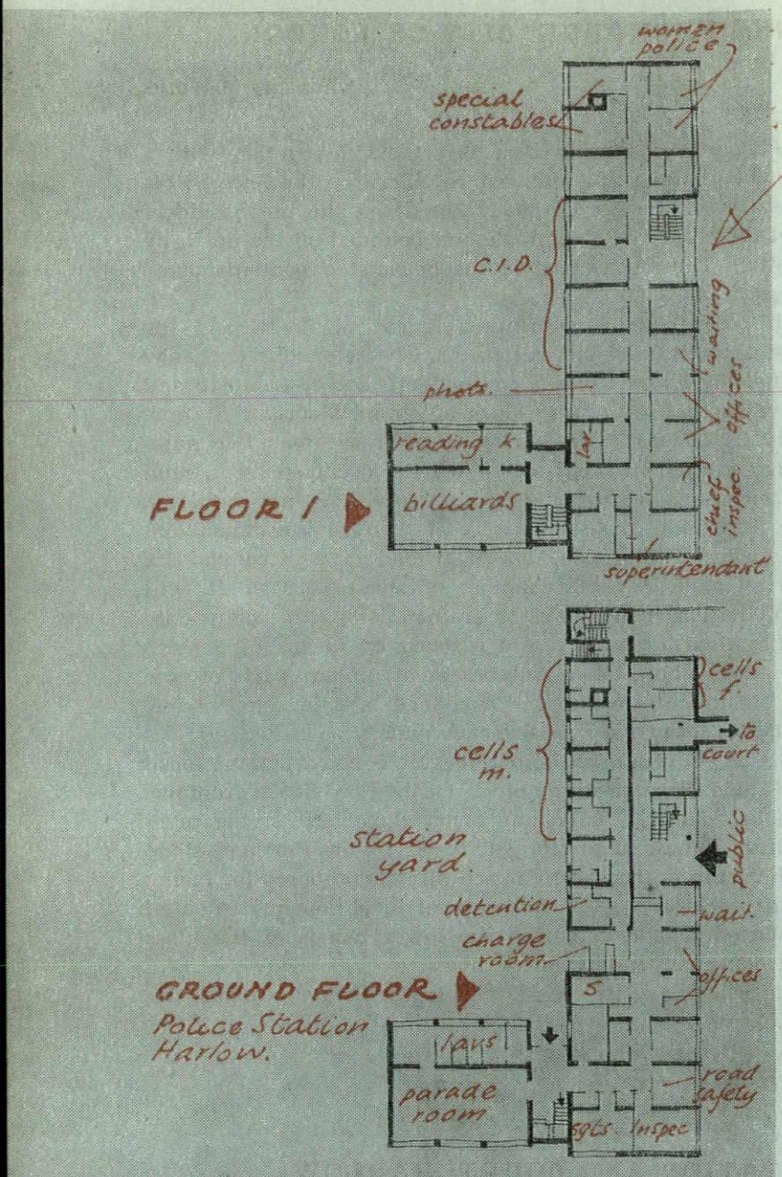
POLICE STATION AND COURT: HARLOW

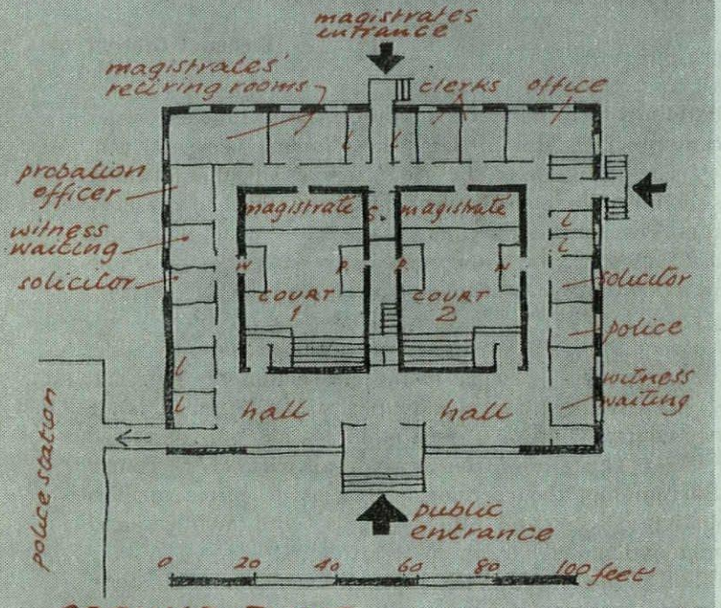
Frederick Gibberd

These two buildings form part of a group on the south-east corner of the town centre, which also includes the Crown offices and professional offices. The buildings of the group are arranged informally round a series of internal courts, care having been taken to preserve the existing trees. The police station and magistrates' court house are planned round a forecourt which also serves as a car park, the whole being raised on a podium which takes up the contours of the existing ground level.

Magistrates' Court House. Two courts are placed side by side, separated by the prisoners' waiting room. The prisoners' approach is through an underground passage and up a staircase which lands between the two courts. There is a circulation corridor all round the courts on three sides. This allows free access to all parts of the courts at all times. Surrounding the corridor are suites of offices for the solicitors, probation officers and other officials, with lavatory and ancillary accommodation.

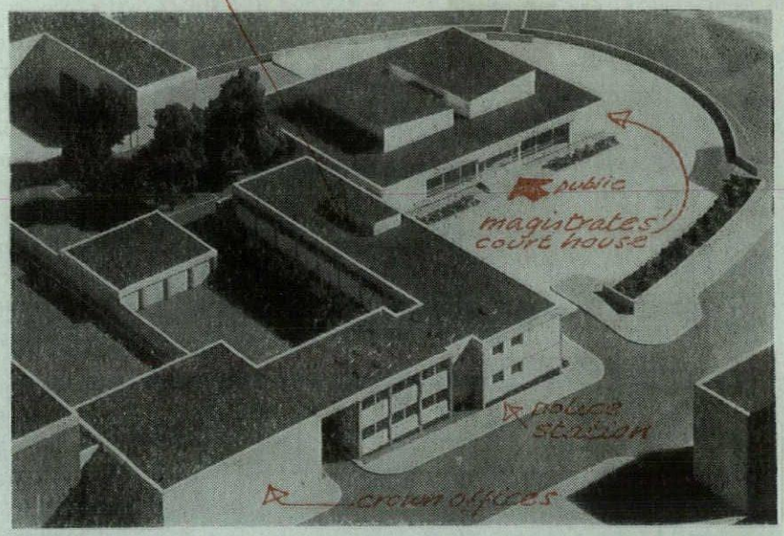
The two buildings are faced with reconstructed Portland stone panels, with limited amounts of brick walling. The court house is a single-storey structure, through the centre of which the two court roofs penetrate to form a clerestory. The elevation facing the forecourt is largely glazed in metal screens. The frame is reinforced concrete, painted where exposed. Floor beams are precast concrete. Court





roofs have steel trusses. Heating is by low-pressure hot water, with hospital-type radiators.

Police Station. This is a divisional station with an L-shaped plan, the long leg of which faces the forecourt on the south and the short leg faces the town road on the west. The internal angle is utilized as a station yard and accommodates the garage block. The building



is of two storeys with staircases near the public entrance and the police entrance hall. Offices are on either side of a central corridor. The cells are on the ground floor and face the station yard. There are separate entrances for the police and for prisoners from this yard.

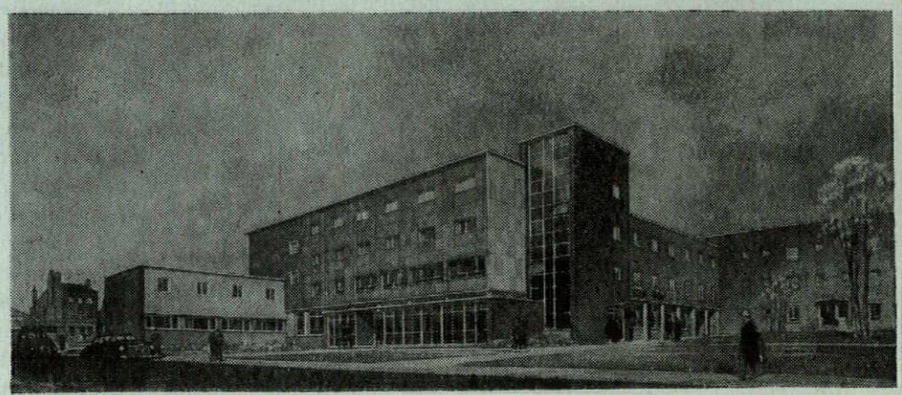
The constructional system is weight-bearing cross walls, which occur at 11 ft. 3 in. centres. The end face of the brick wall projects and forms the reveal into which the windows and the stone panels are fitted. The plinth is painted brickwork and the cornice consists of a continuous band of polished stone. External walls are grey facing bricks with reconstructed Portland stone panels. Windows and glazed screens are metal, with some small pivot-hung wood windows. The staircase is reinforced concrete. Floor beams are precast concrete.

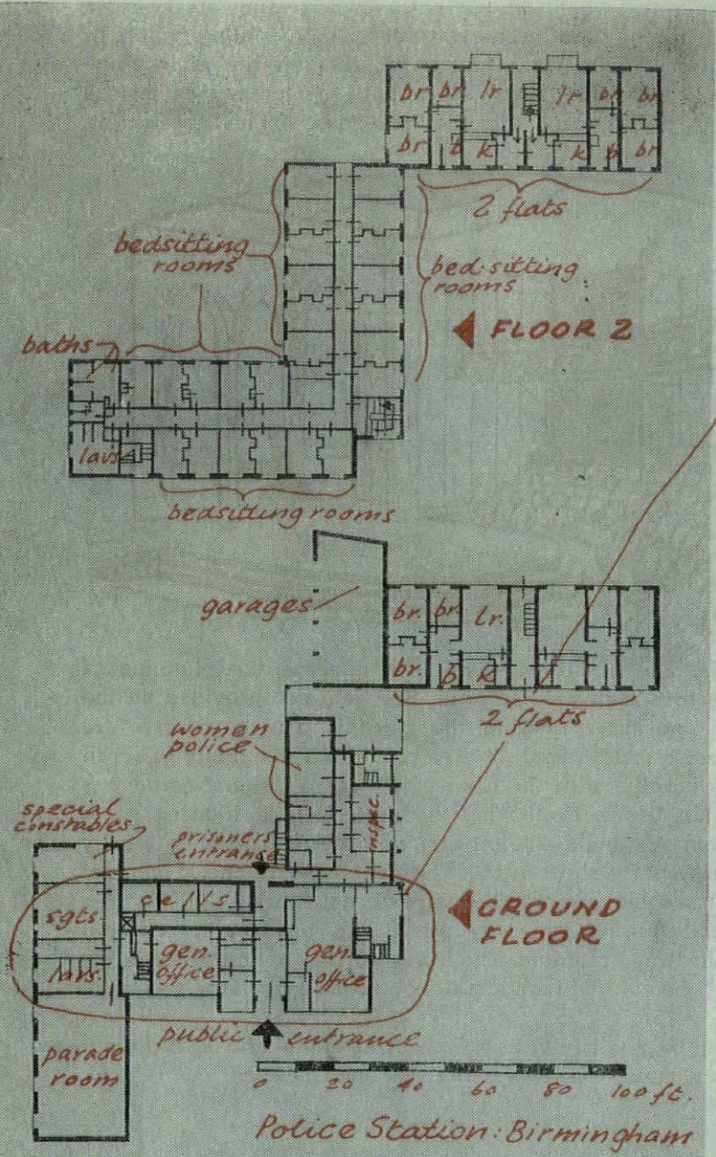
Work has already begun. The buildings were designed in collaboration with Harold Conolly, Essex County Architect. Associate architect: F. Darnell. Quantity surveyor: Oswald E. Parratt. Structural engineer: F. J. Samuely.

POLICE STATION: BIRMINGHAM

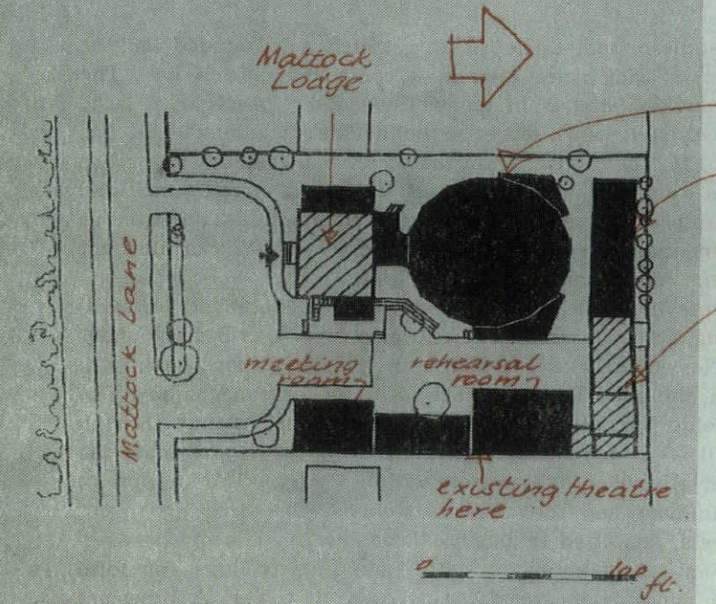
A. G. Sheppard Fidler (City Architect)

A sub-divisional police station occupying a triangular site of approximately half an acre, created by the diversion of Bradford Street across a previously built-up area to meet future traffic requirements. It contains extra accommodation for training; also a





Police Station: Birmingham



SITE PLAN: Theatre: Ealing

flat for the inspector, six flats for married staff, 37 bed-sitting rooms for single constables, separate dining and kitchen facilities for residents and non-residents, and a shared recreation room. The plan consists of two linked L-shaped blocks with the main staircase marking the point of junction. To the north of this point is the main four-storey block and to the south a three-storey block containing all the flats, 13 of the bed-sitting rooms, a quiet room for study and a certain amount of office accommodation on the ground floor, with a covered way leading to garages and to the drill yard at the rear.

The main block has a steel frame, with a two-storey end wing in load-bearing brickwork, while the south block is of load-bearing brick construction throughout. The external colouring relies on contrasting materials used in large areas. Brickwork generally is in light buff facings with dark brown brick on the gable walls. At the north-western end of the main façade a panel of red brickwork acts as foil to the remaining wall area faced in greenish-grey textured faience slabs, varied by Portland stone slabbing on the return face by the main staircase.

Work on the building has already begun.

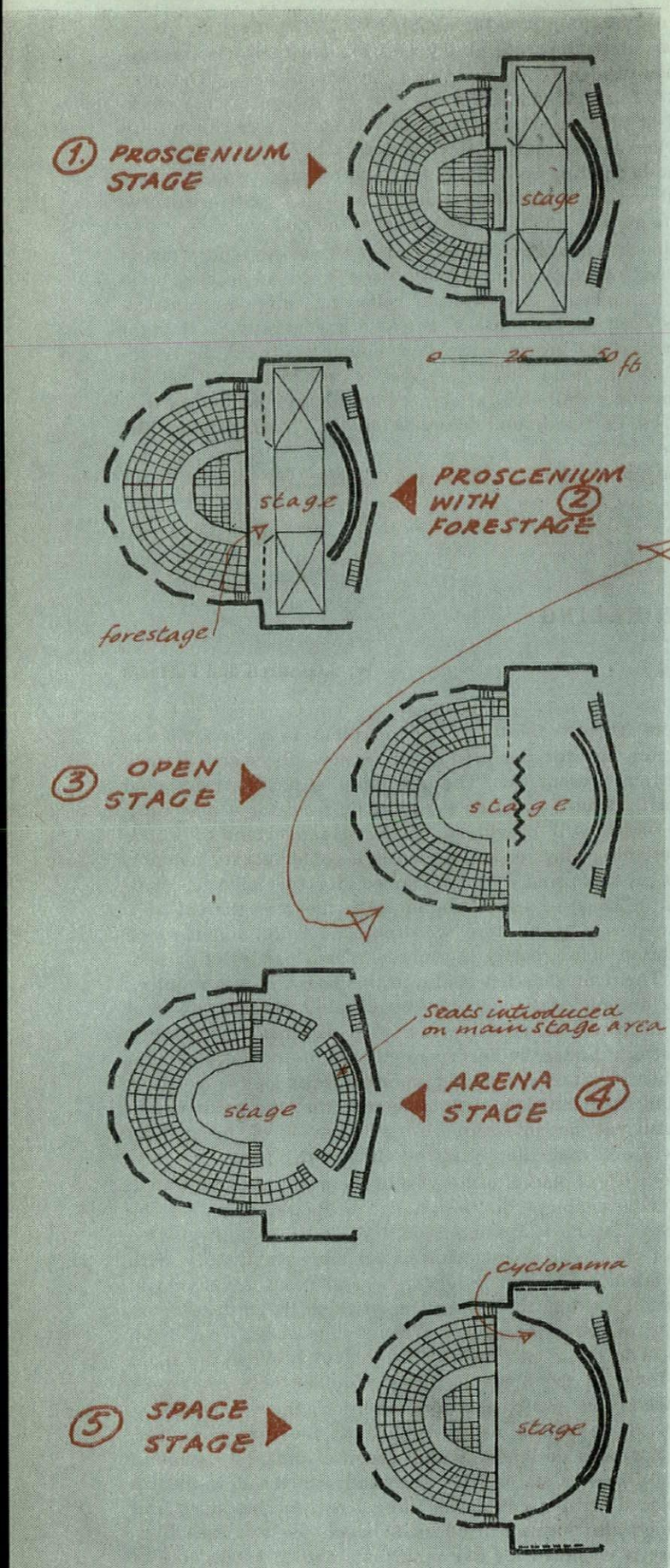
THEATRE: EALING

W. S. Hattrell and Partners

The Questors Theatre, Mattock Lane, Ealing, is a club theatre founded 25 years ago for the production of new plays and of new forms of theatrical presentation. The new building has been designed in the light of the club's experience and of its need for a new form of playhouse which will provide a flexible arrangement of stages capable of presenting plays of any period in a contemporary manner. The club is at present using a timber-framed structure clad in corrugated steel as its theatre, a brick building at the rear thereof as a green room, workshop, paint store, wardrobe and office, and Mattock Lodge, a Victorian house, partly as clubrooms and partly let as bed-sitting rooms. The manager's flat is also in this house. It was required that the new accommodation should be capable of separate construction, and for reasons of economy it was decided that the workshop block and Mattock Lodge be incorporated within the development scheme. The theatre, moreover, must remain in use as long as possible, and the building is planned in such a manner that the construction of each new unit will not interfere with the function of the existing theatre, but will add immediately to the club's amenities.

The new playhouse is placed to the west of the existing theatre upon a north-south axis, enabling Mattock Lodge to be replanned as the theatre entrance. The new dressing-room and wardrobe unit is sited to the north of the theatre and connects on the east directly with the existing workshop block. The new rehearsal room, foyer, cloakrooms and a small meeting room are planned along the eastern boundary of the site in order to provide a 24-ft. wide access road from Mattock Lane. The house has been replanned to provide the main entrance and foyer to the new playhouse, together with manager's office, committee rooms and cloakrooms. Additions thereto accommodate a servery, w.c.s and a new entrance to the manager's flat. The first floor has been designed as club premises and the basement rooms will be utilized as stores. The main stairs to the new theatre balcony are placed with a circulating area between the lodge and the theatre which also forms a fire-lock between the two buildings.

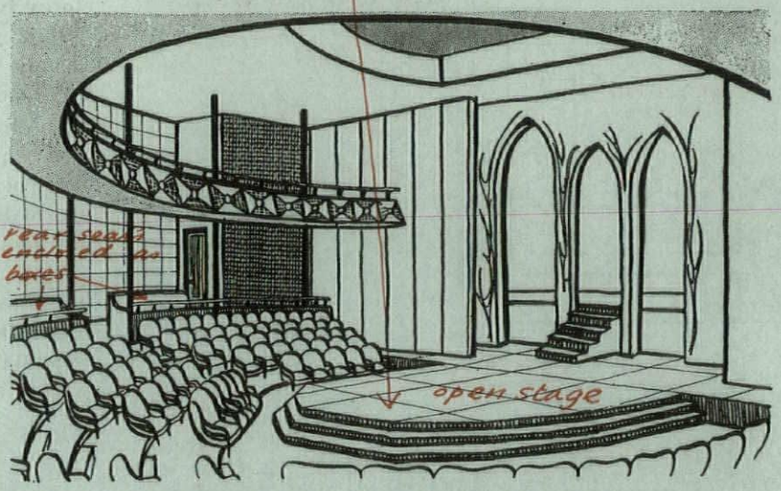
The playhouse is designed for five main uses and to be capable of many variations within and between such uses. These are: proscenium stage (seating capacity 337); proscenium stage with forestage extending over the pit area (seating capacity 315); open stage



AUDITORIUM PLANS showing flexible arrangement of stages.

Theatre : Ealing

constructed over the whole pit but with extra seating at the sides of the stage (capacity 359); arena stage formed by sliding panels in place of the proscenium walls and with seats on the main stage area (capacity 461); and space stage with cyclorama extensions creating a continuous horizon with the acting area defined by lighting



(capacity 397). The nature of these uses governs the planning of the seat tiers in a semi-circular form. Six tiers are provided on the ground floor and three tiers in the balcony. The rear seats are enclosed as boxes and a tiered pit area provides a maximum of seven rows of seats parallel with the front of the main stage. A gallery is designed within the roof, allowing the projection of lighting on to the stages from any angle. The pit area and the main stage are fully trapped. The property store in the basement beneath the stage area is totally enclosed and is approached via external stairs.

The external finishes generally are facing brickwork, rendered panels and hardwood cladding. The lower portion of the walls to the playhouse will be covered with mosaic or murals expressing theatrical themes.

Construction began in July, 1955. Consulting engineers: E. A. Pearce and Partners. Quantity surveyors: Branson and Chester.

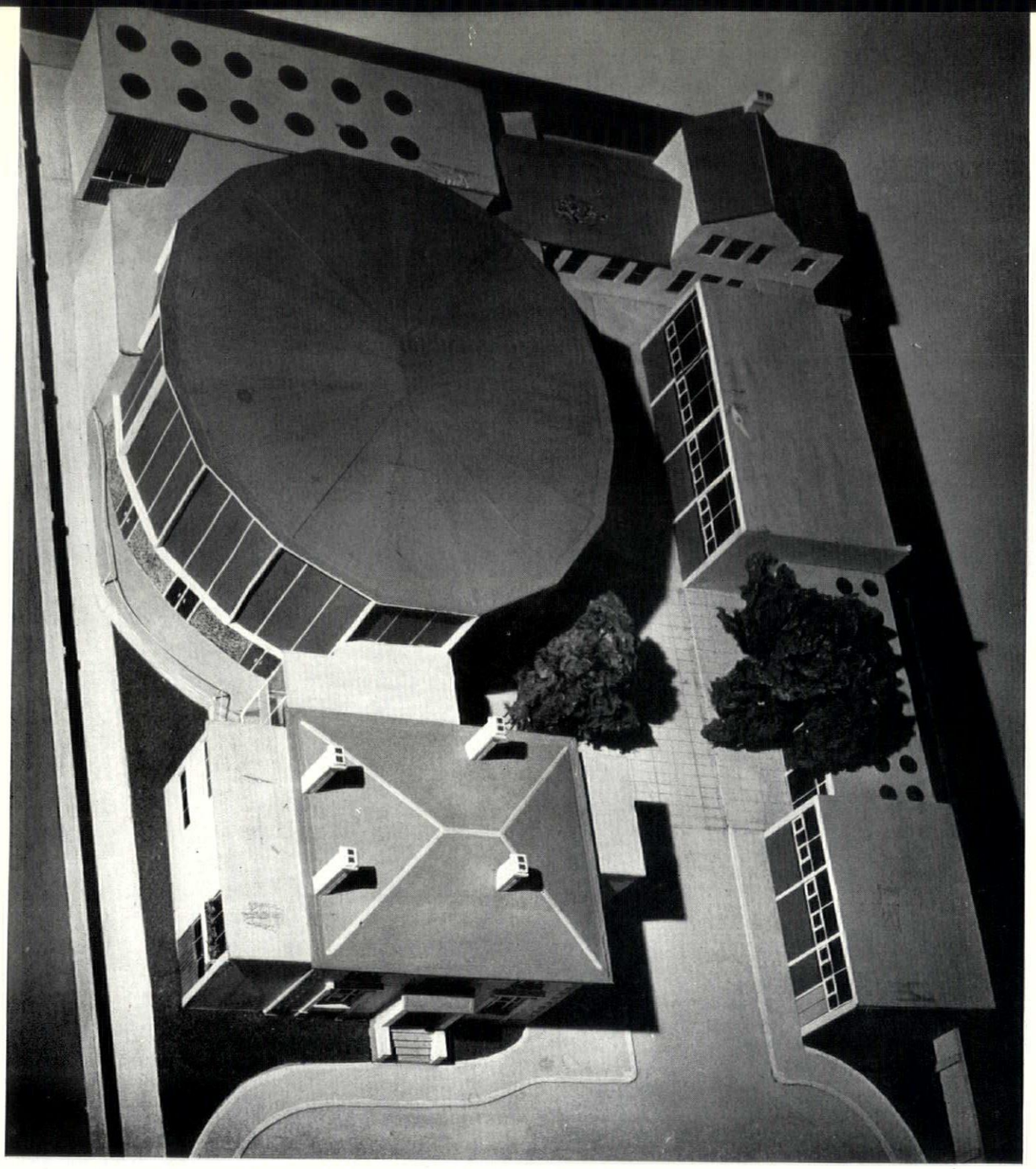
THEATRE: MIDDLESBROUGH

Elder and De Pierro

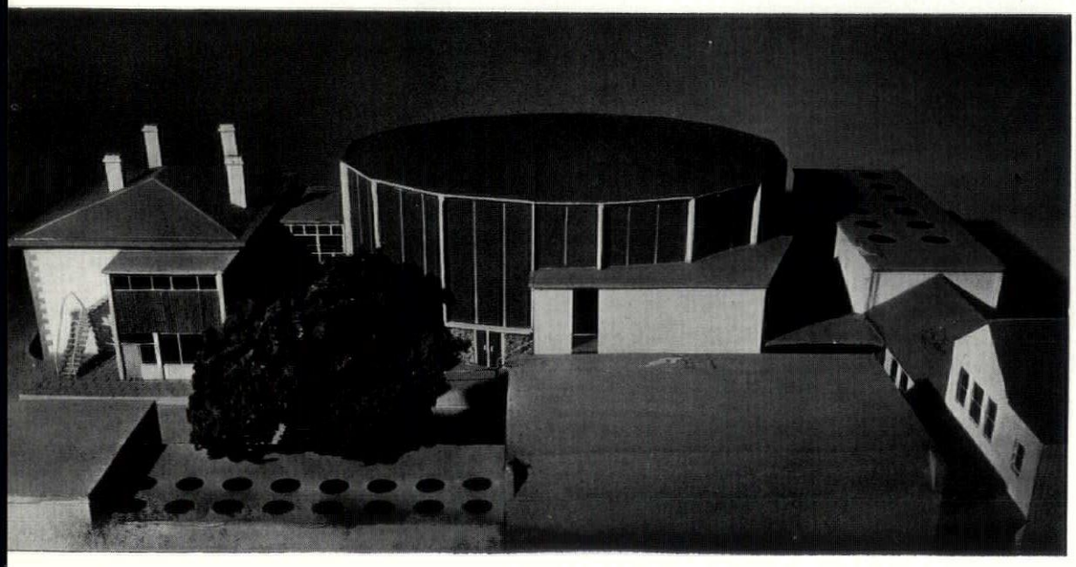
For the Middlesbrough Little Theatre, which was founded in 1930, but has been existing since then in a converted church hall. The site of the new building is in the well-wooded grounds of a large house in The Avenue, which serves as the theatre's headquarters. It has been designed for the production of the society's own plays as well as performances by professional companies (including Arts Council and Shakespearean productions) and intimate opera and ballet, and to serve on occasion for musical recitals, lectures and the showing of films not available at the commercial cinemas.

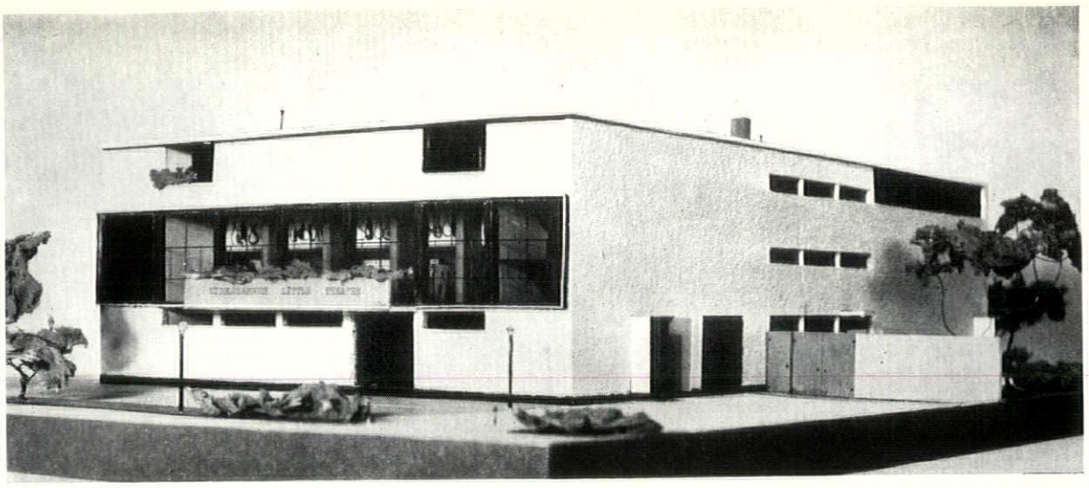
Requirements included as large a stage as possible and an auditorium seating 500, with circle. The entrance foyer and bar are under the circle. The entrance is reached from a drive-in forecourt, with car parks on one side. The box office is in the entrance lobby. The bar, on the side opposite the foyer, overlooks The Avenue through a glazed wall 50 ft. long and 12 ft. high, designed to dominate the exterior especially when lighted from within at night. The auditorium has a sloping floor and the circle is stepped. The dressing rooms, on three levels, are fitted in behind the splayed walls of the auditorium. The stage is equipped with travelling trolleys for fixed sets, thereby avoiding the need for a costly fly-tower. A basement

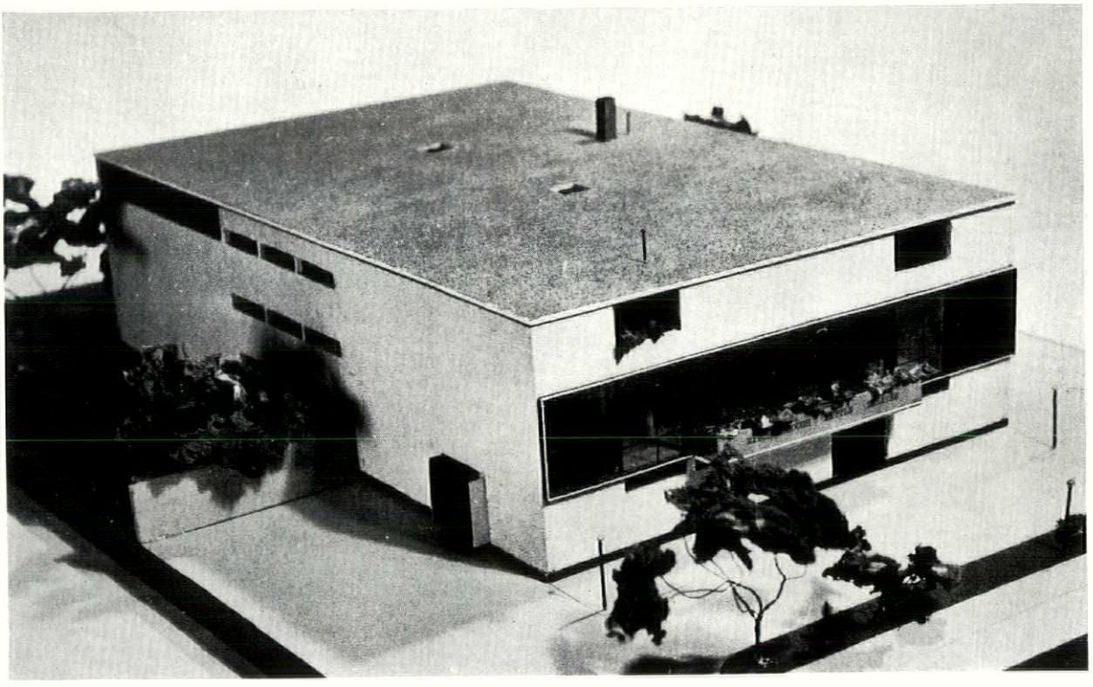
[*continued on page* 21



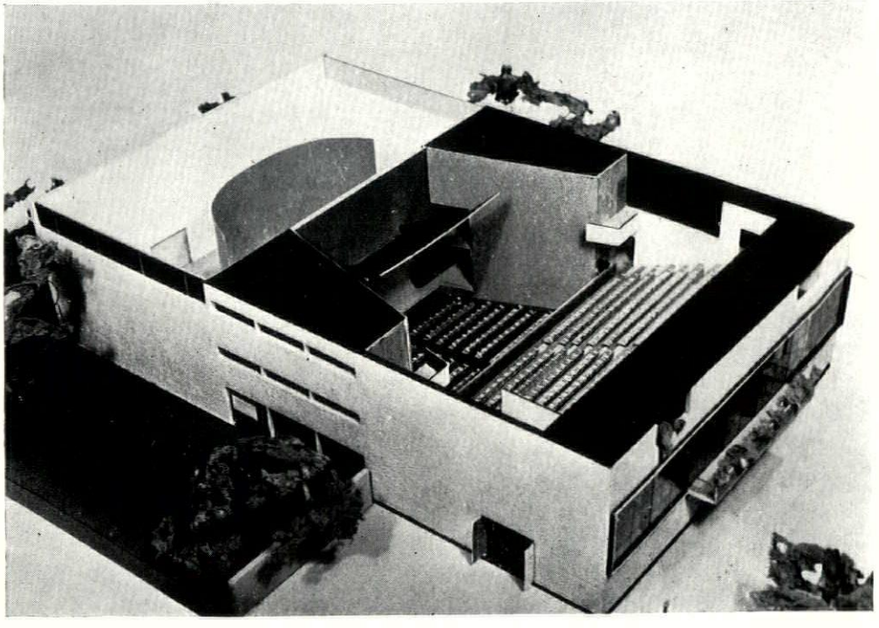
The Questors Theatre, Ealing, showing the oval-shaped auditorium building, linked to the existing mansion and surrounded by subsidiary buildings.

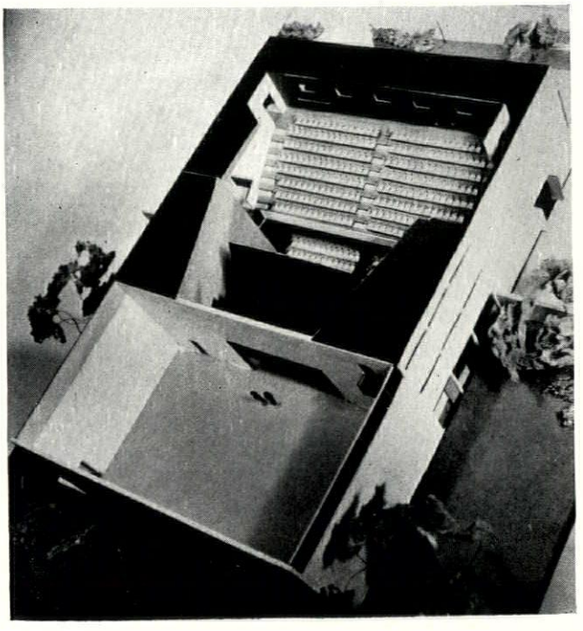






The Little Theatre, Middlesbrough. Right, the exterior from two directions. The long window lights the bar, which shares with the foyer the space beneath the circle. Below, the model with roof removed to show the interior. Three levels of dressing-rooms are fitted in behind the splayed walls of the auditorium.

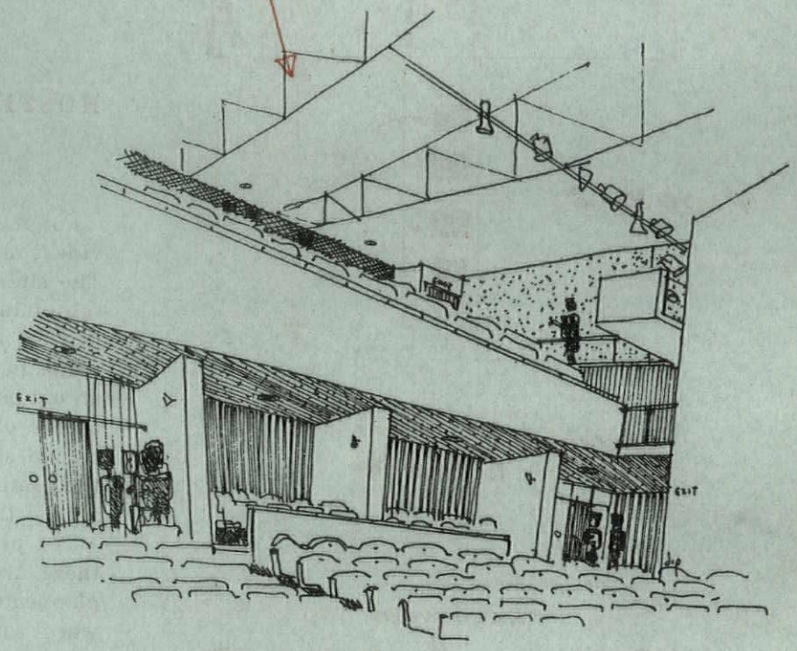




continued from page 18]

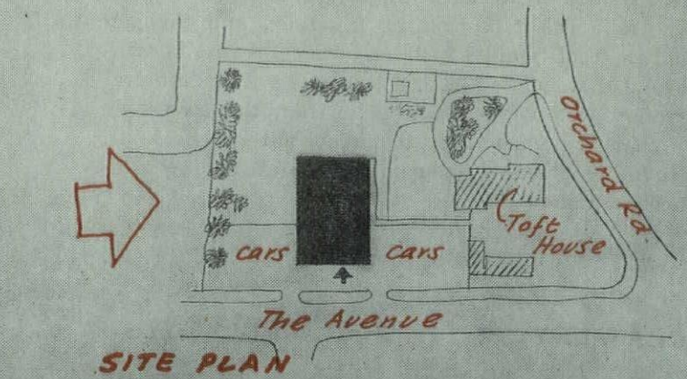
beneath provides access to the orchestra pit and stage-floor traps as well as communication with either side of the stage and dressing rooms. The open roof of the auditorium consists of a series of triangulated tubular members, beneath which a timber acoustical canopy, containing lighting, projects from the proscenium opening.

Construction is of load-bearing brickwork on concrete foundations. Floors are concrete, mainly precast slabs. Stairways are of precast slabs set into the brick walls. The roof is also of precast slabs, with ribs, and with an outer skin of in-situ concrete on metal lath. Roof trusses

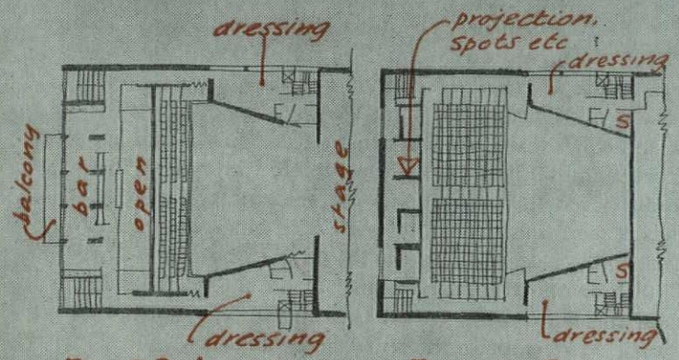


are of tubular steel, welded. Windows, doors and railings are of wood.

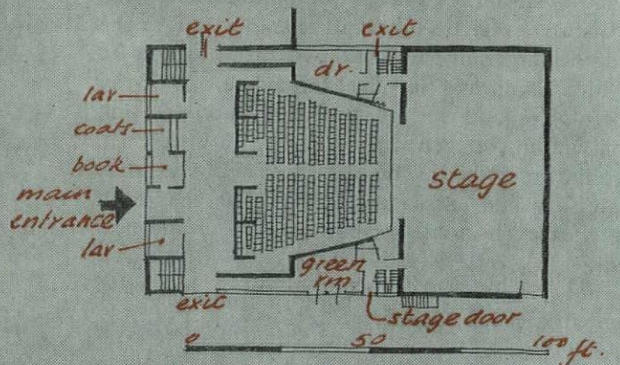
Work began in November, 1955, and is expected to be complete before the end of this year.



SITE PLAN



FLOOR 1 FLOOR 2



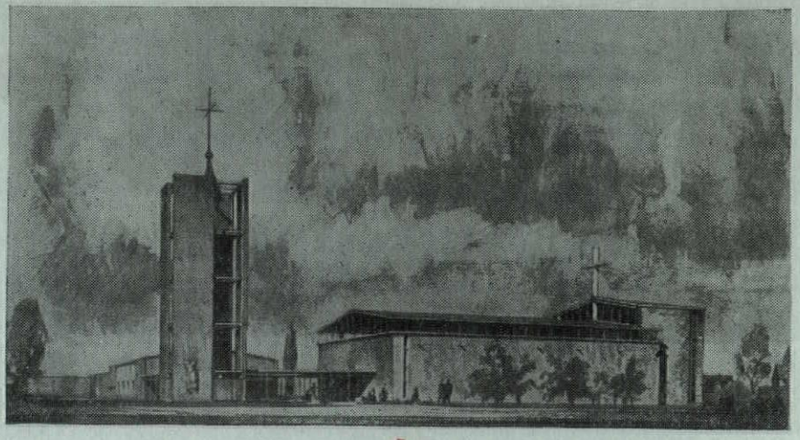
GROUND FLOOR
Theatre : Middlesborough

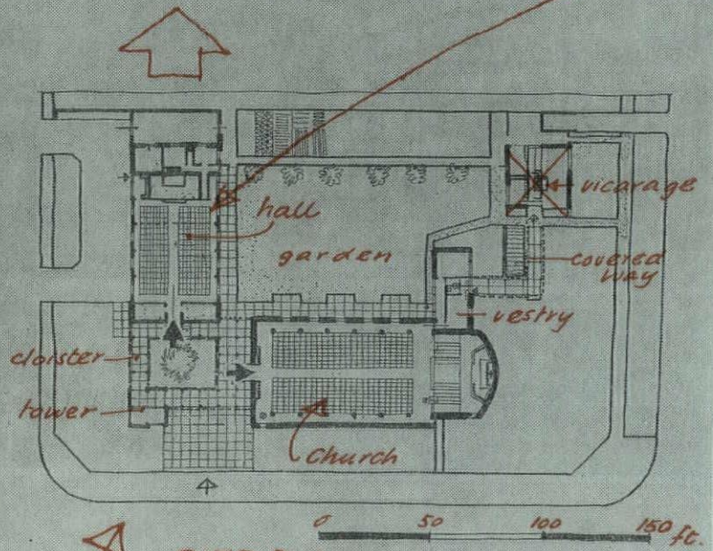
CHURCH: LEICESTER

Basil Spence and Partners

On the Monsell estate, one of the new housing areas of Leicester. The site is rectangular and flat. It is intended to start with the hall, which will be used as a hall-church, and the vicarage. The tower, the church proper and the connecting canopy, which forms the courtyard, will be added later.

The materials are brick with concrete frames, and with panel infill of various materials in parts of the buildings. The church is





SITE PLAN
Church : Leicester

constructed round the nave roof, which is supported by columns which in turn are stiffened by concrete members secured through the U-shaped nave wall. This wall acts as a screen, and the gap between its top and the roof is filled in by a horizontal line of windows. The sanctuary is of stone, and behind the altar will be a mural painting, or some other form of decoration, lit from the clerestory directly above the chancel arch, and by a narrow slit on the south side. The font is lit and emphasized externally by a tall narrow window, a suitable place for stained glass.

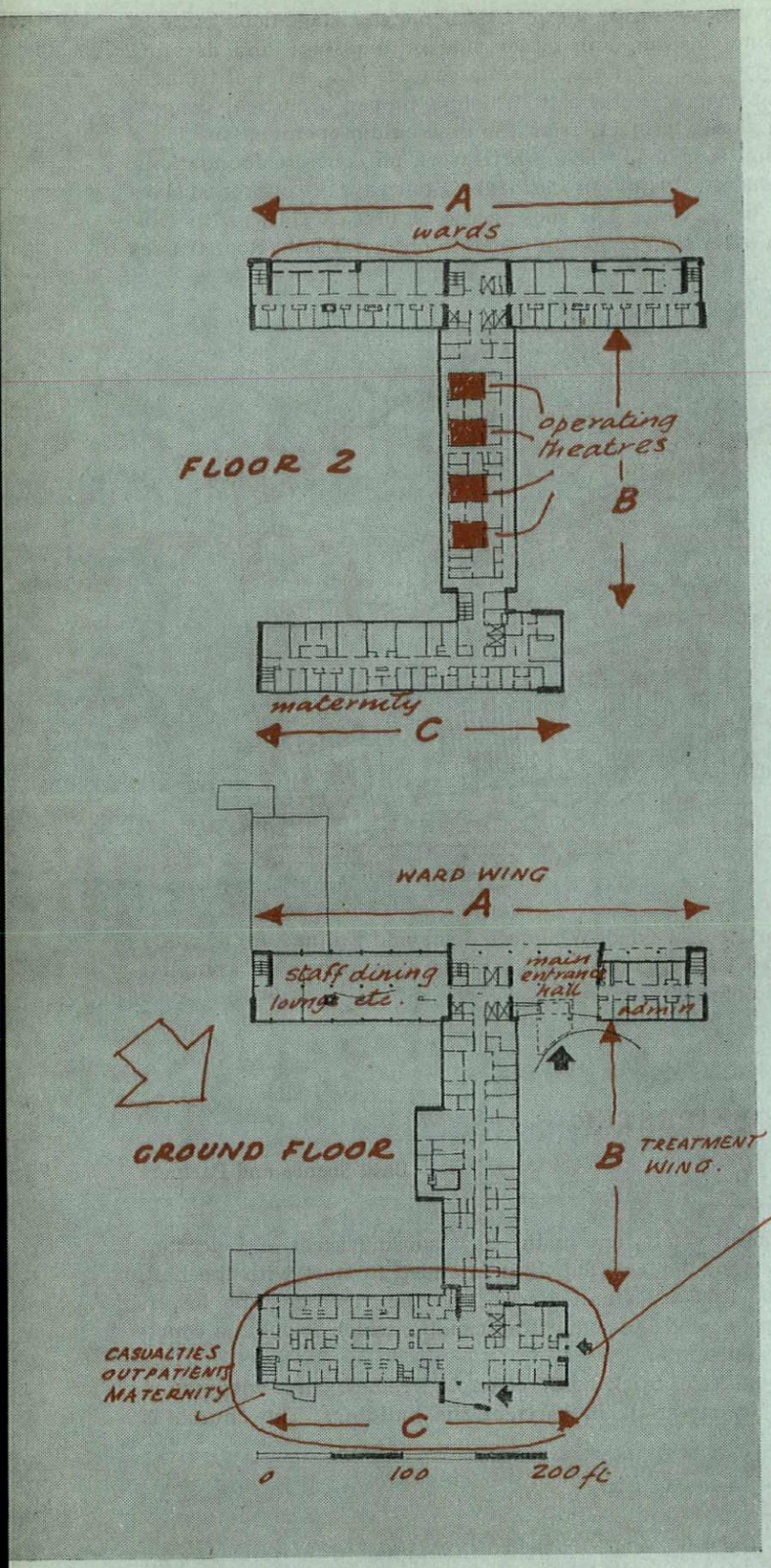
HOSPITAL: CRAWLEY

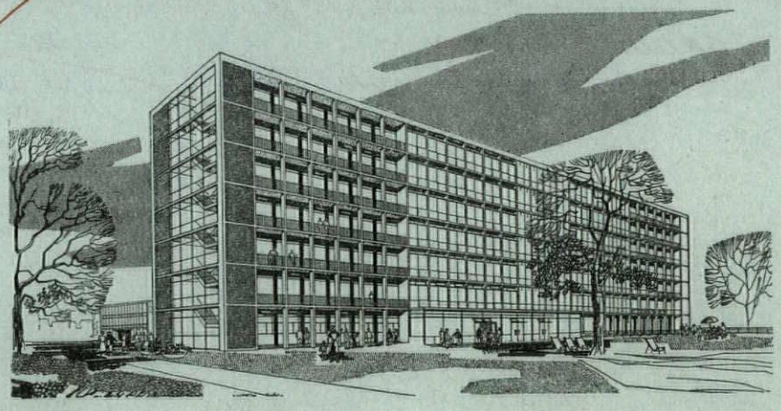
Yorke, Rosenberg and Mardall

For the South-West Metropolitan Regional Hospital Board, to provide a new general hospital for the town of Crawley and district. The site, where there is at present a small cottage hospital, has a fall of 10 ft. from the north-west to the south-east and has a number of well matured trees. The building will be completed in stages. The major need of the district at the present time is for casualty facilities, an out-patients' department and maternity beds. The block marked C on the plans includes all these and will be the first to be built. The second stage will include the treatment wing (B on the plans) and the southern half of the ward wing (A on the plans). The northern half of the ward wing will comprise the third and last stage.

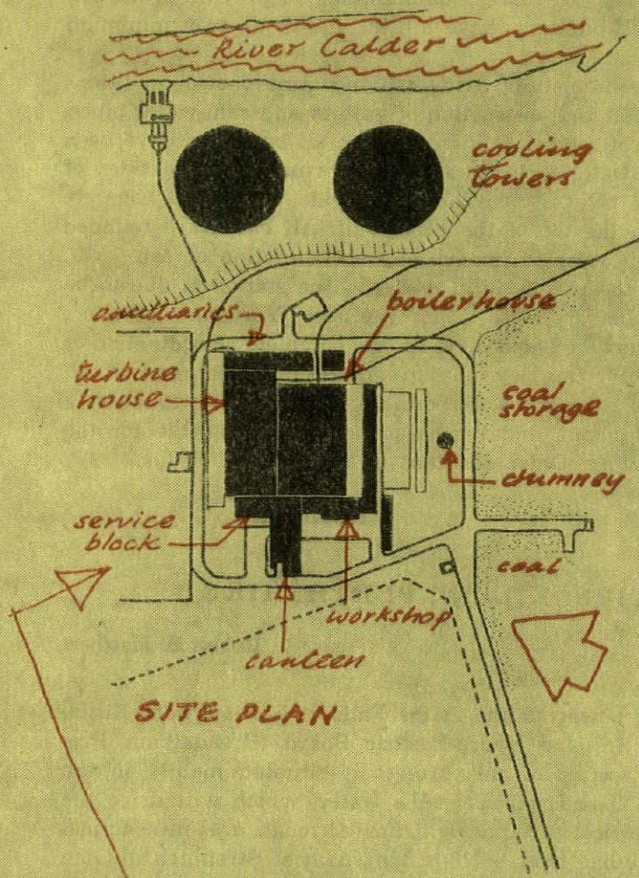
The principal points of entry are separated. In the maternity wing there are three entrances: casualties, out-patients and maternity, planned on two levels. Visitors enter by the main entrance hall in the ward wing. Both in-patients and out-patients have direct access to the treatment wing, which comprises physical medicine, an X-ray department, central laboratories, and central sterilizing and operating theatres. The ward wing contains eleven ward units of 28 beds each, and one (pediatric) ward unit of 20 beds. The maternity wing contains two ward units for maternity and ante-natal cases of 20 beds each and two night casualty wards. The total accommodation of the hospital is therefore 370 beds.

A starting date has not yet been fixed. The hospital has been designed in collaboration with Richard Mellor.





2 POWER STATIONS

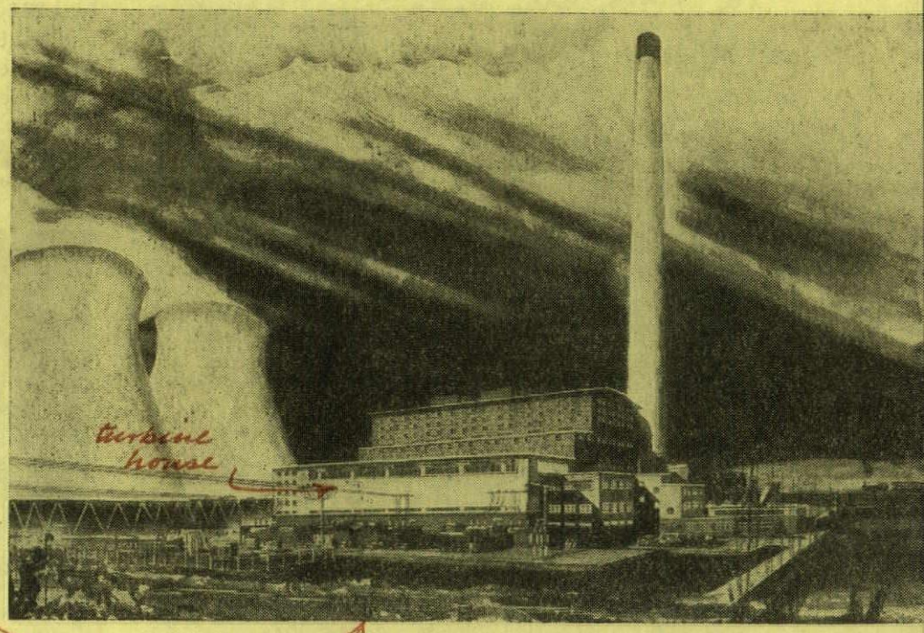


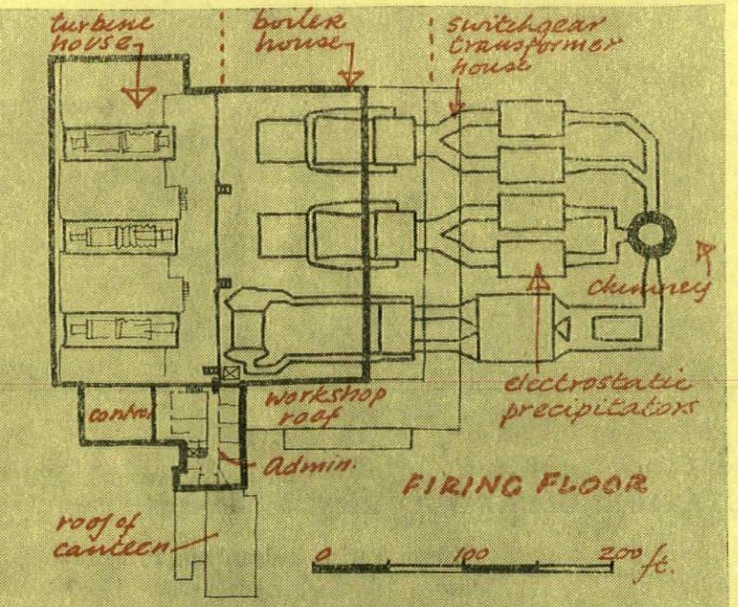
POWER STATION: ELLAND, YORKS

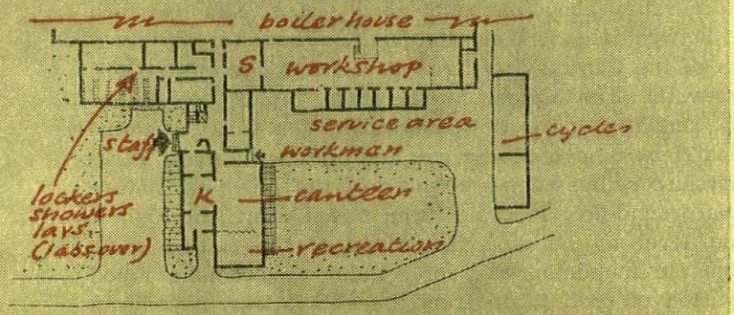
Kitson, Parish, Ledgard and Pyman

In the Calder valley about one mile north-east of Elland, which is equidistant between Huddersfield and Halifax; built for the Yorkshire Division of the Central Electricity Authority. The output will be 180 mega-watts. The Calder valley rises rapidly on either side to 400 ft., and is in parts thickly wooded. The valley contains the Calder and Hebble navigation canal, and one of the main Yorkshire to Lancashire railway lines. Because of the low-lying nature of the site, the ground-floor level has been raised above the highest recorded flood level by building the whole of the station on a reinforced concrete foundation slab of cellular construction. Flood banks, constructed of spoil taken from the excavations, have been built to the north and east of the station to prevent flooding of the site. Ash from the station is to be deposited over the adjoining site where gravel workings have been completed. When these have been filled up, the ash is to be transported to fill up nearby quarries.

Accommodation consists of the boiler-house (202 ft. 6 in. by 100 ft. by 128 ft. high) containing three boilers and associated equipment; the turbine house (229 ft. by 89 ft. by 61 ft. high) accommodating three turbines; the service and welfare block (a three-storey building comprising offices, laboratory, control room, locker room, showers, etc., with a single-storey wing containing kitchen and stores, canteen, workshop and associated stores); the two-storey switchgear and







GROUND FLOOR
Admin. & Welfare Unit
Power Station · Elland, Yorks.

transformer building; a single-storey building incorporating ash plant, water treatment plant and stores, and the coaling gang centre; gate-house and cycle shed.

The main buildings have a steel frame and the single-storey buildings are largely load-bearing brick. The 400-ft. chimney and both cooling towers are reinforced concrete. It was required that as much of the station as was practicable should be clad in a lightweight material, fabricated largely off the site, with a thermal value equivalent to traditional methods of construction, for the turbine house and office block. The cladding that had to be insulated is a lightweight panel composed of a fluted profile 18-gauge aluminium alloy outer facing sheet and inner flat face of aluminium sheet sandwiching 1 in. of glass-wool insulation, and for those parts of the building not requiring to be insulated it is corrugated steel sheet with zinc coating and surface treated with asbestos felt impregnated with a special maroon-coloured bitumen solution. The roof deck is aluminium. To provide protection from bomb blast all buildings have a brick plinth up to a minimum of 13 ft.

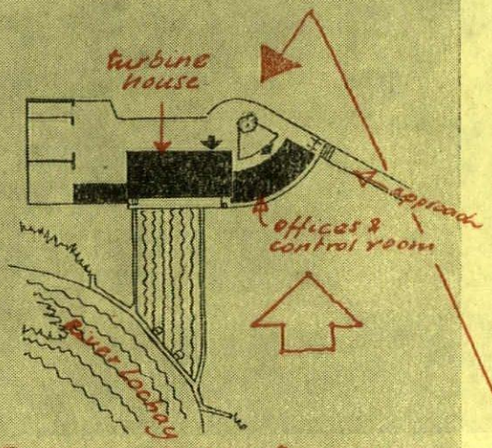
To overcome the problem of flying ash and atmospheric conditions causing deterioration and obstruction of gutters and rain-water pipes, gutters and rain-water pipes at high level on all buildings have been omitted, and rain-water is to be allowed to run down the sides of the buildings and be collected in a 4-ft. wide reinforced concrete gutter, situated on the top of the blast wall. All eaves are rounded so as to allow rain-water to remove any accumulation of ash.

Work began on the site in July, 1954, and the station is due to be commissioned in January, 1958. Chief engineer, Yorkshire Division, Generation Construction, responsible for the complete co-ordination of the project: W. H. Dunkley. Group engineer in charge: A. J. Hodgkinson. Civil consultants responsible for site and foundation works: Brian Colquhoun and Partners. Partner responsible for the design: N. H. Fowler. Chief assistant in charge: M. Ryley.

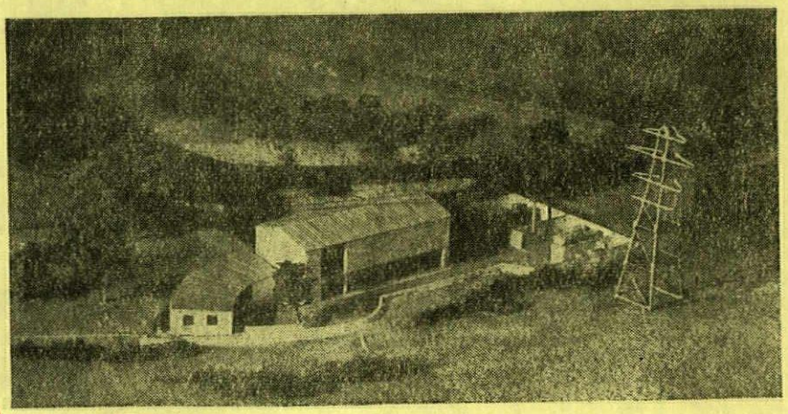
POWER STATION: KILLIN, PERTHSHIRE

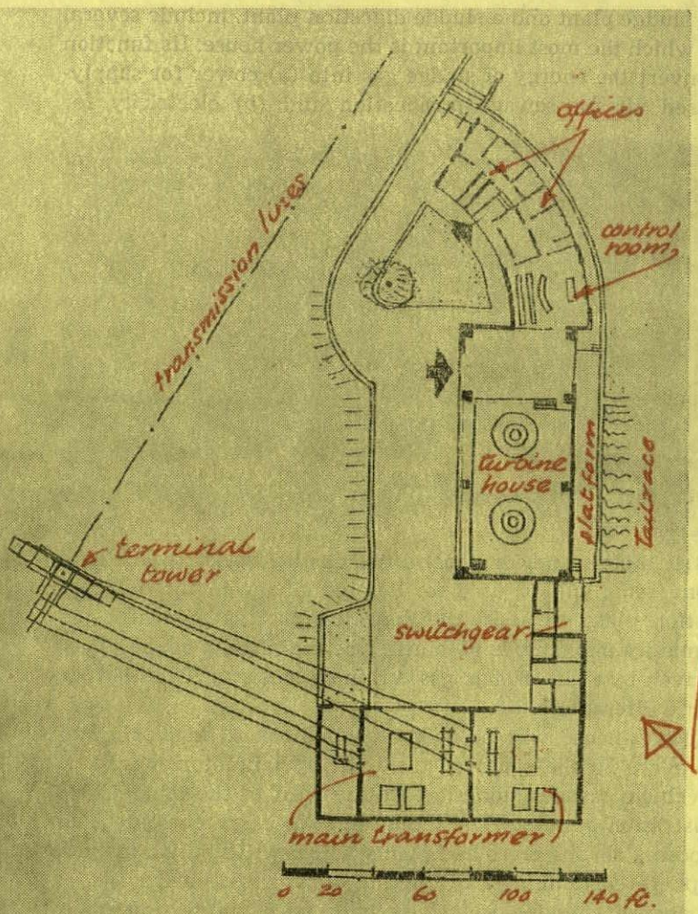
Robert H. Matthew

A hydro-electric power station at the Falls of Lochay, near Killin, for the North of Scotland Hydro-Electric Board (Breadalbane Project). The Killin section of this project is situated mainly in the Glen Lochay and Glen Lyon area. The water, which will drive the two 22,500 kW. vertical turbines, will flow through a 4½-mile tunnel and a 1,670-ft. pipe-line from a 718-ft. long dam at Stronuich in Glen Lyon. Less than a quarter of a mile below the falls and situated on a sharp bend of the river, the site is enclosed on the north and west sides by steep wooded slopes. A landscaping plan proposes informal grouping of new trees and shrubs, such as gorse; there is to be no boundary fencing or formal gardening; where the ground is disturbed

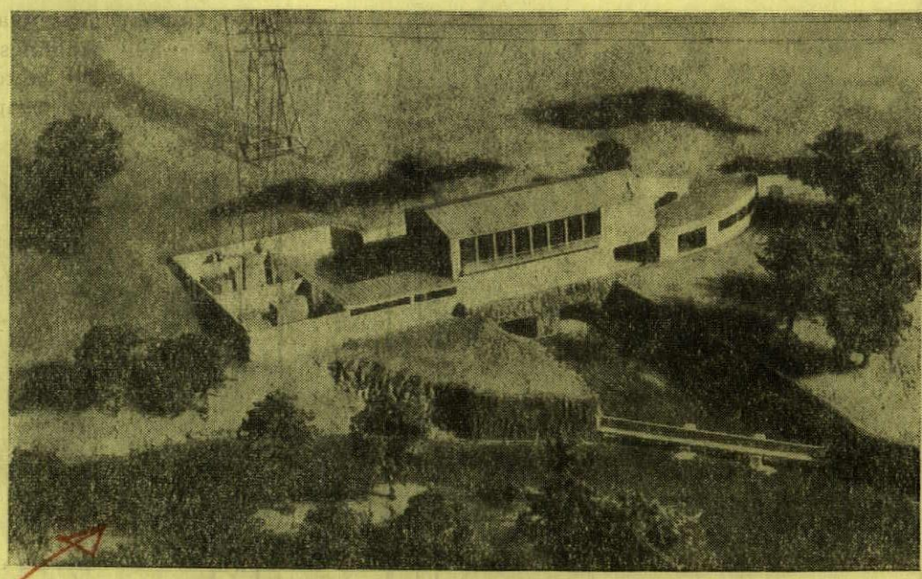


Power Station: Killin, Perthshire





Power Station : Killin, Perthshire

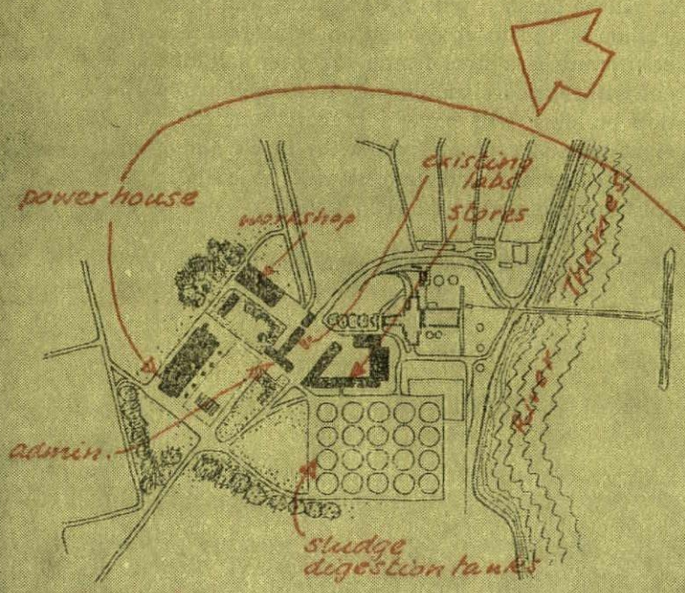


or made up to new levels it will be replaced by rough grassland.

The main factors affecting the design were: 1, electrical and mechanical considerations; 2, the height of the turbine-house, which was fixed by the level at which the crane must run and the head room required above it; 3, the importance of the view from the road above the site; 4, the need to avoid a sharp dividing line between the tail-race and the main building; 5, the decision to use stone as the main walling material, and 6, the position of the main terminal tower, which was fixed within close limits by electrical considerations. The turbine-house is given an even distribution of light by high-level windows on the south wall and low-level glazing on the north wall, which also gives a view of the generators from the entrance yard. A low block containing offices and control rooms is curved round to relate to the approach road, which has been planned parallel to the overhead lines running from terminal tower to the main transmission lines. Open transformer compounds, surrounded by high stone walls, are linked to the turbine-house by a covered block for switchgear.

The concrete of the tail-race is to be poured behind permanent shuttering of large dark grey stones laid on end, and the same stone will be carried over the draught-tube openings and round the south side of the office block. Roofs are of sheet copper laid on felt and boarding fixed to softwood rafters and steel roof trusses. External walls are in rough light stone from a quarry recently opened up in Glen Lyon; in the turbine-house there is an inner skin of concrete reinforced to act as bracing between the crane-rail supports. Windows are of aluminium alloy in teak surrounds; entrance doors to loading bay in teak.

Work will begin in March of this year. The station was designed in collaboration with the North of Scotland Hydro-Electric Board's consulting civil engineers, James Williamson and Partners, and consulting mechanical and electrical engineers, Merz and McLellan. Assistant architects: T. R. Spaven and R. Thurgarland. Quantity surveyors for superstructure: David Reid and Gibson.

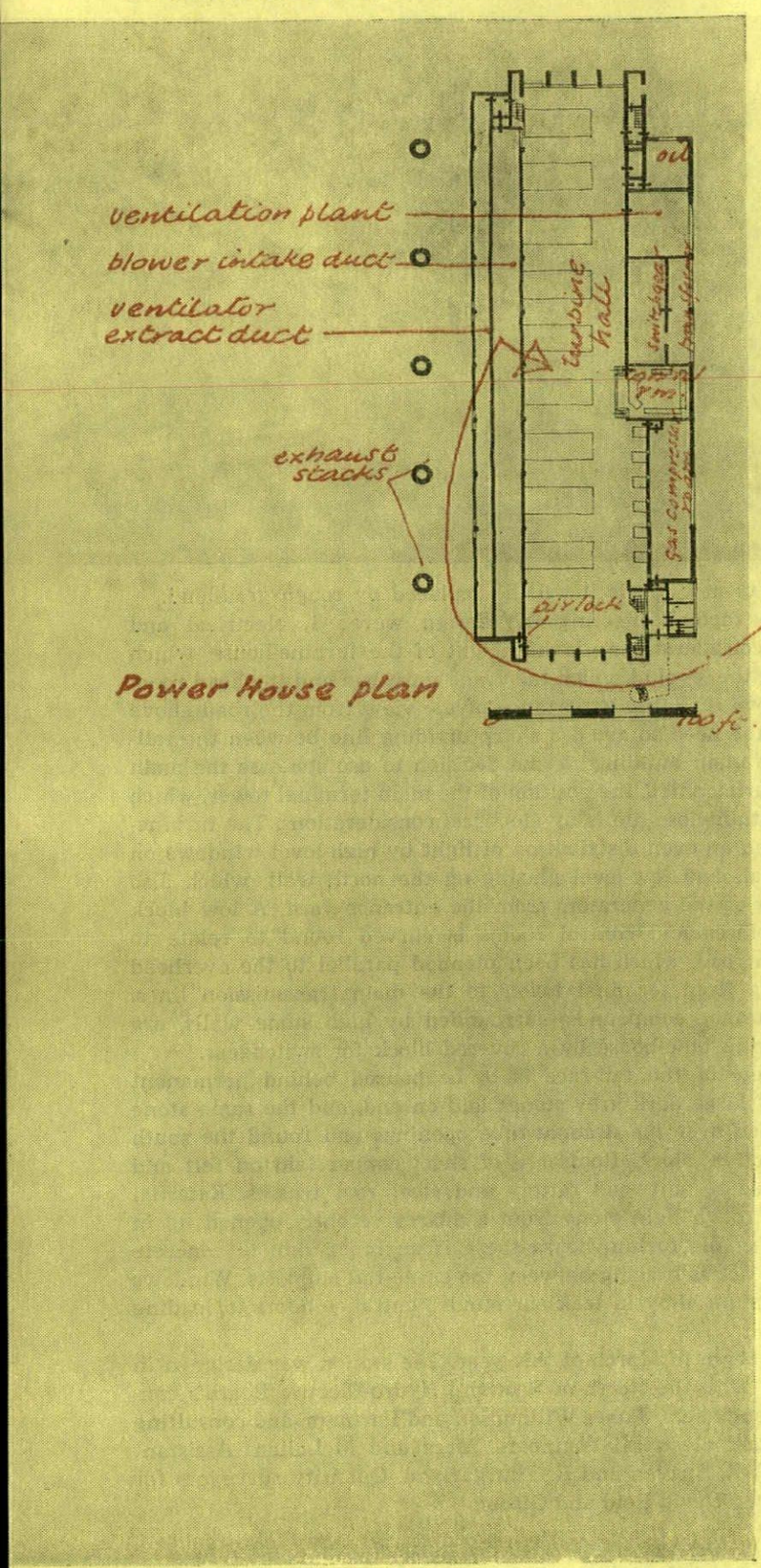


SITE PLAN
Power House : Beckton

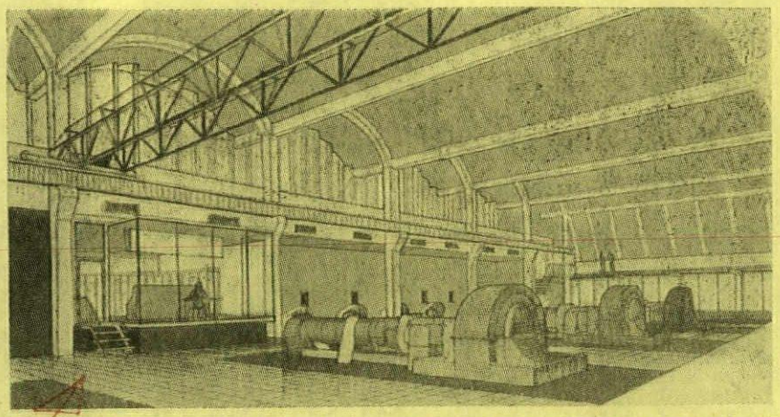
POWER HOUSE: BECKTON

London County Council

Part of a scheme being carried out under the direction of the LCC Chief Engineer, J. Rawlinson, for extending the Northern Outfall Sewage Disposal works, which treats the sewage flow from the whole of the County of London north of the Thames. These extensions, consisting of detritus channels, primary sedimentation tanks, a diffused



air activated sludge plant and a sludge digestion plant, include several buildings, of which the most important is the power-house. Its function will be to convert the energy of sludge gas into (a) power for supplying compressed air for sewage purification and (b) electricity for



driving electric motors and for general use on the works ; waste heat from this conversion will be used for heating sludge in the adjacent sludge digestion plant, to assist the digestion process by which the sludge gas (mainly methane) is obtained. The main units of the plant, which are driven by eight 900-h.p. gas turbines, consist of five blowing units and three alternators.

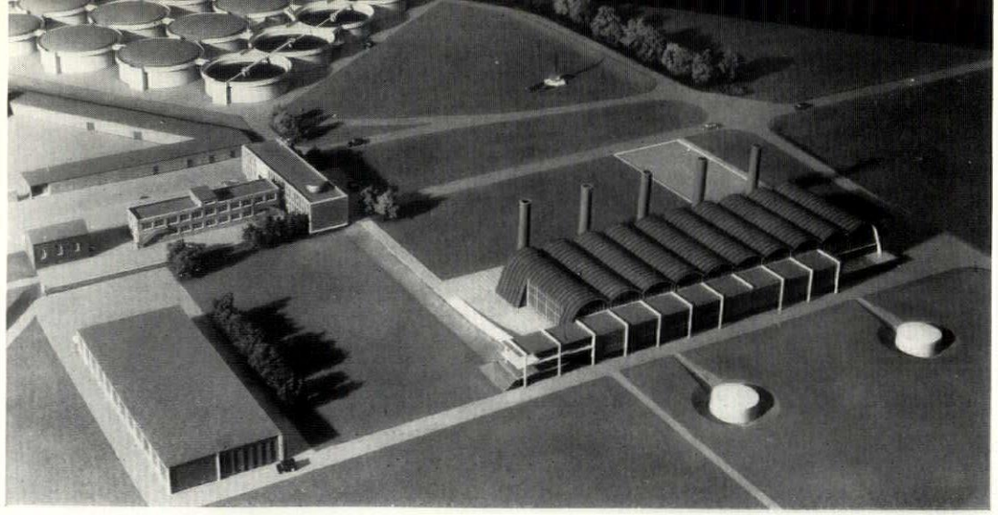
Near the power-house will be a workshop block to maintain and repair machinery. To the south of the existing laboratories will be stores with vehicle garages alongside. To the west of the laboratories is an administration building. The intention is to carry out extensive planting, choosing shrubs, trees and plants which will flourish in spite of an atmosphere contaminated by the large gas-works nearby.

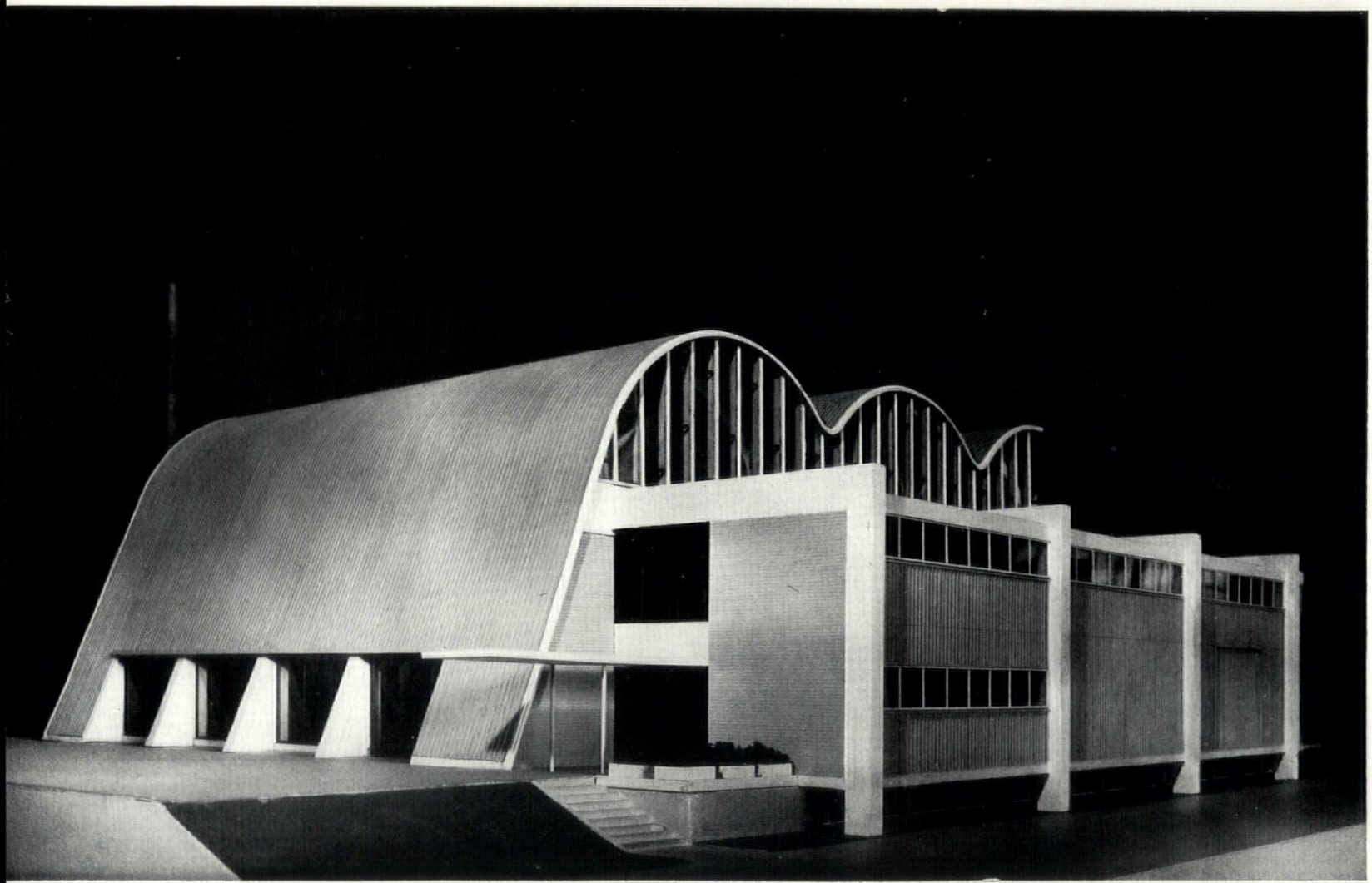
The power-house contains a turbine hall, an air filtration plant and distribution duct, and gas compression, main control and auxiliary rooms. Machinery is located at two principal levels: the basement and the main floor, the latter being the level of the adjacent roads giving direct vehicular access to the turbines while a lorry ramp leads into the basement. Staff messing and lavatories are provided. It is expected that many visitors will come to study the function of the power-house and an observation gallery is therefore also provided.

The superstructure of the power-house, which is composed almost entirely of reinforced concrete, is built upon a heavy reinforced concrete substructure carried in turn on piles cast on the site. As much as is practicable of the superstructure is to be site precast and even the shell concrete barrel vaults are to be precast in sections, hoisted into position and post-tensioned in situ. The exposed precast structural members will be finished with a decorative and protective rendering. The workshop is also to be carried on reinforced concrete piles, and the superstructure is a steel frame carrying a lightweight precast concrete roof with glazed cladding and brick end walls. The future administration building will have a precast concrete frame carrying a lightweight precast concrete roof with brick and glazed panel walls. The stores compound and garages will be built largely of brick with precast, prestressed reinforced concrete roofing and aluminium-framed roof lights.

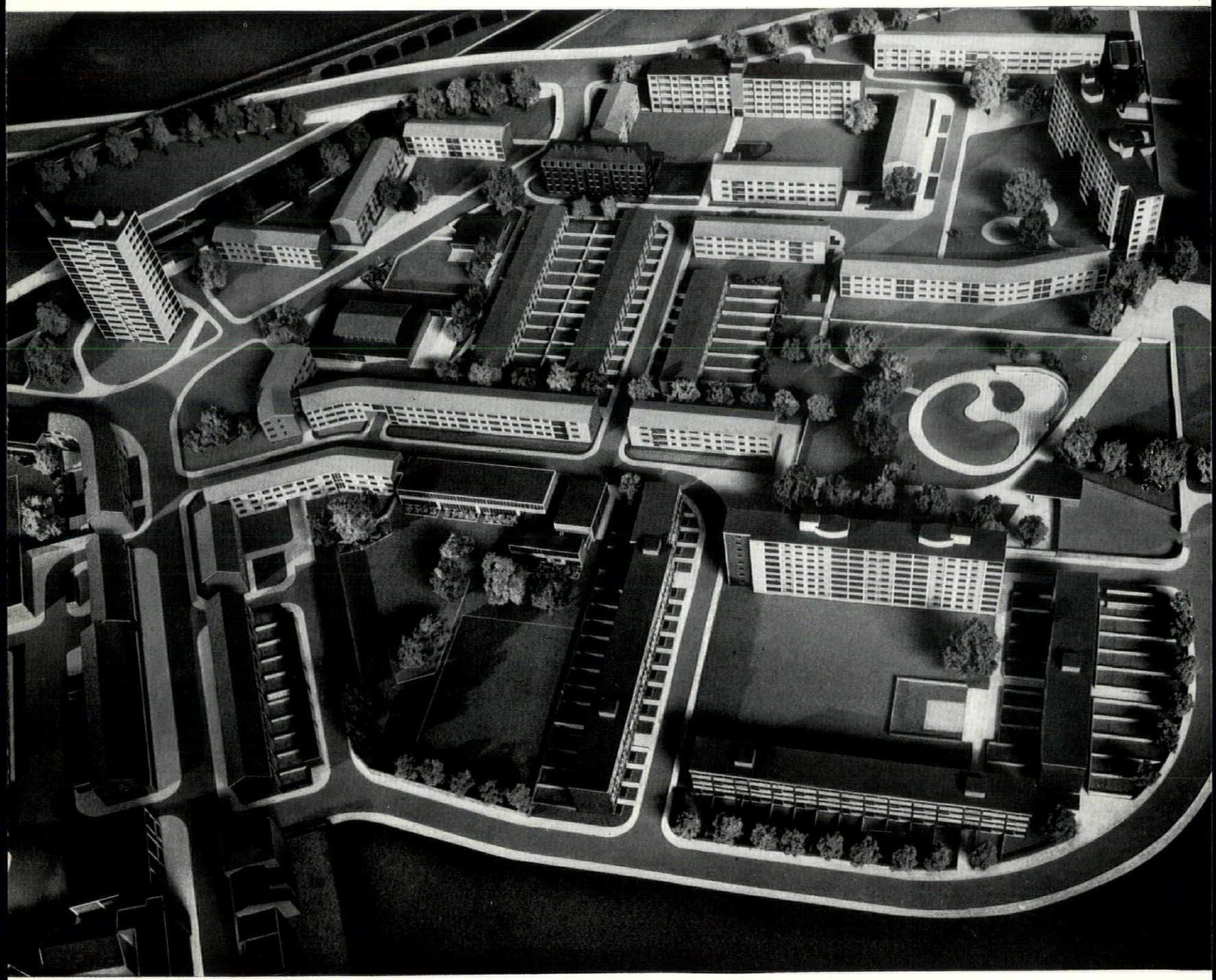
Work on the superstructure of the power-house began last month.

Right, the Northern Outfall sewage disposal works, Beckton, showing arrangement of new buildings. The power house is on the right. Below, a detail of the power house.

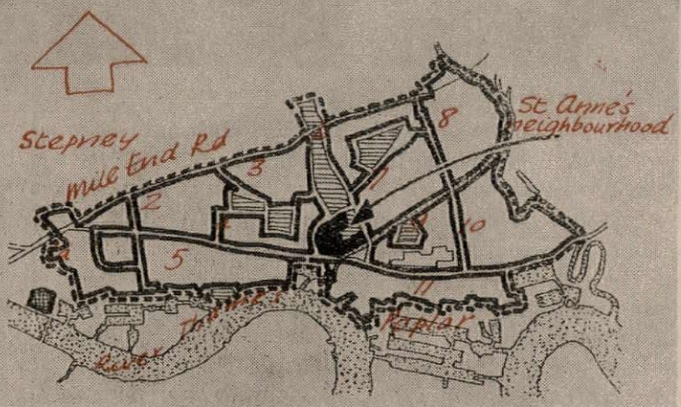




3 HOUSING



St. Anne's neighbourhood, Stepney, East London. Salmon Lane, the shopping street, runs from the bottom of the picture towards the 15-storey point block.



Neighbourhood diagram

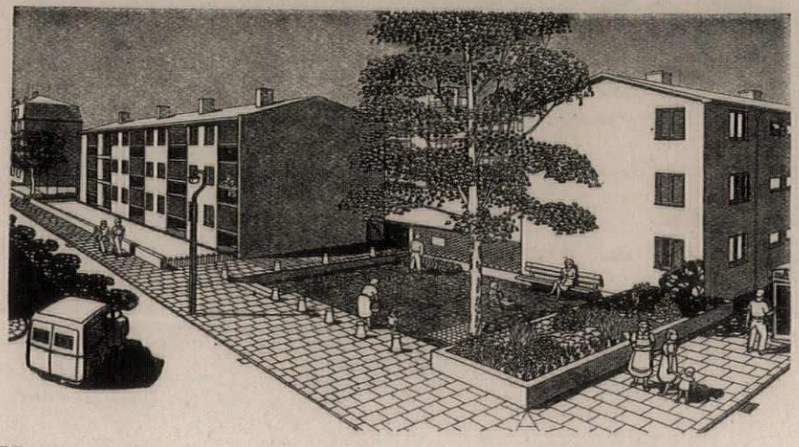
NEIGHBOURHOOD: STEPNEY

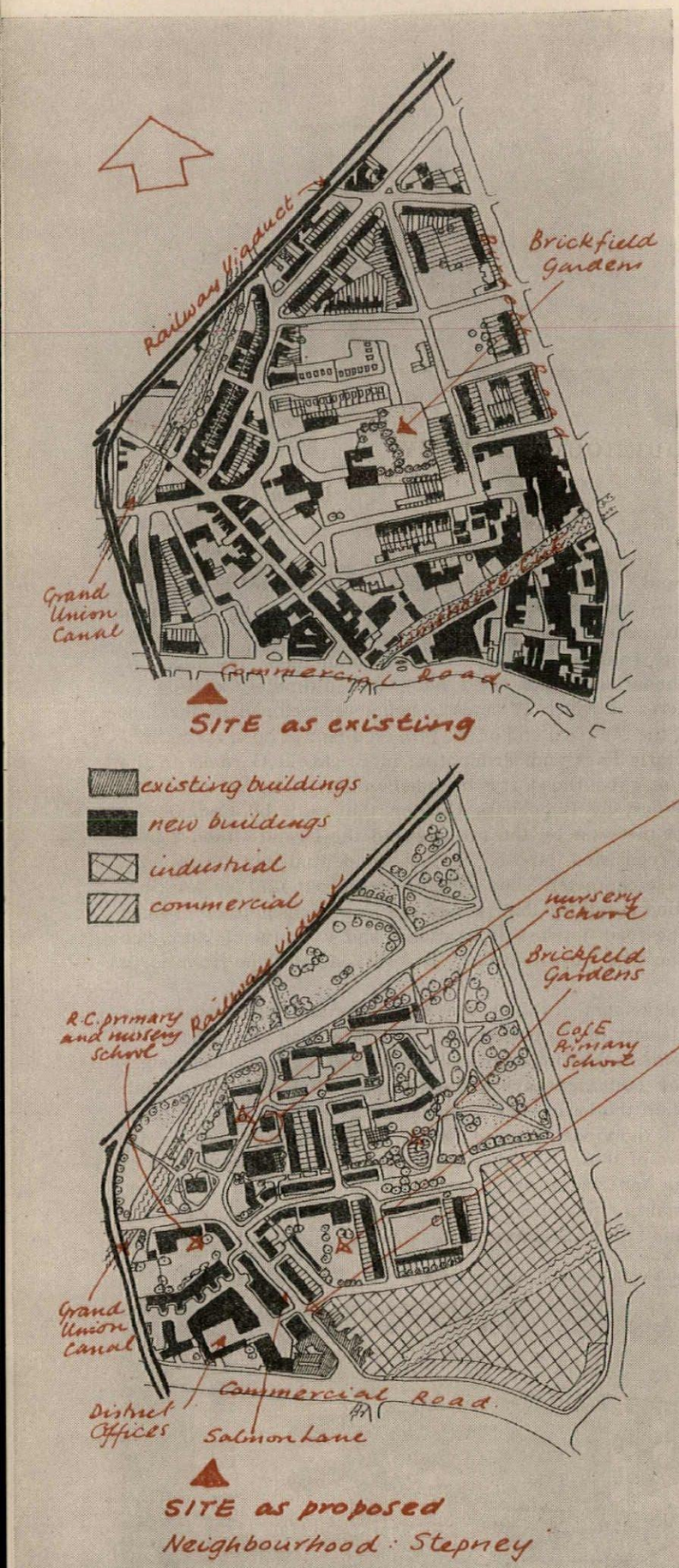
London County Council

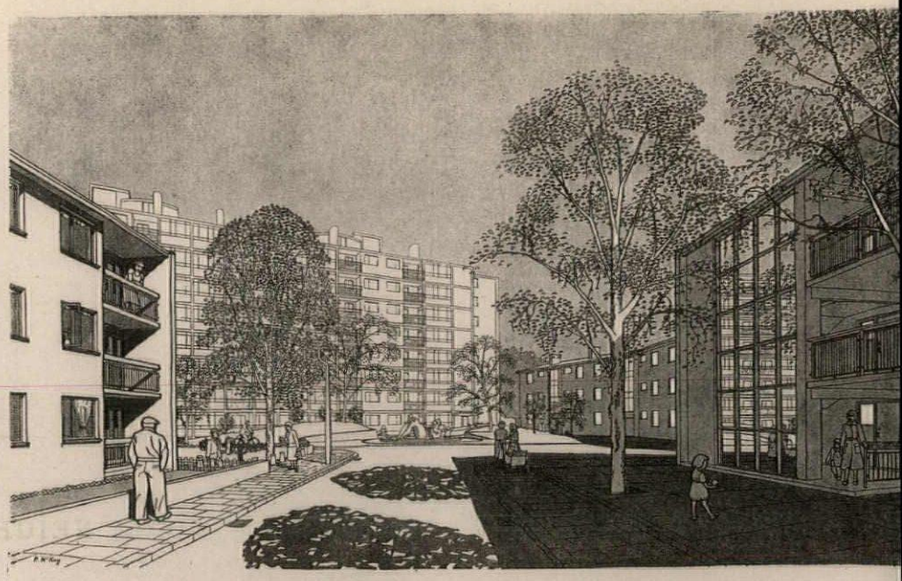
Part of the comprehensive reconstruction of the war damaged areas in Stepney and Poplar which have been replanned by the London County Council as a series of twelve neighbourhoods varying from 2,200 to 10,700 people, each as far as possible with its own schools, local shopping centres, open spaces and community buildings. St. Anne's neighbourhood, illustrated here, will ultimately occupy an area of 42 acres of which 17 acres is being redeveloped in the first stage. It is at the southern end of the proposed belt of open space linking with Victoria Park and terminating in Brickfield Gardens in the centre of the neighbourhood. It is bounded on the east by Burdett Road, on the south-east by Limehouse Cut, on the south by Commercial Road, and on the west by the railway and the Grand Union Canal. It originally consisted largely of low residential buildings, with almost a village character. They were erected about 1870 for working-class occupation and those that remain are mostly obsolete by modern standards. The road network is irrational and wasteful of land. The terrain is almost flat, although there is a very slight slope from north to south.

The new development takes the form of flats, maisonettes and houses at a density of 136 persons per acre, providing accommodation for 1,630 persons in the first stage and for 2,200 in the completed neighbourhood. The buildings have been kept low (but with some high blocks) to retain the basic scale and character of the area. The layout is composed of individual housing groups, each having its own special character. Two of these are squares formed round eight-storey blocks embodying, in one case, three-storey blocks of flats and in the other, four-storey maisonettes with private gardens. A third group consists of the shopping street of Salmon Lane, which is given emphasis at the

From the south-east, showing sunken terrace







One of the two eight-storey blocks

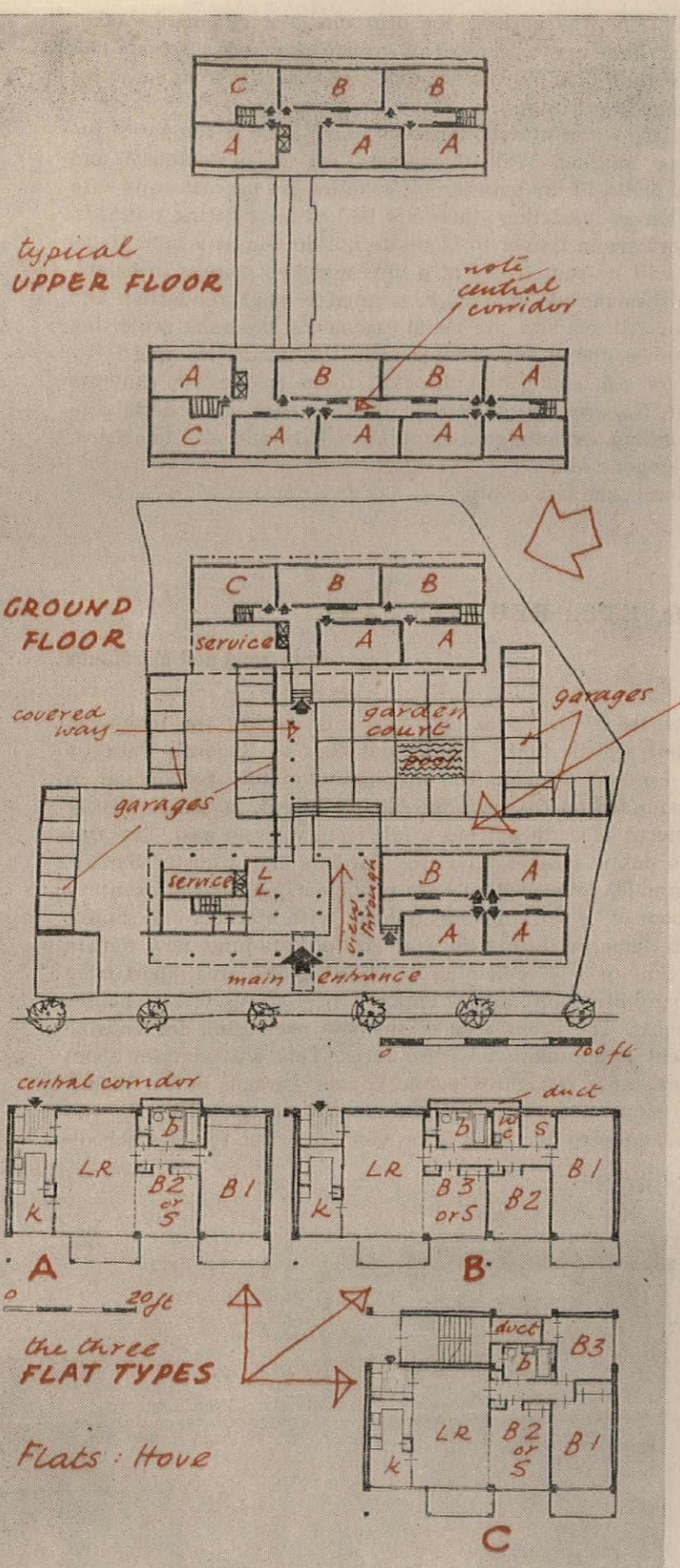
north-west end by a 15-storey point block and at the south-east end by the tower of St. Anne's Church, Limehouse, although the latter is situated outside the neighbourhood. A fourth group is formed as a square with a five-storey block as the dominant feature. In addition, there is a series of three-storey blocks along the banks of the Grand Union Canal. The individual groups are linked by short streets of two-storey cottages with private gardens of varying sizes, and three-storey blocks of flats. The established shopping centre in Salmon Lane is to be largely rebuilt in the first stage, providing shops along the Salmon Lane frontage with servicing facilities and garages at the rear. Above the shops are maisonettes. A site is provided in the ultimate layout for a new Methodist Church to replace the Edinburgh Castle Mission affected by the Council's proposals to extend King George's Fields Open Space. Three schools are included, as follows: St. Anne's C. of E. Primary School; Our Lady R.C. Primary and Nursery School; and Locksley Street Nursery School, of which the first forms part of the first stage. Land has been reserved for commerce in the south-west corner of the neighbourhood. Within this area district offices and a maintenance depot for the housing management department of the Council are sited and form part of the first stage. These are mainly single-storey buildings. The remainder is likely to be used to re-accommodate commercial undertakings displaced by the Council's operations elsewhere, but this land is not being developed at present. The existing road network has largely been replaced by a simpler layout, a change made possible by the need to renew existing services.

Work began in the spring of 1955.

FLATS: HOVE

Eric Lyons

A block of flats, sponsored by private enterprise, at Somerhill, Hove. There are three types of flat, as follows: 40 of type A (see plans), 23 of type B and 11 of type C, making 74 in all. The site is small, having an area of only 1.34 acres. There are 32 lock-up garages. It was required to keep the height of the building down to seven storeys. Corridor access was decided upon to produce a concentrated building with structural economy, and to establish better social feeling than is possible with gallery access or with staircase access with a small number of flats per landing. The objections to central corridor access on the score of ventilation is met by the use



of extract fans, and on the score of noise by the use of soft floor finishings.

Construction is reinforced concrete structural frame with two-way in-situ slabs 19 ft. by 19 ft. The flats will be centrally heated and supplied with hot water by an oil-fired boiler.

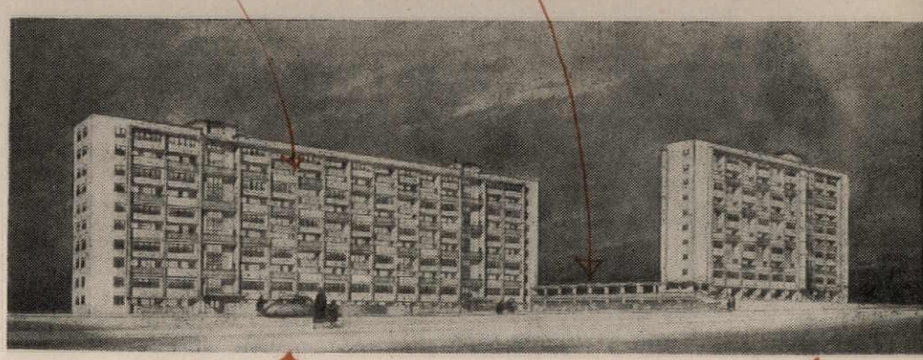
the main block, seen from the garden court.

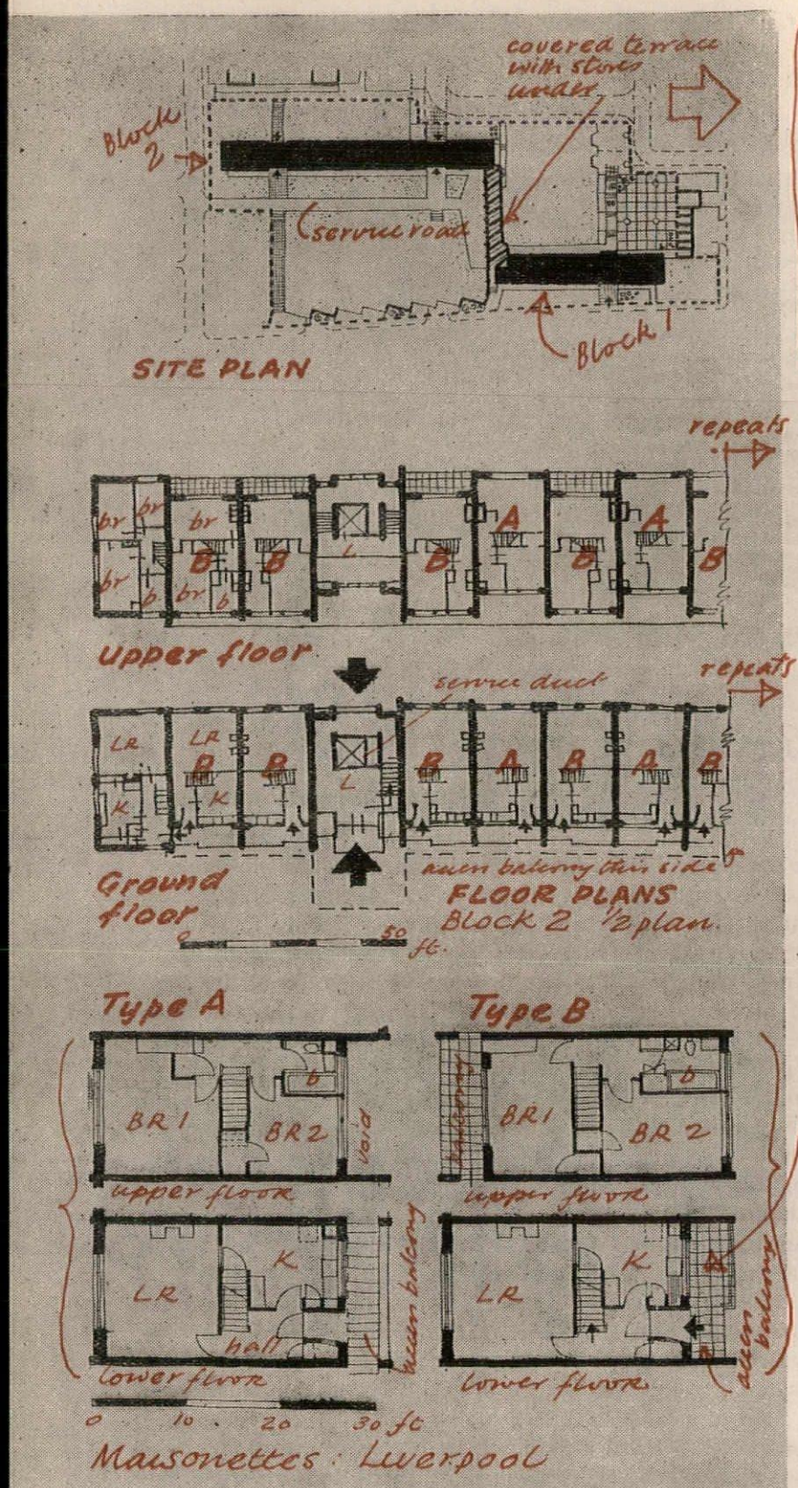
MAISONETTES: LIVERPOOL

Ronald Bradbury (City Architect)

These two ten-storey blocks of maisonettes are part of a comprehensive layout in a central district known as the Anthony Street area, which contains four-bedroom houses, three-bedroom four-storey maisonettes, two-bedroom multi-storey maisonettes and one-bedroom two- and three-storey flats. The site forms a continuation of the completed Boyd Street project, a scheme consisting of three- and four-storey flats and a ten-storey maisonette block known as Cresswell Mount. The position of the blocks on the site is determined by a disused, now filled-in, quarry. The ground slopes at about 1 in 10 and necessitates the use of retaining walls and terracing. A central service road will serve both blocks and the store-rooms. The layout of the site includes a children's playground, a green area, tree and shrub planting and sheltered seats; the position and height above sea level afford interesting views over Liverpool and the River Mersey and also over Cheshire and to the Welsh coast beyond.

The two blocks contain a total of 105 two-bedroom and 15 three-bedroom maisonettes and are linked together by a low block containing 24 store-rooms (each 8 ft. by 4 ft., rented separately) and pump rooms, with a covered terrace over. Living accommodation is on the west side of each block, with kitchens and bathrooms on the access balcony side. Vertical circulation is in towers containing lifts and staircases and housing the lift machine rooms and water-storage tanks above roof level. The elevational treatment derives from the fire-escape regulations: alternate bedrooms require an escape balcony,





and this is obtained by pushing the bedroom floor out on the other side, i.e., over the access balcony. This system provides a private balcony to more than half the maisonettes and a partly covered access balcony.

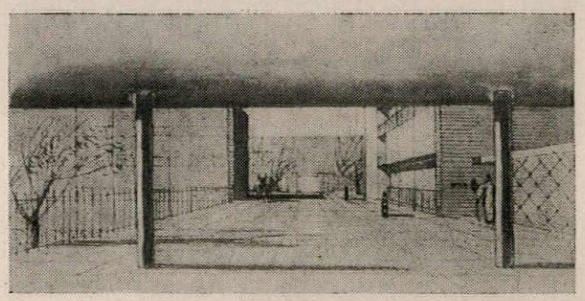
The structure is a reinforced-concrete frame with a composite no-fines concrete infilling. Wall thicknesses are 12 in. external and 9 in. to party walls. Floors between maisonettes are precast units with fibre glass blanket insulation; these are laid as the pouring proceeds. Bedroom floors are in timber to facilitate building-in at a later stage. Maisonettes will be poured two at a time and two storeys in height. External finishes include spar dash, painted cement rendering, and painted metal. All windows are metal casements, top-hung projecting type, and can be glazed and cleaned from the inside. Heating is by open fires; for ash and refuse disposal, there is one ash chute to every twelve maisonettes. A vertical duct to each maisonette contains all plumbing services, gas, water, electricity and also television, radio and telephone cables.

Construction began last month.

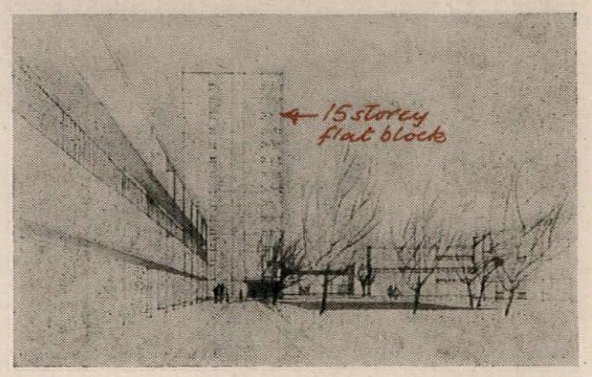
HOUSING, ETC.: REGENTS PARK

Armstrong and MacManus

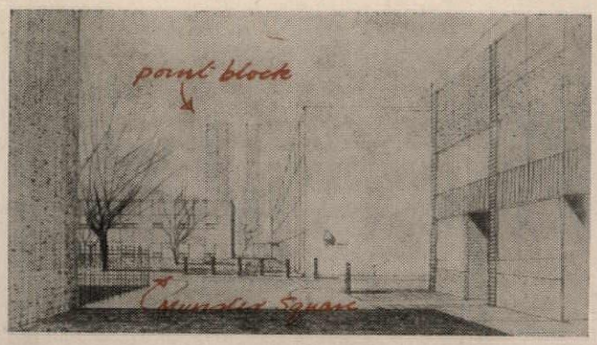
Three new areas, known as 'E', 'F' and 'G', in the long-term redevelopment scheme being carried out east of Regent's Park by St. Pancras Borough Council. The site, approximately rectangular in shape and bounded on the west by Albany Street, is comparatively level from north to south but has a fall from west to east. The area contains two public squares, Clarence Gardens and Munster Square, and was originally developed by Nash in the early nineteenth century for the purpose of 'a working-class quarter with markets and shops'. It was much damaged during the war and no buildings now remain in Munster Square. The remaining buildings in the area, apart from those in Albany Street, are almost entirely three-storey terrace houses with basements. The gross area of the site remaining for housing redevelopment is approximately 10.8 acres. This will contain about 570 dwellings, ten shops, three public houses, garages and a branch library. The scope of the replanning was much restricted by the two large existing squares, the need to provide two sites for new schools



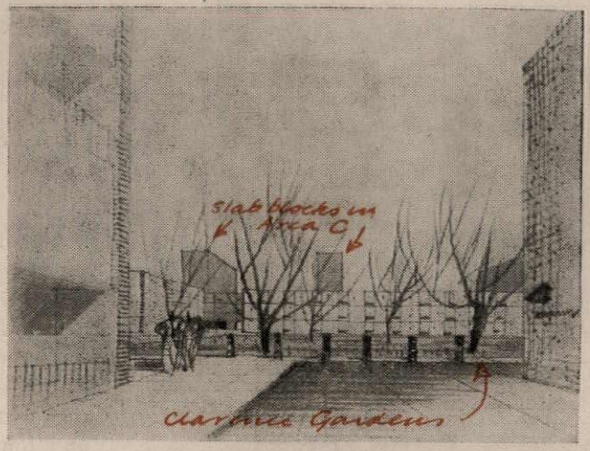
View south to Clarence Gardens from Robert Street.



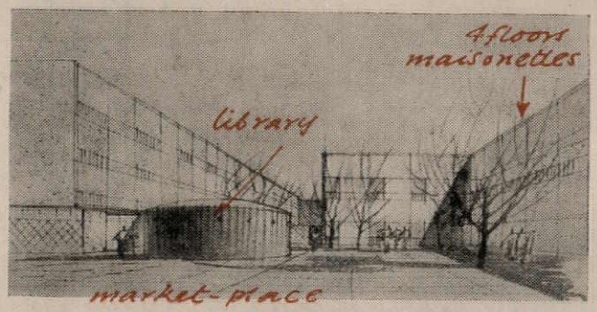
Looking west towards the 15-storey block.



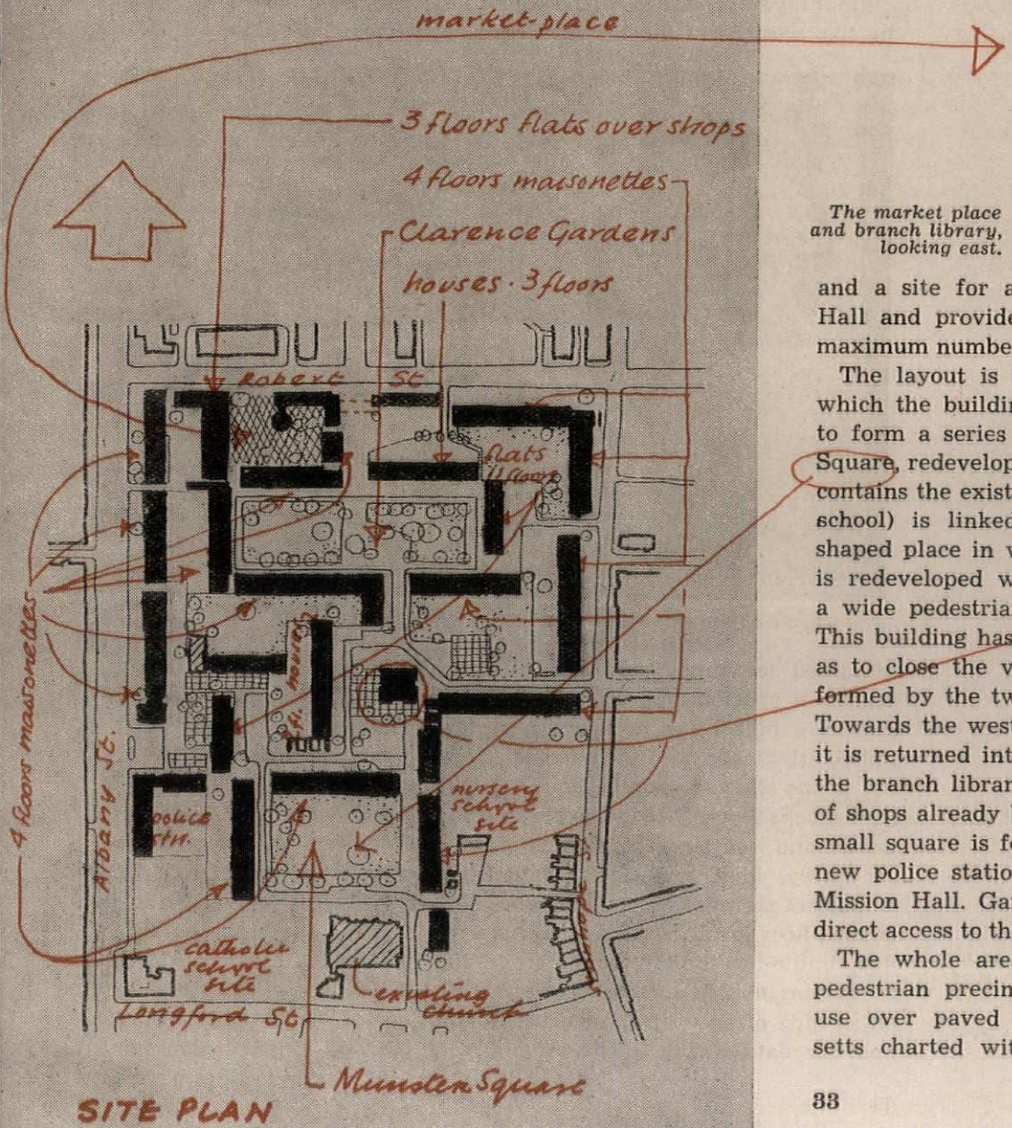
Munster Square from the south.



View north across Clarence Gardens.



The market place and branch library, looking east.

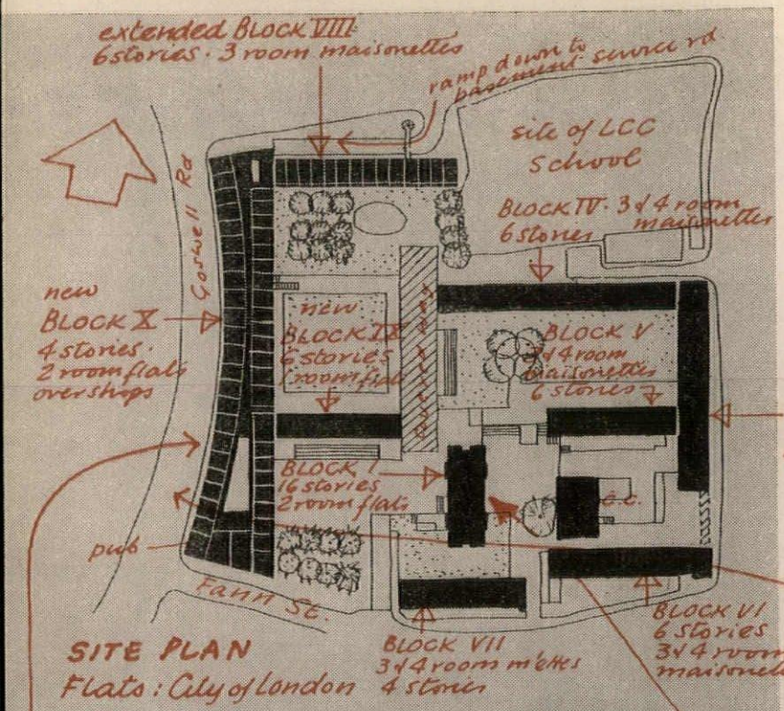


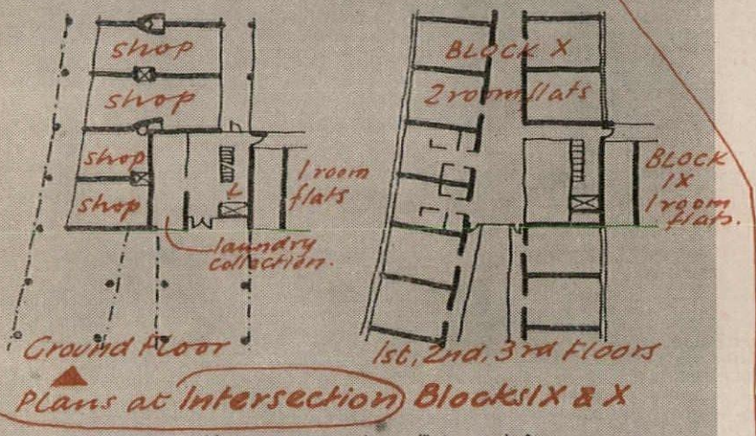
SITE PLAN

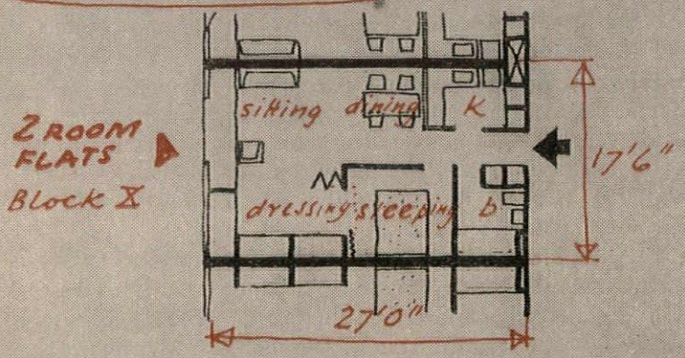
and a site for a new police station, to retain St. Bede's Mission Hall and provide for street widening and the preservation of the maximum number of existing trees.

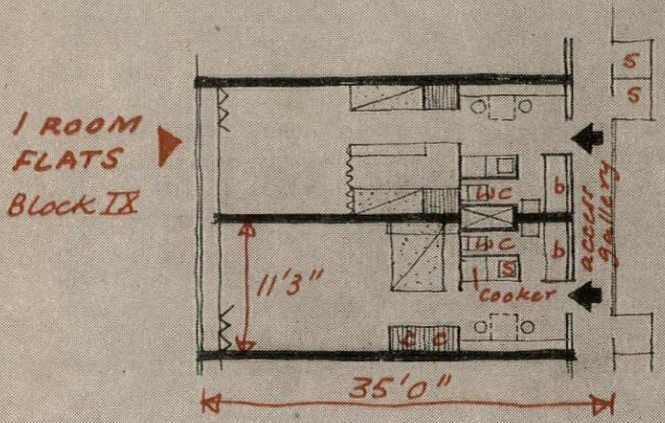
The layout is informal and planned on precinctual principles in which the buildings, mainly of the terrace type, are so disposed as to form a series of varied and linked places and squares. Munster Square, redeveloped on three sides with domestic buildings (the fourth contains the existing St. Mary Magdalene Church and the new church school) is linked with Clarence Gardens through a more freely shaped place in which is sited a high point-block. Clarence Gardens is redeveloped with domestic buildings on four sides and from it a wide pedestrian way leads under a building into Robert Street. This building has been placed on the axis of Cumberland Market so as to close the vista and to complete the architectural composition formed by the two-slab blocks now nearing completion in area 'C'. Towards the west end of Robert Street a building with shops under it is returned into the site to form a small market-place containing the branch library, and placed so as to be associated with the row of shops already built on the opposite side of Robert Street. Another small square is formed at the south end of Albany Street, with the new police station, a new public house and the existing St. Bede's Mission Hall. Garages are provided under some of the blocks with direct access to the adjoining streets.

The whole area has no formal road system, being treated as a pedestrian precinct. Essential wheeled traffic will have permissive use over paved areas between the blocks, on a defined way of setts charted with posts and bollards, thus preserving pedestrian









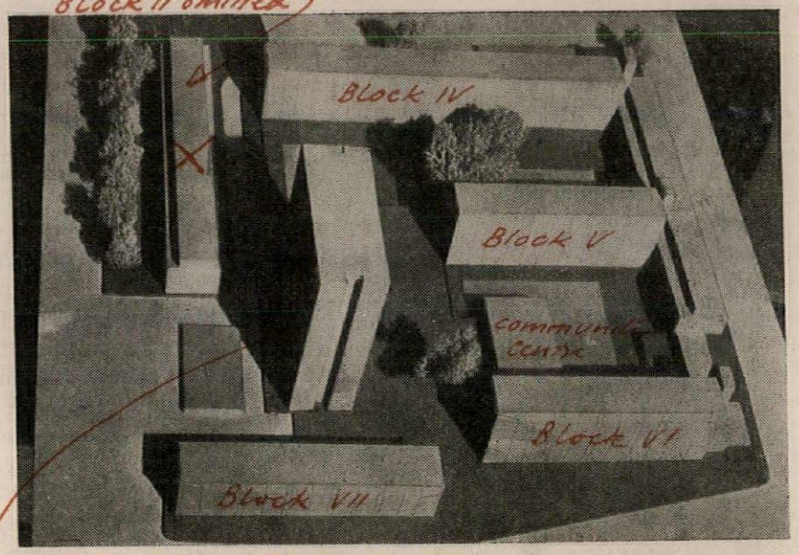
priority and safeguarding the passage of children within the whole area and to the adjacent school sites. While the squares and the paved ways and the spaces throughout the areas will be free for access by the general public, grassed courts contained by, and adjacent to, the living-room sides of blocks will be fenced and reserved for the private use of tenants as in some London squares. A large proportion of the ground-floor dwellings also have private gardens. Fitted play spaces are provided for the younger children. Accommodation consists mainly of four-storey buildings containing maisonettes and flats. There are also terrace houses for large families, a two-storey building of small flats for older persons, two eleven-storey blocks and one fifteen-storey block of smaller flats.

Construction of the housing is expected to begin late this year.

FLATS: CITY OF LONDON

Chamberlin, Powell and Bon

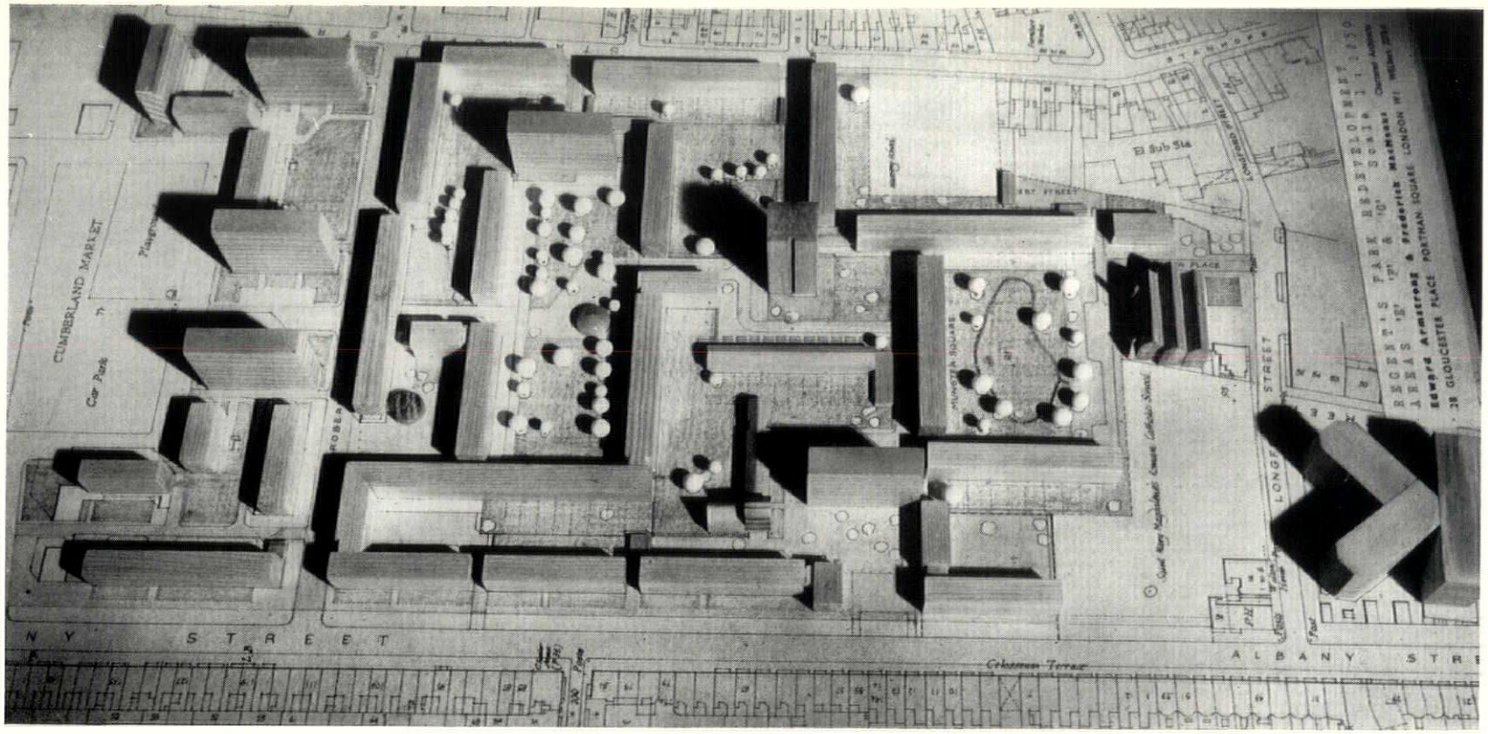
An addition to the Golden Lane housing scheme illustrated in the corresponding issue to this two years ago. Extension of the site to Goswell Road has increased the gross area by 1.95 acres. At the maximum permitted density of 200 persons to the acre, the population may therefore be increased by 390 to a total of 1,390. The revised layout aims at housing the 390 additional persons while maintaining the character and unity of the scheme. The new blocks are of six and four storeys, the four-storey block running north to south, and the six-storey blocks running east to west in the manner of the original layout. Block II, which would have formed a barrier between the two sections of the site, has been omitted and the flats which it



The scheme before extension

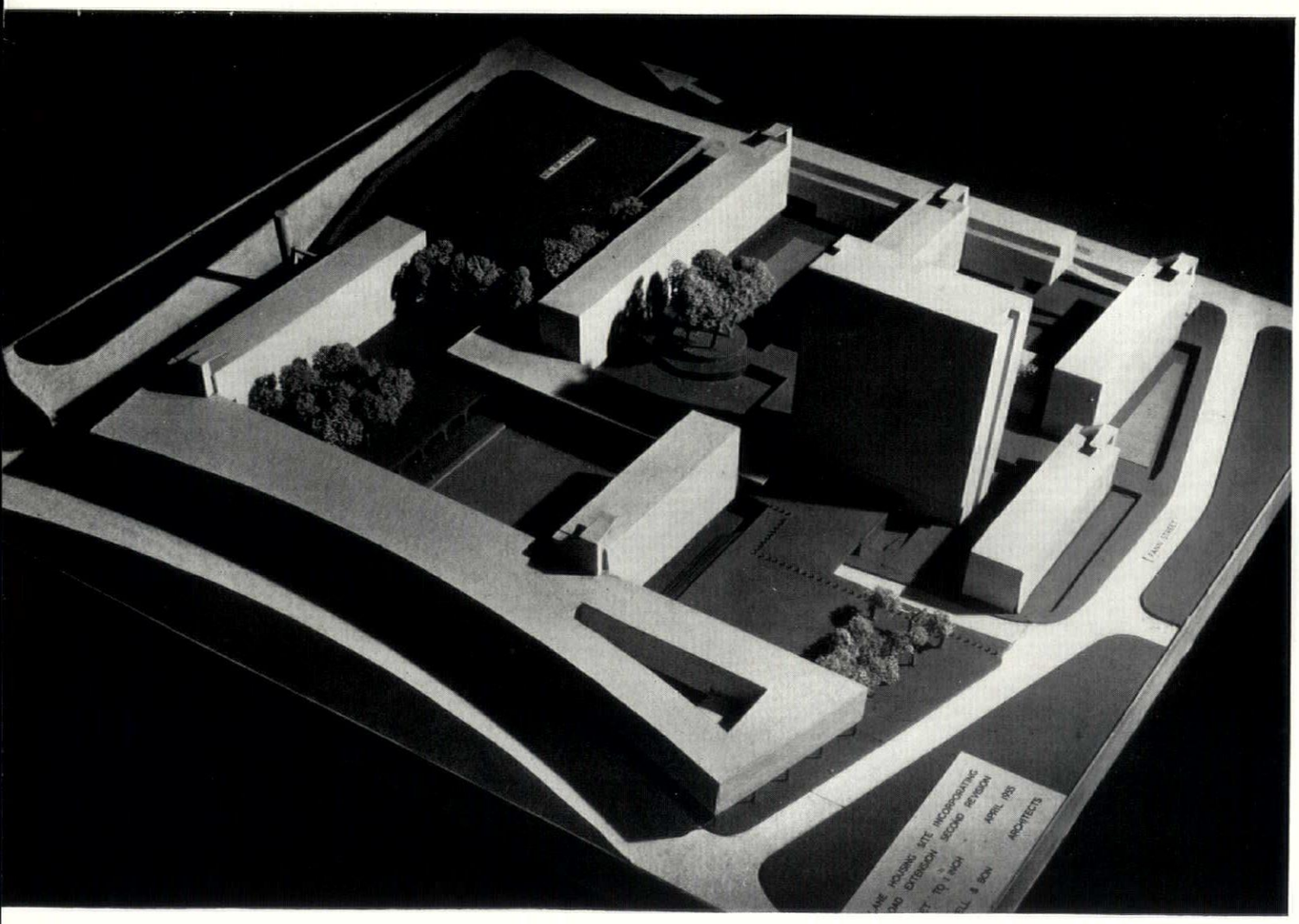
contained accommodated in the new blocks. In the original layout a degree of spaciousness was achieved by housing a large number of flats in a high block of fourteen storeys. The new extension is not sufficiently large to accommodate satisfactorily another high block, but it has allowed another storey of flats to be added to the existing high block. Block VIII in the original layout has been extended westwards and contains the same type of maisonettes as before. It is six storeys high, with access galleries on alternate floors. Block IX is also six storeys and contains one-room flats. Access is by a gallery at each floor level. Block X is four storeys high and contains two-room flats, limited to the top three storeys, disposed either side of a central access corridor. At the southern end of the block, this corridor divides either side of an open space. The ground floor of the block is unsuitable for flats, owing to the proximity of Goswell Road. It contains

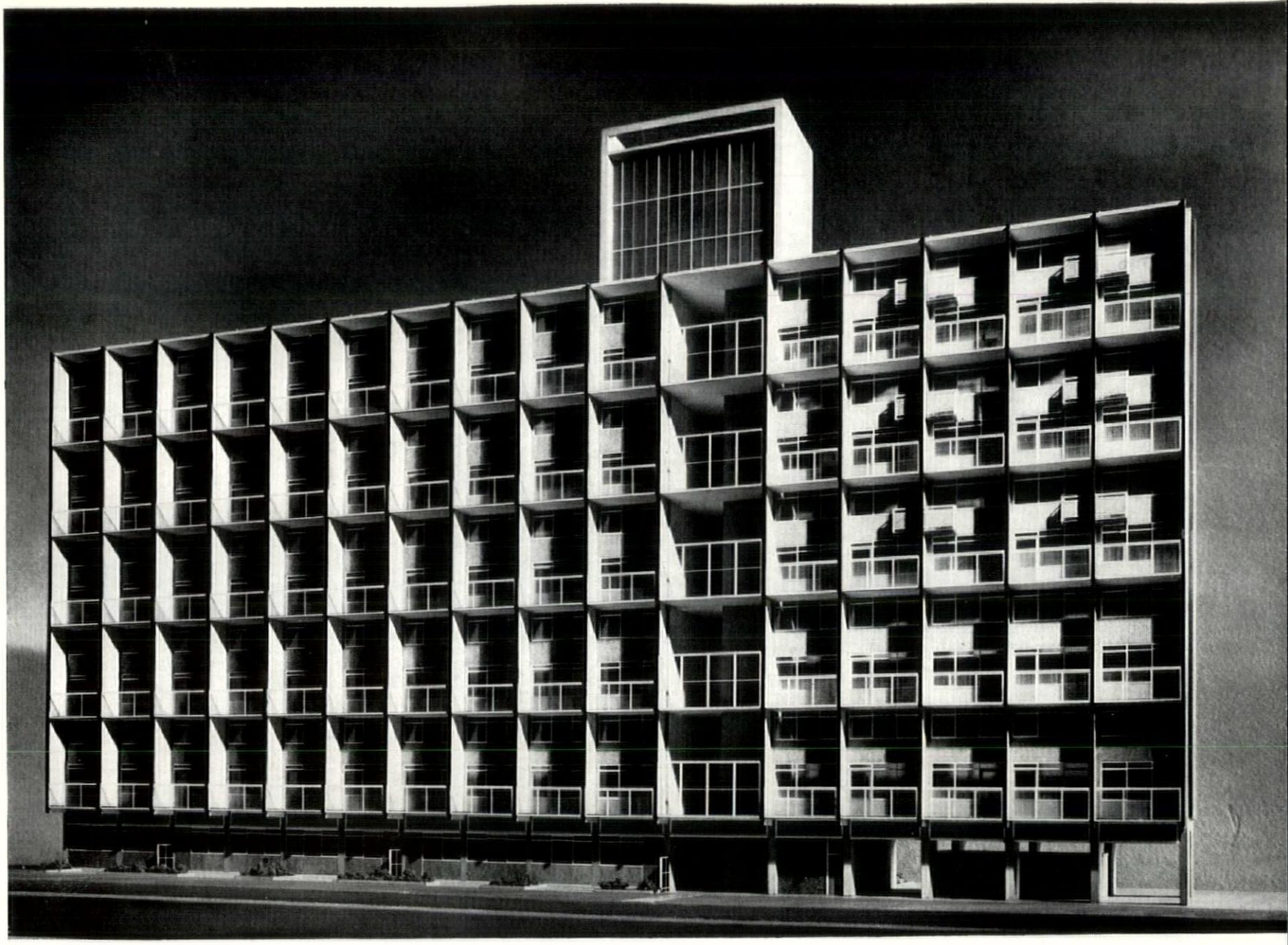
[*continued on page 37*



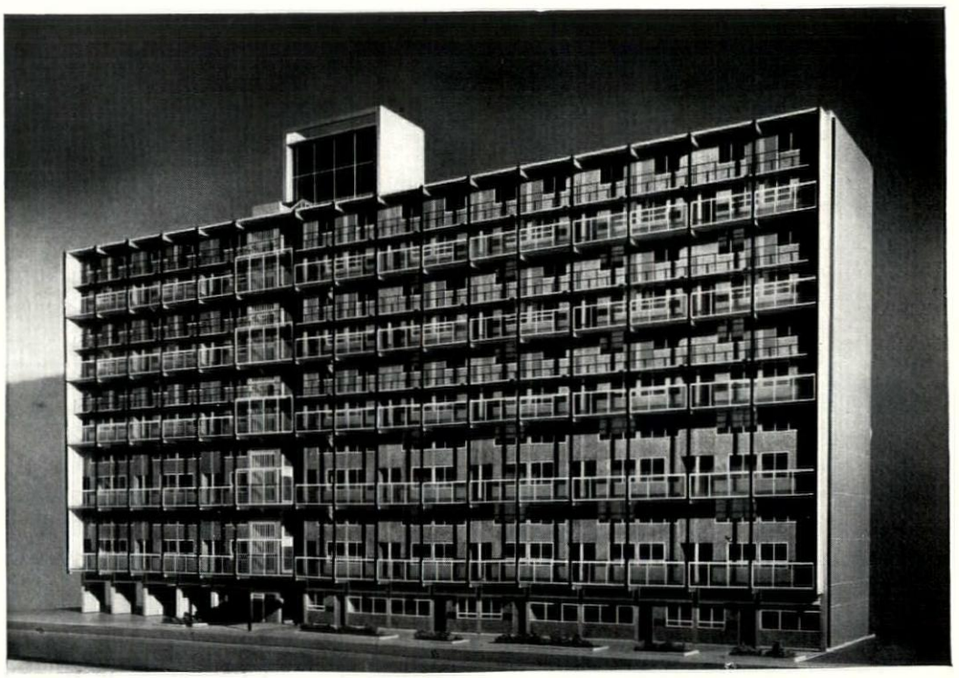
Above, the new section of the large housing area east of Regent's Park, showing the planning in the form of a sequence of connected squares.

Below, Golden Lane housing scheme in the City of London in its extended form. The divided block on the left of the picture is the new one, with shops on the ground floor, facing Goswell Road.





LCC housing at Picton Street, Camberwell: the eleven-storey maisonette block. Above, the living-room side showing two-storey balconies. Below, the entrance side. (See also the cover of this issue).



3. HOUSING

continued from page 34]

instead twenty shops of 17 ft. 6 in. frontage and a public house, all facing on to the road, and a space for a restaurant facing inwards towards Block I.

The western part of the site is served by an estate road connecting Fann Street to Baltic Street, and ramps down at either end from road to basement level. The reason for sinking the estate road is to avoid the bisection of the site at ground level, to maintain the principle of reserving the surface of the site for pedestrian use, and the convenient service at low level to shop basements, garages and refuse chambers. Sixty-three lock-up garages are provided at basement level beneath the court to the south of Block IX. Blocks VIII, IX and X, by their disposition, partly enclose two courts, one to the north and one to the south. These courts are open to the central part of the site around Block I, and have access to Goswell Road, via openings at ground level under Block X. The northern court is partially sunk and it is suggested that it should contain a bowling green. Immediately to the east of this proposed green is a low building, containing two badminton courts at low level, and a nursery room at ground level. To the north of the green is a raised terrace, and behind this an arcade of rooms which can be either open or enclosed to form shelters or club rooms for old people, children or persons using the games facilities. The northern part of the court contains the children's playground. The west end is for older children, and the east end, adjacent to the nursery room, is for young children.

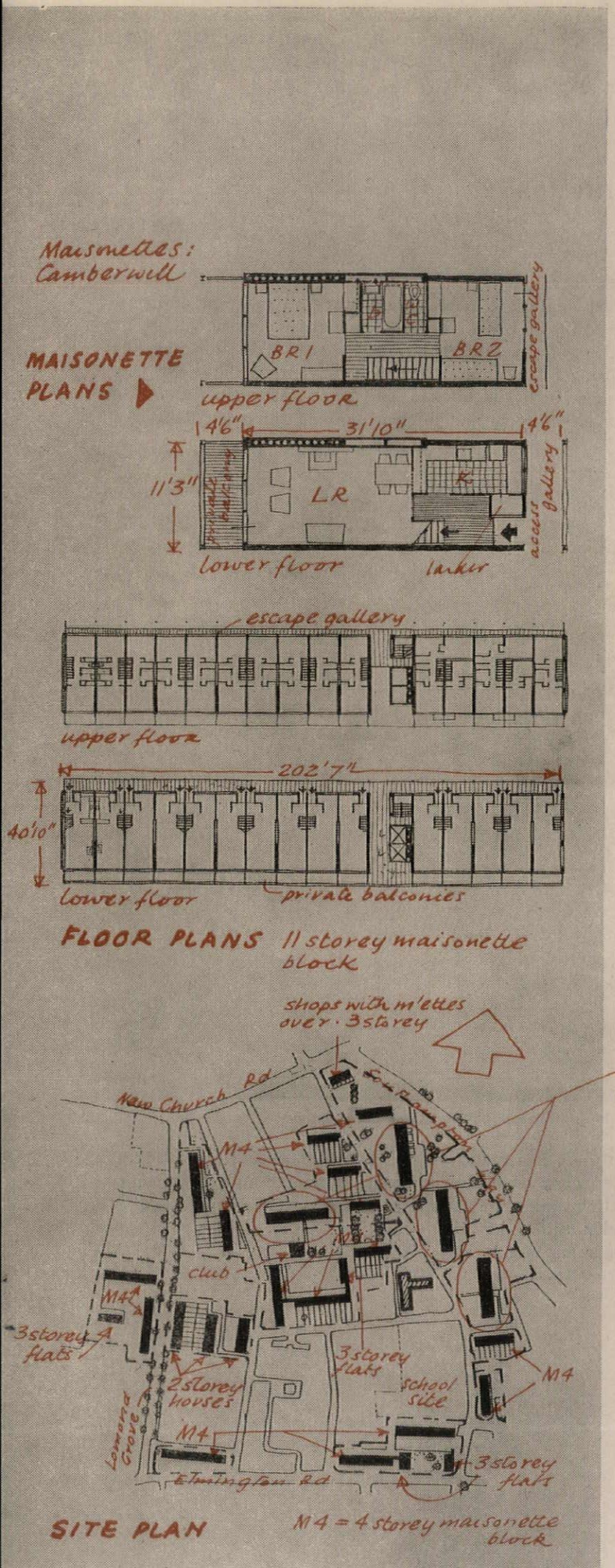
The construction, a mixture of load-bearing brick and reinforced concrete, is as described with reference to the main part of the scheme. Construction will begin early this year. Quantity surveyors: Davis, Belfield and Everest. Consulting structural engineers: Ove Arup and Partners. Consulting heating engineer: H. J. Knox.

MAISONETTES: CAMBERWELL

London County Council

A mixed housing scheme at Picton Street, consisting of 682 dwellings, five shops, clubroom, workshops and play areas. The dwellings are grouped into four eleven-storey blocks of maisonettes, each containing 80 dwellings, and 16 four-storey blocks of maisonettes with private gardens. The site is flat and previously contained derelict and partly war-damaged two-storey, early Victorian terraces. A number of small existing streets will be closed as a result of the redevelopment. The acquisition of the site is being achieved piecemeal as a result of which the new development can only proceed in phases, following demolition. The scheme is an experimental one, designed to ascertain to what extent collaboration between the architects, engineers, surveyors and contractors, from the earliest stages, can contribute towards the introduction of new techniques and the reduction of building costs. It is the work of a team comprising architects, engineers, quantity surveyors and representatives of the Building Research Station and also of the contractors, who were nominated at the design stage. A tower-crane is being used for the construction of the eleven-storey buildings and many of the components have been prefabricated or designed in such a way as to make maximum use of this crane. These components have also been designed as far as possible to reduce the volume of wet processes, particularly plastering.

Construction of the eleven-storey blocks consists of in-situ concrete cross-walls (each alternate wall only being reinforced) with precast main floor units and prefabricated timber intermediate floors. External walls and internal partitions are of prefabricated timber-framed panels, with hardwood or plasterboard facings respectively. Construction of the four-storey blocks consists of in-situ mass concrete cross-walls, with in-situ main floors and prefabricated timber intermediate



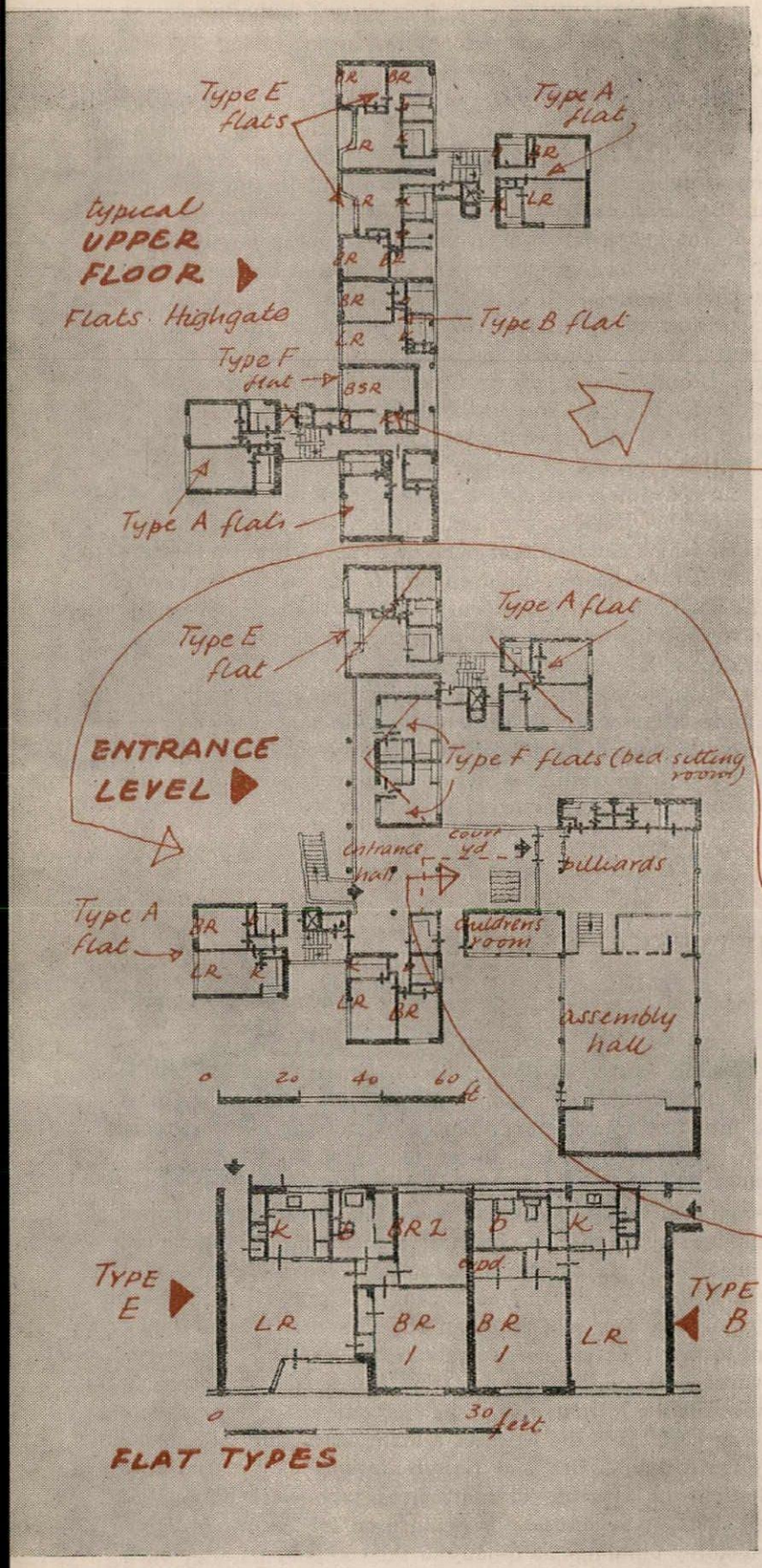
floors. External walls and partitions are similar to the eleven-storey blocks except that the cladding (being on sheer faces) is aluminium sheet.

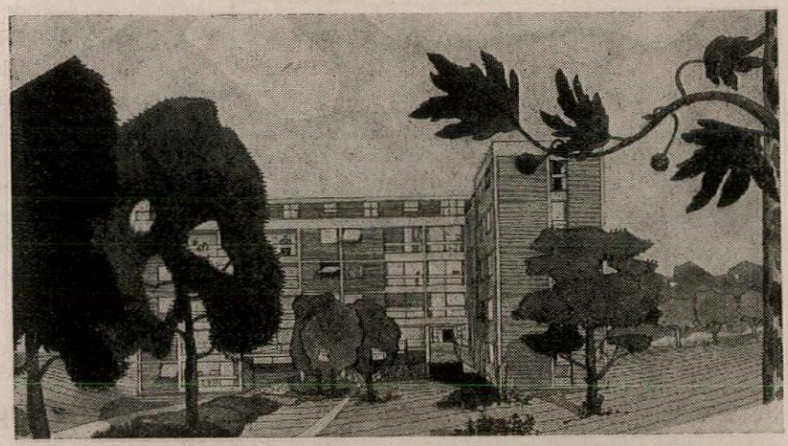
Work started in January, 1955.

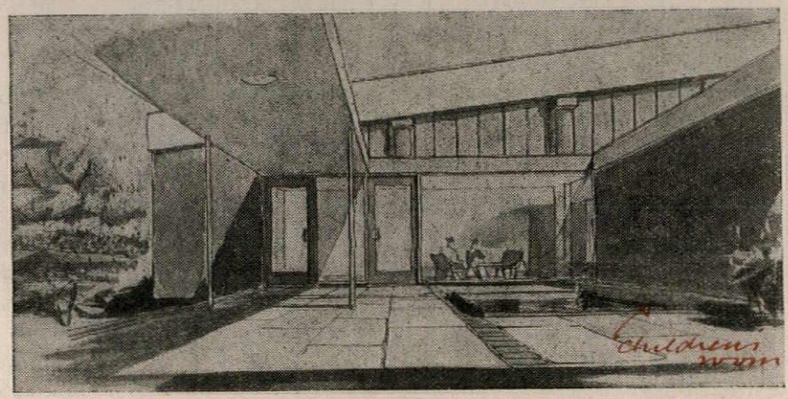
FLATS: HIGHGATE

Eric Lyons

For the Soviet Trade Delegation in the grounds of their offices at West Hill, Highgate. The new buildings are on the part of the site fronting to Millfield Lane. The accommodation consists of six flats with bed-sitting room, kitchen bay and shared bathroom; five flats with bed-sitting room, bath and kitchen; seventeen flats with living room, bedroom, bath and kitchen, and eight flats with living room, two bedrooms, bathroom and kitchen, making thirty-six flats in all.







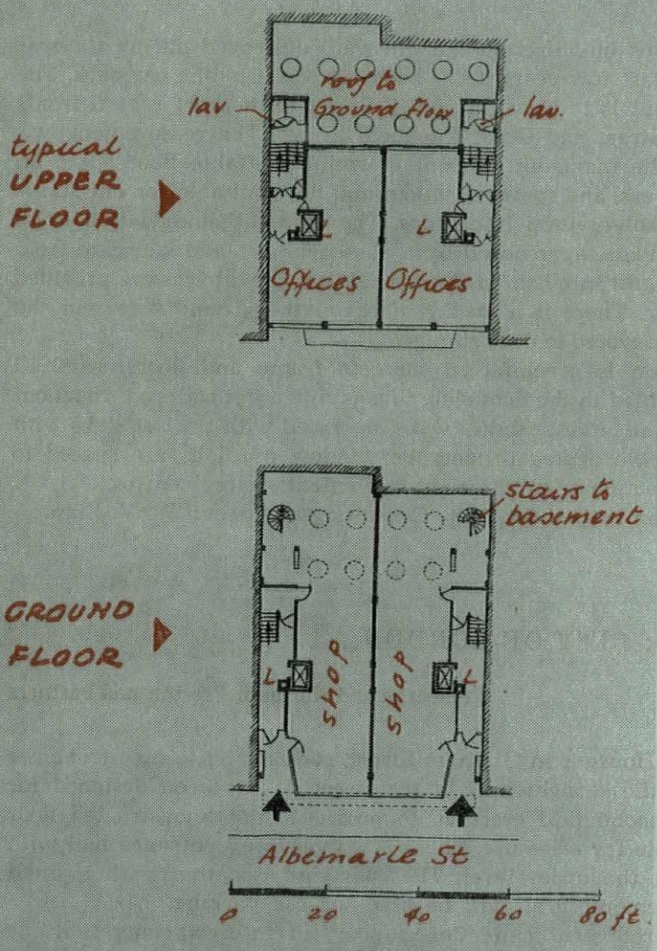
Top, from the south-west; bottom, inside the courtyard

In addition there is a recreation room with stage and projection box, and a games room, lavatories, children's playroom and playground.

Construction consists of a reinforced concrete frame and floors, with external brick filling.

Work began last month.

4 OFFICE BUILDINGS

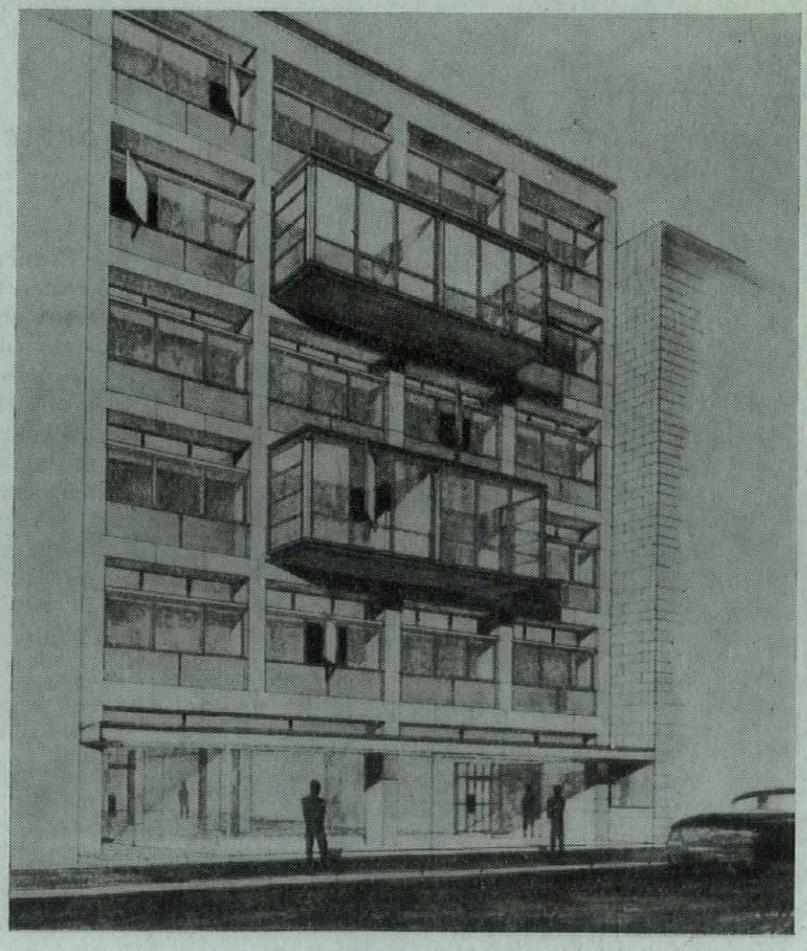


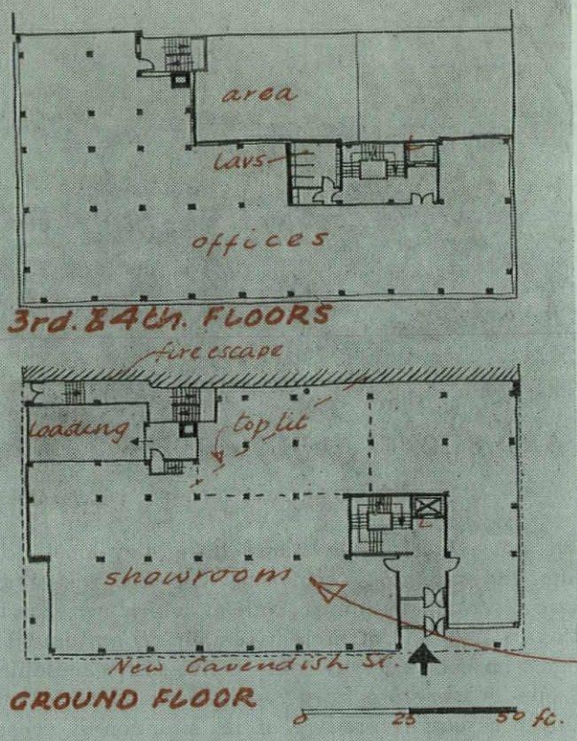
OFFICES AND SHOPS: ALBEMARLE STREET

Ernö Goldfinger

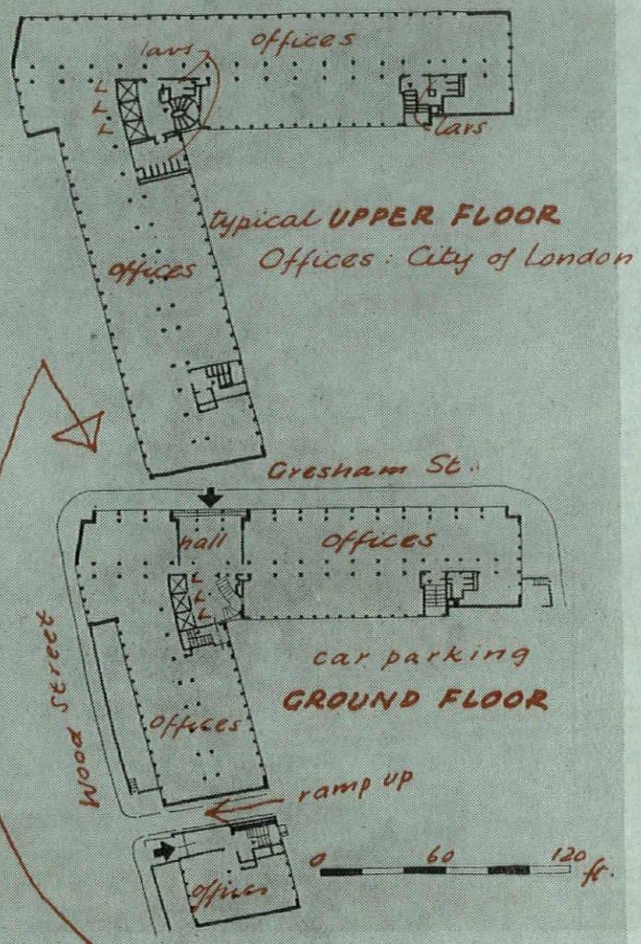
A speculative office block, with shops, being developed for two different clients under separate contracts. The site was originally occupied by two Georgian buildings, both of which were destroyed by enemy action in 1940, and at present remains as an unused bomb site. It is bounded on both sides by four- or five-storey buildings and at the rear by one- or two-storey structures associated with buildings fronting to Dover Street. By reason of its situation it constitutes some of the most costly land in London. Although the site is so restricted (24 ft. frontage to each building) a net letting space of 71 per cent has been achieved. The clients have agreed that the buildings may be treated as one, although planned as separate entities, each with its own entrance, staircase and engineering services.

The building has a reinforced concrete frame with precast pre-





Offices etc: New Cavendish St.



stressed floor slabs. Windows incorporate the idea of a photobolic screen which involves the upper windows being recessed, and the top surface of the transome so formed being used to reflect light into the room. The building as a whole is set back 2 ft. 6 in. from the building line, making the projecting alcove boxes shown on the drawing possible. Heating is by oil-fired burners, circulating hot water to convection heaters in the offices and to radiators in the shops. Hot water is provided by means of a calorifier to which is attached an immersion heater for use in the off season.

Work began in October, 1955.

OFFICES, ETC.: NEW CAVENDISH STREET

Gollins, Melvin, Ward and Partners

The previous buildings on the site were destroyed during the war and for the last few years it has been used as a public car park. The principal front is to New Cavendish Street with short return fronts to Gosfield Street and Great Titchfield Street. The requirement was to provide the maximum amount of well-lit lettable floor space on the upper floors, and space on the ground floor suitable for one showroom or as sub-division into shops. The office accommodation is on four upper floors, approached by a passenger lift and staircase from the separate entrance hall on the ground floor. Lavatories are provided on each floor. There is a loading dock on the ground floor and the basement is devoted to dead storage.

Construction is a reinforced concrete frame and floors, with all beams contained in the floor slab, thus giving a flat ceiling throughout the offices. The outer spandrel walls are faced with precast slabs with a white marble aggregate, and the window mullions are spaced to allow the erection of partitions at conveniently close centres.

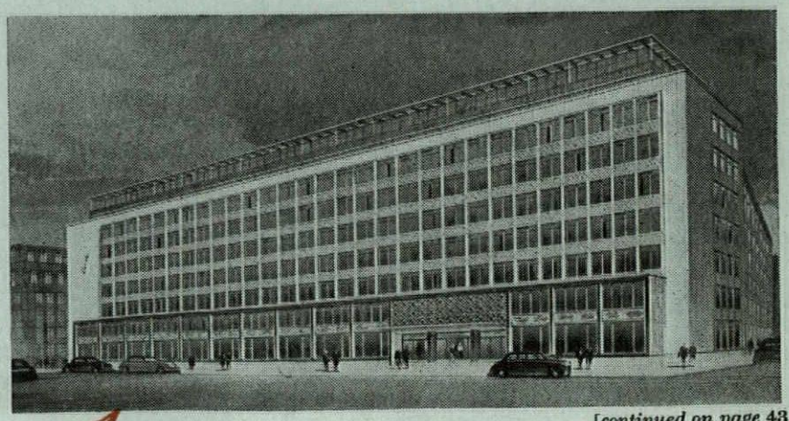
Work began in October, 1955. Consulting engineer: W. V. Zinn.

OFFICES: CITY OF LONDON

Trehearne and Norman, Preston and Partners

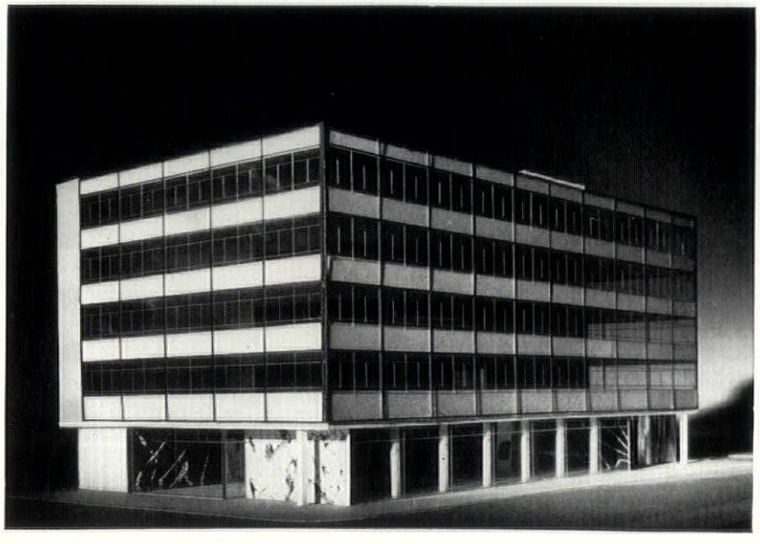
Clements House is in Gresham Street, conforming to new frontages created by the straightening of the street. It has been designed for quick and economical erection, to provide large unobstructed floor areas suitable for office use. There is a two-storey entrance hall with balconies at the upper level. The courtyard, together with a small area at basement level, will be used for car parking.

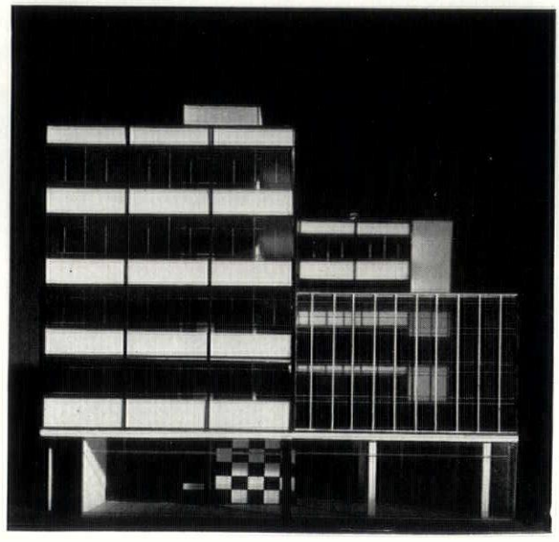
Mass concrete strip foundations support a reinforced concrete frame of the flat slab type, designed to eliminate all beams and so provide flat ceilings throughout the building. Planning is based on a 12-ft.



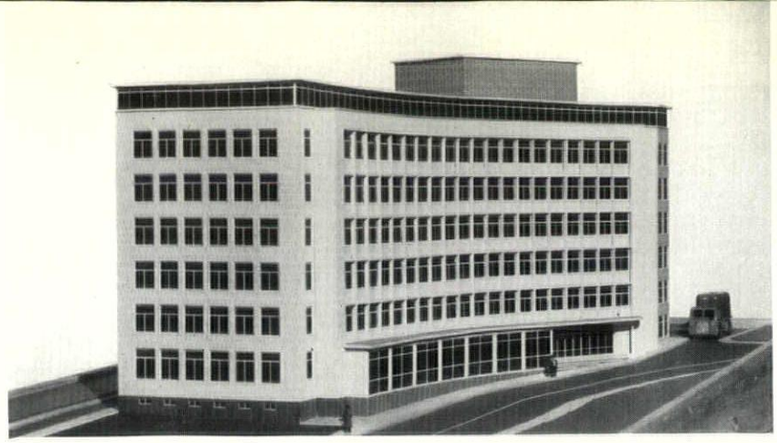
[continued on page 43

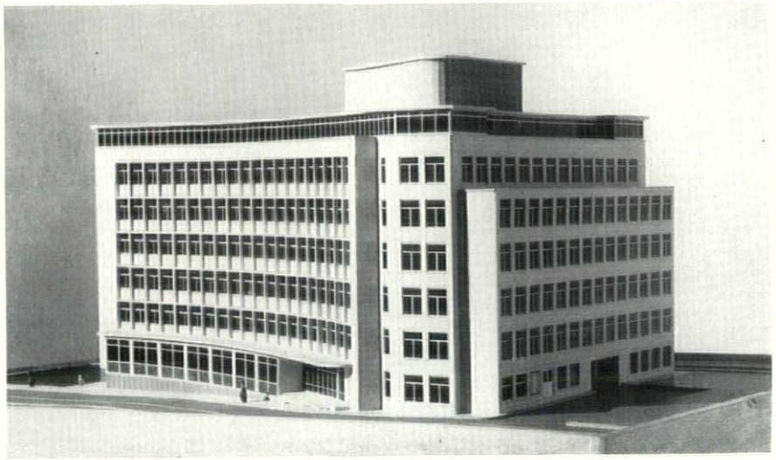
Offices on a bombed site in New Cavendish Street, London, W.1. The ground floor is to be used for shops or a showroom. Above, the main front. Below, the same from Gosfield Street and the Great Titchfield Street front.





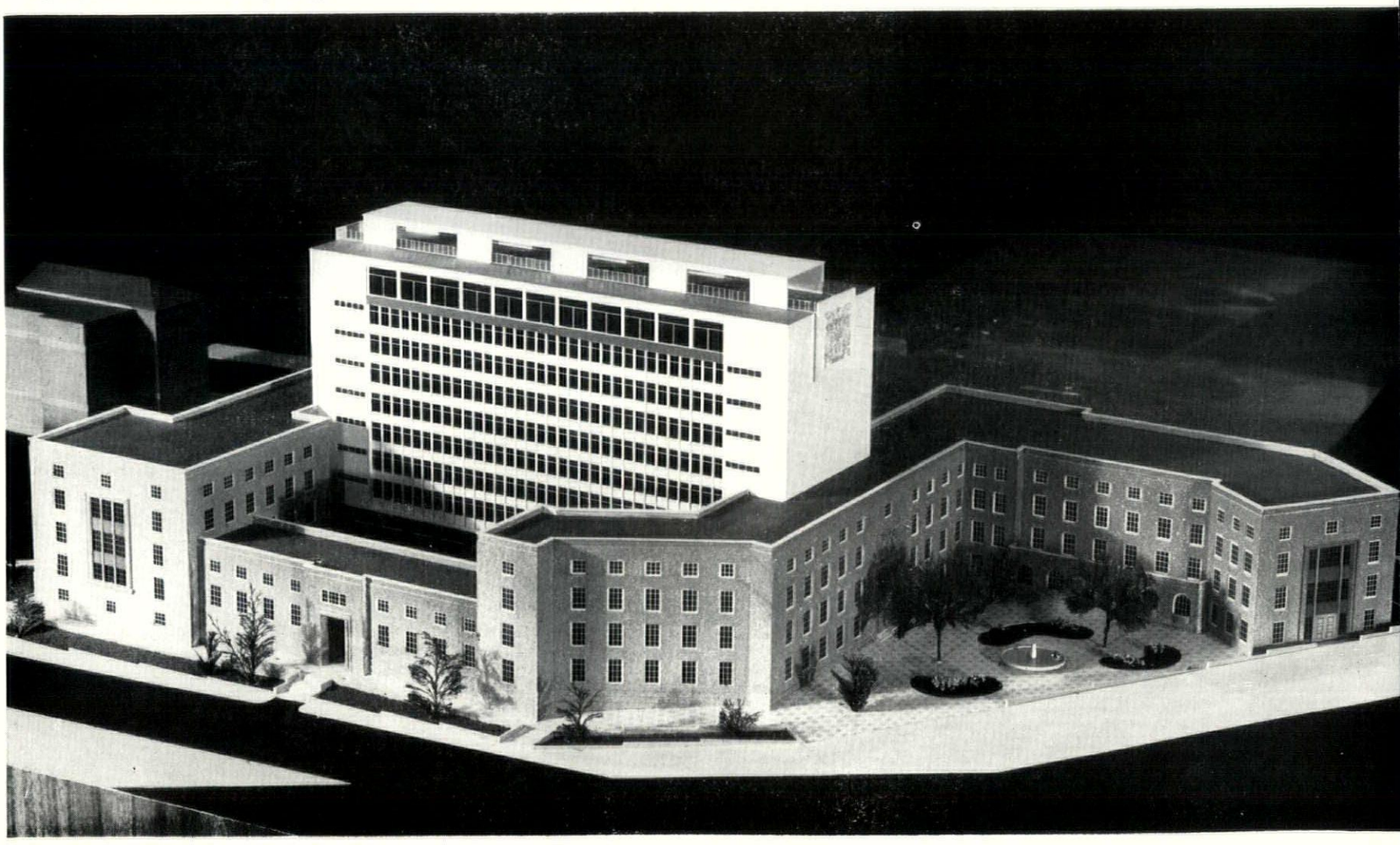
4. OFFICE BUILDINGS





Right, two views of Minster House, an office building in Arthur Street, London. The upper one being from the direction of Upper Thames Street, which is to be widened. The curved entrance façade follows the line of Arthur Street.

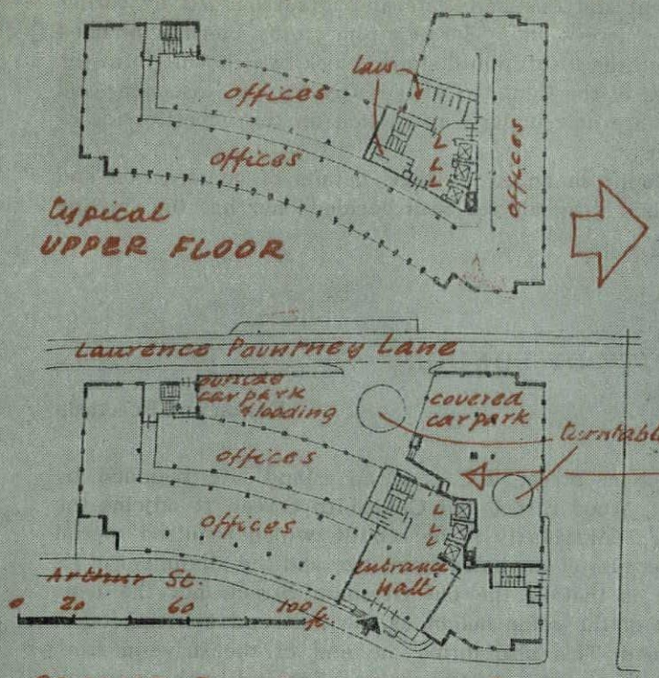
Below, civic offices at Leeds, rising behind the earlier offices designed by Vincent Harris: the Woodhouse Lane frontage.



continued from page 40]

grid. Floors are hollow tile with reinforced concrete ribs. The main external walls consist of: where there are no windows, 4½-in Portland stone so arranged that it can be erected after the inner 9-in. brick wall has been built, to overcome the delay on stone erection; where there are windows, a quartzite facing to the columns and 2½-in. precast window panels faced with quartzite and fixed to 9-in. inner brick walls. The two-storey projection on the Gresham Street side has ends of Portland stone, window panels of mosaic, window jambs of black granite and a grey marble plinth. The lower two storeys of the Wood Street wing are faced with dark coloured tiling. The courtyard walls are of 13½-in. brickwork, using 2-in. hand-made buff and black bricks with recessed joints. The top two floors of the building have continuous glazing. The open pergola on the roof is of reinforced concrete with metal uprights.

Work began last summer and is expected to be finished by the spring of 1957. Consulting engineers: Travers, Morgan and Partners. Quantity surveyors: Cyril Sweett and Partners.



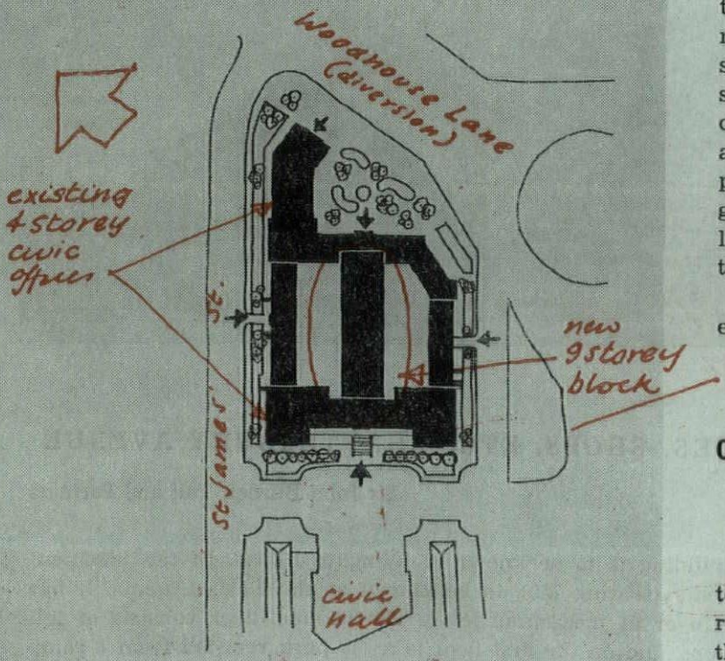
OFFICES: CITY OF LONDON

Trehearne and Norman, Preston and Partners

The site of Minster House, Arthur Street, is in a declaratory area large parts of which have been acquired by the City Corporation for the widening of Upper Thames Street and for the formation of a new road at the northern end of the site. The remainder of the site has been acquired as a freehold by the clients, who are a group of insurance brokers and underwriters now occupying premises in various parts of the City. They wished to bring all their companies under one roof, but to provide each with its own board room, etc. The site has a fall of 13 ft. from north to south, and this, together with the peculiar shape left after road widening and the narrowness of Laurence Pountney Lane, created difficult problems both of planning and elevational treatment. The entrance had to be placed at the northern end of the site, away from Upper Thames Street. The garage is at the back on the ground floor, and is placed here rather than in the basement to avoid a long ramp with subsequent loss of useful space, to leave the basement available for filing, to avoid the need to provide a separate loading area and to save cost.

The proximity of the site to the river necessitated pile foundations to a considerable depth. Up to ground-floor level construction is of reinforced concrete, to allow time for the fabrication of the main structural steel frame. External walls consist of 4 ins. of Portland stone tied back across a cavity to a 4½-in. inner wall. The external columns are within the thickness of the wall. External facing materials are Portland stone for the main walls, black granite for the recessed plinth, polished Roman stone with bronze window frames for the ground-floor projection on the Arthur Street side and green Westmorland slate for the precast slabs forming the window panels, and for the roof structure. The top floor has continuous glazing.

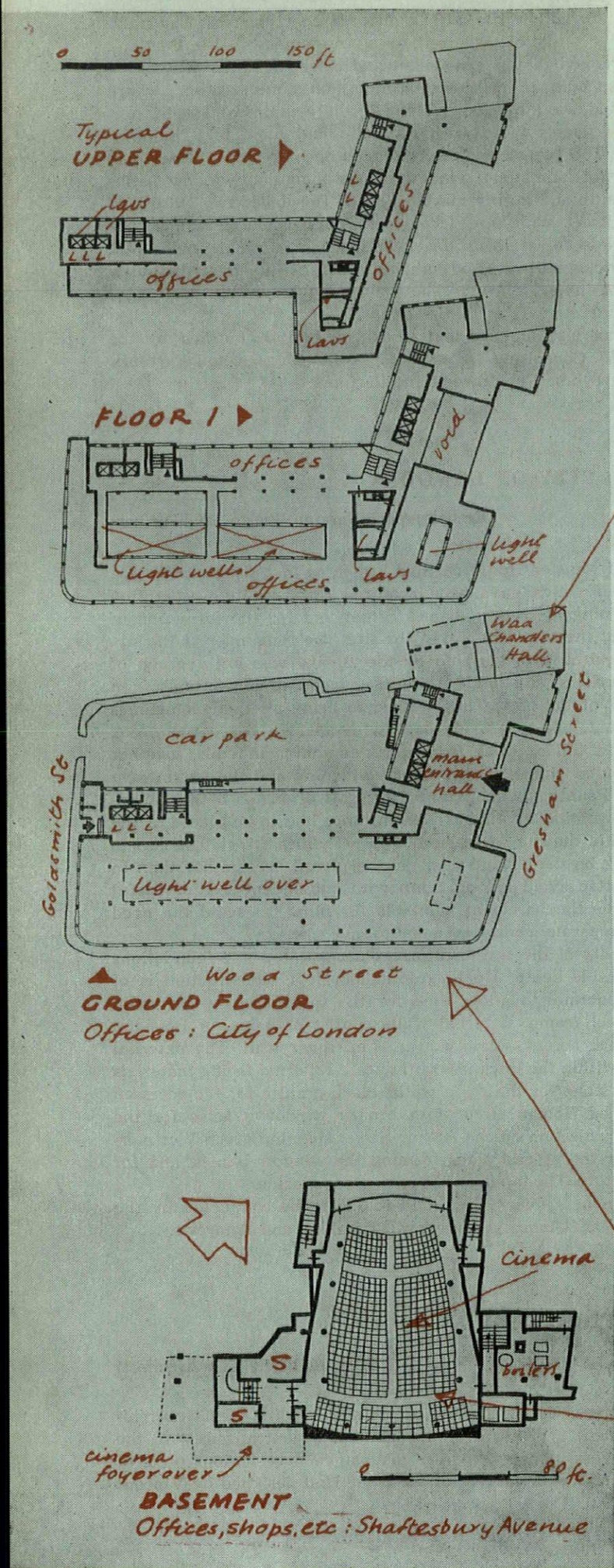
Work began in January, 1955, and is due to be completed by the end of this year. Quantity surveyors: Franklin and Andrews.



CIVIC OFFICES: LEEDS

R. A. H. Livett (City Architect)

To house various Corporation departments, including the City Architect's department, which are at the moment decentralized, with the result that several departments are distributed over various parts of the City. The site is at the rear of the Civic Hall designed by Vincent



Harris in 1933. It is bounded by St. James' Street, Woodhouse Lane, Portland Crescent and Portland Gate and is surrounded by earlier civic offices four storeys high. The new nine-storey block is planned at right angles to the future multi-storey block, which will form the dominating mass of the Central Colleges (by Yorke, Rosenberg and Mardall) which are now under construction on the opposite side of St. James' Street.

The project being in an early stage, details of construction and finishing materials have not yet been decided; nor has the starting date been fixed.

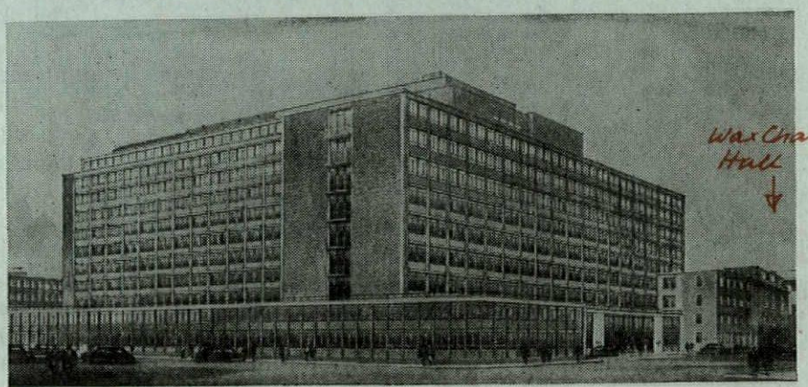
OFFICES: CITY OF LONDON

Easton and Robertson

At 2-12, Gresham Street, E.C.2, on an island site bounded by Gresham Street, Wood Street and Goldsmith Street. It adjoins the Wax Chandlers' Hall, shortly to be rebuilt, which required special consideration because of the hall's small size and the alignment of its frontage which is that of the old Gresham Street, not the new. Hence, a block of the same height as the hall and abutting on it has been planned. This also forms the end of the drive-in from Gresham Street. The purpose is to provide office and banking accommodation, etc. There are approximately 185,000 sq. ft. of lettable space on ten floors, plus a basement and sub-basement. Of this space some 42,000 sq. ft. consists of strong room and storage space located below ground level. The main blocks are 50 ft. in width. Directors' lavatories and staff lavatories for both sexes are on every floor except the ground floor. Boiler-room and ventilation plant room are in the basement. The main entrance hall, approached from Gresham Street, is two storeys high. A second entrance is off Goldsmith Street. The building will be served by seven high-speed lifts. An open-air car park at ground-floor level accommodates 50 cars.

Construction is reinforced concrete, with considerable use of precast frames, etc. External finishing materials for the ground- and first-floor columns are green Westmorland slate with a granite plinth. Above that level the vertical members have a Portland stone casing; the horizontal members are precast. Return walls are in facing brick.

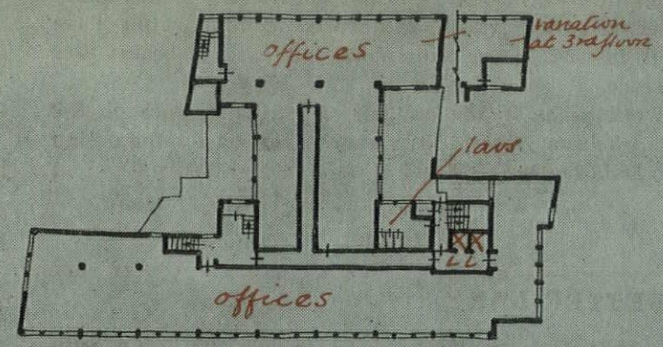
Work will start in the spring of this year.



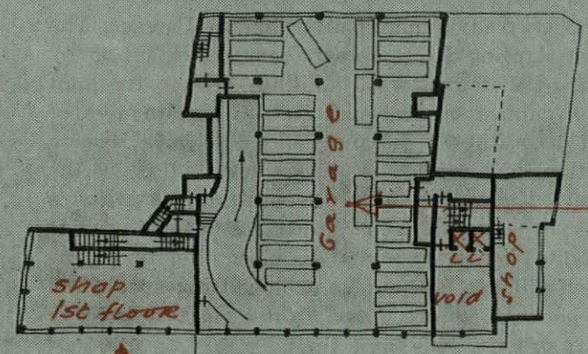
OFFICES, SHOPS, ETC.: SHAFTESBURY AVENUE

Sir John Burnet, Tait and Partners

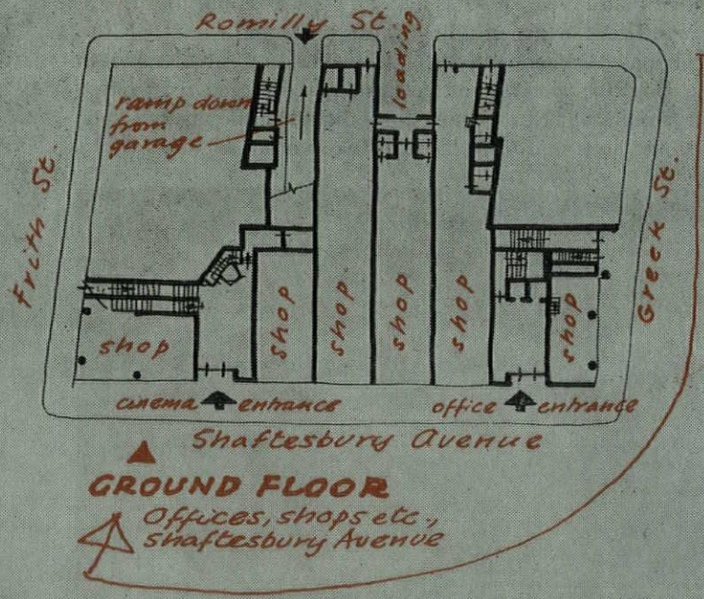
The building is to be known as Wingate House. In the basement is a cinema (seating 750), to be known as the Paris Cinema. It has a large foyer at mezzanine level. The ground floor consists of lettable shops, and on the first floor is a car park reached from a ramp



UPPER FLOORS

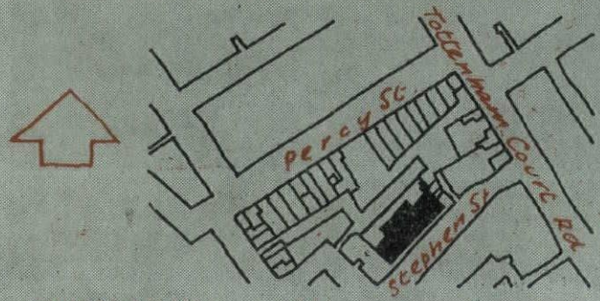


FLOOR 1

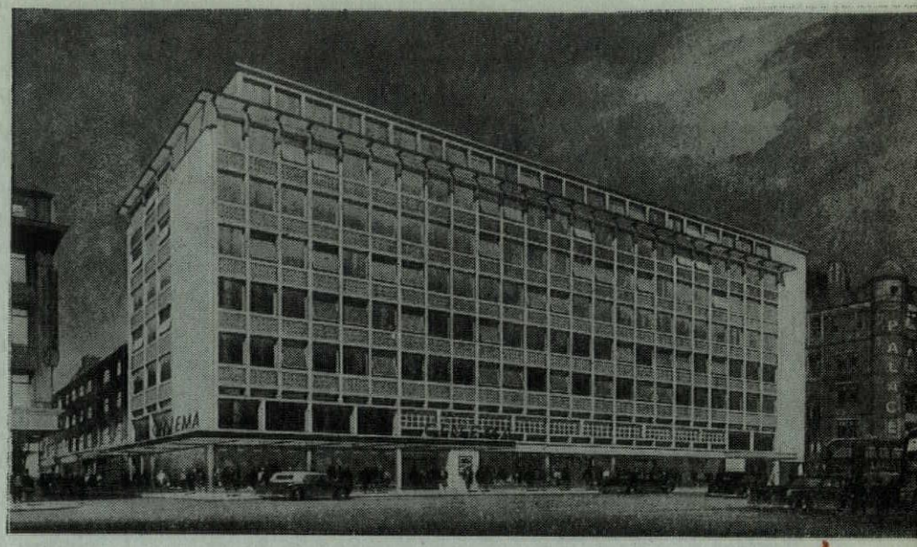


GROUND FLOOR

Offices, shops etc., Shaftesbury Avenue



SITE PLAN Office & Warehouse: London



in Romilly Street. This is the first time in London that the mandatory requirements of the London County Council with regard to car-parking space within the area of the building have been met by placing it on the first floor. The open nature of the car park obviates the use of mechanical ventilation, and many of the fire regulations that apply to basement garages and car parks are also avoided. The upper floors of the building contain offices.

It is of steel frame construction with hollow-tile floors and a facing of stone.

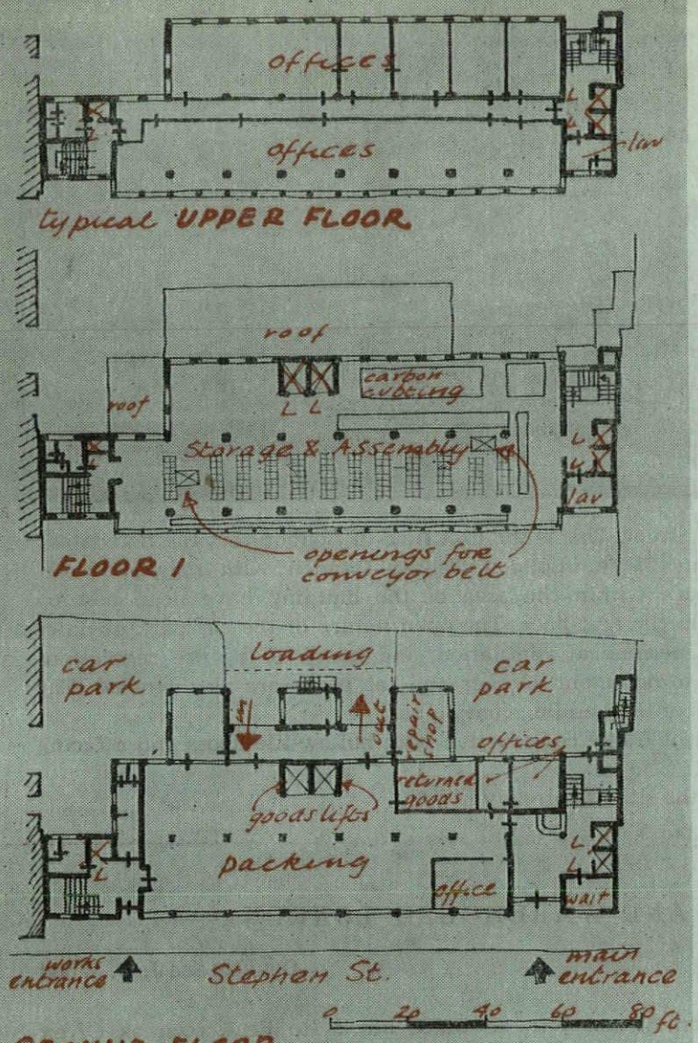
Work on the site has already begun.

OFFICE AND WAREHOUSE: LONDON

Douglas and J. D. Wood

In Stephen Street, W.1, an office block (to be known as Ofrex House) for a group of companies concerned with office equipment. The basement is given over to bulk storage of such equipment, the ground floor to delivery, despatch and packing, and the first floor to the sorting and assembly of orders. A conveyor belt between ground and first floors runs between free-standing columns and a cantilevered window. The offices are on the second and third floors, the directors' accommodation on the fourth floor and a canteen, club rooms and caretaker's quarters on the fifth floor. On the roof is a terrace and roof garden. The total accommodation is 45,500 sq. ft., the plot ratio being 3½:1.

Construction is a reinforced concrete frame on mass-concrete bases, with brick infilling and hollow-tile floors. The cantilevered window wall to Stephen Street is in aluminium. Facing bricks are red sand-



Office & Warehouse : London

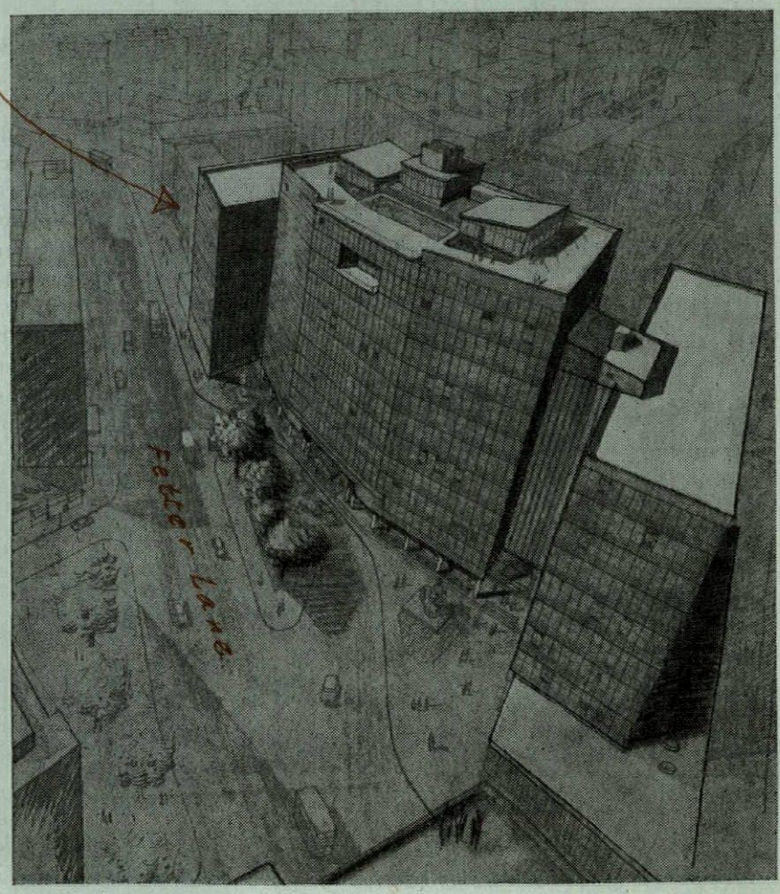
faced. The ground floor is faced with Portland stone. Copings and window dressings are artificial stone. Normal windows are of galvanized steel ; panels between windows, of cantilevered section, are ply-glass. Roof decking is in three-layer bituminous felt, with asbestos tiles inset for the terrace.

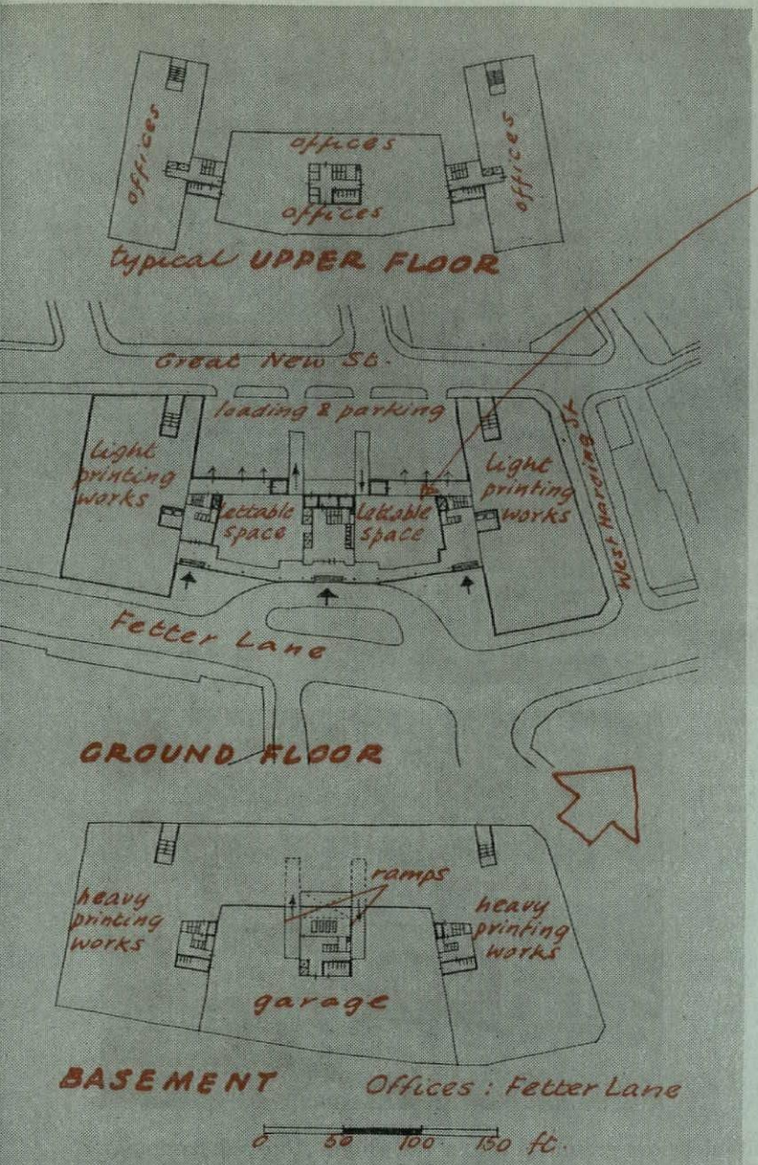
Foundation work began in the autumn of 1954 and work on the superstructure in February, 1955. Associated architects for the design stage: Wornum and Playne.

OFFICES: FETTER LANE

Edward D. Mills

On an almost island site, adjoining Trinity Church Passage. The site is crossed by West Harding Street and the small area cut off by this street is covered by a single-storey building suitable for light industry, except for a public house at one end. The main area of the site is developed according to the plot-ratio of 5:1 laid down by the City Corporation, and consists of three units, allowing the building to be constructed in stages and for separate ownership at a later date if required. The object in the planning has been to provide the maximum well-lighted office space and to place the lifts, staircases, etc., where they will not take up valuable letting space. The basement has been planned to accommodate the largest modern printing presses, and in order to give these the necessary clearance of 30 ft. and a measure of natural daylight and ventilation, its ceiling has been raised above road level. This has also made it possible to provide loading-dock facilities for ground floor and basement. Part of the basement, which has a lower ceiling, is allocated to central services and to parking space for 50 cars. The parking space is reached by two ramps, entered from Great New Street. In addition to the ground-floor space available for letting for light printing works or other light





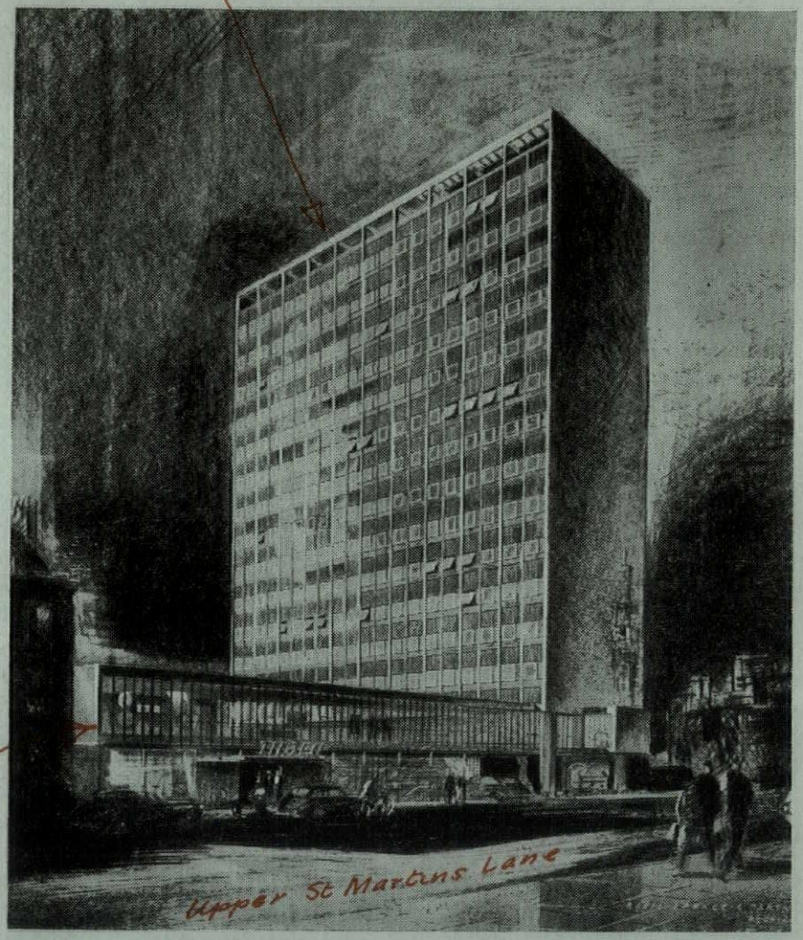
industry, there is also lettable ground-floor space under the offices suitable for banks, a post office or similar uses. The office floors above, the three blocks of which vary in height (see drawings), have a total area of nearly 200,000 sq. ft.

The building is a framed structure with fireproof floors and staircases enclosed by curtain walling, consisting of metal windows with infilling panels up to cill level of some self-cleansing material (not yet decided) such as glass, metal or precast polished slabs.

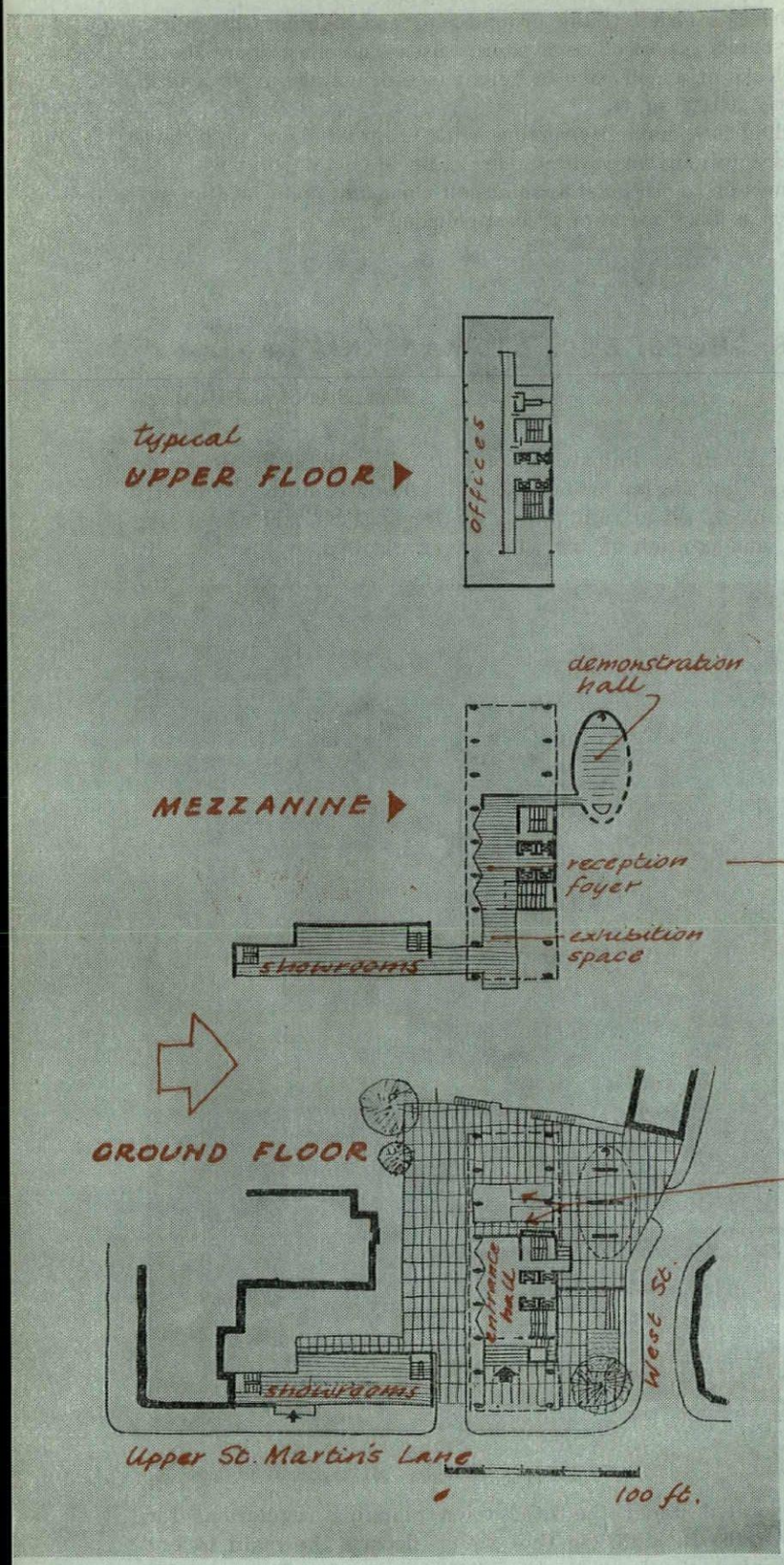
OFFICES, SHOPS, ETC.: ST. MARTIN'S LANE

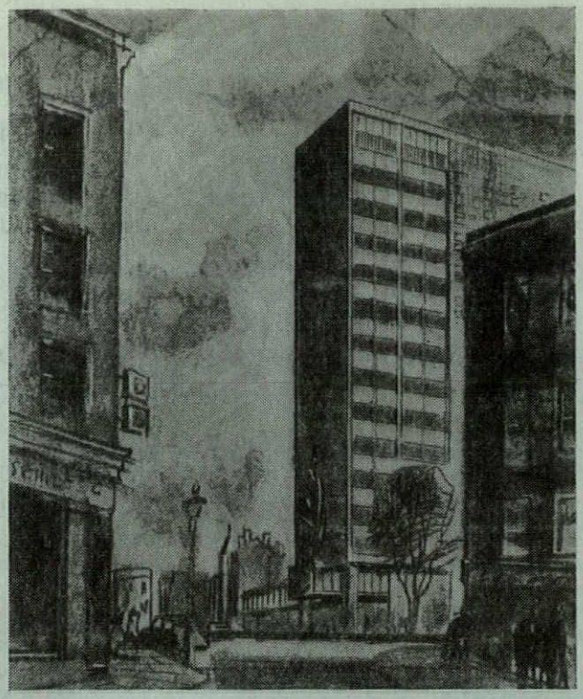
Basil Spence and Partners

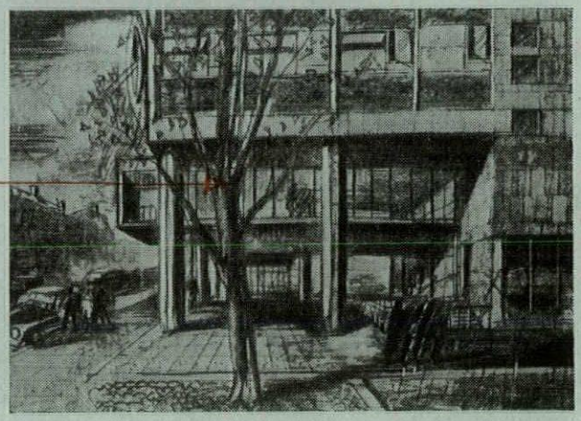
For Thorn Electrical Industries ; part to be occupied by the company and part let. The main bulk of the building comprises a multi-storey office block, set at right-angles to Upper St. Martin's Lane. Its area, shape, and position on the site were controlled by the daylight



indicators operated under the LCC town planning regulations for buildings over 100 ft. high. On the ground floor is the main foyer ; on the mezzanine, the foyer and exhibition area for Thorn exclusively, their lessees using only the ground floor. The top floor accommodates, in addition to tanks and services, a board-room and its ancillaries as a penthouse. Showrooms on two storeys front Upper St. Martin's Lane, with shop windows at street level. On the north side—along West Street—is a demonstration theatre—a concrete shell supported at mezzanine level by columns—seating 250. It serves as a foil to the main office block. Vehicular access to the site is from Upper St. Martin's Lane under the first floor of the showrooms, and from West Street. A car park for 35 cars is provided to comply with LCC regulations. 4,000 ft. of dead storage space and the oil-fired boilers





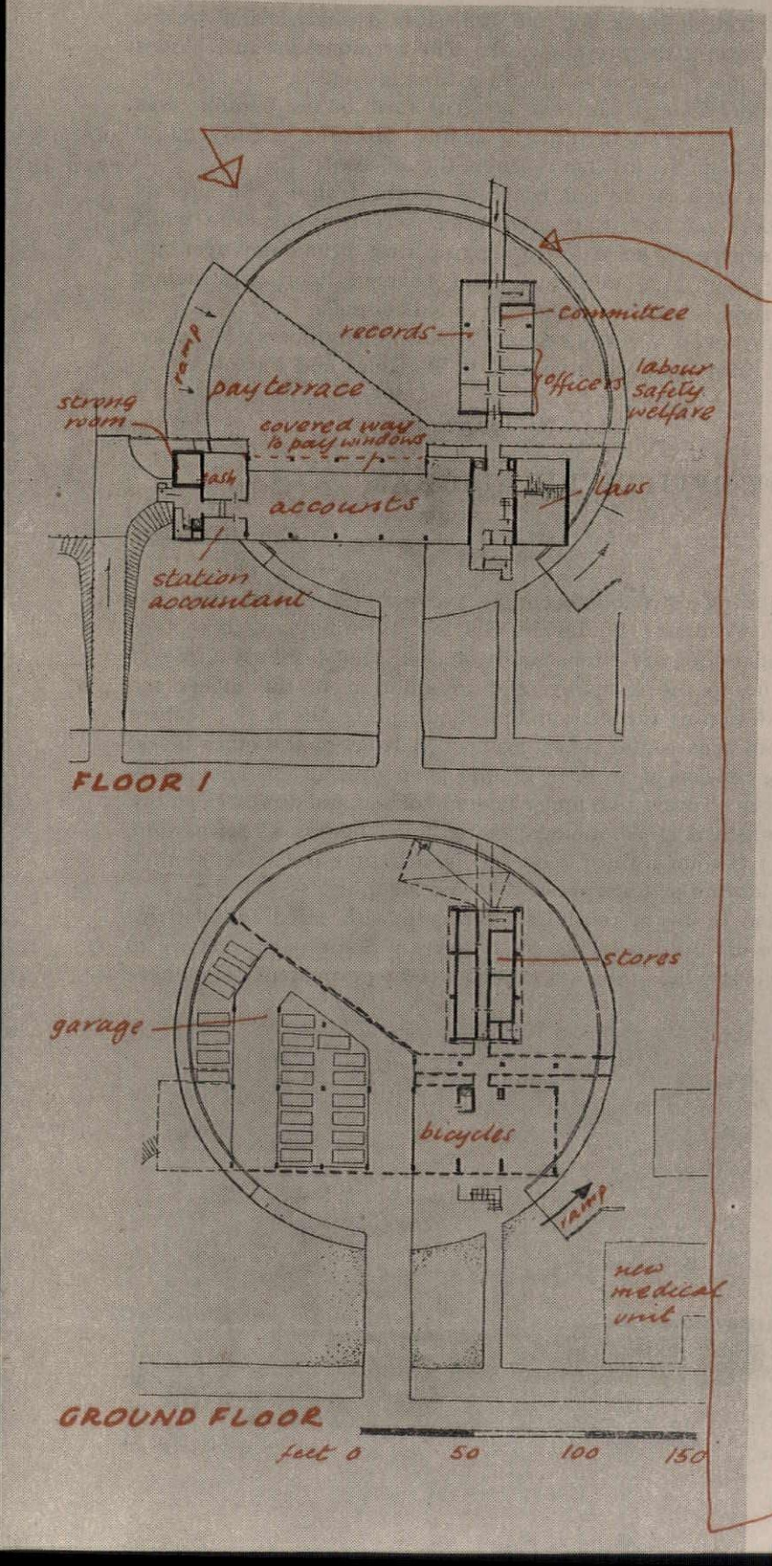


Above, from down St. Martin's Lane. Right, close-up of the open ground floor with foyer at mezzanine level over the entrance.

are also housed below ground level in the single-storeyed basement. Two car lifts take vehicles to and from the garage.

Construction is reinforced concrete with precast columns and hollow-tile floors, the walls between window heads and cills forming edge beams. Bracing for wind is by the service and the gable end walls. Four high-speed lifts are provided, one of which can be converted at the press of a switch to a firemen's lift, with alternative access to the fire lobbies on each floor. There are two staircases, one being the fire stair. Materials are 'natural' (that is, they do not require redecorating, only occasional cleaning). The gable walls are Portland stone, and the facing of the edge beams between window head and cill green Westmorland stone. On the east gable wall fronting Upper St. Martin's Lane it is proposed to site a sculpture, possibly by Eduardo Paolozzi. It will occur above a glazed projection of the mezzanine over the pavement, which gives a fine prospect of St. Martin-in-the-Fields.

5 INDUSTRIAL BUILDINGS

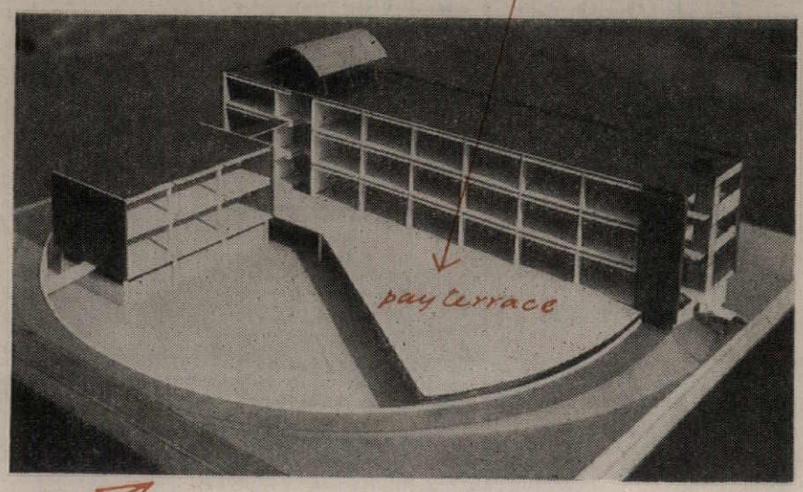


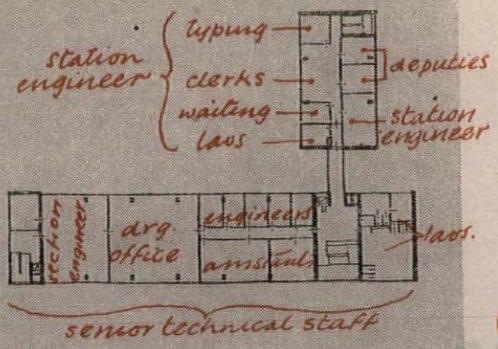
INDUSTRIAL OFFICES: EAST HAM

Elie Mayorcas

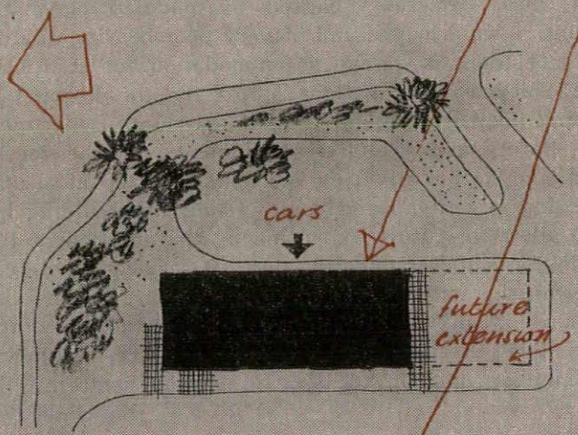
To accommodate the technical and control staff of the Beckton gas works, belonging to the North Thames Gas Board. The aim was to provide the lightest and airiest possible working conditions in the centre of a very heavily industrialized area. The site is a disused gasholder foundation, consisting of a cylinder approximately 200 ft. in diameter and 30 ft. in depth, 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. On the ground floor there is garage accommodation for staff cars, motor cycles and bicycles and various stores for the keeping of records. On the first floor are the offices of the Accounts Department and the Labour, Safety and Welfare Departments, on the second floor the offices of the station engineer and his senior technical staff and on the third floor a canteen and games room. The building has been designed to allow for future expansion by the addition of two floors on each wing, and the engineering and lift services have been so designed to permit this with the minimum disturbance to the existing structure. There is an underground emergency works control room. At first-floor level there is a suspended pay terrace, which will enable a large number of men to be paid without entering the building.

The building has an in-situ reinforced concrete framed superstructure on piled foundations, firebreak walls at staircases, etc., with reinforced concrete and hollow pot floors. The entire building has been designed on a module of 3 ft. 4 ins. Choice of finishing materials has chiefly been governed by the necessity of minimizing maintenance and to be self-cleansing. Curtain walling is aluminium, with

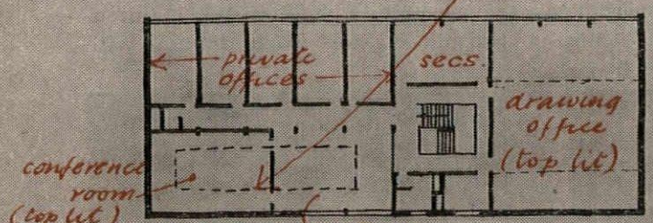




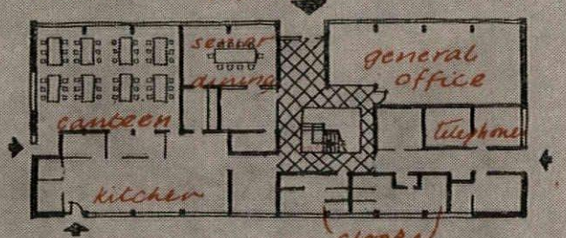
FLOOR 2 Industrial Offices: East Ham



SITE PLAN
Factory Offices: Derby



FLOOR 1



GROUND FLOOR

0 20 40 60 80 ft

vitreous infill panels and faience tiles to the end walls, etc. To facilitate the cleaning of the curtain walling an overhead track for the suspension of cradles has been incorporated in the external design. Internally, floors generally are in plastic tiles, with plaster finish to concrete walls. Partitions have been designed to be demountable if required. Steam from the works will provide domestic hot water and heating. The building is mechanically ventilated.

Work began in July, 1955. Assistant architects: L. E. Tatum, Marjorie Hichisson and J. Keable.

FACTORY OFFICES: DERBY

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

An administration block for the Rolls-Royce engineering works, adjoining the site of the present works. The accommodation includes general office space, executive offices, a drawing office, a conference room with model gallery, canteens, etc. The form of the building was determined by the need to insulate against airborne sound and to prevent smells from the kitchen reaching the offices.

Construction is a reinforced concrete in-situ frame with precast concrete floors and roof slabs and brick screen walls. The walls nearest the source of noise are of engineering brick and openings in them are kept to a minimum. Flat beamed floor construction allows clear runs of services in the suspended ceilings.

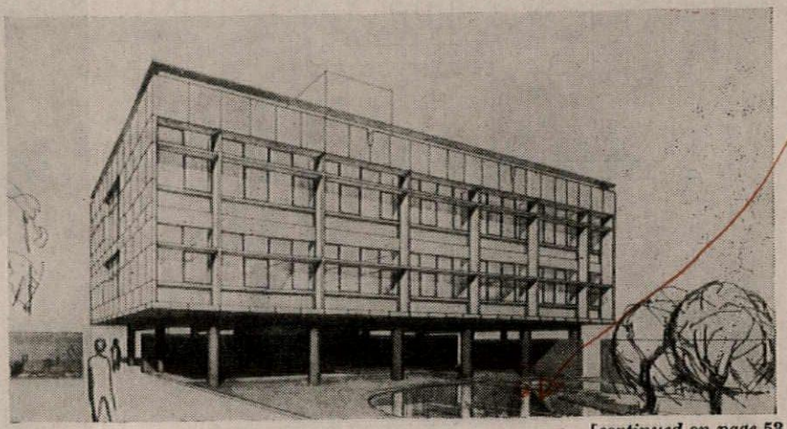
Site preparation has already begun. Consulting engineers: McLellan and Partners, Merz and McLellan and R. T. James and Partners.

FACTORY OFFICES: BIRMINGHAM

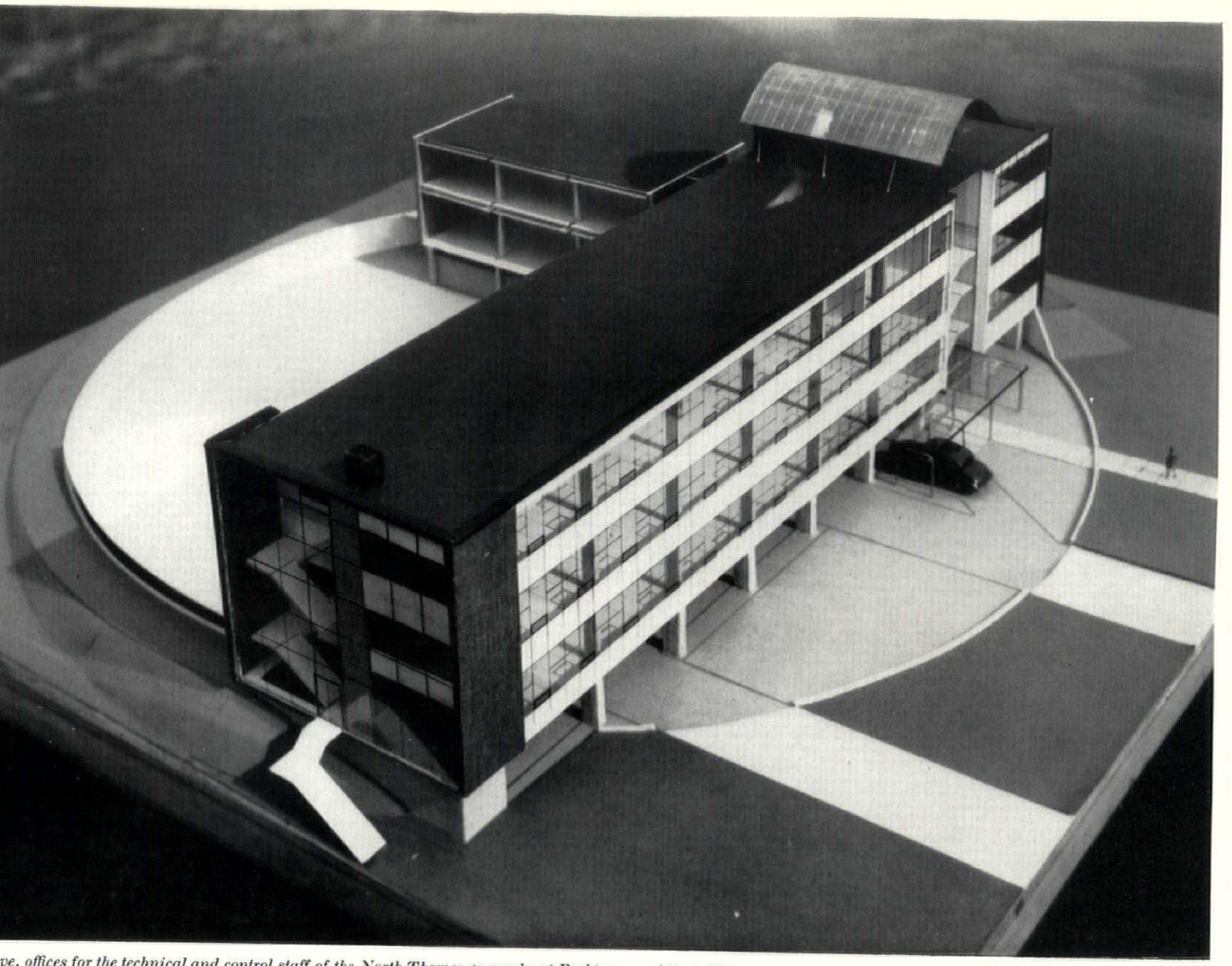
Ernö Goldfinger

A free-standing office block on the factory site of Carr and Co. (Paper) Ltd., Cranmore Boulevard, Shirley, Birmingham, to replace some old and temporary timber-built offices. It is designed to be of prestige value to the company, and in addition to the offices the architect is designing the surrounding landscaping, the major feature of which is an ornamental reflecting pool in front of the office block. The building consists of an open ground floor with an entrance lobby and some service rooms, two upper floors of offices and directors' suites, and a roof which is at the moment being developed as a roof garden, but will later become a third floor. Lift, ventilation and water-storage services are located in a box above this roof level.

Construction is in-situ reinforced concrete with piled foundations. Windows are designed with photobolic screen. Some partitions are in 4½ in. brickwork, where they are expected to be permanent; elsewhere

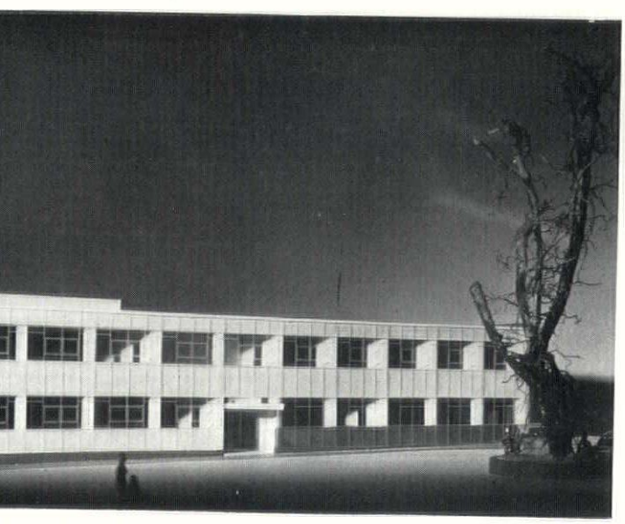


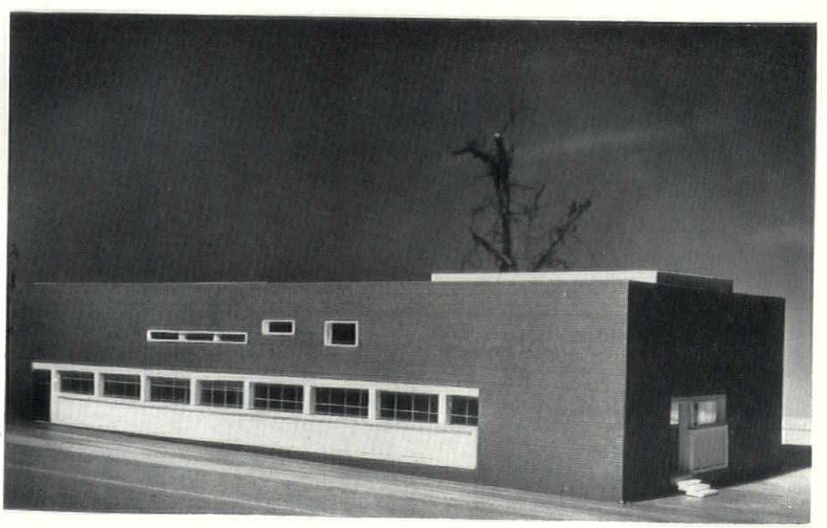
[continued on page 53

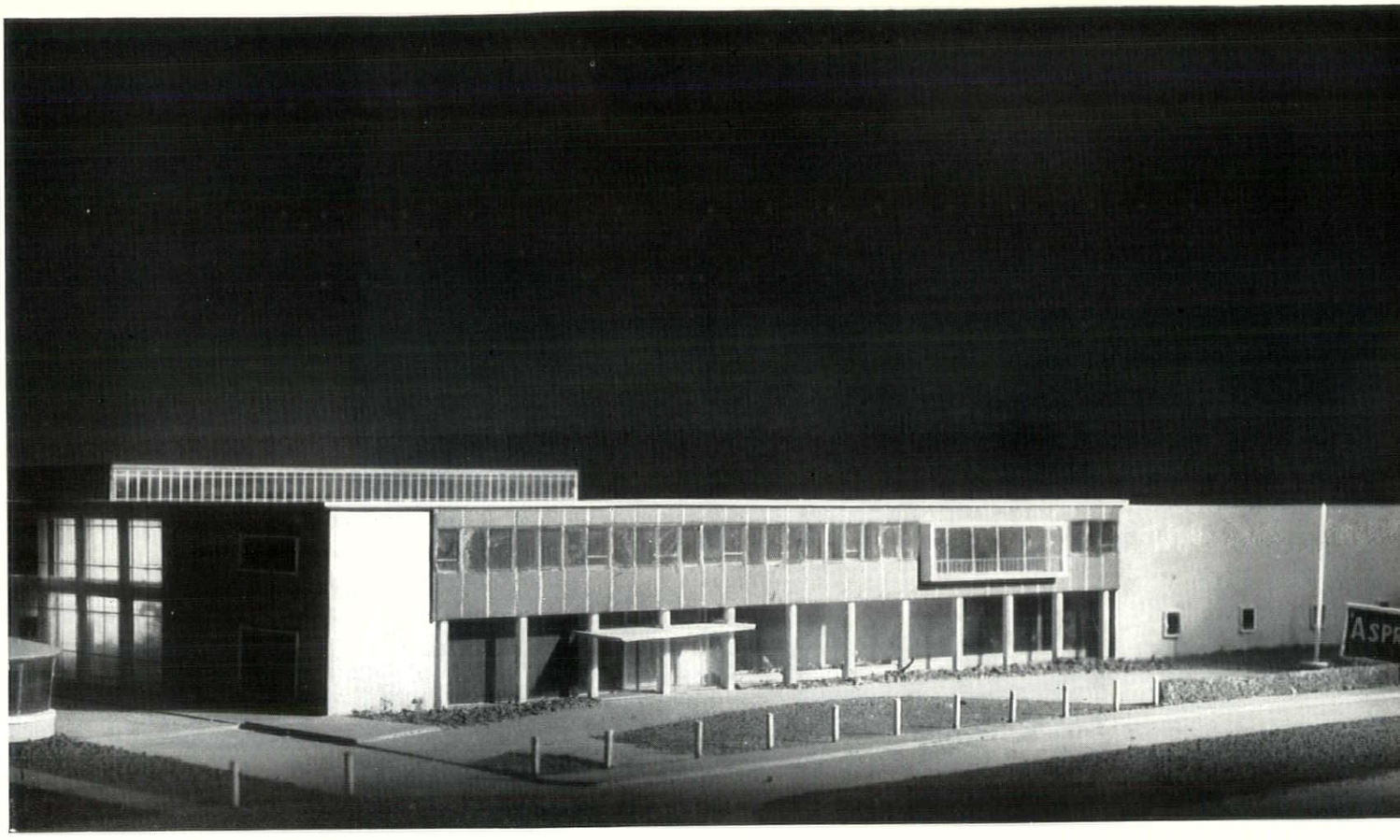


ve, offices for the technical and control staff of the North Thames gasworks at Beckton—architect, Elie yorcas. The circle represents a disused gasholder on the foundations of which the offices are sited.

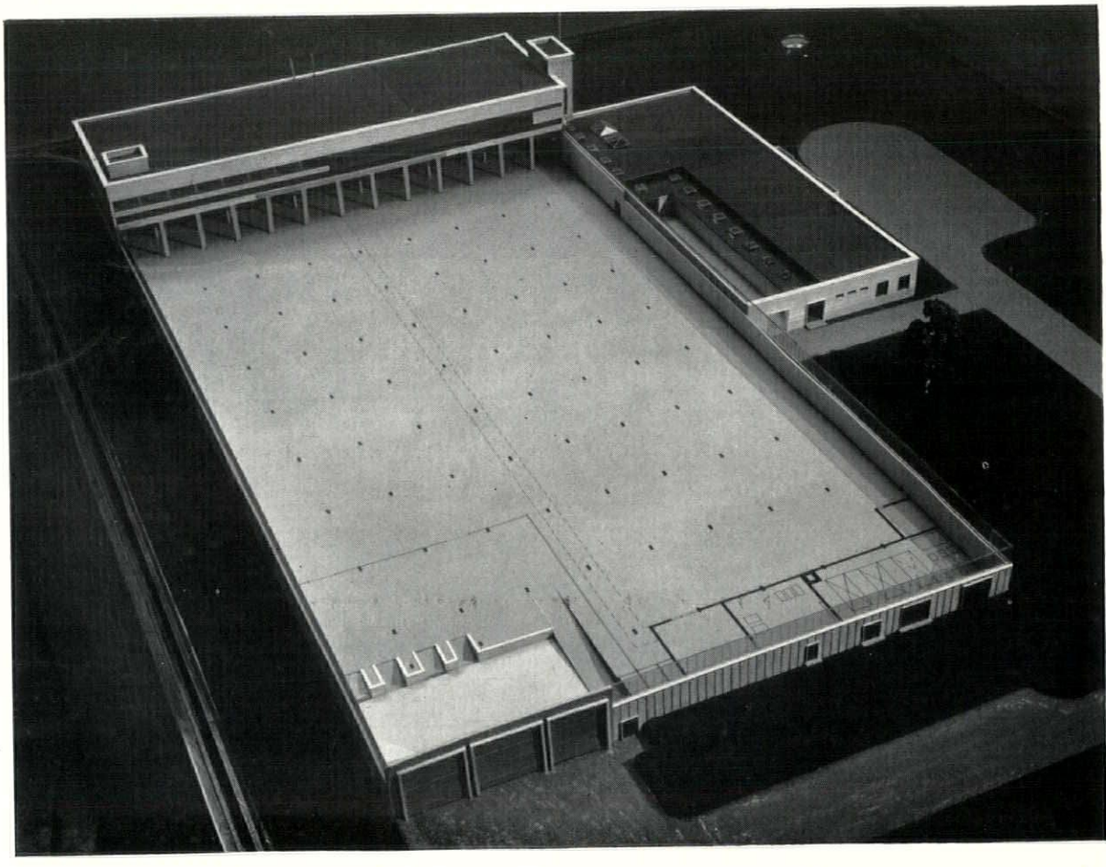
Below, the two sides of the administration offices at Derby, alongside the Rolls Royce engineering works.







Above, the Aspro factory, Slough, showing the two-storey office and workshop block on the eastern side of the site.

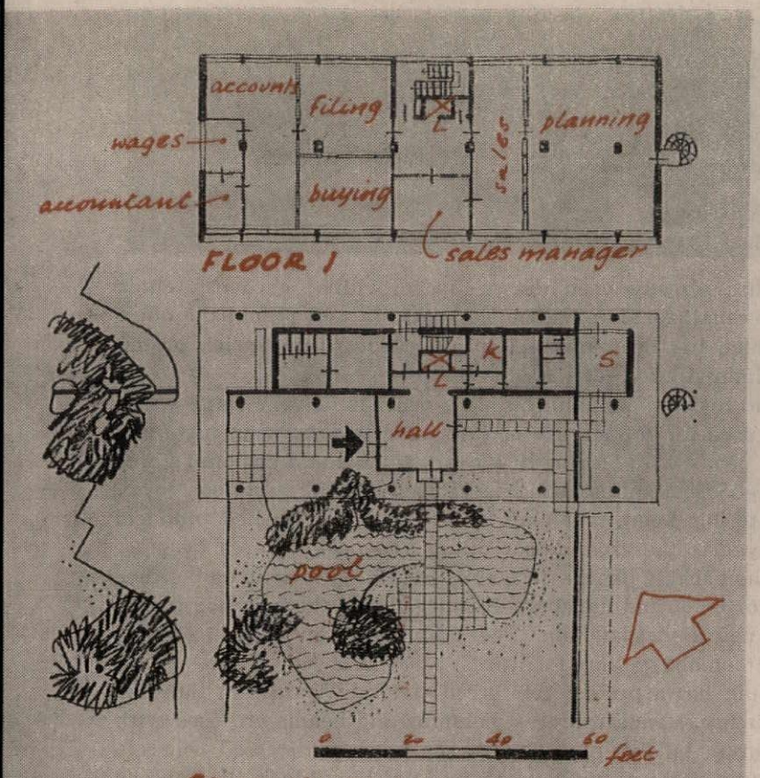


Right, cosmetic factory at Eastleigh. In the model the roof of the main warehouse area has been made transparent to show the interior layout. The factory proper is on the first floor of the block at the far end. On the right is the single-storey administration block.

continued from page 50]

demountable pressed metal units are used. Heating and hot water are provided by calorifiers activated by steam from the factory boiler-house situated approximately 200 ft. from the building. Convector heaters are used generally, with some radiators in the ground-floor service rooms. A plenum extract ventilation system is installed throughout the office areas, extracting from the false ceiling areas and adjustable openings to each of the offices. The vertical runs of the various services are incorporated in chases left in the columns.

Work began in October, 1955.



FACTORY, ETC.: SLOUGH

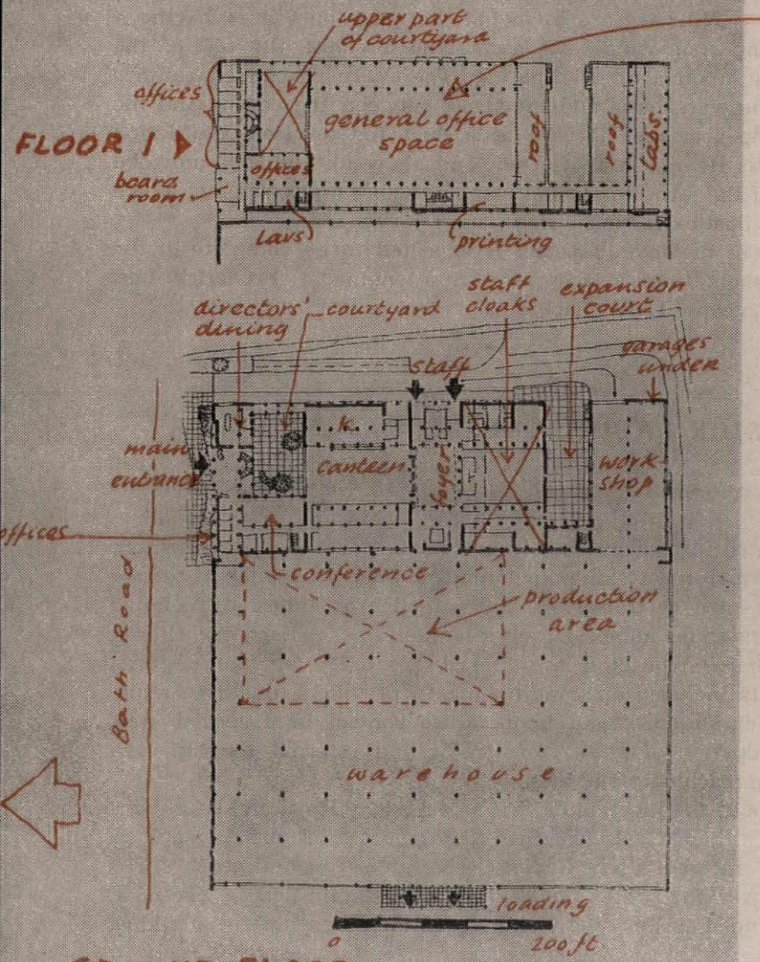
J. Douglass Mathews and Partners

For the Aspro group of companies, manufacturers of pharmaceutical products, who also have a packaging business dealing with a wide variety of goods. The requirement was for a single building containing production areas, raw materials storage, warehousing space for finished products, offices, staff canteens and recreation rooms and service laboratories and workshops (including facilities for servicing travellers' cars). The site, west of Slough on the south side of the Bath Road, adjoins the company's sports ground.

The western part of the building contains the production, storage and warehouse areas and is one storey high. The eastern part is a two-storey block containing the offices, workshops, etc. The ceiling height required for production is less than that required for storage and warehousing, but the former requires electrical and mechanical services which are housed in the extra roof space. The production area is without windows, being wholly artificially lighted and ventilated, allowing great flexibility of planning. The office block employs the American system of housing all staff except the highest executives in one large undivided space. This is on the first floor above the canteen and staff accommodation and a 'foyer' designed for general circulation and for the display of products, etc. Above the entrance are the directors' offices. The workshops are at the south end of the building adjoining the production area.

The production, storage and warehouse portion has an uncased steel frame and light lattice steel roof giving a clear height of 20 ft. The permanent north wall is in buff-coloured brickwork. The wall at the west end, demountable for possible future expansion, is in aluminium framing with plastic panels. The office and service block is also steel framed, with precast reinforced concrete floor panels, but the floor spanning the canteen is covered by a post-stressed precast concrete deck 60 ft. wide, with the ventilation and other ducts within the members. Ground-floor external walls are brick, glass-brick panels or glass screens and the first floor glass or plastic panels.

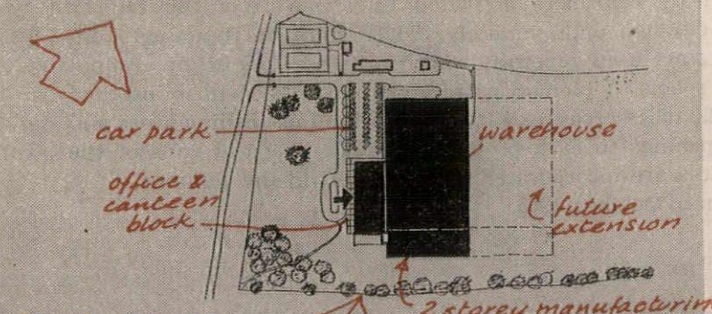
Site work started in July, 1955, and the building is due to be completed by the end of this year. Partner responsible: E. D. Jefferiss Mathews. Chief assistant: E. J. Hill. Quantity surveyors: Harris and Porter. Structural engineer: A. C. Aston. Electrical and mechanical engineers: G. H. Buckle and Partners.



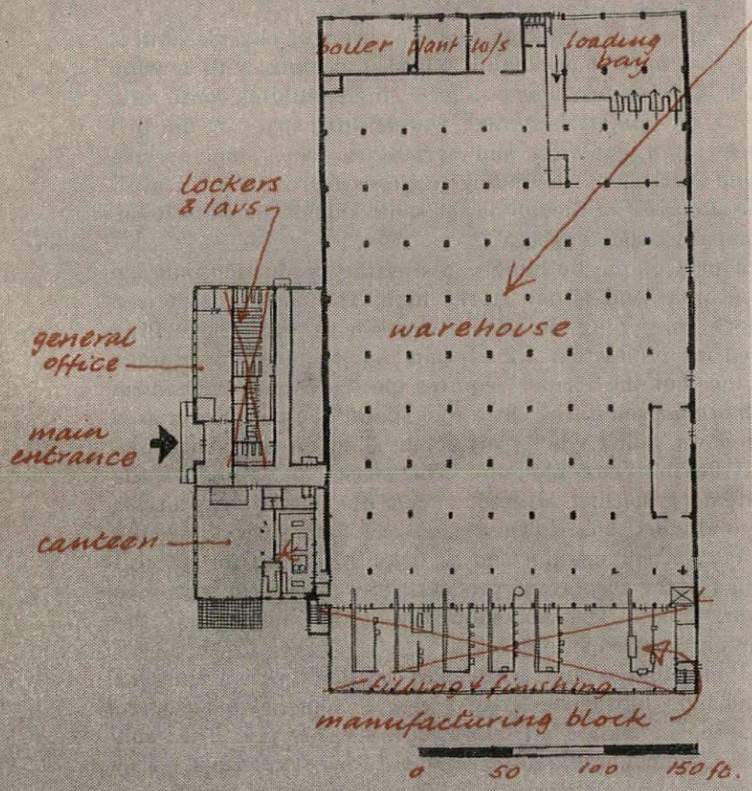
FACTORY: EASTLEIGH, HANTS

Edward D. Mills

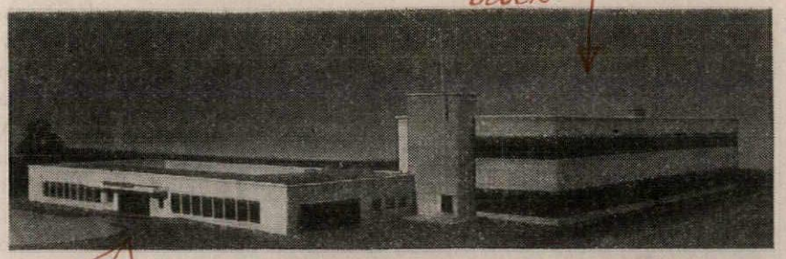
The site for this factory for William R. Warner and Co., cosmetic manufacturers, is surrounded by local authority housing and bounded on one side by the proposed Eastleigh by-pass. The scheme illustrated comprises half the eventual development, and a landscape plan for



SITE PLAN



GROUND FLOOR
Factory: Eastleigh, Hants.



the whole has already been drawn up, providing gardens, tennis courts and a small tennis pavilion. Car parking will adjoin the office building, which has been planned to allow future expansion of the office and administration section.

The ground floor of the main building consists of very large warehouse area, used for the storage of raw materials, packing materials and finished goods, with loading-bay arrangements and enclosed stores for special goods. Manufacturing is carried out at first-floor level, the raw materials being taken up by lift and the finished products being conveyed to the ground-floor filling and packing area by pipelines on to the packing benches. Packing and filling is done on benches with conveyor belts, and the goods discharged into the warehouse area for casing before despatching. The administration block contains offices, a canteen and welfare facilities.

The building has a precast reinforced concrete frame. In the case of the warehouse, standard precast columns and beams are used with a lightweight metal flat roof. The offices have prestressed concrete beams. The two-storey manufacturing and finishing block also consists of precast, prestressed reinforced concrete frame with concrete floors and a metal deck roof. External walling to the office and manufacturing block is 11 in. cavity brickwork, using a local hand-made facing brick, and the warehouse is clad with precast concrete storey-height panels of lightweight concrete with an exposed aggregate external finish and a smooth-faced internal finish to minimize expensive surfaces. Windows are in metal, the warehouse area having a patent-glazing strip window to give some daylight, the rest of the area relying upon artificial lighting. There are suspended ceilings except in the warehouse, and the space between the ceiling and the structural floor or roof is used as a duct for services, ventilation trunking, etc. Heating is by hot air, and air conditioning is provided in certain of the laboratories and manufacturing areas, some of which also require dust extraction.

Work began in May, 1955, and is expected to be complete in the unusually short time of one year. Site engineer: Frederick Lee. Quantity surveyor: L. W. Clark.

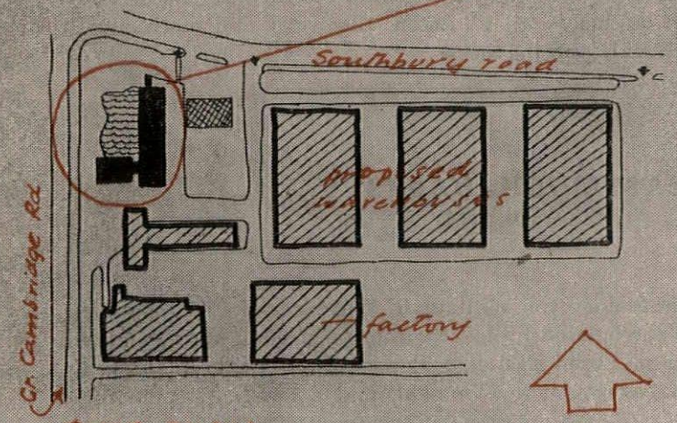
TELEVISION LABORATORIES: ENFIELD

G. A. Jellicoe and Partners

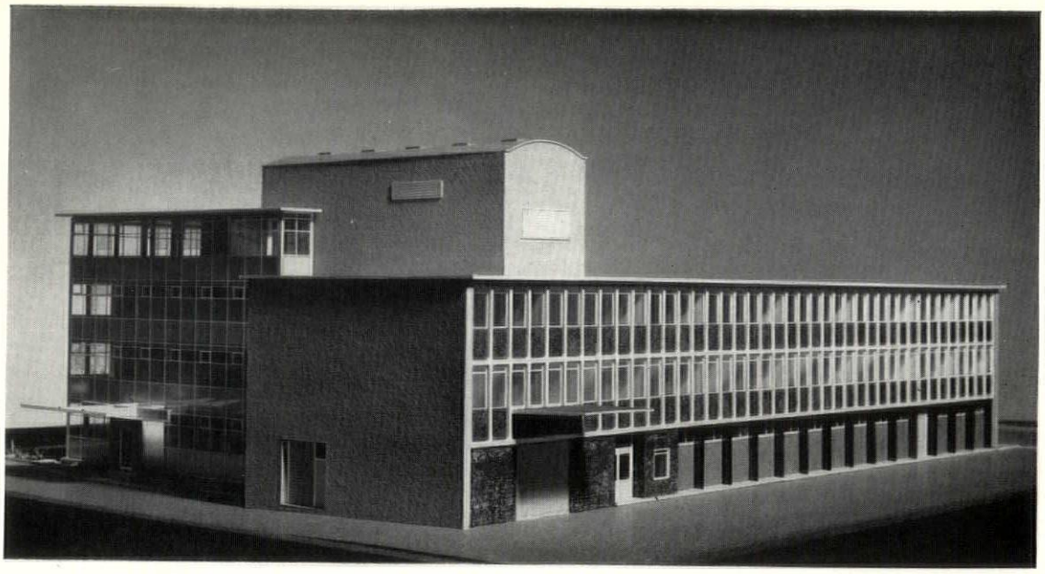
For research into colour television with a view to its development as a commercial undertaking, including the pilot production of certain components such as transistors and cathode ray tubes. As detailed requirements could not be closely planned at the start, the clients, Sylvania-Thorn, requested the utmost flexibility of plan. Special requirements included air conditioning to provide a dust-free atmosphere, strict humidity and temperature control in a special area, and the reduction of noise from traffic and internal sources, such as workshop machinery and lifts.

The site is at the junction of Great Cambridge Road and Southbury Road, and although self-contained the laboratories are planned in relation to the Ferguson Radio Corporation's works nearby. The laboratory working space is on the first and second floors. A central duct suspended below the ceiling contains ventilation trunking,

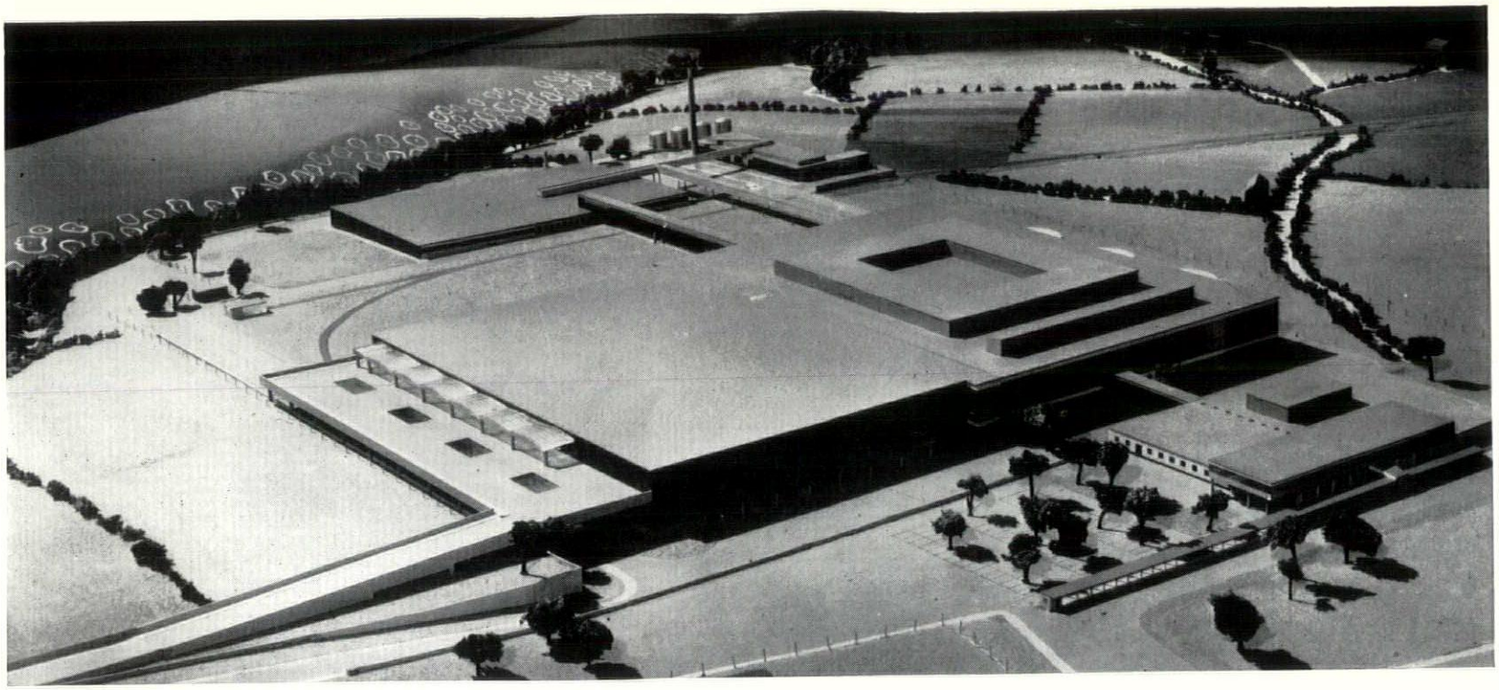
[continued on page 57



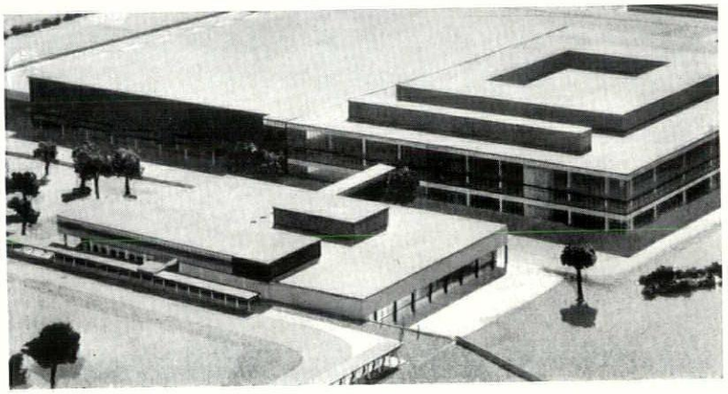
SITE PLAN
Television Labs: Enfield



Television research laboratories at Enfield. Right: the laboratory block with the four-storey office block behind. Below, the two blocks, showing the pool between them, which will feed a heat-pump and contain fountains used to cool the refrigeration plant.

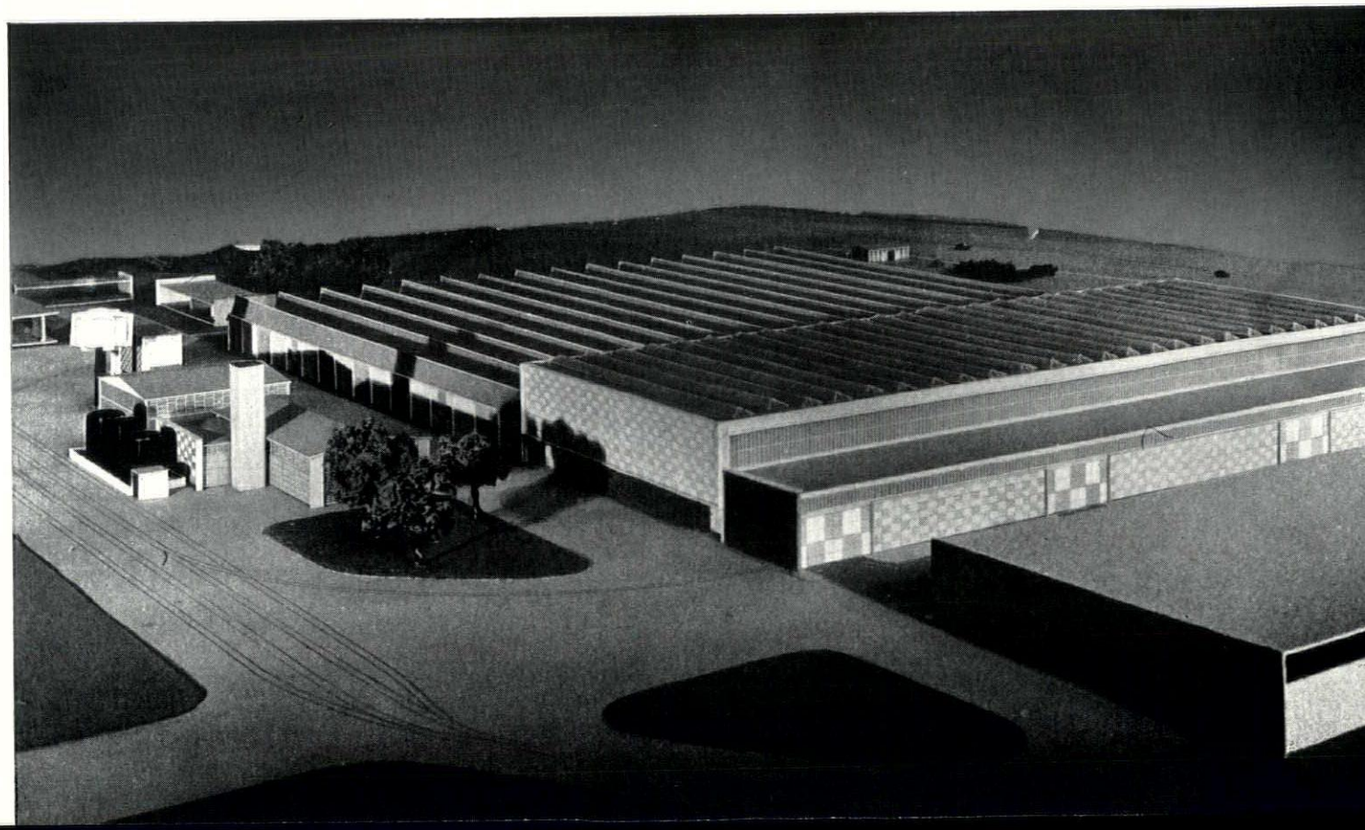


Above and right: Heinz factory at Wigan. On the left above is the ramp by means of which raw materials are fed into the high-level production area. On the right is the administration block linked by a bridge to the production and warehouse block beyond.

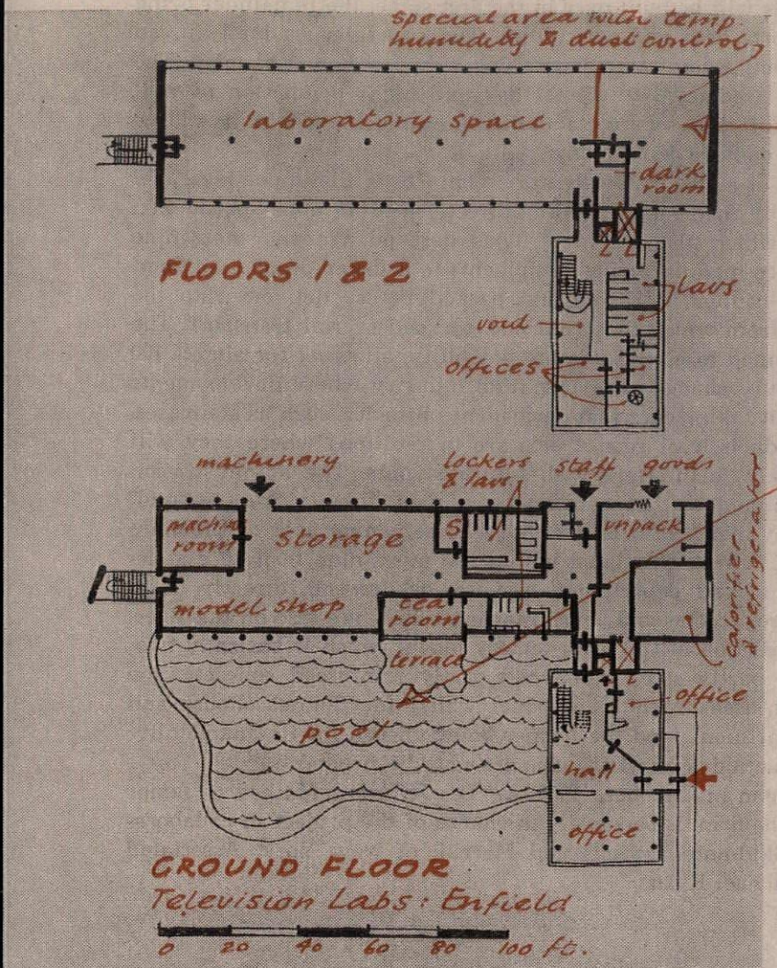


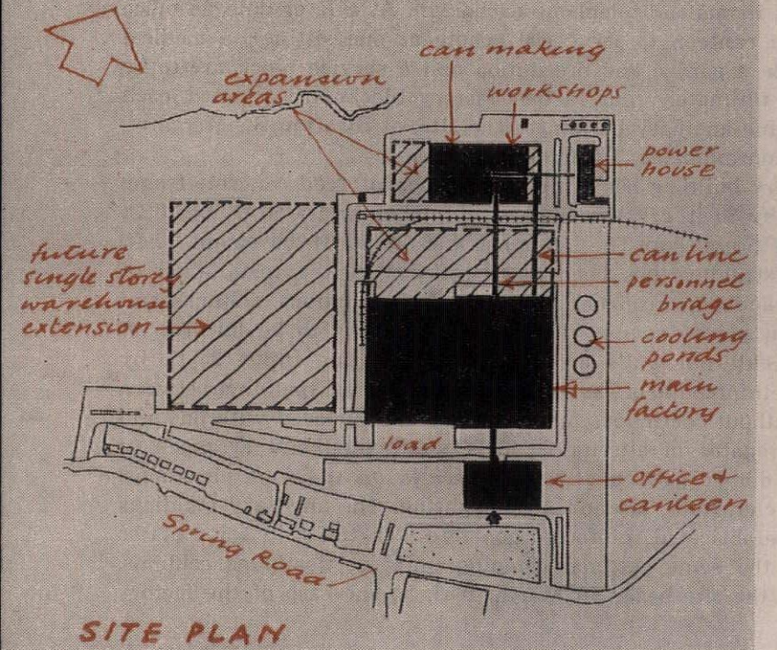
5. INDUSTRIAL BUILDINGS

Below: pressed steel factory at Swindon by Bertram Carter *(see pages 58-59).*



continued from page 54]





heating and lighting runs. Main services are carried in a horizontal duct below window cill level, and contain electric power cables, town gas, water, compressed air, vacuum, and sink waste pipes. Outlets for these services are at 8-ft. intervals. Demountable partitions separate the rooms, except for a permanent darkroom and the special area on the first floor, which are sealed off from the remainder of the laboratory and have their separate air-conditioning plant. The ground floor of the laboratory block contains a workshop and machine rooms, main heating plant, goods unloading, storage space, staff lavatories and a tea room and small kitchen. The four-storey office block, at right-angles to the laboratory block, has permanent partitions, although the third-floor office space has been left open for the time being. Ventilation plant, lift machinery and tanks are on the third and fourth floors.

A large pool is laid out in the angle formed by the two blocks of the building. This provides a mirror of the building by day, and by night the building will be floodlit from underneath the water. Fountains in the pool are used to cool the refrigeration plant for the air-conditioning installation. The air-conditioning plant is designed for conversion into a heat-pump in spring and autumn, and extracts low-grade heat from the water in the pool. It is believed to be the first heat-pump to be installed by a commercial organization in this country. A permanent travelling cradle track is hung below the eaves of the building to facilitate the cleaning of glass and the regular washing of the aluminium windows and curtain walling components.

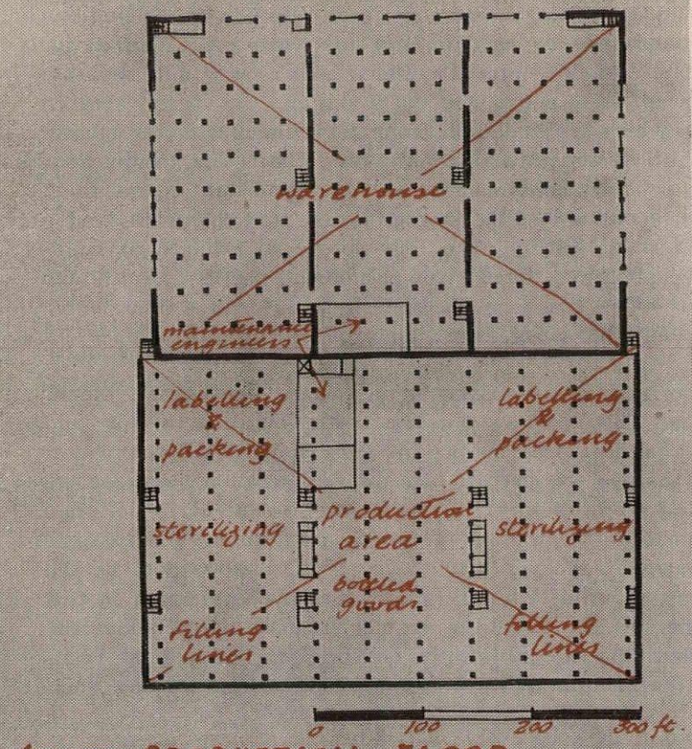
The structure is of in-situ reinforced concrete with 12 in. by 6 in. thick external columns at 8 ft. centres, supporting hollow-pot floors. The office block floors have no beams projecting below the slab, and have internal columns of 15 in. by 9 in. on the ground floor, reducing to 12 in. by 6 in. above. The office block entrance canopy, 24 ft. by 14 ft., is cantilevered from the first-floor slab. The laboratory block has one line of internal columns at 20-ft. centres, with an 18-in. deep spine beam spanning between them. Upstand beams occur only where the external column spacing is increased to 12 ft. Dummy columns are introduced between structural columns on the first and second floors to maintain the 4 ft. internal planning grid inside the laboratories. The floors of the plant and machine rooms on the ground floor are totally independent of the main structure. The end walls of the laboratory block are 18-in. solid brickwork, and the north wall is pierced by a free-standing reinforced concrete stair. The office block and north stair have curtain walling on a 4-ft. grid with coloured glass panels below cills. The laboratory block upper-floor columns are faced in reconstructed Portland stone, with precast concrete slab panels between, faced with exposed Genoa marble aggregate. Double windows are provided to the laboratories. External windows are of aluminium and are permanently fixed. Inner windows are steel and only open for cleaning. Ground floor external walls to the laboratory block are placed behind the columns and are of brick, rendered.

Work began in April, 1955. Partner in charge: Alan Ballantyne. Quantity surveyors: H. J. Venning and Partners. Consulting engineers: Ove Arup and Partners. Heating consultant: J. C. Knight.

FACTORY: WIGAN

J. Douglass Mathews and Partners

For H. J. Heinz Company, to take the place of existing premises near Wigan for the manufacture of canned and bottled foods. A large proportion of the cans will also be manufactured on the site, which is at Kitt Green, about two miles from Wigan, near the Wigan-Southport Railway, and totals approximately 150 acres. About



lower PRODUCTION FLOOR
Factory : Wigan

a third of this will be built over in the first stage, the remainder being used for sports field and agriculture. The site falls gradually in an easterly direction and commands a fine view over open country. The factory will accommodate a total day and night population of well over 2,000, and has a separate administration block, containing a large canteen and welfare departments.

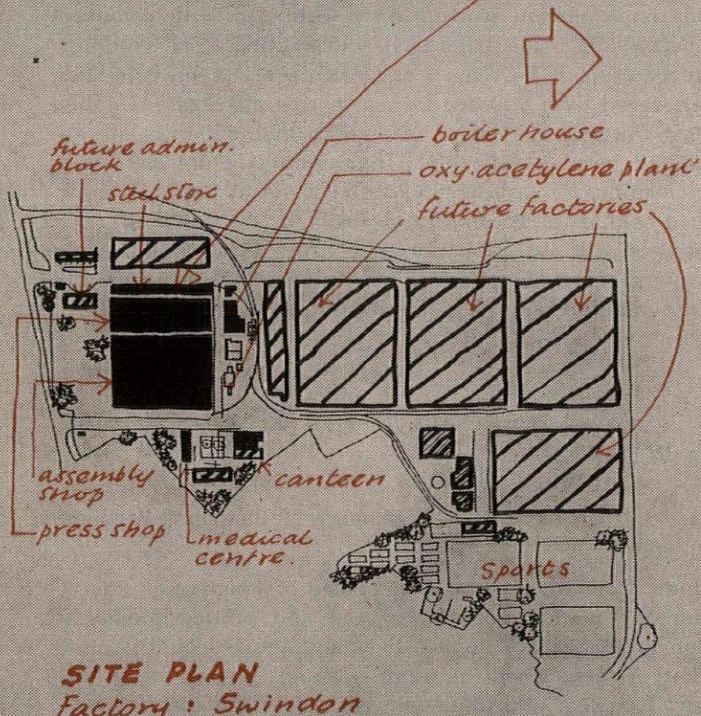
It consists of a raw materials store, planned on the upper level and approached by road ramps, feeding directly into an upper production area from which the prepared foods descend via the mezzanine (which houses manufacturing equipment) to a lower production floor, where it is canned, sterilized and packed before delivery into the warehouse, from which it is collected by road or rail transport. The space is planned to give maximum flexibility, allowing for almost 100 per cent future change of layout in an industry where developments are rapid, but taking care that permanent obstacles, such as staircases, ventilating ducts, cool rooms, etc., are in positions where they will be least likely to interfere with future layouts. The administration block is planned so that personnel can pass directly from ground-floor level by means of a bridge into the mezzanine floor of the main factory and, having circulated within the mezzanine floor to a staircase near to their department, rise up, or descend, directly to it. Lavatories, rest rooms and certain factory offices are also on this floor.

The construction of the main factory block, which is basically two-storeyed, is partly steel frame and partly reinforced concrete, the latter being used (with brick panel walls) for the warehouse and storage departments and the former being chosen for its adaptability in the production area where changes may be needed.

Work began in October, 1955. E. D. Jefferiss Mathews, senior partner in the firm, is personally in charge of the project in collaboration with Skidmore, Owings and Merrill, of New York. Associated partner: Michael Ryan.

FACTORY: SWINDON

Bertram Carter

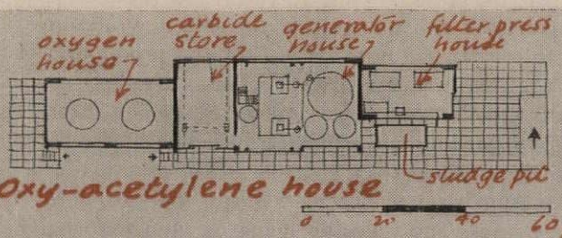


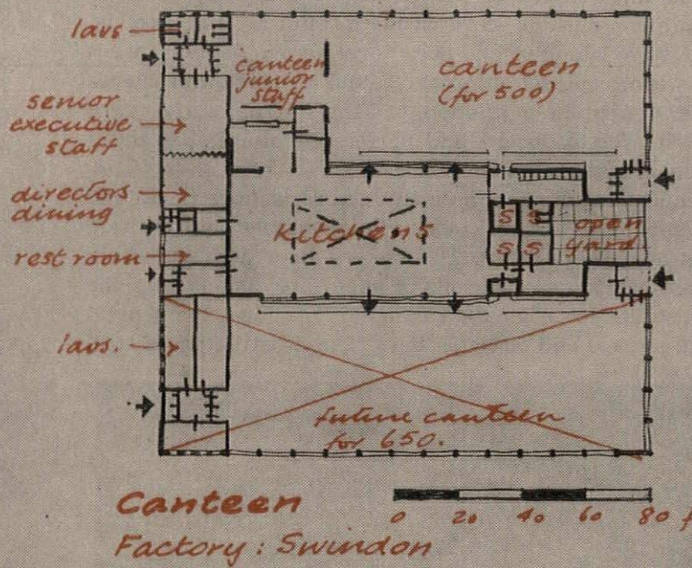
SITE PLAN
Factory : Swindon

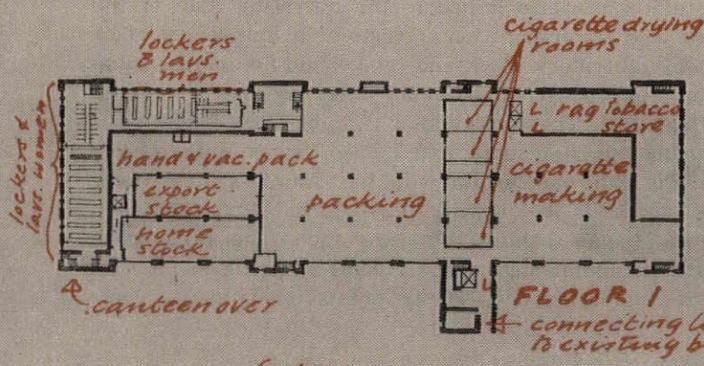
For the Pressed Steel Company (manufacturers of motor-car bodies, refrigerators and railway wagons), consisting of a factory building 650 ft. by 450 ft. (divided into three sections: a steel store, press and assembly shops and despatch platforms) and a number of separate ancillary buildings; namely, a boiler-house, a compressor-house, an oxy-acetylene plant house, an oil-tank farm, and a gatehouse (with watchman's rooms and telephone exchange). At a later date an office block (with canteen to serve 600 people at one sitting), a medical centre block, a garage and fire-station and a service block are to be added, and ultimately four further factory blocks are planned, each with the same ancillary buildings. The site, at Stratton St. Margaret, comprises approximately 135 acres of open land.

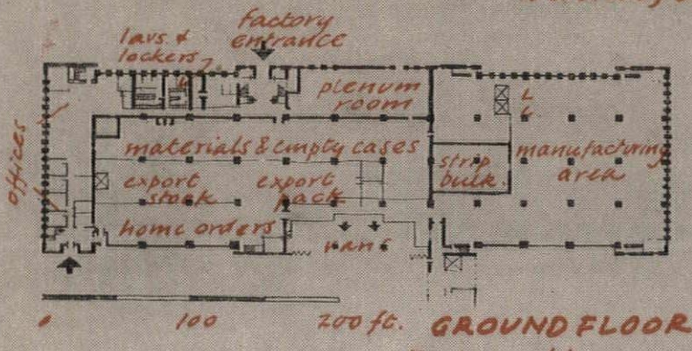
The factory building has a prefabricated reinforced concrete frame on a 25 ft. by 30 ft. grid for the assembly shop and a 60 ft. by 25 ft. grid for the press shop. The latter has a 60,000 sq. ft. basement, 12 ft. deep. The structure has been so designed that the installation of machinery and plant can begin as soon as foundations, columns and roofs are in place, leaving walling and windows to be finished off later. The external walls are of precast cladding units, 25 ft. by 3 ft. 6 in., reinforced to act as self-supporting beams, spanning between columns without continuous footings. They are surfaced with fine and coarse aggregates in alternate panels, subdivided and arranged to produce a diaper pattern of varying scales on the four elevations. There is a clerestory, top and north lighting. The ancillary buildings are also prefabricated reinforced concrete structures, in some places employing the same external cladding units vertically as columns.

Work on the site began in March, 1955. In the case of the factory









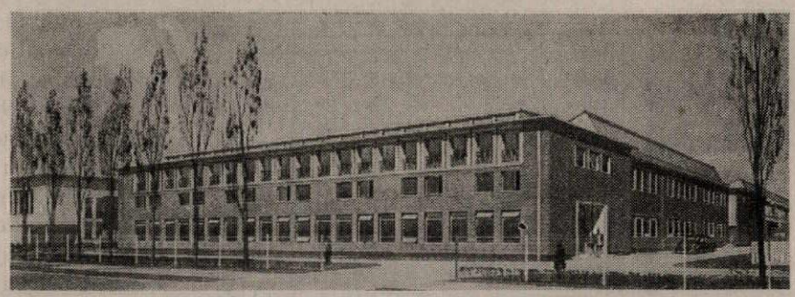
block only, the architect's role has been limited to that of consultant for the external treatment of a structure already decided upon, which was devised by Messrs. Holland & Hannen and Cubitts. Assistant architects: Kenneth Brown, Eric Drew, Thomas Hamilton and Roger Hammond. Consulting engineer for the boiler-house: H. G. Cousins. Consulting engineer for the walls and beams of the oxy-acetylene plant house and the gatehouse: R. A. Sefton Jenkins.

FACTORY: WELWYN GARDEN CITY

Louis de Soissons, Peacock, Hodges and Robertson

For the manufacture of cigarettes by the Ardath Tobacco Company. The site has an average fall of 2 ft. from west to east and adjoins the Company's existing building. A link between the new and old buildings is in a style in keeping with the new building, with the roadway continued through the link. The factory comprises 115,750 sq. ft. of floor area, of which 91,200 sq. ft. is production area and 24,550 sq. ft. administration and service area. The production area is on two floors, the first floor being of flat slab construction, and the administration and service area on three floors. It has been possible, in view of the high storey-heights required for production, to accommodate both sections within the same total height, thus forming a constant eaves line. The ground-floor area of the three-storey section will be used for offices, the first-floor area for male and female factory employees' cloakrooms and lavatories, and the third floor for a canteen and kitchen and staff messes.

The building is of reinforced concrete framed construction including northlight portal frames with external brick cladding. Purpose-made sand-lime bricks are used for the plinth courses with buff multi-coloured rustic facing bricks above. Cills and window surrounds are in reconstructed Portland stone. The panel areas over emergency doorways are rendered. The penthouse section of the three-storey



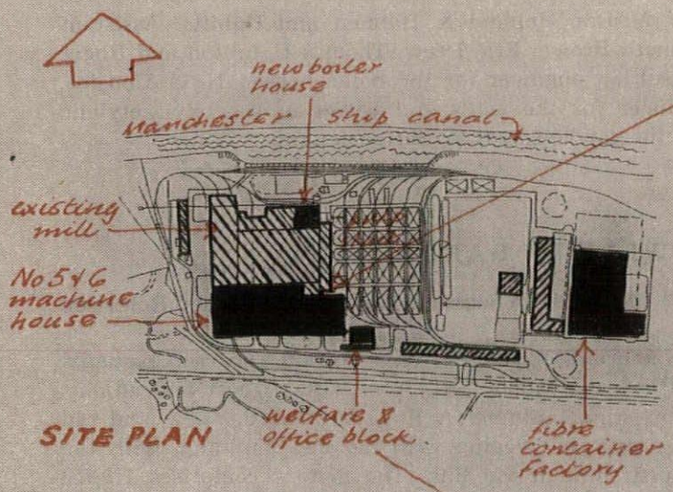
portion is formed by a series of aluminium portal frames, roofed with synthetic board covered with green mineral-surfaced felt. The production area only has a plenum ventilation and semi-air-conditioning system, and the whole of the building is protected by a full sprinkler installation.

Work began in October, 1955. Quantity surveyor: Sydney A. Paine and Partners. Structural engineers: R. T. James and Partners.

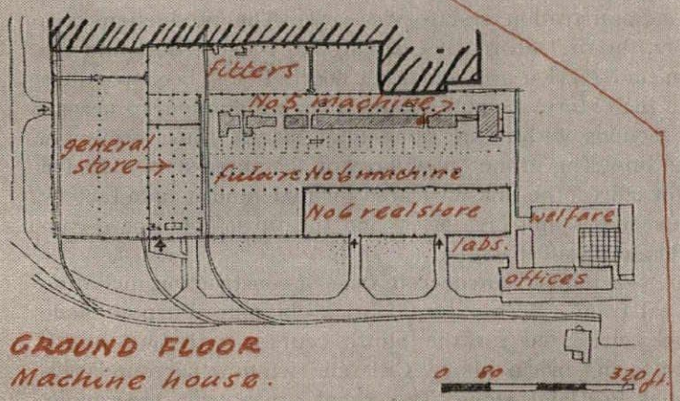
FACTORY: ELLESMERE PORT, CHESHIRE

Farmer and Dark

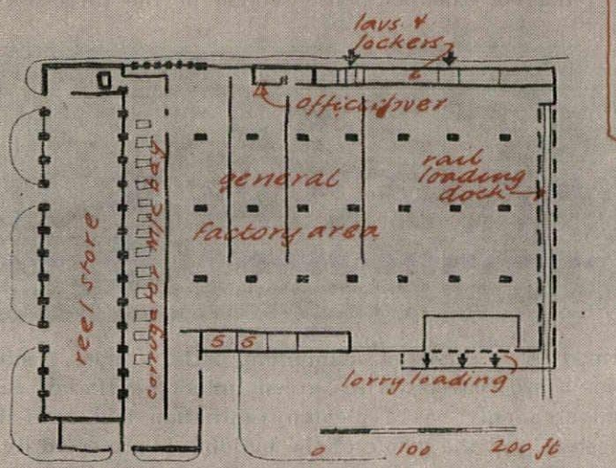
One of two major development schemes for the Bowater Paper Corporation at the Corporation's Thames and Mersey Mills. The buildings are mainly industrial buildings for the manufacture of paper and associated products, together with administrative and laboratory blocks. The site is on flat land adjacent to the existing Mersey Mill, which is situated on the Manchester Ship Canal. The



SITE PLAN



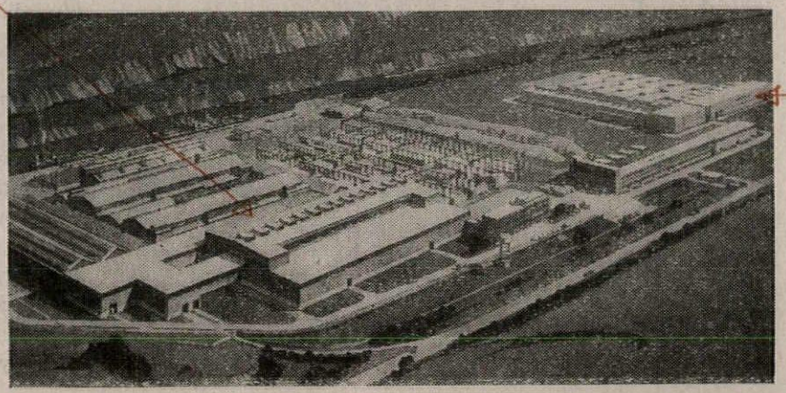
GROUND FLOOR
Machine house.



GROUND FLOOR
Fibre container factory

purpose is to expand the existing mill, to provide new administrative offices, etc., and to construct a new factory for the production of fibre containers. The projects included in this scheme are: (1) a machine house to contain two high-speed paper-making machines, fitters' repair shop, electrical shop, packing and administrative space, and three reel-stores to contain the finished rolls of paper. The structure is a semi-rigid steel frame supporting concrete floors at operating level and overhead gantry cranes. The machine house is clad externally with plastic sheet, and lined internally with acoustic material. The roof is a light aluminium decking covered with built-up felt roofing. The high temperature, humidity and noise level, unavoidable in paper making, presents severe condensation and sound absorption problems. There is a system of plenum ventilation, and the internal surfaces are lined with slotted asbestos board and perforated aluminium sheet, both backed by loose insulating material.

(2) An independent factory for the manufacture of fibre boxes and drums. The factory contains its own administrative and welfare sections, and its own boiler-house. The factory floor area is loosely divided to provide reel stores (the rolls of paper are, in this case, the raw material), also the space for the corrugator machine, the general factory area, and storage and despatch bays. The construction is steel

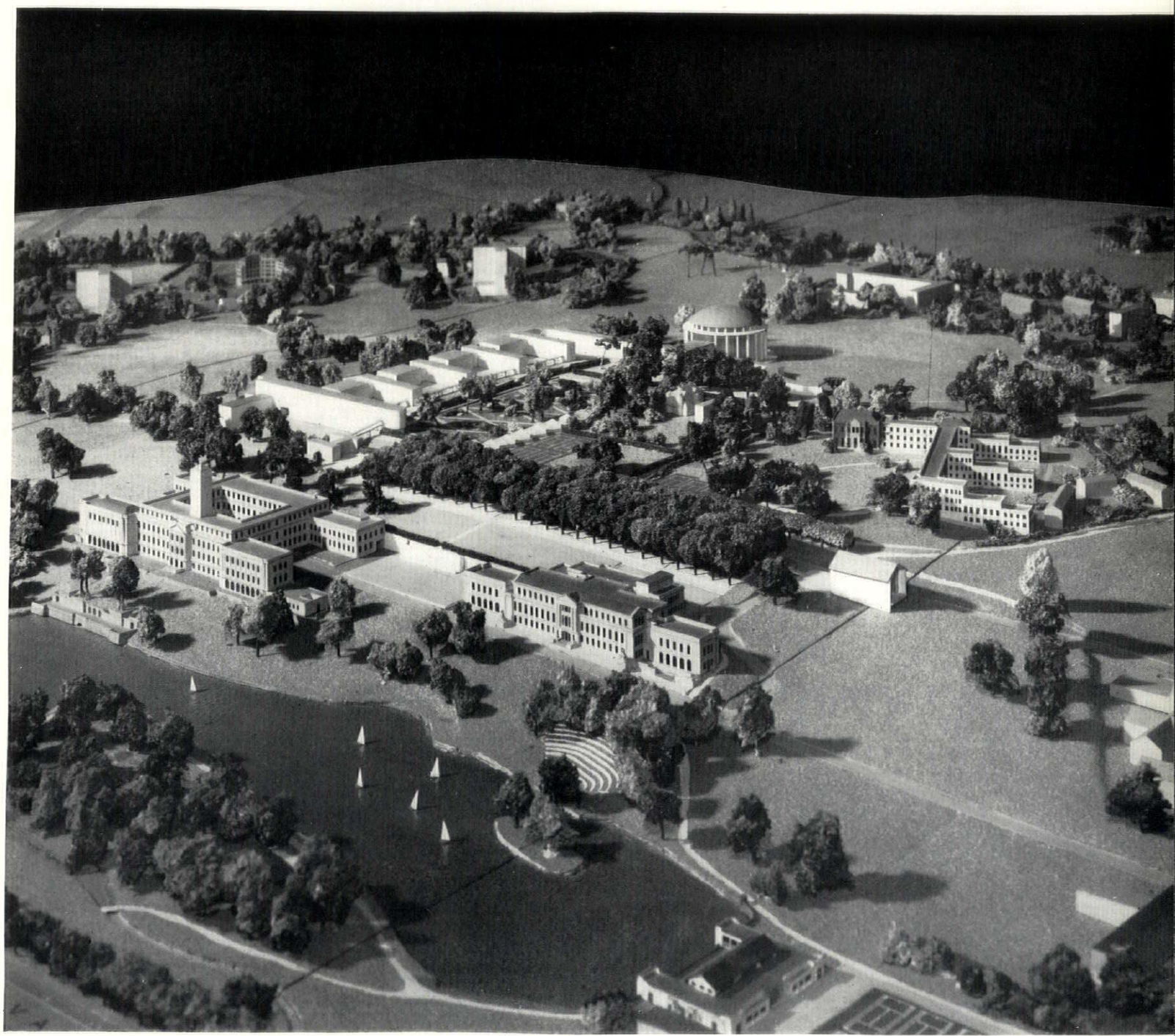


framing, which in the main is clad with aluminium sheet lined with insulation board. A plinth round the building is of precast concrete slabs. The south wall had to be constructed of brickwork with large metal windows, since it was required to match an adjoining building. The factory roof is an aluminium deck.

(3) An office and welfare block adjoining the new machine house, and incorporating the new main mill entrance, clocking-in arrangements, etc.; the offices are also linked to the operating floor of the mill by a bridge. The accommodation consists of a four-storey office block, a two-storey laboratory block and, at ground-floor level, lavatories and other welfare accommodation. There is also a covered cycle park and car port. The construction is light steel frame on a 40-in. module, using box stanchions and lattice beams with precast concrete floors. The external curtain wall has stainless steel cover strips, and the spandrils below cill level have stove-enamelled asbestos insulating panels behind the glass face. The cycle park structure consists of tubular steel space frames covering an area of 100 ft. by 130 ft., supported only at six points on 1¾-in. diameter steel pins.

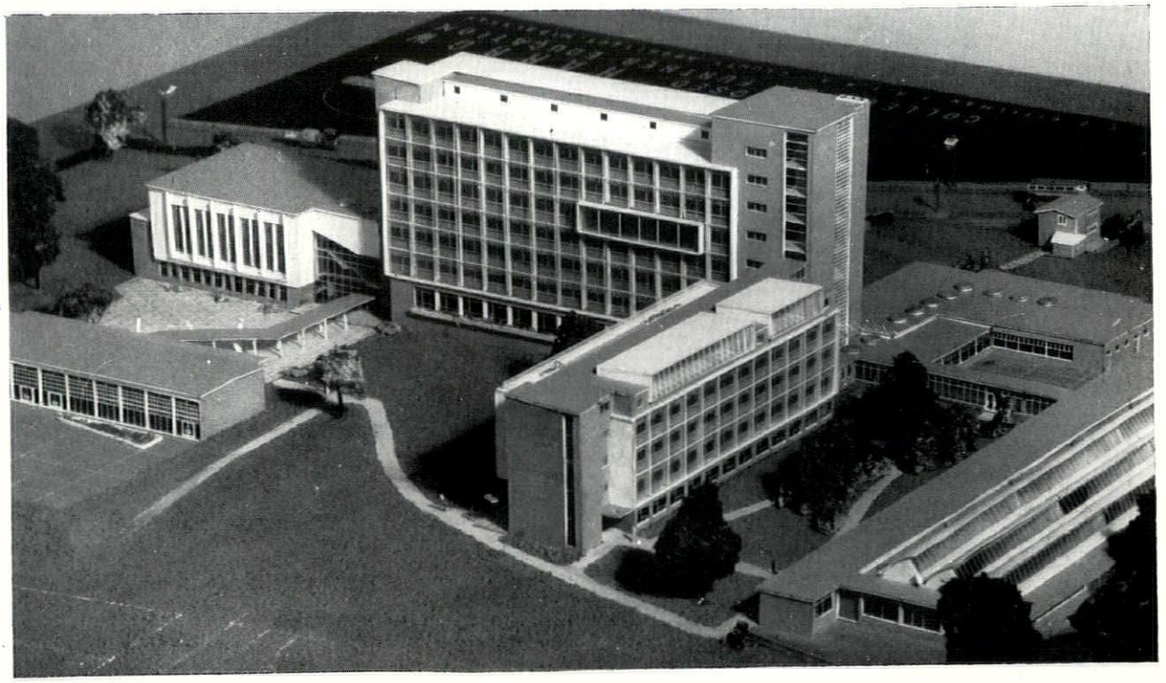
Partner in charge: J. T. Pinion.

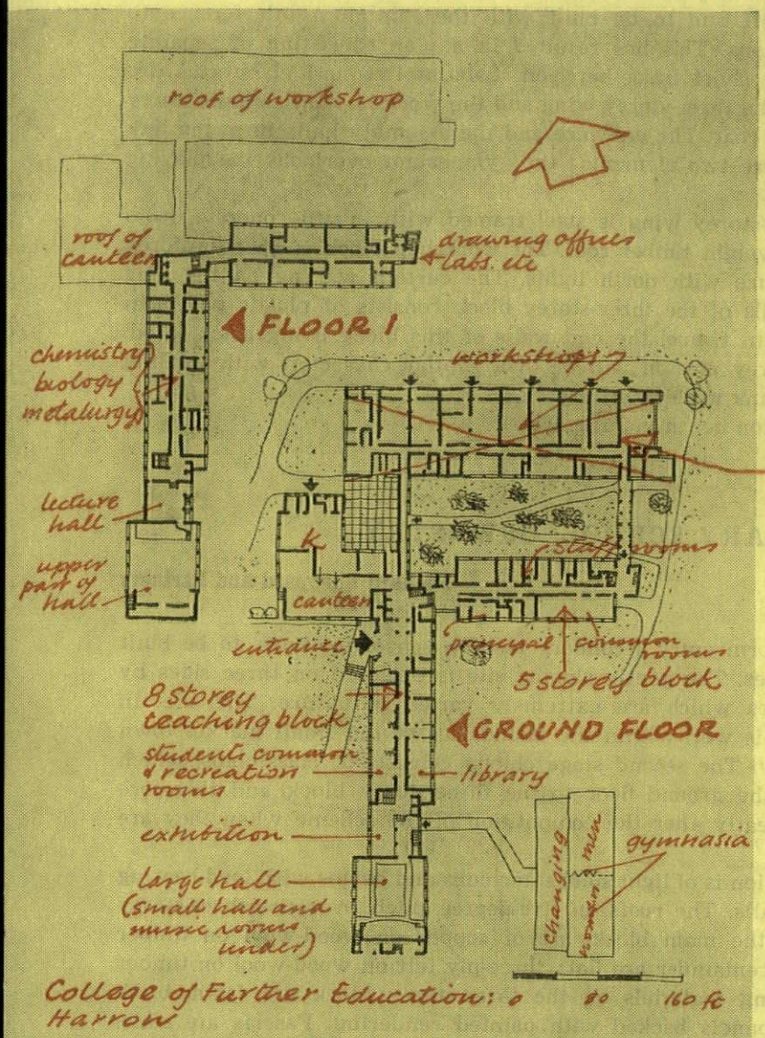
6 EDUCATIONAL BUILDINGS

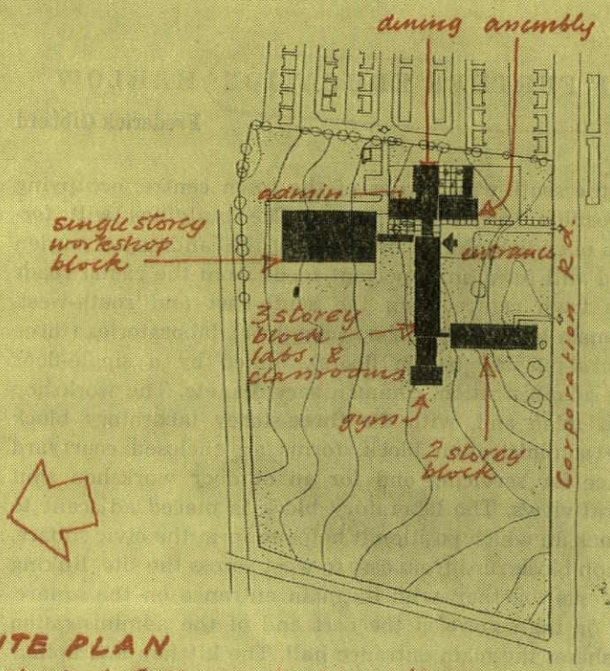


Layout and landscaping plan for Nottingham University, by G. A. Jellicoe and Partners (*see pages* 67-68).

Harrow college of further education. The eight-storey teaching block in the centre and the single-storey workshop block (top left, above) are the main portions already under construction.







COLLEGE OF FURTHER EDUCATION: HARROW

C. G. Stillman (Middlesex County Architect)

To replace the existing Harrow Technical College and School of Art, which is too small and unsuitable for extension. The site, of 26 acres at the north-west corner of Northwick Park, just outside the Borough of Harrow, is bounded on the north by main line and Metropolitan railways and slopes gradually southwards to the site of the proposed new Charing Cross Hospital. On the east is public open space. To the north and west are trees screening the site from the railway. The College has been planned for over 2,300 students and will provide full- and part-time day and evening classes in engineering, pure and applied science, photography and cinematography, commerce, domestic subjects and crafts; also an art department. Eventually physical training facilities will also be available. The current building contract provides the workshop block, the main eight-storey teaching block and the canteen, a little over half of the ultimate accommodation. A second multi-storey block, the assembly-hall block and gymnasia will follow at some future date.

The single-storey workshop block (to the north) is of reinforced concrete north-light barrel-vault construction with reinforced concrete framed ancillaries. The rest of the college is also of in-situ reinforced concrete 'egg-crate' frame construction. Cladding of the frame is mainly brick but much of the fenestration is by glazing direct into precast concrete frames, opening or vent lights only being in steel or wood. Vertical and horizontal ducts provide accessible service ways via which the laboratories, workshops and specialist rooms can be fed, or waste and fumes disposed of. In addition to normal central heating and water supplies, there are special services of distilled water, steam, gas, compressed air, vacuum and electricity in several voltages, AC and DC. There are also ventilation, fume extract and exhaust systems for plant, equipment and appliances.

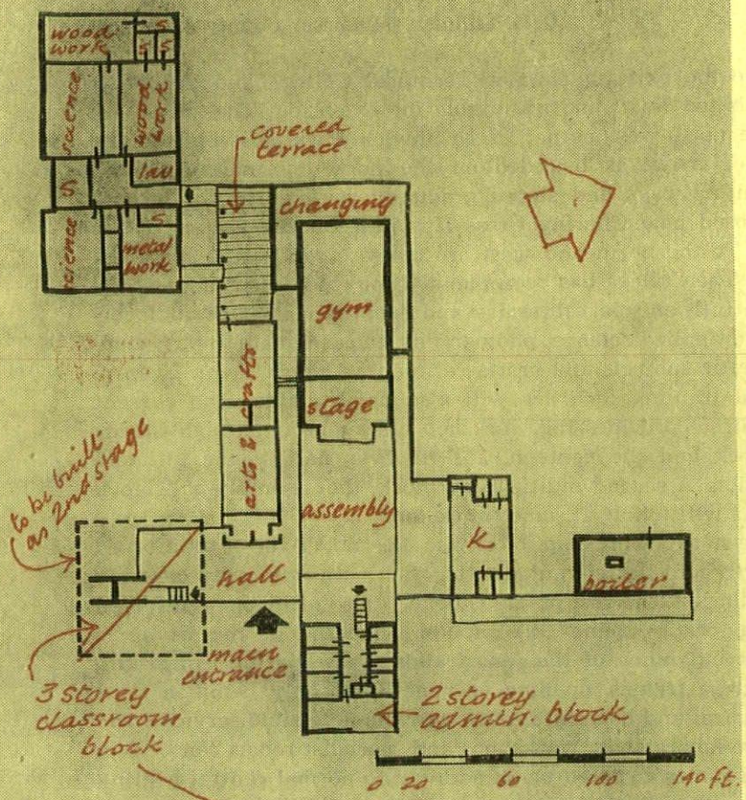
Coat recesses are provided in each teaching room, in the spaces available between the vertical ducts in corridor walls. To facilitate servicing and possible later adaptation of services, all laboratory floors are hollow and removable in panels and all laboratory fitments easily moved on castors, revealing the elaborate service rails for maintenance. The chemical drainage system is totally enclosed, using a combination of polythene, pyrex glass and chemical stoneware pipe-lines which make open channels, waste receivers, etc., obsolete. Dilution of effluent to a degree acceptable for discharge into sewers is by automatic flushing of one external chamber for the whole system. To avoid the complication caused by radiators under windows, which would be rendered inaccessible by the numerous service runs, central heating in laboratories and workshops is by forced-air convector units placed in corridor walls and by high-level unit heaters and/or radiant panels. Artificial lighting is mainly fluorescent.

Building started in April, 1954. The county architect was assisted by G. F. Holden (group architect for further education), A. Hewanicki and J. S. Cousins.

TECHNICAL COLLEGE: REDCAR, YORKS

Gollins, Melvin, Ward and Partners

To be built in three stages. The first comprises the majority of the departments of building science and engineering, the second comprises the balance of these departments and all the commercial departments, where students will be trained in typewriting, bookkeeping and kindred trades for the growing industries of Tees-side. The third stage comprises the department of catering and women's work. The site is near the centre of Redcar (North Riding), in a mainly residential area. It was essential for each stage to be com-



GROUND FLOOR
Secondary School: Oswestry

plete in itself and to be built with the minimum interference to earlier portions. This has resulted in a plan consisting of separate blocks, with short links between. Laboratories and classrooms are planned in the three-storey wing and the workshops in a single-storey block to the rear. The entrance and the assembly halls form the link between these two elements; the gymnasium overlooks the playing fields.

The three-storey wing is steel framed with in-situ concrete floors and a lightweight timber roof. The workshop block is a single-storey steel structure with north lights. The curtain walling on the long window walls of the three-storey block consists of plastic panels in an aluminium frame, the end walls of this block being brick faced. The one-storey portion will be of a similar character, with infilling walls and flank walls in brickwork.

Construction began in June, 1955.

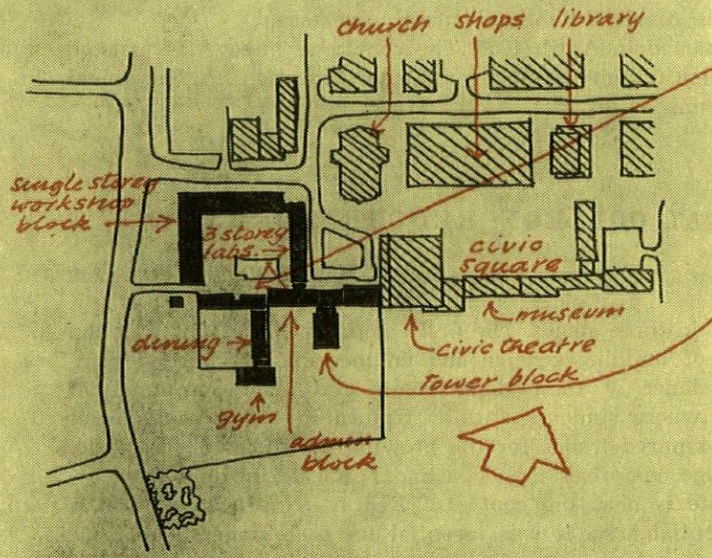
SECONDARY SCHOOL: OSWESTRY

Richard Sheppard and Partners

A three-form entry secondary modern school for boys, to be built in two stages. The gently sloping site is enclosed on three sides by mature trees which are extremely varied in nature. The site, in Pool Road, is well within the boundaries of the small market town of Oswestry. The second stage chiefly consists of classrooms, which will form the ground floor to the three-storey block and therefore will not greatly alter the composition of the scheme when they are added.

Construction is of light steel stanchions and beams with load-bearing internal walls. The roofs, of five-degree pitch over the three-storey block and the main block, are of copper on wood-wool on timber joists. The remainder are flat: three-ply felt on wood-wool on timber joists. Facing materials on the three-storey block are facing-brick and glass panels backed with painted rendering. Fascias are slate. Facing materials on the art and craft rooms are slate panels in metal frames beneath windows, and elsewhere are facing brickwork or glass. Fascias are softwood painted.

Work began last month. The school was designed in collaboration with C. H. Simmons, County Architect of Salop. Architect in charge: Kenneth Strowlger.



SITE PLAN
College of Further Education: Harlow

COLLEGE OF FURTHER EDUCATION: HARLOW

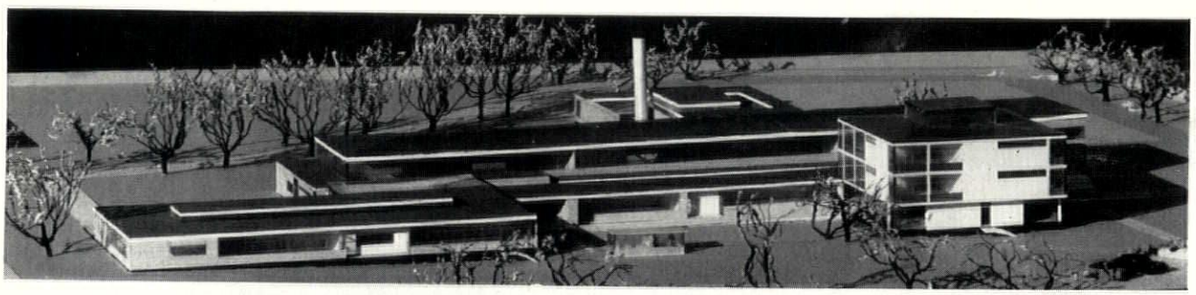
Frederick Gibberd

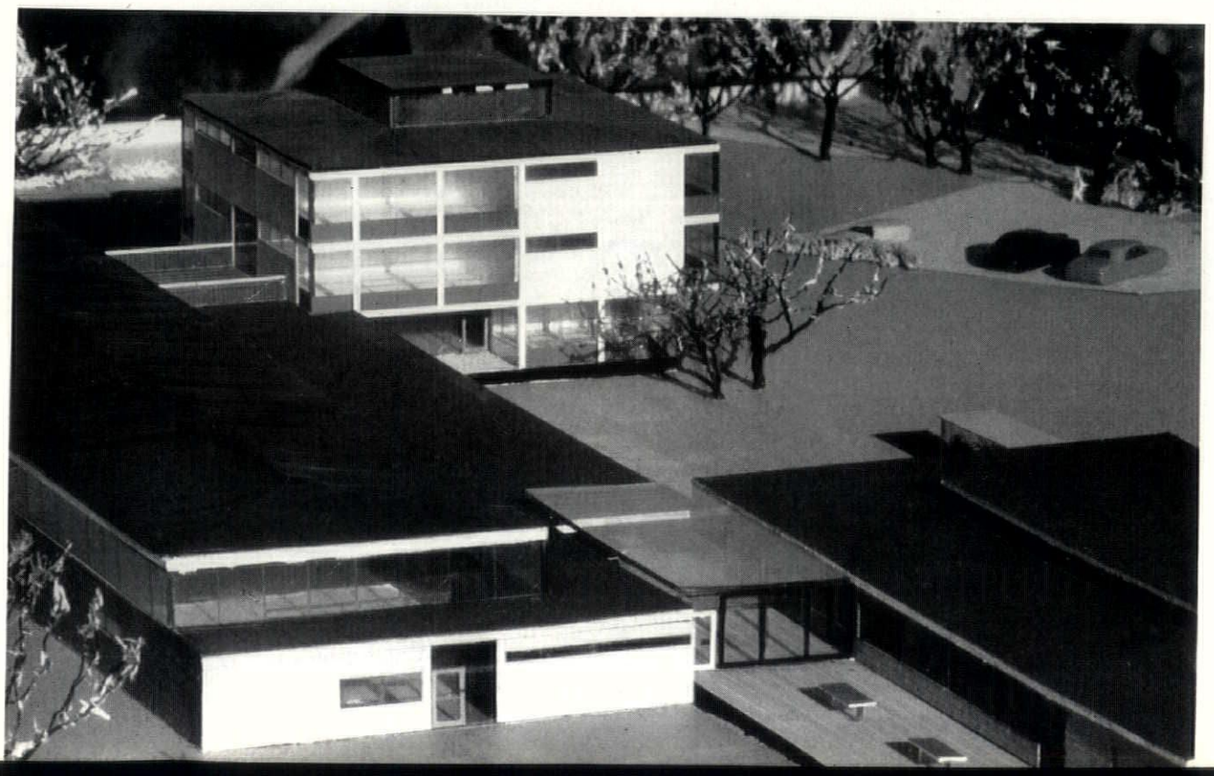
The site is at the south-west corner of the town centre, occupying an important position in the new town. The buildings will terminate the group of civic buildings overlooking the landscaped garden on the south, and will form an important focus from the radial roads approaching the town centre from the south-east and south-west. There are three main blocks: workshop (one floor), laboratories (three floors) and general-purpose (seven floors), linked by a single-floor block containing administration, common services, etc. The workshop block has an 'L' plan and, with the three-storey laboratory block and part of the administration block, forms an enclosed courtyard providing a space for servicing and for an outdoor workshop shut out of the general views. The laboratory block is placed adjacent to the workshop block, in which position it helps to form the civic square. The administration block runs from east to west across the site, linking the various elements together, with its main entrance on the square. The hall is also on the square at the east end of the administration block, where it shares the main entrance hall. The kitchen and boiler-

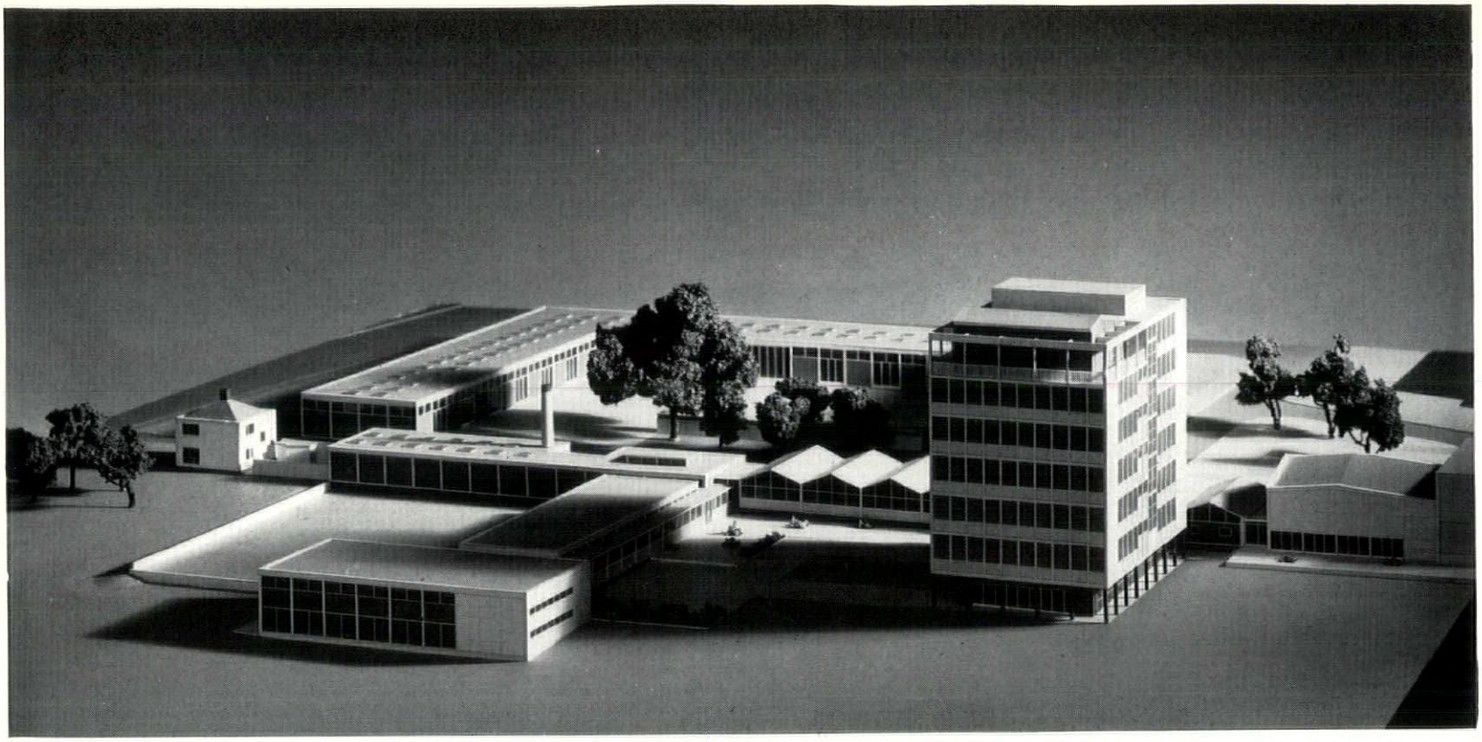
[*continued on page 67*

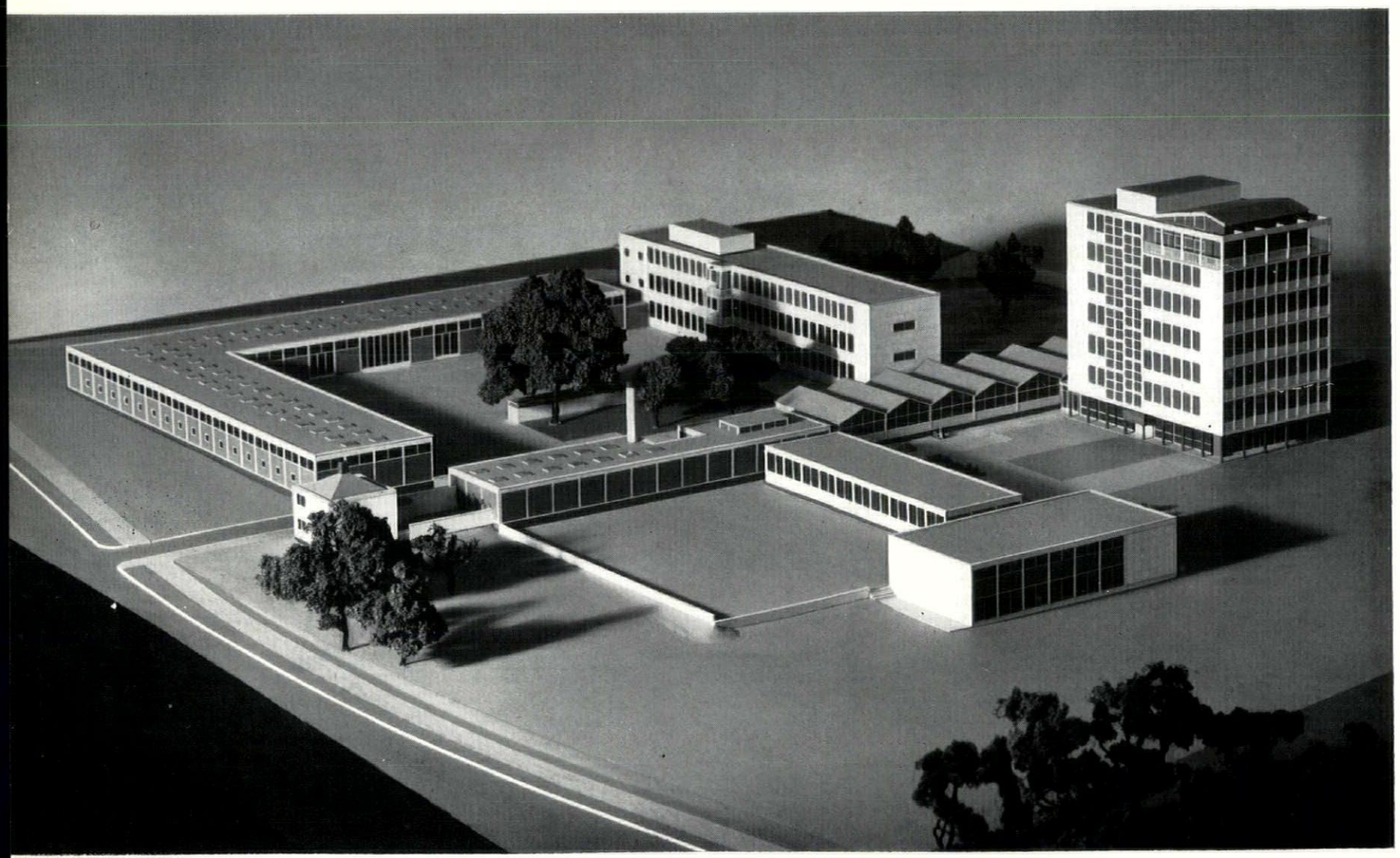
Above: technical college at Redcar, Yorks. (architects: Gollins, Melvin, Ward and Partners), from the south-east.

Right: secondary school at Oswestry, Salop. Top, general view; bottom, close-up showing three-storey classroom block.









College of further education in the town centre at Harlow new town (architect: Frederick Gibberd). The high block is for general teaching purposes; the three-storey block contains laboratories and the lower buildings workshops, offices, etc.

continued from page 64]

house are at the end of the administration block adjacent to the service road and court. The dining block extends to the south and beyond it, still further to the south, are the students' common rooms and the gymnasium. This extension helps to give a sense of enclosure to the landscaped garden. The college has been designed to be built in stages (see site plans), which have been planned so that the first stage will give the appearance of a completed scheme.

The buildings are frame structures with infilling walls of brick, stone slab, or glass. The frame is reinforced concrete except in the case of the one-storey administration block, which has a timber frame. Floors and roofs are of precast reinforced concrete.

Work will begin on the site early this year. The college was designed in collaboration with Harold Conolly, Essex County Architect. Associate architect: J. B. Forrest. Quantity surveyor: Oswald Parratt. Structural engineer: F. J. Samuely. Services engineers: Roger Preston and Partners.

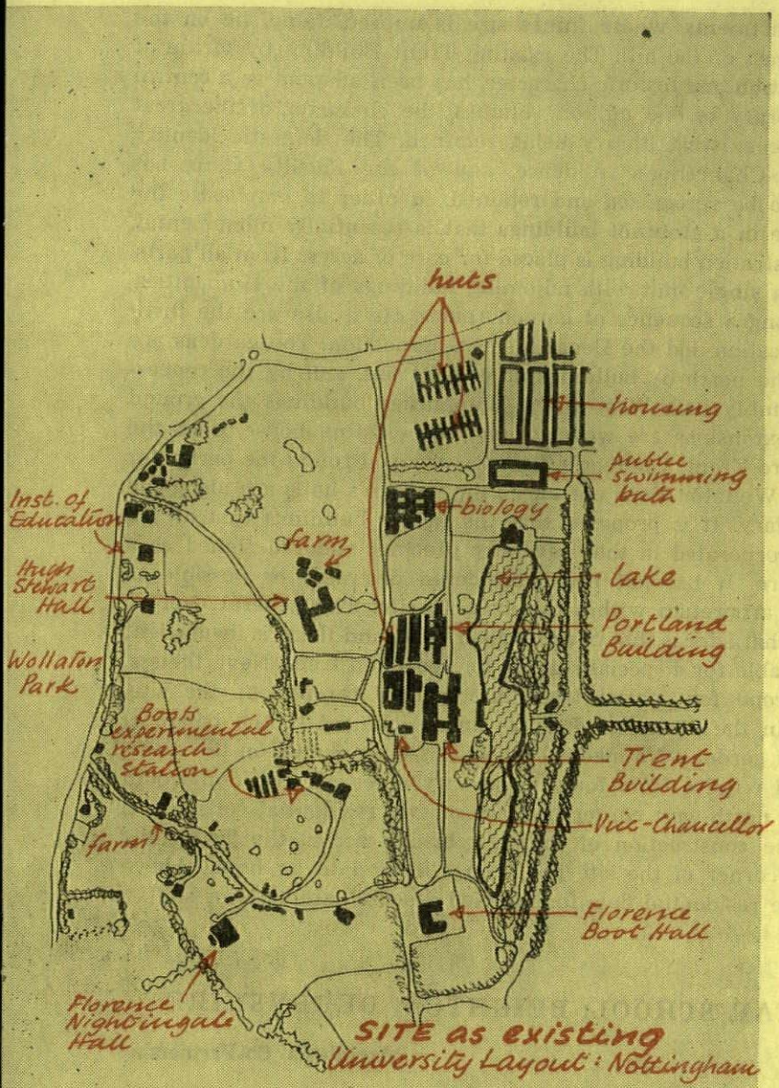
UNIVERSITY LAYOUT: NOTTINGHAM

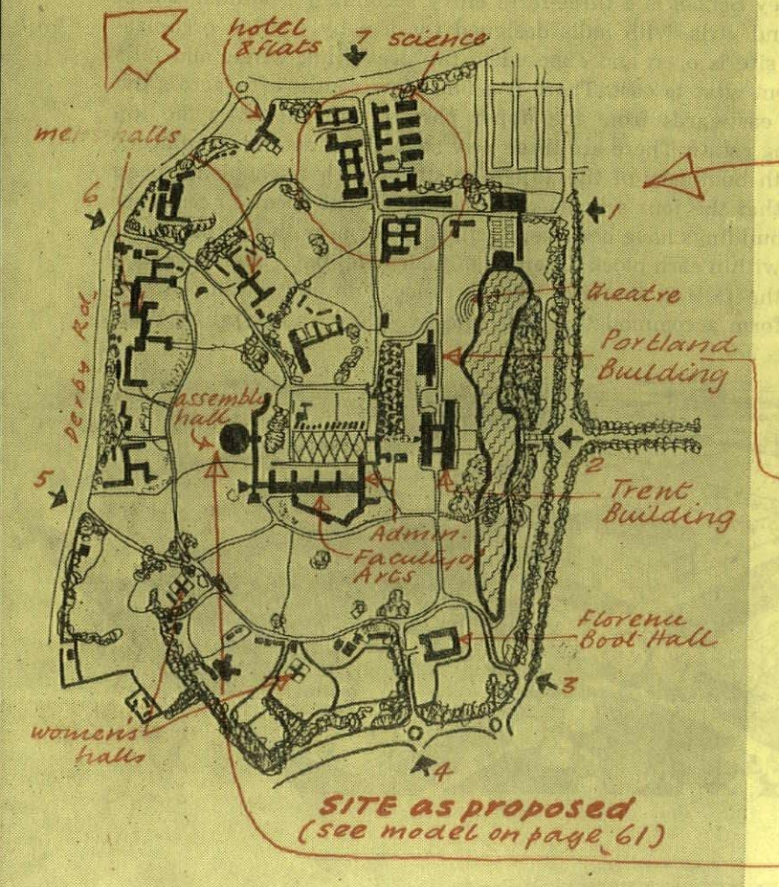
G. A. Jellicoe and Partners

A plan for co-ordinating existing and future buildings of the University to form a coherent landscaped whole, based on the plan prepared by Sir Percy Thomas in 1948. The present University site has an area of 258 acres. This plan assumes the acquisition of adjoining land to bring it to 436 acres. To the north lie the 700 acres of permanent parkland of Wollaton Hall, now a city museum. The general land formation gives the impression of a peninsula of high land extending into the level lowlands of the Trent Valley from the undulating and well-treed plateau that partly forms Wollaton Park. Part of the site is upon coal measures, and because of subsidence any building programme must be related to the programme of mining. It is peculiarly rich in trees planted over a period of 200 years and more. The Vice-Chancellor's residence, Highfields, was built in 1760, and created at that time the essentially English park of tall trees, grassland and water, the identity of which survives. The main buildings date from 1928 onwards, but much building for expediency took place during and immediately after the war. The plan requires the removal of such temporary buildings; also of the present engineering buildings.

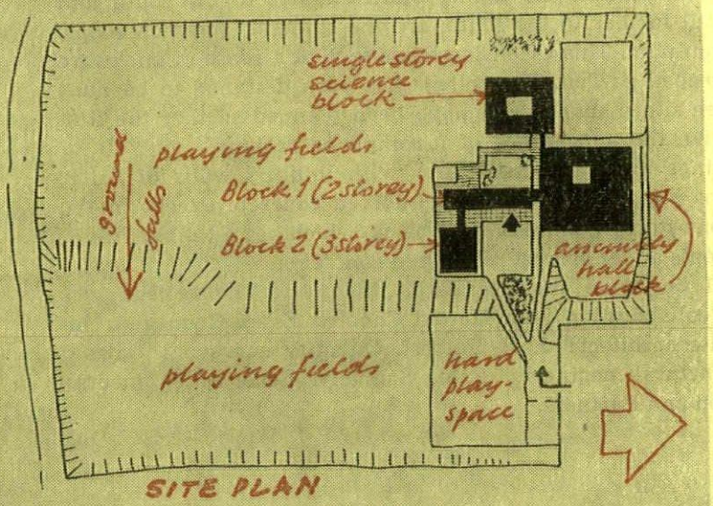
In this plan the University is entered by seven gates; three to the south, two to the north, and one each to the east and west. The axial gate from the south is for walkers only, who will cross the bridges and ascend the hill by a landscape stairway. It is, for the first time in a university, an 'open' plan based on access by car, motor-cycle or bicycle, but roads and car parks so far as possible have been segregated from the walks; occasionally, to prevent speed, the roads have been given sharp turns. Car parks are rendered as inconspicuous as possible and where possible have been designed to muffle sound. Because of the disadvantages of an 'open' plan in winter the buildings are grouped to give protection from wind, and covered ways connect the Portland Building to the assembly hall. It is suggested that use might be made of the heating service ducts similarly to connect the buildings of the science area. In order to retain the precinctual character of the central group, and at the same time not to interfere with cross-circulation of cars, the road cutting the space from east to west has been sunk and is crossed by three footbridges.

The shape of the peninsula, upon which already stand the main university buildings, has been recognized and emphasized. The central buildings group round the west and north escarpment of the peninsula. Enclosed within are gardens and groves of trees. The isthmus of land to the north carries the men's halls to the perimeter of the site. The

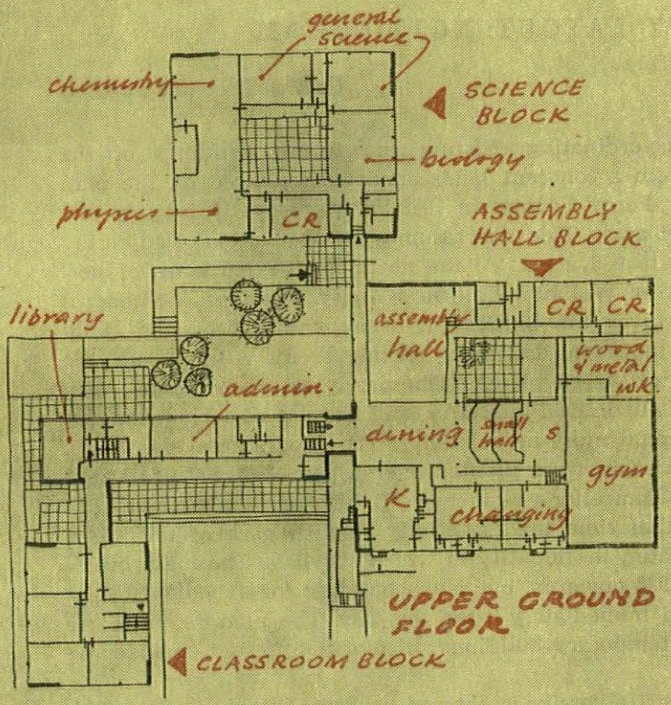


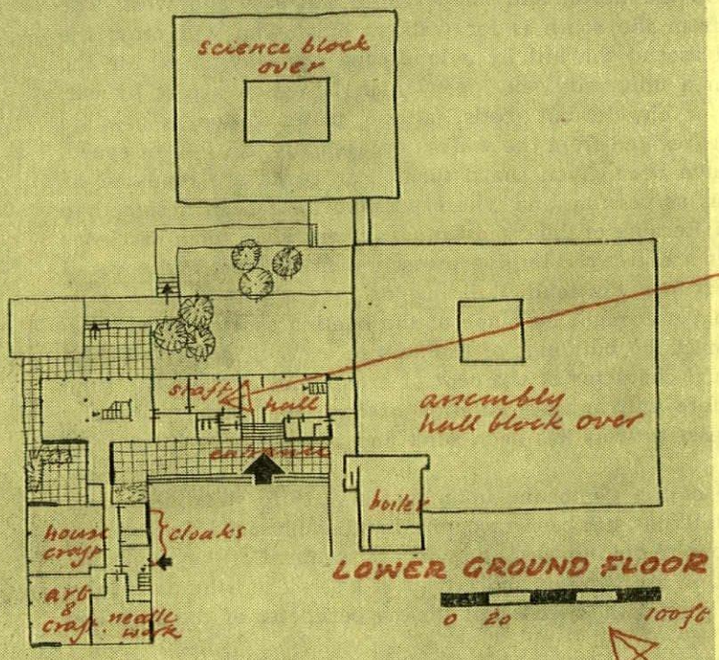


science departments, whose future size is unpredictable, lie on the level land east of the hill. The existing Trent Building by virtue of its size, position and historic character, has been adapted as a central teaching library of one million volumes, the character of the great hall and the existing library being retained. The domestic identity of the Vice-Chancellor's residence, and of the Faculty Club, has continued to be recognized and retained, in order to emphasize the human scale in a group of buildings that is essentially monumental. The administration building is placed for ease of access from all parts, and forms a single unit with adjoining buildings of the Humanities, grouped along a sequence of garden courts. Here also are the Institute of Education and the Department of Education. The gardens are closed on the north by buildings of general use, and by the copper-domed assembly hall. West of the Humanities buildings the ground falls, and extensions are woven round the existing house, once the home of Lord Trent. The men's halls are grouped round the perimeter east of the Wollaton Park entrance ; the women's halls are along the west boundary. It is proposed that the public buildings east of the lake be incorporated in the university precinct and redesigned as a sports centre. It has not been considered desirable or possible to include an arboretum within the existing site. The general over-all landscape character is that of an English park, and there is insufficient space available for a special reserve for specimen trees. Nevertheless, there is scope for special trees interspersed throughout the site, especially in the centre gardens, as an enrichment to the botanical and faculty gardens. No medical school has been shown on the plans. This would require from forty to seventy acres of land and would occupy the north-west corner in place of two residential colleges. In view of the construction of the new bridge across the Trent, the north-east corner of the site has been allocated to an hotel. Above it would be residential flats for married research students or staff.



SITE PLAN

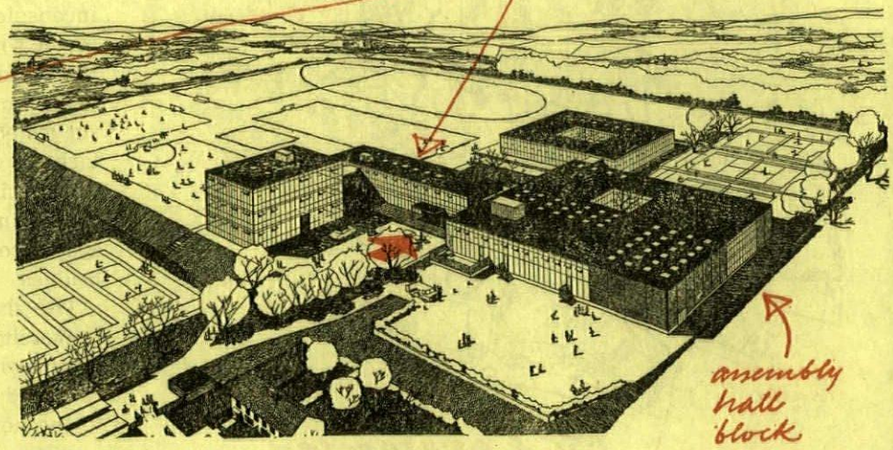


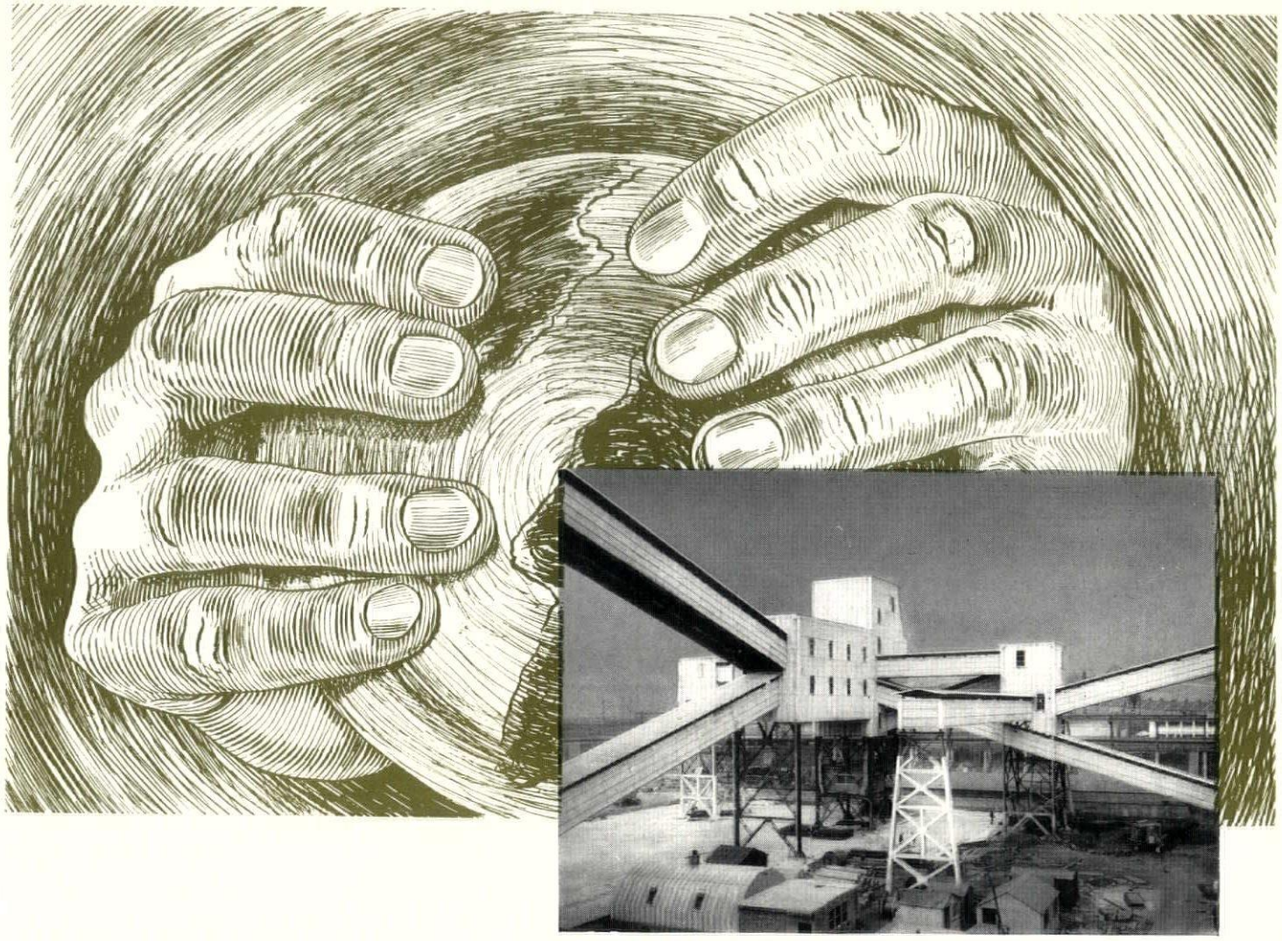


GRAMMAR SCHOOL: BEIGHTON, DERBYSHIRE

Architects' Co-Partnership

The Birley School is a three-form entry secondary grammar school for boys and girls, with halls designed for use by outside organizations. The site is open and exposed to the prevailing winds and falls steeply from west to east. There is a fine view southwards across the slope and eastwards from the upper part of the site over the top of a housing estate. There are three new schools immediately adjacent to the north boundary of the adjoining site and this school has been placed so that the four schools will to some extent form a 'campus'. Blocks of buildings have been kept simple in form, with no changes of roof level within each block. Changes of floor level have been arranged by using the fall on the site. The entrance, administration, library, and sixth-form accommodation is in one two-storey block which links





Conveyor Plant at Stapleton Gas Works, Bristol.

Shaping his new world...

To-day's Architecture demands materials which are up-to-date: to-morrow's architectural enterprises will call for materials which meet the requirements of new techniques. The remarkable range of products offered by this Company has already shown Asbestos Cement to be one of the most adaptable and practical of materials. We look forward to developing its many advantages in the building of the future.

universal asbestos

THE UNIVERSAL ASBESTOS MANUFACTURING COMPANY LIMITED
WATFORD • HERTFORDSHIRE

Plan for linoleum for good looks and long life

Don't think of linoleum only in terms of standard designs—vast as that choice is! An interior decorator has at his command a range of patterns offering him an unlimited palette to express his ideas. This floor, for example, on the S.S. Arcadia of the P. & O. Line is made up from a combination of patterns planned to express a pleasing decor. Quiet to the tread, easy to clean, linoleum is unsurpassed for its beauty. The right grade, correctly laid, may well outlive the life of the ship.

Linoleum installation by Semtex Ltd. (a Dunlop company)

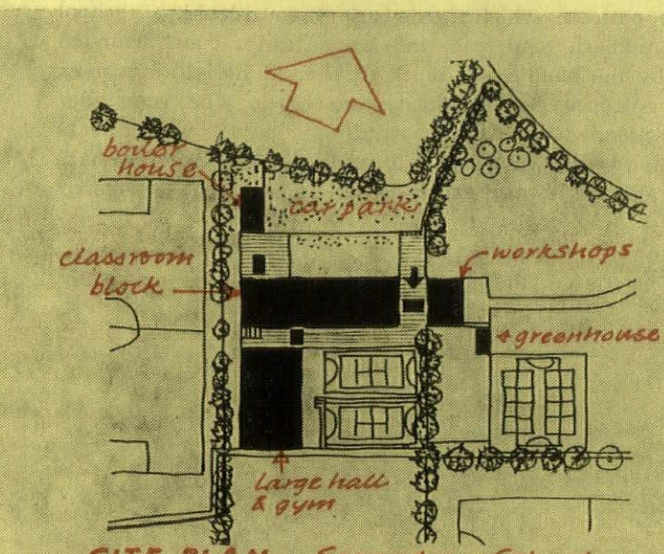
FOR LONGEST WEAR EVERYWHERE

LINOLEUM

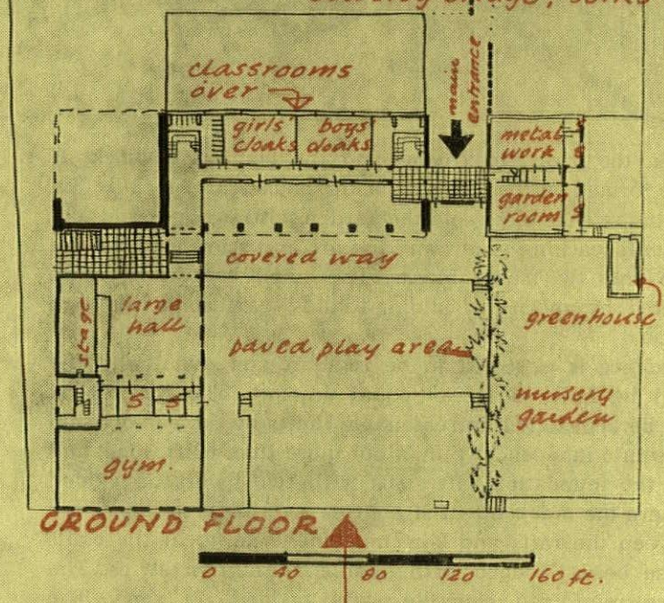
THELMA

"THELMA" stands for The Linoleum Manufacturers' Association, 127 Victoria Street, London, S.W.1.
For further information write to the Association or to any of the following members:—
BARRY OSTLERE & SHEPHERD LTD., KIRKCALDY · DUNDEE LINOLEUM CO. LTD., DUNDEE · LINOLEUM MANUFACTURING CO. LTD., 6 OLD BAILEY, LONDON, E.C.4 · MICHAEL NAIRN & CO. LTD., KIRKCALDY · NORTH BRITISH LINOLEUM CO. LTD., DUNDEE SCOTTISH CO-OPERATIVE WHOLESALE SOCIETY LTD., FALKLAND, FIFE · JAS. WILLIAMSON & SON LTD., LANCASTER

25



SITE PLAN Secondary School: Sowerby Bridge, Yorks



at ground- and first-floor level with the ground and first floors of the three-storey block containing the bulk of the formal teaching, together with some practical rooms on its ground floor. The assembly-hall block, which also contains the gymnasium, changing-rooms, kitchen, wood and metalwork rooms, and some formal teaching rooms, is linked to the mezzanine level of the administration block. The science block is planned round a courtyard, used for biology, and is linked to the assembly-hall block. The small hall is designed to contain a fully-equipped stage, has a stepped floor, and will be used as an intimate theatre. Its back wall is formed of a sliding folding partition opening on to the platform of the large hall to allow for larger audiences on certain occasions. The library is planned as a double-height room with views down into it from the upper level.

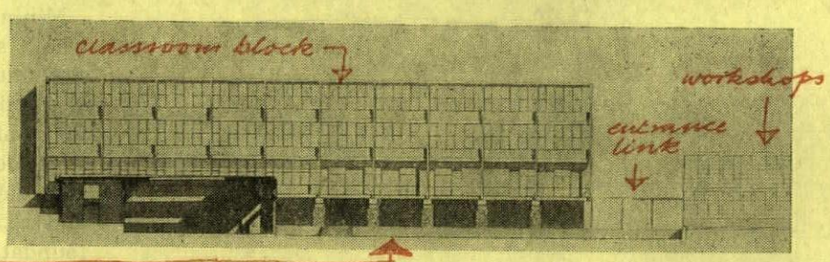
The building has a light steel frame planned on a 3 ft. 4 in. module, with precast concrete slab floor and roof units. Internal partitions are of preformed gypsum plaster honeycombed panels. External cladding is glass curtain walling with some panels of brickwork. Opening windows are mostly top-hung hoppers.

Building will start in March. The school has been designed in collaboration with F. Hamer Crossley, Derbyshire County Architect.

SECONDARY SCHOOL: SOWERBY BRIDGE, YORKS

James Cubitt and Partners

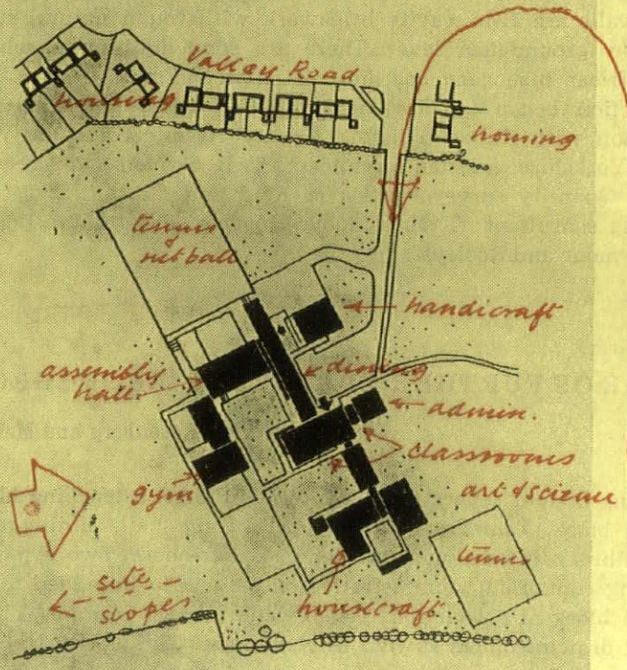
A four-form entry mixed secondary school for 600 pupils. Sowerby Bridge is near Halifax. The site is steeply sloping and is subdivided by dry stone walls with trees planted alongside them. The plan has been determined by the desire to take full advantage of the views to the south across a valley as well as to make economical use of the



contours. The main teaching areas occupy four floors, with specialist classrooms on the north side and general classrooms on the south.

The gymnasium and workshop blocks are constructed with reinforced concrete frames. The main classroom block has a steel frame rising from reinforced concrete columns at ground level and prestressed concrete floors.

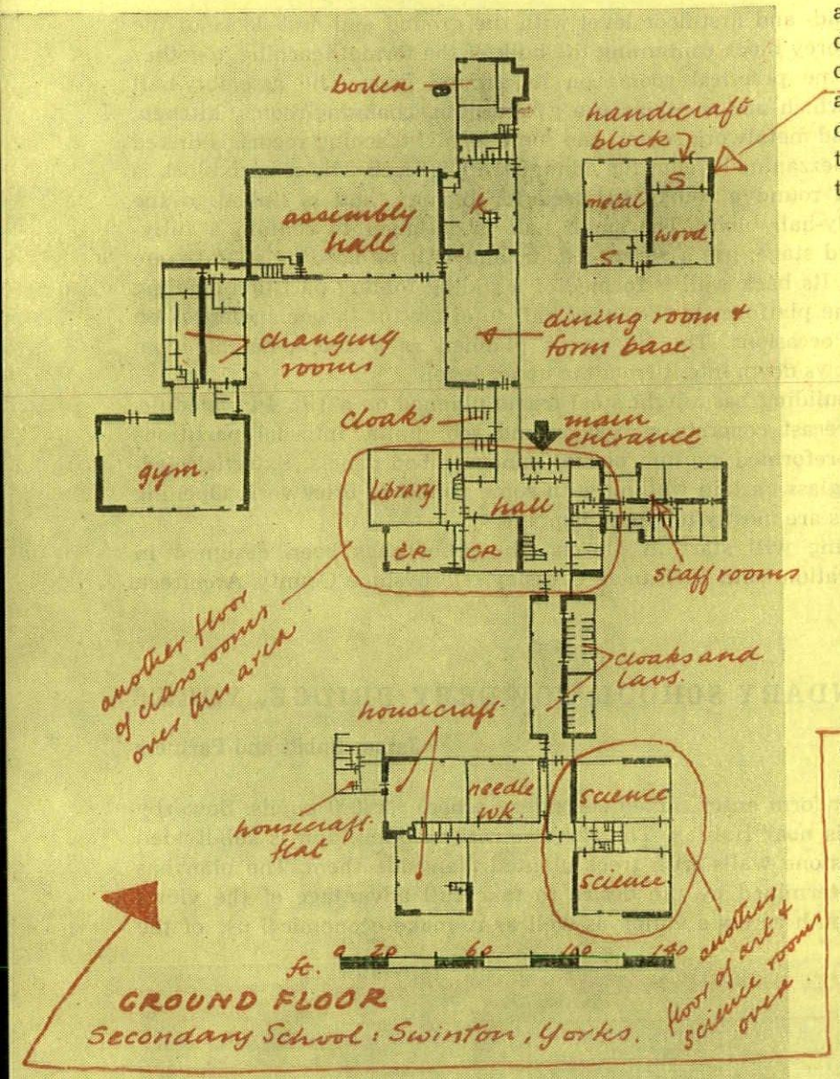
Work is due to start in March. It has been designed in collaboration with Hubert Bennett, county architect of the West Riding of Yorkshire.



SECONDARY SCHOOL: SWINTON, YORKS

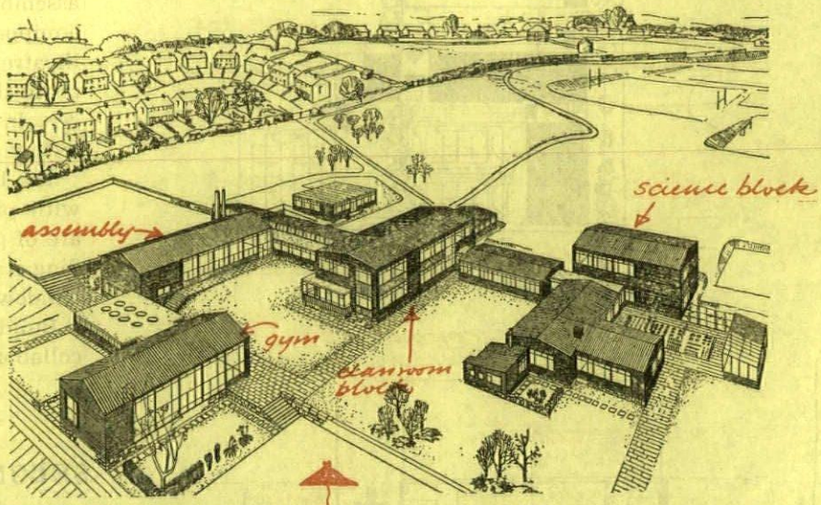
Robert H. Matthew

A three-form entry secondary modern school for 500 boys and girls. The site slopes from north to south. A housing scheme bounds the west side, and playing fields are to be laid out to the south and north. Unworked coal seams lie at various depths below the site. The plan was determined chiefly by three factors: the limited access—the approach is through the housing scheme, but this is conveniently near the flattest part of the site—the likelihood of future mining subsidence, which required relatively small units in light construction and precluded two-storey planning apart from two small areas, and



GROUND FLOOR
Secondary School: Swinton, Yorks.

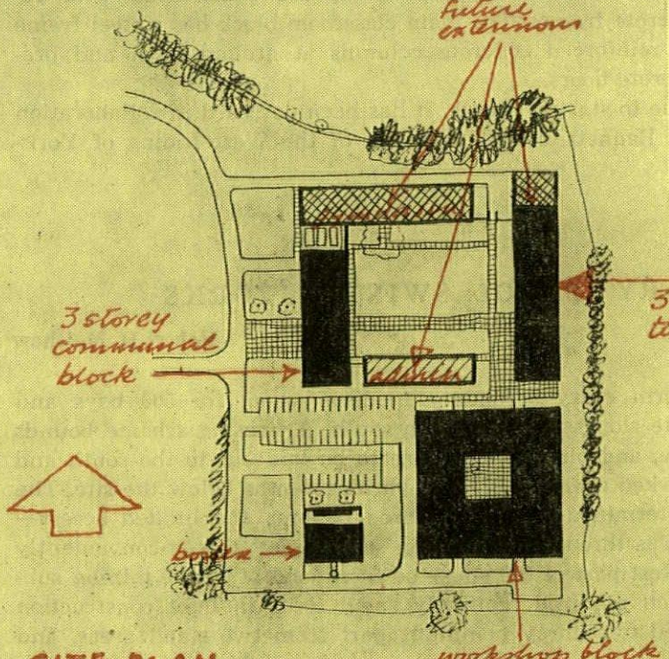
a rather bleak outlook, which made an 'inward-looking' school desirable. The approach road leads into an entrance court bounded on three sides by the handicrafts block, the small hall-dining block and the main entrance and administration block. The remainder of the school is planned round two partially-enclosed courts—one to the west contained by the small hall-dining block, the assembly hall, the gymnasium and the library, and one to the east by the two-storey



classroom block, the main cloakrooms and the housecraft block. A smaller court is formed on the east side of the housecraft block by the two-storey art and science block and the garden potting sheds and tool stores. The general teaching rooms and the art and science rooms are grouped in the only two-storey blocks. The small hall-dining room can be converted by means of sliding-folding partitions into two teaching rooms.

Mining subsidence is expected to be regular, and eventually the whole site will be lowered by an equal amount. The differential settlement will be kept to within reasonable limits by the sub-division of the buildings into independent units not more than 60 ft. long, and by reinforcing the foundation raft slabs with two layers of welded steel mesh. Where the independent structures are connected there are 6-in. gaps between the rafts and 9-in. movement joints in the walls and roofs, these being bridged with pliable aluminium strips. The foundations are reinforced concrete rafts bedded on sand. The structural frame is mainly of rolled steel sections with roofs of trusses and lattice girders, but there are some load-bearing brick walls. The external walls are 11-in. cavity brickwork with rough natural stone walls below ground-floor level. There are some infilling panels of vertical African mahogany boarding on softwood framing.

Construction began in May, 1955. The school was designed in collaboration with Hubert Bennett, County Architect for the West Riding of Yorkshire. Assistant architects: T. R. Spaven and Margaret M. Little. Quantity surveyors: David Reid and Gibson. Structural engineering consultant: T. H. Haddow. Heating consultants: Donald Smith, Seymour and Rooley.



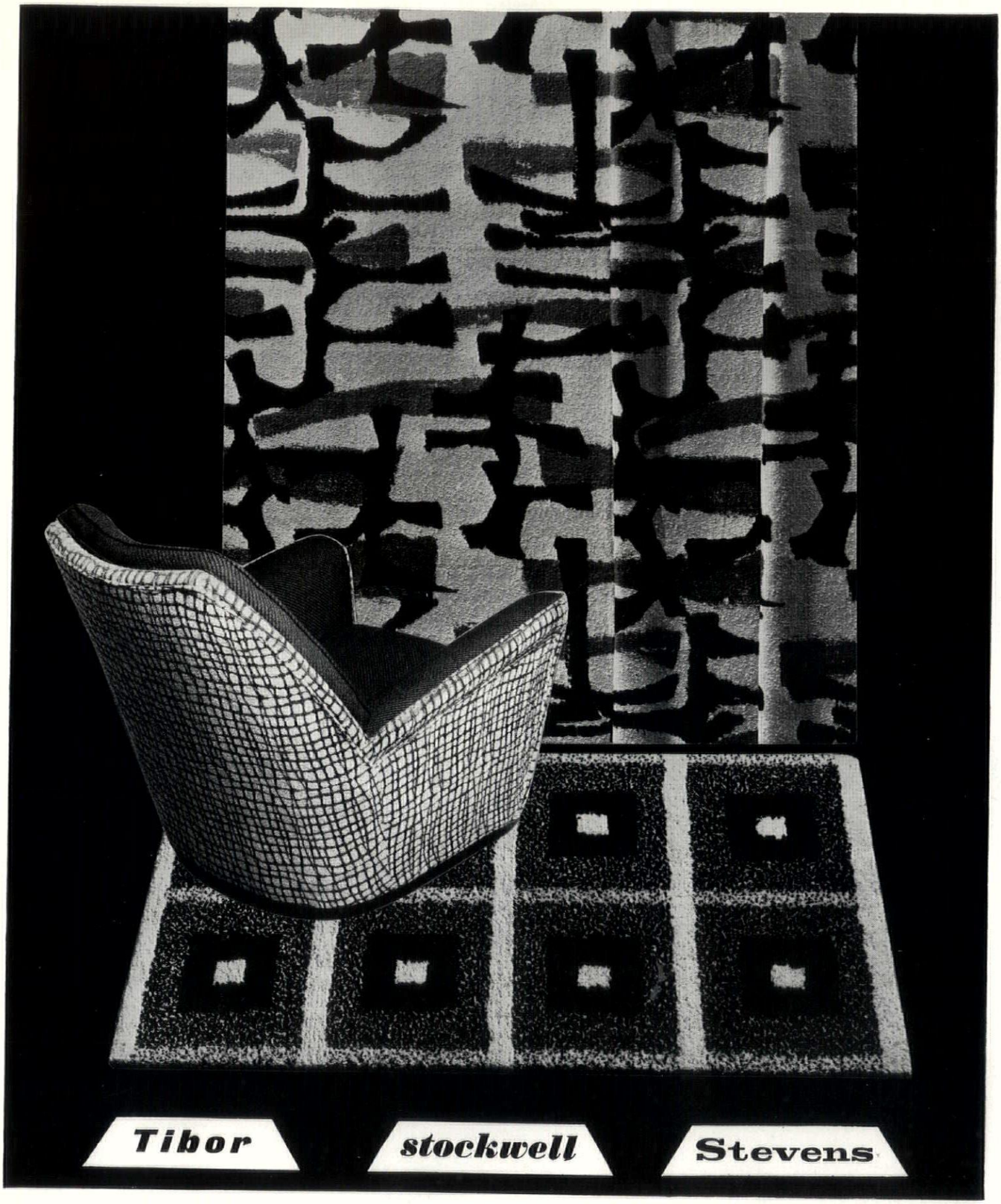
SITE PLAN
College of Further Education: Bromsgrove

3 storey teaching block

COLLEGE OF FURTHER EDUCATION: BROMSGROVE

Yorke, Rosenberg and Mardall

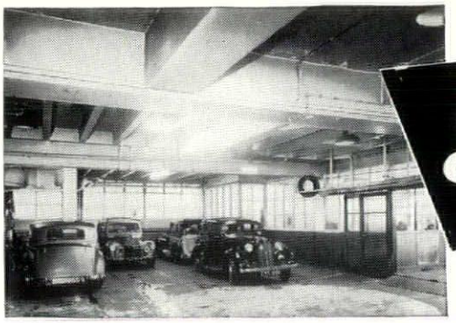
Consisting of four separate but related buildings, a teaching block, workshop block, communal block (comprising hall, dining-room, kitchens, library, lecture-room, etc.) and a boiler-house. Two gymnasia and a wing containing administrative offices are to be added to the communal block at a later date. The teaching block contains laboratories and drawing-offices as well as classrooms. The workshop block



EXCITING new Tibor Textureprints, woven in high quality textured cotton, incorporating Lurex non-tarnishing metallic thread. In guaranteed fast Vat colours, they combine the beauty of colour weaving and printing. The design illustrated is called "Raw Coral." Produced by: Tibor Ltd., Stratford-on-Avon.

VICEROY deep all wool pile rug with textured effect, available in a variety of colours and sizes to your specification. In three grades, "Standard," "Super" and "Supreme." The design shown is "Broadway" by Tibor Reich, F.S.I.A. Produced by: S. J. Stockwell and Co. (Carpets) Ltd., 16 Grafton Street, London, W.1.

THE "BALMORAL" CHAIR designed by Ronald E. Long, M.S.I.A., is an example of the new range of upholstered furniture by R. S. Stevens. The outside is covered in Tibor's deep textured wool fabric "Mesh" Black / White with "Stratford" Black on the inside. Produced by: R. S. Stevens Ltd., 209 Wood Street, London, E.17.



See-

HOW THE SCENE CHANGES

Garage with conventional lighting. Note the confusion of beams, pipes, trunking, wiring and light fittings.

The same garage after modernising with a LUMENATED CEILING.

Write for your copy of "LUMENATED CEILINGS", an illustrated brochure giving full details of this new lighting technique.

When modernising old premises or building new ones, you can make lighting an integral part of design by installing a LUMENATED CEILING, a new lighting technique combining light source and ceiling in one. The whole interior of shops, offices and showrooms is diffused with a pleasant, efficient light of uniform intensity without shadow, glare or 'high spots'. The LUMENATED CEILING overcomes many design problems by effectively screening overhead pipe work, ventilation trunking and other unsightly projections.

SAVING IN MAINTENANCE COSTS

The surface of the LUMENATED CEILING is a durable, finely corrugated plastic material, specially treated to repel dust. It is non-inflammable, can be easily cleaned and kept in perfect condition with the minimum of attention.

LUMENATED CEILINGS LIMITED

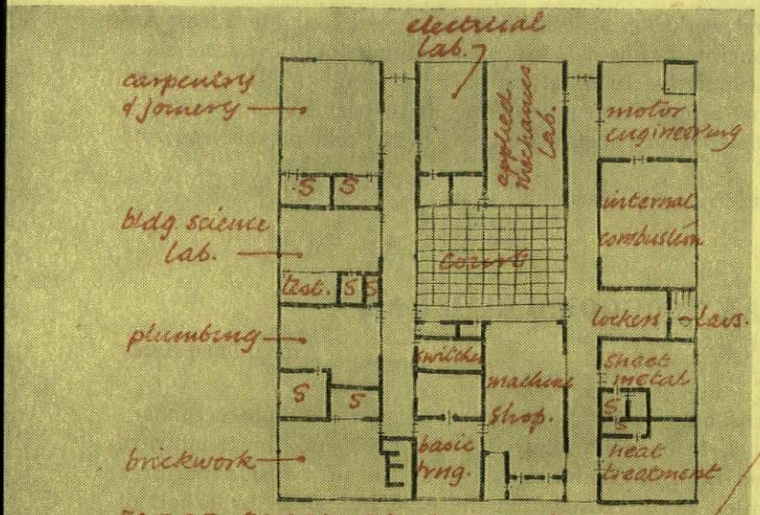
L.C

LONDON OFFICE: ALLIANCE HOUSE, CAXTON ST., S.W.1. TEL: ABBEY 7113

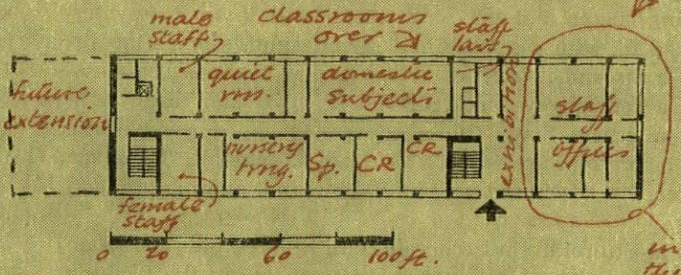
HEAD OFFICE: THERMOTANK LTD., HELEN STREET, GLASGOW

South African Company: Thermotank S.A. (Pty.) Ltd., Simmonds and Godfrey Street, Johannesburg.

TGA L7

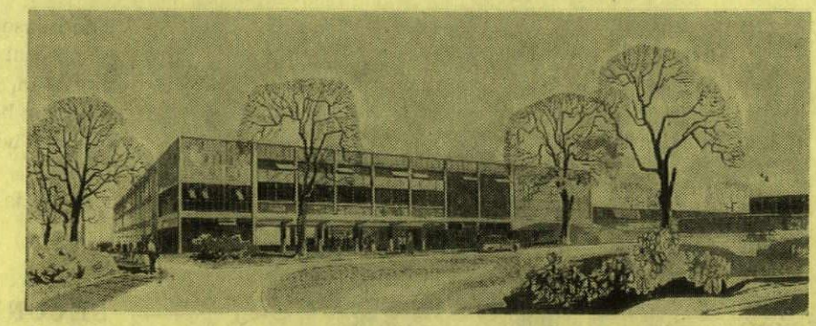


FLOOR PLAN · Workshop block



GROUND FLOOR · Teaching block

College of Further Education: Bromsgrove



accommodates the engineering and building departments. The two-storey boiler-house serves both the college and a nearby high school.

The teaching block is constructed with precast reinforced concrete columns with double external walls consisting of 4½-in. brickwork and an inner skin of concrete blocks. Windows are timber vertical sliding sashes. The workshop block has a steel frame, with boxed columns formed of two welded channels, and a roof of lattice trusses with metal roof-decking. All steelwork is exposed and treated with a zinc spray process and painted. External walls are 11-in. cavity brickwork; and internal walls 9 in. brick. Most of the services are in the ceilings. Lighting is through metal louvres beneath the trusses, with roof-lights and fluorescent lights above. The communal block has an in-situ reinforced concrete frame, with steelwork (similar to that in the workshop block) for the section containing the main hall.

Work on the first stage is expected to begin in April this year.

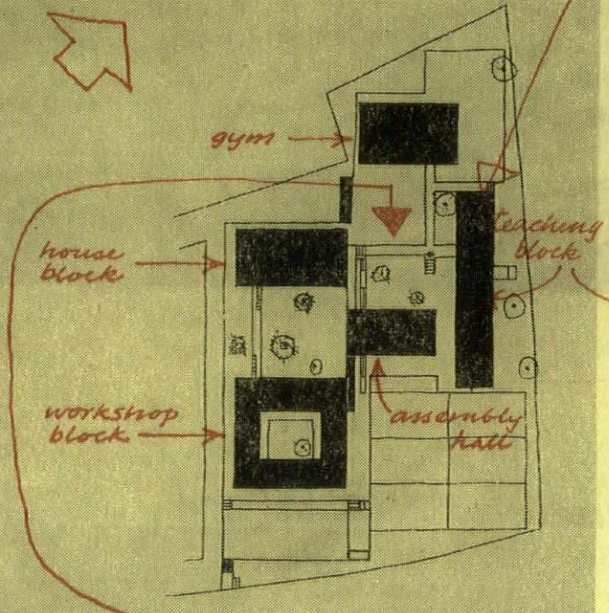
in completed scheme these will become drawing offices

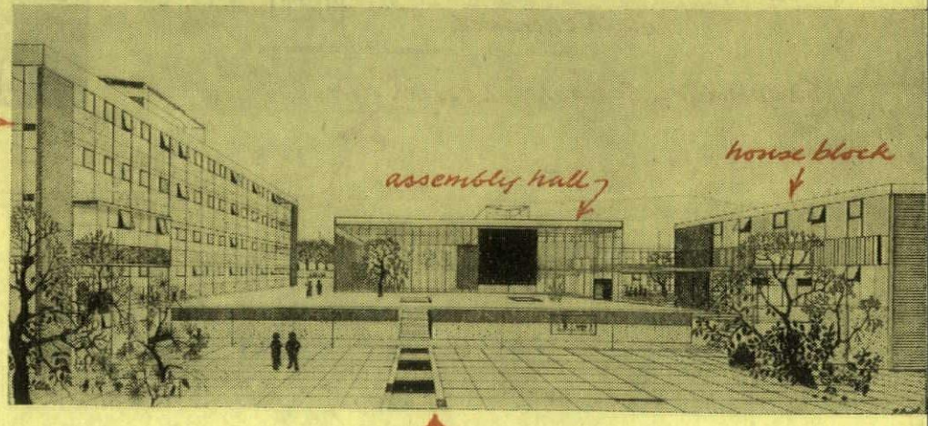
COMPREHENSIVE SCHOOL: DULWICH

London County Council

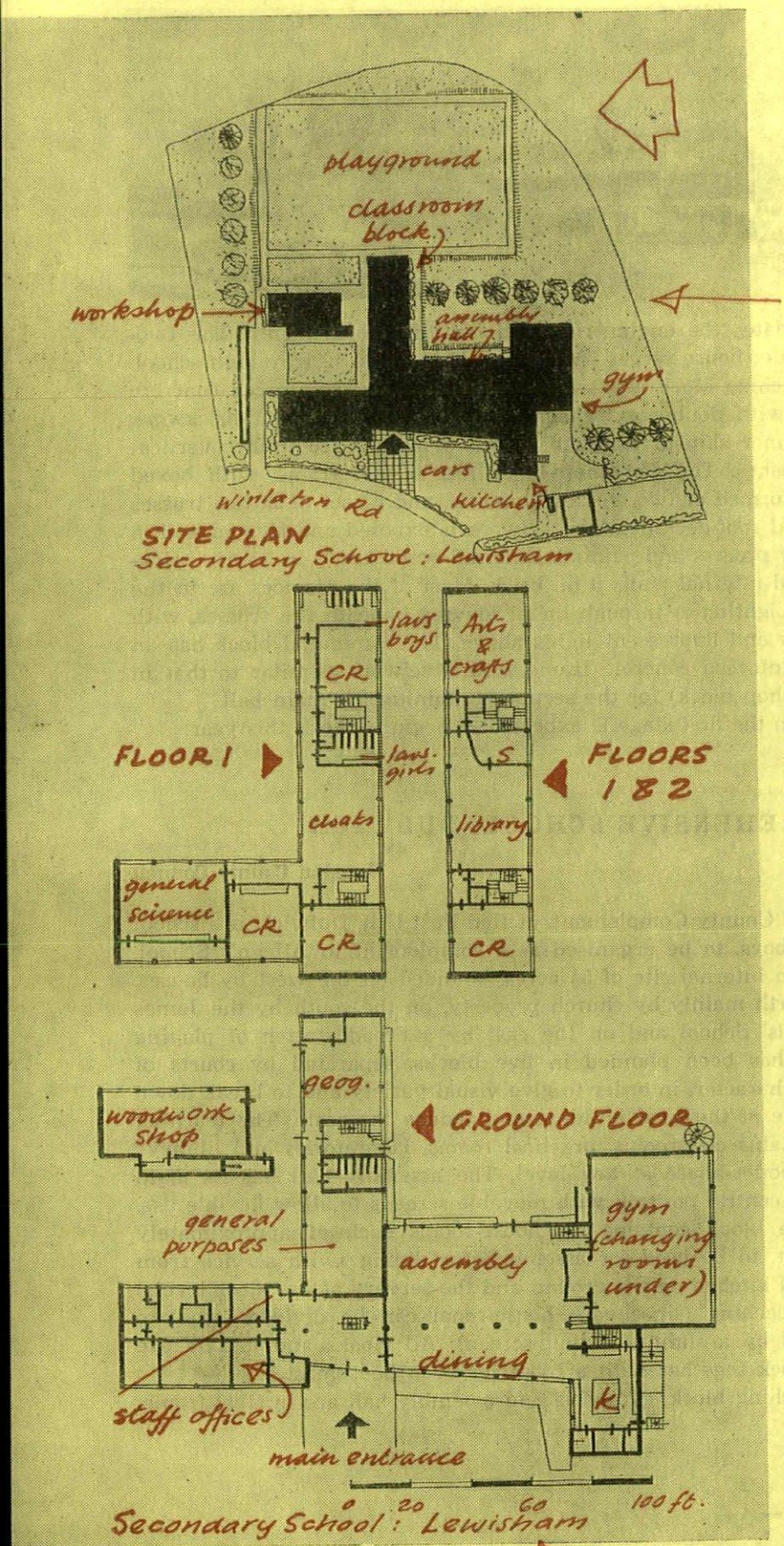
Alleyn's County Complement, at Red Post Hill, Dulwich, is a school for 1,470 boys, to be organised as a complement to Alleyn's School. It is on an internal site of 5½ acres, bounded on the west by houses, on the north mainly by church property, on the south by the James Allen Girls' School and on the east by a broad stretch of playing fields. It has been planned in five blocks, separated by courts of differing character, in order to give visual variety and to break down the volume of the total building and reduce the scale. The teaching block contains classrooms, practical rooms, laboratories and library; also the boiler-house at low level. The assembly hall has its main stage in a central position with movable screens to allow flexible use. The house block contains six house-rooms each of approximately 1,000 sq. ft. to be used for assembly, for dining (with service from the central kitchen on the ground and the servery at first-floor levels) and for teaching (since each house-room can be divided into two classrooms by a sliding/folding screen). All cloaks and lockers are in this block together with a room for each housemaster.

The teaching block, gymnasia and assembly hall are in steel frame.





SITE PLAN Comprehensive School: Dulwich



The house and workshop blocks are in reinforced concrete. Floors are of precast concrete beams at 2-ft. centres supporting wood-wool slabs and 2-in. structural screed on top and an acoustically absorbent building-board below. External cladding is in part curtain wall, and in part windows with panels of timber, brick, and precast concrete slabs.

Work is due to start in March this year.

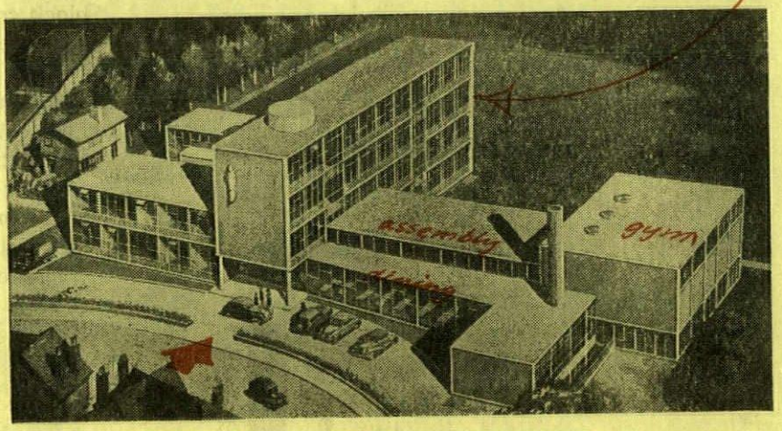
SECONDARY SCHOOL: LEWISHAM

Archard and Hardy

A two-form entry special-agreement Roman Catholic secondary modern school, to be built jointly by the LCC and the Southwark R.C. Diocesan Schools Commission. The site is in a residential area off the Bromley Road, bounded on the east and south by a belt of trees forming part of Woodland Walk, Downham. The plan provides thirteen teaching spaces and ten form bases, with a total teaching area of 14,500 sq. ft., with assembly hall, gymnasium, science laboratory, arts and crafts and housecraft rooms and workshop. The classrooms occupy a four-storey block, served by two staircases, with circulation on alternate floors. Noise sources, such as gymnasium, workshop and laboratory, are isolated as much as possible. The stage and dining area are also used as circulation and gymnasium and dressing rooms.

The frame is in-situ reinforced concrete with isolated pier and beam foundations. The frame is exposed at the returns only ; the flanking walls are in glass curtain walling, but the floors are carried through and exposed on the face. Columns are placed behind the curtain walling. Solid end panels are in facing bricks with an inner leaf of breeze concrete. Where exposed externally the frame is faced with white artificial stone. Facings are heather-coloured sand-lime bricks. Solid panels to windows are in green-faced asbestos cement panels. The chimney flue is free-standing and consists of egg-shaped concrete sewer-pipe used as permanent shuttering. Heating is by forced draught convector cabinets, from an oil-fired boiler system.

Work is expected to begin early this year. Chief assistant architect: C. A. B. Gowers.



SOME BIOGRAPHICAL NOTES on the architects represented in this issue

A. Hodson Archard: trained at the Bartlett School; began practice, 1930 (churches, schools, housing, etc.); war service, Royal Engineers; after the war, became lecturer at Northern Polytechnic, London; resumed private practice, 1946; partnership with Ronald Hardy since 1949. **Ronald Hardy:** trained Liverpool under Reilly and Budden (B.Arch. with First Class honours); war service, Royal Engineers in Far East, India, Burma and Hongkong; mentioned in despatches for work on American Air Field construction in Assam; MBE for work in rehabilitation in Hongkong after Japanese occupation.

Architects' Co-Partnership: formed 1939, consisting of eleven members all of whom trained together at AA school; re-formed immediately after war by eight of the original group, seven of whom make up present firm: Kenneth Capon, 39; Peter Cocke, 37; Michael Cooke-Yarborough, 39; Anthony Cox, 39; Michael Grice, 37; Leo de Syllas, 37; Michael Powers, 39. Designed Brynmawr rubber factory; several private houses; parts of 1951 South Bank exhibition; primary schools for Coventry and Herts; secondary schools for Derbyshire, Yorks and Herts.

Eric Bedford: chief architect, Ministry of Works since 1951; Grissell Gold Medallist, 1934; appointed CVO 1953 for work on official Coronation decoration and Westminster Abbey annexe; member of RIBA Council.

Ronald Bradbury: born 1908; trained Manchester and Columbia University, New York; Athens Bursar, 1939; Lecturer, Durham University School of Architecture and private practice in North-East until war. Director of Housing, Glasgow, 1945-48; City Architect and Director of Housing, Liverpool, since 1948; member, RIBA Council.

Sir John Burnet, Tait and Partners. Gordon Tait, now senior partner, is son of the late T. S. Tait. Other partners are T. Kennedy Axten, E. A. Blade and C. Spencer Willmott. The firm has designed factories, hospitals, office buildings, shops and stores, etc.; also the Station Gate of the 1951 South Bank exhibition (and converted it afterwards into the present British European Airways terminus).

Bertram Carter: born 1896; trained Royal College of Art and as pupil of Lutyens; works include hospitals, factories, shops, flats, etc.; hon. treasurer of MARS Group since 1944.

Peter Chamberlin: born 1919; trained Kingston School of Art. **Geoffrey Powell:** born 1920; trained AA. **Christopher Bon:** born 1921; trained Zurich and Milan. Partnership, formed 1952, has built London Shoe Co. shop in New Bond Street; Golden Lane housing scheme, City of London (see 1954 and this Preview issues); schools; warehouse at Witham, Essex (see next month's AR).

Harold Conolly: born 1901; trained Leeds; deputy city architect, Bradford, 1937-39; city architect, Bradford, 1939-42; deputy county architect, Essex, 1942-45; county architect, Essex, since 1945.

James Cubitt: born 1914 in Melbourne, Australia; trained AA; war service in Royal Engineers in West Africa, India and Burma; studio instructor, 1946-48, at Kingston School of Art; since 1949, senior partner, James Cubitt & Partners; since 1951, senior partner, James Cubitt, Scott & Partners, Gold Coast. **Stefan Buzas:** born 1915 in Hungary; trained Vienna, Polytechnic and AA School; instructor, 1944-49, Kingston School of Art; became partner in James Cubitt & Partners, 1949. **Fello Atkinson:** born 1919; Sir Walter Lawrence Scholarship to AA School, 1936; completed training at AA and School of Planning after serving in Royal Navy from 1940-46; worked on East Kilbride New Town, 1947-48; taught at AA School, 1948-54; Fulbright exchange lecturer at Harvard University, 1950-51.

Frankland Dark: born 1903; trained RA School; associated with F. Q. Farmer since 1931 (partnership since 1934; Farmer retired 1952). The firm has built power stations, industrial buildings, factories, schools, houses and showrooms, including a quantity of work in Kuwait and elsewhere in the Middle East.

Enrico De Pierro and Henry Elder: partnership established 1952 to carry out design for technical college at Poole, Dorset, after competition had been won by De Pierro in 1951; general practice with special interest in schools and theatres; both partners also teach. De Pierro was trained at MacGill and Michigan Universities; Elder at Manchester University.

Louis de Soissons: born Montreal, Canada, 1890. Articled to J. H. Eastwood; trained RA Schools and École des Beaux Arts, Paris; Tite prizeman, 1912; Henry Jarvis student, 1913; architect for Italy, Imperial War Graves Commission; member, Royal Fine Art Commission since 1949; architect-planner, Welwyn Garden City; architect of George VI memorial. Partners: Peacock, Hodges and Robertson; works include industrial and social service buildings, shops, theatres, housing, war memorials, etc.

John Murray Easton: born 1889; trained Scotland and London; Godwin bursar 1927; president AA, 1939-40; member of RIBA Council since 1951; Royal Gold Medallist, 1955. **Sir Howard Robertson:** born 1888; trained AA, London University and Paris; principal of AA throughout 1920's; Royal Gold Medallist, 1949; past president RIBA; member Royal Fine Art Commission. Partnership established 1919 (at first with late Stanley Hall), has built Royal Horticultural Society Hall, Gt. Ormond Street Children's hospital, Government exhibition pavilions, Hatfield Technical College, etc.; also interiors of liners; architects of new Shell office building, South Bank, and of Bank of England printing works, Debden, Essex.

A. G. Sheppard Fidler: born 1909; city architect, Birmingham; trained Liverpool (under Professor Reilly) and at the School of Civic Design under Professor Abercrombie; Victory Scholar, 1933; Rome Scholar, 1933; formerly chief architect, Barclays Bank; chief architect, Crawley new town, 1947-52; member RIBA Council since 1953.

Frederick Gibberd: born 1908; studied Birmingham; past Principal AA School; member RIBA Council since 1952 (vice-president, 1950-51); member, Royal Fine Art Commission; works include Pulman Court, Streatham, Hackney Housing, London Airport terminal buildings (see 1954 Preview issue and July and November, 1955, *AR*); marketplace at Lansbury neighbourhood, offices on Albert Embankment now under construction (see 1955 Preview issue), etc.; architect-planner of Harlow new town; author of *The Architecture of England* and *Town Design*.

Ernö Goldfinger: born 1902 in Budapest; trained Switzerland and France (Auguste Perret's atelier); came to England, 1934; has designed shops, houses (including row of three in Willow Road, Hampstead, one of which he occupies), schools, offices, etc.; author of Penguins *County of London Plan Explained* (with E. J. Carter), *British Furniture Today*; English correspondent for *L'Architecture d'Aujourd'hui*.

Frank Gollins: born 1910; trained Birmingham; in practice before the war with R. A. Smeeton. **James Melvin:** born 1912; trained AA; worked in Paris and Vienna and was in partnership with Lionel Smith. **Edmund Ward:** born 1912;

previously a partner with Sir John Brown & Partners. Present firm formed after the war; built own offices, Manchester Square; Sheffield technical college now under construction (see 1954 Preview issue); schools in Glamorgan, etc.

W. Stanley Hattrell: took over father's practice in Coventry in 1925. **Duncan Kay:** articled to a Birmingham firm, and part-time student at Birmingham School; worked in London with Brian Poulter before joining W. S. Hattrell in 1935, becoming a partner in 1937. **Norman R. Branson:** articled to a Birmingham firm; became partner in present firm in 1948; specializes in stage design and sculpture and was chiefly responsible for design of theatre illustrated in this issue. **Savile Greenwood:** trained Liverpool; joined W. S. Hattrell, 1946; partner since 1948.

Leonard C. Howitt: city architect, Manchester, since 1945; trained Liverpool; managing assistant

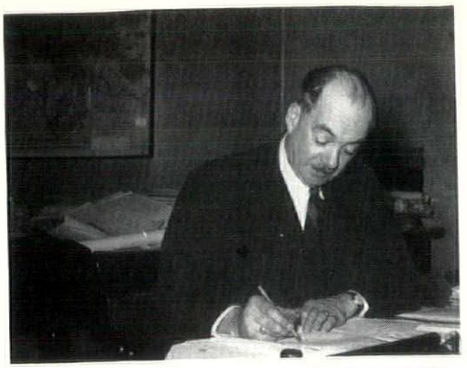
to Herbert J. Rowse, Liverpool, until 1934; chief architectural assistant to Lancelot H. Keay, Liverpool Director of Housing, 1934-37; deputy city architect, Manchester, 1937; president, City and Borough Architects' Society; president, Manchester Society of Architects; member, RIBA Council since 1947 and chairman of Salaried and Official Architects' Committee.

Geoffrey Jellicoe: born 1900; trained AA; in partnership with J. C. Shepherd until 1930, engaged on gardens and domestic work; afterwards in independent practice; work included Calverton Colliery buildings, in collaboration with Miners' Welfare Commission; Principal, AA School, 1939-41; consultant, Ministry of Works, 1942; work includes landscape and town plans for Wolverton (Bucks), Guildford and Wellington (Shropshire); appointed designer for new town of Hemel Hempstead, 1947; consulting architect to Government of Northern Rhodesia, 1947 (and designed Lusaka hotel there); past-president, International Federation of Landscape Architects.

W. A. Ledgard: joined the firm of Kitson, Parish, Ledgard and Pyman in 1908 as articled pupil (the two principals were then Sydney Kitson, considered to be the father of the firm, who died just before the war, and James Parish, who joined in 1902, became a partner in 1914 and died in 1933). After war service, W. A. Ledgard became a partner; is a General Commissioner of Inland Revenue. **Noel Pyman**: joined office, 1922; became a partner, 1929; in sole charge during the last war, at the same time serving with the Royal Observer Corps. **William Henry King**: trained Leeds; joined the office in 1928; partner, 1936; specializes in hospital design; during the war was with the Ministry of Aircraft Production. **Norman H. Fowler**: joined the office in 1927; partner, 1936;

war service with Royal Artillery, returning to architecture in 1946 since when he has worked on a number of schools, a power station and buildings for War Department; acts as external examiner to Leeds School of Architecture.

R. A. H. Livett: went to Leeds in 1934 as housing director in charge of all work—including housing management for newly formed housing committee; appointed city architect when separate architect's department was formed in 1945; Sussex man—served in Royal Sussex Regiment in 1914-18 war, then went to AA, under Robert Atkinson; on qualifying, worked under Paul Waterhouse until his death, then for short period with Michael Waterhouse; has been chief assistant architect at

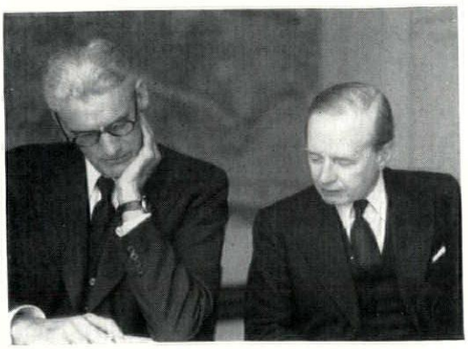


Nottingham and deputy housing director at Manchester; responsible, among other work at Leeds, for Quarry Hill flats.

Eric Lyons: born 1912; articled to London architect; supplemented this by training at Regent Street Polytechnic; worked in various London offices, including that of Gropius and Fry; set up in partnership with Geoffrey Townsend in 1938,

which was abandoned in 1939 and resumed after the war; partnership dissolved, 1954.

Frederick MacManus: born Dublin, where his interest in architecture was kindled by Vincent Kelly; trained Dublin School of Art, later at the AA; has worked with Beckett and Harrington, Dublin; Clough Williams-Ellis and W. L. Stoddard and Associates, New York; during war years worked at MOW as secretary of 'Inter-Departmental Committee on Building Materials Standardization' and technical officer to 'Standards Committee'; later as advisory architect to EJMA on standardization of joinery; afterwards joined in partnership with Edward Armstrong, who



has since retired; principal work, housing in Battersea, Kensington, Chelsea (Cremorne Estate), etc. Photograph shows Armstrong, left, and MacManus, right.

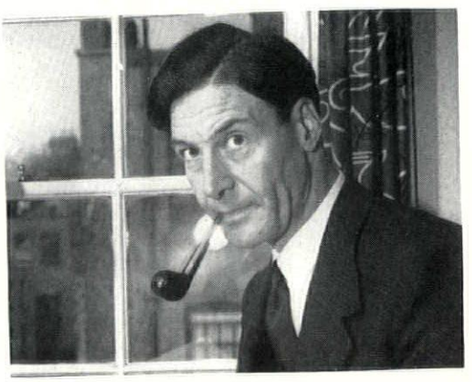
J. L. Martin: born 1908; architect, London County Council; trained Manchester (Soane medallist, 1930); head of Hull School, 1934-39; deputy architect, LMS railway, 1939-48; deputy architect, LCC, 1948 (chiefly responsible for Royal Festival Hall); member RIBA Council since 1953; author (with wife Sadie Speight), *The Flat Book*, 1937. Appointed 1955 first Professor of Architecture at Cambridge University, which post he takes up in October 1956.

E. D. Jefferiss Mathews: born 1907; trained as a surveyor; subsequently took outside RIBA final and joined family firm of architects established by great-grandfather in 1830's; war service with Royal Engineers, ending as Assistant Director of Works, Persia and Iraq; present practice (with two partners, Oswald D. Pearce and A. G. Nisbet) specializes in hospital and industrial work; vice-president RIBA since 1953; chairman ARCUK, 1951-53.

Robert H. Matthew: born 1906; trained Edinburgh; Pugin Student, 1929; Soane medallist, 1932; Arthur Cates prizeman, 1932; Bossom Gold Medallist, 1936; member RIBA Council since 1950; architect and town-planning officer, LCC, 1946-52; previously chief architect and planning officer to Department of Health for Scotland; now Professor of Architecture, Edinburgh University; recent work includes Turnhouse Airport, Edinburgh (see 1955 Preview issue); appointed architect for New Zealand House, to be constructed on Carlton Hotel (Haymarket) site, London.

Elie Mayorcas: born 1908, London, of Spanish extraction; trained AA (Distinction in Thesis); Henry Florence Student and RIBA Silver Medallist, 1932; worked with Verner O. Rees, Joseph Emberton and late Robert Atkinson; war service with Royal Engineers (escaped from Singapore after its fall); engaged principally on schools and industrial welfare projects.

Edward D. Mills: born 1915; studied architecture at Regent Street Polytechnic School of Archi-



tecture; private practice since 1937; author of *The Modern Factory*, *The New Architecture in Great Britain*, and a book not yet published on modern church architecture; member of RIBA Council; member of RIBA Science Committee and Prizes and Studentships Committee; zone architect Festival of Britain 1951 South Bank

[continued on page 76

Paint-buy Leyland

SPEED LEYLAC

for Winter Painting

THE LEYLAND RANGE INCLUDES THESE FIVE DECORATIVE FINISHES, EACH AT THE TOP OF ITS CLASS

You are invited to write for full details of the LEYLAND products mentioned here, and also shade cards.

LEYLAND PAINT & VARNISH CO. LTD. LEYLAND, LANCS, and LONDON

continued from page 74]
exhibition; awarded RIBA Alfred Bossom Research Fellowship, 1953; principal works include factories, churches (Preview, 1955), schools, flats, office buildings, etc.

Richard Sheppard: born 1911; trained AA; partnership includes his wife (formerly Jean Shufflebotham) and Geoffrey Robson; work includes schools in Herts, Essex, Worcs., etc., hostel at Wye College, Kent, shipping offices at Newcastle, housing at Harlow, etc.; member, RIBA Council; author of *Prefabrication* (1946), *Building for the People* (1948).

Basil Spence: born 1907; trained London (pupil of Lutyens) and Edinburgh; Arthur Cates prizeman, 1931; Pugin student, 1933; recent work includes schools, housing, many exhibitions (e.g., Sea and Ships building, South Bank, 1951); winner of Coventry Cathedral competition, 1951 (see 1954 Preview issue); planning consultant to Edinburgh University; member, RIBA Council since 1952.

C. G. Stillman: born 1894; 32 years' service in local government; one of the first to experiment with prefabricated schools when county architect of West Sussex; county architect of Middlesex since 1945; past vice-president RIBA.

Alfred F. A. Trehearne: founded the firm on 1st January, 1900; in 1906 took into partnership C. S. Norman, who died in 1925; sole partner until 1930 when joined by E. W. Preston and F. R. Jelley; the latter left in 1945; A. E. Lees joined in 1931 and died in 1955; F. P. C. Trehearne and W. R. Preston joined in 1941; H. Mortimer joined in 1951; T. R. Preston and G. Gneditch in 1955; all worked for the firm before becoming partners; pre-war work comprised offices, flats, banks, etc., including buildings in Kingsway; first new post-war building was St. Bridget's House in the City; most recent to commence is new headquarters for UK Atomic Energy Authority (in conjunction with Leslie C. Norton and Partners) in Lower Regent Street.

Noel Tweddell: trained Durham University and London; started private practice in 1936; after war service in the army joined the Housing Development Group of the Ministry of Works and was Assistant Director of Works for two years, working on prefabrication techniques, until he was appointed as the first chief architect of Harlow new town, under architect-planner Frederick Gibberd; since 1949 has been chief architect and planner of Basildon new town.

Basil Ward: New Zealander, born 1902; trained under J. A. Louis Hay; Henry Jarvis student, 1926; a founder member of the MARS Group; in partnership, 1929-39, with Connell and Lucas (modern houses); now with Ramsey, Murray & White; recent building is MRC Laboratory at Hammersmith; Professor of Architecture, Royal College of Art, 1946-53, then appointed first Lethaby Professor, RCA.

Douglas Wood: senior partner in the firm of Douglas and J. D. Wood; trained by the York Diocesan Surveyor; qualified in 1902; private practice, 1907-14, at New Malden; 1914-18 war service on Haig's staff; Housing Commissioner for Midlands, 1919-22; Mayor of Westminster, 1944-45. **J. D. Wood:** eldest son of above; articled to C. H. James, studied at Northern Polytechnic; war service as RAF pilot, 1939-46. **Michael Wood:** prisoner of war, 1941-45 (RAF Bomber Command); began studying architecture in Stalag Luft 3 (Wooden Horse); escaped three times for which he was awarded MBE in 1945; trained afterwards at Bartlett School; qualified, 1951, when he became partner in firm.

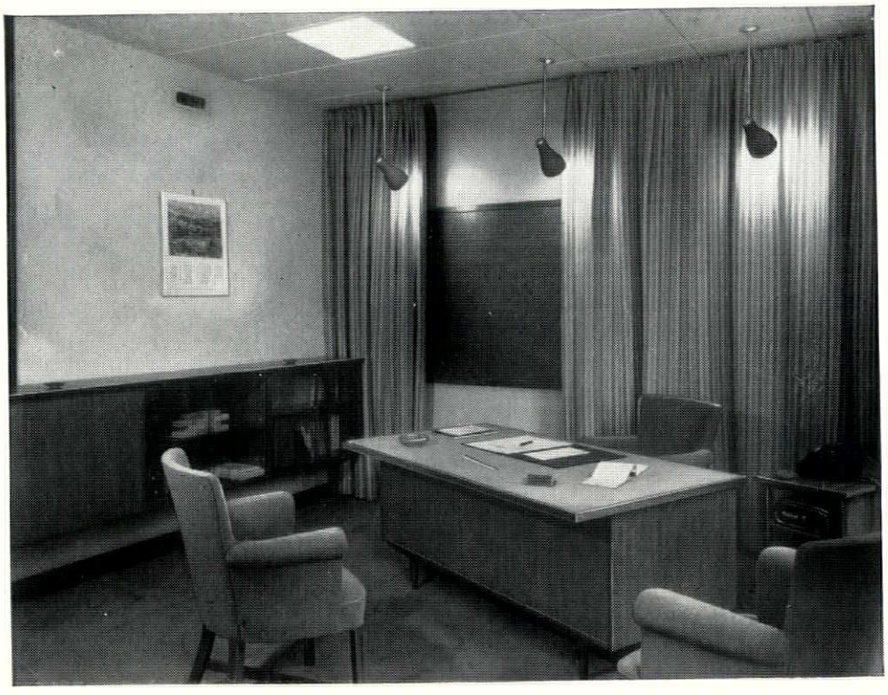
Kenneth Wood: born 1921; qualified in engineering before training at Regent Street Polytechnic; worked with Farmer and Dark and other well-known architects; now in private practice.

F. R. S. Yorke: born 1906; studied in Birmingham; author of *The Modern House*, *The Modern House in England* and (with Penelope Whiting) *The New Small House*, and editor of *Specification*; a founder member of the MARS Group; member of RIBA Council since 1951; in partnership with Mariel Breuer, 1936-38; one of the architects participating in the international housing exhibition, Berlin, 1957; appointed, 1955, architect to Gatwick airport; **Eugene Rosenberg:** born 1907; studied Prague and Paris. **C. S. Mardall:** born 1909; studied Northern Polytechnic and the AA. The three have been in partnership since 1946 and among their principal buildings are: schools at Stevenage, Lansbury, Ruislip and many other places, flats, industrial buildings, hospitals, housing in Harlow new town, etc.

In character . . . . .

Here is an office which says at a glance 'top-level management". Heal's Contracts Ltd. furnished it, in collaboration with the architects, Messrs. Adam, Holden and Pearson, F/F.R.I.B.A., for one of the directors of the famous builders, John Laing. We specialise in co-operating with architects to produce this kind of result—furnishing and decoration schemes which, both in the conception of the design and the execution of the work, express the character of the client.

If you would like to see more of Heal's recent work for boardrooms and offices our illustrated booklet *Furniture for Special Needs* is available on request.



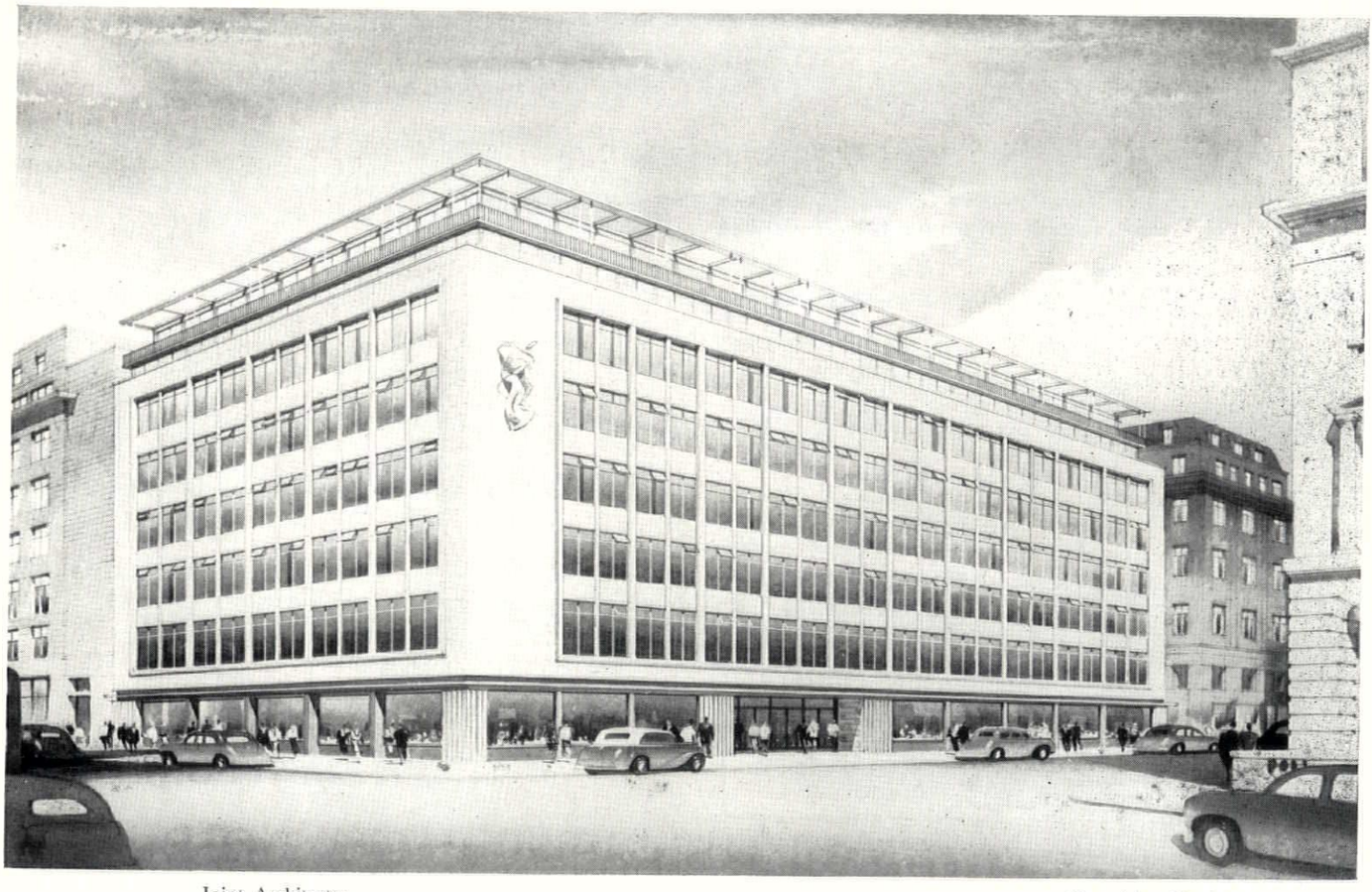
HEAL'S CONTRACTS LTD

196 TOTTENHAM COURT ROAD, LONDON, W.1. Telephone: MUSeum 1666

For the occupation of

THE UNITED KINGDOM ATOMIC ENERGY AUTHORITY

Charles II Street, S.W.1.



Joint Architects:
Messrs. Trehearne & Norman, Preston & Partners, and Leslie C. Norton, Esq.

Consulting Engineer:
John Dewar, Esq.

One of the many important new buildings now being erected in London

by

TROLLOPE & COLLS

Established 1778

CONTRACTORS etc

Power Station at Elland. *Architects:* Messrs. Kitson, Parish, Ledgard & Pyman. *General contractors:* Holland, Hannen & Cubitts Ltd. *Sub-contractors: Foundation work:* Yorkshire Hennebique Ltd. *Steelwork:* Heeman, Beddow & Sturmer Ltd. *Boilers:* John Brown Ltd.; Yarrow Ltd. *Cladding:* Robertson Thain Ltd. *Ventilators:* Colt Ventilation Ltd. *Roof decking:* D. Anderson Ltd.

Maisonettes at Camberwell. *Architect:* Dr. J. L. Martin, Architect to the LCC. *General contractors:* John Laing & Sons. *Sub-contractors: Timber panels and joinery:* Rippers Ltd. *Aluminium screens, droppers and balcony fronts:* Hawksley S.M.D. Construction Co. *Prefabricated copper plumbing:* Building Installations Ltd. *Vitreous enamel larder shelves and fireplace surrounds:* National Enamels Ltd. *Lighting protection:* R. C. Cutting & Co. *Plastic flooring tiles:* Marley Tile Co. *Electrical installations:* Halliday & Son. *General plumbing, water services and dry rising mains:* J. C. Toogood Ltd. *Lifts:* Express Lift Co. *Metal windows:* Frederick Braby & Co.; Crittall Manufacturing Co. Ltd. *Flue and duct linings:* True-Flue Ltd. *Asbestos sheeting:* Cape Asbestos Co. *'Fural' aluminium sheeting:* S. W. Ronald & Co. *Special rainwater outlets:* B. Finch & Co. *Glazing:* Faulkner Greene & Co. *Tiled fireplace surrounds:* W. N. Froy & Sons. *Plaster boards:* Gyproc Products Ltd. *Built-up roofing:* Permanite Ltd. *Insulating quilt:* Meta Mica Ltd. *Asphalt:* General Asphalte Co. *Ironmongery:* Childs Constantine & Co. *Lightweight insulating screeds:* Amazon Insulation Co. *Painting:* T. H. Kenyon & Sons. *Tar pavings:* A. C. W. Hobman & Co. *Plastering and granolithic work:* Pollock Bros. (London) Ltd.

Offices in Gresham Street, E.C.2. *Architects:* Trehearne & Norman, Preston & Partners. *General contractors:* Wates Ltd. *Sub-contractors: Portland stone:* Bath & Portland Stone Co. *Lifts:* Waygood-Otis Ltd. *Heating, hot water and ventilation:* Young, Austen & Young Ltd. *Electrical:* Rashleigh Phipps & Co. *Quarzite:* John Stubbs (Marble & Quarzite) Ltd.

Offices in Arthur Street, E.C.4. *Architects:* Trehearne & Norman, Preston & Partners. *General contractors:* John Mowlem & Co. *Sub-contractors: Site investigation:* Le Grand Suteliff & Gell Ltd. *Piling and sub-structure:* Soil Mechanics Ltd. *Asphalt:* General Asphalte Co. *Structural steel:* Moreland Hayne & Co. *Portland stone:* The South Western Stone Co.; Bath & Portland Stone Co. *Westmorland slate:* John Stubbs (Marble & Quarzite) Ltd. *Granite, roman stone and marble:* J. Whitehead & Sons. *Bricks:* Richard Parton Ltd. *Tiling:* Carter & Co. (London) Ltd. *Terrazzo:* Art Pavements & Decorations Ltd. *Cork and 'Paropa' roofing:* Frazzi Ltd. *Acoustic false ceilings:* John Dale Ltd. *Staircase balustrades, ladders etc.:* Kingsmill Metal Co. *Metal windows:* Crittall Manufacturing Co. *Car park gates:* Haskins Ltd. *Steel doors:* Haywards Ltd. *Garage turntables:* Francis Theakstone (1933) Ltd. *Lifts:* Waygood-Otis Ltd. *Lightning conductors:* Rashleigh Phipps & Co. *Heating, hot water and ventilation:* Young, Austen & Young Ltd. *Demolition:* Wackett Bros. Ltd.

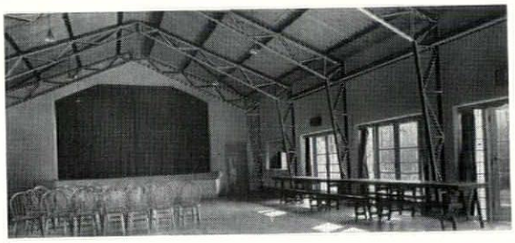
Office and Warehouse, London. *Architects:* Douglas & J. D. Wood, in collaboration with Wornum & Playne. *General contractors:* J. Jarvis & Sons. *Sub-contractors: Basement waterproofing:* Quickset Water Sealers Ltd. *Terrazzo floors:* Malacarp Terrazzo Co. *Heating:* Chas. P. Kinnell & Co. *Electrical:* Phoenix Electrical Co. *Lifts:* J. & E. Hall Ltd. *Plumbing:* Thomerson (1934) Ltd. *Sprinklers and fire doors:* Mather & Platt Ltd. *Windows:* W. G. Kaleyards Ltd. *Curtain walling:* Standard Metal Windows Co. *Acoustic ceilings:* Horace W. Cullum & Co. *Wood flooring:* Granwood Flooring Co. *Roof decking:* Wm. Briggs & Sons. *Portland stone:* Fenning & Co. *Artificial stone:* Empire Stone Co. *Facing bricks:* W. T. Lamb & Sons. *Ladders and railings:* George Wright (London) Ltd. *Pavement lights:* J. A. King & Co. *Door furniture:* Yannedis & Co.

Industrial Offices at East Ham. *Architect:* Elie Mayorcas. *General contractors:* Peter Lind & Co. *Sub-contractors: Heating, ventilating, hot and cold water, water supply and steam services:* J. Jeffreys & Co. *Curtain walling:* Williams & Williams Ltd.

Factory, Warehouses and Offices at Slough. *Architect:* E. D. Jefferiss Mathews of J. Douglass Mathews & Partners. *General contractors:* W. & C. French Ltd. *Sub-contractors: Curtain walling:* Holoplast Ltd. *Post stressed floor to general offices:* A. & C. Contractors Ltd. *Structural steel:* S. & G. Walmsley Ltd. *Bricks:* R. Y. Ames.

Factory at Eastleigh, Hants. *Architect:* Edward D. Mills. *General contractors:* Holland & Hannen & Cubitts Ltd. *Sub-contractors: Slate cills:* Carter & Kernaham Ltd. *Steel catwalk:* Steel Scaffolding Co. *Lifts:* The Express Lift Co. *Patent glazing:* British Challenge Glazing Co. *Glass:* Pilkington Bros. Ltd. *Plaster:* Gotham Co. *Sprinklers:* Atlas Sprinkler Co. *Warehouse precast slabs:* Cheecol Processes

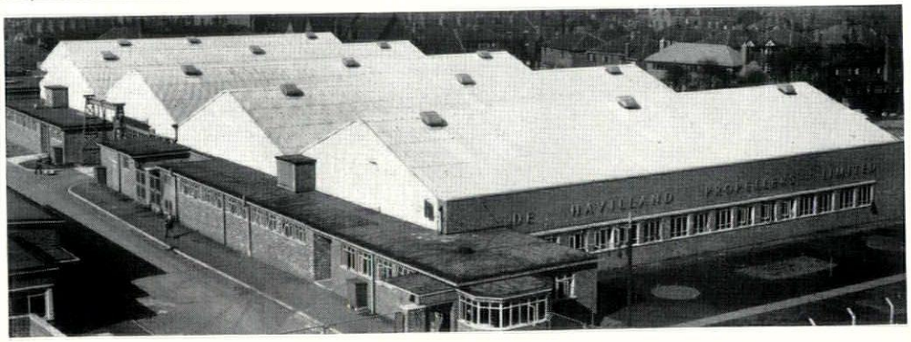
[continued on page 80



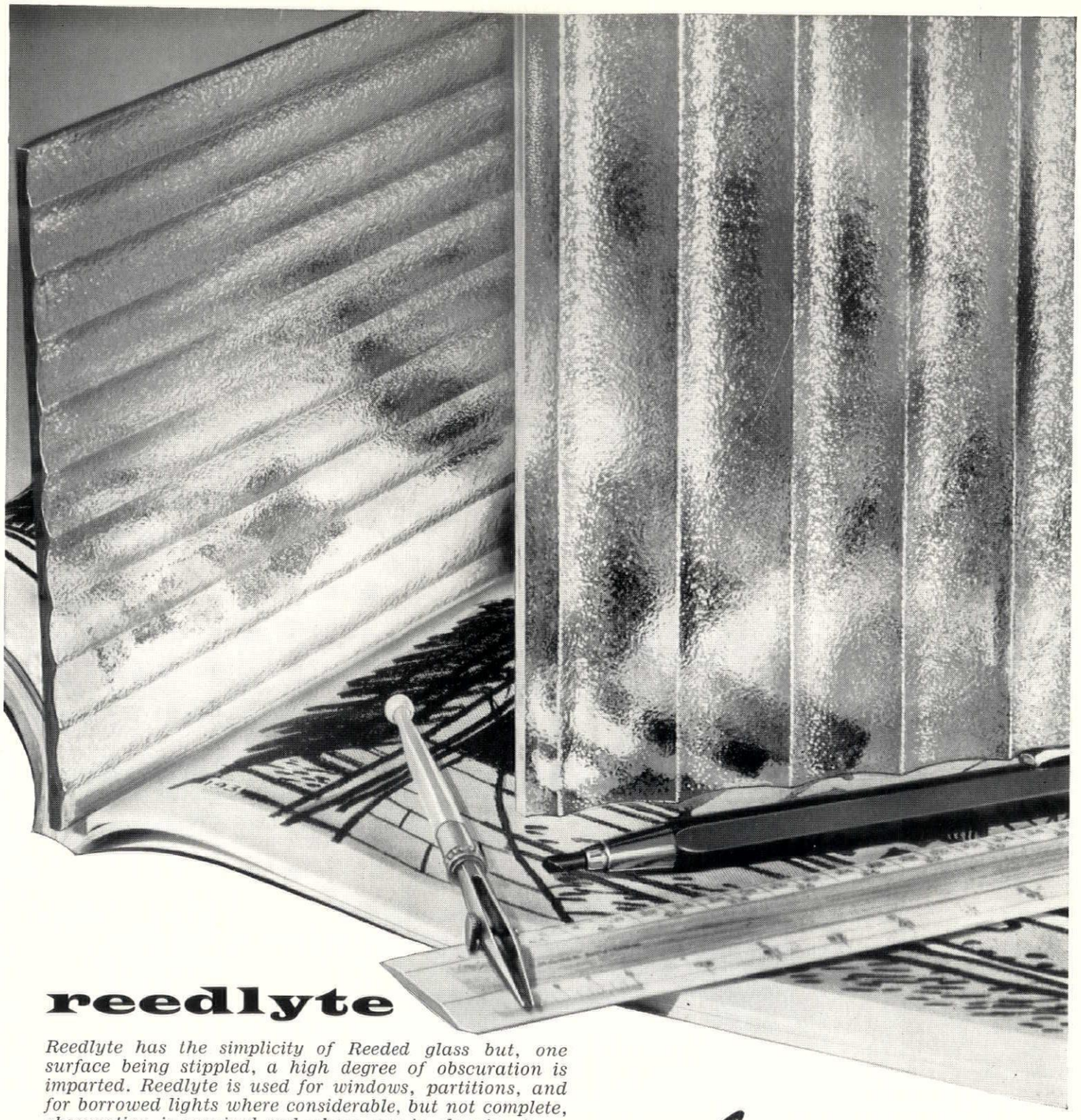
COSELEY
BUILDINGS
are so
adaptable

Adaptability, durability, appearance and economy are keynotes of Coseley Standard Steel-framed Buildings. Standard spans from 30 to 75ft. with eaves heights from 8 to 20ft. and lengths in multiples of 12′ 6″.

Whatever your accommodation problem it can be solved in the shortest possible time by 'Coseley' Standard Buildings. Brochure and full details are yours for the asking.



COSELEY ENGINEERING
CO LTD.
LANESFIELD
WOLVERHAMPTON
TEL • BILSTON 41927 • 6 lines



reedlyte

Reedlyte has the simplicity of Reeded glass but, one surface being stippled, a high degree of obscuration is imparted. Reedlyte is used for windows, partitions, and for borrowed lights where considerable, but not complete, obscuration is required and where ease in cleaning is an important factor.

technical details

Width of Reeds	Narrow ½ in. Broad ⅞ in.
Light transmission	83 per cent.
Thickness	⅛ in. (26 oz./sq. ft.)
	3/16 in. (44 oz./sq. ft.) *not normally held in stock*
Maximum size	100 in. x 48 in.

Chance GLASS

* * * *

PILKINGTON BROTHERS LIMITED

For further information on the use of glass in building consult
the Technical Sales and Service Department, St. Helens, Lancs. (Telephone: St. Helens 4001),
or Selwyn House, Cleveland Row, St. James's, London, S.W.1. (Telephone: Whitehall 5672-6)

Supplies are available through the usual trade channels

continued from page 78]

Ltd. *Precast concrete roofing:* Concrete Ltd. *Wall and floor tiling:* Cope & Co. *Flat roofing:* William Briggs & Sons. *Plumbing and cold water:* William Freer Ltd. *Built-up roofing:* London Asphalte & Felt Roofing Co. *Glass domes:* T. & W. Ide Ltd. *Lantern lights:* Williams & Williams Ltd. *Air pump unit:* Equipment Repairs Ltd. *Air compressor:* Broom & Wade Ltd. *Precast stone:* Blockcrete Co. *Vacuum pumps:* Lacy-Hulbert & Co. *Calorifiers:* Hartley & Sugden. *Powermaster boiler:* G.W.B. Furnaces Ltd. *Warehouse concrete framework:* R. E. Eagan Ltd. *Facing bricks:* Henry J. Greenham (1929) Ltd.

Television Laboratories at Enfield. *Architects:* G. A. Jellicoe & Partners. *General contractors:* J. Jarvis & Sons. *Sub-contractors: Heating, hot water and ventilation installations:* J. Jeffreys & Co. *Acoustic ceilings:* Burgess Products Co. *Electrical installation:* Phoenix Electrical Co. (London) Ltd. *Lifts:* Bennie Lifts Ltd. *Lightning conductors:* J. W. Gray & Son. *Metal windows and wallspan curtain walling:* The Standard Metal Window Co. *Demountable partitions:* The Ayrshire Dockyard Co. *Sliding folding doors and roller shutters:* Dennison Kett & Co. *Travelling cradle track:* Palmer's Travelling Cradle & Scaffolding Co. *Fire doors:* Mather & Platt Ltd. *Stone facings:* Stuart's Granolithic Co. *Piling:* The Franki Compressed Pile Co. *Mineralite rendering:* Cooper, Wettern & Co. *Cement glaze:* Robb's Cement Enamel Finishes Ltd. *Sanitary fittings:* W. N. Froy & Sons. *Precast facing slabs:* The Malacarp Terrazzo Co. *Bricks:* W. T. Lamb & Sons; Broad & Co. *Duct covers:* Broad & Co. *Slate cills:* E. F. Williams Ltd. *Venetian blinds:* J. Avery & Co. *Gas incinerators:* Southalls (Birmingham) Ltd. *Concrete fixings:* The Abbey Building Supplies Co.

Factory at Swindon. *Architect:* Bertram Carter. Main construction work and installation of mechanical and industrial services carried out wholly by the Cubitt Group. *Main contractors:* Messrs. Holland & Hannen and Cubitt's. *Mechanical Services:* Electrical Service Installations Ltd.

Factory at Kitt Green, near Wigan. *Architects:* E. D. Jefferiss Mathews, of J. Douglass Mathews & Partners, in collaboration with Skidmore, Owings & Merrill of New York. *General contractors:* A. Monk & Co. *Sub-contractors: Steel:* Peirson & Co.

College of Further Education at Harrow. *Architect:* C. G. Stillman, Middlesex County Architect. *General contractors:* Prestige & Co. *Sub-contractors: Barrel vault:* Twisteel Reinforcement Ltd. *Piling:* The Franki Compressed Pile Co. *Electrical installation:* T. Clarke & Co. *Mechanical installations:* William Freer Ltd. *Concrete windows:* J. A. King & Co. *Steel windows:* The Crittall Manufacturing Co. *Wood (carda) windows:* Holcon Ltd. *Lifts:* Waygood-Otis Ltd. *Sanitary Ware:* Adamsez Ltd. *Laboratory furniture and fitments:* George M. Hammer & Co. *Polythene pipe-line and fittings:* J. S. & F. Folkard (Engineering) Ltd. *Pyrex glass pipe-line and fittings:* G.V.F. Ltd. *Chemical stoneware:* Doulton & Co. *Roofing:* D. Anderson & Sons. *Patent glazing:* Hills (West Bromwich) Ltd. *Bicycle holders:* Le Bas Tube Co. *Sliding door gear:* George W. King Ltd. *Woodwool roofing slabs:* Halcrete (Precision) Panels Ltd. *Metal louvred ventilators:* Greenwoods & Airvac Ventilation Co. *Glass domelight:* R. Seddon & Sons. *Facing bricks:* Henry J. Greenham (1929) Ltd.

Technical College at Redcar. *Architects:* Gollins, Melvin, Ward & Partners. *General contractors:* F. Shepherd & Son. *Sub-contractors: Mechanical services:* Steels Engineers Installations Ltd. *Electrical services:* Jowett & Throp Ltd. *Structural steelwork:* Banister, Walton & Co. *Reinforced concrete work:* Girlingstone Ltd. *Curtain walling:* Holoplast Ltd. *Sanitary fittings:* B. Finch & Co. *Precast chimney stack:* Truflue Ltd. *Dome lights:* T. & W. Ide Ltd. *Patent glazing:* Henry Hope & Sons.

Corrections

We regret that on page 350, AR, November, 1955, Messrs. J. & B. Abbott (Contractors) Ltd. were credited with responsibility for plastering on the S.E. Passenger Handling Building, London Airport. They were in fact the painting contractors for this building.

In the description of the Laboratories at Rangoon, AR, November, 1955, page 313, the consultants for the space deck unit system were omitted. They were Bolton, Hennessey & Partners.

Advertisements

ARCHITECTURAL REVIEW.—Pre-war issues required by Birmingham School of Architecture: February, 1936, August, 1937, November, 1938. Reply to The Director, Birmingham School of Architecture, Margaret Street, Birmingham, 3.

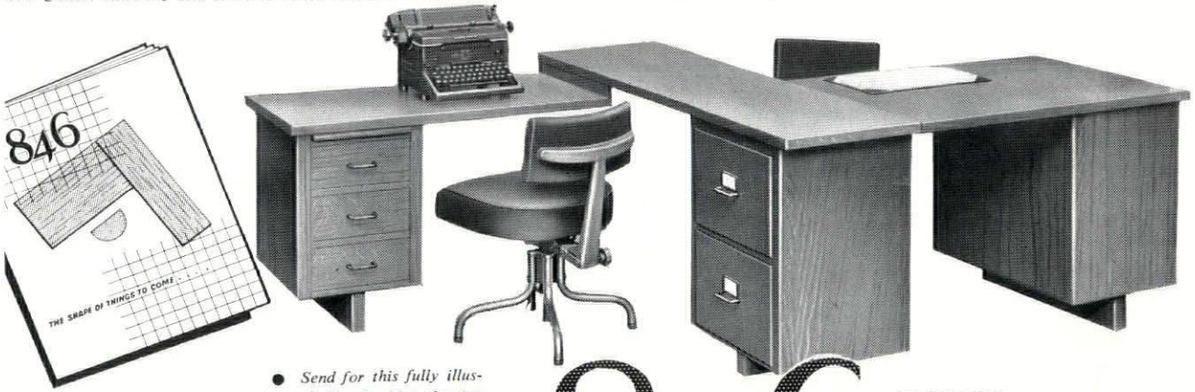
"REVIEW" BACK NUMBERS:— Urgently required: one copy each of the issues of THE ARCHITECTURAL REVIEW, January to April 1955. Please reply to Box Number WC/VVT.

ARCHITECTURAL DRAUGHTSMEN: B.X. Plastics Ltd., Brantham Works, Nr. Manningtree, Essex, require Draughtsmen for work in connection with industrial and administrative buildings. Applicants, aged 20 to 30, must be well versed in the preparation of schemes and detailed working drawings, and possess a sound knowledge of building construction, surveying, and estimating for building work. Good opportunities with an expanding Company in a pleasant area. Technical library and sports facilities available. Contributory pension scheme in operation. Salary commensurate with experience and ability. Apply to the Personnel Manager, stating age, experience and qualifications.

33% floor space saved 25% more desk area

846 (Eight-for-Six) furniture literally applies time and motion principles to the office — whether it is for one person or several hundred (including sound-proofed offices for senior personnel). Thus *eight* people can work with greater efficiency and comfort where only *six* worked before.

And in addition the desk area of each worker is 25% greater. Plan NOW for future expansion—decide to make more of existing space. 846 (Eight-for-Six)) is efficient! It *looks* efficient too! Just write "846" (Eight-for-Six) on your notepaper and full particulars will be sent by return.



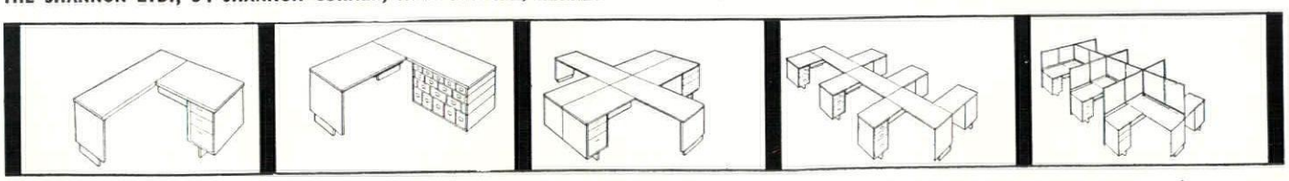
● *Send for this fully illustrated free booklet showing wide variety of seating plans.*

Shannon Systems

EIGHT-FOR-SIX 846 SERIES

System OFFICE FURNITURE

THE SHANNON LTD., 34 SHANNON CORNER, NEW MALDEN, SURREY



He can't relax tomorrow

Tomorrow for him means trying to deal with the company's business while smothered in the company's *noise*. Beginning as innocent little sounds made by telephone bells and accounting machines and the people in the office next door, *together* these sounds make *noise*. No one can work efficiently, think clearly, avoid irritation, when they have to fight against noise. Everyone wants to get away from noise and stay away from it. Let Cullum sponge up noise, reduce sounds to a comfortable level. Call in Cullum straight away.

Sound control by CULLUM

THE ACOUSTIC CONSULTANTS & CONTRACTORS

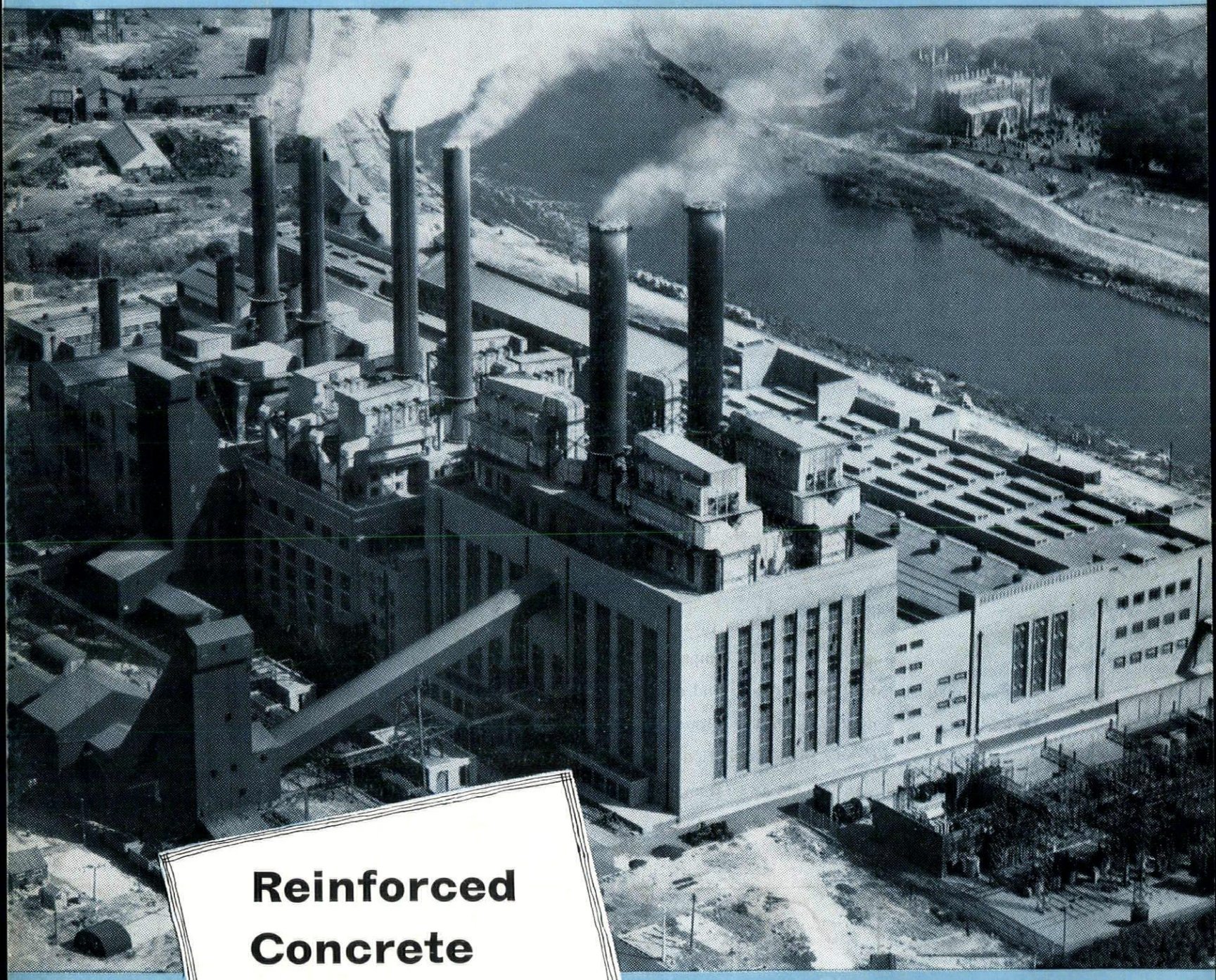
Concessionnaires for **ACOUSTI-CELOTEX**

PROGRESS WITH QUIETNESS

HORACE W. CULLUM & CO. LTD., FLOWERS MEWS, LONDON, N.19 Tel: ARC 2662 (4 lines)

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

Construction at its best . . .



NORTH WILFORD
POWER STATION

Contractors: Messrs. Thomas Bow, Nottingham. Reproduced by permission
R. M. Finch, Esq., O.B.E., M.I.C.E., City Engineer & Surveyor, City of Nottingha

Reinforced Concrete Design by...

BRC

Specialists in Reinforced Concrete Design and Suppliers of Reinforcement

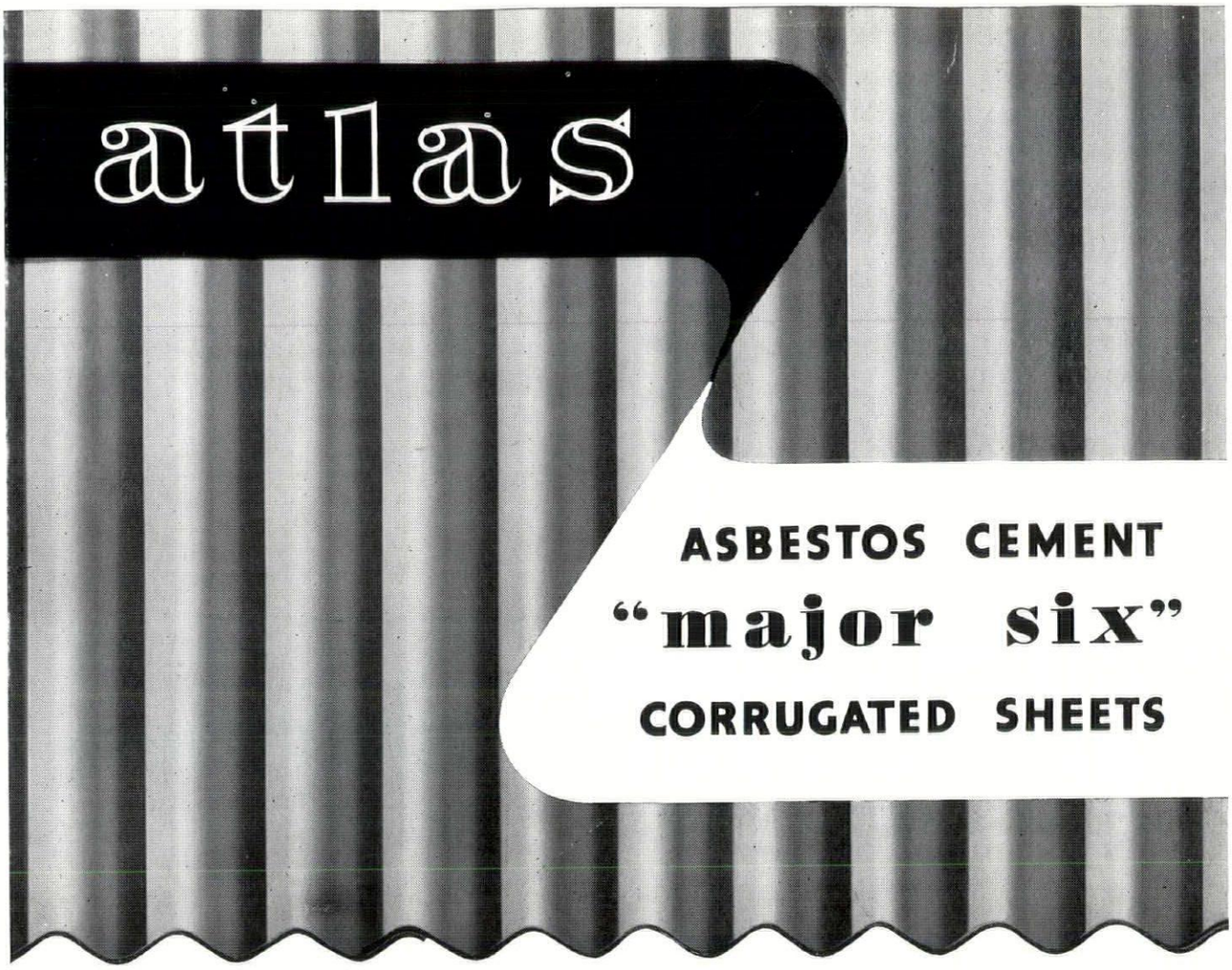
THE BRITISH REINFORCED CONCRETE ENGINEERING CO. LTD., STAFFORD

LONDON, BIRMINGHAM, BRISTOL, LEEDS, LEICESTER, LIVERPOOL, MANCHESTER, NEWCASTLE, CARDIFF, GLASGOW, DUBLIN, BELFAST

ar

Most of the events that we brush off as accidents, unprogrammed products of apparently random causes, will often prove on inspection to be manifestations of another, disregarded order, some alien mode of classification. Such a classificatory cause, military tidy-mindedness in putting one's gloves with one's helmet, accounts for the apparently accidental minimum anthropomorphic symbols for Guardsmen, below. In the *Farmacia della Scala*, described within on p. 124, a concealed classification depending on the size of bottle-base that can be accepted by the stands distributed apparently at random among the writhing rococo shelving, above, makes it impossible for even the most casual dispenser to replace the bottles in a manner that can offend the eye. The apotheosis of such concealed control over accidents appears in gardening—broadly and expansively in the English tradition, closely and systematically in the Japanese, described on p. 128, and seen diagrammatically behind these words.

THE ARCHITECTURAL REVIEW VOLUME CXIX NUMBER 710 FEBRUARY 1956 FIVE SHILLINGS



Roofing of *extra* durability and stability—that's MAJOR SIX sheeting, a non-warping, non-cracking material of increased covering capacity . . . and a side lap offering definite advantages.

MAJOR SIX sheeting is proving its adaptability to all constructional and weather conditions, giving—always—a dependable roofing service.

We would like to send you detailed technical literature and full information.
Will you 'phone or write today?

Atlas Stone CO. LTD.

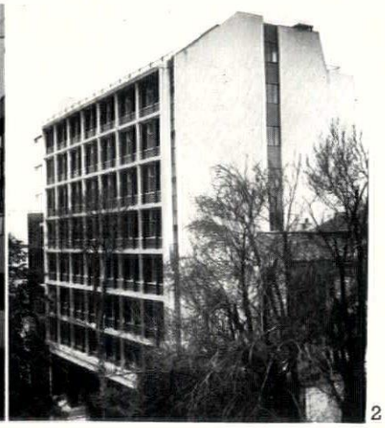
ARTILLERY HOUSE
ARTILLERY ROW, LONDON, S.W.1
Telephone: ABBey 3081-2-3-4
Telegrams: London Office: "Atlastonco Sowest"

Works at MELDRETH • GREENHITHE • STROOD • CAMBRIDGE • PARK ROYAL (LONDON) • SHORNE • WING • RYE (SUSSEX)

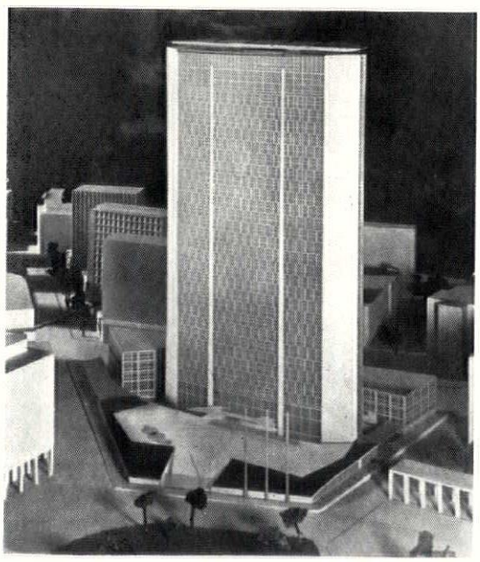
MARGINALIA

OFFICE BUILDINGS IN MILAN Leadership in Italian architecture, which has seemed over the past two or three years to be slipping down to Rome, has returned to Milan with two new office-blocks, one completed and one projected, and neither of them having quite the qualities which one associates with Milanese Rationalism. Superficially, at least, the new Olivetti building, 1, presents to the Via Clerici elevations which have all the regularity and mechanistic qualities which go with *Razionalismo*, but a three-quarter rear view shows asymmetrical gables and a vertical window-slit, 2, which suggest a very different approach. The design of this functionally impeccable machine-for-administering-in is the work of G-A. Bernasconi, Annibale Fiocchi and Marcello Nizzoli, and it is credibly reported that the last named, famous as the stylist of Olivetti's products, also 'styled' the building on the Via Clerici side, and, indeed, the flickering rhythm of the close-louvred sun-breaker is a far more effective eye-trap than the more subdued, but equally efficient, treatment of the other façade.

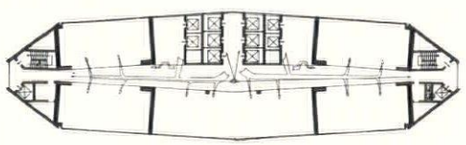
1



2



3



4

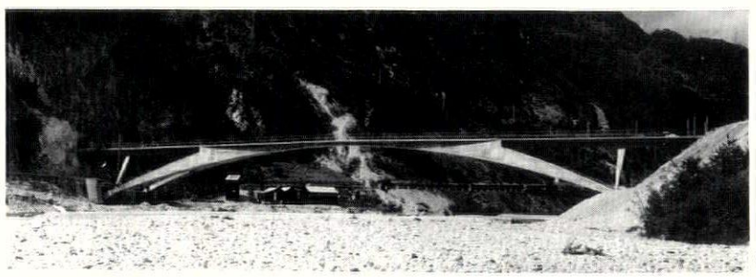
5

(3, 4 & 5, *Edilizia Moderna*)

The Pirelli office block project, 3, which looks at first sight so much more like a 'styling job,' derives its extraordinary form from an approach to functional and structural problems which is, on examination, far closer to Rationalism than that of the Olivetti design. The work of a formidable team, in which Gio Ponti, with his great experience of office-block design, and Pier-Luigi Nervi, with his untrammelled approach to structures, were the moving spirits, this striking design was evolved slowly and carefully from a basic layout which conformed to the flat-slab aesthetic currently in favour in Milan. Continuous reconsideration of circulation needs and structural possibilities, and accommodation of a largely predetermined office module between them, eventually produced the organically and inseparably related solutions of the boat-shaped plan and the double-bifurcated column structure, 4 & 5.

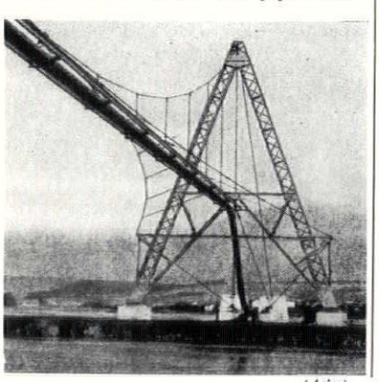
PROGRESS IN BRIDGE STRUCTURES The need for caution in accepting the evidence of the eyes is underlined by the dashing and economical structure of the *Ponte-Tubo di Gardona* which will carry water for the Maè hydro-electric project over the river Piave in north Italy. Its designer, Carlo Berghinz, has spoken of himself as a member of a 'Scuola Maillartiana' and comparison of his bridge, 7, with Maillart's well-known bridge at Felsegg on the Thun, 6, would seem to bear this out. But Berghinz is only a follower of the Master in the more progressive sense of one who follows in order to go farther. Whereas Maillart, like so many pioneers, has solved his structural problems by rationalizing his structure down to its fundamental disparate elements, evolving each member separately and flatly on the drawing board and assembling them into an ideal pin-jointed structure whose over-all mathematics are simple, Berghinz's slim structure is virtually monolithic and plastic in conception. It has no hinges, either at crown or abutments, and must therefore be considered as an encastered arch, functioning perhaps in cantilever to some extent, and the whole structure is therefore statically indeterminate. The main structural arch consists of a box beam which thickens away from the crown and, at its deepest point, splits into two separate box beams either side, tapering down to the abutments. Two smaller pairs of tapered legs rise vertically from the abutments to carry the landward portions of the pipe-platform, and these (to cope with thermal expansion) are grounded on the only hinges in the structure. Thus, though so visually similar in form to Maillart's work, the *Ponte di Gardona* is a much subtler, more integrated and more advanced structure. It may even mark the point at which we have to relegate Maillart to a place alongside Perret, among the Primitives of Ferro-Concrete.

6



7

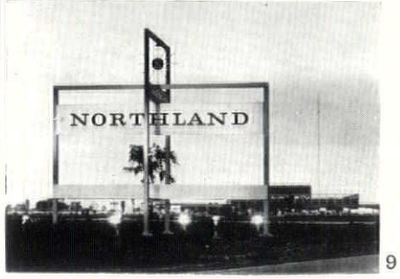
QUADRICABLE BRIDGE. Part of a remarkable project for feeding surplus furnace gases from the Saar into the urban supply net-work of Paris, over 300 km. distant, this bridge which carries the pipe-main across the Meuse is notable not only for its elegant form, but also for the possibilities of its four-cable structure. Developed by a research team of the Baudin-Chateauneuf organization, it consists of a central cable in tension, to which the load is directly attached, steadied by three other cables disposed radially around it, and drawn into parabolic curves by the short stays at right angles to the central cable. All four cables are locked together by a central 'knot' and the resulting structure is so stable that it cannot be distorted even by asymmetrically displaced loads. For this reason it could be used to carry the running rails of overhead railways, etc., without risk of derailment due to local distortions of the rails, over far wider spans than are currently possible, and thus offers great possibilities in the opening up of rough, roadless terrains.



8

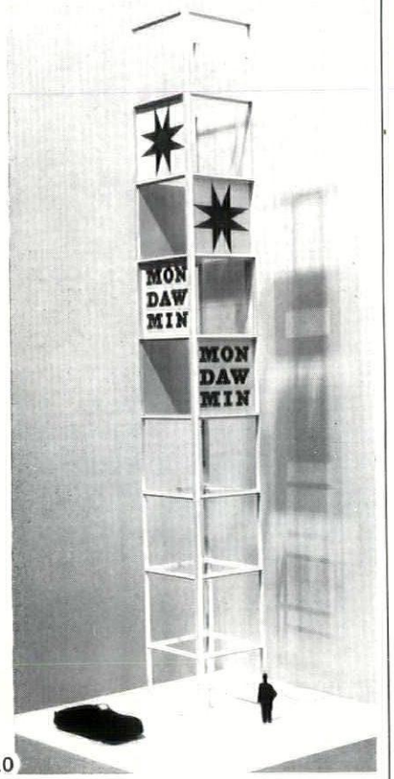
(*Acier*)

EXURBIA NOT NECESSARILY SUBTOPIA Although the potentialities of visual squalor latent in the American idealization of the ultra-low density motorized suburb hardly bear contemplation, the fact remains that some of the brightest American designers are entangled with Exurbian development, and particularly its most characteristic building type, the super-market (see Marginalia in AR for December, 1955). At a recent Museum of Modern Art Exhibition of graphic design by Bruno Munari and Alvin Lustig, the latter showed models of his Northland shopping-centre sign (which has been erected), 9, and



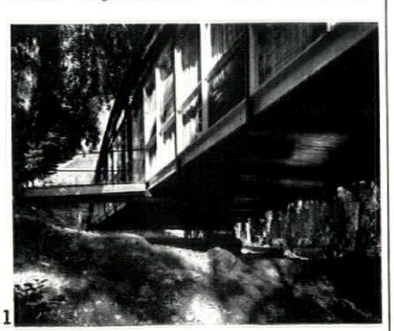
9

the Mon-Daw-Min market sign, 10, still at project stage. Both are handsome examples of that combined interest in structuralism and form-as-communication which is equally to be found in the thoughts and works of Charles Eames and Gyorgy Kepes, and both are examples of possible developments for the better in roadside advertising that could be useful to English designers of (for instance) motels—a problem which Diana Rowntree discusses on pages 110, ff.

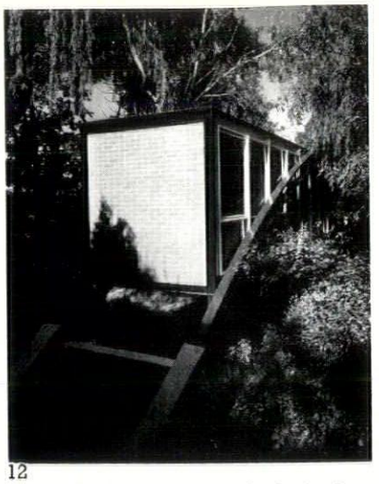


10

HOUSE IN THE AIR The ability to float a building clear of the ground is one of those potentialities of Twentieth Century structure which the pioneers have praised—only to decline it, or fumble it. Le Corbusier, having toyed with it, did not fully exploit it until Marseilles; Buckminster Fuller having achieved it in structural fact with his Beech House, then muddled the issue visually. It seems to have been left to the not-so-famous to develop this idea; various examples have been seen from time to time, and the latest, most sophisticated and assured,


11

comes from Australia. The functional excuse here was a difficult site bisected by a creek which had to be left unencumbered; the structural solution evolved by its architects (Grounds, Romberg and Boyd) was an unusual one—to sling a single-storey house of Miesian aspect and wedge-shaped plan between two lattice arches, grounded on massive


12

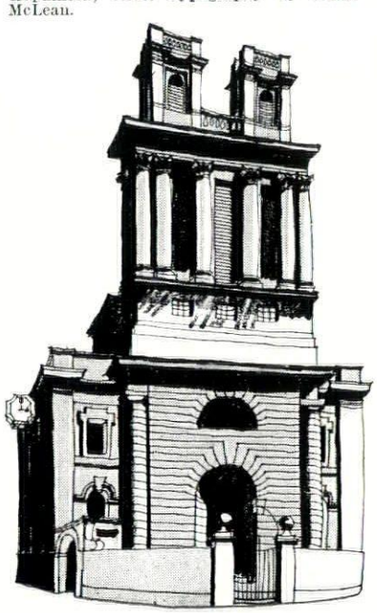
concrete abutments, 11. The levitation of the building block not only affords dramatic views from down in the creek-bed, but also makes a carport and covered play space under the house, 12.

St. Mary Woolnoth

Church guides are at as low an ebb as church architecture in Britain today, for the same reasons—confused thinking, ill-advised compromise and inadequate powers of expression. To be able to mention one* which is accurate, comprehensive without being prolix, and attractively produced is a pleasant surprise, especially as it describes Hawksmoor's St. Mary Woolnoth, newly reconstituted as a Guild Church.

What this guide has, in addition, is a pair of drawings by Gordon Cullen—an interior, managing to suggest by understatement the incredible interlocking space, and a view of the West front (reproduced below) which at last realizes in two dimensions Hawksmoor's bleak but passionate nobility, and belief in volume for its own sake, and not as some other determinant's by-blow. Even the best photograph has to show the mess of Bank tube station underneath it, and the less intelligent dollops of City neo-Georgian around it. Hawksmoor's plan for Cambridge vitalized the town by dispersing energy, spearing each intersection with an obelisk. St. Mary Woolnoth vitalizes by concentration: a power house of energy which

**St. Mary Woolnoth*, a short guide by Stephan Hopkinson, vicar. Typography by Ruari McLean.



charges up the six-way crossroads. The charge stays with the observer a long way east or west until misapplied Portland stone becomes too much for it.

One plea—can somebody move the gallery fronts forward? They are still pinned to the wall, saved by unexpected Butterfieldian mercy. The gallery created need not carry any seats, but it is an essential part of Hawksmoor's composition—the last number in the combination lock.

CORRESPONDENCE

The Bryant Index

To the Editors,

SIRS,—I wish to bring to the notice of ARCHITECTURAL REVIEW readers the existence of the Bryant County House Index.

This has received far less publicity than its scholastic importance deserves and to the world of historic research and genealogy still remains comparatively unknown. It consists of above 140,000 cards, five by three inches, catalogued under house-place-names with an efficient cross reference of past and present owners. Nearly every known example of country domestic architecture up to 1840, existing or otherwise, is included in this comprehensive survey of architectural histriography. Each card supplies, besides the genealogical account: brief historical statements; notice of sales and auctions; attachment and collations from relevant newspaper material; information from wide sources, including old topographical guides; illustrations restricted to card size by print and photograph; and a most important bibliography.

The compilation is the result of twenty years' spare-time work by Mr. Gilbert E. Bryant, and it must be emphasized that he has but laid the foundations and provided a directive for future research into the indexing of English Country Houses. One must consider it a sad reflection upon ourselves that the value and potentiality of this Index has only been satisfactorily recognized outside this country, notably in America, where Harvard University is anxious to acquire it or at least a complete copy of its information to date.

The future is debatable as no endowment has been offered to find it a suitable home and support the badly needed research worker whose task of classification will be a gargantuan one. It must be realized that the obvious corollary to this Index is the National Buildings Record which does not possess an historical compilation. This latter organization could gain great guidance from the Index's comprehensiveness.

Yours, etc.,
JOHN HARRIS.

London, S.W.7.

Obnoxious Matter

To the Editors,

SIRS,—After reading in Marginalia (AR, October 1955), *Litter in the Parks*, it occurs to me you might be interested in a new piece of California legislation by which it became an offence to drop garbage 'or any other obnoxious matter' on any right-of-way or highway. This law is being enforced with splendid results, although the maximum penalty, six months in prison or a $500.00 fine, is seldom imposed in full.

Surely the dropping of litter is at least as reprehensible as petty theft or attempted rape, and the prospect of a stiff fine is a far more effective deterrent than a gentle admonition on a noticeboard!

Yours, etc.,
DAVID PLEYDELL-BOUVERIE.

Glen Ellen, California.

Brian Bannantyne Lewis, architect of the National University at Canberra, was born in Tasmania in 1906, is married to Hilary Lewis (FRIBA) and has five children. After studying at Melbourne University, he went to Malaya, as a mining engineer first and later as an architect; then to Liverpool University, London firms and the GWR, to whom he was chief architect from the end of his war service until nationalization of the railways. From 1948 till 1955 was first professor of architecture, Melbourne University, and in 1952 was British Council lecturer in Greece and Turkey.

Intelligence

The U.S. State Department is organizing a limited competition for the design of a new embassy building, to occupy the complete west side of Grosvenor Square. The eight architects invited to compete are Eero Saarinen, Edward D. Stone, William Wurster, Hugh Stubbins, J. L. Sert, Ernest J. Kump, Minoru Yamasaki and Anderson & Beckwith.

The Council of CIAM recently sent to Mme. Jeanneret, the mother of Le Corbusier, a telegram congratulating her on her 95th birthday.

The newly-formed William Morris Society held its first meeting during November last. Its address is The Red House, Red House Lane, Bexley, Kent.

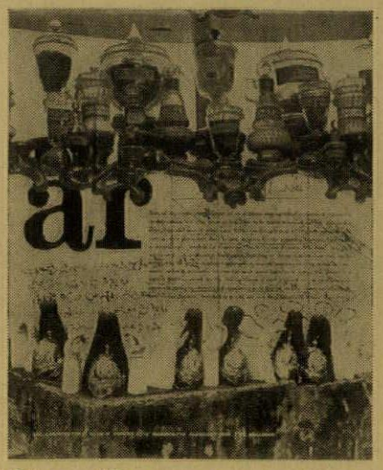
ACKNOWLEDGMENTS

The colour blocks on pages 92 ff. were made available by courtesy of W. & J. Leigh Ltd., Leeds Fireclay Co., and Semastic Ltd.

COVER, top, P. Boucas; bottom, FOX. MARGINALIA, pages 81–2: Gardona Bridge, Manarin; Signs, M.M.A.; 'House in the Air,' W. Sievers; Prof. Lewis, Canada Pictures. WAREHOUSE AT WITHAM, pages 89–98: Galwey, Arphot. CANBERRA UNIVERSITY, pages 104–9: Ritter-Jeppesen. MOTELS, page 113: 4, C. R. Pearson; 5, J. W. Molitor; 6, Stuart Lynn; page 114: 8, 9, J. Shulman; 10, D. G. Mears; 11, Bishop and Scott; 12, Sport and General; 13, J. Chandler. CURRENT ARCHITECTURE, pages 117–120: Grays Technical College, Essex Education Committee; Haileybury Club, Galwey. ADAM & MYLNE, pages 121–3: 2, 3, 4, 6, 10, 11, 14, 15, C. Westwood; 7, Nairn, Arphot; 8, 9, C. Gotch. MISCELLANY, pages 124–132: Farmacia, P. Boucas; Exhibitions, 1, Photo Studios; 2, A. Carlebach. SKILL, Interiors, pages 133–140: 1, 34, Bedford Lemere; 3, 8–11, 13, 16, 17, 21, 25, 26, 31, 32, 35–37, 40, 42, Stewart Bale; 5, H. Felton; 6, Elsam, Mann and Cooper; 7, 27, Metvan; 15, 44, Galwey; 18, 24, 38, Binelli; 19, 28, 33, Photowork; 20, McCallum, Arphot; 23, London News; 43, B. Stefani. Design Review, pages 141–2: 6, Sundahl; rest, Toomey, Arphot.

THE ARCHITECTURAL REVIEW

Volume 119 Number 710 February 1956



This month's cover brings together two subjects from articles in this issue, in both of which accidents play an important aesthetic role, and compares them with a pure accident without aesthetic intentions. Yet what makes this last, a casual ranking of Guardsmen's accoutrements, so striking is the unexpected order it reveals, the repeated yet variable constant of one helmet and two gloves. Similarly in the Farmacia della Scala, p. 124, and in Japanese Gardening, p. 128, apparent accidents, aesthetically of prime importance, are always the products of another, deliberate, yet concealed order of placing objects in relation to one another, but this time an order which is within the designer's control.

81 **Marginalia**

82 **Correspondence**

84 **Frontispiece**

85 **The Functional Neurosis** *by Robin Boyd* Design-for-function is an ethic and a technique, but not an end in itself, and the pioneers of the early years of the century may be blamed for not having made the true goals of architecture clear enough. As a result of their delinquency we have now come to identify the functional method with the glass cube, and to accept only one kind of atmosphere or character in a building as truly functional. 'Light, clean, fresh, simple,' says Mr. Boyd, 'has become the deadly constant of architecture,' and though this is not necessarily the requisite atmosphere for every type of building, we cannot conceive of alternative solutions that do not involve the abandonment of Functionalism. Hence the neurosis. Functionalism misunderstood has imposed 'a sort of Hays Office emotional standard' and our buildings lack the confidence to be ugly if their purpose is ugly, or, in general, to have a character proper to themselves. Faced with the ensuing monotony and poverty of invention we are tempted to abandon a principle which has been called Nature's own design, instead of scrutinizing ourselves and seeing that the blame lies in the low quality and lack of variety in our architectural ideas. For the essence of character in building is the germinating idea, and the question of functionalism should not enter in until after the idea has been formed.

89 **Seed Warehouse at Witham:** *Architects, Chamberlin, Powell and Bon*

99 **Inside the U.S. Office** *contributed by Martin Pilch, John Penn, Paffard Keatinge Clay and R. Desmond Henly* The world is generally aware that the organization and methods of architects' offices in USA differ in a stimulating way from those in other countries, but it is less generally aware that there are equally stimulating differences in size and method between American offices themselves. To point up and give full value to these alternative American approaches, we publish a symposium of experiences in the offices of Richard Neutra, Victor Gruen, Abraham Geller, and Skidmore, Owings and Merrill, by three young British architects, prefaced with an essay, by another who has recently returned, which sets out the relationship of the American office to the present state of American building.

104 **University at Canberra:** *Architect, Brian Lewis*

110 **Motels** *by Diana Rowntree* Motels, the characteristic building-type of a community on wheels, are a relatively new addition to the English landscape, for the travelling motorist has hitherto been catered for by the existing grid of coaching inns regularly spaced across the country. But the coaching inn is adapted to a social (and sociable) structure which is no longer current in the impersonal democracy of the wheel, in which the touring motorist's closest tie is to his car, and not to the rest of the transient community with whom he spends the night. This factor alone at once differentiates the motel from other types of roadside accommodation, but in order to attract (and hold) the type of clientele for which it is designed it must differentiate itself by conspicuous visual means as well—a consideration which could (and occasionally does) lead to the use of a contemporary architectural style, but also might lead (and equally does) to the employment of routine subtopian publicity techniques, and their concomitant squalor. On balance, and in spite of commercially successful use of the architectural alternative, the chances are weighted for the subtopian solution, and Mrs. Rowntree's article considers, among other things, what must be done, here and now, about this potential menace while it is still young.

117 **Current Architecture**

121 **Mylne and Adam** *by Christopher Gotch* Though it is customary to compare and contrast Robert Adam and Sir William Chambers in discussions of the Neo-Classic phase of English Eighteenth-Century architecture, the architect with whom Robert Adam is most closely comparable, in date, career, interests and style, is his fellow-Scot, Robert Mylne. Mr. Gotch makes precisely this comparison, showing those points where Mylne reveals himself as a more painstaking and adventurous student, as a more advanced pioneer of Etruscan ornament and a bolder user of space, as a better engineer, as more generally regarded as the head of his profession in the later years of the century. Particularly in the early 1760's Adam and Mylne appear to have run neck and neck in the introduction of the new style of interiors to which Adam, and not Mylne, was eventually to give his name. Nevertheless the case for Mylne is a strong one and, if accepted, must alter the conventional picture of English Neo-Classicism.

Miscellany

124 **Popular Art**

126 **Townscape**

127 **Exhibitions**

128 **Landscape**

131 **Books**

Skill

133 **Ship Interiors** *by Ian McCallum* Though there is a firm-based and time-honoured tradition of nautical design, the interiors of passenger ships—and trans-atlantic liners in particular—all seem to have rejected it in favour of a Grand Hotel style. The style comes in national variants of which the Italian and Scandinavian ones come nearest to good contemporary design, while the British—with a handful of notable exceptions—is as far from the work of good contemporary British designers as it could possibly be. There may be comprehensible reasons for this vulgarity and fake-antiquity, but in the present state of the transatlantic trade they are becoming rapidly less compelling, and the time has clearly come for a re-thinking of the ship interior problem by British lines as radical as that which has produced the new, designer-decorated interiors of post-war American liners. As Mr. McCallum shows in his detailed examinations of specific problems around the ship, the unreformed Grand Hotel style often makes awkward spaces more awkward, restricted cabins less spacious, makes quite large spaces physically and psychologically uncomfortable and even calls for quite unjustified structural modifications.

141 **Design Review**

142 **Techniques: Precast Prestressed Floors** *by Robert Maguire*

148 **The Industry** 150 **Contractors, etc.**

Author: *Diana Rowntree.* Educated Somerville and AA School of Architecture, qualifying 1939. Married Kenneth Rowntree 1939, lived in Essex, 1941-9, with their two children. Found this a whole-time job, except for converting a Scarborough mansion of the early modern movement into flats. Moved to Putney Embankment, and started to write in spare time: in 1954 took on Design Review.

Directing Editors J. M. Richards, Nikolaus Pevsner, H. de C. Hastings, Hugh Casson

Executive Editor Ian McCallum

Art Editor Gordon Cullen

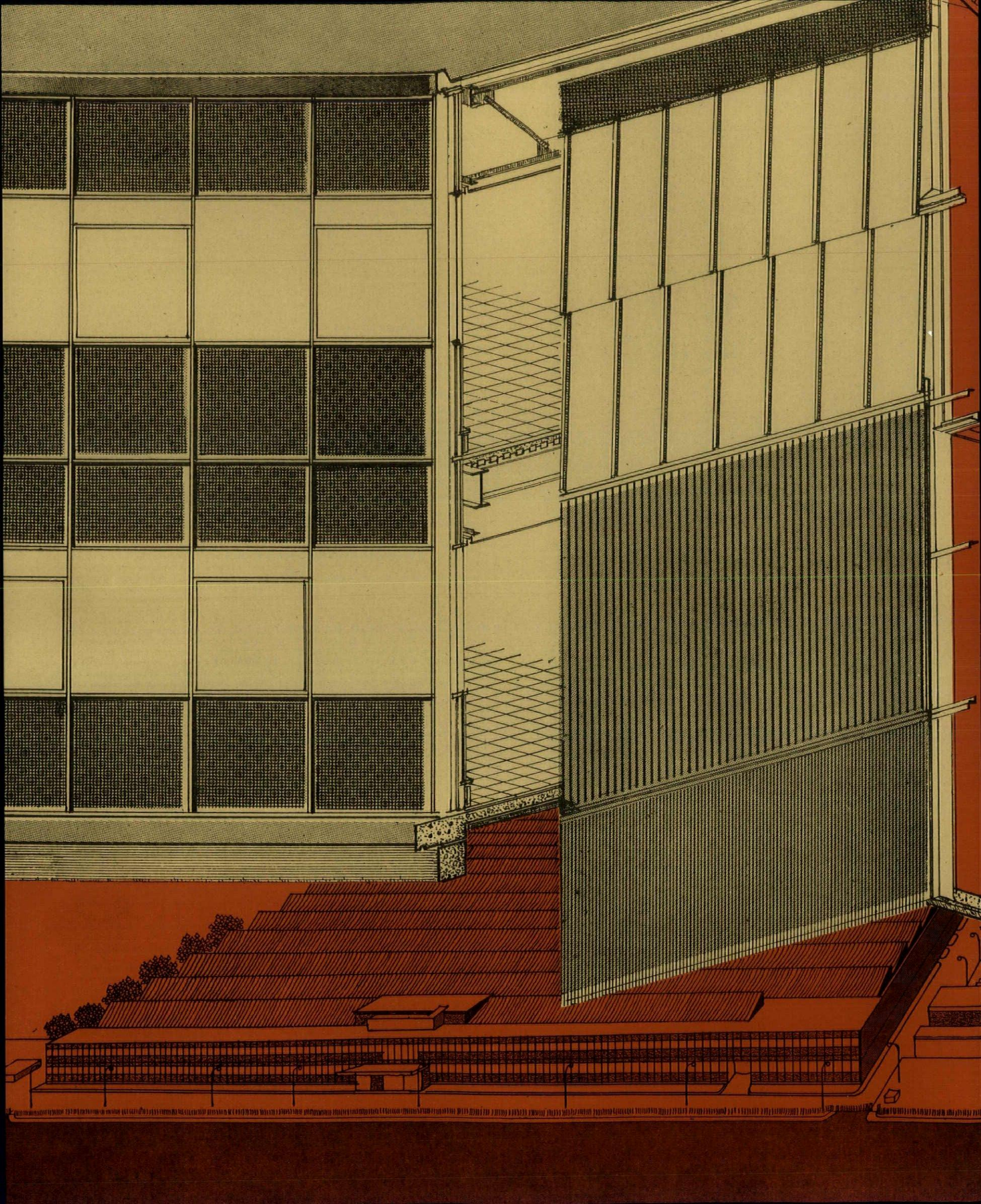
Assistant Editors production, Ian Nairn. research, S. Lang. literary, Reyner Banham. Editorial Secretary. . Whi 0611-9

SUBSCRIPTION RATE: The annual post free subscription rate, payable in advance, is £2 18s. 0d. sterling, in U.S.A. and Canada $9. An index is issued half-yearly and is published as a supplement to the REVIEW.

THE ARCHITECTURAL REVIEW

9-13 Queen Anne's Gate, Westminster, S W 1 · Whitehall 0611

FIVE SHILLINGS



The use of standard elements in building produces both the most seemly, and most squalid, of contemporary architecture. Economic considerations make standardized, dry-built walling units almost inevitable, yet we frequently fail to make virtues of these constructional necessities—all too often the architect's response is abdication or affectation. Yet the new Spares Warehouse at Aveley, Essex, designed by E. R. Collister and Partners in the closest collaboration with their clients, the Ford Motor Company, shows precisely the kind of intelligent yet unaffected use to which such units can be put. The diagrammatic breakdown, opposite *, by B. Schwarz, shows at the right a detail of the temporary, recoverable rear wall of glass and metal panelling, and at the left the elements of the glazed curtain walling whose repeated units give a comprehensible rhythm to the five-hundred-foot length of the office-block façade. The design will be fully published in the April issue.*

Robin Boyd

THE FUNCTIONAL NEUROSIS

When modern architecture is not lounging complacently in the coloured magazines or chewing over the discoveries of its pioneers, when it is obliged to state its beliefs, or face up to a psychological problem, or look to its future, then the neurosis is most evident. Modern architecture is torn by remorse and doubt because it is still wavering on the point of renouncing functionalism, and yet has no other conviction to replace this god of its youth. Whenever it is tempted to build from the heart, and not from the head, it has the uneasy feeling that it is somehow letting the old side down. The single-minded revolutionary zeal of the early years has been replaced by nothing but a half-smug and half-dispirited slackening of the discipline. Sometimes deliberate reactions against simplicity and directness are tolerated, mostly on the pretext of reviving 'human' quality in response to calls which frequently sound more like advertisements for soft drinks than architectural criticism.

The delinquency and the neurosis of the day are not entirely due to a weakness in the present generation. The pioneers of the early years of the century may also be blamed for not having made the nature of the goal clear enough. Too often design-for-function was presented as a character, a quality of building, an end in itself; and it is of course none of these. It is an ethic and a technique, not some sort of mood or atmosphere; not something to be set up in opposition to the genre of humanism; never a substitute for creative architectural thought. It is the mould in which architecture is cast, not an ingredient.

As a technique and a philosophical basis for design, functionalism still holds the promise to direct and unite all the useful arts. The tragedy is that it is dying while still young and inexperienced. It is being discarded while virtually only one application of its principle has been investigated conscientiously, and even this one application is still so

unfamiliar in the streets of most countries that the layman has not had sufficient opportunity to evaluate it. Functionalism is being renounced because the first attempts to apply the principles of the functional ethic always tended in the same direction, and we are tiring of this direction. But its philosophical basis, glowing with the eternal validity of nature's own design, is bigger than any one of its possible human applications. One application suggested itself to men who were revolting against the aimless anarchy of nineteenth century eclectic exhibitionism. They saw a line of development which started with a white cube of concrete and appeared to lead ultimately to a cube of glass. This line has now been traversed assiduously, and some men, finding the end result lacking in certain qualities, and considering that all possibilities have been investigated along the line, are now all for throwing out the principles of functionalism along with the glass cube. The unforgivable oversight of Mies van der Rohe was that he did not build the Farnsworth house thirty years earlier, and so speed the investigation of the line to its conclusion. The Farnsworth house closed all investigation. It was the ultimate glass cage, made so superbly as to be a final word on the subject. Whatever esoteric pleasures may be savoured in future play with structure or proportion in variation of the theme, no one can expect the line to hold further undiscovered mysteries of any significance.

If this present stage had been reached earlier, while the functionalist principles were still fresh, more attention might have been concentrated on achieving equal purity of conception in terms not necessarily limited to rectangles and continuous glass, in terms which might give always increasing consideration to the demands of living and environment—a more subjective, constructive simplicity for every purpose; not merely the plainness that results from the avid practice of elimination.

The basis of our present uncertainty is the fundamental error in identifying the functional method with the glass cube, and in contrasting it with the cosy cottage. The neurosis develops as we try to reconcile the familiar, austere version of functionalism with architectural expressions of greater emotional appeal. The principles of design-for-use still seem like a moral anchor stabilizing design; but now the more intellectual and sensual delights of architecture beckon us again. Should we, then, cut loose from the anchor, or continue to repress our desire for more excitement? But if this is the conflict within us it is quite unreal. For there is no need to cut the functional anchor while we explore architecture further.

Notwithstanding the confusion we are in, it is still just possible to imagine a building which could be discussed with unanimous admiration by a Wright, a Corbusier, and a Casson. No matter what shapes we build, all of us are likely to agree that one quality, if present in sufficient strength, will determine architectural merit and override such considerations as whether, in the historian's eye, the style is Cottage, International, or Baroque. The building of universal admiration would have some seemingly original and clearly valid idea permeating every part of it, unifying it with a nameless character. When present in other arts, this quality is generally recognized and acknowledged, and no one seems to find it necessary to attempt to name and define it. The work may be fitted into a generic style group, but it will be permitted its individuality of character. In our matter-of-fact architectural way, however, we like to get all the details settled in black and white; we like to tie art down to a contract specification; we still like to see all buildings in neatly labelled pigeon-holes, for we are still tied to stylism, despite all our protestations. We are at home with style, and fidgety when confronted with character.

If it seems necessary today to renounce anything, we should be concentrating on ridding the movement of the identification of functionalism with the narrow range of expression so far accomplished in its name. 'Light, clean, fresh, simple'—this has become the almost universal, steadfast, emotional expression, the deadly constant of architecture. Even the more experienced critics often strike heavy weather trying to distinguish in general terms between new buildings, simply because so often there is so little difference between their architectural characters.

Perhaps the most humiliating thing is that we still use solemnly in description the word 'beautiful', which long ago was withered by parody from the vocabulary of painting. Passive acceptance of the implications of indeterminate terms of praise such as this puts architecture in the intellectual company of the interior decoration magazines or Hollywood, where aesthetic right and wrong are defined and the prime achievement is the ability to work in the established idiom in such a way as to lull the observer to sleep. The quality most conspicuously lacking from international modern architecture is not beauty, but reality. Our buildings lack the confidence to be themselves, the strength and honesty to be what the situation makes them—ugly, if necessary, if the purpose is ugly. Architecture has accepted a sort of Hays Office emotional standard, a sophisticated but essentially chocolate-box ideal of prettiness, a timorous, sedate desire for conformity of the soul of the building. Even while the architect is planning a novel shape, or devising a new tensile structure, we can be pretty certain what the final quality will be—light, clean, simple; with an atmosphere fresh, open, uncluttered. And while this is a charming and delightful character for numerous occasions, a world of it—which is presumably the present ideal—suggests a decline which would carry architecture eventually to unplumbed depths of ennui.

The process which began with the elimination of ornament, and pressed on rapidly to the elimination of visually complicated details of construction, has passed to the stage where the elimination of architecture is in sight. Disturbed by this, many architects during the past decade have turned their backs on the goal which once seemed so desirable. No longer do they insist on a physical justification for everything. The thought grows, 'We have passed the stage of functionalism', and now perhaps we need not be so strictly simple, so grimly opposed to ornament. We can look for new devices to divert architecture from the decline. We may allow ourselves to interfere with a shape dictated by use or structure. We may return to pleasant diversions such as the play with arbitrary proportions of each flat plane.

Where will it all lead? Back to the plaster jungle of sentiment, unless we revise our attitude to architectural character; unless we reject the notion that functionalism represents one stock atmospheric type in building; unless we break our habit of confusing technique with character, and identifying certain characters with different regions and different architects. Functionalism is indeed doomed if it is taken as a substitute for an architect; if one believes that it can provide with mathematical precision the idea behind the building. It cannot present any idea. There is no substitute for creative thought. But functionalism, in ever stricter interpretation, with ever firmer denunciation of applied aids, can and must provide the discipline under which the architect's idea is worked out to its conclusion in terms of building materials.

We must be strict. A liberal interpretation of the meaning of functionalism destroys the concept altogether. It has never been unusual for an architect to imagine that he is

serving purpose with the greatest possible economy. Only the purpose has varied from age to age. Early this century the definition of a building's function was finally narrowed down to the purely physical requirements of the occupants, and a new discipline tightened about this wonderfully solid, universal standard. But in our present state of vacillation, in our anxiety to explain away deviations from the cube, we are stretching the definition again. We allow that a building may serve what we call 'psychological functions', but we might as well talk of 'symbolic functions' or 'romantic functions', or 'advertising functions'.

Dissatisfied with the current monotony of architecture, with 'inhuman' mechanical cages, disappointed to find so few monumental qualities, so few symbols, such numb response to any call to the spirit, we question the principle which once promised to remake the world of design. We do not dream of searching in ourselves to find why our ideas are so thin that they have let down the principle. But the fundamental weakness of the moment is here: in the low quality and lack of variety of architectural ideas. Yet a peculiarity of architecture, apart from other arts, is the scope it allows for the intrinsic theme, the operative idea. Each new building may have a theme derived from any of several different stimuli. It may be basically sculptural, as in the cathedrals or Le Corbusier, but it may be a geometrical idea, growing from any symmetrical or formal pattern; or an emotional idea, as in an introverted Wright house; or an intellectual idea of structural perfection, as in the best of Mies van der Rohe; or a mathematical constructional idea, such as a despotic module, or one of Paul Rudolf's demanding roofs; or a spatial idea; or a combination of several of these and other kinds as well. But not an idea of function. That is the mistake we make so often. The use of the building rules the entire development of the design, but it has never supplied a stimulus to fine architecture.

The basis of the original idea, however, is not of great moment. What matters is the strength of the idea, and how it is developed. What matters to the spirit of functionalism is whether the requirements of purpose are misinterpreted or distorted, or are in any way not suitably served by the idea when developed without stress or embellishment. What matters to the spirit of organic creation is whether or not the result is at ease within the laws of nature, of structure, of materials. What matters in terms of art is whether the idea is developed consistently enough to permeate the entire work. And what matters to the spirit of architecture is the extent to which the development of the idea exploits the qualities of space and enclosure.

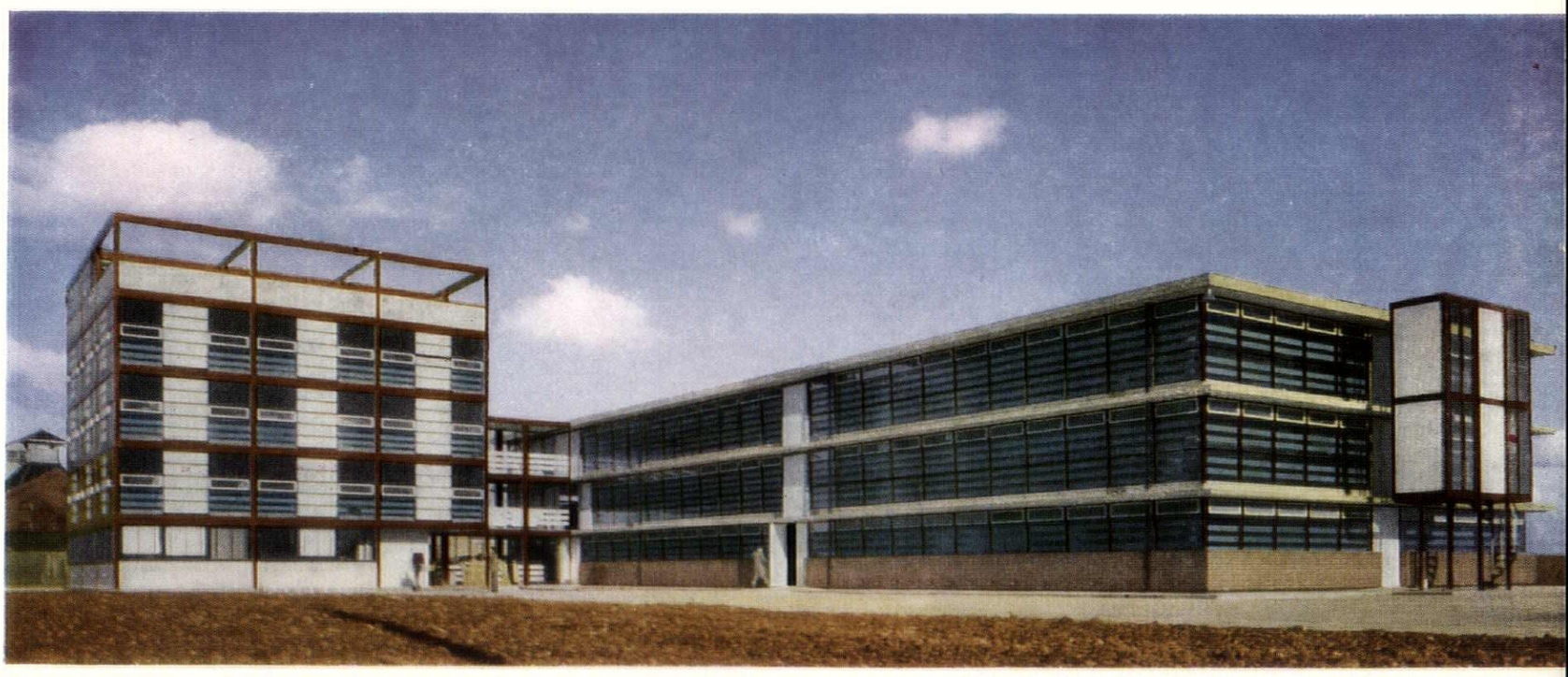
These, however, are merely rules of technique and style—not of character, which cannot recognize rules or limitations. The essence of character is in the originating idea. If our buildings are monotonous, it is because our ideas are generally confined within a narrow range. Structure is approved as a stimulus by our unwritten architectural morality code rules; ideas based on shell-concrete or exposed steel cantilevers are always well accepted, but ideas based simply on the enjoyment of living, or springing from a sense of humour, or gaiety, or reverence, or mystery, or awe, are suspect, because we cannot bind them into a specification. They worry us; we wonder if they can be functional. Yet the question of functionalism should not enter until after the idea is formed. Then it will never let down the idea. It is never to be questioned; only our own lack of ideas is responsible for the coldness, the monotony of atmosphere, the constancy of mood, the limited range of expression in modern architecture.

SEED WAREHOUSE AT WITHAM

ARCHITECTS | **CHAMBERLIN, POWELL & BON**

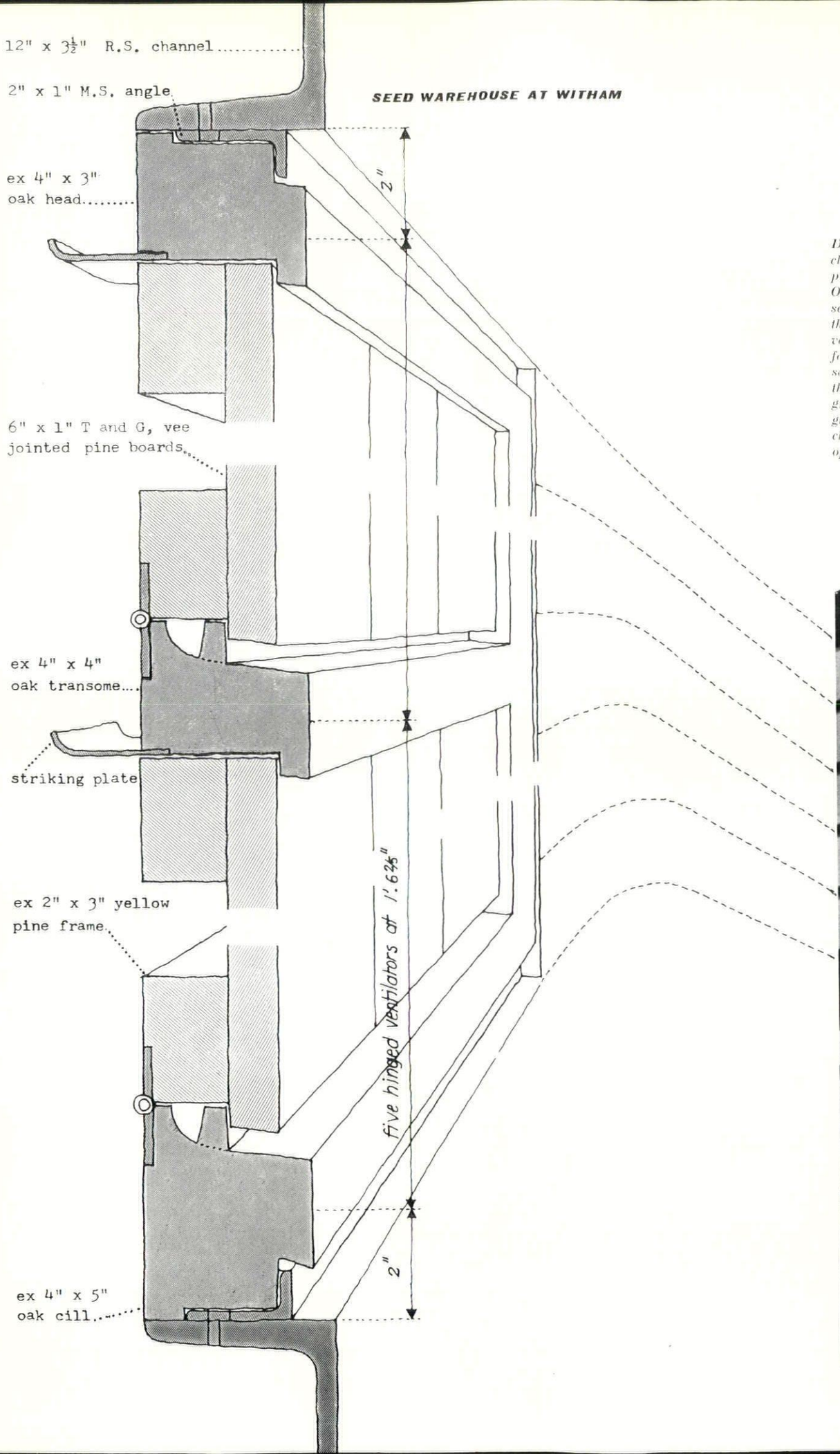
assistant architect | **J. R. Holroyd**

1, south view of, left, the processing building and, right, the warehouse. Loading bay is between the two.

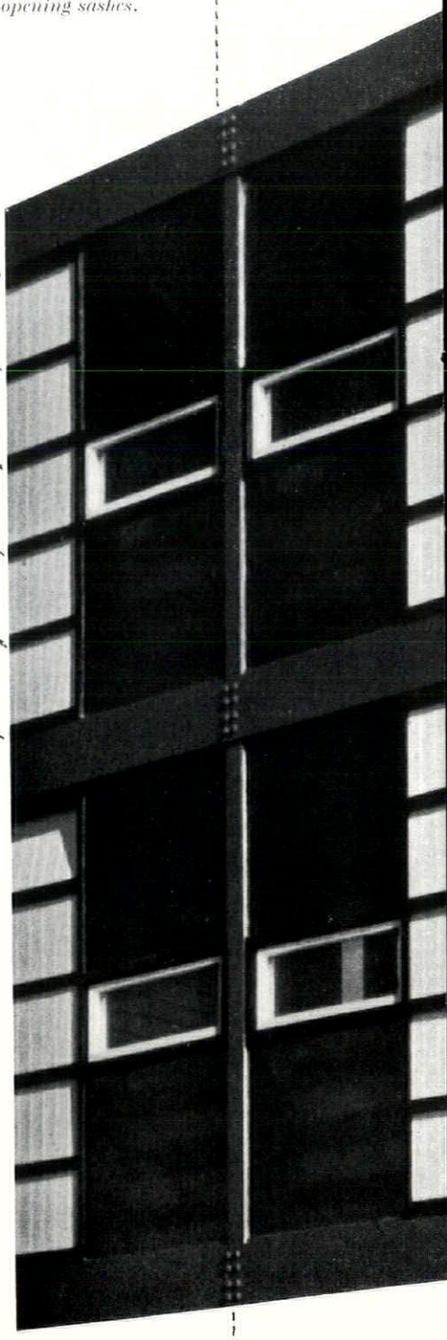


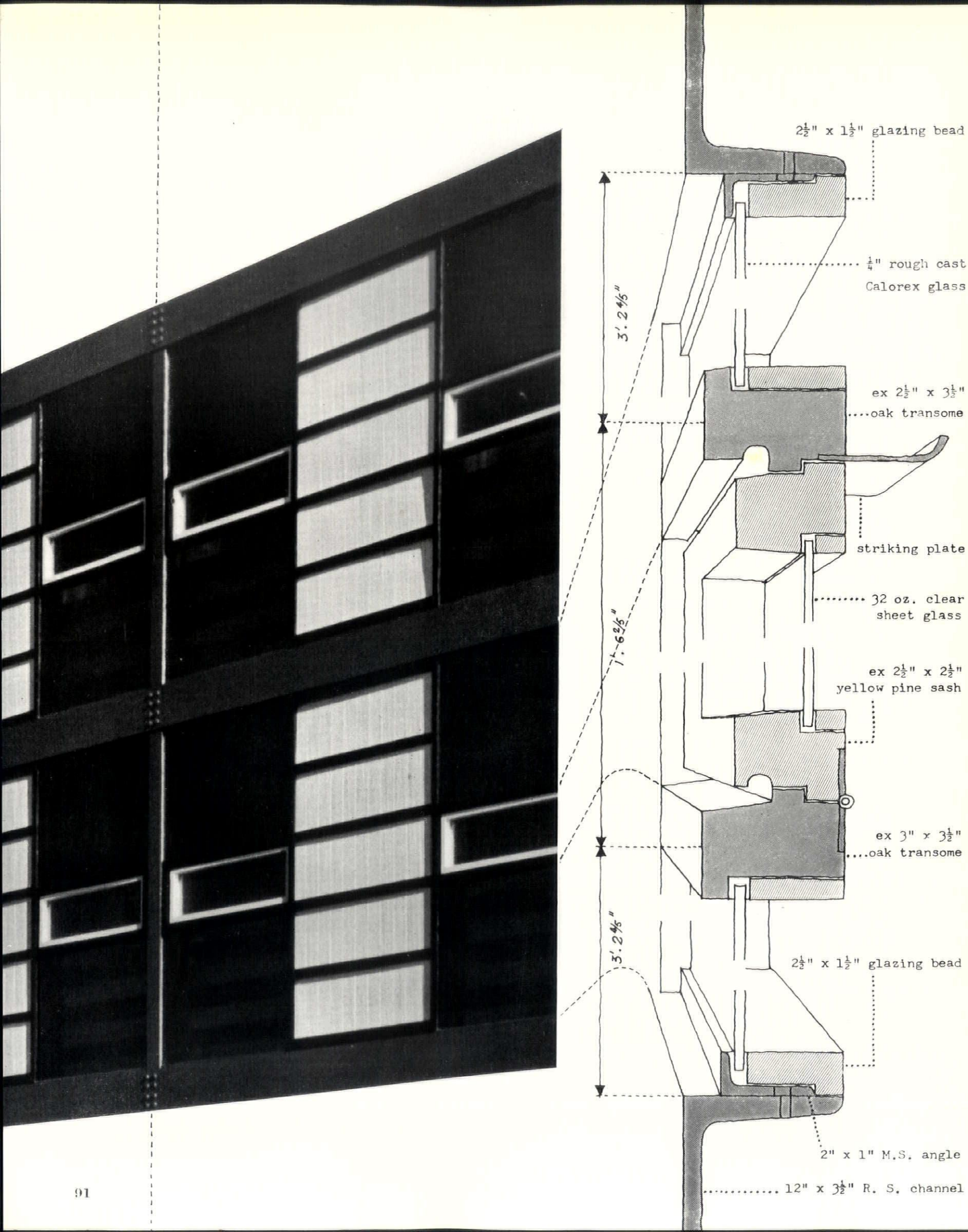
These buildings were required by a firm of wholesale seed merchants at Witham, Essex, to replace their former premises which had been destroyed by fire. It was decided that they should be erected on an open, level site which was part of the Company's seed-testing grounds. A total floor area of about 30,000 square feet was needed to serve as a warehouse, to house the processing machinery, and to provide accommodation for a seed-testing laboratory, a small retail shop, offices, a staff lunch-room, lavatories, etc.; the possibility of future expansion had also to be allowed for. Owing to the limitations of the local water supply, a 100,000-gallon static water tank was built for emergency ; it serves also to emphasize the height of the processing building in contrast to the warehouse, which is long and low.

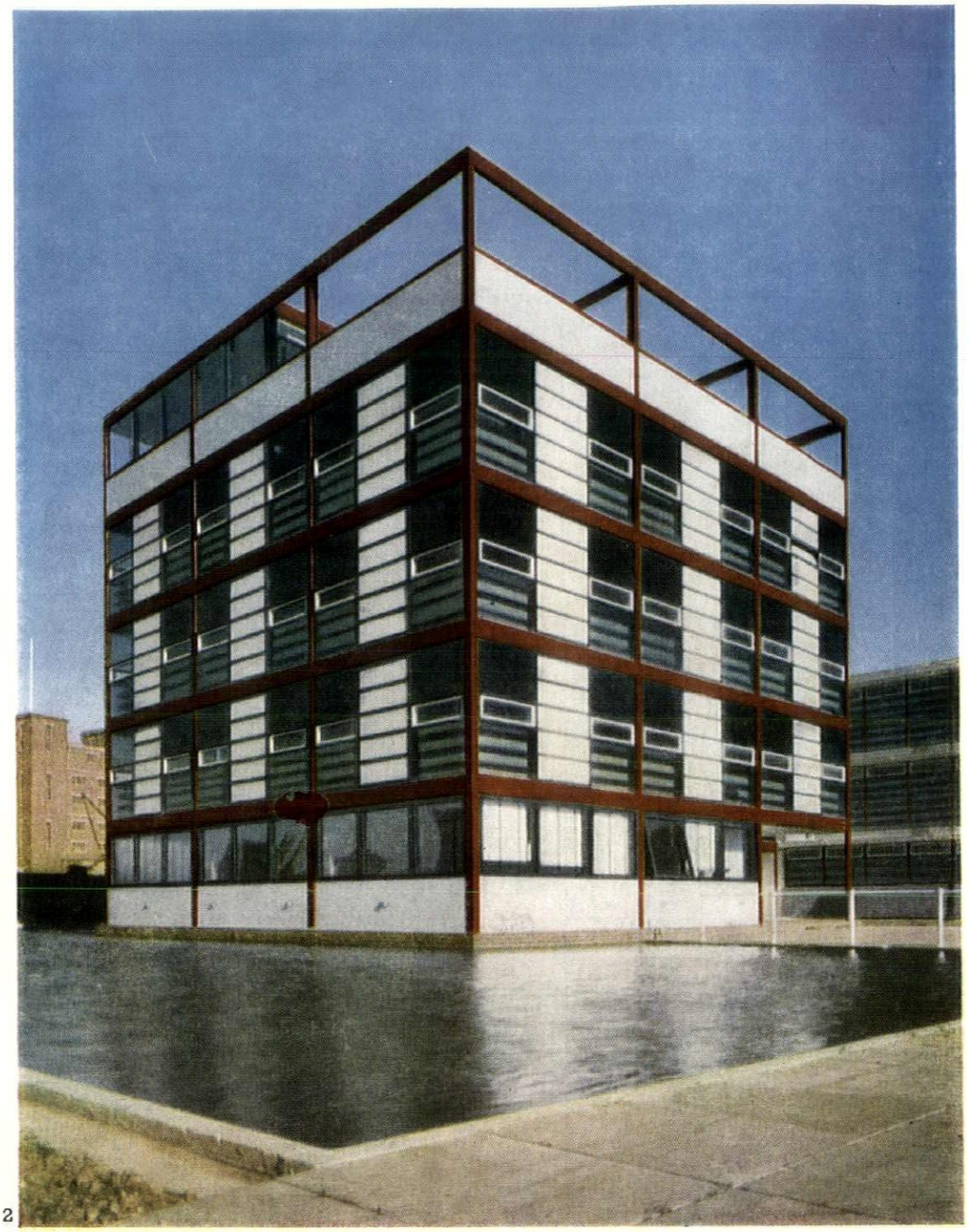
When seed arrives from the growers it usually needs to be both dried and cleaned before it can be put into store where it may remain for a long or short period. The different functions of processing and storing suggested a warehouse for storage purposes only and a separate processing building to contain the drying plant, the cleaning machines and the other small elements



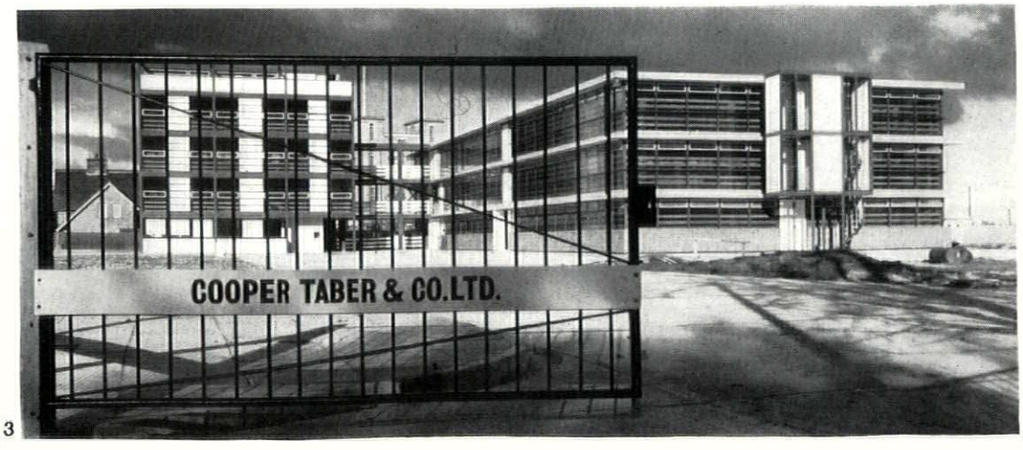
Details of the cladding of the processing block. On this page, section through the vertical ventilators; on facing page, section through the fixed blue-green rough cast glazing and clear-glazed opening sashes.




2½" x 1½" glazing bead
¼" rough cast
Calorex glass
3'. 2⅛"
ex 2½" x 3½"
oak transome
striking plate
32 oz. clear
sheet glass
1'. 6⅛"
ex 2½" x 2½"
yellow pine sash
ex 3" x 3½"
oak transome
3'. 2⅛"
2½" x 1½" glazing bead
2" x 1" M.S. angle
12" x 3½" R. S. channel



2



3

4

Facing page, 2, processing building from the south-west; seen across the static water tank; 3, general view from south of site. 4, view east, looking past processing to north end of warehouse. 5, south-east corner of processing building; brick panels of east wall are to prevent fire spreading to warehouse opposite. 6, processing seen from warehouse; linking bridge and loading bay are between blocks.

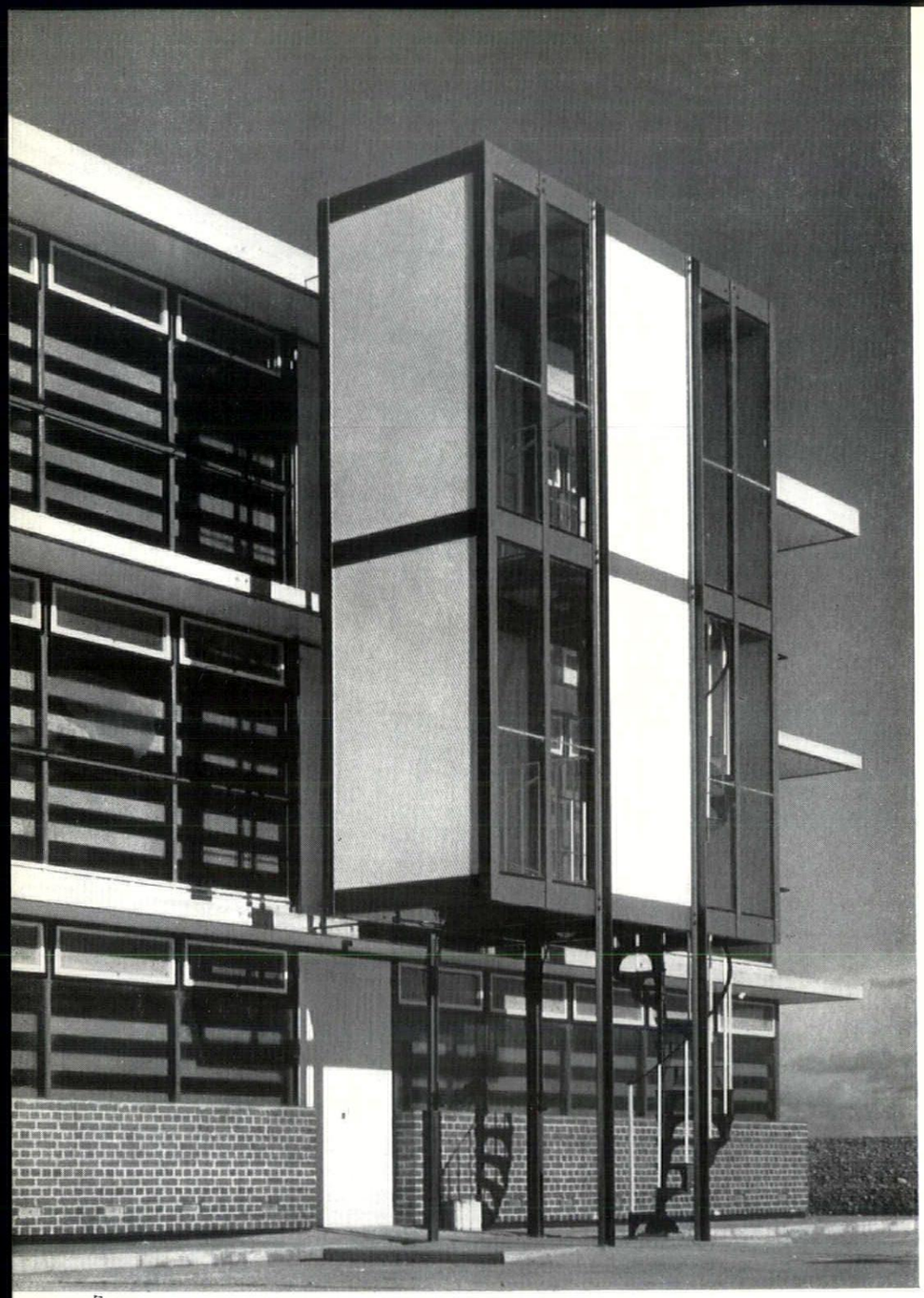
SEED WAREHOUSE AT WITHAM

5

6

required. The two buildings are linked by a bridge. Both are planned on a 5 foot grid. The difference in constructional method, steel frame in the processing building and concrete in the warehouse, was dictated by the need for multiple vertical communication in the first and fire prevention in the second.

The warehouse is a rectangular three-storey building, 145 feet by 55 feet on plan, and 27 feet high. Penetration of the floor slabs is limited to two small nine-inch-diameter chutes in the first and second floors, introduced to facilitate the mixing and bagging of seed. All vertical circulation, by stair, lift or hoist, is outside the building, to reduce the risk of fire spreading from one floor to another. As the building consists of three unbroken reinforced concrete slabs (first floor, second floor and

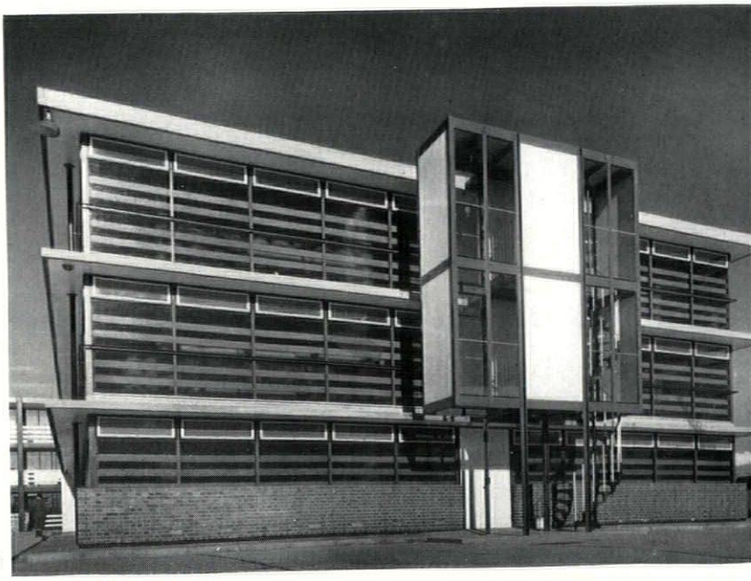


7

SEED WAREHOUSE AT WITHAM

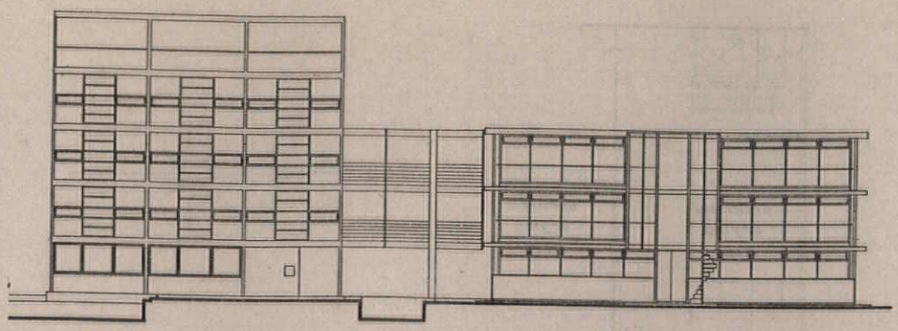
7 and 8, south end of warehouse, showing floor slabs cantilevered out all round to prevent possible spread of fire; a spiral stair and a hoist are enclosed in the projecting unit.

roof) supported on mushroom-headed reinforced concrete columns, it was extremely simple and economic to build : the cantilevered floor slabs extend beyond the screen walls to prevent, again, the possibility of fire spreading. Sacks of seed are stored on top of each other to a height of about 6 feet so that it was not necessary for the ceiling height to exceed about 8 feet. The warehouse had to be well ventilated. Because of the low ceiling the screen walls are largely of glass to allow maximum light penetration, and clear-glazed centrally-pivoted sashes are placed all round each floor of the building immediately under the projecting soffits thus allowing complete cross-ventilation. The glazing is fixed with beads against the outer flange of mullions formed of light steel joists ; to the inner flange is fixed a fence of boards against which the sacks can be stacked. To keep the interior cool in hot weather, a blue-green roughcast glass has been employed for all fixed lights, this allows

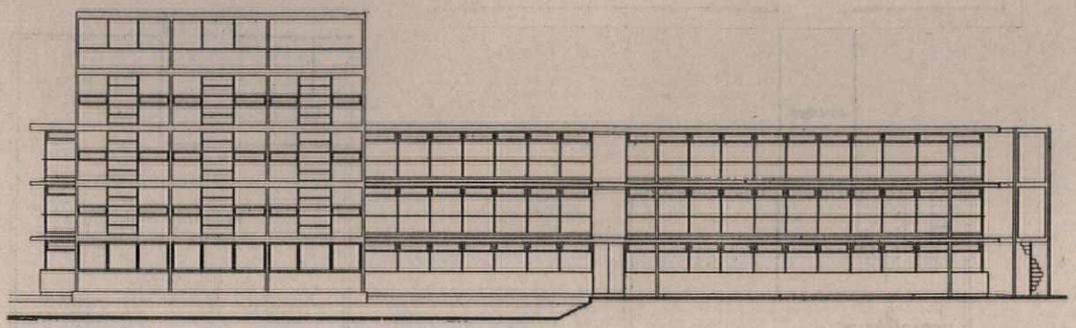


8

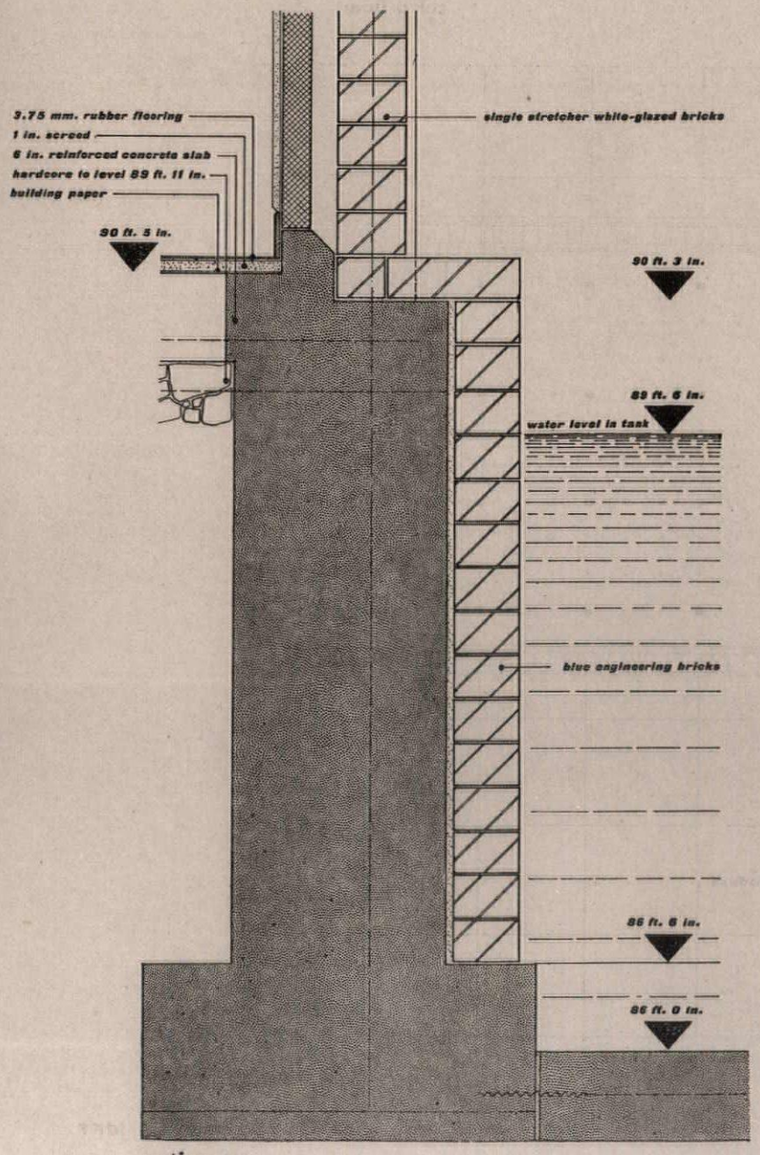
SEED WAREHOUSE AT WITHAM



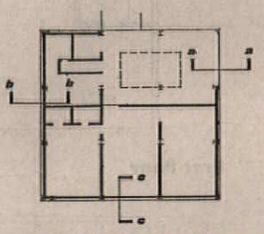
south elevation



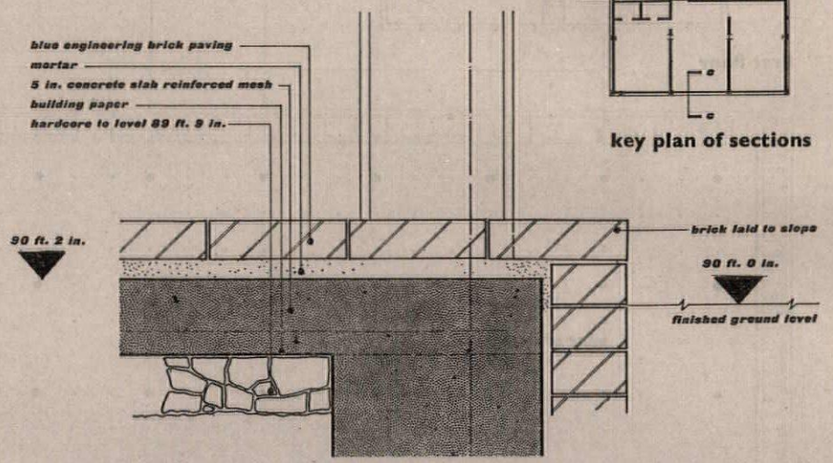
west elevation



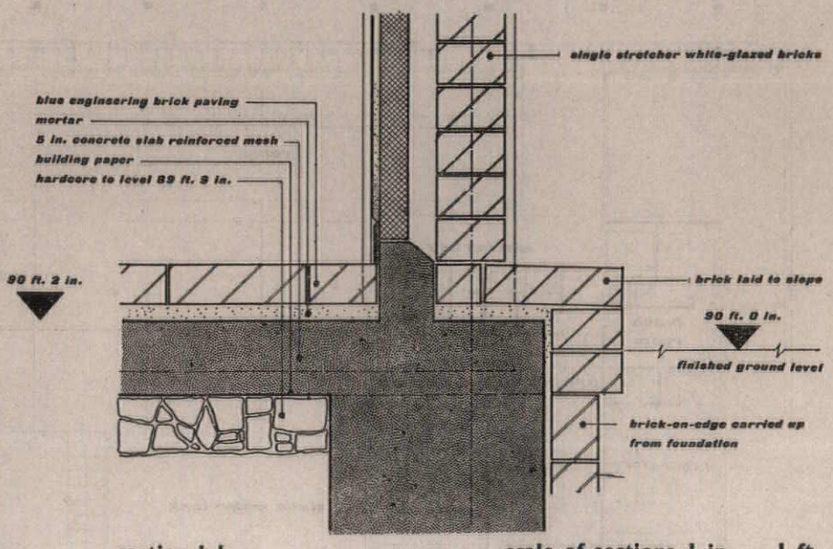
section c-c



key plan of sections

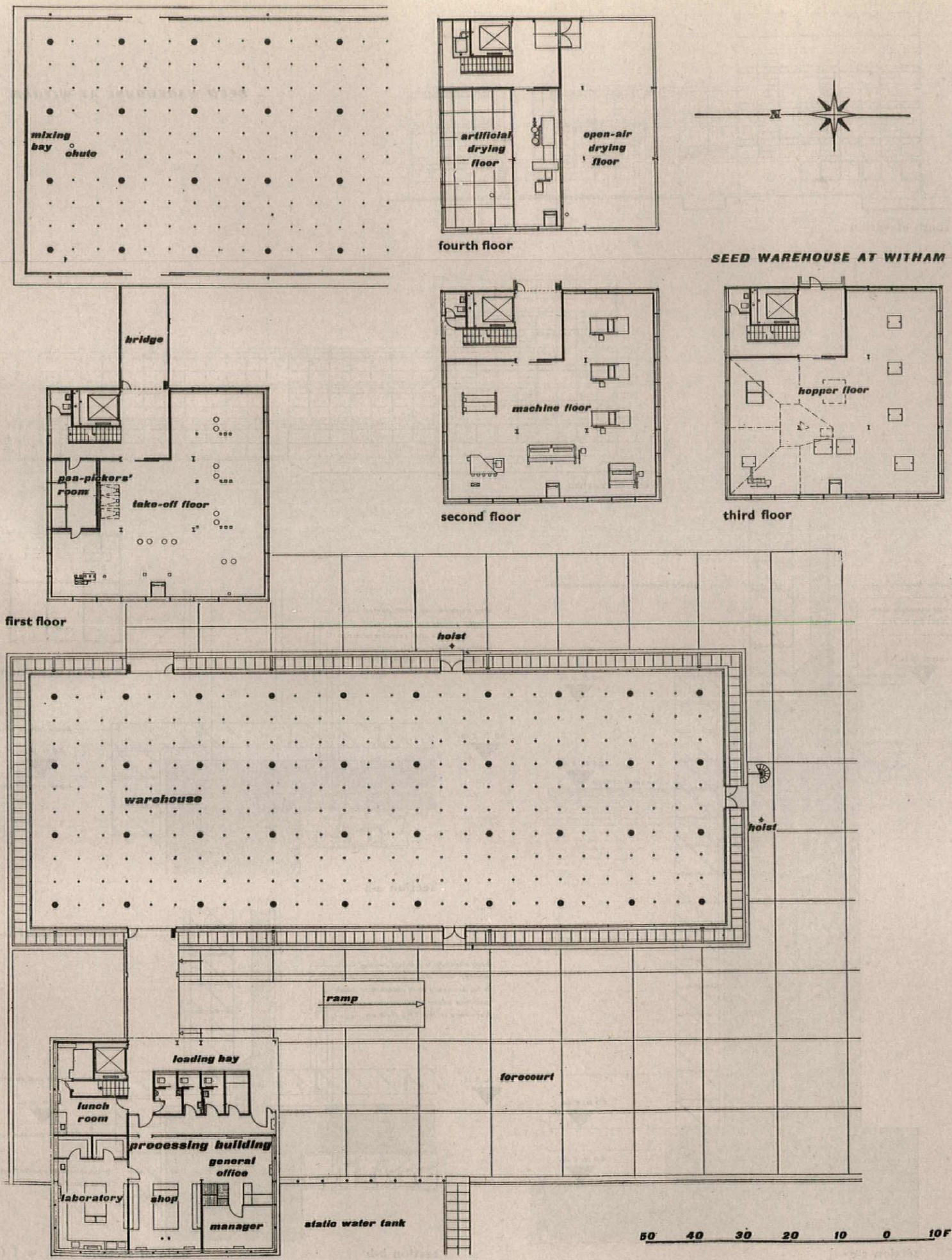


section a-a



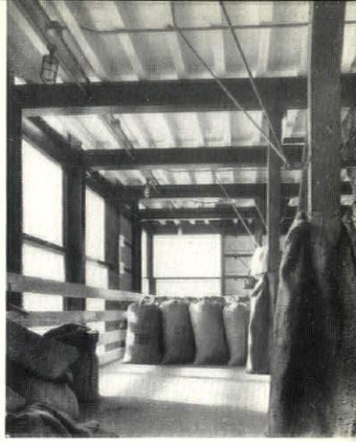
section b-b

scale of sections 1 in. = 1 ft.


mixing bay
chute
fourth floor
artificial drying floor
open-air drying floor
N
SEED WAREHOUSE AT WITHAM
bridge
machine floor
hopper floor
gas-pickers' room
take-off floor
second floor
third floor
first floor
hoist
warehouse
hoist
ramp
loading bay
forecourt
lunch room
processing building
general office
laboratory
shop
manager
static water tank
50 40 30 20 10 0 10FT
ground floor

ample light while warding off most of the sun's heat. In addition to the vertical circulation provided in the processing building and linked by bridge to the warehouse, an enclosed hoist and spiral stair is placed at the south end and an exposed hoist on the east side of the warehouse, for direct loading to or unloading from lorries. The fair-face concrete soffits and the doors in the warehouse are painted white, the steel mullions crimson and sundry details dark blue. A low protective wall surrounding the ground floor is of blue engineering bricks. The roof is covered with asphalt on insulation board, and floors finished with an asphalt compound.

The processing building is five storeys high. Broadly speaking the seed is raised mechanically to the top of the building and then allowed to fall, under the influence of gravity, to the first floor, being processed on the way. The testing laboratory, offices, small retail shop, staff luncheon-room, lavatories and a loading bay are all on the ground floor. The staircase and lift-well are in a fireproof enclosure and the frame on the east side is filled with brick panels to prevent the risk of a fire in either building spreading to the other. Otherwise the

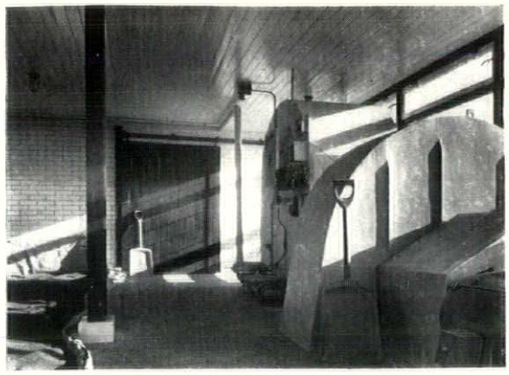


9

10

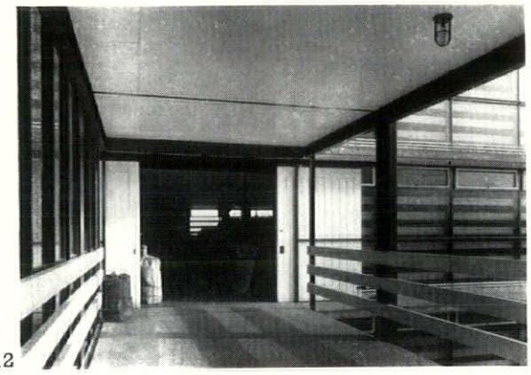
9, typical interior of intermediate floor in processing building; 10, the same in warehouse, each showing the fences of boards fixed to the flanges of the mullions, against which sacks can be stacked.

11



SEED WAREHOUSE AT WITHAM

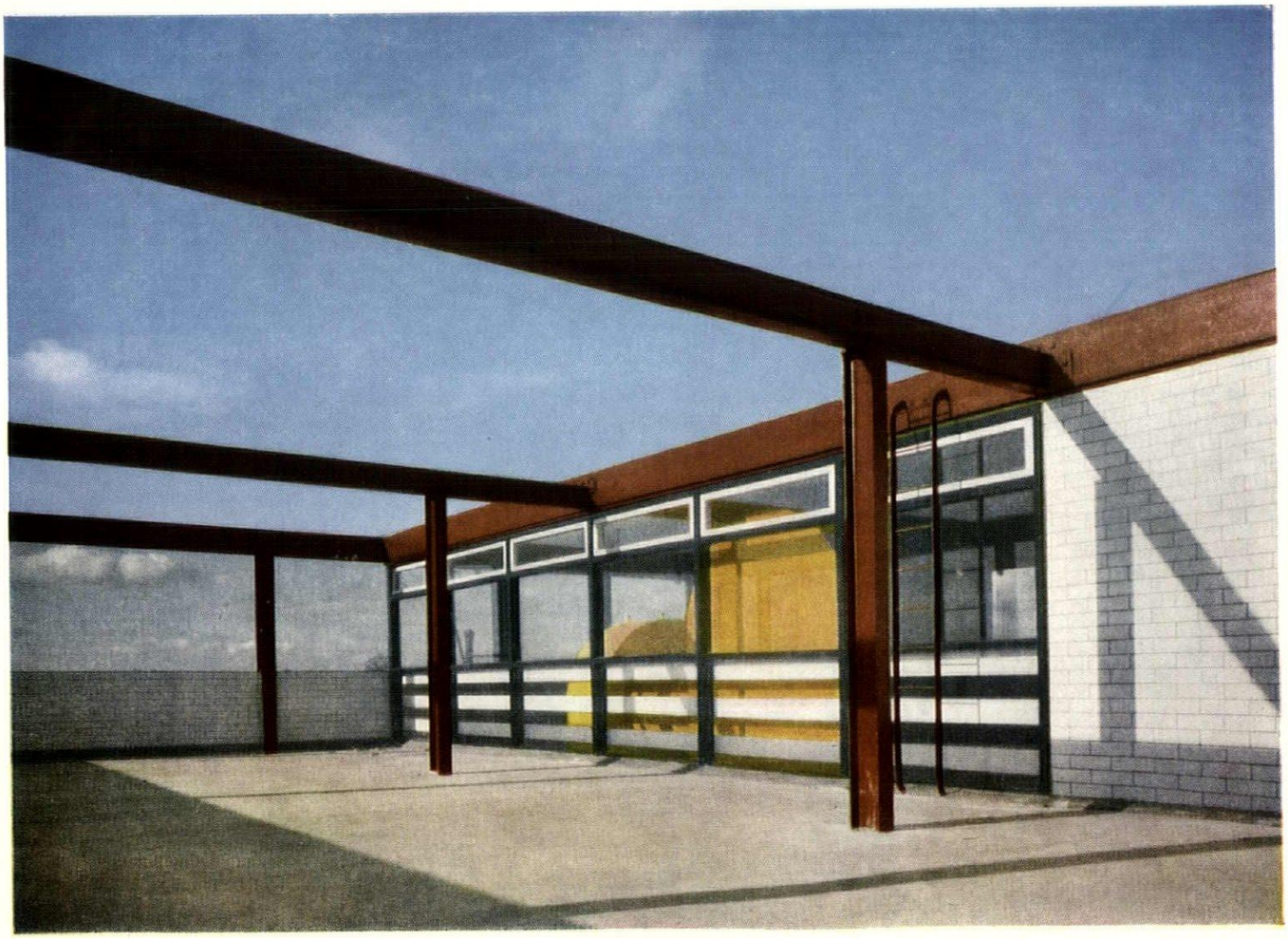
11, the covered and, 13, the uncovered parts of the drying room at the top of the processing building. 12, the bridge linking the two blocks.



12

exposed steel frame is largely glazed externally except for the hopper-type ventilators which are of timber and the brick spandrel panels at ground-floor and roof level. Above the level of the blue brick plinth, all brickwork, internal and external, is of white-glazed bricks requiring no maintenance. The stanchions and beams of the structural steel frame are fully exposed and painted crimson. Before painting, all external steelwork was shot-blasted and treated with a zinc deposit, against rust. Floors are finished with softwood boards above ground level. The floors in the laboratory, retail shop, and office on the ground-floor level are finished with grey and white rubber floor tiles.

13



INSIDE THE U.S. OFFICE

Architectural office organization in the USA has become an almost legendary subject for non-Americans, who tend to envisage hundreds of assistants working in factory-sized offices without windows. The facts of the matter, however, are that a building industry so vast and complicated, and a body of clients as varied as a half-continent can produce, together offer unique opportunities for specialization and for pioneer enterprise, for the small office or the large, for group-work or for hierarchy. To give some idea of the wide variety of American office practice, we present below a symposium of experiences by British architects who have worked in several contrasting American organizations, prefaced by a general survey of the American architect's relationship to American building business by *Martin Pilch* (Dundee trained) who has recently returned from a two year study tour as MacLaren Travelling Student of the RIAS.

1

The profession of Architecture in the United States is organized through the American Institute of Architects. Each member of the Institute is also a member of its constituent organizations, numbering over ninety, and known as Chapter and State organizations. As in the political sphere, where the States are very jealous of their rights versus the Federal Government, so in the sphere of architecture the local bodies are jealous of their independence and, consequently, the AIA is more of an advisory body than a regulating authority.

education

Architects in the United States get their professional training very largely at the universities, and both the length of their training and programme vary with each institution. In general two years of an Arts Degree course is a prerequisite for the student's admission to the School of Architecture within the university. On an average it takes a further three years in the School of Architecture to complete the degree of Bachelor of Architecture, which admits the holder to the profession. By studying for a further two years the student may get the degree of Master of Architecture, and then proceed to the degree of Doctor of Philosophy. For a degree in architecture, students attend studio and lecture courses which carry point values depending chiefly on the time required to be spent on the particular course. A degree is granted upon satisfactory completion of courses with point values which add up to a required total. About two-thirds of the subjects are compulsory, and the other third is selected from a list of alternatives. The optional subjects may include drawing, painting, sculpture, planning and housing, or any technical subjects. In this way a student may follow his natural aptitudes and acquire a certain amount of specialized knowledge at college.

registration and licensing

The registration and licensing of architects is carried on at the State level, and belongs to the privileges that the States guard so closely. Whether an architect requires to be registered or licensed depends upon the State law. Generally, where the law prevents the exercise of the functions of architect unless certain standards are complied with, it is a licensing law; where the use of the title of architect is controlled, it is a registration law. The different States have varying requirements for licensing or registration, but in general a candidate is required to pass an examination, which may be equivalent to the RIBA final, as in New York or California, or may be of a lower standard. Usually the candidate must be a graduate from architectural school with three years' experience in an architect's office. If the candidate does not have a degree, most States require about twelve years of practical experience instead, and in this case a High School Diploma is a necessary prerequisite for registration.

The fact that an architect is registered or licensed in one State rarely gives him the privilege of practising in another State. Colorado, for instance, will only permit architects to practise who are natives of the State. Most States, however, will permit any architect to practise who passes their examinations. In the last few years the National Council of Architectural Registration Boards, which was set up by the various State Boards, has assisted architects in inter-state practice by holding examinations for architects registered in States where the requirements are lower, to bring them up to the standard of those States which have higher standards. Architects registered in New York, for instance, will be admitted to practise in other States through the NCARB upon application, while architects qualified in States whose registration or licensing laws are less strict have to pass supplementary examinations.

the architect and the building industry

There is no independent profession of quantity surveyor in the USA, and consequently working drawings and specifications form the basis of the contract documents. In 1926 a group of quantity surveyors established a national organization to standardize procedures and secure the recognition of persons qualified to give this service, but the depression eradicated the independent quantity surveyor, and to-day he is a part of the contractor's organization.

The building industry in America is one of the highest paid industries, and one of the most competitive. It commands the best technical skill available and is very cost-conscious. It has to deal with well-organized labour unions and pays very high wages. Only a well-above-average architectural employee in New York City commands a salary equivalent to that of a bricklayer. The average tradesman is well educated and highly skilled. In many trades entry into the trade is controlled by the State by issuing licences upon examination. Such is the case with plumbers in New York.

Speculation in land in the cities is largely uncontrolled, and land values tend to be very high. City revenues are primarily collected from the taxation of real estate values, and taxes are payable on vacant sites according to their value for development, as well as on occupied sites. All these factors create a very strong emphasis on speed of building. Clients want to occupy or rent their buildings as soon as possible to reduce the period when their capital is tied up without return. In many cases the clients are willing to pay more for the building in order to have it sooner in service. With all these conditions, and the fact that site labour is generally dearer than shop labour, the stress is laid on preplanning, prefabrication, dry construction methods, etc.

Large contractors have a tendency to become brokers, as they may only do one trade themselves and sub-contract all else. They comprise a small, very efficient organization of specialists in planning and organizing building operations.

contracts

The normal practice in large jobs where the clients are private individuals or corporations as contrasted with public bodies, is to employ a contractor almost at the same time as the architect. In fact the client may approach the contractor, and, in consultation with him, appoint the architect, or vice-versa. The contractor then acts as a consultant, and is paid either by a fixed fee, a percentage of the cost of the job upon completion, or in any other mutually agreed way. Sub-contracts are then sent out to tender in the usual way.

In the case of government bodies and local authorities, the standard method of selecting the contractor is by the open tender based upon the working drawings

and specifications. This procedure requires a most complete set of drawings as in any variations the client is at the mercy of the contractor.

The third method in use is a system of several contracts, where the client sends individual tenders to all sub-contractors and pays the general contractor for co-ordination and supervision, or the architect himself acts as co-ordinator for the client and receives additional remuneration.

Supervision of buildings in progress is usually through a clerk of works, who supervises the quality of materials, etc. On large structures the architect may pay visits once a month only, and since the contractor is given complete data he can proceed with the job and only ask for explanation of points which seem doubtful.

consultants

The American client has long ago accepted modern mechanical services, and demands the best in heating, lighting, air-conditioning, lifts, etc. The American architect, therefore, employs consultants early, and much more frequently than is the case in this country—in fact they are employed universally. Certain States will not grant permission to erect any building regardless of size, unless structural and mechanical drawings are accompanied by calculations, and the drawings are stamped by a licensed engineer. Large architectural offices at one time employed their own specialists, but that method is being superseded in favour of outside consultants as this gives the architect freedom to choose the most appropriate firm for the job. The consultants used for an average job are: heating and ventilating; plumbing; electrical; structural. These consultants are usually paid by the architect either by a fixed fee or a mutually agreed percentage of the cost. This service is included in the architect's fee from his client, and the client is only asked to pay separately for special services, if required, i.e., town planning consultants, grading or foundation specialists, etc.

the client

The AIA professional practice code does not permit advertising, but does allow architects to have their names exhibited on a building in course of erection. Architectural jobs are obtained in the usual manner, but greater attention is paid to public relations, particularly by large offices, where lack of continuity of jobs might throw the whole organization out of gear. Public relations are to a large extent helped by the press. The real estate pages of the *New York Times*, for instance, constantly feature new buildings and the names of the architects responsible for them. Some architectural magazines are designed not only to serve the architect but to a large extent the contractor and the layman. The general public is very much more aware of contemporary architecture and the work of individual architects. *Time* and *Life* magazines feature buildings frequently. Modern architecture is not only accepted, but is used as an advertisement to convince the public that a particular firm is very much to the fore because of its use of well-designed buildings and the most up-to-date services. The public has come to associate modern buildings with efficiency. Even banks have discarded their colonnaded solidity for plate-glass transparency. Such changes indicate their awareness of a change of mood in the public. It is conceivable that the New York Stock Exchange will follow suit with a contemporary building in line with its recent decision to sell stocks on the hire-purchase system.

Although established firms are usually paid on the fee-plus-cost basis, firms do accept less according to circumstances.* State and local authorities do not abide by either method, and offer percentage fees which are half or less what the various architectural bodies specify as minimum. Since the States also grant licences or register architects undercutting is no crime.

The architect usually signs a contract with the client in which both fees and services are stated clearly as the courts have been known not to recognize other forms of agreement. Since the client is well aware of the financial loss he faces if he changes his mind during the execution of the job he usually demands and receives much more detailed information than is customary here. After the approval of the preliminary drawings, the clients are sent regular prints of all the drawings produced in the office, and their consent is sought. It is extremely surprising how quickly they grasp the technical aspects of the drawings, and how much comment they do offer—which saves so many tears later.

Architects' fees are usually paid by instalments, as set out in the contract.

office

Housing in America is largely in the hands of speculative builders, some of whom employ architects, but the majority do not. The more expensive type of house is architect-designed, but otherwise architects in America concern themselves with larger structures. Since it usually takes a team of five to ten people to produce a building some offices operate on one job at a time and remain small, while others go up to 600–1,000 employees. Smaller offices may expand rapidly if circumstances warrant it, and a large number of people may be employed for the duration of a particular job in the office. This system is practised by some firms in large cities, but the rates of pay these employees receive is very high and increasingly a larger proportion of architectural firms prefers to keep a smaller but permanent staff. A typical office of this type might comprise 25–50 employees.

Americans are brought up with the idea that increase of efficiency and productivity will result in higher standards of living. This is reflected in architectural offices. Standards of lighting (100 lumens on the board), equipment, and comfort are very high indeed, and result in an excellent standard of draughtsmanship and speed. The working week varies from 35–40 hours with a five-day week. Some States specify paid overtime in excess of 40 hours at higher rates of pay.

Irrespective of the form of contract, contractors demand drawings well in advance of building operations. Constant pressure is put upon the architect to produce drawings quickly. In two years spent in New York City I have never seen a job without a time limit to it.

When a new job comes in, and as soon as approximate estimates can be obtained, the job is priced in terms of its cost to the architect. Architects have figures available indicating how many man-hours it will take to complete a particular job in their office. As soon as the sketch plans are approved the person in charge is given the necessary personnel who will remain with him for the duration of the job, and a date by which all drawings must be finished.

Most offices are in large modern buildings with high rents. This permits the most efficient lay-out and good standards of daylighting. It is usual to have an administrative section, a plan room, a specification room, a conference room, the partners' rooms, and the main office in which all drawing is done. This room is seldom partitioned off, and is well ventilated and quiet. Sometimes designers are separated, but it is usually considered better practice for the designers to be in the same room.

It will be seen from the above that the overheads of an average office are very high, and an architect in America must be an efficient organizer to survive. This is usually achieved by either combining the necessary qualities in partnerships, or by employing an efficient office manager.

Preliminaries and working drawings are produced by a group who stay on the same job from beginning to end. Each person in the group is given a task for which he is wholly responsible. The person in charge of the group is responsible for the whole job, and makes sure that all the points are settled, so that no one has to stop and wait for decisions, and the drawing may proceed with very little obstruction. In general, there is a very large delegation of responsibility and this makes not only for greater efficiency in the office but also for a spirit of co-operation and a sense of achievement.

The quality of architectural design will depend on the general outlook of an office and the talent of the designers, but under the American system good co-ordination between design and construction is taken for granted.

---

* Fees are calculated in various ways. The New York Chapter of the AIA propose the following schedule of fees for various classes of buildings:—

Schedule A
Projects of minimum requirements in planning and design such as: Factories, Warehouses, Public Garages, Repetitive Dwelling Units, etc. Building Cost and Percentage: $250,000—6%. $1,000,000—5%. $4,000,000—4%.

Schedule B
Projects of average requirements in planning and design, such as: Hotels, Office Buildings, Mercantile and Department Stores, Banks, Welfare, Dormitory and School Buildings. Building Cost and Percentage: $250,000—8%. $1,000,000—7%. $4,000,000—6%.

Schedule C
Projects requiring specialized knowledge, such as: Libraries, Government Buildings, Hospitals, Laboratories, Theatres. Building Cost and Percentage: $250,000—10%. $1,000,000—9%. $4,000,000—8%.

Schedule D
Residences, Churches, Monumental or other work of unusual requirements: a minimum of 12 per cent.
For decorative furnishings, furniture, and special interiors: a minimum of 15 per cent.

Alterations and Additions
For alterations and additions to existing structures, the minimum basic rates under each classification should be increased 50 per cent. Special conditions may require adjustment of this recommended fee.

Since the method of arriving at fees on a percentage basis is not considered very equitable various alternative methods are in operation. The other methods of payment are:—

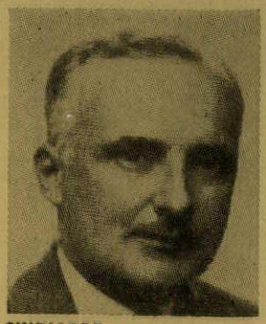
Fee plus Cost—where the client pays for the time and expenses of personnel spent on design and preparation of drawings, and a percentage fee to the architects to cover overheads and profits.

Salary Method—the architect's expenses are paid by his client and he is paid a salary for the duration of the job.

2

SKIDMORE, OWINGS AND MERRILL, a firm whose size and complexity have made it one of the bases of the legend of American 'design factories,' is described in its humanity, flexibility and adaptability by Paffard Keatinge Clay (A.A. trained) who previously worked with Le Corbusier, Frank Lloyd Wright and Raphael Soriano, and is now a member of S.O.M.'s Chicago office.

Of the four U.S. offices of Skidmore, Owings and Merrill the Chicago office is the largest and fastest growing, having doubled its size during the past year to include 350 people, including also mechanical, electrical, civil and structural engineers.



SKIDMORE

OWINGS

MERRILL

To many outside the organization it seems a mystery that an architect's office of such enormous proportions can concentrate so directly on the pursuit of a fine art, keeping its head above commercialism with an increasing unity and strength of direction. There is no great figurehead, no Mies nor Corbusier, to provide the focus, to attract like disciples, or to herald the way, and yet no other office is doing such work. This may be due to the unusual position of the designers.

They are all young men. Most of them have strong convictions, and are entrusted because of those qualities with the responsibility of a building. Some are straight from school, others were in the Bauhaus, and some are voted to the rank of general partner having shaped the architecture of S.O.M. by the buildings they design, the Lever House or the Air Academy, but in no case is the architecture the outcome of established principles of design or office practice. It is the building itself that attracts single-mindedness and suggests the next step rather than a theory or a personality. The general partners state their purpose in simple words: that they work together to achieve what they could not possibly handle alone. But behind that lies a consciousness that this kind of team work must steer clear of two ever-present pitfalls: the weakness of popular approval and the anarchy of individualistic expression. This is resolved in the careful selection and then confident support of the designer or chief architect for a project. The chief of design, the project managers, the partners themselves may try to influence him, but the concept is his and the final decision lies with him where the architecture is concerned, because they feel that if a building is to stand as a consistant whole it needs the strong hand of a single man. Consequently an enormous personal interest is developed in the project and the designers' time and energy are devoted far beyond the limits of office hours. Discipline, confidence, freedom are conditions, but why is there good architecture coming from this office second only to the work of the great masters? In the final analysis it can only be said that the atmosphere is right for it.

Each project is handled by a small office set up specifically for that job within the broad framework of the organization. In this way it is possible to develop a project by combining the advantages of the personal interest and intimacy of a small office centred on one idea, with the wide range of technical assistance and specialized experience only available in a large organization.

A project manager, representing the firm, is directly responsible to the client for the job. His work may begin with the promotion of the project or the outlining of the programme, but it is intended that a designer is selected as chief architect for the job at the earliest stage, and that he is present at all meetings with the client.

In the smaller jobs of a million dollars or less, the designer may work entirely on his own from the first site-use plan to the definitive details. In the larger jobs he may have one or two assistants to work with him, to do research, to study alternative solutions, to make sketch models and presentation drawings. The greatest advantage of this arrangement is that the assistant is completely familiar with the architect's intention and can follow the project through working drawings, checking and making detailed design decisions all the way along, while keeping a sheriff's eye on the other less architecturally minded departments. In the case of the Air Academy, which forms a large office in itself, extending over two entire floors of the office building, the project is again broken down into smaller groups. In one group four or five may make up a design team under the chief architect, but with each working out his own solution to the problem more or less independently until a certain point in the development where they go into conference and settle upon the solution that they will adopt, from then onwards working as a group on one scheme. This simultaneous method enables the chief architect to feel out the problem without spending time on eventually discarded alternatives.

When the design is approved by the client a set of drawings known as definitives are made by the designer, their purpose being to provide the necessary directions for working drawings, pinning down as many details as time permits. Simultaneously a job co-ordinator is selected from the production department to work closely with the designer and the engineers and to form the nucleus of a small office that will carry the job through working drawings. A complete break-down of the cost of the building is made by the estimating department at this stage, on the basis of the definitives, to determine ahead of time any changes necessary to bring the building within the allotted budget. There is no filing of details and little stereotyped office practice even through working drawings. The attitude of the design department to begin a job with a completely fresh start, questioning and studying out the alternatives for each step it takes, is not always the most efficient way to do business but the gain is in setting new standards for architecture in terms of pure solutions to everyday problems, which in other large offices are hacked from commercial type renderings.

Perhaps the real secret of the consistently fresh work that is coming out of this office, is the investment made in the opportunities it gives to the eager minded young architects whose energies in other parts of the world are so often sadly gone to waste, but which are here channelled into actual practice from which they in return reap the fruit of experience in the great discipline of building.

3

VICTOR GRUEN and RICHARD J. NEUTRA are the heads of two smaller offices of very different types, the former an expanding business organization, the latter a highly personal team headed by a distinguished pioneer of modern design in America. Their methods and output are contrasted by John Penn (Cambridge trained) who spent most of his two and a half years in the USA working for these two architects in Los Angeles.

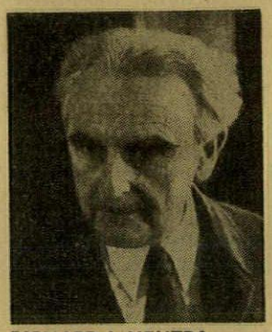
It is difficult to tell to what extent the character of American building is affected by the organization of work in architects' offices, and equally difficult to decide which particular patterns of organization are good, since it is not always easy to see the point behind certain developments, and to value them accordingly.

In a country where maximum production and maximum consumption seem to be the rule, it is inevitable that definite value is attached to quantity of output, and architects who organize their work to this end often gain greater opportunities to influence trends. Whether this is desirable or not is not the point here, but it has to be

taken into account in considering the position in America.

I worked for two architects, Victor Gruen and Richard Neutra, whose attitudes to this question of output differed, yet each achieved the ends he desired by accepting and using disciplines which were the result of economic conditions utterly different from those in Britain.

Neutra, initially at great risk to himself of becoming over-involved in the time-consuming problems of the 'custom made,' spent what many people might have considered an extravagant amount of energy arriving at design answers to specific problems (in spite of the fact that by now this can be shown to have paid him a hundredfold). Perhaps all that can be said is that at a time when a choice had to be made between quantity and quality, Neutra chose the second, and, owing to the particular circumstances of technology then prevailing, at definite cost to himself of a small output for a limited clientele.



RICHARD J. NEUTRA

There is no doubt that his small staff, with the resulting intimacy of personal relationships, made possible many opportunities for multi-dimensional links between those who built and those who were built for, which seems most desirable in all types of office organization. Technological development seems more and more to have deprived the architect of personal links with both staff and client. So far, in fact, organization has resulted in standardization instead of standards, and has forced conscientious architects to make the choice that Neutra made.

Victor Gruen, a great friend of his, devotes much of his ingenuity to problems of production, and obtains both quantity and quality of output by methods that derive from a totally different set-up to Neutra's, but at the cost of an intense separation of activities within the office.

VICTOR GRUEN

An extremely imaginative attitude towards building problems is characteristic of both men. Neutra's staff is contained in his private house, while Gruen's organization still expands according to the laws of a successful business. Of the two, it might be said that Neutra's achievement has been more difficult, especially in a country like America; but this is not to say that it has been either more or less worthwhile than Gruen's.

It is rather that the first has made his mark in spite of, not because of, the characteristic pattern of American culture, while the second has 'taken the bull by the horns.' Possibly the quality of Gruen's work expresses organization above individuality, yet it does not appear to suffer as a result, and in this it is characteristic of some of the most significant present-day work in all countries.

For even if it were true in the past, it is no longer true to insist that high level organization necessarily always need be destructive of humane relationships, and in particular of those creative solutions to problems of living that must always depend upon them. Victor Gruen, by careful choice of staff, and by the division of responsibility for different jobs among different teams, achieves to some degree a 'horizontal' as well as 'vertical' organization that breeds great enthusiasm in the office. Whether sufficiently close contact is maintained between teams and clients is a matter of opinion. But it does seem that on very large scale operations this may not serve the interests of good practice.

It could, perhaps, be argued that any form of organization that lessens the opportunities of clients to alter, and even at times rebuild for themselves, their own environment is not, in the long run, in the best interests of any society. But this opinion, of course, contradicts that generally held—that the architect should assume all tasks of organization rather than that he should seek to put greater and greater opportunities for self-expression—possibly in the shape of flexible and adjustable structures—at the disposal of his clients.

One thing is certain, however. In the long run quality of work always must depend upon individuals who find expression in different ways; even, at times, in large scale organizations. Perhaps a measure of Gruen's genius is that within his organization he still manages to keep the path clear for the valid design that may one day develop from, and so change, the very structure of its origins. He recognizes that design for life can be nothing if not individual, but that quantity of output no longer need be associated with poor quality, and in this makes an important new contribution. America has committed herself to all the troubles that highly developed organization brings, and, paradoxically, must accept organization to bring about those processes of decentralization that she needs so badly.

A constant volume of building, good, bad or indifferent, at least guarantees that ideas and experiment are expressed in concrete shape. Architecture gains by the process of constantly being rebuilt because this retains spontaneity. Even though pursuit of novelty, for its own sake, is overindulged in, especially in the U.S., at least there is never a refusal to try out what is new. Nor do I think that this experimental attitude towards building depends entirely upon wealth, or that unlimited funds are a condition for good architecture—although certainly it seems that there comes a moment when resources, for one reason or another, can become inadequate—or incapable of being used in an economical way. This moment comes at the same time as the ability to continue further experiment fails, as seems the case in England at present.

Confidence that no problem is too hard to tackle is as characteristic of Victor Gruen's organization as it is of America. Consideration of this potential ability to turn situations to advantage, as opposed to undue criticism of the way in which Americans have used their opportunities up to now, is what I think would benefit us most. Nor does it seem that any accurate forecasts can be made by examining contemporary form in the U.S., since it has developed as the expression of continual experiment in a country that considers things old-fashioned as soon as they have been made.

For this reason, it might be tempting to say that to the extent to which organization develops satisfactorily, to that extent will the pitfalls of an established style of architecture be avoided. And it seemed to me that lack of style is one of the most characteristic features of Victor Gruen's work.

His buildings resemble framework. They impose no authority on those seeking to build a scheme of life within them.

4

RICHARD J. NEUTRA, in San Francisco, whose work depends to a large extent on standard details and methods accumulated over the years, and ABRAHAM W. GELLER, in New York, whose approach is more experimental, but also depends upon an intelligent exploitation of the trade catalogues, are contrasted by R. Desmond Henly (A.A. trained) who worked in the U.S. from 1950 to 1954.

Neutra needs no introduction from me. I would, however, like to say that it was interesting to compare his early work in California, consciously of the 'International Style,' with his recent work. The latter makes great use of local materials and has an indigenous character with a freshness that is seldom seen amidst all that building work now going on in the far west.

His office, designed by himself in the early 'thirties and located near Los Angeles, is an extremely functional and refreshing place in which to work; I spent about eight months there.

Neutra is one of the few contemporary architects who is able to make private house architecture pay, and this I feel is due to his extremely efficient office organization, and to the fact that he can produce good contemporary architecture that is both vigorous and human. The result is that he is in great demand.

In his office, which operates on a five-and-a-half-day week from 8.00 to 5.00

(common in the far west) one finds such aids as Instruction Manuals prepared by Neutra through the years for the guidance of his assistants, and giving the procedure to be used for the various stages of the work. There are also specially prepared forms on which to record telephone conversations and meetings with clients, etc., all of which are circulated to the assistants concerned, keeping them fully informed.

Perhaps the most unusual feature one notices is the system of standard details and specifications developed over a long period, and constantly being improved. These form the bulk of details for each new building, and save a great amount of unnecessary draughting work. They consist of 8½-inch by 11-inch sheets of tracing paper from which a print of a typical detail may be made, the latter being bound in book form for each job. In my time the staff consisted of Neutra's son and seven other assistants, the former being mainly responsible for office organization and job supervision. Five assistants comprised the working drawings and specifications team, one of whom concentrated mainly on details and another on specifications and the business side of the job. There was one draughtsman. My job was personal assistant to Neutra and this entailed the development of all the preliminaries in close co-operation with him. The secretarial staff consisted of two under the control of a person of considerable experience and ability who relieved Neutra of much of the everyday office matters. The publication and exhibition material were in the capable hands of Mrs. Neutra.

Neutra always gave a great deal of attention to the site and the siting of his buildings, and to questioning the clients on their requirements, which he made sure were understood by all concerned. Then a number of studies were made of the proposed building, all of which were on standard small printable sheets which, when presented to the client, convinced him of the very thorough investigation that had been made. This, I felt, was a sound policy.

No drawings were ever done in ink unless absolutely necessary, which not only saved a great deal of time, but also made it simple to execute changes to the drawings when required. The use of pencil for all drawings is quite common in America.

There was a noticeable ease with which Neutra produced one excellent house after another, and the comparative speed with which they passed through the working drawing stage (sometimes in three weeks) was due largely to his well trained 'team' of assistants, his very good office organization, and to his standard details. Other larger jobs were handled in the same efficient and sensitive manner.

Generally, I found that the office organization was to some extent flexible, but seldom did one man see a job through all of its phases, however small the job. There was, therefore, a tendency for a person 'to lose contact' with the building at times despite the excellent inter-office communications. One cannot, however, question the efficiency and wisdom behind Neutra's whole organization.

Geller is in his early forties and in just a few years has come to be recognized as one of America's leading contemporary architects. He has had marked success in many competitions, and most of his work has appeared in the professional journals.

In a small unpretentious office on the east side of Manhattan he has created a working environment that is both stimulating and vigorous, and in my experience unequalled.

ABRAHAM W. GELLER

Perhaps the most striking thing about his office is the informality, the tolerance and understanding that is so much a part of Geller's personality. This informality is reflected in the use of Christian names and the lack of hierarchy. The tolerance is shown, for example, in the flexible policy towards office hours and overtime work. The office operates on a five-day week from 9.30 to 5.30 and the staff is given considerable 'freedom' and is, therefore, only too willing to make adjustments to personal schedules when the need arises. Likewise the necessity for overtime work is largely left to the discretion of the individual. Perhaps, on the whole, employers are not sufficiently aware of the dividends resulting from such an understanding.

One is very soon aware of a 'battery' of filing cabinets consisting of design files and trade catalogues, the latter serviced by an agency sponsored by the building industry and known as 'The Architects and Engineers Service.' This is in constant use by all assistants. Telephones, too, are never idle and it is quite evident that 'the search is always on' for new materials and for imaginative ways of using them. Frequently I remember manufacturers saying such things as, 'that has never been done before' or 'we are quite sure it cannot be done,' and later, 'we can't see how you did it.'

Another important feature of Geller's office is the existence of job-books, which consist of a notebook for each job, in which all meetings, telephone messages, trade enquiries and the like that are pertinent to the job are entered and are, of course, in chronological order. Their value is obvious.

Geller's staff averaged four, and I worked with him for eighteen months. Assistants were very carefully chosen since they became his team of 'personal assistants,' working directly under his leadership, and all were, so to speak, 'dedicated to the creation of good architecture.'

As far as possible the assistants were given one job to see through all of its stages and in this way they acted more as architects than as normal assistants. Where expedition was necessary the whole office might concentrate on one job for a period, and on larger jobs the smallest team capable of handling the job was used. In this way assistants became 'involved' in their work, and were not just a part of a machine producing buildings.

As in most American offices the consulting engineer was always brought in during the very early stages of the preliminaries. Trade representatives were also called in early to discuss their details with respect to the overall concept, and to anticipate as many problems as possible before the working drawings were commenced.

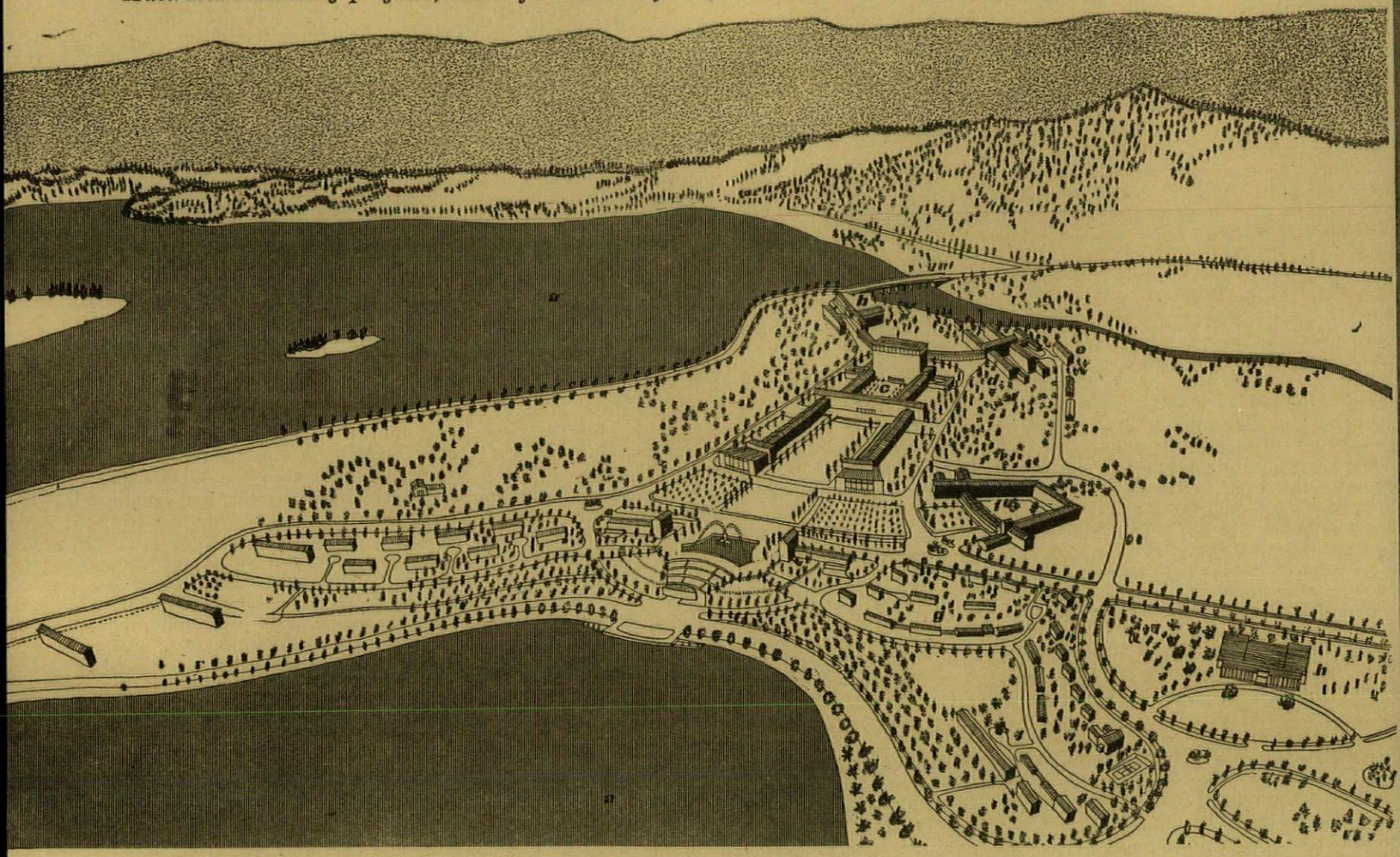
Clients, too, were encouraged to come in to the office to discuss the job at all stages, and invariably around the drawing board. This was at times a lengthy procedure, but it did keep everyone completely informed and ensured that the client's requirements were being met. It was encouraging to note that Geller's clients at least, were quite well aware of their needs as to space, fittings, and general arrangement, although seldom did they attempt to impose their aesthetic ideas.

The time spent on each job is not easy to assess in an office such as this. Many of Geller's jobs are for clients who are not only interested in having a good building, but also a good piece of architecture, and so are often relatively more patient than the average client. Geller was always ready to study and re-study the smallest of details in order to satisfy his demanding clients, and, of course, his own high standards. There are few architects who are willing 'to invest their profits in perfection,' and this is to be admired since no architect can demand, much less get, an increase of fees for any extra study done in the cause of good architecture.

We sometimes used a special type of contract approved by the American Institute of Architects, and designed, I believe, for the client who wants to act as the general contractor with the help of his architect. For this work, and hard work it is, the architect can ask for an extra four per cent maximum fee. For this he is responsible for the inviting of tenders from all sub-contractors (and in America there are a great many), the integration of the work of each trade with regard to job organization, and a greatly increased amount of site supervision. One important advantage is that the architect can select his sub-contractors and in this way obtain higher standards of work.

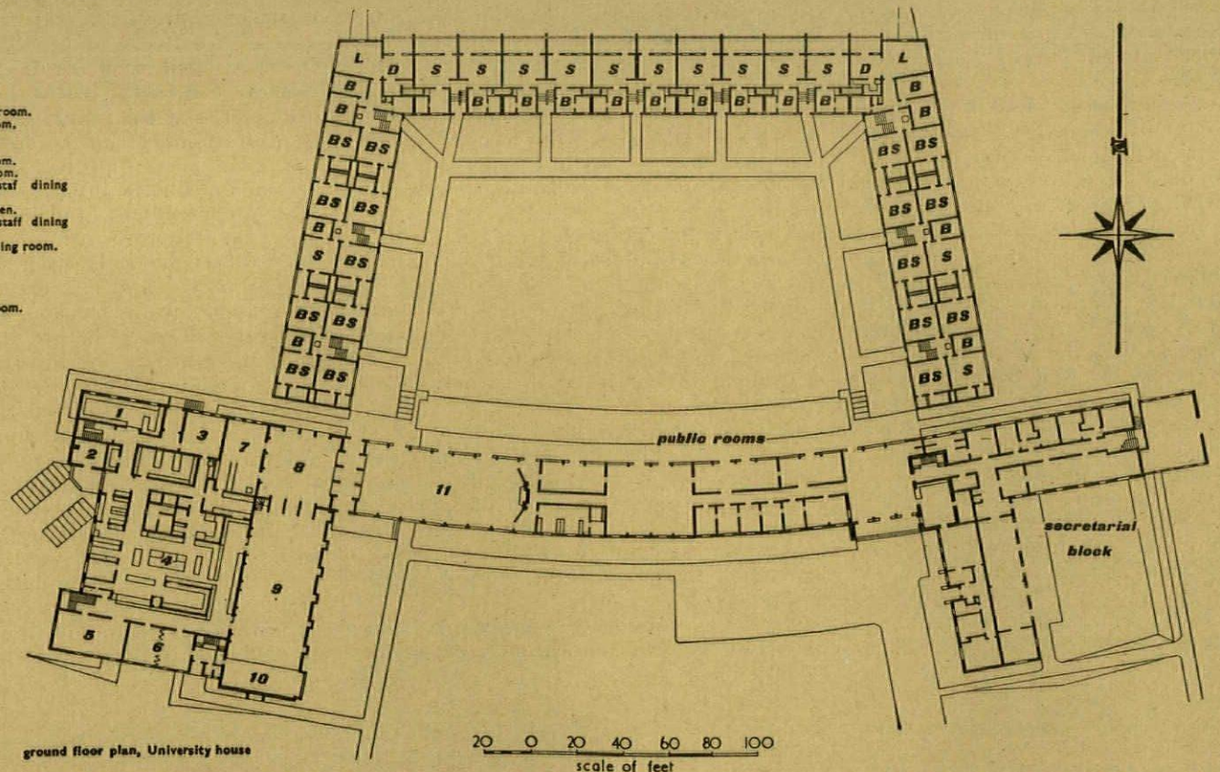
The type of service that Geller gives his clients is as complete as I have yet seen, and this raises the question of the relationship of fee to work done. One can see that the interest in the job beyond the normal architectural service is purely up to the architect in question, and Geller is the exception. He is an architect who 'lives architecture,' and this is quite evident in the working environment that he has created, and in the work that he does.

The National University at Canberra, described below and on the following pages, is one of the largest of current Australian building projects, which form the subject of an exhibition at the R.I.B.A. that is open until March 24th.



key to perspective: *a*, future lakes. *b*, physics block. *c*, library court. *d*, medicine block. *e*, boiler house. *f*, university house. *g*, staff housing. *h*, institute of anatomy (existing.

key to plan.
R—bedroom.
BS—study bedroom.
D—dining room.
L—lounge.
S—study.
1. laundry room.
2. garbage room.
3. domestic staf dining room.
4. main kitchen.
5. technical staff dining room.
6. private dining room.
7. bar.
8. foyer.
9. refectory.
10. dais.
11. common room.



ground floor plan, University house

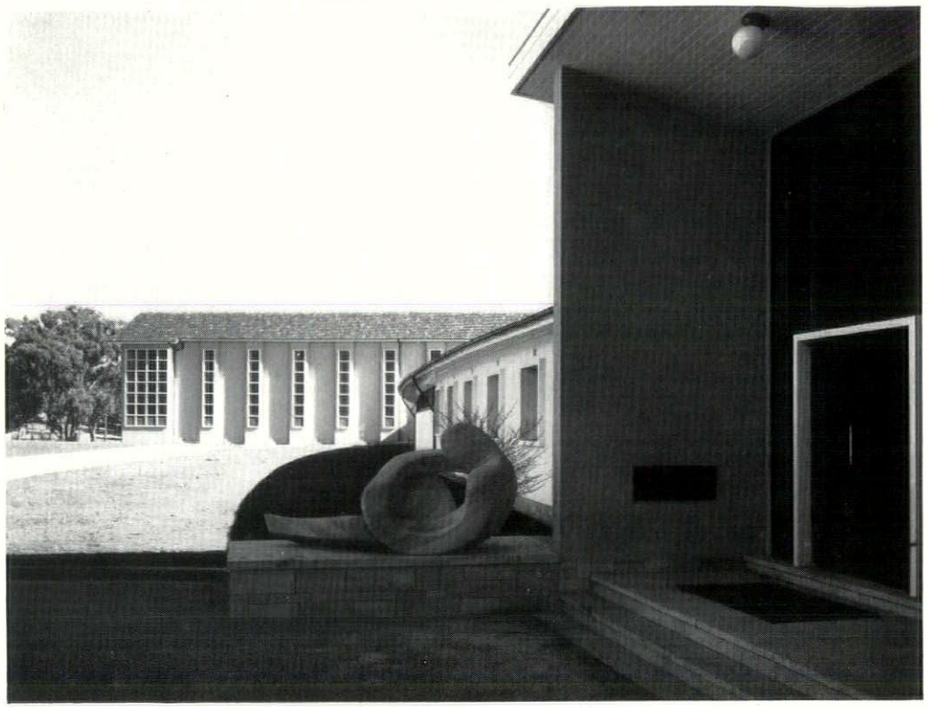
UNIVERSITY AT CANBERRA

ARCHITECT | **BRIAN B. LEWIS**

1, the south-east corner of the inner court of University House with, right, the single-storeyed wing of communal rooms, fully glazed on the north (near) side.

In 1947 the Federal Government of Australia decided to establish the National University in Canberra to supplement the universities of the various states, and to consist of four research schools—for non-clinical medicine, physical sciences, social studies and Pacific studies.

The site of over 200 acres consists of lightly wooded undulating land with one clearly defined ridge dominating it and coinciding with one of the axial views of the original plan. The central buildings of the University are planned about an open space on this ridge, the eastern end being open so as to give views to the east. The old hospital buildings serve temporary university

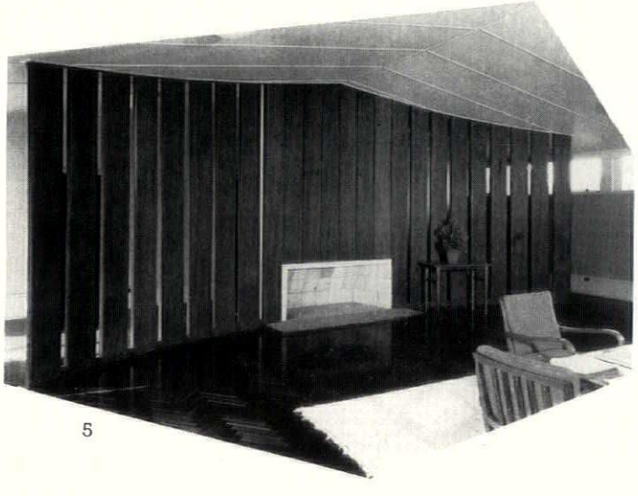


2

2, from the main entrance looking towards the refectory; the freestone sculpture is by Gerald Lewers, of Sydney. 3, the west wing of the residential block, which adjoins the refectory, from a viewpoint corresponding with that of 2, on the inner side of the centre block. The grille on the right is of pre-cast concrete. On facing page, 4, University House from the north-west; the system of individual balconies to each study unit is seen on the north face; the block projecting extreme right contains kitchen, services and staff quarters. 5, fireplace and screen of wire-brushed timbers in the common-room (occupying western portion of centre block).

3

4



5

purposes ; however, no existing work influenced the new layout. The initial programme included a hall of residence, staff houses, a library and accommodation for the four foundation schools. 'University House', primarily a hall of residence, is also the social centre of the University, providing accommodation for formal functions.

It is built on three floors on three sides of an irregularly shaped quadrilateral court, the fourth side being a low curved wing of public rooms overlooking the court and facing the north sun across a pool running the length of the wing. The residential accommodation consists of 30 bedrooms and 96 flats ; 60 of the latter contain a large study-bedroom, balcony and bathroom, and 30 contain a large study-living room, bedroom, large balcony and bathroom ; six large flats in addition are available for special visitors. The climate of Canberra makes the balconies valuable for reading and working in the open air.

The refectory is a high room, 85 feet long by 32 feet wide, seating many more than the number of inmates of University House. Tall east windows give the main lighting, but subsidiary small high windows at the opposite side give extra light and cross ventilation. The end wall space behind the dais will be decorated with a mural painting. Adjacent to the dais end of the refectory are two suites of rooms for smaller functions, which have their own entrance.

The structure of University House is load-bearing brick with concrete floor slabs. The external walls are of

6

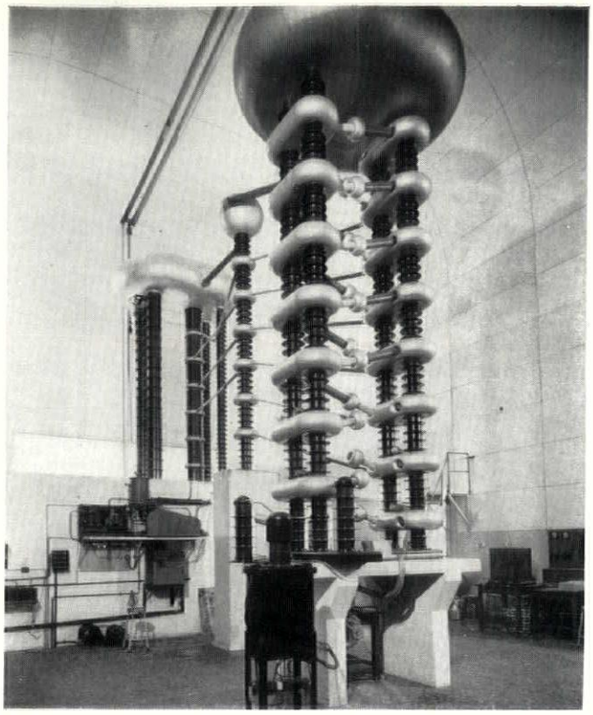
6, interior of the refectory, looking west from the musicians' gallery to the dais; panelling, floor and furniture are in walnut. It is intended to add a mural to the end wall.

common bricks mortar-bagged and coloured; the perimeter walls are a light yellow, the courtyard walls are of a mushroom tint and the low frontal wing is dead white and has a low-pitched copper roof. The main roofs of the building are of terra-cotta tiles.

Heating is provided by floor panels between the concrete slab and the wooden floor over. In addition all living-rooms have normal water radiators at places of heat loss. The refectory and kitchen are fully air-conditioned. The low wing of public rooms has a wall of sealed-cavity double-glazed units facing into the courtyard.

The Institute of Physical Sciences consists of two distinct buildings on either side of the approach road connected at basement level. The office block has brick walls, floors of concrete slabs and an asbestos sheet roof. On the other side of the road is the workshop and experimental block which has a bolted steel frame supporting corrugated asbestos walls and roof, backed for insulating purposes with 3-in. wood-fibre boarding. The plan of the experimental block, T-shaped, with the top member crowning the ridge and the tail running out over the steep hillside, makes possible the shielding of the main experimental area by the surrounding soil on three sides, the fourth side having mass-concrete protection.

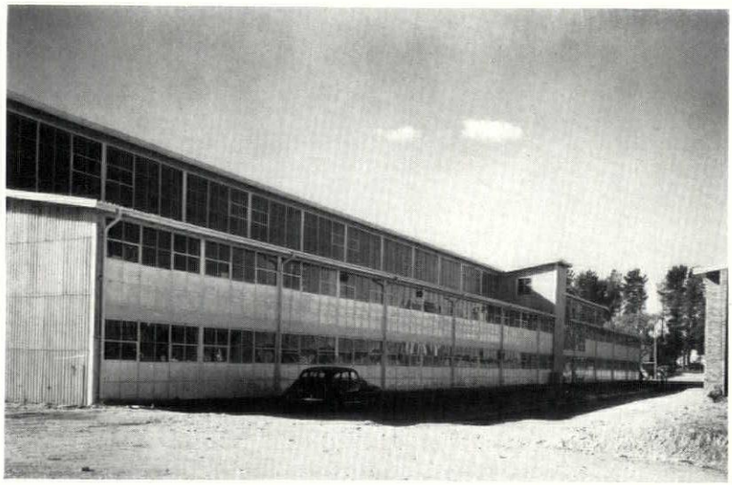
The workshop of the Medical Institute is of similar construction to the Physics experimental block. The



UNIVERSITY AT CANBERRA

7, the high-tension set in the research school of Physical Sciences H.T. laboratory, which is specially lined for radiation protection. 8, south face of the research school showing two floors of small workshops and laboratories and clerestory to principal workshop behind. 9, workshops for the medical research school. 10, general store, constructed in no-fines concrete blocks.

7

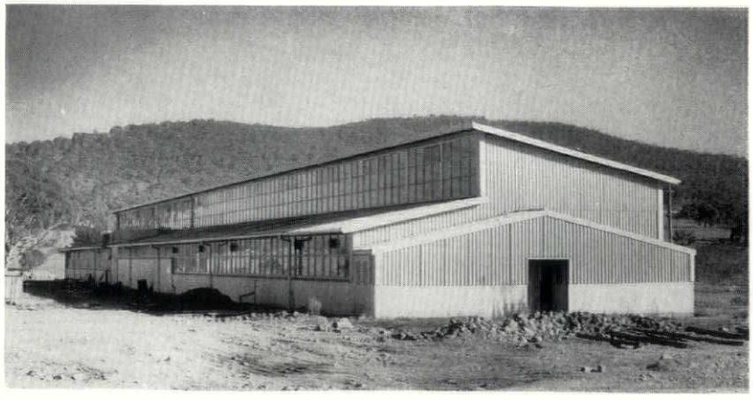


8

buildings of the medical school proper are under construction and will be connected with the workshop.

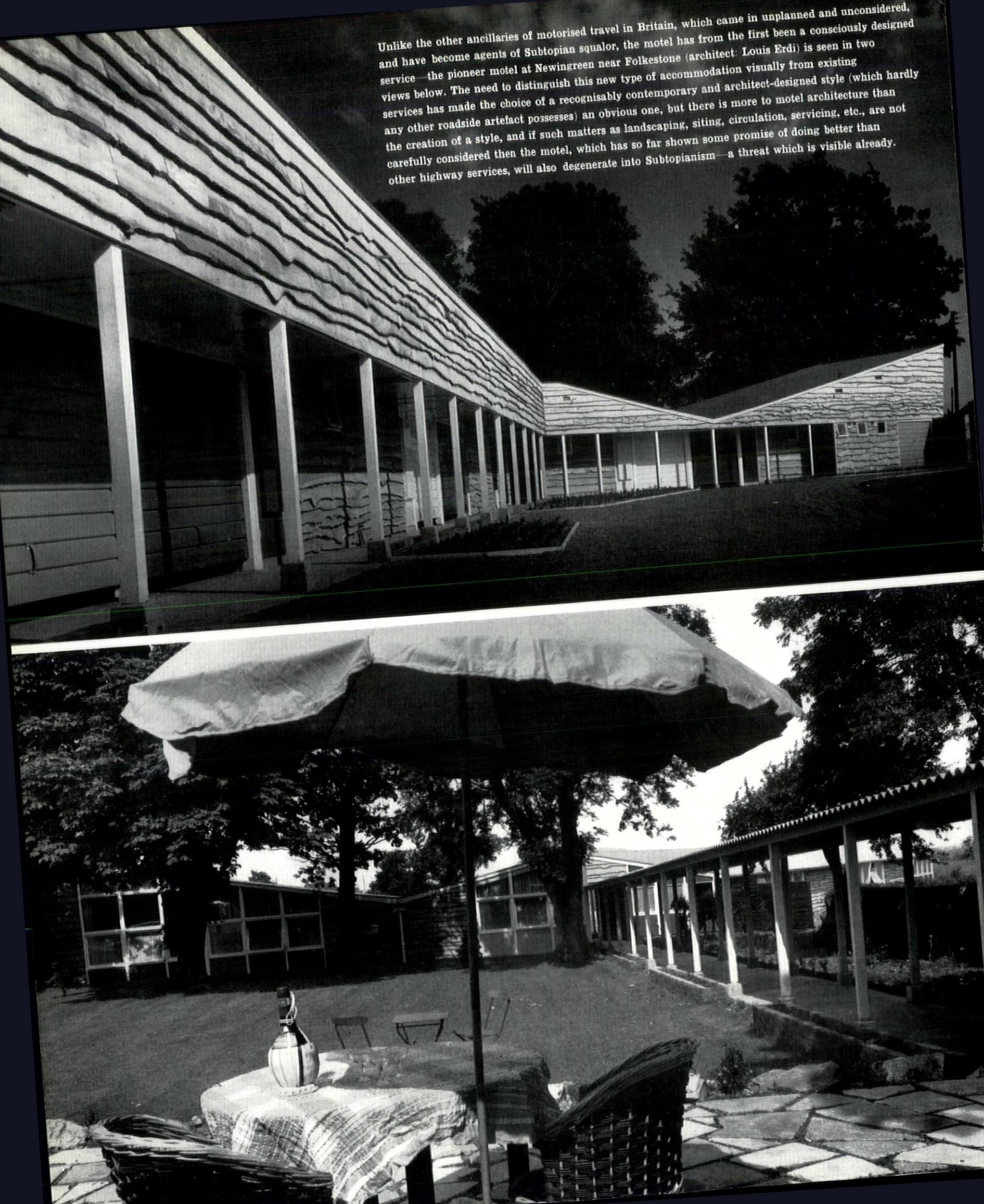
The first of a range of utility buildings for stores and workshops has been built, with walls of no-fines concrete blocks, buttressed at the points which exceed the low crushing-strength of the blocks. A gantry crane is supported from the roof trusses which are of timber framing.

Part of the staff will have houses on the university site and a group for senior workers has been completed, using the only steeply sloping land.



9

10



Unlike the other ancillaries of motorised travel in Britain, which came in unplanned and unconsidered, and have become agents of Subtopian squalor, the motel has from the first been a consciously designed service—the pioneer motel at Newingreen near Folkestone (architect: Louis Erdi) is seen in two views below. The need to distinguish this new type of accommodation visually from existing services has made the choice of a recognisably contemporary and architect-designed style (which hardly any other roadside artefact possesses) an obvious one, but there is more to motel architecture than the creation of a style, and if such matters as landscaping, siting, circulation, servicing, etc., are not carefully considered then the motel, which has so far shown some promise of doing better than other highway services, will also degenerate into Subtopianism—a threat which is visible already.

Diana Rowntree

MOTELS

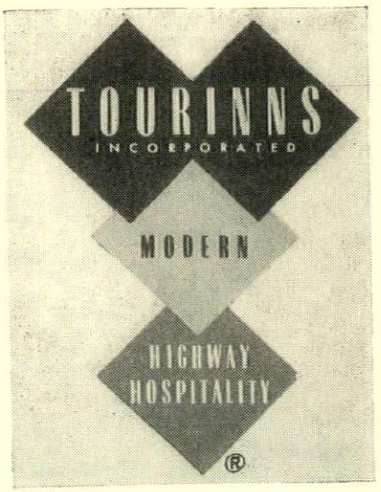
We in the British Isles have every right to be proud of our Coaching Inns. We have been proud of them for two hundred years. For nearly half that time their original excellence of plan and comfort has been replaced by their historical appeal. The coming of railways created its own demands upon the hotel trade. The immediate result was the Railway Hotel. The indirect result, momentous architecturally, was the resort. Whole new towns consisting of hotel and sub-hotel accommodation were built, and most of our fishing ports put out engulfing growths of this kind. In fact the demand made by the railways was so well and truly met that the simple demands of the motorist have not been met at all. Such enormous resources of accommodation existed by the beginning of this century that only slight expansion seemed necessary to cope with motor tourists. The fact that the motorist wanted a lodging rather differently conceived simply could not be entertained. Beds and various grades of plumbing existed in plenty. The proprietors did their best to squash in a few motor cars.

Our towns are very closely spaced. The motorist brought new prosperity to the existing network of coaching inns. Such new hotels as were built tended to model their planning on these. Symmetry, cosiness and antiquity were mistaken for the real virtue of these inns, which was, as is usually the case with a successful building, intelligent planning for the job. Cosiness in this climate is certainly not to be despised, but had our ancestors had central heating at their command I doubt if they would have bothered much with warming pans.

In the U.S. where no closely spaced grid of towns existed in advance, two types of hotels have developed for motorists. The resort type consists of a scatter of holiday

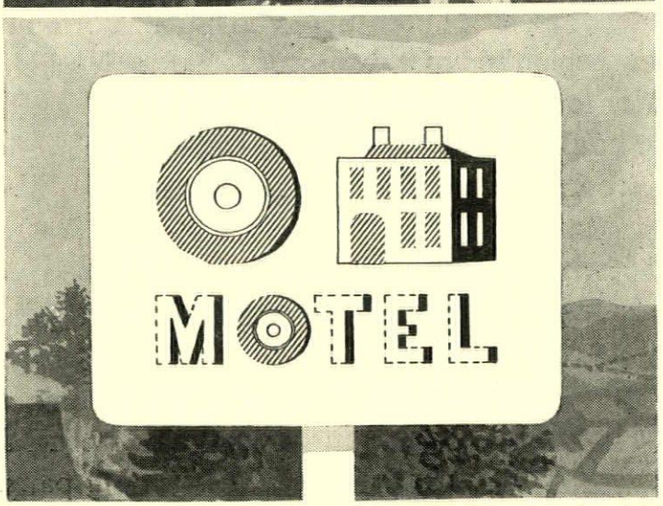
bungalows with a central restaurant and pool. The highway type exists alongside the road for the long-distance driver to stop off for the night. There may well be a future in Britain for the first type, in fact the sound of it is immediately attractive. But the second type is already here, and planning to spread fast. This matter is urgent. Let us take a look at it.

Our resorts can take care of themselves. Much of their charm is their visibly evolutionary character; an outer skin of flowery suburbs, flattering the Regency and Victorian layers of painted terraces, some eighteenth century gems, and a core of tangy mediaeval squalor. Such towns as these can absorb almost any novelty. But for the roadside motorist hotel absorption is out of the question. Even if urban sites were two a penny one explicit motorist demand is a night in the country. Preferably on the loveliest stretch of road, with the sound of a rushing stream and/or distant views. Such a place will strike the motorist as very pleasant. What concerns us all at this moment is how the motorist will strike the place. There will have to be a building and a sign, both potential spoilers. Probably no reader of the REVIEW would seriously dispute the possibility of a beautiful building. Inn signs, too, have added something very agreeable to the English scene. The particular danger of a sign directed at motorists is that it must be read by someone driving at fifty miles an hour. One's immediate feeling is that the sign must be LOUD. The visual equivalent of loud is in fact, not vulgar, but large and simple in scale. Perhaps it is not any intrinsic characteristic that makes most signs directed at motorists so repellent, but the fact that we have no wish to look at them and the assumption that the crude structure they are mounted on is invisible. A tin plaque fixed to a heavy structure of unwrought timber is the usual form. The plaque is naïvely intended to be seen as a painted sign upon a painted landscape. If we were to design the eye-catching sign and its support in one operation we might get something as pleasing as those pub signs that hang from a vine of delicately wrought iron.



3, an American motel sign. Top, white lettering on black diamonds. Centre, black on yellow. Bottom, white on red.

1



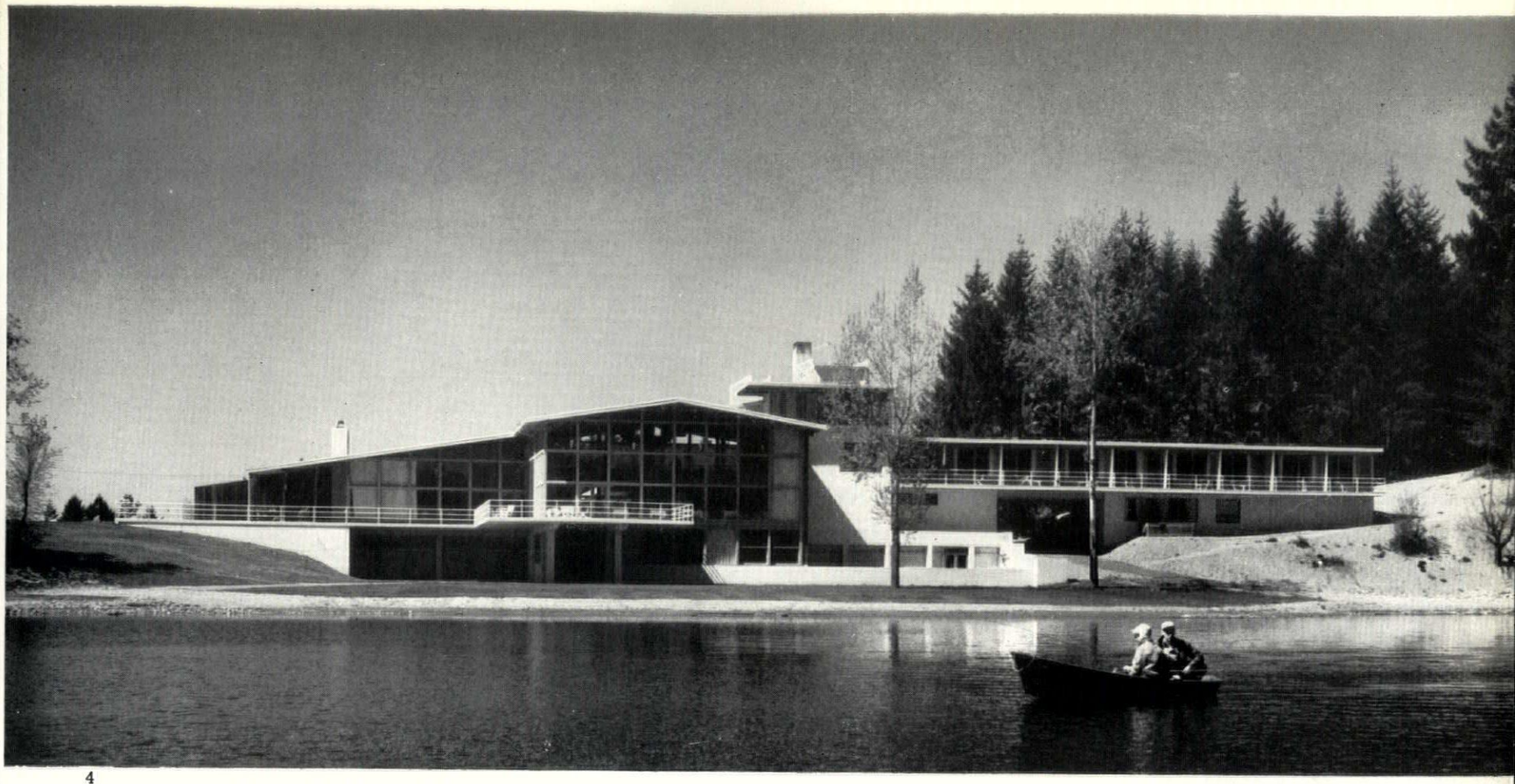
2

1, the sign to the motel on the Exeter by-pass, contrasted with a design by Kenneth Rowntree, 2, which attempts to catch the eye by direct visual image, not flashy lettering.

The motorist cannot stop instantaneously, even at the bidding of the 100 per cent successful sign. An intelligent practice followed in the U.S., though not for some reason by the first motorist hotels in this country, is to put the first sign 500 yards ahead of the hotel. Even so, the hotel itself will need an architectural allure as potent as that of the sign. One can well see the temptation to be flashy. Certainly financial returns on these hotels are more than usually dependent upon the skill of the architect. And I mean for once his ARCHITECTURAL skill. Not his skill in dealing with quantity surveyors, or in correctly forecasting costs, or experience in working out the most economical grid. When it is a question of stopping motorists, of instantaneous seduction, the ability to design an economical grid will get you nowhere. For this you want an artist, someone who can make the simplest statement in the most telling way. There is practically no constructional problem. The planning problem is an interesting one, and quite new. But the gruelling test of the design is that it must be sold not once to a client, but to a given number of people every day of the building's life.

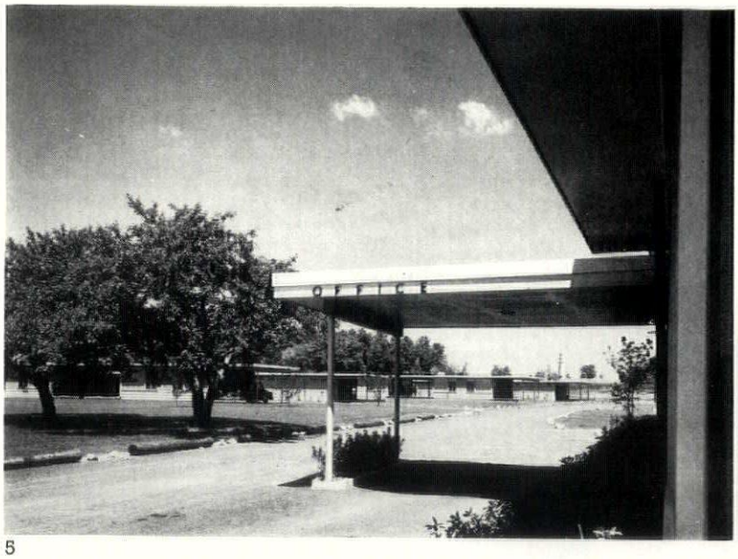
What in fact does the motorist want that is not to be found in a good traditional hotel? Firstly, a night's lodging that is not a break in his journey but part of it. This means direct under-cover access from

[*continued on page* 115



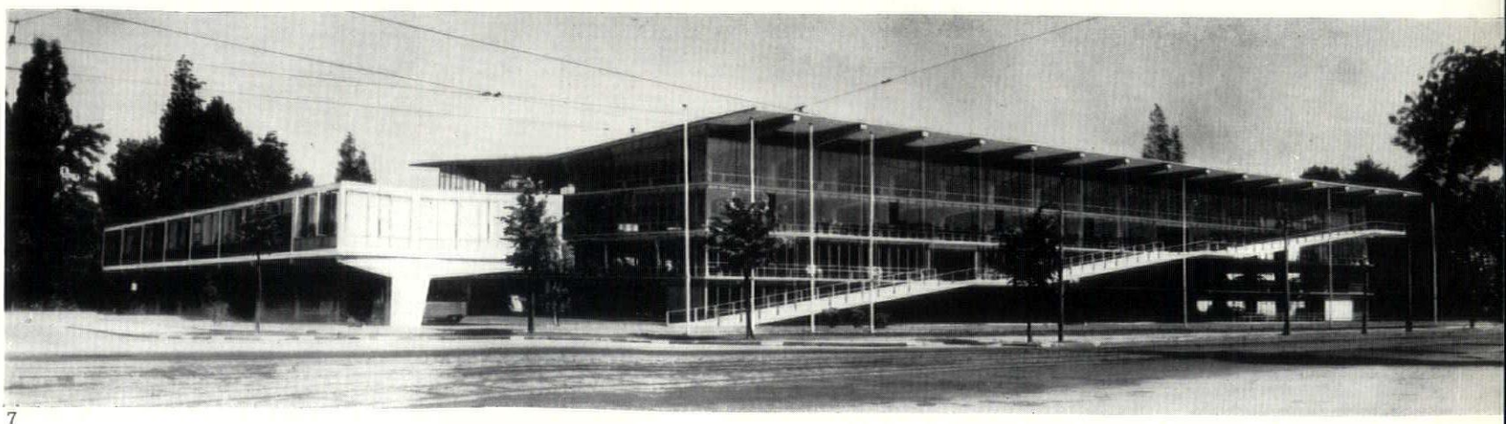
4

4, a resort motel seen from the lake it overlooks: Maple Valley, Washington. This building has perfectly caught the calm spirit of the landscape. 5, unpretentious motel entrance: Newcastle, Delaware. 6, car park under the rental units: Fort Lauderdale, Florida. This is an easier problem to solve in America: in England a lock-up garage for each car is insisted on. 7, multi-storey garage with motel on left: Dusseldorf. This motel is as well in scale and keeping with the autobahn as the one at Maple Valley, above, is with the lake.

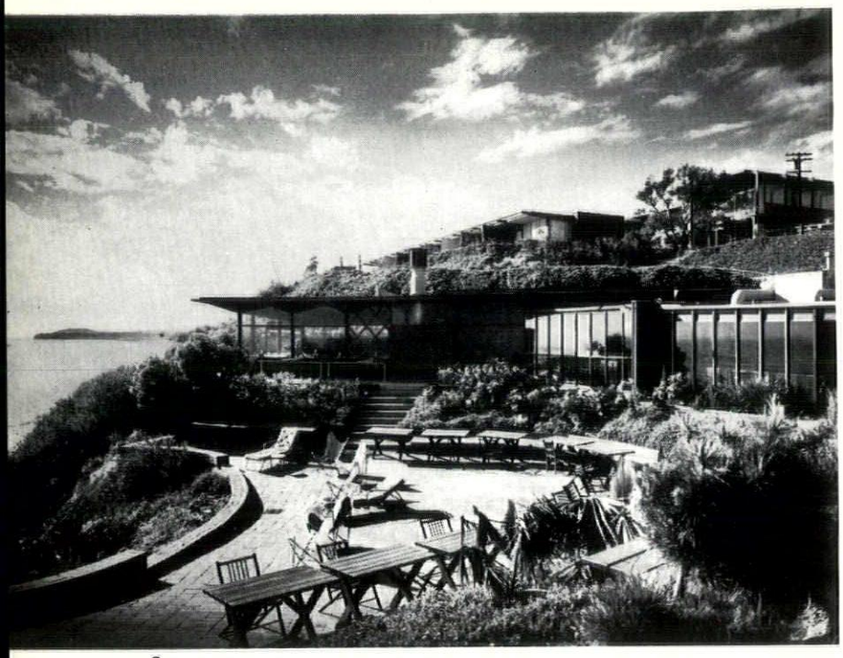


5

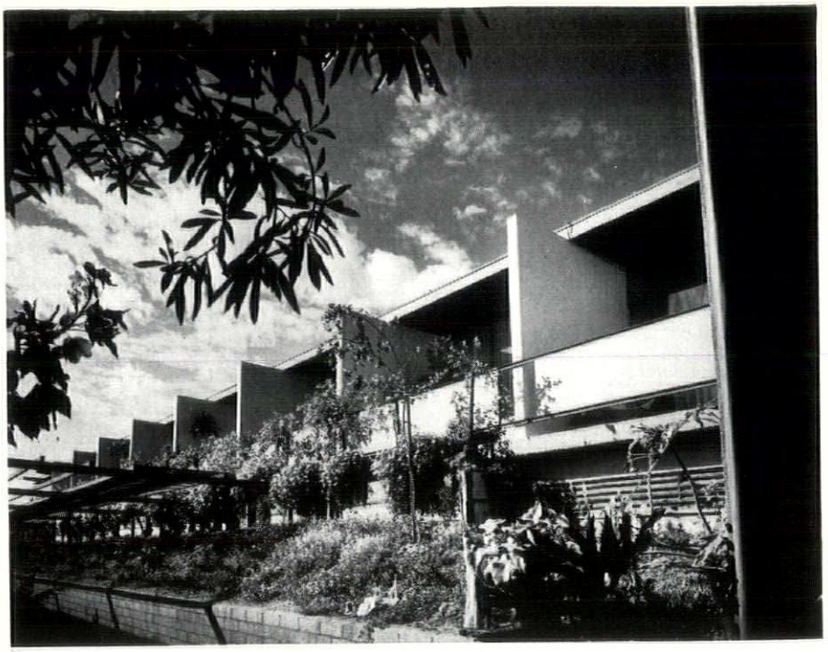
6



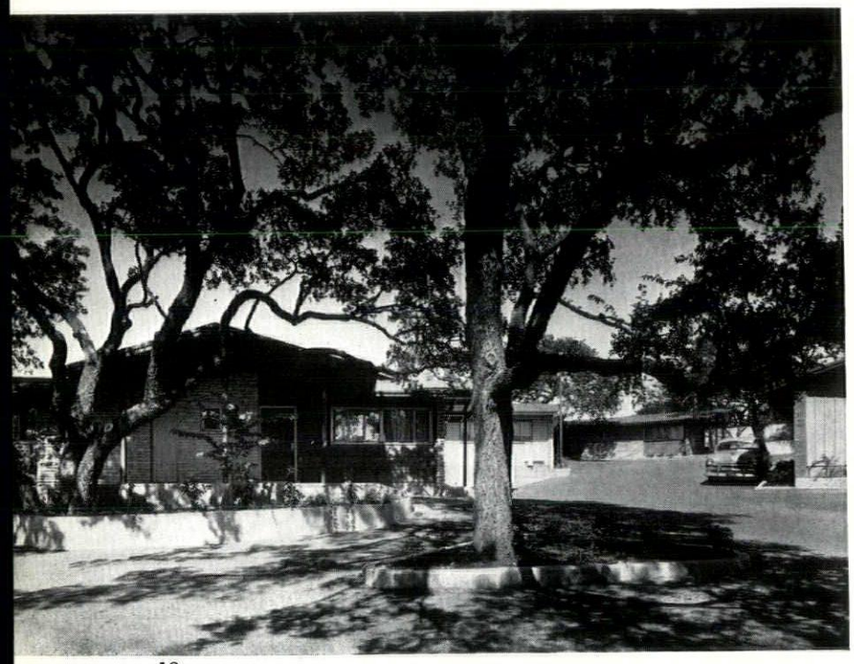
7



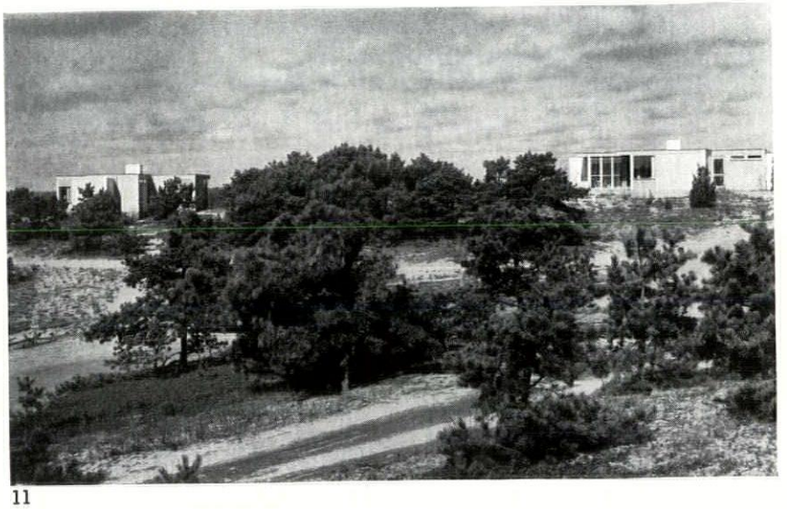
8



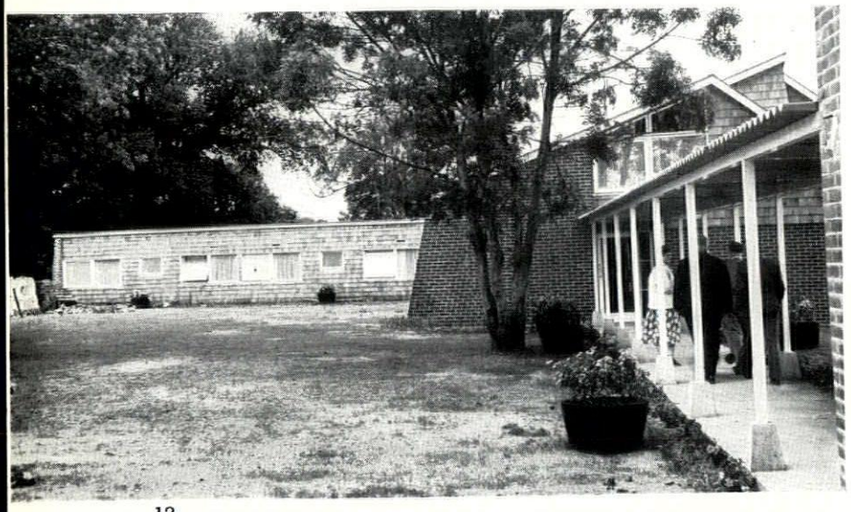
9



10



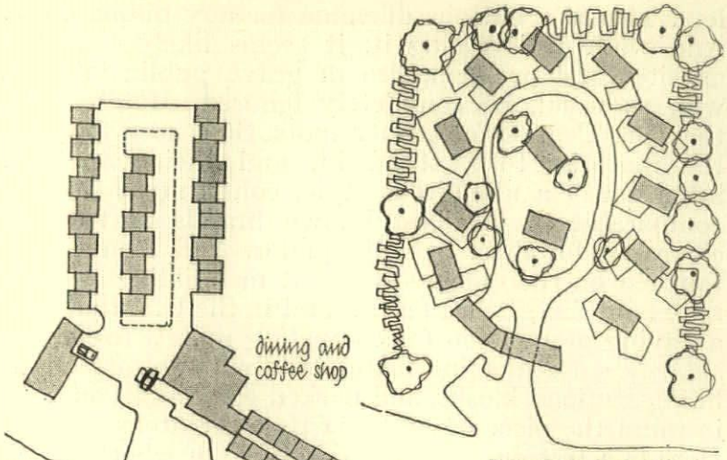
11



12

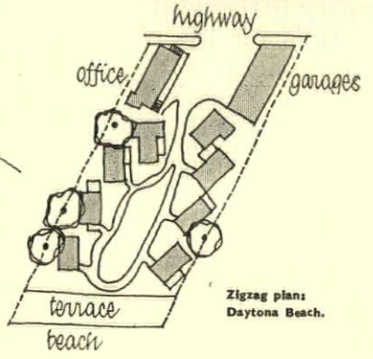
13

8, sloping site used to give both rows of rental units a seaward view: Malibu Beach, California. 9, the seaward-facing balconies of the upper row at the same motel. 10, skilful use of broken-up elements on a small steeply sloping site: Austin, Texas. 11, pairs of rental units scattered over a wide site: Wellfleet, Mass. 12, rental units and link with restaurant: Ower, New Forest. Here a quiet courtyard is spoilt by phoney contemporaryisms. Note the curious behaviour of the roofs, the splayed wall valiantly buttressing nothing, in contrast to the minimum weight structure beyond. 13, an English motel apparently built on to an early nineteenth century pub: Exeter. In fact the hotel is newly opened in a splendour of Louis XVI road-house style. The elevation of the rental units is a genuine bit of design, if one ignores the false stonework leaning against the brick piers. Architecturally they are well capable of standing on their own feet and have no need of the old world contrast. The juxtaposition is preferred by licensing authorities who are nervous of motels.

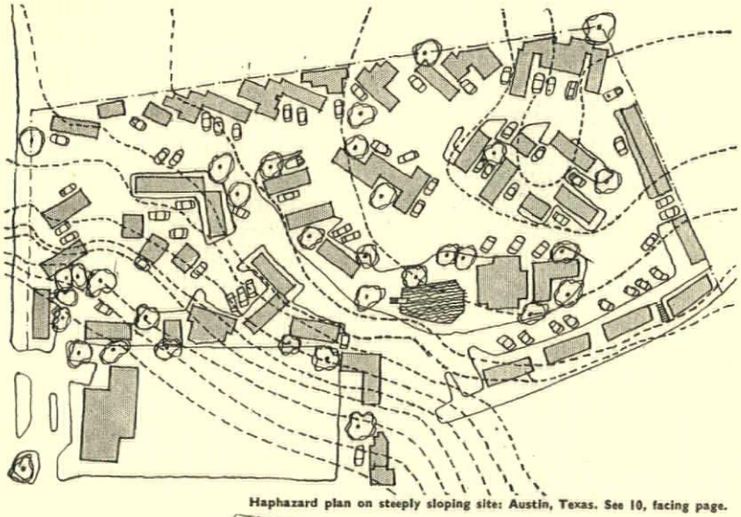


Plan for a town site: Duncan, Oklahoma.

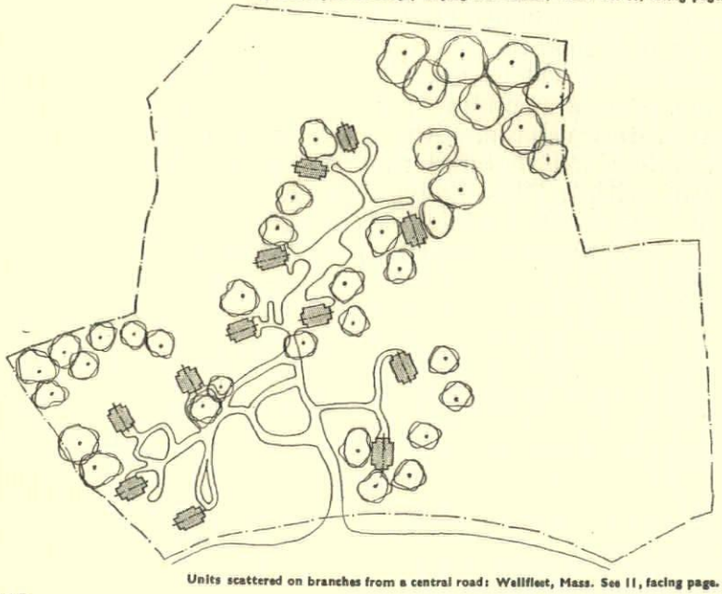
Rectangular site disguised: Miami.



Zigzag plan: Daytona Beach.



Haphazard plan on steeply sloping site: Austin, Texas. See 10, facing page.



Units scattered on branches from a central road: Wellfleet, Mass. See 11, facing page.

continued from page 112]

motor car to room. Ideally the car should remain accessible throughout his stay, so that the whole paraphernalia of maps, sunglasses and over-coats can stay where they are, or be carried in without the need to put a good face on them for the porter's benefit.

Further, he wants to remain preoccupied with his journey. He is not geared up to the ritual of a stylish arrival, and wants to meet as few people as possible. The traditional hotel is run on the assumption that social contacts may make one's stay more pleasant. The motorist, although needing the very maximum amount of service in a very short time, would like to avoid a corresponding multiplication of the costs and courtesies of tipping.

His third requirement is to know in advance, not the probable, but the accurate total cost of a night's lodging. This is answered by the system of paying in advance, and offers no special architectural complications.

Finally, there is the getaway, at any hour one likes to name, without the usual impediments of the hold-up over the bill and the five motor cars belonging to late risers hemming in one's own. The first difficulty vanishes if one can pay in advance. The second demands the same kind of planning as the easy arrival.

Here, then, are the purely architectural implications of this type of hotel.

The main planning problem is to make all room accommodation accessible by motor car. This clearly demands a larger site than the traditional hotel. And the letting accommodation cannot be more than two storeys high. A letting unit has evolved comprising a double room, with sofa for a child, wash-basin, w.c. and bath or shower. In England so far this goes with a lock-up garage, in the U.S. simply with a car-port. Whether this means that the Americans have fewer car thieves or the British are more untidy travellers I do not know. But this difference has considerable bearing on building costs. Planning is complicated by uncertainty as to the number of travellers to expect per motor car. This is solved at present by adding a wing of single rooms to the hotel.

The second requirement, of insulating the guest from human contact, has been enthusiastically taken care of, here as abroad. The plumbing arrangements are exotically self-contained. One is automatically woken and refreshed with tea at the chosen hour. The room door is built as a double-opening wardrobe. Into this the guest puts suit and shoes which are whisked away from the other side, to be returned cleaned, the suit pressed, one supposes well before dawn, and one hopes silently. Rest, refreshment and valeting can all be achieved without leaving one's room. For food only one must venture into the restaurant.*

These are the planning points which concern the guest's comfort and will determine whether he comes back another time. The architect's problem is to assemble these units into a form that will be instantaneously arresting from the road—I hesitate to describe the little winding tracks we use as highways. The frontage of the site will have to be long, approximately 100 yards, to give motorists time to decide

* A minor omission from the British motels is a large rack for suitcases and other items brought in from the car.

and stop. So that there is financial inducement to ribbon development. At Exeter, where Louis Erdi has evolved a basic elevation for the rental unit with room over garage, he gets his effect simply by lining up his units roughly parallel with the road. Though one applauds the directness and restraint of this design, one would as a guest prefer to look out on to quiet meadows, rather than on to the roar of the by-pass. At Ower, where simplicity of plan has been sacrificed in order to have a bit of everything contemporary, the guest has the benefit of a courtyard screened by the restaurant from the road. In this matter the guests' comfort must be weighed against elevational appeal. No doubt the alternative solutions are being watched for results. One cannot have everything.

In the case of motels there are, however, two very auspicious architectural conditions. The first is that it has been found in America that initial costs of construction are unimportant compared with what is called rentability.* It pays, in fact, not to economize in initial outlay in any way that can rebound against the all-the-year-round chance of letting every room. This point is flouted by the British motels. If shabbiness will eventually repel potential guests they will do well to detail the finishes properly. But, perhaps, shabbiness is reckoned as old-world charm.

The second unusual feature of motels is that in order to distinguish themselves from the immense gamut of existing hotel architecture they have to build in a contemporary style. Luckily for them the remarkable conservatism of twentieth century building ensures that every contemporary building shows up as though floodlit. For this reason they would do better not to over-reach themselves in presentation. Erdi has thought out a genuine rental unit and thus ensured a novel and interesting elevation. There is no need in the world to add to this phoney contemporaryisms. No need to face brick buttresses with decorative stonework. One loses the decorative effect while trying to figure out the structural relationship of these materials. No need, in Kent, where he had had the polite idea of using traditional barge-boarding, to guy it with embarrassing rusticity.

The idea of motorists hotels has in this country come to the boil with plenty of scum on it. The name Motel is one that only the most strong-minded can pronounce without a smile. Unfortunately, the beautiful seclusion it promises is ideal, not only for motorists, but for furtive sex life. We may smile at the headline Motels Threaten Morals. In fact, the unfortunate Authority who has to pass or refuse the plans is in a nasty jam. If it upholds what it may feel to be its duty towards morals at the expense of the motorists' comfort and vetos the motel, it runs the risk of losing local trade to the less moral authority next door. It courts far more glaring disgrace if it can be shown to discourage American tourists, who have motels at home, and are notoriously nostalgic travellers. This is a hideous dilemma for any public body. And while it is facing it, it seems likely that the architectural problem, also of grave public interest, will, as usual, be completely ignored. Motels, with their predilection for beauty spots, their need to shock the motorist to a standstill, and their expressed intention of a ubiquitous style, constitute a menace comparable to our best known brands of tea and cigarettes for sheer baleful squalor. And I have only touched on the dangers inherent in building a single motel. In fact, it has been found in the U.S. that it is a paying proposition for competing motels to line up side by side. Imagine motel row, with its attendant filling stations, kiosks, and parked cars, and you have in mind the piece of subtopia that threatens us now. Here is a test on a nation-wide scale of whether that nasty little word is going to prove a call to action.

It is for the proprietors of motel chains to decide what clientele to aim at and what architect to employ, for the Planning Authority to state if the proposed site is already scheduled, for the Local Authority to decide whether to pass the plans, and for the magistrates to decide whether to allow another Licence in the district. Supposing that the proposed site is not scheduled for anything that prohibits the building of a motel; supposing that the building looks 'quite usual' on the drawings to the not passionately discriminating eye of the committee; supposing that local opinion is too much worried over possible immorality to engage itself on the over-all picture. It must be understood that motel chains operate on a large and potentially nation-wide scale. A decision taken in the unpromising conditions I have suggested, and taken in isolation, is not only inadequate in itself, but quite out of scale with the problem of motels and with the picture that will be seen by visitors to this country. Whose business is it to decide, on the motels' own scale, what kind of motels we want in Britain, and what kind we simply have not room for on this overbuilt island? Logically it is the business of all who care about the matter. Legally it is NOT THE BUSINESS OF ANYONE AT ALL.

Subtopia is now a recognized ill: its cure is receiving attention. Unfortunately motels have chosen this moment to spring to life. They can develop as a twentieth-century phenomenon as encouraging as our recent schools. Or they can tell the sorry story of the filling station over again. If any action is to be taken, it must be now. Two possible courses occur to me. We can appoint a body at a national level, on an interim basis, either with powers to deal with applications to build motels, or as advisor to local authorities. This body must include the guardians of several traditions, architectural, dollar-earning, road-using, and constitutional. And we can hold an architectural competition for motel plans. An exhibition of the winning plans would set general standards, which do not at present exist in the public mind on this subject. We are a committee-loving nation. Let us get down to it once again.

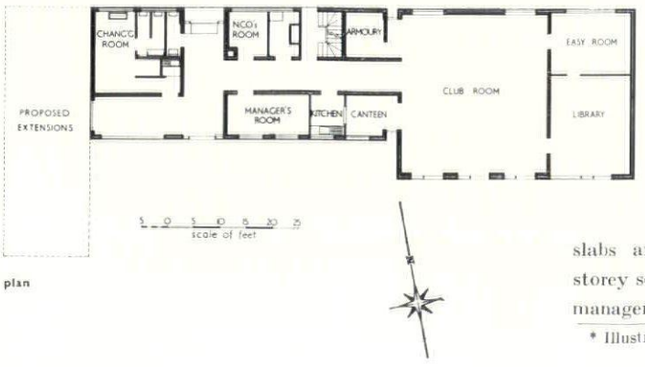
* *Motels.* Geoffrey Baker & Bruno Funaro. Reinhold Publishing Corp.

1, *from the south-west: clubroom on the right.*

BOYS' CLUB AT STEPNEY, LONDON, E.1.

ARCHITECTS, YORKE, ROSENBERG AND MARDALL

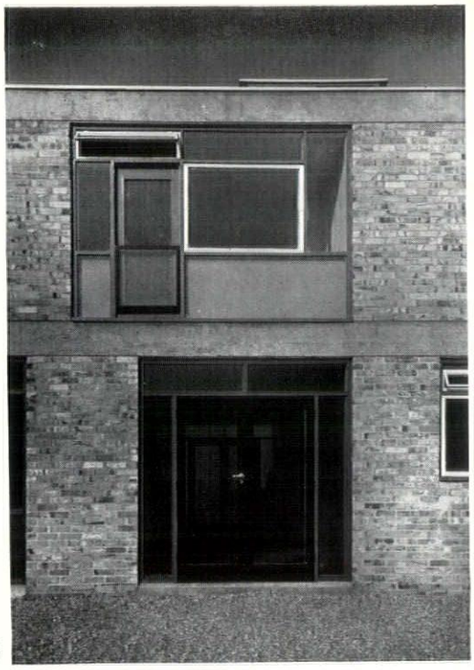
ASSOCIATE-IN-CHARGE, T. R. EVANS. ASSISTANT ARCHITECT, D. ALLFORD



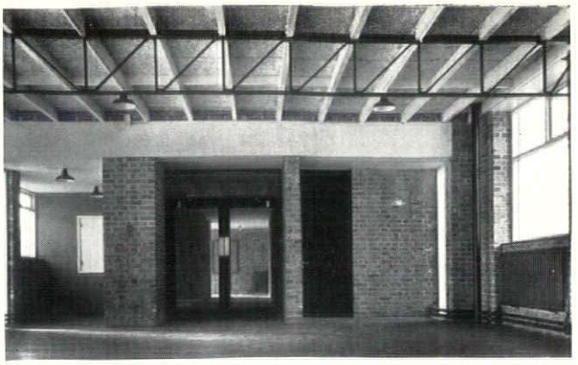
plan

This club* for the Haileybury Guild, in Ben Jonson Street, near St. Dunstan's Church, replaces a smaller one on the same site which was bombed. Load-bearing brickwork is used throughout, and the roofs are of timber joists, wood-wool slabs and three-layer felt. The central two-storey section (the upper storey occupied by the manager's and caretaker's self-contained flats) has a reinforced concrete slab at first-floor level to take the partition walls which are not related to the ground floor partitions. The roof of the single-storey section is carried on welded steel trusses. The concrete beams at first-floor and roof level are 15 inches deep and are of Shap granite aggregate, polished with a carborundum disc. External brickwork is second hard London stocks; internally it is fair-faced and painted in certain areas. Partitions to the flats consist of concrete blocks, plastered. Floor finishes are quarry tiles in the entrance hall corridor and

* Illustrated as a preview in AR January 1955, page 60.



2



3

2, *detail of the main entrance.* 3, *the clubroom, looking west.*

Boys' Club at Stepney, E.1

changing rooms, woodblocks in the clubrooms, and concrete tiles elsewhere in the club and throughout the two flats. Windows generally have timber sub-frames with metal opening lights. Heating and hot water for the club is by gravity feed to radiators from a basement boiler using coke. Hot water is supplied to the flats from smokeless fuel grates with a back boiler.

The present building will be extended to provide an assembly hall with a stage, and a rifle range in the basement.

TECHNICAL COLLEGE AT GRAYS, ESSEX

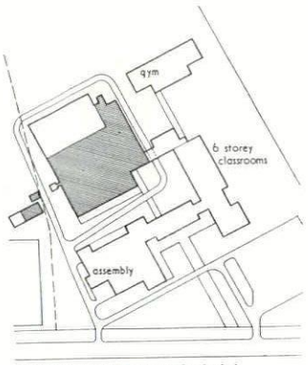
COUNTY ARCHITECT, H. CONOLLY

ASSISTANT ARCHITECT, N. P. ASTINS

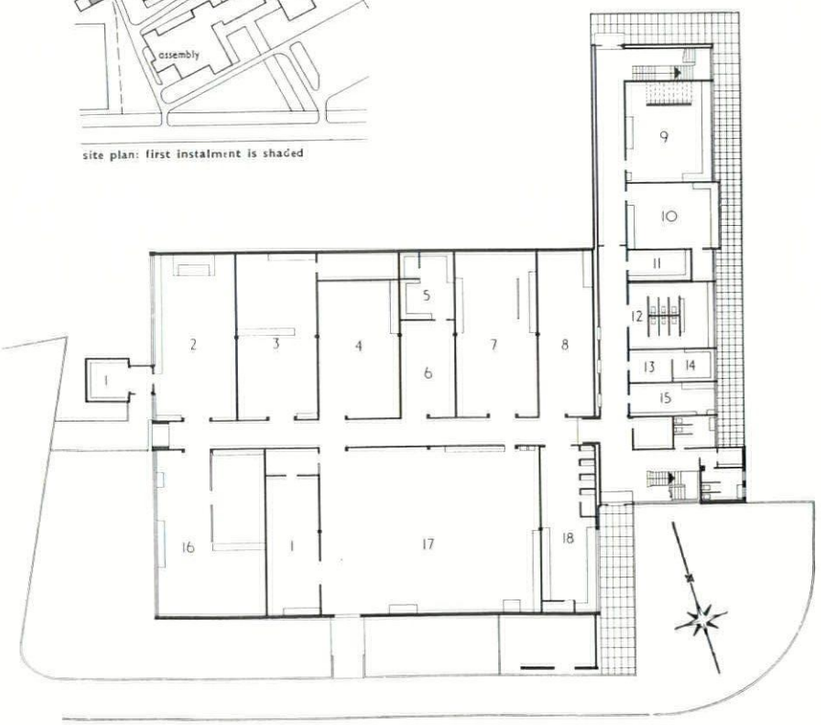
Opposite ☞, 4, *top, workshops and drawing offices from the south east.* 5, *centre left, boiler house.* 6, *centre right, detail of cladding and one monitor of the workshop block.* 7, *bottom left, main staircase.* 8, *bottom right, main entrance at the join of workshops and drawing offices.*

This building is the first instalment of a regional technical college, north of the A.13 London—Tilbury road, and consists of a single-storeyed workshop block and a two-storeyed block containing administration and drawing offices. The workshops are of the monitor type and are steel-framed. Every other monitor is reversed, as in shops of restricted area this affords better overall lighting. Each is separately framed and rests on the main beams. The roof of woodwool slabs in metal tees is finished with a vermiculite screed and mineral-finished felt roofing. The external walls are of cavity brickwork with an inner skin of light-weight concrete blocks below the windows, and the same with an external cladding of western red cedar above; internal partitions are of fairface brickwork. Ceilings are sprayed white, the light concrete walls are plastered and painted to various neutral shades, and the corridor has small areas of brighter colours.

The two-storeyed block is also steel-framed, with a prestressed plank first-floor and its roof constructed and finished as for the single-storeyed building; the walls are either 11-inch brickwork, or metal windows with spandrels of light concrete blocks with cedar cladding. A heating chamber was designed as a separate above-ground structure, to facilitate future extensions; it is steel-framed, with brick and glazed walls and a prestressed plank roof. Heating is by means of a low-pressure steam, differential vacuum return installation, and by natural convector heaters. The lighting is chiefly fluorescent.

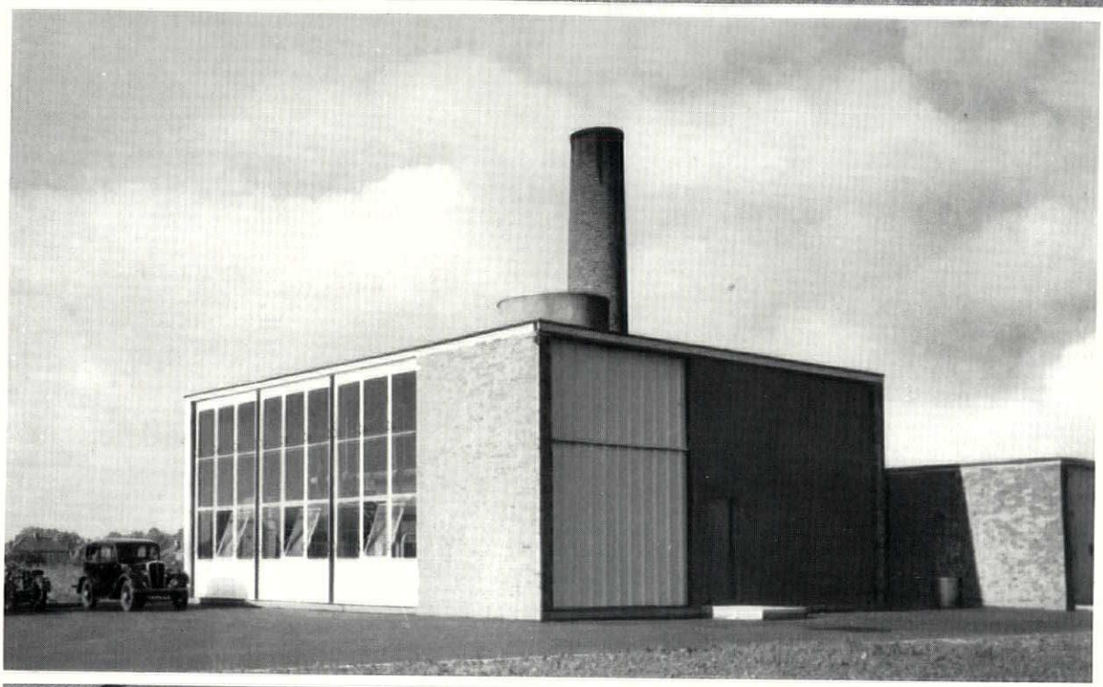


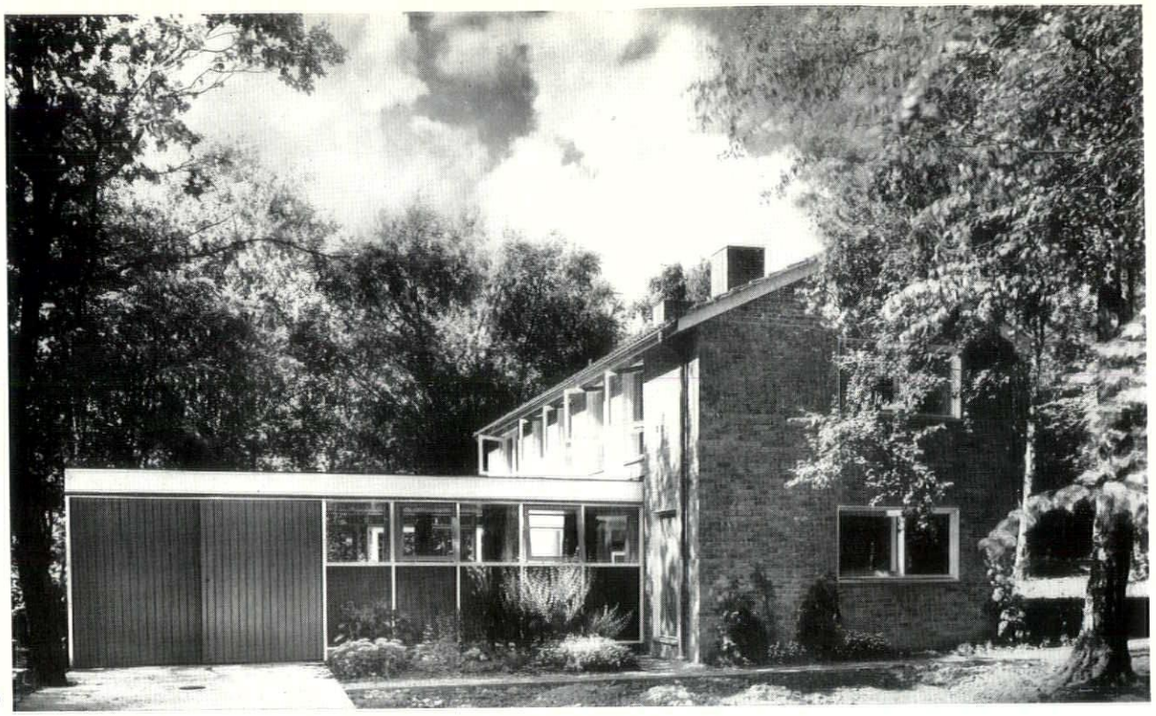
site plan: first instalment is shaded



ground floor

key
1. store.
2. engineering science.
3. applied mechanics.
4. strength of materials.
5. metallurgy.
6. heat treatment.
7. electrical engineering.
8. dining room.
9. electrical installation.
10. metrology.
11. switch room.
12. lavatories.
13. bookstall.
14. book store.
15. caretaker.
16. heat engines and hydraulics.
17. machines.
18. welding.





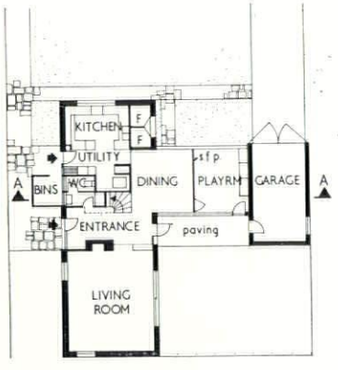
9

HOUSE AT WELWYN GARDEN CITY, HERTS.

ARCHITECTS, ARCHITECTS' CO-PARTNERSHIP

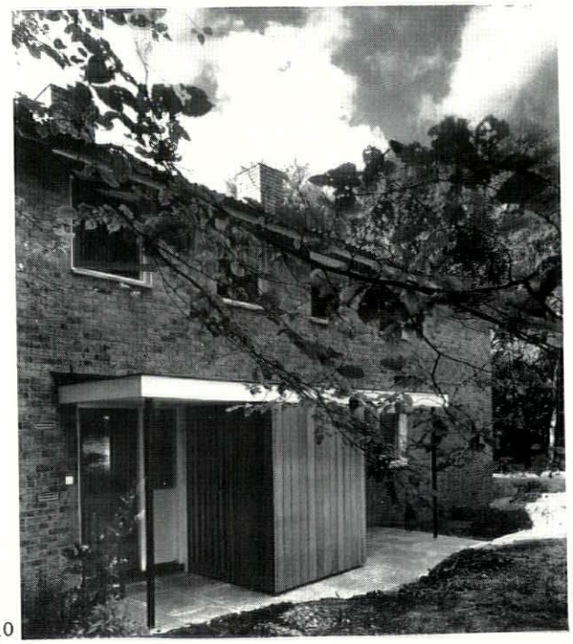
The house, in the Glade, Welwyn Garden City, is on a west-sloping, well-wooded site. The ground-floor accommodation is on two levels—the kitchen, dining area, playroom, entrance hall and garage on the upper and the living-room on the lower level. The dining and playrooms and the garage form a single-storeyed wing. External walls are of 11-inch cavity brickwork, with internal skins and partitions of 4-inch or 3-inch clinker blocks. The pitched roof has light timber trusses at about 6-foot centres, with interlocking tiles at a pitch of 22½ degrees. The flat roofs have roofing felt on wood-wool slabs, fixed to timber joists. External walls are faced with London stocks; floors in entrance, kitchen, dining, and children's rooms are finished with 9-inch-square handmade quarry tiles, and in the living room with beech strips, laid on battens in sand. In the single-storeyed wing, panels below the windows are resin-impregnated plywood, gaboon faced, and varnished. An anthracite-burning, automatic boiler serves the floor heating system.

first floor



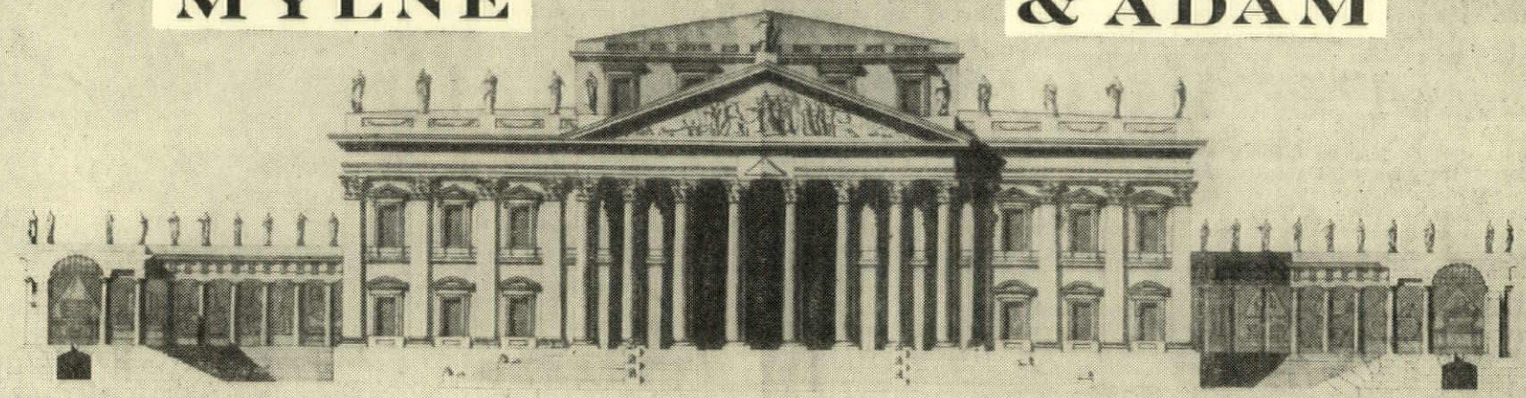
ground floor. scale: 1/32 in. = 1 ft.

9, *south and west facades.* 10, *north facade with entrance porch.*



10

MYLNE & ADAM



Christopher Gotch

Though he has been outshone by his older contemporaries Adam and Chambers, the work of Robert Mylne suggests that he should claim a bigger share of historical attention than has been awarded him. Christopher Gotch, in the article below, demonstrates that besides being the designer of Blackfriars Bridge, Mylne can also claim to be a pioneer of Neo-Classicism, as exemplified by his St. Luke's Academy medal design, above.

The monopoly of credit held by Robert Adam for the introduction of a style of decoration drawn from the vocabulary of Roman domestic and Etruscan design is beyond all question excessive. Adam possessed originality of a high order, but he did not know his limitations. He utilized his opportunities to start a fashion and, indeed, deserves full credit for his perspicacity, yet his very assiduousness in fostering this novel but flaccid design form hastened the passing of it.

Adam's strength, as well as his fame, lies in his devotion to 'filigrane toy-work,' as Chambers called it, to the exclusion of all else. Thus, to his own dismay he found himself regarded more as a decorator than an architect. Sir William Chambers is usually set against Adam, their work being contrasted in detail. These two architects are the tortoise and the hare of neo-classicism, the one a steady efficient bumbling conservative, busily waving a red flag of chinoiserie in order to divert attention from his reaction to the slick salesmanship of the other. Mr. Summerson[1] states that 'Chambers was to be Robert Adam's chief contemporary and rival in England. His career and Adam's . . . were in many respects remarkably similar.'

Such as this may be—and I submit that it was superficial in fact—the similarity between Adam and Robert Mylne provides a far more remarkable parallel. Mr. Summerson, it is true, mentions Mylne: in such a way, though, as to indicate his position as a poor third to Adam and Chambers. One basis for this assertion is that the first two travelled abroad as gentlemen rather than as students and that their studies 'ranged over renaissance as well as antique work and were strongly influenced by contemporary France,' whereas Mylne 'was, in fact, a more or less inexperienced student and attempted, so far as we know, no schemes of discovery or archæological publication.'

Now only five years in age separated Mylne from Adam, and nine from Chambers, yet at the age of twenty neither Adam nor Chambers could boast the experience of Mylne. Before tracing this curious parallel between Adam and Mylne, I should like to suggest that in Mylne can be found the nearest example of the pure neo-classic architect who practised in Britain. In Mylne, moreover, were present the opposing traits of both Adam and Chambers in addition to which was an engineering ability of great quality. Neither this nor his worth as an architect has hitherto emerged sufficiently.

Robert Adam and Robert Mylne, each the second son, were born in 1728 and 1733 respectively, and each was educated at Edinburgh High School, the one leaving in 1742, when the other was arriving. Adam spent the next five years at Edinburgh University, but nothing is known of his studies there nor of what he did after he left in 1748. In that year his father died suddenly, leaving the practice in the care of John Adam, who presumably had Robert to help him. One of the first known drawings by Adam is dated 1750, although Mr. Colvin refers to sketches done at the age of fourteen.[2]

Does this supposed first sketch, of the cross at Winchester, indicate that Adam travelled into England during these years? What was he doing with these vital years? Where did he learn his profession? In his brother's office? Had he already assumed leadership of the family and had he decided to move the practice to London? If so, was this decision the cause of the subsequent Grand Tour? It is this gap in our knowledge of Adam which stands him in such good stead, for it is so easy to credit him with a precocity that was in fact lacking.

Mylne, on the other hand, had been apprenticed on leaving school in 1747 to Daniel Wright, a mason like his father, one supposes; for by 1753 and all the following year he worked as carver at Blair Atholl under Abraham Swan, a carpenter and joiner who published several books of architectural design.[3] Mylne had the temerity to criticize Swan's design at Atholl in a letter to his father, which even allowing for his six years' experience is indicative of a fulsome self-confidence.

When Adam set off for Italy in the summer of 1754 he was followed closely by Mylne. Whereas Mylne lingered awhile in Paris, Adam journeyed straight to Nîmes, this being established from a sketch dated December 13, 1754. On this very date, Mylne was in Lyons having walked there from Paris. From Lyons he continued by boat to Marseilles. Both were in Rome by 1756. Adam had travelled overland by Genoa and Florence studying en route. Mylne had gone by sea to Civitavecchia arriving in Rome early in 1755, since when he had also been studying; for he felt that 'unless a man settles for some years under a master he cannot attain to any degree of merit.'[4] Indeed, he remained in Rome, except for several expeditions, until the spring of 1759—that is for over four years. At some unknown date he became a student at St. Luke's Academy, and in the autumn of 1758 carried off the silver medal for architecture with a design of an astonishingly neo-classical character obviously derived from France. This achievement led to his election as a Professor of the Academy, of which Adam had been made an ordinary member two years before.

We know that in Rome, even if they did not actually meet, Adam and Mylne knew of one another's presence. Mr. Summerson is corroborated as to Adam's mode of living there by Mylne himself, who records that '. . . he [Adam] makes a great figure here, keeping a coach and a couple of footmen.'[5] In June, 1756, Mylne toured the Naples area, presumably visiting the recent excavations at Herculaneum and Pompeii. There can be little doubt that he was as impressed as Adam must have been at the difference between Roman domestic and monumental decoration. (James Adam, on his later tour, was to write 'At Pompeii, I saw a room which seemed to have been painted with arabesques.'[6]) The following year, that is the year Adam left for Spalato, Mylne visited Tivoli, Porto Anzio (Antium), and Nettuno (Circium) and then Naples. From there via Paestum he went to Sicily. He spent several months on the island, as opposed to Adam's five hurried weeks at Spalato, collecting material for a book to be called *The Antiquities of Sicily*. He corrected the most recent map of the island, publishing his version in 1788. He had managed to find a backer-cum-publisher, while in Rome, and had even completed numerous drawings by the time he returned to England; but, unfortunately, the work occasioned by the success of the Blackfriars Bridge competition prevented him from finishing the book. Throughout his life it lay awaiting completion; every year Mylne's collection of Siciliana grew and every year he hoped to put the final touches to the book.[7] Whatever the ultimate cause, he had set out for Sicily that year with the same object in mind as had Adam when leaving for Spalato. Taormina, Girgenti, Syracuse, Segesta, Selinus, all the centres of the vanished civilization of the Greeks, the Romans and the Punic peoples he visited, made notes about and sketched. In a letter to his publisher he gave a list of the several temples that he wanted illustrated. 'Thus,' as Mr. Summerson writes of Adam and which is here so apposite to Mylne, 'Thus, he was both student and explorer at one and the same time collecting material and developing his capacity to use it.' True, Adam's labours at Spalato and the speed with which he turned it to good use were a tour de force calculated in its conception and brilliant in its execution; for by 1764 the results of his trip were published and provided invaluable advertisement. Yet Spalato itself yielded less from the decorative point of view than

[1] *Architecture in Britain*, 1530-1830 by John Summerson. Pelican History of Art, 1953.

[2] *A Biographical Dictionary of English Architects*, 1660-1840 by H. M. Colvin, John Murray, 1954.

[3] *Ibid.*

[4] *Mylne's Letters* by kind permission of Miss J. M. H. Mylne.

[5] *Ibid.*

[6] *Robert Adam and His Brothers. Their Lives, Work and Influence* by John Swarbrick. B. T. Batsford, Ltd., 1916.

[7] "Mylne, the architect, has a fine collection of drawings made by himself in Sicily, and is hard at work about his travels there. (These still remain (1813) in MS in the possession of Mr. Mylne's son.)" Gough to Tyson, Jan. 1774. Nichols Lit. Anecdotes.

did the examples on the Italian mainland which were to prove so lucrative to Adam on his return to England.

Whilst exploring in Sicily, Mylne had met Winckelmann. The latter mentions the fact in his *Notes on Girgenti* (1762) paying tribute to Mylne's information about the site. In Rome, Piranesi was finding Mylne as convivial and promising as Adam. Now, Adam had worked with Piranesi on the Campus Martius, and their names were coupled on the inscription to the plan subsequently engraved. Piranesi extended a benevolent influence towards all those who bothered to search him out. Dance was to gain from this, just as Mylne and Adam had before him. Indeed, Mylne's association with Piranesi appears to have been personal to a degree of friendship, if one can read anything into the highblown phraseology used by the latter in his letter to Mylne congratulating him on his success over Blackfriars Bridge,[8] and by the fact that for many years Mylne kept Piranesi supplied with a variety of articles and information, as recorded in his diary accounts.

Adam's journey home took him back through the Rhineland, a route dictated by the Seven Years War, and one which Mylne was forced to follow a year later from the same cause. Mylne, however, tells us that on his way north through Italy, he spent some time inspecting Palladio's work and that from The Hague, he deliberately routed himself through Amsterdam 'with an intention to be well acquainted with the mechanical part of our trade. . . .'[9] This foresight, this early curiosity, was to result in Mylne's leadership of the engineering profession after participating in the affairs of no fewer than thirty-seven waterways—nearly a quarter of the total constructed. Both Adam and Mylne returned, not to Edinburgh, but to London, both equally determined to fulfil their respective ambitions by setting up practice there and using to the full the advantages gained by their travels.

Neither the first commission obtained by Adam, the Admiralty arch and screen in Whitehall, nor that by Mylne, Blackfriars Bridge, affects the issue here; it is when we come to consider Croome Park in Worcestershire, which Adam decorated from 1760–63 that the form of the fashion so soon to sweep over England really emerges. And what is there of Mylne's to set against this? The Mylne Diaries,[10] in which every action of his business and much of his private life, too, is recorded, stretch from 1762 up to shortly before his death. Only those years so vital to any establishment of Mylne's early decorative style are absent—that is 1760 and 1761. The first mention of such work is a library for Lord Morton at Chysick House in Brook Street, London, in the June of 1762. In addition, there is a possible clue in a cryptic entry for September 28, 1764, 'Saw Sir William Baker's.' This is a reference to Bayfordbury House near Hertford, built for Sir William Baker, an influential city merchant and, therefore, familiar with the Blackfriars Bridge project and its author, a house of Early Georgian character that was building from 1759–1762. Mylne returned from Italy in 1759. Considerable alteration to the house was carried out in 1809, but the staircase and upper hall are original and bear the stamp of a peculiarly light hand, much lighter, in fact, than is consistent with the external treatment of the house. Indeed, the contrast is startling, as startling as that of the Wyck at Richmond which is unquestionably the work of Mylne, the contrast being reversed, however, in this case.

So slender a lead is this, that we must consider the earliest confirmed interior work by Mylne if we want to prove that Adam was not wholly responsible for the introduction of the style that now bears his name.

Kings Weston which Mylne transformed internally for Edward Southwell exhibits an unusual amalgam of the old and the new styles. This work was done from 1763 forward and whereas the plaster work clings to the Burlington tradition except that it is divided into much smaller panels than normal, the fanlights and fireplaces show a surprising similarity to the later fashion. There is stronger evidence of Mylne's early use of this so-called Adam style at Halston Park in Shropshire. Close on the heels of Adam's alteration at Croome Park, in the following year, to be exact, the saloon at Halston was refashioned. Both ends of the room were formed into a bow, not apsidal such as Adam favoured, but creating an oval effect, reminiscent of the Wyck again; this time though with a fireplace in the centre of each bow and a doorway on the axis opposite to these. This doorway was flanked by fluted Ionic pilasters surmounted by a delicate overdoor. The effect of the decoration generally is one of restrained Adamesque. Furthermore, at Cally in Galloway, a strong resemblance to Mersham in the exterior is very apparent. Cally, built in 1764, possesses—now rather mutilated—an interior that has hitherto been attributed to Adam, but which is actually by Mylne. But to return to Mersham, it is interesting to learn that Mylne met Sir William Knatchbull in Rome and while there was making various sketches for Mersham. These were apparently discarded in favour of Adam's design in 1762, yet two years later Mylne was again preparing drawings for Mersham—this time for Sir Edward, uncle of the previous baronet who had died in 1763. Who, therefore, was plagiarizing whom? Mylne Adam, or Adam Mylne?

The success of Mylne's work at Halston Park resulted in his employment by several other Shropshire families, mostly those related to the Myltons of Halston. Indeed, he became so much the vogue that for twenty years he propagated the new style by creating interiors at Condover (1766), Tern Hall, later rebuilt and renamed Attingham (1769), Loton Park (1773), Sundorne Castle (1774), Little Berwick Hall, Combermere and Edgmond Rectory (1780), besides building new houses at Woodhouse (1774), Onslow Hall (1774) and Aston Hall (1780). Onslow was rebuilt in 1820, no trace remaining of Mylne's work; but Woodhouse and Aston are country mansions more akin to modest Mersham than to palatial Kedleston, yet the very restraint observed by their designer both without and within shows us Mylne, the architect, achieving exciting and unusual effects—such as the stair hall at Woodhouse—out of the simplest forms. The fireplaces and roof lanterns in these two houses are basically similar, although varied in shape, the former in particular having all the quality as well as originality of Adam's fireplaces, whilst that at Loton Park contains a frieze of ox skulls, paterae, swags and urns that has earned it the name of the Adam Fireplace!

At Sundorne (recently demolished), the decoration of the main suite has a Palladian flavour about its solid cornices and columns to which the frothy elegance of the ante room is curiously contrasted.

Thus Mylne constantly surprises by the breadth of his design vocabulary, coupling forms that were, in his day, both traditional and modern: and, as a consequence, confounding future analysis to such an extent that some of his work has been attributed to early eighteenth century architects and much more to Adam and Wyatt.

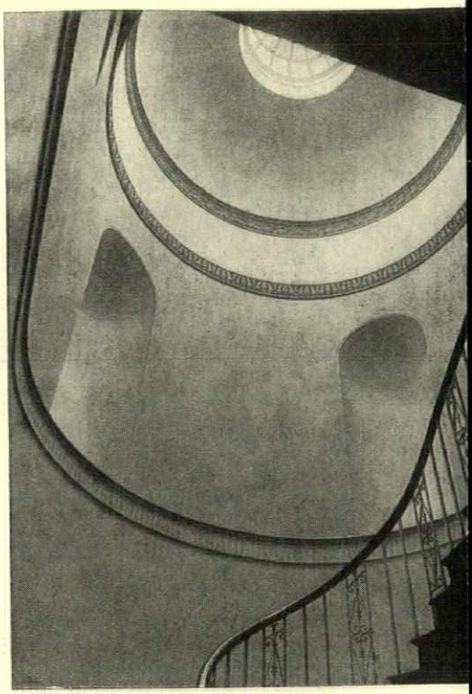
At Addington House, at Croydon, built by Mylne and decorated by him with the assistance of George Richardson, in 1772, there is revealed, in one remaining room at least, a full-blooded example of the Adam style; and of course, Mylne's superlative essay is still extant at Inveraray.[11] We are neglecting, though, the parallel between these two architects which, so marked in the early stages, now assumes a peculiar twist, caused by the rapid spread of Adam's fame as a decorator, a twist that discloses either society's awareness of Adam's limitations as an architect, as demonstrated by his shoddy work now being exposed at Kenwood, or its obliviousness to Mylne's full capabilities as an architect.

The Duke of Northumberland employed both men extensively, first at Northumberland House where Mylne carried out extensions and alterations in 1765, while Adam was accomplishing a miracle of lush beauty within Syon House. Five years later, Adam did the same within Mylne's shell at Northumberland House, and similar work at Alnwick Castle where Mylne was, in all probability, constructing the bridge. Around the time of Adam's death, Mylne was acting as the Duke's engineering consultant, and in 1802 he designed the shell and the interior of the Boating House at Syon, acknowledged by all who attribute it to Adam, or to Wyatt, as superb.

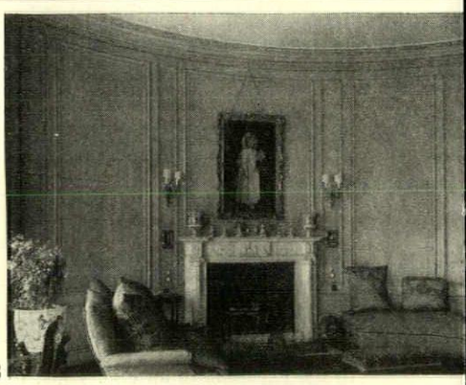
Then there is the paradox of Wormleybury and Hill Street. In 1766, Mylne rebuilt Wormleybury in its entirety for Sir Abraham Hume. Whether he executed the interior then, we shall never know,[12] for if Adam's drawings and the dates thereon are to be believed, he decorated the house, as it is to-day, in 1777; yet this very year Mylne executed alterations to Hume's London residence in Hill Street, Mayfair. Moreover, the elongated portico designed by Adam for Kenwood in 1767 is strangely similar to that by Mylne at Wormleybury, built the year previously. However, Mr. Summerson claims that Adam's portico at Shardeloes, built in 1761, was the first of this type.

Lord Eglinton, too, had alterations done at his town house by Mylne in 1766, and only three years later was employing Adam to provide a ceiling for it. Again, while the 5th Duke of Argyll was allowing Mylne full sway at Inveraray, his son Lord Frederick Campbell (6th Duke) had Adam working away at his house in Kent. The 6th Duke's son, in turn, reverted to Mylne as his designer!

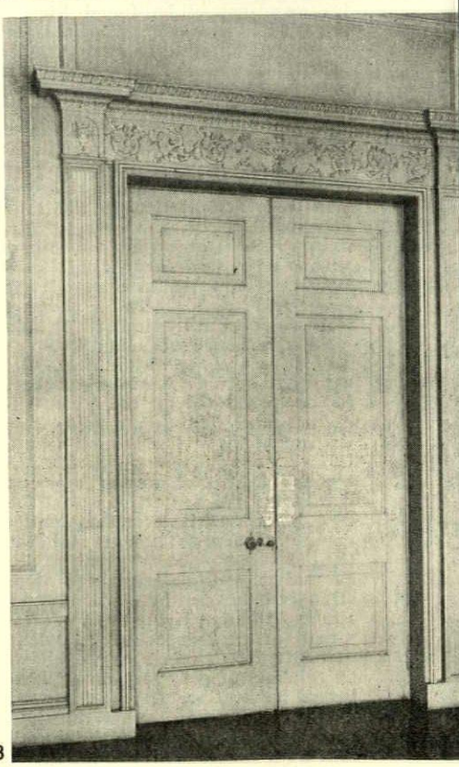
Mylne's design for a building to house the Society of Arts in 1765 appears to have been abandoned in favour of Adam's in 1772. Finally, the Earl of Bute favoured Adam to such an extent that he had him build Luton Hoo as well as Highcliffe



1, *the stairwell at Bayfordbury*, 1759-62.



2



3

2, *one of the oval ends, and* 3, *a detail of one of the doors to the saloon at Halston, Salop*, 1764.

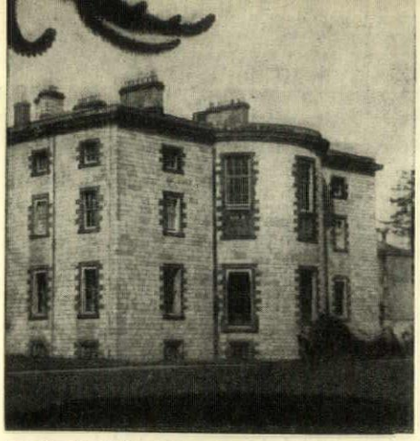
[8] The Missing Years of Robert Mylne, AR, Sept., 1951.

[9] *Mylne's letters, ibid.*

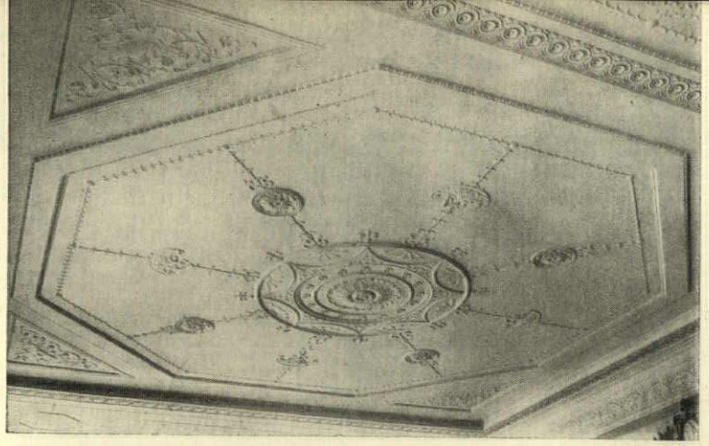
[10] *Mylne's Diaries* by kind permission of Miss J. M. H. Mylne.

[11] *Country Life*, June 23, 1953.

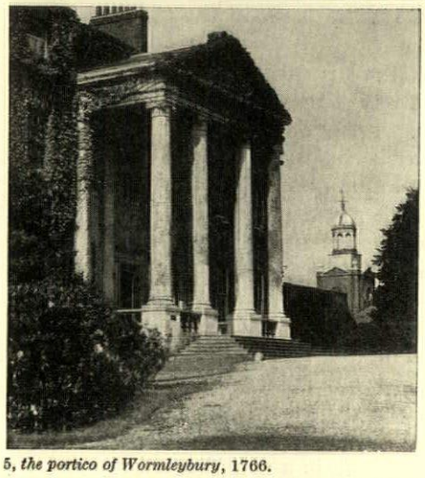
[12] *Robert Mylne—Architect and Engineer*, 1733-1811. Introduction by Sir A. E. Richardson, PRA, FRIBA, Batsford, 1955, page 26. 'At Wormleybury . . . the internal decorations formerly attributed to Robert Adam, should be accepted as the work of Robert Mylne. . . .



4, *Cally, Co. Kirkcudbright*, 1764.

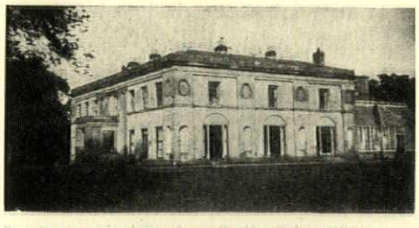


9, *ceiling in Addington Palace, Surrey*, 1772.

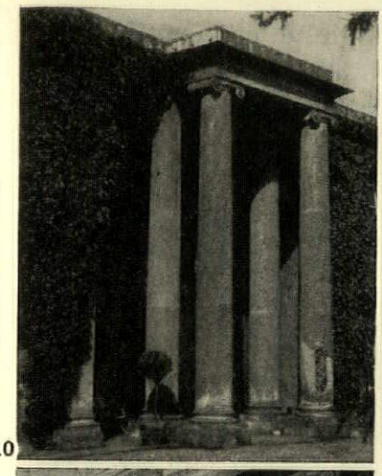


5, *the portico of Wormleybury*, 1766.

6, *Aston Hall, Salop*, 1780.

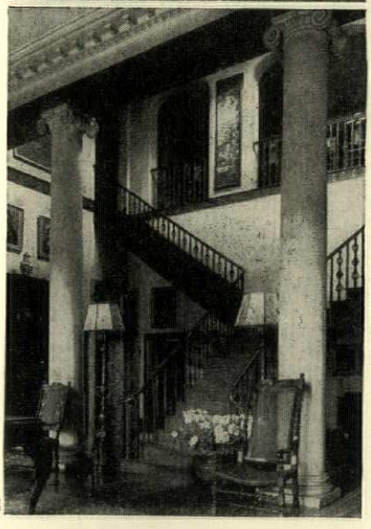


7, *entrance side of Sundome Castle, Salop*, 1774.

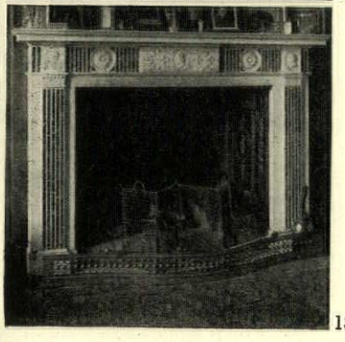


10

11



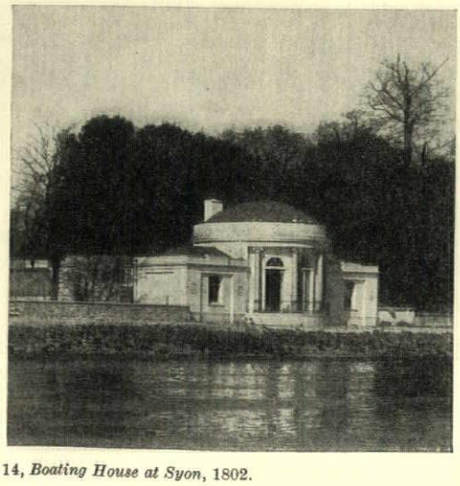
12



13

Four views of Woodhouse, Salop, 1774: 10, *detail of the entrance portico*; 11, *bow window on the garden front*; 12, *hall, screen and main staircase*; *and* 13, *one of the fireplaces.*

8, *one of the interiors at Sundorne just before demolition.*



14, *Boating House at Syon*, 1802.

in Hampshire between 1768 and 1775. Ironically his son preferred Mylne, and employed him to look after and alter his properties at Petersham, Brompton, Highcliffe and Luton Hoo. Highcliffe had, by this time, been demolished (only three years after Adam's death) and Mylne was asked to survey the estate, presumably for sale purposes. Mylne's diary entry regarding Luton is self-explanatory. 'May 14th, 1802. Waited on Lord Bute at Brompton. Gave him on one sheet, a design for new modelling his present house and offices at Luton—to convert same into a tolerable dwelling!'

Both men were elected Fellows of the Royal Society and both were founder members of the Architects' Club: and it seems appropriate that for his last job of work, Mylne, then aged 78, surveyed Adam's Lansdowne House.

This curious parallel in two careers can be no coincidence. Somewhere lies an answer to the question, which one, Adam or Mylne, influenced the other most. Superficially the laurel goes to Adam, especially as he was the elder of the two, but as I have tried to show by comparison, there is plenty of room for doubt. Besides which a close study of Mylne's style reveals a delicacy and elegance far exceeding that of Chambers and a virility more akin to Vanbrugh, in its sense of movement, than to Adam. Mylne's style is inconsistent, however, so much so as to render analysis almost impossible. Influences from Burlington and Adam are there clearly to be seen, and yet the resultant architecture may be proved penultimately to have sired the work of Dance and Soane, both of whom were well known to Mylne.[13] Dance, especially, was aware of Mylne's powerful personality and no less powerful influence; for, as City Clerk of Works, he obtained Mylne's appointment as chief of a group of engineers on the various projects to develop the several docks along Thameside.

There is no doubt that in his own lifetime, Mylne was regarded as doyen of both the architectural and the engineering professions. Even more significant is Mylne's share in the metamorphosis that took place during the last quarter of the eighteenth century from the static Palladianism to the spatial concepts of Soane. Mylne was adept in dressing his progressive interiors in varying suits of moderation, deceptive in their simplicity. For all this, it is obvious that his changing moods were never obscure to his younger contemporaries and pupils who, with the exception of the Wyatts and other lesser architects, certainly rejected Adam's fulsomeness, and yet never courted Chambers. Thus it would seem that Mylne exerted an influence in his own lifetime as profound as any since that of Gibbs earlier in the century.

The best example of Mylne's contribution to this revolution is the group of buildings round the stable courtyard at Kings Weston where he dispensed with classical details altogether, whilst retaining the basic shapes and proportions of classicism.[14] Since this example was built in 1763, when Dance the Younger was still in Parma and Soane but a child of ten, there can be little doubt that Mylne's work provided the samplers that enabled Dance, and Soane after him, to experiment further, some forty and fifty years later.

[13] Dance told Farington that Mylne had given him his autobiography to read; while Soane, in a letter to Mylne's son, refers to the 'taste and genius of his late father.'

[14] *Country Life*, January 24, 1953.

POPULAR ART

ROCOCO PHARMACY

The Farmacia of the Carmelite Monastery of Santa Maria della Scala in Trastevere is the only one of its kind to have preserved intact the charm and grace of a Roman 'Spezieria' of the eighteenth century.

Until the unification of Italy it was only one of many which belonged to the religious orders or were old family businesses that had been handed down from father to son for many generations, and in some cases could trace their origins as far back as the sixteenth century.

Some relics of these ancient farmacei are still to be seen among the neon lights and chromium plate of modern Roman chemists' shops—finely worked chestnut counters and cupboards, ancient bronze pestles and mortars, marble urns, and beautiful majolica pots and flagons which held the essences and unguents of the herbalists' stock in trade. Many of these last were the products of the most famous potteries in Italy and are now exhibited among the ceramic collections of the national museums.

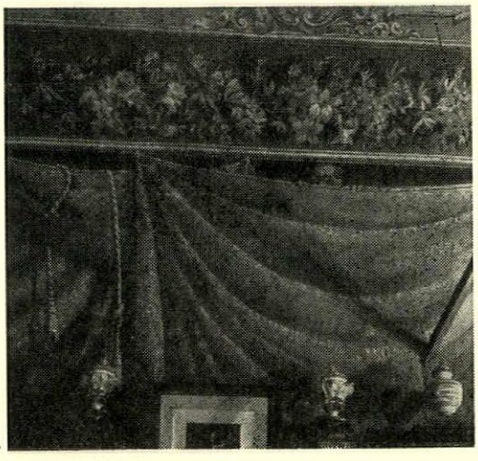
It is only at Santa Maria della Scala that these fascinating relics of old Rome can still be seen in daily use, for the Carmelite monks continue to prepare and to sell in large quantities their traditional remedies such as 'Acqua Antipestilenziale,' 'Acqua Antisterica,' 'Balsamo della Samaritana,' and a host of other decoctions and pills which are in great demand among the inhabitants of Trastevere and the older quarters of Rome.

The farmacia is reached by climbing a flight of stairs which leads from the monastery door in the Piazza della Scala into an open gallery facing upon the cloister garden. In this gallery hang two pictures of the school of Pier Leone Ghezzi, which represent Fra Basilio, a monk who lived from 1726 to 1804, and whose fame as a herbalist greatly contributed to the honour and renown of the farmacia. Fra Basilio was the inventor of the 'Acqua Antipestilenziale' and 'Acqua Antisterica.'

It is probable that the equipment and decoration of the farmacia as it exists to-day dates from the time of Fra Basilio, for he is known to have presided over it, and to have instructed the monks in the pharmaceutical art, for the last 50 years of the eighteenth century, and the frescoes and fittings undoubtedly date from that period. It is possible that some of the pestles and mortars and the magnificent marble urns, which served as recipients for the mysterious compounds known as Teriaca and Mitridato, may be of an earlier date, as there was an infirmary attached to the monastery practically from its foundation in 1597, and the archives of the monastery for 1694 include an inventory of the 'Spezieria' which show that by this time it was already extensive and well equipped.

Certainly some of the objects which are still to be seen in the farmacia were in use in Fra Basilio's day, for they are shown in the Ghezzi conversation piece which represents him instructing his pupils. These include a large marble urn for Teriaca surmounted by a pine cone, glass decanter-shaped bottles for holding 'Acqua Antipestilenziale,' and a curious collection of chemical salts worked in the form of crosses, medallions, obelisks, and leafy trees, evidently intended to serve as ex votos.

The farmacia consists of one large room with a coved ceiling, frescoed with garlands of flowers and a trompe l'œil design of brocade draperies; in its centre are the arms of the Carmelite Order. Although these frescoes have evidently been restored and retouched several times, it is probable that they were originally executed by an artist of the Ghezzi school, possibly the same man as was responsible for the two pictures of Fra Basilio. At one end of the ceiling, 1, a monk is portrayed peeping over



1

the painted draperies; this humorous touch is in style and character strongly reminiscent of the trompe l'œil frescoes which were executed by Ghezzi in the Villa Falconieri at Frascati. Although Ghezzi painted religious subjects in various Roman churches, he was chiefly known for his caricatures and representations of scenes from contemporary Roman life redolent of full-blooded humour, and the peeping monk is very much in character with his work in this genre.

The walls of the farmacia are lined with cupboards which in some cases have pilasters suggested by gilding and wooden beading; they are of a style which was common to farmacie all over Italy during the eighteenth century. One fine glass-fronted cabinet which is surmounted by a broken pediment is somewhat similar to one which is to be seen in the Chigi Villa at Ariccia.

This particular cabinet was evidently used to store the more valuable drugs, as it contains dozens of small glass jars and bottles, each balanced upon a gilded wooden baroque stand. These stands are joined together and attached to a narrow shelf. The glass jars themselves date from the latter half of the eighteenth century, one or two are of Italian manufacture, but the vast majority are foreign, probably of Bohemian origin. The only other Italian farmacia known to possess anything similar is that of the Ospedale degli Incurabili in Naples, where four glass-fronted recesses in the walls contain a complicated decoration of gilded baroque scroll-work, carved in wood, which forms a series of pedestals and stands for pots and bottles of glass from Bohemia and Murano. The decoration and fittings of the Farmacia of the Ospedale degli Incurabili is known to date approximately from the year 1748.

Adjoining the farmacia in the della Scala Monastery is the store-room in which the dried herbs and other medicaments are kept in cupboards specially designed for the purpose. Upon their shallow shelves repose scores of wooden boxes, each with a painted label denoting its contents. Boxes such as these were common to any Italian farmacia of the period, but what is unique in the farmacia della Scala is the fact that the cupboards, and, indeed, all the woodwork in the room even to the shutters, are decorated with portraits of famous personages in the history of medicine—Hippocrates, Galen, Avicenna, Mithridates and Mesue (the latter is portrayed wearing an elegant monocle). This portrait gallery is complemented by pictures of animals and plants which were particularly esteemed

2, eighteenth-century gilded wooden stand carrying glass jars and bottles. 3, roof frescoes of Farmacia; 4, chemical salts worked in shapes of crosses medallions, urns, obelisks, trees, etc., probably meant as ex votos. *5, same as 4, showing portrait of Victor Emanuel I, King of Sardinia. 6, cupboard of herb-boxes, with portrait of ex-Queen Marie José of Italy.*

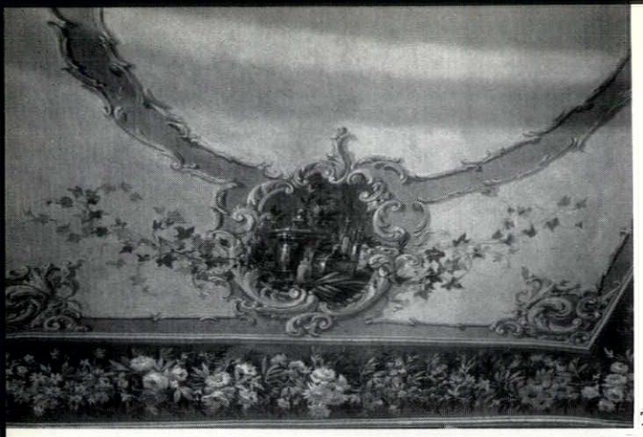
2, 3

4

5

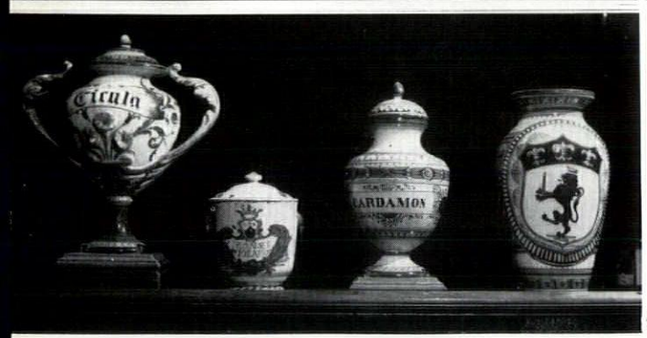
FLOR CENTAUR
SPERMACET
R. SASSAFRASS
RAD IPECACUAN
CORALLIN CORS

6



7

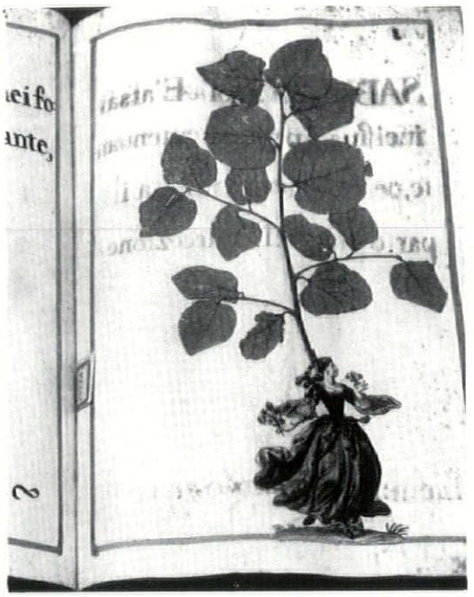
8



9

10

7, ceiling fresco, with medallion containing representations of medicine bottles; 8, glass-fronted cabinet for storage of valuable drugs (see Cover for detail); 9, modern jars for herbs and spices; 10-12, pages from Fra Basilio's herbal of 1755, in which the samples are actual dried and pressed herbs.



11

12

for their use in the pharmacopeia of the eighteenth century.

The della Scala Farmacia had evidently acquired very considerable renown by the beginning of the last century, as it was visited in 1802 by Victor Emanuel I, King of Sardinia, and his wife, Maria Teresa of Austria d'Este. Subsequently it has been similarly honoured by succeeding generations of the House of Savoy, whose portraits, with those of Victor Emanuel and his Queen, have been painted upon the inside of the store-room cupboard doors.

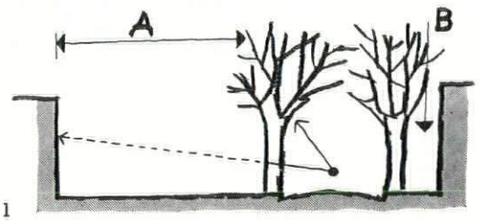
The greatest treasure of the farmacia is, however, the wonderful Herbal, made in 1755, which is traditionally supposed to have been the work of Fra Basilio. Samples of the actual herbs, dried and pressed, are mounted upon its pages and decorated with figures, birds, and animals cut out of old prints. Upon the pages, opposite, the names and medicinal uses of the various herbs are written. The book contains examples of 230 varieties of plants, and is probably unique in Italy. **Georgina Masson**

TOWNSCAPE

THE PROMENADE, CHELTENHAM

If it is agreed that the Promenade, Cheltenham, is one of the finest streets in Britain can the reason for this be explained so that it might serve as a model? Probably not, because however simple it looks it is an amalgam of many things some of which, such as the architecture, can never be repeated. There is, however, one aspect of the street which can be jotted down in the Case Book. And that is the peculiar spaciousness of the place; an explanation of which is attempted here.

Consider the general view, 2, opposite, with the section below, 1. It will be seen that the street consists, basically, of



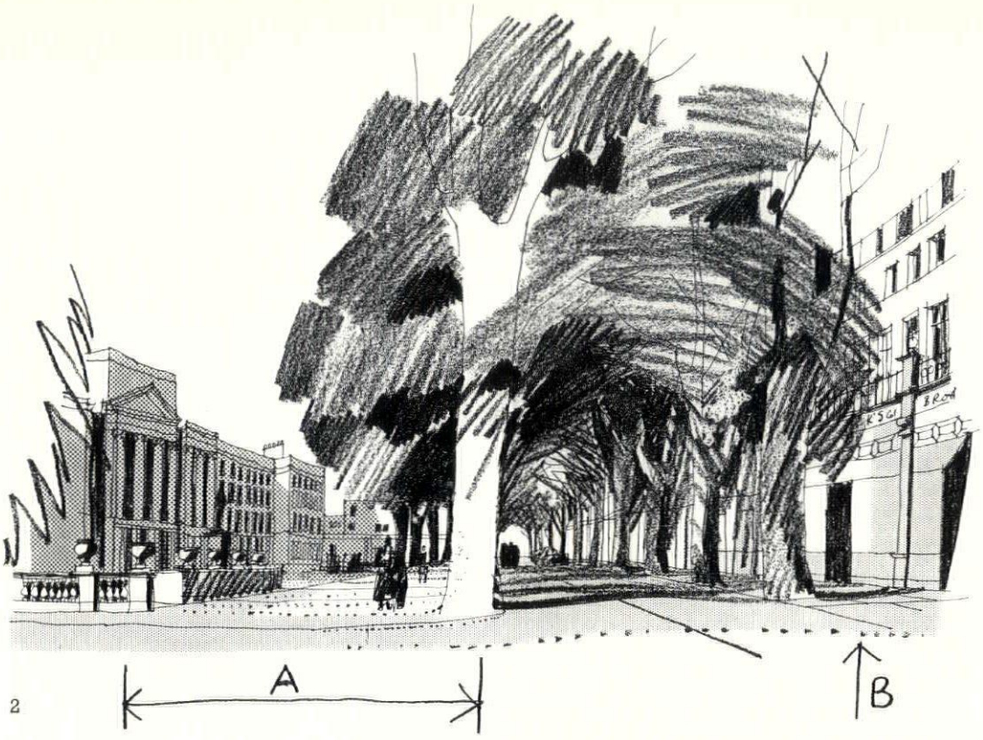
1

two enclosures. First there is the structural enclosure of buildings which forms a wide street and inside this is the second enclosure, or tunnel, formed by the avenue of trees (which screens out the ubiquitous sky thus heightening the sense of enclosure). The main traffic and pedestrian route is situated inside the tunnel so that one normally sees the whole street from inside the second enclosure which, naturally, is busy and concentrated. But the avenue of trees is not situated in the centre of the structural enclosure, it is emphatically to one side, to the side of the shops. This is made obvious and clear by the way the trees crowd right up to the buildings, at B, as compared to the articulating space, A, 1.

The effect of enclosure on a person, inter alia, is to identify him with his environment, it is a space in which he can say; 'I am now in the middle of IT', or, 'I am to one side of IT'.

But here, in the Promenade, there are two enclosures, 1, one inside the other and due to the lack of axial correspondence it is possible to look OUT of one enclosure (the tunnel) INTO the other (the clean, architectural enclosure).

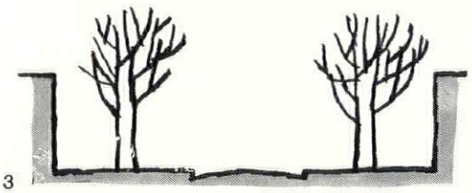
In this way a relationship is created out of the interplay of identities. For, due to the articulating space, A, there is a sort of visual undertow pulling the eye from the



2

local identity of tunnel to the larger identity. It is this which raises the layout from one of pleasant spaciousness to that of spatial tension.

It may help to clarify the point if we use the same elements in a different way, 3.


3

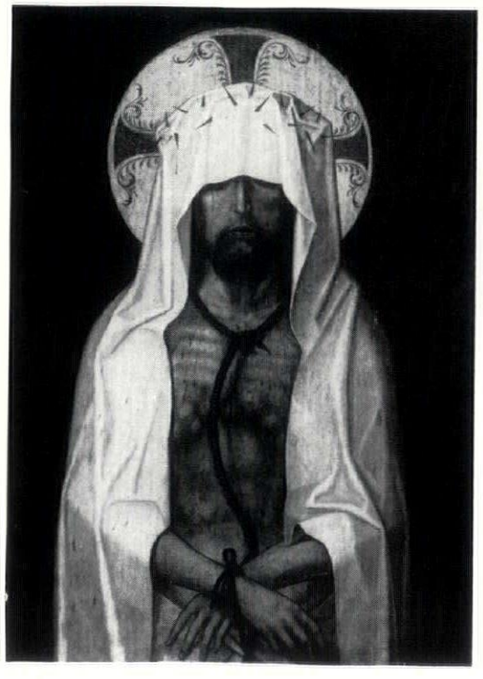
Here the magic has gone, for although we still have trees and buildings the drama of relationship is dissipated, and there is just one street.

Gordon Cullen

EXHIBITIONS

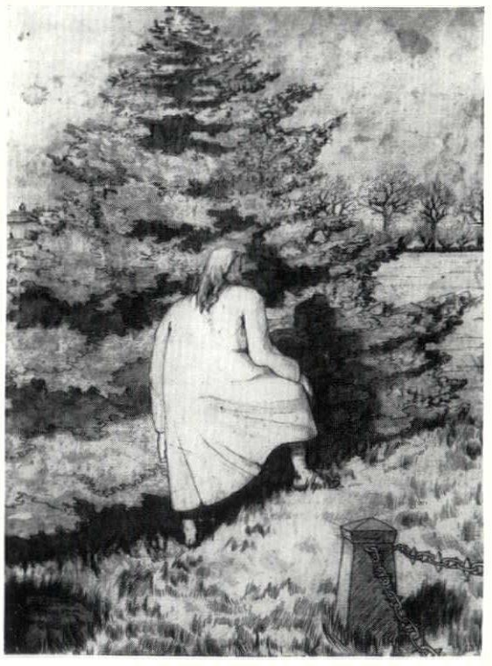
PAINTING AND SCULPTURE

The exhibition of Portuguese art at Burlington House was admirably displayed under the direction of Professor Reynaldo dos Santos, but there were not enough first-rate works at his disposal to enable him to maintain the atmosphere of majestic moderation which distinguished the first two rooms. Gallery I was given a kind of dramatic sobriety by a large fourteenth-century wood carving of Christ on the Cross, which created a thoroughly convincing impression of physical pain anæsthetized by grief. Gallery II was dominated by the fifteenth-century polyptych of The Veneration of St. Vincent by Nuno Gonçalves, an exquisitely balanced composition containing dazzling portraits of the young and the old, the rich and the poor. It is a masterpiece of courtly elegance and remote piety, and provided an unforgettable experience. But for the most part the massed ranks of ecclesiastical paintings and court portraits presented neutralized versions of Flemish and Spanish styles, and there was an over-all effect of talented routine work produced for undemanding patrons. In this boring atmosphere of dignified unoriginality, a few things that smacked of the macabre offered some relief: the best of these was the late fifteenth-century *Ecce Homo*, 1, which is painted without zest but, like the coiled rattlesnake in Mexican sculpture, would retain its iconographical kick even if it were the copy of a copy of a copy.


1

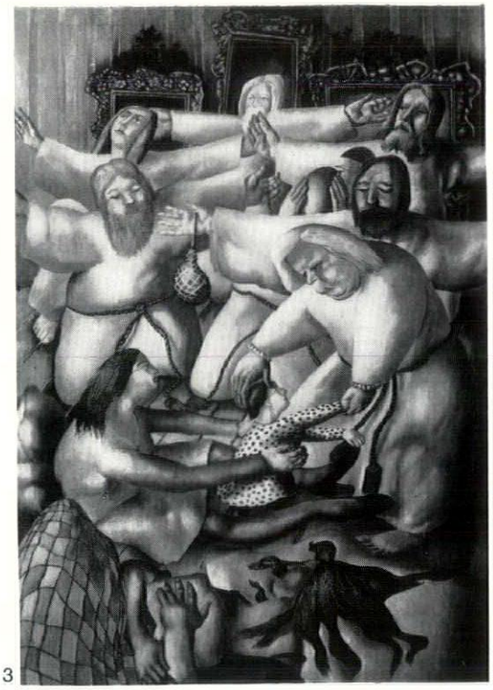
Neither landscape nor *genre* seems to have flourished in Portugal, and the provincialism of its painting and sculpture is without any trace of the naivety or sense of place that has saved the English school from dullness. The trouble with us is that we tend to overdo it, and when one of our painters of promise takes the line of least resistance and becomes willfully parochial we treat him as an heroic figure. Stanley Spencer is among the most formidable of our parochial cranks. He has forsaken the art of painting to become a master of the religious comic strip, and the retrospective exhibition of his paintings at the Tate Gallery and of his drawings at the Arts Council Gallery have put the official seal on his reputation as an English genius whose work 'transcends' art.

One or two early paintings suggest that he might have become a sensitive painter, and several early drawings—among them


2

Man Goeth to his Long Home, 2, made over forty years ago—show him to have been a fine visionary draughtsman. But in a typical painting of the later years, *The Coming of the Wise Men*, 3, dated 1940, execrable painting and inane drawing define a mock vision. As a comic reteller of bible stories with Cookham as the new Jerusalem, exploiting in the process a vein of erotic religiosity, he has no rival.

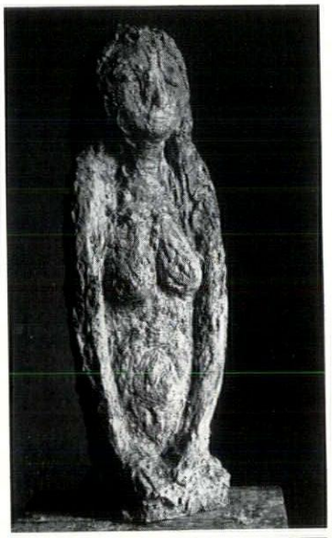
The very large sculpture called 'Internal



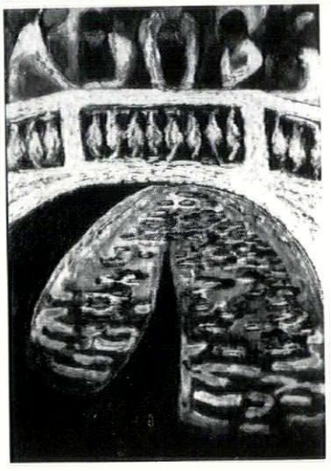
3

and External Forms,' 4, carved in elm wood, which was the centre-piece of Henry Moore's recent exhibition at the Leicester Galleries, is a full-scale reversion to biomorphic form and the notion of 'truth to material.' It is a remarkable work, but it belongs in spirit to the thirties, and much has happened since then, including Moore's own humanistic bronzes, to make it look decidedly dated. Whatever appeal it may have as form and image is obscured by the beauty of the wood grain, which arouses disconcerting associations with Heals' 'Craftsman's Corner,' and I cannot help feeling that this may well have been an appropriate occasion for covering the surface with pigment. In the same exhibition, the equally large bronze casting of a closely related 'Exterior Form' seemed much more modern in feeling. Although it was unaided by an interior figure, it was thoroughly extricated from the veil of 'nature's handiwork,' and sharply conveyed in naked sculptural terms the sense of an aching pod, which has successfully delivered an 'Internal Form'.

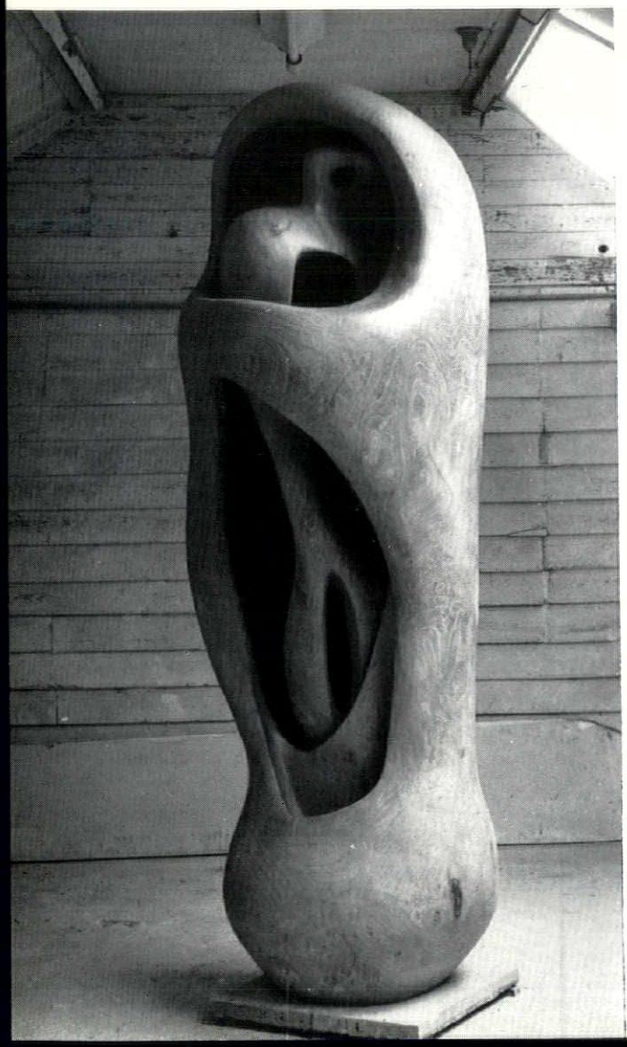
Michael Werner's development as a sculptor has been slow, but in his latest exhibition at the Beaux Arts Gallery his work has suddenly taken on a strange, melancholy force. His theme is the frailty and toughness of the human condition, and the appropriately ragged vitality of his modelling can be seen in this single figure, 5; but he makes more dynamic use of the armature in some of his groups. It is noticeable that even his statuettes look like maquettes for colossal bronzes, and I think that he would probably draw his best work from the impetus of a large-scale project.



5



6



4

Ruszkowski has been showing some paintings of Venice at Roland, Browse and Delbanco's, and has succeeded in taking that stare-proof old lady by surprise, for in one or two highly original, beautifully painted works he has managed to give shape value to the ripple of light playing on water and stone, 6. **Robert Melville**

LANDSCAPE

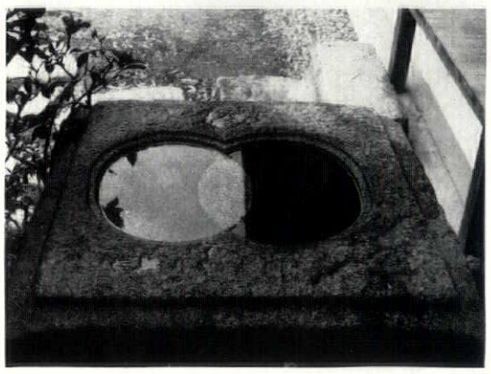
AN INTRODUCTION TO JAPANESE GARDENS

House and garden in Japan form a single aesthetic unit, the spreading verandahs of the house merging gradually into the garden and the architectural style of the house seeking to harmonise closely with the surrounding garden. So closely felt is this relationship that the Japanese word for 'home' is written with the two characters 'house' and 'garden' together. At first it was only the noble and the wealthy who could afford the luxury of a garden. This was laid out in the spacious and elaborate Chinese style, with a lake and islands as essential central features, and it served as a setting for the pageantry and pastimes of the Japanese aristocracy of the time. When the country was torn by civil war it was only in the Buddhist temples and the retreats of Buddhist hermits that cultural pursuits could still be carried on in peace and seclusion, and so the art of this age is to be found in temple gardens, a few of which remain to this day. They mainly follow the hilly, lake-and-island pattern of former days, which was perpetuated later in the gardens of the warrior aristocracy when the country began to settle down under a military dictatorship. But at the same time there appeared under the austere influence of Zen Buddhism an element of bold simplicity in garden design, characterized by a taste for smaller gardens on a flat plan, by the use of upright stones and the elimination of all but the barest essentials, so that the observer is left to build up from these a complete landscape according to his own individual imagination. The Flat Garden reached its culmination in the smooth raked sand, stark rockwork and absence of plants or trees of the celebrated Ryōanji Temple at Kyōto. Zen Buddhism led too, in its search for simplicity and solitude, to the development of the tea house, where a few friends would meet to drink tea, to discuss a painting or a choice piece of pottery and to enjoy the view of a quiet garden completely secluded from the workaday world. This garden, through which the tea-house must be approached, shuns all that is ornate and showy, it contents itself with a few evergreen trees and shrubs, a sparse scattering of stepping-stones and one or two stone lanterns and

1

2

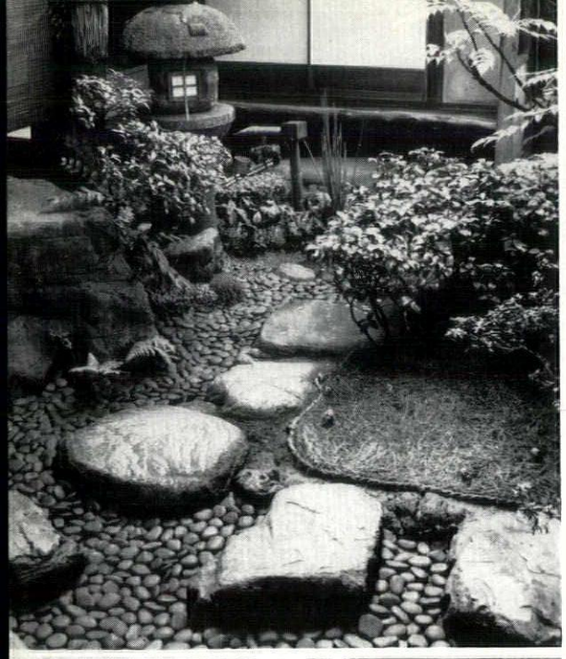
3

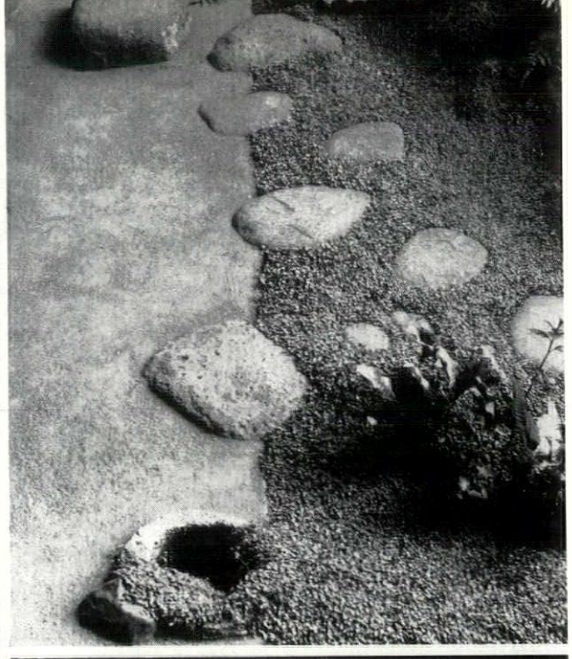


4

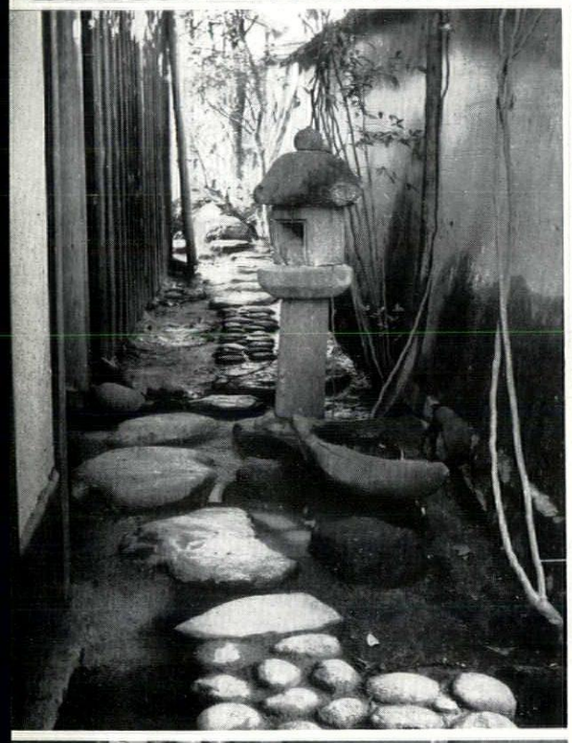
Japanese gardens

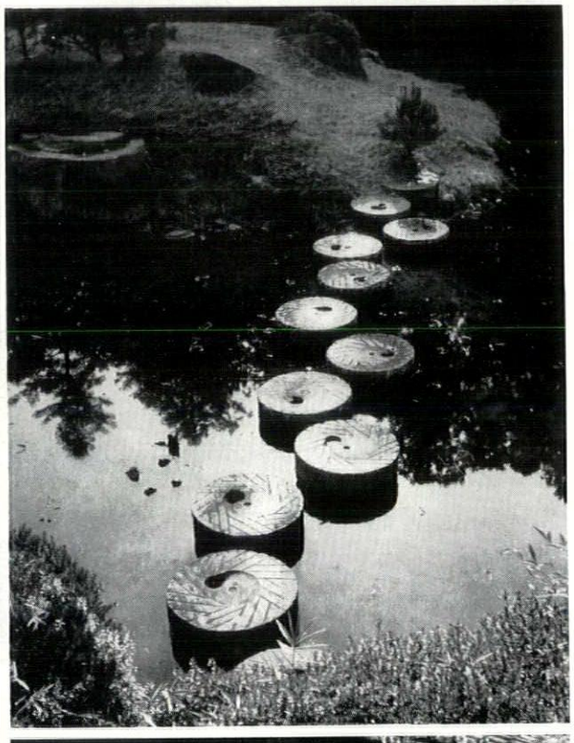
1–3, the garden of Ura-Senki (seventeenth-century) which contains two tea-houses, Yuin and Tottossai: 1, the stepping-stones in front of the Yuin tea-house, said to have been arranged to resemble scattered beans. 2, the paved walk of hewn stones from Yuin to Tottossai. 3, bamboo garden leading to Tottossai, with a sixteenth-century stone lantern behind. 4, at the Buddhist temple of Raigo-ji, built about 1600, a washing-basin modelled on the 'moon-viewing inkstone' preserved at the temple.



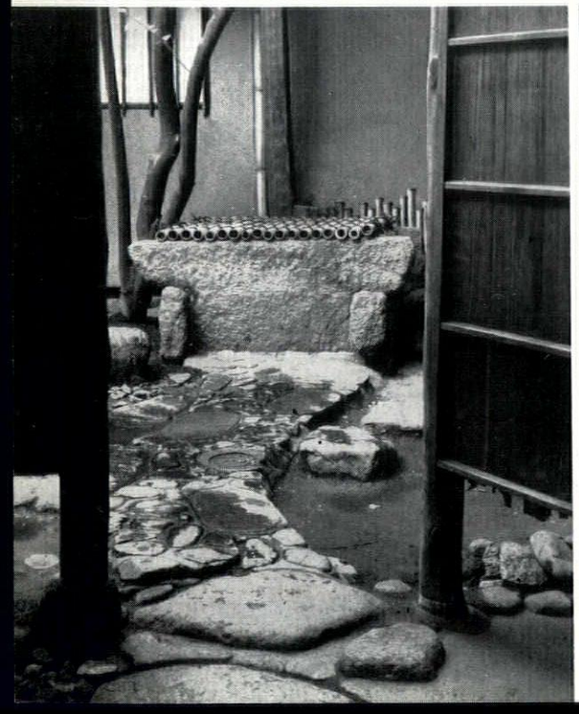


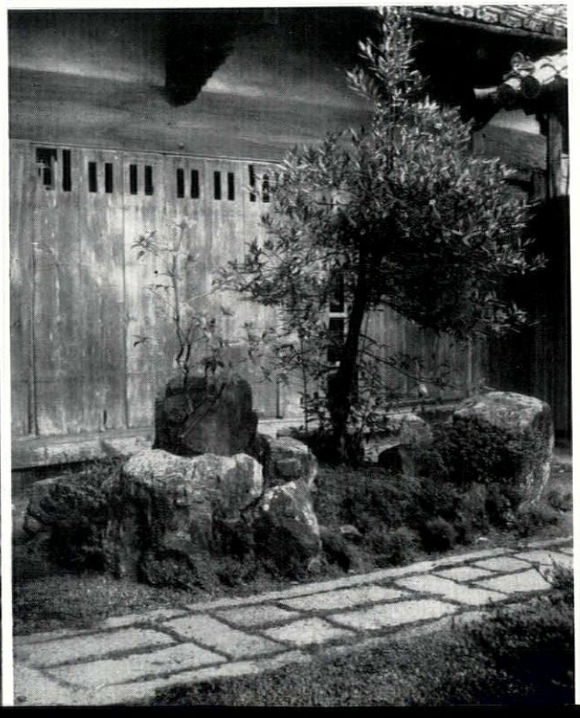
5,6





7,8





9,10

stone washing-basins, the latter for the use of guests at the tea ceremony, but all must be chosen and arranged with the utmost care and discrimination, and the keynote is one of subdued good taste.

The book from which the accompanying illustrations are taken* deliberately avoids large-scale gardens and national show-pieces such as the Saihōji, Ryōanji and Katsura Palace gardens. Instead, it sets out to be a guide to the little-known but skilfully designed small gardens of Japan, most of them in private hands.

At the same time, the book aims to help the layman in the task of designing his own small garden and making it a real source of delight for his leisure hours. With this object, the author gives practical advice on how to arrange trees and rocks, stepping-stones, dividing fences, garden wells, washing basins and stone lanterns, and, most important of all, how to make the most effective use of limited space.

Clearly the Japanese garden must be appreciated from a totally different standpoint from the Western garden. It abhors the formal and symmetrical layout of gardens as practised in Europe; rules and canons undoubtedly exist, but all are designed as aids to an artful simplicity and fidelity to nature, and to avoid any suggestion of the intruding hand of man. Even though man-made stone ornaments are used, in the form of lanterns and washing-basins, it is those which are most worn and weatherbeaten and mellowed with age that are the most highly prized. The object in this, as in all Japanese gardening, is complete harmony with nature.

Trees, rocks and water are the three essential elements of the Japanese garden. It has little use for flowers or flowering shrubs. Colour is rarely introduced, except in the leaves of the maple which turn a russet-red in the autumn. Form and grouping are of far more importance, especially in the arrangement of stones. Here, perhaps, is the essence of Japanese garden-art. From earliest times stones and rocks have played a vital part in garden design. A garden can consist of stones and sand alone; without stones there can be no garden. Stones can suggest a whole landscape or can symbolize mountains, birds and beasts, with special literary associations for those versed in the Chinese and Japanese classics. In selecting them, by shape and size and texture, in placing them in relation to one another and to the garden as a whole, the Japanese gardener exercises his highest skill and art.

In the best of their gardens the Japanese find, like the Zen monks of old, not only peace of mind but a right view of the individual soul in relation to the world of nature and to the universe. **K. B. Gardner**

* *Japanese Gardens*, by Nishimura Tadashi.

11

Facing page, 5, 'garden of pleasure,' Shichijo, Kyoto City, built in the early seventeenth century; the arrangement of the rocks and pebbles in this so-called 'dry-landscape' is supposed to suggest a flowing stream. 6, the garden of Mr. Suzuki, Shijo Takakura, Kyoto. 7, side passage in the garden of Mr. Imanishi, Fukuchiin-cho, Nara City. 8, the Isuien garden, Nara, built in 1897; the millstones serve as a causeway to an island in the lake. 9, ornamental garden well in the Warajiya garden, Shichijo, Kyoto. 10, the courtyard of Wachusan, at Umeno-ki, Shiga Prefecture, formerly a prosperous inn. 11, above, the garden of Juryo-in, Kami-Sakamoto, Shiga, a private residence of Buddhist abbots, built in the seventeenth century; note, in the pond, the stone representation of a boat.

BOOKS

BUILDING WITH PASSION

ARCHITETTURA ITALIANA OGGI: ITALY'S ARCHITECTURE TODAY. *By Carlo Pagani.* (*Hoepli* £3.3.0.)

This book contains nearly 500 photographs of some hundred current Italian buildings, together with plans and notes on the technical and æsthetic aspects of each job. The work shown, while wholly 'modern' is chosen on a catholic basis. Flats, houses, office buildings, factories, hotels, schools, etc., are all represented. Format and typography are of the high standard one associates with the publications of Hoepli. The text is in Italian and English, although the translation is poor. There is a brief foreword by Richard Neutra in bad American.

On the whole Carlo Pagani has given us just the book we wanted. The English architect was badly in need of some sort of guide that would enable him to see the wood as well as the trees. The post-war renaissance of Italian architecture has now become, it must be recognized, one of the most curious phenomena of our time. Defeat in war is always a stimulus—'challenge and response'—but in the case of Italy there must be added two other very potent factors: one, the violent reaction against the aggressive rhetoric of Fascist building, and two, high traditions of craftsmanship and material. It is the combination of all these things that has made Italy, architecturally speaking, the most fascinating country in the world . . . that and the fact that through it all she retains obstinately the beautiful sensual swagger of Latinism. To visit Milan at the moment, or even Rome if one penetrates to the more expensive or more industrialized suburbs, is to feel somehow that one is living in one of those pages of the history book where man's overriding interest was in building. Not all the work is good, but very little of it is very bad, and there is no shadow of doubt that the Italian passion at the moment, as in the third and the fifteenth centuries, is structure.

Pagani is not only catholic in his choice of subject matter; he is fair minded and objective. While condemning Fascist building, his condemnation is not wholesale; it springs from genuine distaste rather than from political prejudice; this is proved by his dating the present renaissance from Terragni's clear, rational design for the Fascist Headquarters in Como (1932), from the pure lines of the railway station in Florence (1936), or from Ridolfi's 1936 flats in Rome. Otherwise Pagani's preliminary survey, in his preface, of Italy's pre-war contribution is inevitably rather thin. It serves mainly to emphasize both the quantity and quality of the later work that is the main theme of the book. It was with post-war reconstruction, with UNRRA-CASA and the Government's INA-CASA Fanfari plan that the present era really began. Some of us, indeed, would feel that there was an even more symbolic moment; at the 1951 Milan Triennale two exhibits, side by side, 'The Form of the Useful' and 'Divine Proportion,' showed how firmly Italy was grasping both ends of that stick that we call the 'Modern Movement.'

Turning over the pages of this book one realizes many things. The intense sophistication, for instance, of a small holiday home by Calderara and Varisco, is followed by another on the next page, Gardella, in the purest farmhouse tradition . . . all the more extraordinary when one recalls the sophistication of Gardella's own work in Milan. Is it not, incidentally, this intense sophistication, this intense sense of form—as opposed to mere professional slickness—that makes the best 'Bay Region' work look comparatively brash? Again and again, too, one realizes that the true blending of the functional and æsthetic is, in the ultimate product, purely sculptural. This is not only true of such *jeux d'esprit* as, say, a diving board—with obvious sculptural opportunities—but equally true of many great blocks of flats, where balconies, plain surfaces and crisp, detached structural frame are all not merely arranged but synthesized into a single sculptural whole. Of course materials, craftsmanship, sunlight

are all enormous assets, essential ingredients; but they are all assets that are today consciously exploited, not taken for granted. That exploitation is in itself one symptom of the eternal artist in the Italian; the other is his comprehension of plastic and sensual form. All these things have in the last ten years added up—as Pagani's book shows—to an architecture of immense importance, more significant and more enduring, in the long run, than that of Scandinavia or the USA.

In this passion for building—and it is at the moment a real, consuming, Latin passion—there is a danger. Things move quickly anyway in the modern world; technically and socially they are in Italy now moving too quickly for the artist. There is no time for consolidation. Buildings, almost before they are finished—the scintillating new Olivetti offices for instance—are hastily dismissed as the last of their kind—as the inevitable cliché . . . and one is hurried on to something else. The lush, expensive Roman suburb of Parioli is a series of brilliant but detached experiments. All this is the price one does pay for a consuming passion. Yet without that passion, while there has often been sound building, there has never been great architecture. In Pagani's survey, while there may not be very much great architecture, the basis and the ingredients are all there.

R. Furneaux Jordan

ROSE-RED CITADEL

THE MOSCOW KREMLIN, ITS HISTORY, ARCHITECTURE AND ART TREASURES. *By Arthur Voyce. Thames and Hudson, 63s.*

As you drive down Frunze Street towards the Moscow River you see at first, at the end of the street beyond the river, only a collection of undistinguished buildings of which the most notable is the Victorian-Italianate palazzo that now houses the British Embassy. But soon, as the street turns and widens, there slides into view from the left a tall, thin, circular tower in red brick, roofed with green glazed tiles. This is shortly followed by another tower, this one square and composed of a diminishing series of flat boxes, crowned with a pointed spire. In a few moments, if you are on your way to the Embassy, you find yourself crossing the Stone Bridge and will see to your left the most extraordinary and one of the most beautiful urban views in Europe. Rose-red battlemented walls, interrupted at irregular intervals by irregularly designed rose-red and green towers, enclose a low plateau surmounted by a rather improbable collection of buildings; some lumpish nineteenth-century palaces, yellow and white with copper-green roofs, several little white-walled provincial-Byzantine churches with gold and aluminium domes, a great awkward white tower topped by a blazing gold onion and, over the far corner, the extraordinary turbans, turnips and pineapples of the Church of Basil Blazhennyi, newly repainted in vermilion, chalk-white, sage green and saffron.

The visual effect of this triumph of Sharawaggi, this 'Caesaropapist fantasia' as Robert Byron described it, is much enhanced by the reflection that it is no dead monument, like the Acropolis or the Capitol, but that, like the Vatican, which of all European architectural complexes it most resembles, it houses, however incongruously, the living centre of a would-be universalist faith. The Great Palace contains the parliament of this faith, and well back behind the little churches is the low classical building where its leaders have their offices.

This view from the Stone Bridge is described by Mr. Arthur Voyce, author of the latest book on the Kremlin, as 'the most striking' But he confuses the issue by saying that the side facing the Moscow River, which is all that is really visible from the Stone Bridge, is 'not of essential importance in establishing the picturesqueness of the Kremlin' (whatever that may mean). This confusion of thought is, unfortunately, typical of Mr. Voyce's book, a confusion which occasionally slops over with downright inaccuracy. This inaccuracy sometimes takes the form of plain errors, as when he situates Suzdal on the Volga, and at other times proceeds from an obvious unfamiliarity with the present state of affairs in Moscow, as when he includes the Spas na Boru and the Red Staircase among existing buildings or says that the ramparts 'now . . . form a pleasant walk around the Kremlin and, at some points, reveal a breathtaking view of the city across the river'. The confusion extends to the arrangement of the book, which twice lists the illustrations and plans but both times without page references, and is most strikingly apparent in the chapter entitled 'Art Treasures' which is as conspicuous for its repetitions as for its omissions.

These defects are all the more regrettable since this is the only recent book in English to deal *in extenso* with the history, construction and contents of the Kremlin and since it contains some useful information and reproduces many valuable plans and sections of Kremlin buildings from Russian publications that are not easily available.

William Hayter

LEIPZIG MEN AND HOUSES

LEIPZIGER BAUTRADITION. *By E. Müller, H. Küas, K. Steinmüller, H. Füssler, H. Bethe, A. Franke and P. M. Zahn. Bibliographisches Institut, Leipzig 1955.*

We don't get many books from behind the Iron Curtain and especially from East Germany. Scholars, we are told, still keep in touch with the West; but we see little of that, and communications with England often go by way of a West German middleman. This book, written by eight authors, and presenting an architectural history of a town nearly the size of Birmingham and, at least in the past, many times the cultural importance of Birmingham, is a reassuring example of book-production and book-writing in the east. The paper, it is true, is a little flimsy, but the writing is neither flimsy nor more than very occasionally forced into the party-line—unless one calls it unjustly the party-line that nearly half the book is social history and only the rest architectural history strictly speaking. Personally I welcome this proportion. Having many years ago written myself a book on the architectural history of Leipzig during one period, and having totally neglected that aspect for the sake of analysis and comparisons of style, I find it particularly gratifying to read who the men were who could afford to build terrace houses in the main streets of Leipzig, eleven windows wide and four storeys high, plus two or three in the roof, how these men got their money, how they used the houses partly to let apartments, and partly for the purposes of the Leipzig Fair, and so on. A house of the size just referred to would cost nearly 60,000 Taler; rents in such a house for a front flat of about eight rooms on the first, second or third floor were between 300 and 500 Taler annually. The same bankers and merchants who built these town houses built gardens and summer-houses outside the walls. In one of them the first coffee tree flourished at Leipzig in 1723, another was landscaped *à l'anglais* as early as 1770–1. Leipzig in fact in the eighteenth century, the time of Bach, Gottsched and later of Goethe's university years was a town of far greater power and importance than now. The book brings this out well and is reliable on the details of architectural development. Only the reference to van Campen on page 96 must have gone wrong. Is perhaps de Keyser meant? As in most Continental books the Victorian age is treated inadequately and unsympathetically.

Nikolaus Pevsner

FURNITURE PRIMER

ENGLISH FURNITURE AT A GLANCE. *By Barbara Jones. Architectural Press. 8s. 6d.*

This book is useful to the person who wants to begin a study of furniture. The text is profusely illustrated with neat little drawings which the author has made herself. In a book which is called *Furniture at a Glance* one would have thought the illustrations were more important than the text: the text, however, does not merely amplify the illustrations—on the contrary, it expresses a number of opinions which have little to do with furniture recognition. It would perhaps have been better if the author had not declared so emphatically her dislike of certain styles of furniture (in particular the Elizabethan) for the student is not so much interested in a writer's personal opinion of what is good or bad as in learning something he or she does not know.

The real value of this little guide is, however, to be found in the last five sections, which deal with furniture from 1830 to 1920. Here the author does give the student interesting information. For instance, about the young engineer Robert Mallet whose furniture designs were illustrated in Loudon's *Encyclopædia*. This part of the book displays a first-hand knowledge and is a real contribution to the subject, though many readers may not be captivated by the 'great beauty' that the author considers exists in the late nineteenth-century furniture designs of Charles Rennie Macintosh. A noteworthy feature of the book is the glossary, which gives brief explanations of all terms connected with furniture and furniture making. This has been carefully written and should undoubtedly be of use to beginners.

R. W. Symonds

SKILL

A MONTHLY REVIEW
OF BUILDING TECHNIQUES & INDUSTRIAL DESIGN

1 interiors
2 design review
3 techniques
4 the industry

1 INTERIORS

SHIP INTERIORS

by Ian McCallum

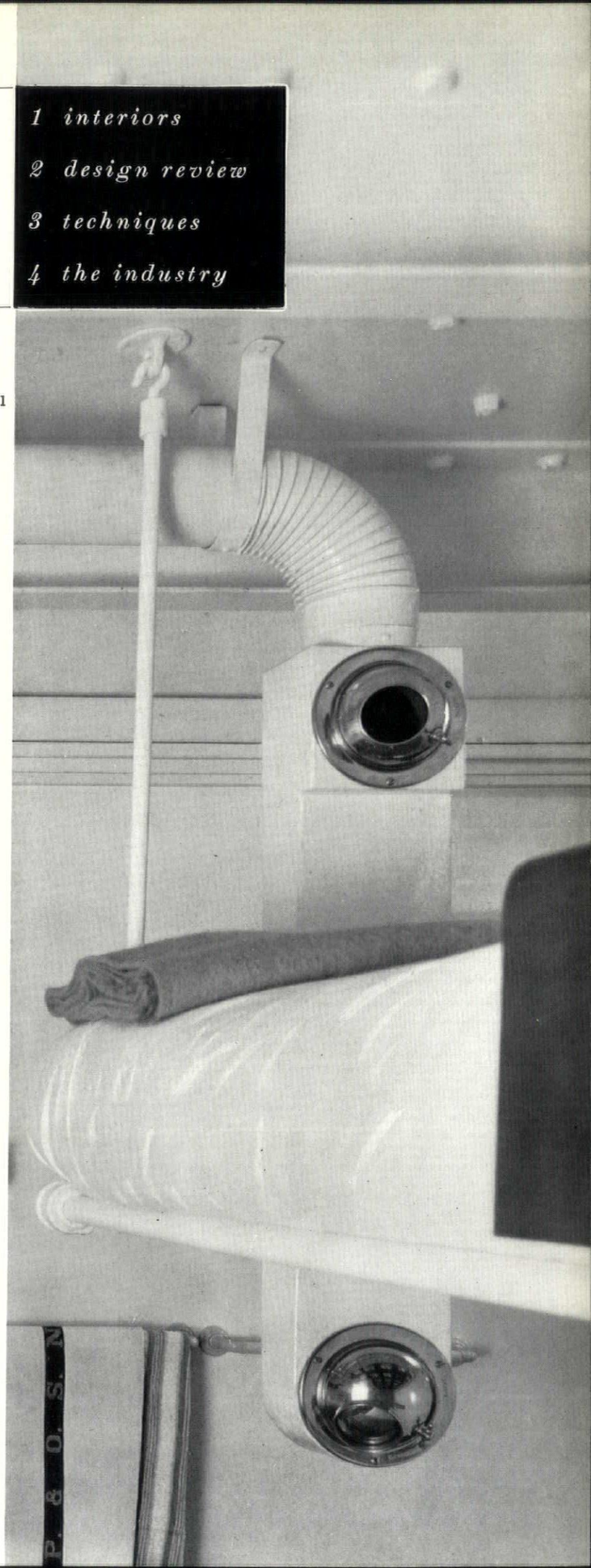
The old cry constantly repeated by those who care about design when faced with the interior of a luxury liner is not that the ship is spoilt for a ha'porth of tar, but that it is spoilt by a thousand barrels worth, in the form of satins and silks and Empire wood and the kind of taste that might be called popular, if anyone really liked it.

Why, ask the highbrows, given a forceful, characteristic and entirely successful nautical style outside, does a ship have to have the worst kind of Grand Hotel style inside? Is it beyond all ingenuity to adapt and develop the nautical style, to provide

2

interiors that are not such resounding anachronisms?

Most shipowners reply that the Grand Hotel is what their customers require and the one thing they don't want is to be



1

Is there a nautical indoor style? This detail from a cabin on the P & O liner Strathmore, 1, *suggests that there could be: ventilation, suspension, ship construction are expressed simply, even primitively, and though the bare bones may not always be acceptable there are formal implications here, denied in most ship interiors today, that start the imagination roaming. The* Kenilworth Castle, 1904, 2, *is another matter; this is clearly just the nautical outdoor style brought in, and satisfying enough—to the purist, but shipowners have to cater for other types too.*

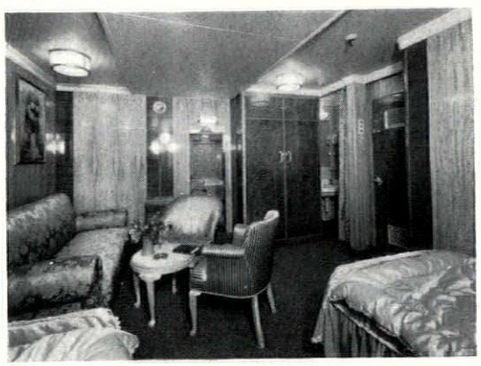
reminded, however subtly or ingeniously, that they're at sea.

So the Grand Hotel is what they get, differing, of course, according to the routes taken and the type of passengers carried. From bare, clean and pretty Danish, through vigorous and boldly coloured American; lush, chic, Italian; hectically gai French; to worthily, and sometimes imaginatively, modern British. That is at the top of the scale—design-wise—to use a transatlantic term. Design-wise, however, is not what most transatlantic liners are, at least not from the highbrow viewpoint. It is among these, where competition is fiercest and the rewards highest, that the worst excesses are committed.

There have been a number of phases of this anti-nautical style, most of them following fairly closely the styles of the more expensive hotels.*

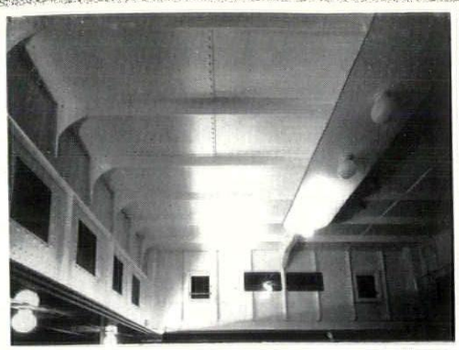
A constant and particularly obnoxious influence, due to the extreme cosmopolitanism of the passenger lists, is national and imperial propaganda. Since these liners constitute a permanent floating exhibition in which the passenger is imprisoned for varying lengths of time, it is neither possible nor necessary to resist the temptation to wave the flag. On such occasions, however, the conspicuous position of the flag-waver makes it vitally important that he should stand up to inspection—an over-dressed vulgarian would clearly be miscast for the role. But this is what these liners are, judged as examples of the best their countries can do in the decorative arts. Granted the craftsmanship is near faultless, the ship a masterpiece of engineering, the navigation and service impeccable, the decoration is, as a rule, untouched by any acknowledged master of the art and the paintings, sculpture and tapestries are nearly all by artists whose existence has hitherto gone un-

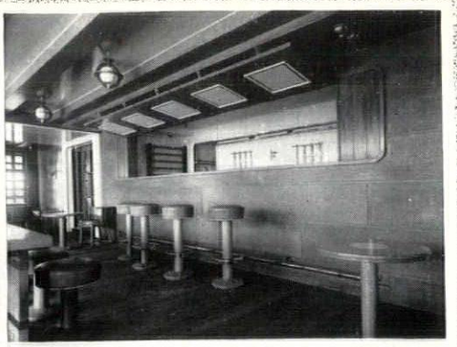
* One digression was the museum phase, during which famous rooms on land were dismantled and adapted for a life on shipboard or else were copied as near as the technical exigencies would allow. (See also postscript p. 140.)



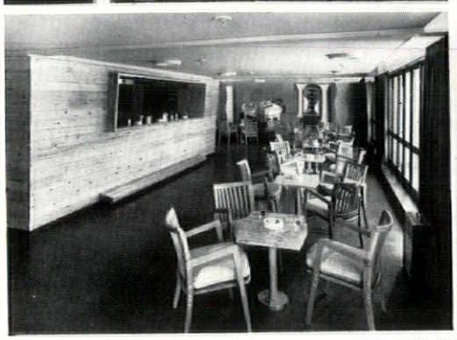
3, *the* Carnarvon Castle, *an unfortunately typical example of the veneer craze—four different woods used in one small cabin, all highly polished and reflecting like a wet street.*

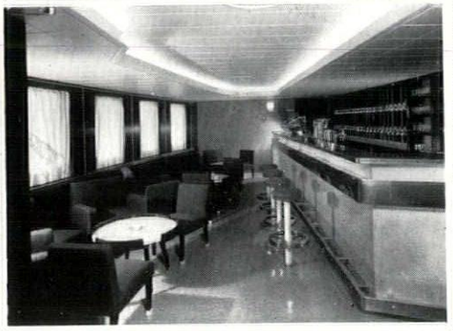
nautical





4, 5

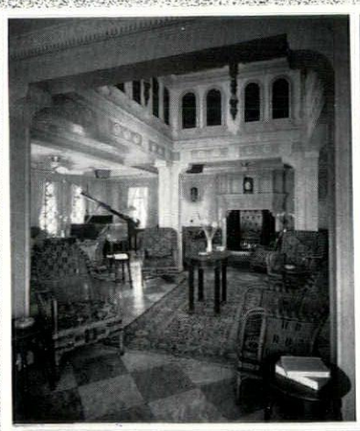


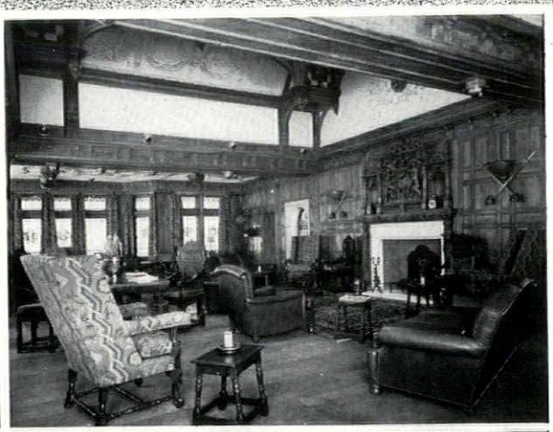


6, 7

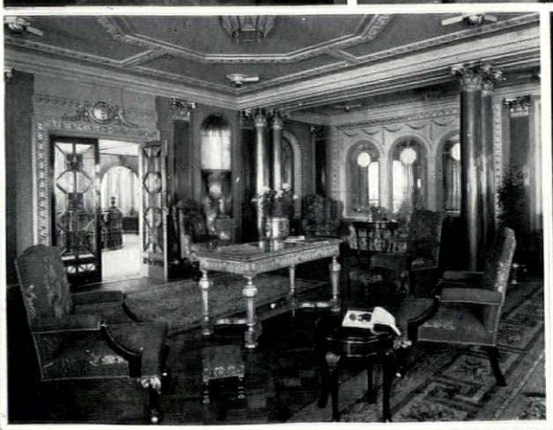
Though the nautical style may be too 'bare bones' for all the rooms in a ship, there is still at least one line that pays homage to it from time to time. 4 *and* 5 *are both the Orient Line's* Orion, 1935, *and* 6 *is in the same line's* Oronsay, 1950. *The latter pays homage more by implication than directly, but the parentage is still there, clean, raked lines, neat, trim, unvarnished wood.* 7 *has moved a good deal further down the family tree and gathered quite a 'bit of brass' on the way, without, however, forgetting its vigorous forbears. And this is really the moral of the story—a* sense *of the nautical traditions is what really counts inside ships, much more than a superficial carrying inside of outside motifs. Note in* 7 *(tourist bar in the* Cristoforo Colombo) *the traditional proportion of the upper-deck ship's window (the same as in* 2, *preceding page), left visible by keeping the curtains inside the reveal. If there is little sign here of attempting a new formal language as suggested by* 1, *on the preceding page, it does show that the functional tradition, which is really what it comes to and of which the nautical tradition is a branch (see AR, January,* 1950), *can now embrace luxury without denying itself. This puts the lie once and for all to the argument illustrated by* 8, 9, 10 *and* 11, *below, which says, virtually, that fancy-dress, whether Mooresque, Tudorbethan, Holkhampocum or modernistic, is the only way to satisfy the insatiable appetite of the sea voyager for luxury and a sense of security.*

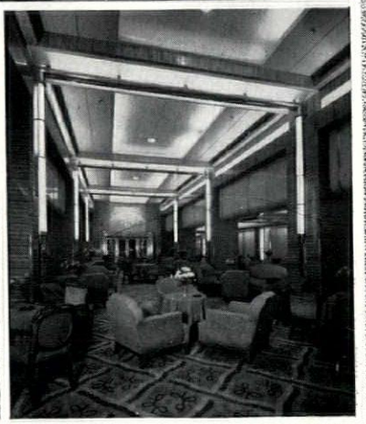
anti-nautical





8, 9

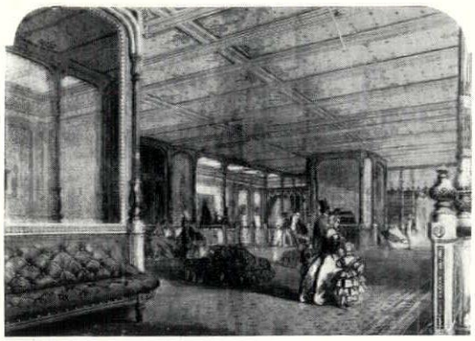




10, 11

observed by reputable critics. Add to this the propaganda theme which encourages the lavish use of exotic veneers in homage to the fecund vegetation of the Empire (not to mention the only too well varied output of the home country's textile mills), and an effect is produced beyond praise, but also beyond blame.

Why beyond blame? Because there are few who can think of any alternative. The purist may admire the unadorned, ship's carpenter interior of the windjammer, yacht or cabin cruiser, but the realities of the situation clearly rule this out as a liner style, its very essence being sturdy simplicity and its character the result of ingenious solutions to minimum spaces.



12, *the Grand Saloon of the* Great Eastern, 1858.

The first of the big liners, the *Great Eastern*, is no help for, charming as its interiors were, the style was a Victorian decorator's style, charming because the style was charming, showing as it still did its Regency parentage. Modern architects are sometimes used, and the only successes on British lines have been due to them, but where lavish decoration is wanted they have a serious drawback. The modern movement in abjuring decoration in its pioneer phase, and in its disapproval of the very idea of luxury, has given its adherents a guilt complex the size of the *Queen Mary* about touching such things, and an extraordinarily limited vocabulary when they do.

One would have thought the shipowners might have looked to the top-line decorators to help them. They could have called, for instance, on Syrie Maugham, Kelso, Colefax and Fowler, Lehmann and so on. They would have had their luxury—they would also have had a certain style, using the word in its non-historical sense, though they would have had a certain amount of the other kind, too.

But no, where they would stand for nothing second-rate in engineering, navigation, craftsmanship and service, the

congregating

an interior which looks as if the mice had been at it

13

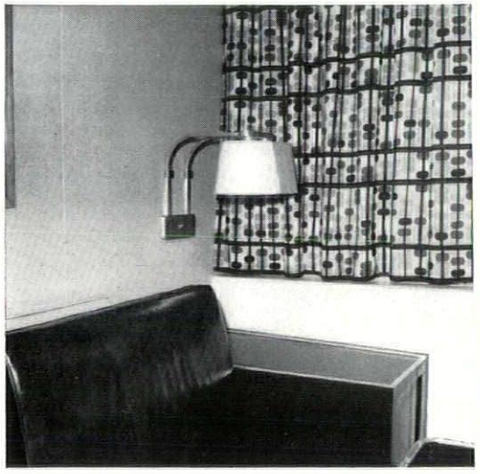
an interior that allows people to play the active part

14

It is hard to discover what principles of design were followed in 13, *the Chintz Lounge in the Cunard Line's* Saxonia, 1954. *Certainly its jagged geometry is unlikely to do credit to British prestige in design, and though it* may *satisfy the traveller's desire for a sense of luxury, it cannot possibly be said to contribute to his sense of security. Even when quite still the effect is sinister, as if a dozen 'big brothers' were watching, and at the idea of a swell the mind boggles. It would seem to be self-evident that where a number of people move and congregate, the background should be what its name suggests. This does not rule out pattern, texture, colour and ornament whether in the form of sculpture murals, tapestry or, as in the liner* United States, 1951, 14, *etched glass. But where these are exploited, as they so ably are in the* United States, *they must take their place as part of a controlled environment. Stratification would appear to be the most important aim, for, particularly where there are dozens of tables and chairs, there will be plenty of vertical punctuation by people; furniture is, therefore, better arranged as one horizontal stratum, walls and curtains as another, and ceilings with what now seem to be their almost universal, decorative lighting pools (and/or rivers), yet another.*

second-rate in decoration was openly and warmly embraced.

In recent years, exceptions to this rule are found in Italian and American transatlantic liners. Both countries are, to use a loose term, extrovert, delighting in bold colours and experiments in form. In the liner *United States*, for example, the Americans have shown what can be done in an idiomatic style of decoration, which though it may not exhibit the higher flights of imagination is both luxurious and simple. An achievement, what is more, arrived at without recourse to a multiplicity of exotic woods, since all wood was forbidden owing to special risks of fire in war, for which the ship was designed to be easily converted. The *United States* is a decorator's ship, and it shows the advantages of humility. The Americans are not proud of ignorance, where they possess no knowledge they *don't*



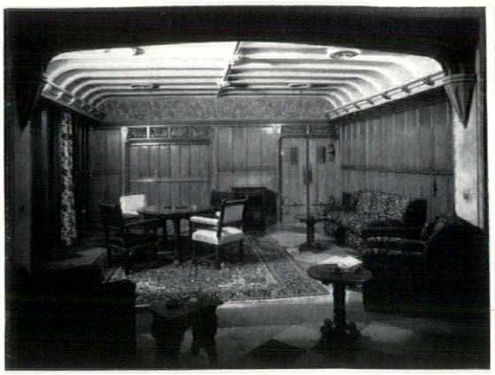
15, *all-metal furniture and walls and fire-proofed fabrics give the* United States *a clean-limbed, while avoiding a bare-boned, look* (*see also* 38, *page* 139).

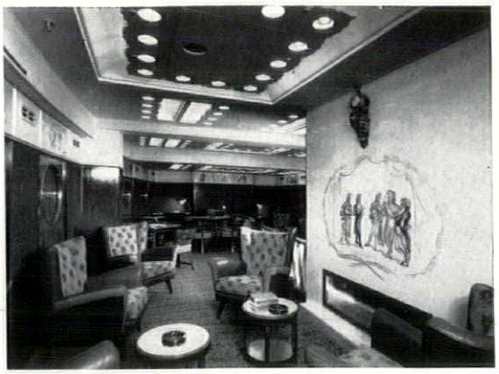
know what they like, and they expect to be told by those who do know.* This has its advantages and its disadvantages, which I do not propose to discuss here. What it has meant in the field of decoration is the development of an idiom created by decorators and owing a debt to various of the world's contemporary styles. It is, therefore, uninhibited by architects' fears of what the other chaps will think. The glossy magazines have helped establish the idiom and have turned it into a ruthless rule of taste. The danger of this is the danger of all established canons. Meanwhile, there is surely a lesson for us in a canon which can make even our big guns look fairly small.

This American idiom is, nevertheless, a national one, and though it may provide a

* I have not heard of an American ship, as I have with a number of British ones, where the owner's wife chooses the colours and fabrics.

designs that put Britain at the bottom of the list



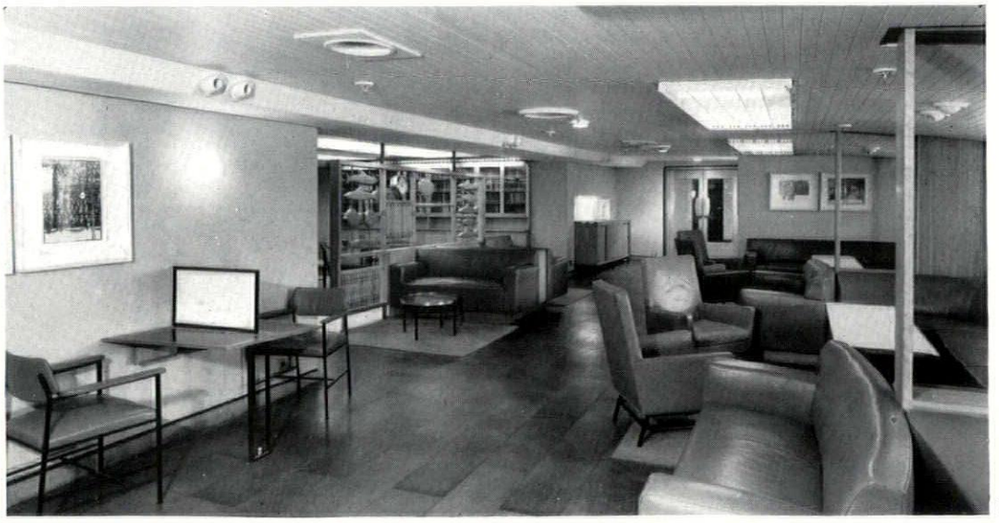


16, 17

the kind of interior that puts Italy near the top

18

saving grace for Britain from the Orient Line



19

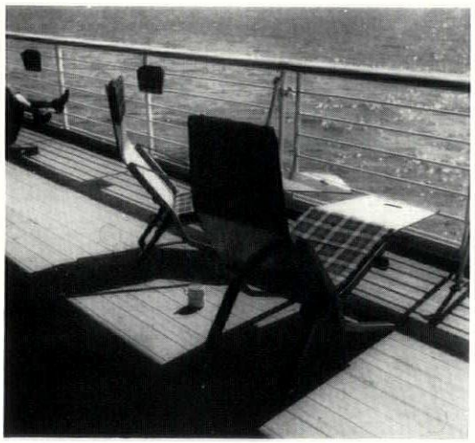
16, *Smoking Room in the* Andes, 1948. *'Tudor by the yard' brought up to date with jazz-modern fabric on non-Tudor upholstery.* 17, *Smoking Room in the* Saxonia, 1954, *modernistic, with touches of Louis the Hotel* (*clock*) *and cafeteria Regency* (*mural*): *both First Class.* 18, *Cabin Class Writing Room on the* Cristoforo Colombo; *perhaps a little mannered, but where, in the morass of ship interiors, there is lightness of touch, elegance, assurance—in one word, style* (*in the non-historical sense*)—*complaint on such small scores becomes carping.* 19, *Tourist Class Library in the* Orsova—*simplicity almost amounting to luxury, a remarkable achievement in a sphere where economy usually spells austerity.*

lesson it cannot be expected to provide *answers* to our own problems. It should also be emphasized that it is a pattern-book style (that is what justified the term idiom); the Americans have not, so far, made use in their transatlantic liners of their frontier-pushing designers like Eames, Knoll Associates and Dreyfuss, though Dreyfuss and Raymond Loewy have worked for lines which serve South America and the Pacific.

If we need more than a lesson—inspiration in fact—it is, of course, the frontier-pushers we should look to, either in America or elsewhere. We have already done this, often quite successfully, for land-based furniture, though we are long overdue for a genius or two of our own.

Meanwhile the Orient Line still has the lead among British ships that it has held for twenty years, each new liner (the *Orsova* is the most recent) marking a steady advance on the last, with bolder colours, more artists collaborating, new materials being tried and now the first redesign of the classic deck-chair for fifty years.

In spite of improvement in the decoration of some ship interiors since the war, it does seem remarkable to the lay critic



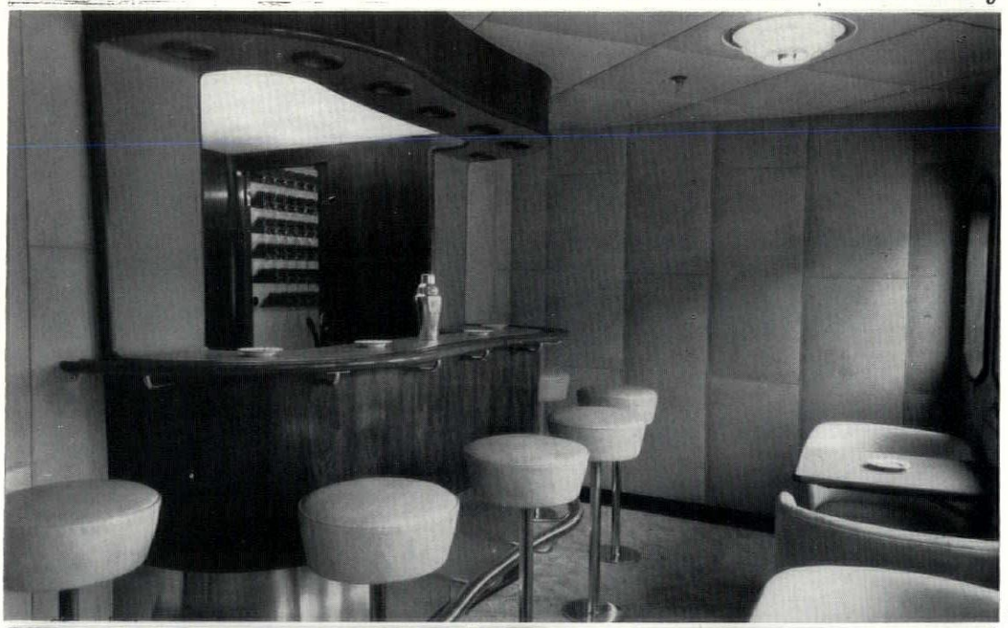
20, Ernest Race's deck-chair for the Orient Line, made of formed, laminated beechwood; finished with synthetic lacquer, it is collapsible and hingeless; armstraps are of nylon and squabs of rubber-foam are covered with p.v.c. fabric.

that the planning remains almost totally unchanged. Conservatism seems even more stringently inhibiting at sea than on land. One shipping correspondent said recently that 'naval architects and engineers never had any doubt as to the technical merits of placing the engines at the aft end' and yet it was not until last year that a British passenger liner, the *Southern Cross*, appeared with this improvement. The more efficient planning both of decks (at last free of smuts) and of interiors made possible by placing the engines aft is obvious. Yet even

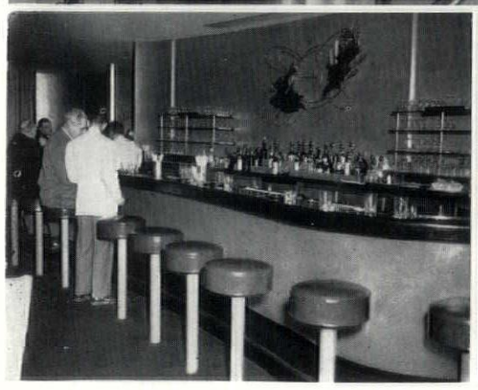
the babel of many forms, most of them unnecessary

21

the coherence that comes from a common vocabulary



22



23, 24

21, the so-called 'Yukon Bar' in the Saxonia. *The lesson that this and all the other cautionary examples seem to teach is 'do simple things simply'; this century is no good at complicated design—all ingenuity and subtlety should go into line, texture, pattern and the right juxtaposition of these, and all the materials employed, to each other. 22 is a lovely example of how to do just this. The craftsmanship may be no better than in* 21, *but sheer design expertise makes it* look *better; it is the First Class Bar in the Danish ship* Kronprinsesse Ingrid. *23, in the* United States *and 24, in the* Cristoforo Colombo, *though not quite up to the standard of the Danish example, show that the better designers all speak with one voice—note the agreement on the best shape for the bar stools, and compare it with those in* 21.

extraneous detail creates chaos in a large, low room

25, 26

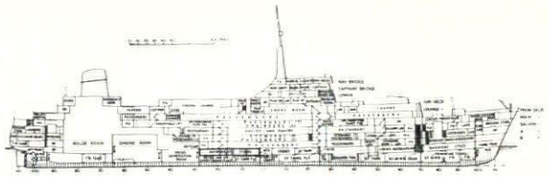
horizontality can be a virtue if you follow the rules

27

non-axial and below axial, examples that follow the rules

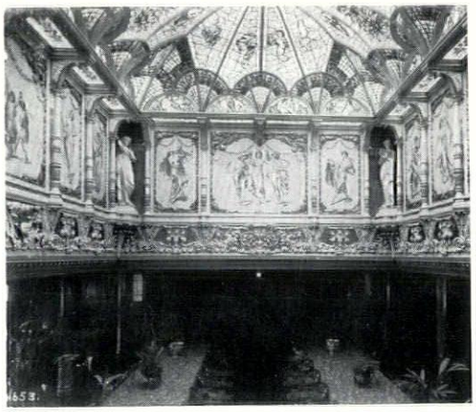
28

25, *the* Pretoria Castle, 1948, *and* 26, *the* Rhodesia Castle, 1952, *both Union Castle Line. In* 25, *a system of beams is created in the ceiling for 'decorative' reasons, which combine with the lighting troughs to confuse the eye and oppress the spirit. In* 26, *bands and blobs of light take over the dominant role and serve in their turn to make visual chaos out of an existing confusion.* 27, *in the* Cristoforo Colombo, *shows one way of dealing successfully with the large, low room. The ceiling is, so to speak, 'lifted off' by brilliant indirect lighting and the playing-down of subdivisions; bounding walls are treated as backgrounds to people, with horizontal emphasis accepted and even accentuated (striped curtains); furniture is stratified (see also* 14, *page* 135). 28, *in the* Orsova, *shows the same principles employed to more formal ends; the floating ceiling is kept to the central area (perhaps another hang-over from the clerestory, see* 30 *and* 31) *and columns, mirrors and curtains all emphasize the axial layout; if not quite as successful as* 27, *the effect is calm, orderly and pleasing.*



29, *section through the* Southern Cross, 1955, *the first British passenger liner with engines aft.*

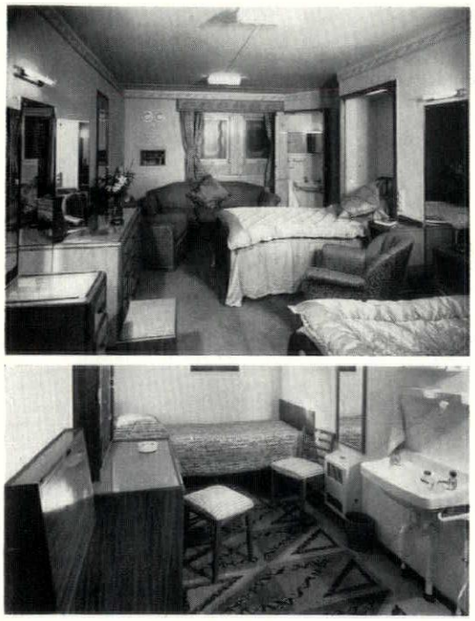
in the *Southern Cross* no radically new planning ideas seem to have revealed themselves as an outcome of a technical advance which should be of marked advantage to the planner. This raises the question of how close a collaboration exists between naval architect and decorator, and whether a closer one might not call in question a number of planning shibboleths, if such they are, that would seem, again to a lay critic, to be without clear technical justification. For instance, the two-floor-high centre to the grand public rooms (1st class). This, apparently, is left over from the old days when the need for natural light and ventilation demanded a breakthrough to the upper deck for either a dome or clerestory. It is true that a very large, low-ceilinged room can be oppressive, but are there not a number of ways of overcoming this, without recourse to the immense amount of waste space that



30, *above, the* Saxon, 1899, *typical of the elaborate clerestories needed in earlier times for ventilation and light.* 31, *below it, the* Queen Mary, *with a clerestory 'hang-over,' now artificially lit, and not used for natural ventilation.*

double-height rooms entail? Or, if spatial excitement or impressiveness is wanted, why not really exploit the height with stairs, galleries, flyovers, etc.? Are so many large public rooms needed anyway; why not more, smaller rooms? Apart from other advantages, they are far easier for the decorators to handle successfully.

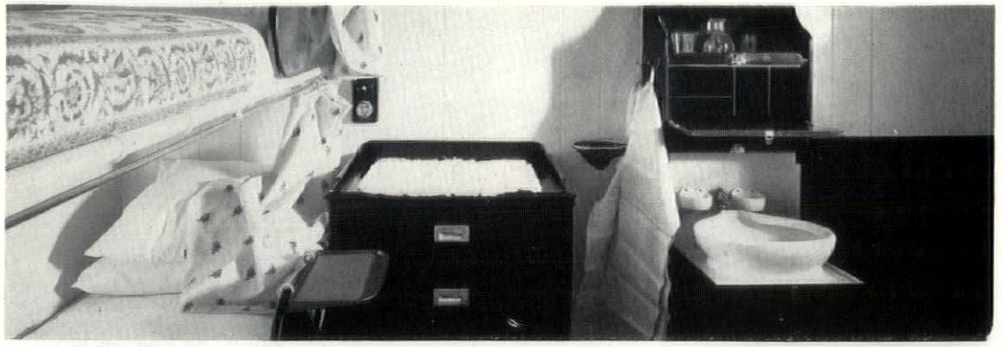
Again, one of the most unsatisfactory features of nearly all ships' cabins is the lumpish furniture which projects in the most unpleasant cubist compositions into the confined spaces—the effect often aggravated by the use of highly-polished veneers. Could not decorator and naval architect devise some method for building-in furniture, wash-basins, etc.? Would it not be possible, for instance, to plan cabins in pairs, with structural walls between every other cabin, the ones between comprising storage and plumbing walls?



32, *above, 'crib'd, cabin'd and confin'd,' a stateroom on the* Andes; *though the beds disappear into the wall, that would be only two lumps less, in a room seemingly all composed of them.* 33, *below it, a cabin on the* Orsova *with furniture, heater, basin—all projecting higgledy-piggledy. Is it beyond the ingenuity of designers and naval architects to build furniture in?*

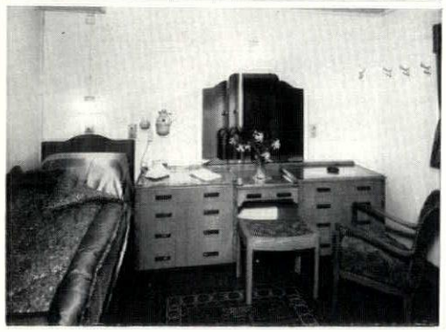
Then there is the whole question of the incorporation of services into the decorative theme—fire protection devices, air conditioning or ventilation—lighting, pipes and so on, in addition to all the lettering, symbols and mechanical indicators needed for safety, service and just getting about. Isolated examples can be found of the intelligent exploitation of such things to decorative ends (see 41) but generally, even if some thought has been given to the design of the object itself, it is usually left to fend for itself in the over-all picture, and

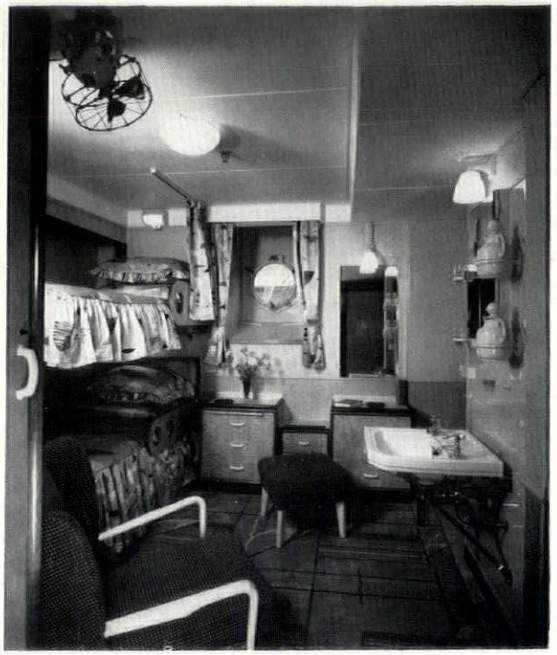
Balmoral Castle 1910: functional tradition in full vigour



34

dead hands and blind eyes in British post-war ships

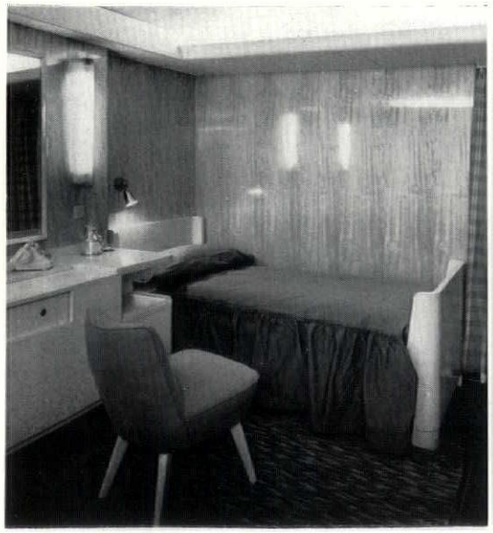


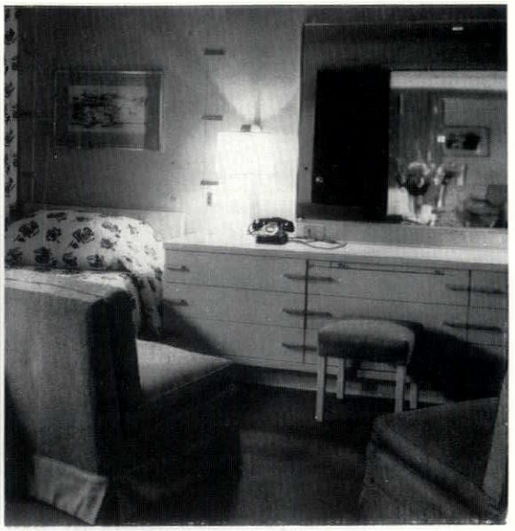


35

36, 37

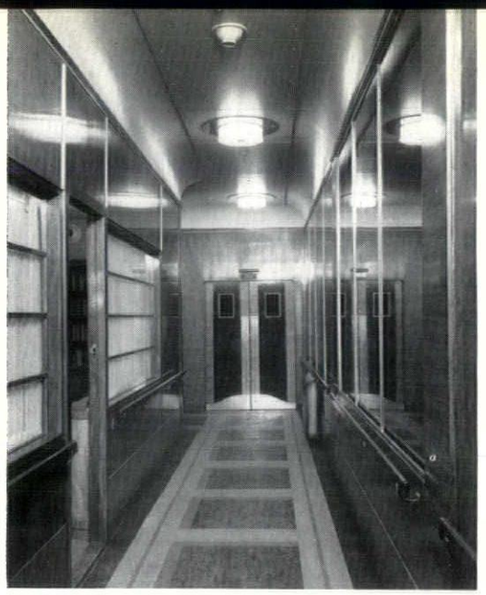
simple things simply done in Italian and U.S. ships

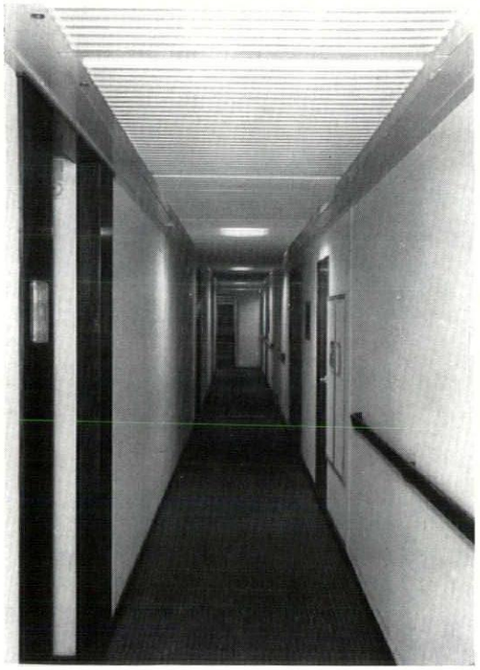




38, 39

34, *cabin in the* Balmoral Castle 1910, *with its removable bunkside table, ship's chest, disappearing basin, built-in sofa, it shows up the three examples that follow in a particularly depressing light.* 35, *cabin on the* Caronia 1949. 36, *cabin on the* Andes *and* 37, *on the* Saxonia—*a jumble of shapes, textures and patterns, resulting from an inability to visualize the problem in advance. Even if they were good of their kind, which they are not, the elements are unrelated and present a restless and incoherent picture.* 38, *cabin on the* Cristoforo Colombo, *and* 39, *on the* United States; *designs which do present a coherent picture; in each case the designer clearly has assurance and conviction.*





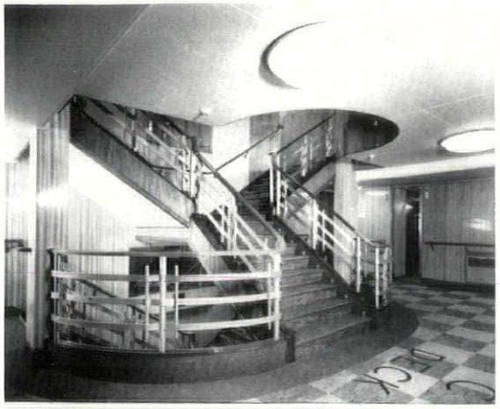
40, *above, corridor in the* Andes; *apart from the reflecting walls which confuse rather than enlarge the space, and the unnecessarily elaborate trim to the door, it is further complicated by projecting ceiling lights, ventilators and fire sprays.* 41, *below it, on the* Orsova, *shows an ingenious way of overcoming this: an open false ceiling of slatted-wood conceals all services and, since it is built in sections and hinged, provides easy access for repairs.*

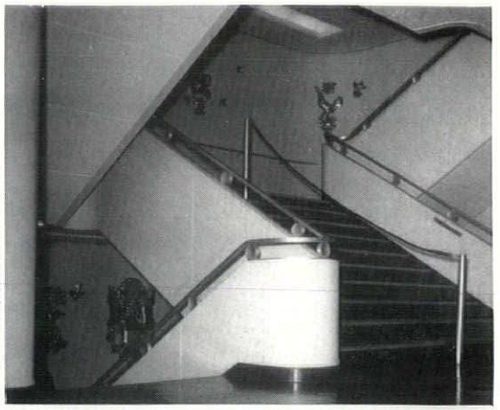
very disruptive it, and other things like or unlike it, can be to that picture.

It seems that there cannot be any real advance in the interior design of ships until these and all the fundamental planning problems are thrashed out between naval architect and designer in an atmosphere free of marine conservatism and designer's bigotry. The combination of an objective study of the subject and some hard, creative thinking by a first-rate artist might well put new life into the idea of sea transport now so fiercely competing with air.

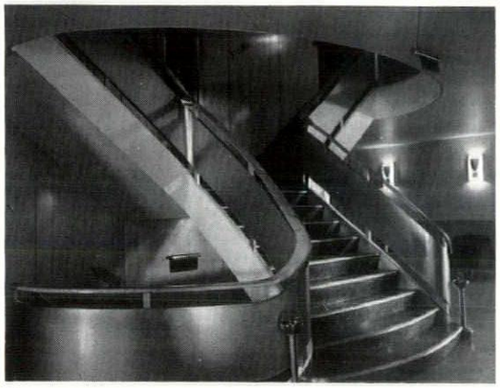
circulating

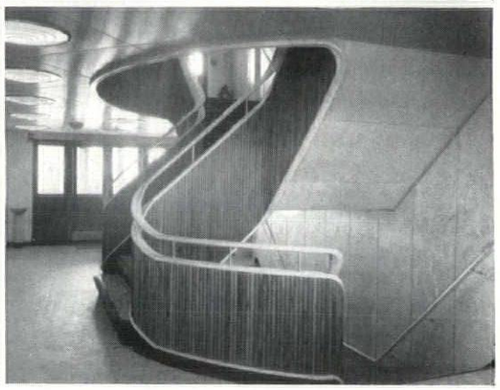
simplicity of outline is the key here as in all else





42, 43





44, 45

42, *the* Rhodesia Castle, 43, *the* United States, 44, *the* Conte Grandi *and* 45, *the* Kronprinsesse Ingrid, *a progression from the complex to the simple. The overlay of unnecessary pattern in the balustrade of* 42 *confuses the eye without adding distinction.* 43 *is better, but the handrail supports are affected.* 44 *is good, though the curves lack subtlety.* 45 *has all the virtues, utter simplicity, good line and pleasing texture.*

postscript

cutting from the Manchester Guardian, December 15, 1955

"The outward appearance of the new 21,637-ton vessel, the forty-seventh to be built by John Brown's and their predecessors for the Cunard Company, closely resembles that of her sisters. There will be the same gracefully curved stem, cruiser stern, and large single funnel. The inside will, however, be very different. Instead of contemporary patterns and effects, the designers are seeking "to re-create the past in terms of the present by using modern methods of construction to interpret some of the gems of historical interior design and decoration."

The inspiration for these schemes seems to have been the popularity of period style in some of the earlier liners. "No ship interiors have been more successful than the Aquitania's Carolean smoking-room or her Palladian lounge," the official brochure says. But it is emphasised that there will be no slavish reproductions of existing rooms and it is aimed to make the whole effect "refreshingly original." There will also be—it is one of the modifications ... said, exp... "d...

2 DESIGN REVIEW

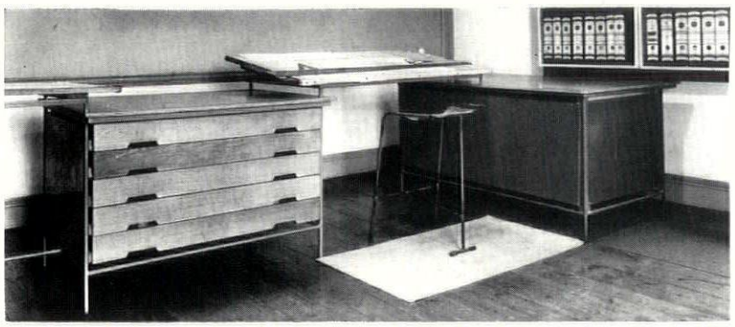
Drawing Office Furniture

Magpie Furniture—best known for its Ladder Unit in the British flat at Hälsingborg—has found a way of lowering the prohibitive cost of drawing office furniture. The plan chest, necessarily a strong item, is used to support the drafting unit.

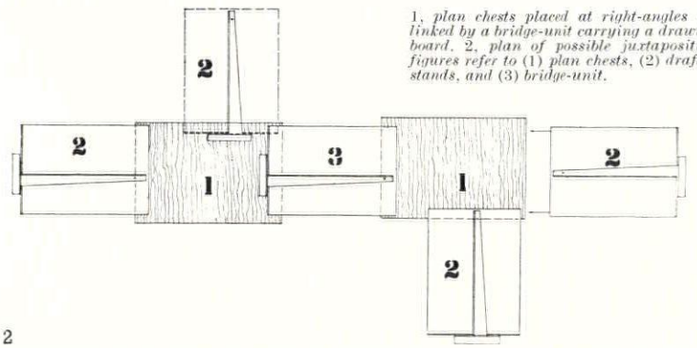
The range consists of three units. 1, the basic unit, is the plan chest, which is slotted to receive the drafting stand in any of four positions. 2, the drafting stand has two legs at one end and, at the other, two dowels to slot into the chest. A combination of units 1 and 2 provides drawing board support, reference table, and five drawers for plan storage. Unit 3 is a bridge that can span between two plan chests to support a drawing board.

This furniture has of course more positive virtues than its low cost. It has all the planning flexibility of a game of dominoes. The plan below illustrates one possible layout, and as an office expands more units can simply be added. It has been designed in such a way that appearance and construction are indistinguishable. The welded framework is steel tube enamelled grey. The welds are excellent. The plywood table-top is clear polished, and side and back panels are stove-enamelled red and white respectively. The oak-fronted drawers slide in oak runners. Brass screw feet are tapped to the legs of the units so that they can adjust to uneven floors.

The prices quoted here are for the double elephant sizes. Unit 1, £36 10s. Unit 2, £4 17s. 6d. Unit 3, £3 8s. They are obtainable from Magpie Furniture, 8, Onslow Road, Richmond, Surrey. D. R.



1

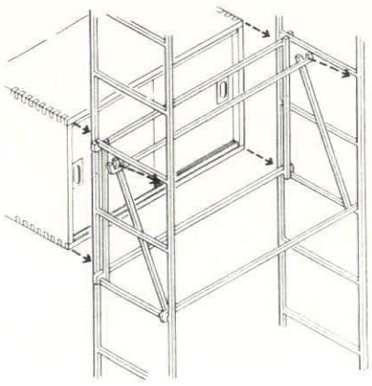


2

1, plan chests placed at right-angles and linked by a bridge-unit carrying a drawing-board. 2, plan of possible juxtaposition; figures refer to (1) plan chests, (2) drafting stands, and (3) bridge-unit.

Storage Units

Ever since the contemporary style took shape its adherents have found difficulty in finding ready-made shelves and cupboards to hold books and all the paraphernalia of a living room. Those determined to avoid unpleasing detail have had to choose between shelves knocked up at home and contemporary cabinet work of the highest quality. Simple labour-saving furniture was anomalously confined to the rich. Designs for unit production have been brought out from time to time. A pre-war example was Dr. Martin's unit furniture for Rowntrees of Scarborough. But the conditions have never existed for enough of such furniture to be produced to bring the price down to a popular level, and, fifteen years later, we are not much better off. But we may be soon. There are now several carefully designed ranges of storage units taking up a minimum floor space, and one of these has taken cost as its first consideration.



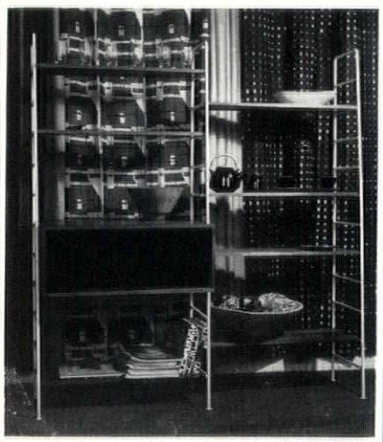
3, typical assembly of ladder units.

Ladder units, 3, are the result of carrying the analytical method of designing to its logical conclusion. The customer is offered the vertical, horizontal and stiffening components of the structure as separate items. From these he can build up the exact proportion of open shelving and cupboard space that he needs. The vertical components are metal ladders. Shelves can be clipped to the rungs of the ladders.

Primavera claim to have been the first to market a ladder unit. This one is designed by Nigel Walters, 4. The ladders are in light steel rods, stove-enamelled and excellently finished, tapering towards the top. The shelves in the example photographed are in mahogany, the sideboard doors in rosewood. Other woods of the customer's choice can be used. The shelves are fitted with metal clips which rest on the rungs of the ladder. When shelves and cupboards are in position two piano wires are stretched diagonally across the back of the structure.

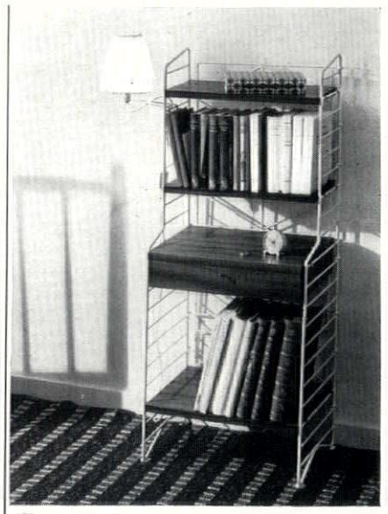
The designers of Magpie Furniture, Martyn Collins and James McKay Spence, have designed a ladder unit to the minimum cost, in square section welded steel, 5. The basic steel components are the ladders L1 and steel frames which interlock with the ladders to give the unit its rigidity. There are two frames, a vertical L2 and a horizontal with the same dimensions L3. The frames are 18 inches by 27 inches; the ladders 12 inches deep with rungs every 9 inches vertically. The framework supports wooden shelves, and two types of box vertical L4 and horizontal L5.

The Swedish firm String produces a range of ladder units mainly for hanging, but including some standing pieces. Peter Jones stocks a bookcase and a bedside unit, 6. The metal is coated in plastic, the shelves teak or birch. D.R.



4, Primavera ladder unit, designed by Nigel Walters.

5



6

5, Magpie minimum-cost unit, designers Martyn Collins and J. W. Spence; 6, String bedside unit, stocked at Peter Jones.

Prices are as follows:

	£ s. d.
LADDERS.	
Primavera	4 4 0
Magpie Furniture ...	3 0 0
Frames	1 15 0
SHELVES.	
Primavera	1 7 0
Magpie Furniture, ft. run	12 0
BOXES.	
Primavera ... from	12 0 0
Magpie Furniture L4	8 7 6
Frames ... L5	7 10 0

String, as a guide to pricing, a wall unit with two ladders and two shelves, in teak £2 12s. 6d., in birch £2 2s. 0d.

Italian Contemporary Furniture

The 1955 exhibition of Italian handicrafts in London aimed to show that in Italy no distinction of style exists between designs for handicraft and for industry. This is a confusing distinction for English people. The Italians regard as handicraft anything actually made by hand, as, for instance, a mass-produced chair in bent metal, as distinct from objects handled by machinery. Our distinction is between the self-employed craftsmen or small organization and the factory.

Italy has a tradition of fine iron-

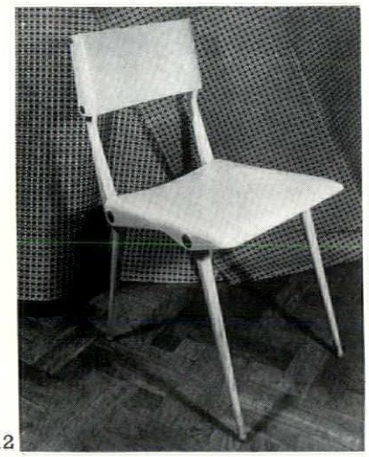
work. Appropriately the most original object was a wrought iron jar with a lid, designed by a student. Iron and steel rods figure largely in recent designs, but the idea of beating out objects for household adornment came as a surprise. The jar is shown, 7, with a vase in the same material.

Italy's elegant and sophisticated brasswork is known over here. Cesare Lacca's brass coffee ware combines an amazingly fine finish with a variety of elegant shapes. The large pot, 8, retails at about £4 11s. 0d.

The designer of the long brass dish, 9, has had a different idea about this material, keeping a sharp edge and sheet character. The price £1 14s. 11d.

Cianfanelli, Florence, has produced some extraordinarily light and cheap brass table ware, 10. The bowl and large plate sell each at about 5s. 9d., the small plate at 3s. 8d. The bowl and plates are photographed against a straw and cotton fabric, lighter than any of the excellent examples I have seen in this country. It could be used as hangings, but is normally sold for skirts. Designed by A. Botteri, Campoligure (Genoa) the material is 37 inches wide and approximately £1 15s. 0d. a yard.

The very agreeable wooden bowls by students, 11, were treated with an extremely synthetic looking polish.



12

Glossy, but opaque, this gave the wood a curiously metallic quality, wickedly at variance with handicraft tradition.

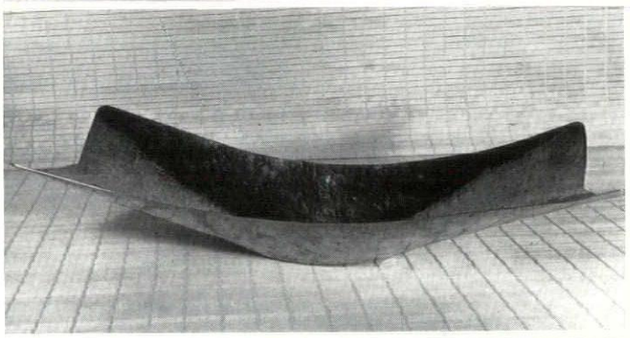
Amadeo Cassina's chair, 12, in veneered ply and solid cherry is approximately £6 plus 20 per cent duty and 25 per cent purchase tax.

13

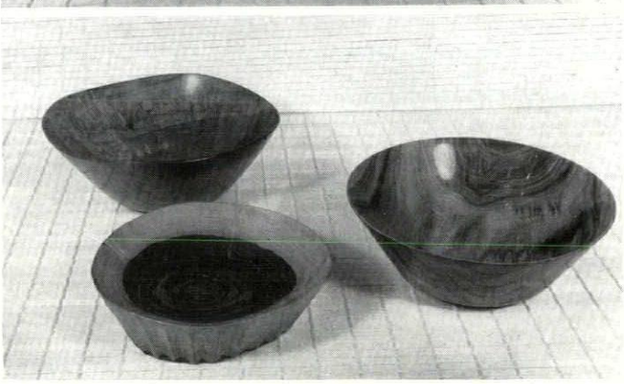
Gervasoni Udine's chair, 13, in rod and cane is another example of a type recently discussed here. The subtlety that designer Maurizio Tempestini has brought to the design does not produce as happy an effect in this material as a studied simplicity. Price £4 approximately.

Prices given are retail, and exclude tax or duty, unless stated. D.R.

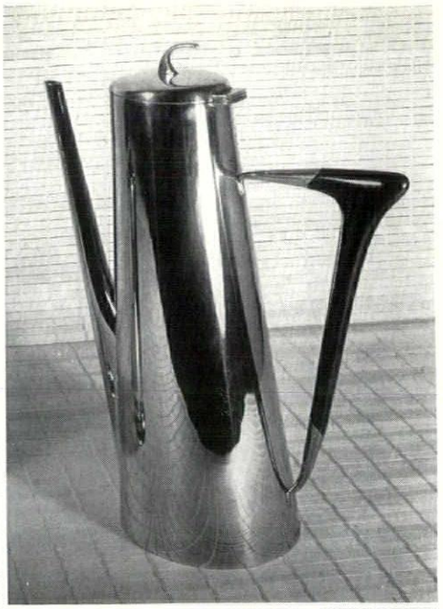
7



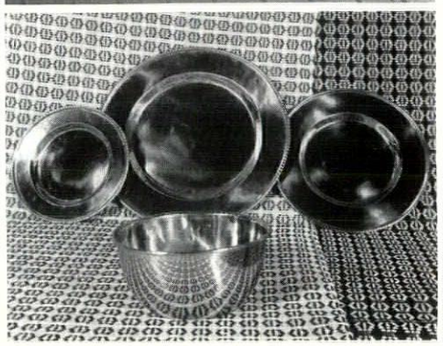
9



11



8



10

7, wrought iron jar and vase; 8, large brass coffee pot by Cesare Lacca; 9, brass dish; 10, brass table ware from Cianfanelli of Florence; 11, wooden bowls by students. The straw and cotton fabric against which most of the objects are photographed is by Botteri of Campoligure.

3 TECHNIQUES

PRECAST PRESTRESSED FLOORS

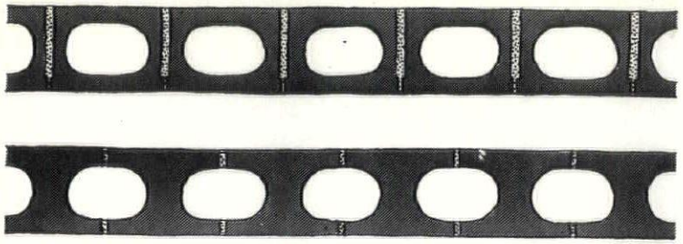
by Robert Maguire

Architects seem always to be in search of systems of construction which will give them complete flexibility in design, have a positive structural expressiveness in accord with modern aesthetic trends, comply with the byelaws, and at the same time be easy and quick to erect with a minimum of scaffolding, shuttering, and sloppy wet work. The words 'precast' and 'prestressed' have both in their time raised hopes in these directions. Precast and prestressed flooring systems are at present only at the beginning of their development, and in this article Robert Maguire describes the advantages of combining the two techniques and reviews the systems so far put into production.

A large range of precast flooring systems in ordinary reinforced concrete has been available for many years, and in part has answered the need for quickly-erected high grade floors and roofs. On the site the main advantage of using precast units is the elimination of shuttering, an item whose cost is quite out of proportion to its temporary nature, and which obstructs the work of other trades. Also, factory production brings with it the advantages of lower cost and greater control over quality of materials and method. The erection of precast units is much quicker than that of *in situ* slabs and hollow pot floors, but imposes some restrictions on their design, for unless elaborate lifting plant is to be used the units must be light enough to be man-handled. The resulting slender units require extra reinforcement solely to take care of handling stresses.

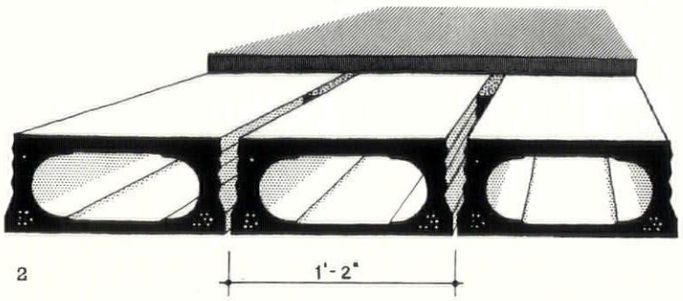
The introduction of prestressing into this field has so far been very successful. In fact it may well be here that prestressing will find its most extensive application, for the 'long line' method of stressing, which is suitable only for the quantity production of precast units, is also the most economical. Looking through the impressive if short list of the attributes of prestressed members it

continued from page 142]



1

Diagrammatic cross-sections of prestressed beam units. The concrete in each unit is disposed with its greater mass in the top and bottom flanges; whether the units are of box- or I-section, the result is a hollow floor of great strength for its weight.



2

Bison Prestressed Units (Concrete Ltd.). Hollow box-section units, made to the same standard range of thicknesses as Bison units in ordinary reinforced concrete. The screed is optional. Services may pass vertically through the floor in the centre of each unit, since the prestressing wires are grouped at the sides. Fire resistance test time: 1 hour 28 minutes.

is easy to see why the impression one gets from manufacturers' publicity is of a sort of structural panacea.

The most outstanding effect is, of course, the saving in dead weight which follows from using the properties of modern high grade concrete and steel to the full, as only prestressing can. For short-span work this may not always be an advantage, since loss of weight greatly reduces sound resistance, but it does make possible medium-span beamless floors of shallow depth in situations where formerly a system of secondary beams and short-span floors would have been necessary.

The compressive stress induced in the concrete by the prestressing force resists or annuls any tensile stress produced by live loading. One result of this is that no cracking takes place under normal loading conditions, making the application of interior finishes such as plaster less hazardous. After any exceptional loading, when tensile stresses may be induced and the concrete may crack, the recovery of the member to its original form and condition is complete.

The production of units by the 'long line' method provides an automatic check on stresses in the steel, since greater stresses are produced in the high tensile wires during manufacture than are ever likely to be produced by live load.

Handling stresses are no great problem in a prestressed member, because the initial compressive stress is generally sufficient to counteract any tensile stresses produced by the comparatively small dead weight. In fact, units can be made which, designed to carry only their own dead weight and a small nominal live load, are of an almost ridiculous slenderness.

It is this last possibility which has given rise to a most significant change in concreting methods. For over half the concrete necessary for the full structural efficiency of a precast floor can now be dispensed with during transportation and erection, and then added *in situ* using the units as permanent shuttering. The slender units will support the weight of the structural topping while this is wet; the two together then form the complete floor.

prestressed beam units with non-structural screed

The most straightforward application of prestressing to precast floors is simply to substitute prestressing wires for the normal mild steel reinforcement. This enables the same size of unit to span longer distances, or alternatively, to carry larger live loads. Prestressed units of this sort are used in the same way as their ordinary reinforced concrete predecessors; simply laid side by side and covered with a non-structural screed.

Each unit is designed to carry the total loading falling upon it, without relying upon distribution to adjacent units, and so needs no propping before screeding or grouting-up. However, owing to the eccentric placing of the prestressing wires, which cannot be avoided, there is always the tendency for the units to 'hog,' i.e., to assume a permanent deflection upwards during stressing. This gives a slightly curved soffit, although the curvature of the upper surface may be lost in the thickness of the screed.

Beam units may be of two general types; hollow box sections and I-sections. When placed and grouted up, these both produce the same result—a hollow floor with top and bottom membranes and connecting webs, 1.

Hollow box beams. Several makers of the familiar reinforced concrete hollow box beam units are now also producing them prestressed, 2, 3 and 4. Some flexibility in design is allowed by the fact that both types are made to the same standard range of thicknesses, so that short- and medium-span floors on the same job can economically be made to have the same thickness.

I-beams. I-beams have the advantage that, as well as forming a complete floor if used by themselves, they may also be spaced apart by hollow pots resting on the lower flange. With the possibility of these two arrangements, the same unit will do duty for a wide range of spans and loadings, 5, 6 and 7.

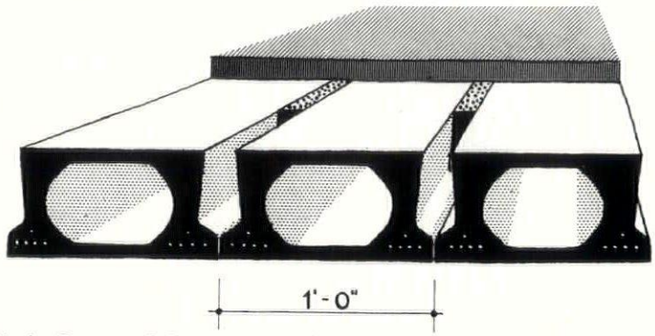
maximum spans

2 Thickness.	30 lb./sq. ft. live load.	200 lb./sq. ft. live load.
4¼″	18′ 0″	11′ 0″
5¼″	22′ 0″	12′ 0″
6¼″	25′ 0″	14′ 0″
7¼″	29′ 0″	17′ 0″
8¼″	33′ 0″	20′ 0″

3 Thickness.	15 lb./sq. ft. live load.	100 lb./sq. ft. live load.
6″	23′ 0″	18′ 0″
6½″	25′ 0″	20′ 0″
7″	27′ 0″	21′ 0″
8″	30′ 0″	24′ 0″

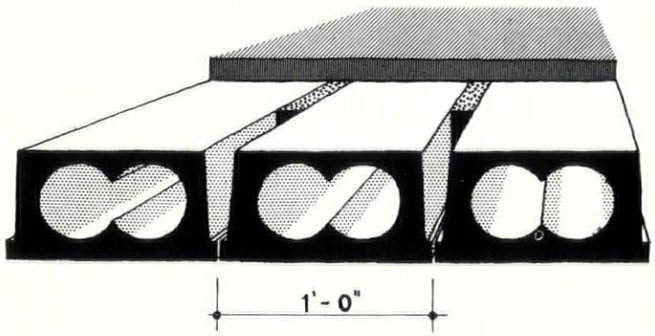
4 Thickness.	30 lb./sq. ft. live load.	200 lb./sq. ft. live load.
5″	18′ 9″	11′ 0″
6″	22′ 6″	13′ 6″
7″	26′ 3″	15′ 6″

5, 6, 7 Type.	30 lb./sq. ft. live load.	200 lb./sq. ft. live load.
Single beams, Wide blocks	20′ 6″	11′ 11″
Single beams, narrow blocks	23′ 8″	13′ 9″
Double beams wide blocks	25′ 5″	15′ 0″
Single beams, narrow blocks	—	16′ 9″
Beams only	—	23′ 0″



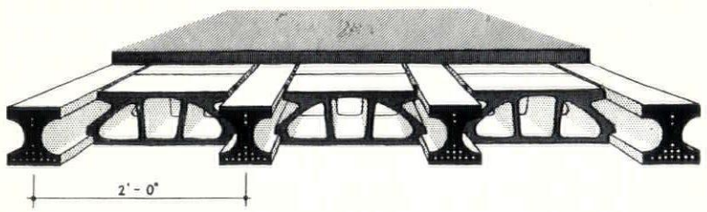
3

Girling's Prestressed Beams (Girling's Ferro-concrete Co. Ltd.). Hollow box-section units. The non-structural screed is optional.

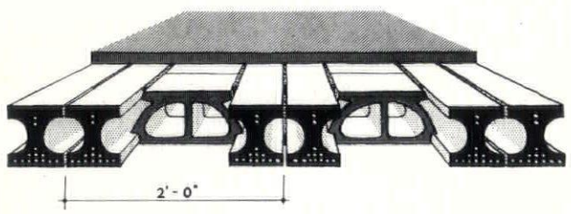


4

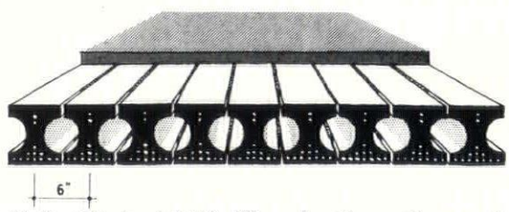
Raphcon Pre-tensioned Units (Raphcon Ltd.). Hollow box-section units, also made in ordinary reinforced concrete. Services may pass vertically through the 7 inch wide hollow centre of each unit.



5

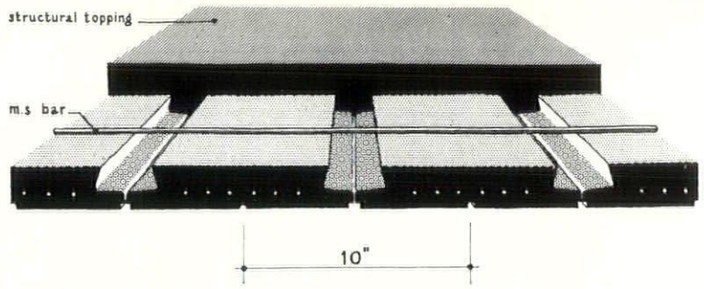


6



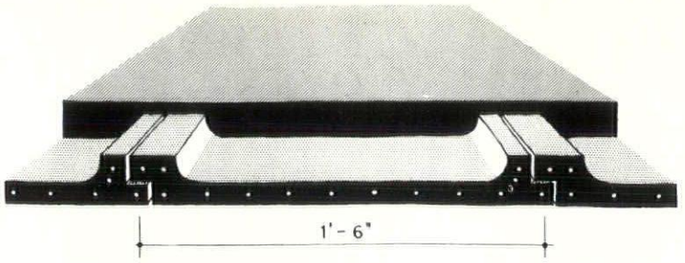
7

Pierhead X7 Units (Pierhead Ltd.). These I-section units are of a constant depth of 7 inch, and variations for different spans and loadings are made by spacing the beams apart with clinker hollow blocks. The screed is optional. Single beams with wide blocks, 5, give the lightest floor; the narrower block shown in 6 can also be used with single beams. Double beams in conjunction with either wide or narrow blocks, 6, increase the strength further, while for very heavy loads the beams may be placed side by side, 7. Fire resistance test time: over 2 hours.

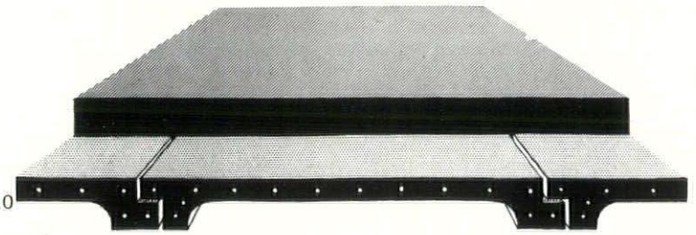


8

The Bison Plank Floor (Concrete Ltd.). A combination of in situ *and precast methods which combines well with any type of primary structure. When the planks are placed side by side a dovetail is formed which ensures a good bond for the structural topping concrete; the tops of the units are also roughened. Transverse mild steel rods distribute live loads between the units. Tests have shown that 70 per cent of the load is distributed in this way. The planks are made in two thicknesses (2 inch and 2½ inch) and by varying the thickness of the topping, floors of 3 inch, 4 inch, 5 inch can be constructed. Special trimming planks are also made.*

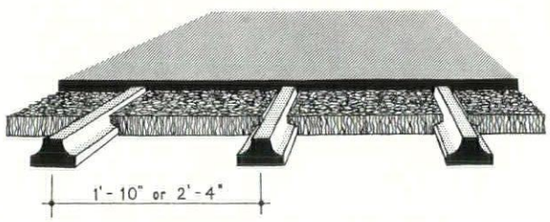


9



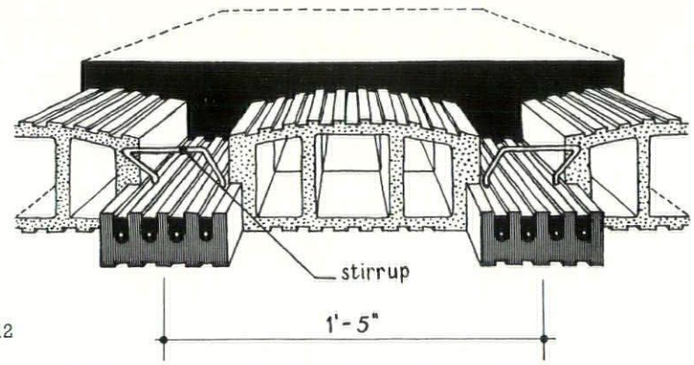
10

Milbank Slab Decking. (Milbank Floors Ltd.). Units with a shallow troughing and interlocking edges, for use with an in situ *concrete topping. The units can be used with either face uppermost, to give a level soffit,* 9, *or a ribbed soffit,* 10. *The ribbed slab is slightly stronger. A 3 inch thick slab will carry a distributed load of 84 lb./sq. ft. over a span of 10 feet.*



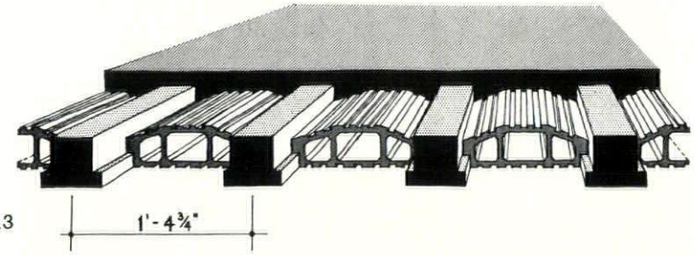
11

Pierhead C5 Units (Pierhead Ltd.). This lightweight system uses inverted T-section units spaced apart by wood wool slabs. The concrete topping completes the structure, which has an overall thickness of 5 inch. As in the Pierhead X7 system, 5, 6 *and* 7, *different span and load conditions are dealt with by adjusting the spacing of the units or by doubling them.*



12

St. Paul's Cray Floor Units (Concrete Development Co. Ltd.). Another system in which inverted T-section units are used. Allowance for various load and span conditions is made by changing the thickness of the structural topping. The system may be used with or without propping the units during erection; if props are used, longer spans may be obtained.



13

Stahlton Floors (Costain Concrete Co. Ltd.). The plank units used in this system are formed of unit lengths of clay tile placed end to end. Stressing wires run in grooves in the tiles and are grouted up; continuity with the topping concrete is ensured by stirrups. Various types of spacing blocks may be used, and the planks may have 3, 4 *or* 6 *stressing wires, giving a great variety of span/load conditions. The planks are propped at* 5 *feet centres during erection.*

[continued on page 146

prestressed units for use with a structural topping

This type of system is a decided advance on previous arrangements. Although several worked-out systems are now on the market, most of the manufacturers are still doing extensive development work in this field, with the result that modifications and improvements are continually being made.

At the present time their use is somewhat restricted, since the high quality of workmanship and of the concrete used for the topping generally requires the use of skilled labour and special mixing plant which is beyond the reach of the small contractor. One firm at least is carrying out exhaustive tests on the effects of poorer workmanship, with the aim of developing a more or less foolproof system.

Apart from the obvious advantage of ease of handling and erection which results from the use of lighter units, these systems allow a high degree of flexibility in design. This is, of course, mainly due to the nature of the *in situ* concrete; by combining precast and *in situ* methods one gets, as it were, the best of two worlds.

Most of the systems make use of mild steel reinforcement laid in the topping to distribute stresses between adjacent units. As an extension of this principle, continuity reinforcement set in the topping can be used to make the construction continuous over supporting beams, or to support cantilevered balconies, eaves, and other such features.

The various systems at present on the market differ considerably from one another and it is difficult to classify them; but they aim at an end-product which is either a simple slab (with the prestressing wires evenly distributed over the lower part of the section) or a ribbed slab (with the wires grouped together at the bottom of the ribs).

Prestressed simple slabs. These are achieved by using a flat plank-like unit to form the soffit, with a topping of even thickness in which transverse mild steel bars are placed to distribute stresses. Both the method and the result have the advantage of extreme simplicity; there is only one type of unit to handle and when this is placed in position a flat deck is formed on which workmen can operate without the use of scaffold boards. The construction being homogeneous, the risk of pattern-staining on the underside is reduced to a minimum.

In one such system, 8, the manufacturers have taken great care to ensure that an effective bond is made between the units and the topping. To this end the sides of the units have been dovetailed and the upper surfaces roughened. Tests have shown that each of these provisions is sufficient in itself, so that a wide margin of safety is allowed.

Another system, 9 and 10, employs a slightly troughed unit with rebated interlocking edges. This can be used with either face uppermost, so that slabs with either level or ribbed soffits can be produced, the latter being rather stronger for their weight but forfeiting the advantage of a cheap flat ceiling.

Prestressed ribbed slabs. Ribbed slabs are conveniently formed by using hollow pots or wood wool as permanent shuttering between the ribs, in much the same way as in conventional hollow pot floors. The important difference in erection procedure, however, is that the pots or wood wool are here supported on the prestressed members which form the greater part of the ribs, so that no shuttering is needed. For the longer spans a little propping may be required with some systems, usually only at mid-span. The concrete top-

maximum spans

(1 : 2 : 4 *topping mix*)

8 Total thickness	15 lb./sq. ft. live load.	112 lb./sq. ft. live load.
3″	13′ 0″	—
4″	15′ 0″	10′ 0″
5″	18′ 0″	12′ 0″

Note: By using a 1 : 1½ : 3 *topping mix, greater loadings and spans can be obtained, e.g.,* 224 *lb./sq. ft. over* 12′ 0″ *or* 60 *lb./sq. ft. over* 18′ 0″ *for a* 5″ *thick slab.*

11 Type.	30 lb./sq. ft. live load.	100 lb./sq. ft. live load.
Single beams, wide spacing	12′ 6″	10′ 0″
Single beams, narrow spacing	13′ 9″	11′ 0″
Double beams wide spacing	—	12′ 3″
Double beams narrow spacing	—	13′ 0″

12 Total thickness.	30 lb./sq. ft. live load.	200 lb./sq. ft. live load.
5¾″	15′ 0″	8′ 6″
6¾″	17′ 0″	11′ 9″
7¾″	21′ 0″	14′ 0″

13 Total thickness.	30 lb./sq. ft. live load.	200 lb./sq. ft. live load.
5″	14′ 9″	6′ 3″
6″	17′ 6″	7′ 0″
7″	20′ 0″	12′ 3″
8″	23′ 6″	14′ 0″
9″	26′ 9″	15′ 7″
10″	28′ 11″	17′ 3″
11″	30′ 8″	19′ 4″
12″	32′ 4″	22′ 0″

THE MASTIC ASPHALTE ROOF

On this famous public building

THE ROYAL SCOTTISH ACADEMY

Photograph by courtesy of H.M. Ministry of Works and The Royal Scottish Academy.

CRAFTSMAN-LAID BY NEUCHATEL

The roof of this famous building in Edinburgh was laid by the Neuchatel Asphalte Co. Ltd., with Natural Rock Asphalte Mastic to B.S.S. 1162.

Technical consultation freely invited.

SPECIALISTS FOR 80 YEARS IN ASPHALTE for Roofing, Tanking, Flooring and Roads. Also NACOFELT ROOFING and Approved Laying Contractors for ACCOTILE FLOORING.

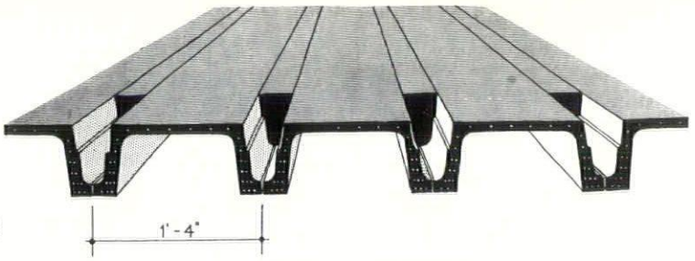
Sole Concessionaires of all Natural Rock Asphalte mined in The Val-de-Travers, Neuchatel, Switzerland.

THE NEUCHATEL ASPHALTE COMPANY LTD.

58, Victoria Street, London, S.W.1 Telephone No. of Contracting Depts. RENown 1321

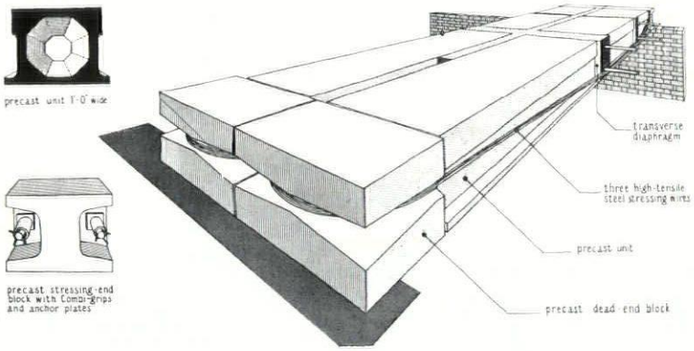
Branches | BELFAST • BIRMINGHAM • CARDIFF • EDINBURGH • FROME • GLASGOW • LEEDS MANCHESTER • NEWCASTLE • OFFHAM (KENT) • PLYMOUTH • PORTSMOUTH

NEUCHATEL



15

Milbank Channel Units (Milbank Floors Ltd.). These units vary in depth from 4 inch to 8 inch. They are placed side by side and the cavity made by the sides of adjacent units is filled with concrete, forming a series of linked T-beams, 14. For longer spans or heavier loads, a structural topping may be used, and the addition of mild steel reinforcement in the bottom of the cavities gives even greater strength. (A floor of this type, with a topping of 1½ inch added to give an overall depth of 7½ inch, has been tested to 405 lb./sq. ft. over a clear span of 18 feet.)



16

Raphcon Post-tensioned Floor. (Raphcon Ltd.). Used for longer spans, this system makes use of post-tensioning. The stressing cables pass from the stressing-end block, under the reinforcing bars of the transverse diaphragms, round the dead-end block, and back again on the other side of the units. The cables are grouted up after stressing, which is carried out by a small hand jack.

maximum spans

14, 15 Thickness.	30 lb./sq. ft. live load.	**16** Thickness.	30 lb./sq. ft. live load.	200 lb./sq. ft. live load.
4"	15' 0"	6¼"	23' 3"	14' 3"
5"	19' 0"	7¼"	26' 0"	15' 9"
6"	24' 0"	8¾"	28' 0"	16' 6"
7"	30' 0"	10"	29' 0"	18' 3"
8"	35' 0"			

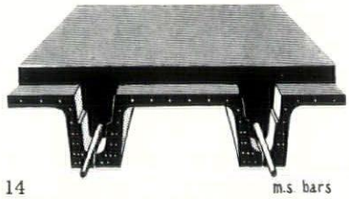
ping completes the structure, filling up the remainder of the ribs and linking them to form a continuous ribbed slab.

The prestressed unit takes the form of an inverted T-section in two of the systems now available, 11 and 12. In another, 13, it consists of a plank, composed of unit lengths of extruded clay tile with parallel grooves in the top placed end to end to the required length. A high tensile steel wire is stretched along each groove and grouted up, and stirrups are provided at intervals to reinforce the bond between plank and topping.

One firm has introduced a ribbed slab system using channel-shaped units, 14 and 15. These can be used in several ways. For lightly loaded floors they are laid side by side and only the rib filled with topping concrete. For heavier loads or longer spans the topping can be laid over the upper surface as well to increase the overall depth, and if even greater strength is needed mild steel bars can be laid in the bottom of the ribs.

post-tensioning

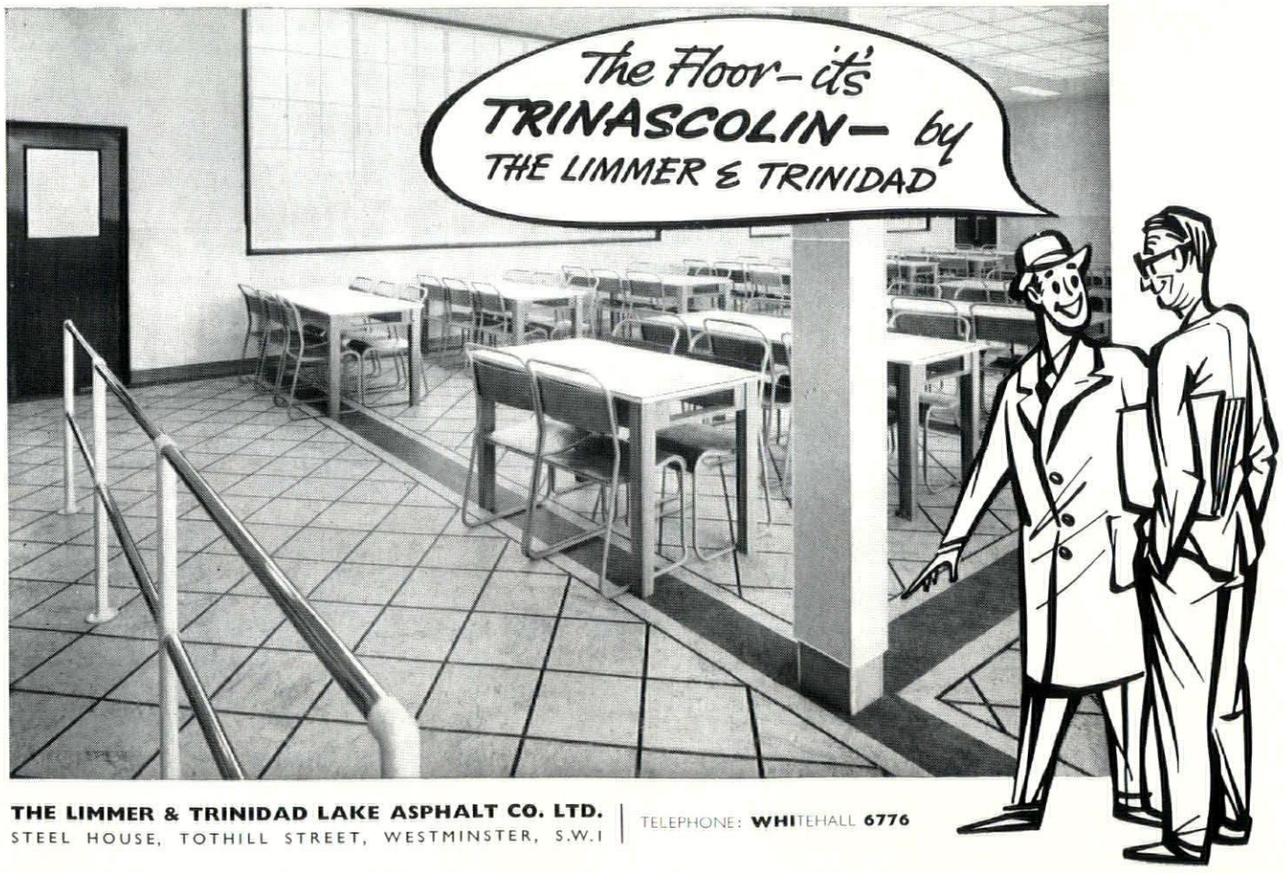
All the systems discussed so far make use of pre-tensioned units, i.e., units which are prestressed during manufacture. Many experimental



14

floor structures have been built in which precast units in ordinary reinforced concrete are erected in position and then prestressed together to form a continuous structure, the process known as post-tensioning. One such system has now reached a stage of development where it is suitable for general application and has been put into quantity production, 16. It consists of short box beam units arranged so that three units placed end to end form a complete span. Transverse diaphragms formed *in situ* separate the ends of the units. The prestressing force is applied by jacks to high tensile steel cables which run between the units longitudinally and are then grouted up. Strips of shuttering supported on props are necessary under the transverse diaphragms and these also support the precast units before the prestress is applied.

[Trade Notes and Contractors on page 143



THE LIMMER & TRINIDAD LAKE ASPHALT CO. LTD.
STEEL HOUSE, TOTHILL STREET, WESTMINSTER, S.W.1 | TELEPHONE: **WHI**TEHALL **6776**

"Modern Boardrooms—Modern Style"

Dignity combines with originality of design in the boardroom of John Laing and Son Limited, recently furnished by Heal's Contracts Ltd., in collaboration with the architects Messrs. Adams, Holden and Pearson, F/FRIBA.

The panelling and table-top are in Queensland maple; the table-frame and blue hide-upholstered chairs are of dark mahogany; and the door is covered with yellow leather. Rust carpeting, yellow curtains, and a light-fitting, specially designed in yellow and white, complete the setting.

If you would like to see more of Heal's recent work for boardrooms and offices, our illustrated booklet *Furniture for Special Needs* is available to architects.

HEAL'S CONTRACTS LTD

196 TOTTENHAM COURT ROAD, LONDON, W.1. Telephone: MUSeum 1666.

4 THE INDUSTRY

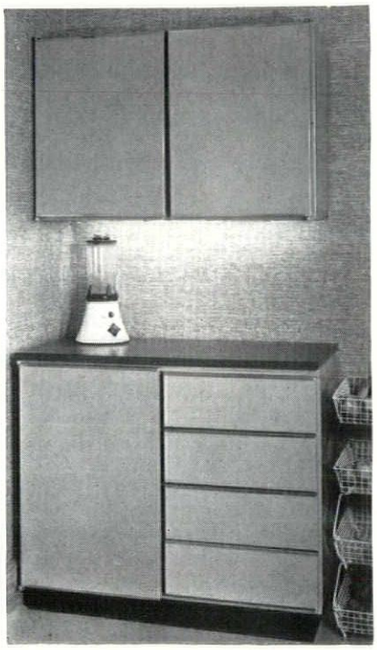
Durlon Waterproof Cloth

100 per cent nylon yarn is the basis of Durlon cloth, one of the more recent imports from Denmark. The cloth is specially suited to upholstery and is being used at the moment by coach builders and some London hotels. In order to resist dirt and dust the material is treated to remove static electricity and subjected to a silicone application to make it water repellent. The resultant cloth can be easily cleaned with a damp sponge. Durlon is made by Dansk Silkeindustrie, Uplandsgade 54, Copenhagen, and is imported to this country through Dr. G. A. Rohan, 3a, Lovelace Road, Surbiton, Surrey (Tel.: Elmbridge 9880). The material is supplied in 36-inch and 55-inch widths at a maximum price of 25s. 9d. a yard. Due to import difficulties the minimum quantity which can be ordered is 200 yards of any one colour.

The Storemaster Cabinet

Metal kitchen cabinets, however well made, have always been very much a metal version of a wood prototype, and it was not until the new Storemaster cabinets, designed by Clive Entwistle, appeared that we have had what seems to be a perfect synthesis of industrial technique and design. Two points in their manufacture make them of great technical interest: the metal sheets of which they are made are formed by an electro process which deposits zinc on cold steel, giving better corrosion resistance than the more usual hot-rolled galvanized sheet; and the processed sheets are stressed over the frame, saving time and giving much greater strength. The cabinets are designed to the 4 inch module, base units being 36 inches high, 20 inches deep, and 20 inches, 40 inches and 60 inches in width; wall units are 28 inches high, 12 inches deep and 20 inches wide. Touch latches are used instead of handles and work throughout on plastic runners. The 40 inch units shown in the photograph are available through the normal retail channels or direct from the makers. The base unit costs £28, the wall unit £12.

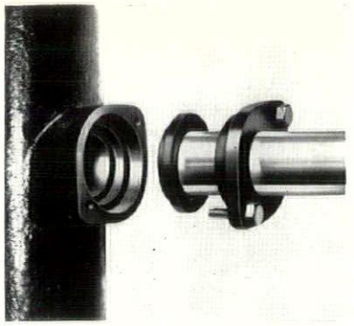
Engil Development Co. Ltd., 4, Belgrave Square, London, S.W.1.



Right, the separate base and wall units of the Storemaster Cabinet.

A Screwed Waste Connector

One of the most interesting innovations in plumbing is a screwed waste pipe connector which was widely publicized at the recent Building Exhibition. The joint is used for connecting branch wastes to the cast-iron stacks of a single-stack plumbing scheme, and is made by Federated Foundries Ltd. The main stack has a cast inlet and the copper waste is housed with a "neoprene" synthetic rubber washer and a cast-iron collar with two bolts. Such an arrangement saves much time in fixing and the plumber's only concern is the ordering of the cast-iron stack. To assist him Federated Foundries Ltd. are introducing standard multi-branch fittings to cover most design requirements, but purpose-made pipes are available with reasonable delivery



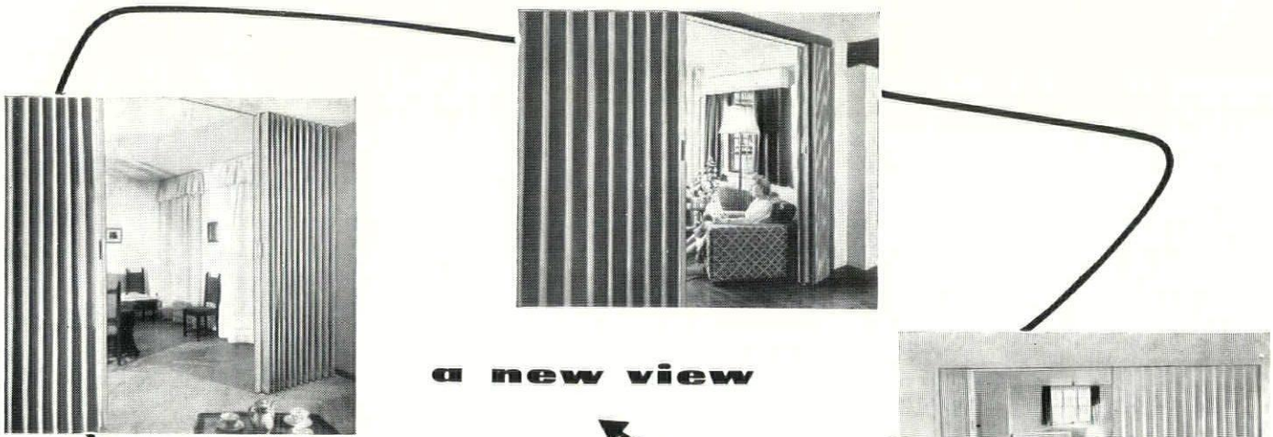
dates. The joint has been tested to pressures far in excess of BS requirements and was used in the LCC's Picton Street Scheme.

Federated Foundries Ltd., 75, Hawthorn Street, Glasgow, N.2.

CONTRACTORS etc

Seed Laboratories at Witham, Essex. *Architects:* Chamberlin, Powell & Bon. *Quantity surveyors:* Davis, Belfield and Everest. *General contractors:* Helical Bar and Engineering Co.; Charles S. Foster & Sons. *Sub-contractors: excavation—foundations, reinforced concrete:* Helical Bar & Engineering Co. *Asphalte:* Limmer & Trinidad Lake Asphalte Co. *Glazed bricks:* Leeds Fireclay Co. *Structural steel:* Daco Structures Ltd. *Slate cills:* Bow Slate & Enamel Co. *Glazing contractors:* Brown & Wicks, Romford; 'Calorex' Pilkingtons. *Patent flooring:* Runny-

[continued on page 150



of the space problem

One room transformed into two, at the touch of a finger—simply by opening out the Modernfold wall. In the same way, Modernfold doors save valuable floor space—because they do not swing, they fold. Covered with easy-to-clean plastic material in a range of attractive colours, Modernfold walls and doors are ideal wherever space is at a premium.

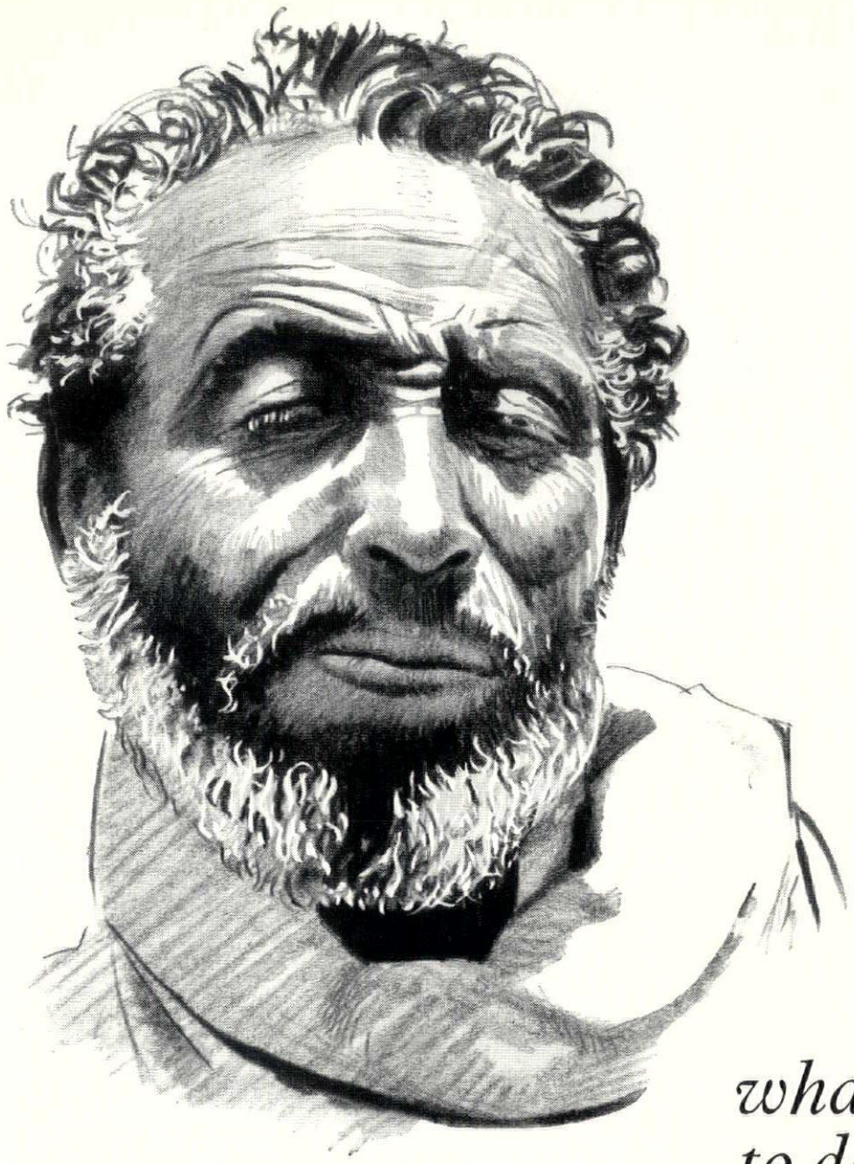
Write now for full details.

make more room with **modern fold** walls and doors

HOME FITTINGS (Great Britain) LIMITED

ONE OF THE BROCKHOUSE COMPANIES

DEPT. A.R./1, TUMBLE, LLANELLY, CARMARTHENSHIRE *Telephone: Tumble 313/4*



Abyssinian tribesman—an illustration from the story of the Lake Tana expedition, "Into the Blue" (published by Collins).

what can he have to do with PAINT?

Just this. He has encountered one of the most rigorous tests a paint has ever had — an ordeal by travel on the *Lake Tana expedition. Manderlac enamel protected the expedition car on the four-month journey to the source of the Blue Nile. 12,000 miles of scorching sun, salt-laden humidity, torrential monsoon rains and the paint was as good as new. Mander's quality has NO superior.

MANDER'S *have the answer*

Mander's Architectural Advisory Service will be glad to supply details, specifications and colour cards of their complete range. *Send for the interesting leaflet on the expedition.

MANDER BROTHERS LTD., WOLVERHAMPTON

continued from page 148]

mede Rubber Tiles. *Waterproofing materials:* Secomastic Glazing Compound. *Gas fixtures:* Sugg 'Sapphire' Balance Flue Heaters; Ascot Hot Water Heaters. *Gasfittings, plumbing:* Mann & Partners; Newbury Park. *Gas-fired seed drying floor:* G. F. Rider (Process Plant) Ltd. *Electric wiring, electric light fittings, electric heating, bells:* John Hearson & Co. *Steel ventilators:* Morfax Ltd. *Sanitary fittings, door furniture:* Rownson Drew & Clydesdale Ltd. *Casements:* Fosters (Woodworkers) Ltd. *Window furniture:* Stedall & Co.; Alfred G. Roberts Ltd.; Nicholls & Clarke Ltd. *Telephones:* Post Office Telephones, Chelmsford. *Folding gates:* Messrs. Haskins. *Site fencing and gates:* Peerless Fence & Products Ltd. *Iron staircases:* S. W. Farmer & Sons. *Sunblinds:* Venetian Vogue Ltd. *Plaster:* Albert Willett & Sons. *Metalwork:* Morfax Ltd. *Joinery, shop fittings, office fittings:* Fosters (Woodworkers) Ltd. *Pea processing machine:* Bryan Corcoran Ltd. *Seed processing machine:* Robert Boby Ltd. *Cloakroom fittings:* W. M. Froy & Sons (suppliers). *Lifts:* London Lift Co. *Hoists:* Herbert Morris Ltd. *Main:* Witham Urban District Council. *Signs:* Charles S. Foster & Sons.

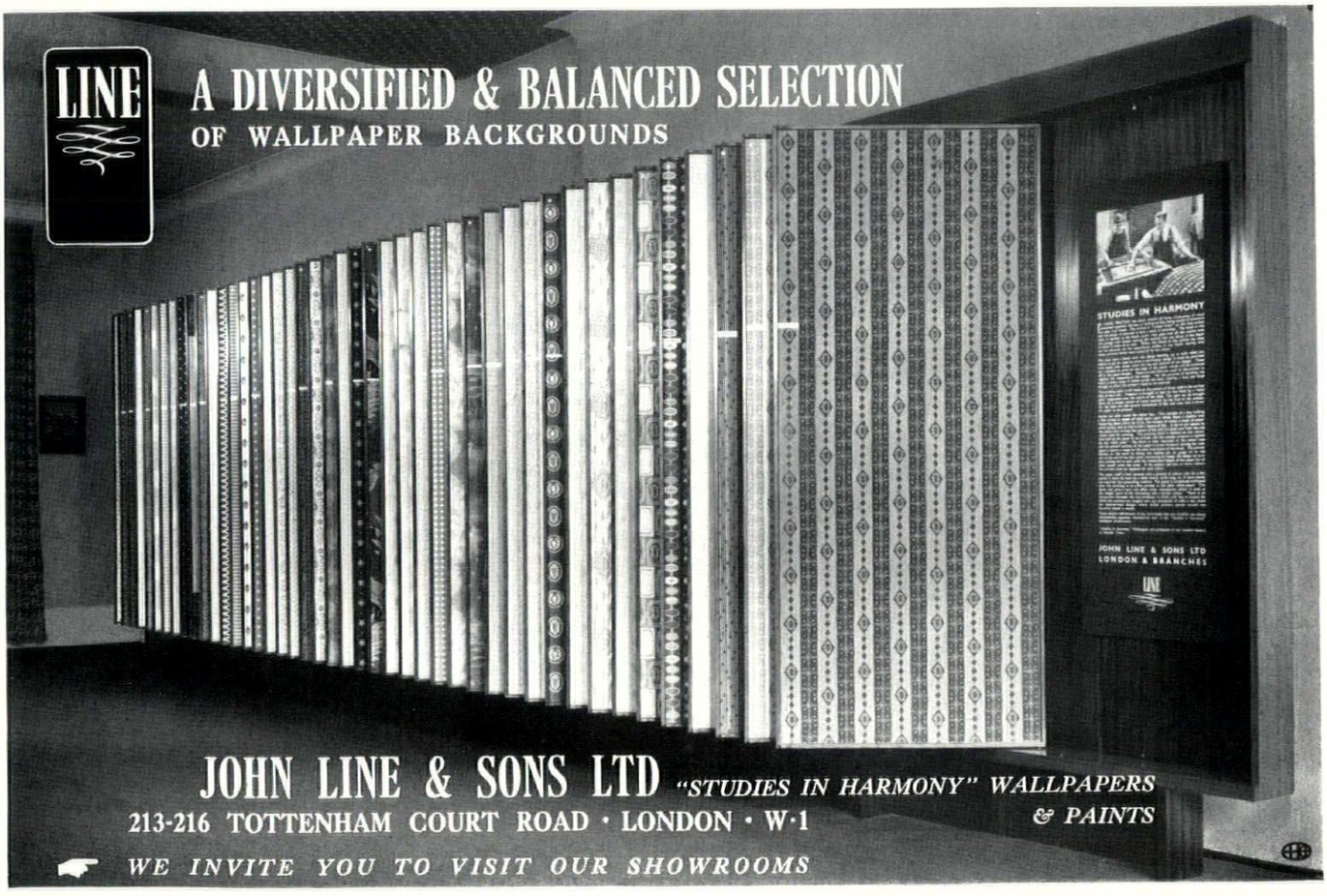
University Buildings at Canberra. *Architect:* Professor Brian Lewis. *General contractor:* Howie Moffat. *Sub-contractors: hardware:* Alexr. Smith & Keeler. *Steel windows:* Crittalls Manufacturing Co. *Drainage:* Making & Bearse Ltd. *Plumbing:* A. W. Robey Ltd. *Plastering:* Hook Bros.; A. Ross. *Painting:* J. W. Clarke & Son. *Terrazzo work:* A. Marchiori & Sons; Melocco Bros. *Heating:* J. Sainsbury & Co. *Ventilation:* R. Plackett & Co. *Electrical work:* G. Pitt; W. A. Harris. *Insulation:* Bradford Insulation Co. *Refrigeration:* British General Electric Co. *Roof tiling:* Wunderlich Ltd. *Floor and wall tiling:* Australian Tessilated Tile Co.; R. Goldsby. *Fibrous plaster:* Canberra Fibrous Plaster. *Parquetry floor:* Geo. Hudson & Co. *Timber and leather panelling:* McPherson & Davies Ltd. *Thermophane double glazing:* Frank G. O'Brien Ltd. *Food lift:* Otis Elevator Ltd. *Mild steel handrail:* A.C.T. Engineering Co. *Cool room doors:* James Budge Ltd. *Fitments:* Elvin & Co.; L. J. Morgan Ltd. *Roller flyscreens:* A. F. Agnew & Co. *Fire doors:* Wormald Bros. *Strong room doors:* Chubb & Co. *Ornamental metal doors:* Artistic Steel Co. *Precast concrete work:* Picton Hopkins Ltd. *Structural steel work:* Sydney Steel Co.

Boys' Club at Stepney. *Architect:* Yorke, Rosenberg & Mardall. *General contractor:* C. J. Sims Ltd. *Sub-contractors: dampcourses:* Wm. Briggs & Sons. *Concrete blocks:* Broad & Co. *Reinforced concrete:* Twisteel Reinforcement Ltd. *Bricks:* Eastwoods Ltd. *Piling:* Pressure Piling Co. *Structural steel:* Concrete & Structural Products Ltd. *Slate cills:* Bow Slate & Enamel Co. *Roofing felt:* Wm. Briggs & Sons. *Woodblock flooring:* Jos. F. Ebner Ltd. *Patent flooring:* Marley Tile Co. *Central heating:* Chas. P. Kinnell & Co. *Stoves:* Newton Chambers Ltd. *Gas fixtures and gasfittings:* North Thames Gas Board. *Electric wiring:* Messrs. Locke & Soares Ltd. *Electric light fixtures:* Metal 'Coolicon.' *Sanitary fittings:* Stitsons Sanitary Fittings Ltd. *Door furniture:* Alfred G. Roberts. *Casements and window furniture:* Aygee Ltd. *Fencing:* Bayliss Jones & Bayliss Ltd. *Balustrading:* S. W. Farmer & Son. *Joinery:* James Prepared Woodwork Ltd.

Technical College at Grays, Essex. *Architect:* H. Conolly, County Architect. *General contractors:* Richard Costain Ltd. *Sub-contractors: heating and mechanical services:* Coleman & Hosking. *Electrics:* Alpha Manufacturing & Electrical Co. *Lettering: written and applied:* The Lettering Centre. *Suspended ceiling:* Horace W. Cullum & Co. *Sanitary fittings:* Adamsez Ltd. *Decorative glazed wall tiling:* Carter & Co. *Wood block floor:* Vigers Bros. Ltd. *Chimney stack:* Chimneys Ltd. *Bricks:* Eastwoods Ltd.; Stonehenge Brick Co. *Stahlton prestressed plank floor:* Costain Concrete Co. *Structural steelwork:* Dorman Long & Co. *Plastic glaze wall finish:* Plastic Surfaces Ltd. *Coloured glazed wall tiling:* Summers & Co. *Ironmongery and door furniture:* James Gibbons Ltd. *Accotile flooring:* Neuchatel Asphalte Co. *Felt roofing:* Pilkington's Asphalte Co. *Granolithic paving:* Stuarts Granolithic Co. *Balustrades and handrails:* Culford Art Metal Co. *Patent glazing:* Williams & Williams Ltd. *Metal windows pressed, metal door and trims:* The Crittall Manufacturing Co. *Rolling shutters:* Shutter Contractors Ltd. *Folding, sliding partition:* Esavian Ltd. *Precast casing to the columns and thresholds:* Empire Stone Co. *Precast terrazzo partitions:* Mosaic & Terrazzo Precast Co. *Lighting fittings:* Troughton & Young Ltd.; The Merchant Adventurers Ltd.; The General Electric Co.; Crompton Parkinson Ltd.; Frederick Thomas Ltd. *Special electric laboratory control board:* Astral Switchgear Ltd. *Overhead busbar system:* English Electric Co. *Clocks:* Synchronome Ltd. *Bell system:* Gent & Co. *Paint:* R. Gay Ltd.; Sercetons Paint Makers Ltd.; Inertol Ltd.

House at 4, The Glade, Welwyn Garden City, Hertfordshire. *Architects:* Architects' Co-Partnership. *General contractors:* R. T. Bushell & Sons. *Sub-contractors: heating:* H. Deacon Ltd. *Bricks:* Pratt (Watford) Ltd. *Slate:* Bow Slate & Enamel Co. *Roof tiling:* The Marley Tile Co. *Felt roofing:* The Northern Asphalt Co. *Beech strip flooring:* Masters & Andren Ltd. *Ironmongery:* Alfred G. Roberts Ltd. *Sliding door gear:* E. Hill Aldam & Co. *Magazine boiler:* Earlymill Ltd. *Electrical installation:* Eastern Electricity Board. *Gas Installation and appliances:* Eastern Gas Board. *Fire:* W. N. Froy & Sons. *Flush doors:* Jayanbee Joinery Ltd. *Sanitary fittings:* Adamsez Ltd. *Reconstructed stone sills:* Atlas Stone Co.

S.S. 'Orsova.' *Designer:* Brian O'Rorke. *Tables:* H. H. Martyn & Co. *Chairs, settees, altar cupboard curtains:* Maple & Co. *Carpet:* Wilton Royal Carpet Co. *Decorative feature:* Barbara Jones. *Plastics:* Thomas de la Rue. *Chairs:* Heal & Son. *Carpet:* Crossley & Co. *Tables and chairs:* Messrs. Beresford & Hicks. *Window seats, curtains and tables and wallpaper:* Waring & Gillow. *Curtains:* Elizabeth Eaton Ltd. *Plastic:* Messrs. Warerite. *Wallpaper:* Messrs. A. N. Coles, Ltd. *Tables and stools:* Orient Steam Navigation Co. *Curtains:* Gerald Holton. *Blinds:* J. Avery & Co. *Squabs:* Calico Printers Association. *Settees:* Hille, of London. *Window squabs, curtains and tables, sideboard and blinds:* Hampton & Sons. *Chairs:* Finmar Ltd.; Wrinch & Sons Ltd. *Floor tiles:* Carter & Co. (London). *Tables:* Vickers-Armstrongs Ltd. *Chairs:* Russell Furnishings Ltd. *Decorative feature:* Ceri Richards. *Chairs:* Ercolani (Furniture Industries Ltd.). *Chairs and tables:* Ernest Race Ltd. *Carpet:* S. J. Stockwell (Carpets) Ltd. *Floor:* Armstrong Cork Co. *Piano:* Danemann, W., & Co. *Floor:* Korkoid Decorative Floors.



CONCRETE CONTRIBUTIONS BY TWISTEEL

Reservoir, Cleadon, Co. Durham. Engineer: A. G. McLellan, B.Sc., M.I.C.E., M.I.W.E., Sunderland & South Shields Water Co. Contractors: W. Moss & Sons Ltd.

To make sure of the highest standards in concrete design and construction, at the lowest cost in steel, money and time, call in the TWISTEEL Design Service. Their specialist knowledge, backed by many years of practical experience, enables them to advise architects and engineers, with certainty, on every aspect of design and planning for every type of construction involving the use of reinforced concrete: and they can also supply the reinforcement.

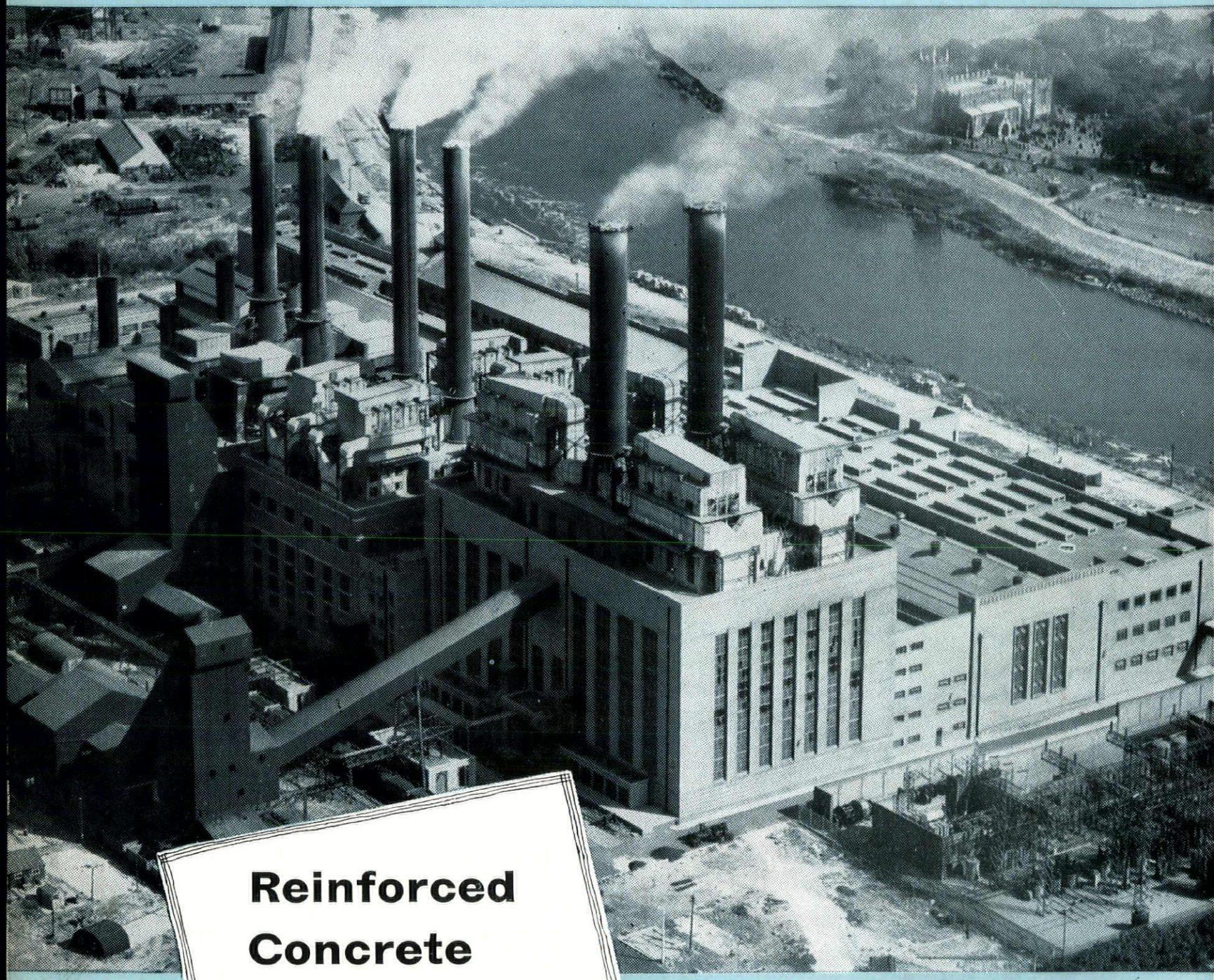
TWISTEEL DESIGN SERVICE

43 UPPER GROSVENOR STREET, LONDON, W.1 · TELEPHONE: GROSVENOR 1216

AND AT BIRMINGHAM MANCHESTER GLASGOW

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

Construction at its best . . .



NORTH WILFORD POWER STATION

Contractor: Thomas Bow, Nottingham. Reproduced by permission of R. Finch, Esq., O.B.E., M.I.C.E., City Engineer & Surveyor, City of Nottingha

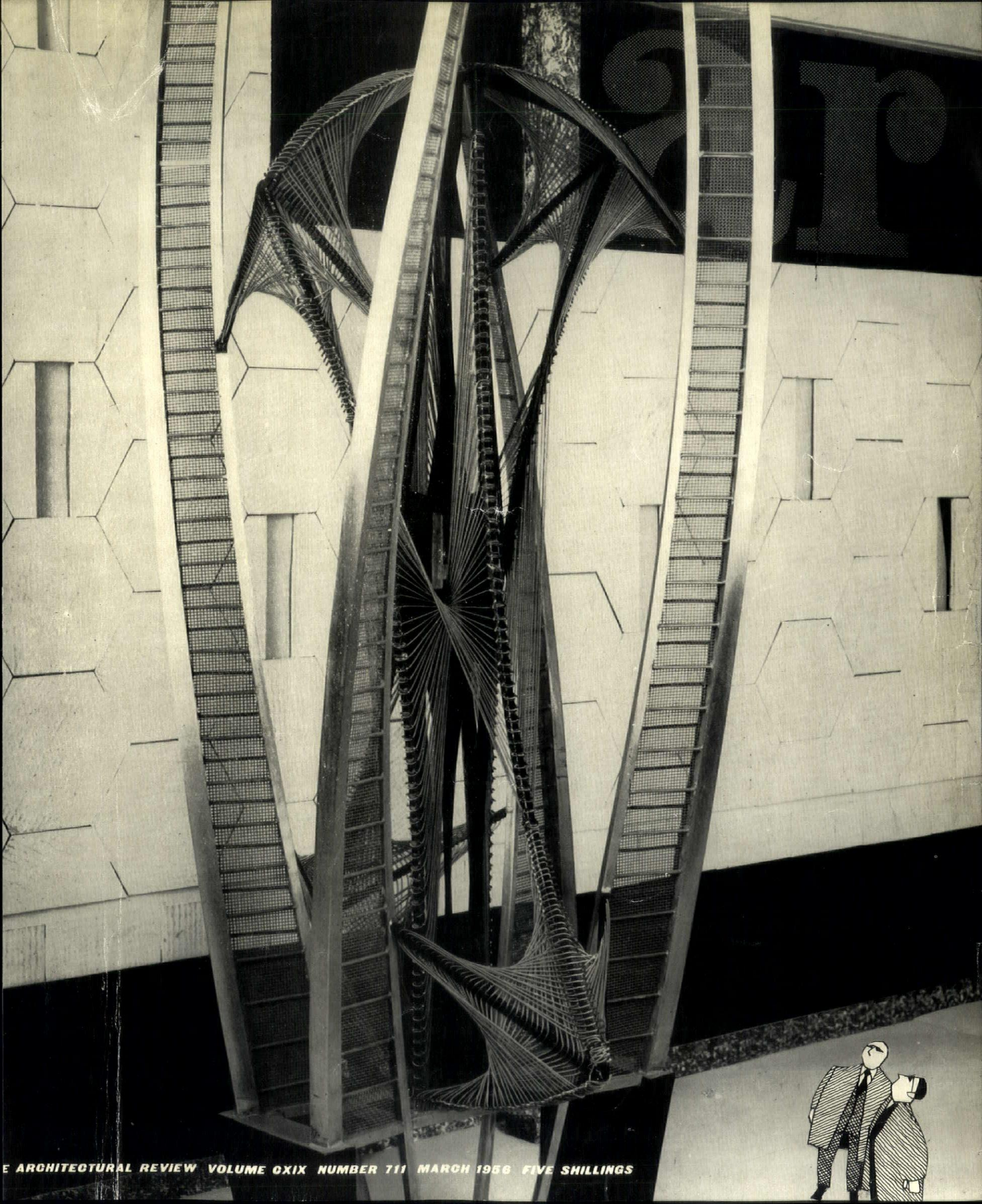
Reinforced Concrete Design by...

BRC

Specialists in Reinforced Concrete Design and Suppliers of Reinforcement

THE BRITISH REINFORCED CONCRETE ENGINEERING CO. LTD., STAFFORD

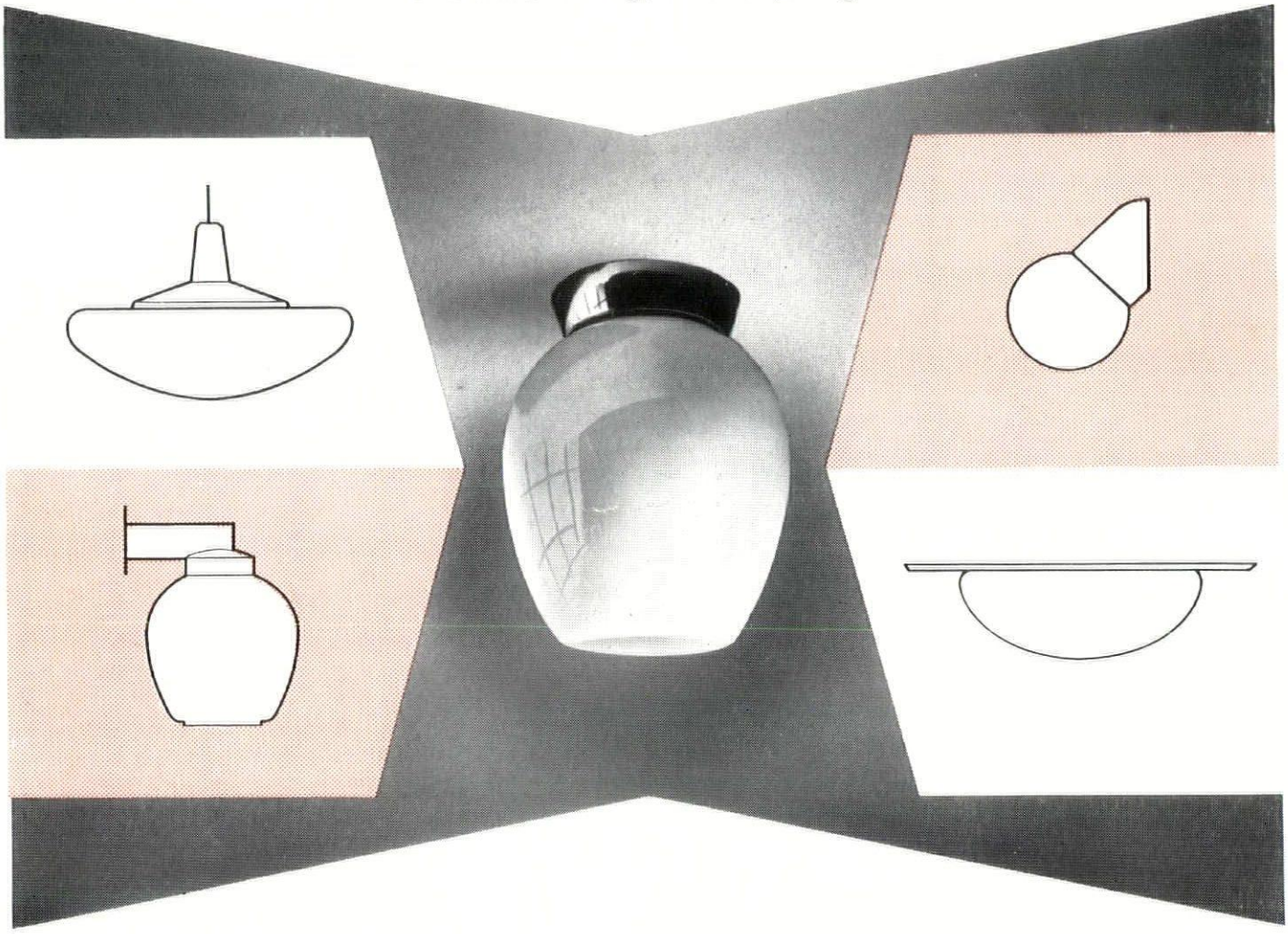
LONDON, BIRMINGHAM, BRISTOL, LEEDS, LEICESTER, LIVERPOOL, MANCHESTER, NEWCASTLE, CARDIFF, GLASGOW, DUBLIN, BELFAST



E ARCHITECTURAL REVIEW VOLUME CXIX NUMBER 711 MARCH 1956 FIVE SHILLINGS

general lighting

For efficient overall glare-free lighting.
Utilising British 3-ply flashed opal glassware.
Pendant, ceiling, or wall fitting.



The Ultralux range is renowned for its simple functional design, which has contributed largely to Troughton & Young's reputation for lighting efficiency. It is part of the comprehensive range of lighting fittings which include Versalite for directional lighting, Mondolite for universal lighting, and Tubalux for fluorescent lighting—to be seen attractively displayed at:—

THE LIGHTING CENTRE.

» ULTRALUX «

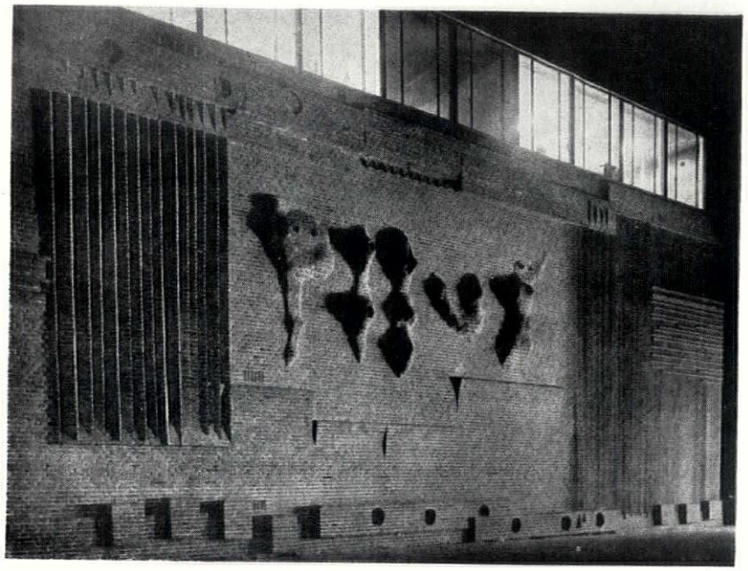
A range of lighting fittings by:—

TROUGHTON & YOUNG

TROUGHTON & YOUNG (Lighting) LTD., The Lighting Centre,
143 KNIGHTSBRIDGE, LONDON, S.W.1. 'Phone: KENsington 3444.
and at 46 Rodney Street, Liverpool 1.

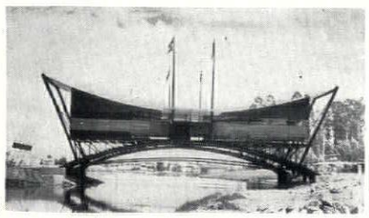
MARGINALIA

RELIEF IN BRICK. As part of the ceremony of inauguration of the new extensions to the celebrated Bouwcentrum in Rotterdam, a wall-sized relief in carved brick by Henry Moore was unveiled last December. The work was commissioned by the Dutch brick industry, and the version executed appears to differ from the 'accepted' project shown at Henry Moore's last exhibition in England. The technique and material are, of course, traditional in Holland from High Gothic to twentieth-century Amsterdam Eclectic, but seem to have revived in Moore a tendency which died out in the late thirties—using the grain or stratification of his material to contour and emphasize the forms of the sculpture.



1 *Bouw*

EXHIBITION-BRIDGE. The characteristic forms of Brazilian architecture are so generally associated with such materials as concrete and wood, that it is both surprising and salutary to see them appearing without impropriety or lack of structural logic in other materials. The *Volta Redonda* pavilion-on-a-bridge in Ibirapuera, 2, designed by Sergio Bernardes for the Brazilian state metal company, is something rare in Brazil, a steel structure. Mechanically complex, it combines arcuate and tension-structure forms in a manner that gives a striking publicity silhouette, and demonstrates the structural performance of the material in a dramatic manner. When the exhibition for which it was designed is over, the substructure of the pavilion, 3, will remain as a bridge, and a permanent contribution to the amenities of the park. (For another 'building on a bridge,' see *Marginalia*, AR, Feb. 56.)



2

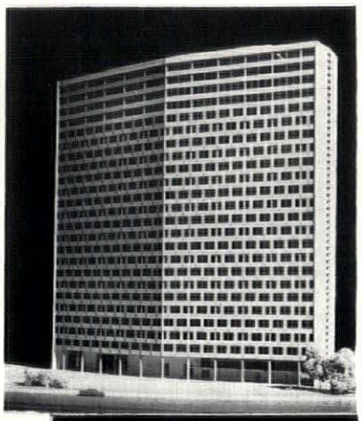
3 *Modulo*

FORM FOLLOWS OFFICE ORGANIZATION: a rare expression of office organization in visible architectural terms can be seen in the new premises of the John B. Parkin Associates, outside Toronto, Canada. Though the international reputation of this office depends on their competition-winning design for the new headquarters of the Ontario Association of Architects (AR May, 1955), their domestic reputation and flourishing practise depend on their ability to design efficient buildings that work well and unassumingly—a kind of design that stems from close collaboration by specialists (three of the Associates are mechanical or structural engineers) rather than a hierarchy of designers. This expresses itself forcefully in the plan of their new building, for half the floor-space is devoted to one enormous drawing-office-cum-workroom, 4, without visual (or other) separation of function or administrative grade. The other half of the plan is occupied by more specialized accommodation—boardrooms, reception, filing, etc.—parcelled out in a cool and business-like manner, while this binary division expresses itself on the exterior by the single stanchion which divides the shorter elevation, just as the quiet and efficient tone of the organization is aptly indicated by the snug glass box which houses it, 5.

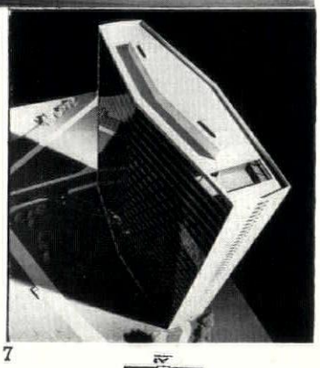
4

5

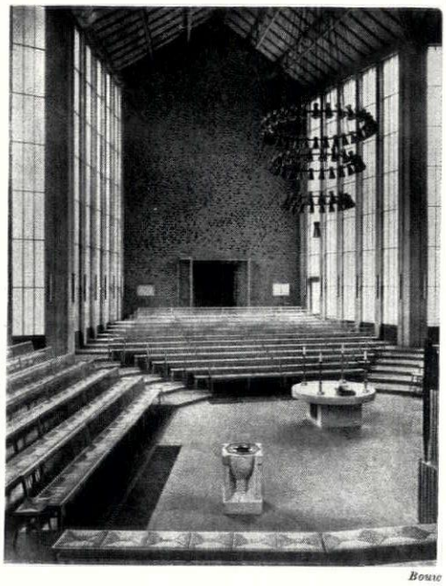
HELMUT HENTRICH. Though commonly regarded as an exponent of the German 'middle style,' on account of such buildings as his Trinkhaus Bank (AR, December, 1953), with its air of suppressed neo-Classicism, Helmut Hentrich has lately shown a much more adventurous approach to design, and with the new hundred-metre-high office block for Phoenix-Rheinrohr, 6, in Dusseldorf he has achieved a commercial building which departs definitively from the flat-slab and courtyard routines of German post-War work. This competition design, with which he and his partner Petschnigg won first prize out of twenty-one entries, clearly rivals the new Pirelli block in Milan in visual impact, if not in bulk, and as with the Pirelli block one's immediate temptation is to refer the plan-form, 7, back to Le Corbusier's Algiers scheme for its inspiration. But just as Pirelli proves to derive from something deeper than mere emulation of a masterpiece (*see* AR February, 1956) so does Phoenix-Rheinrohr, for the same tendency to polygonal planning without right-angles can be seen in other recent works by Hentrich, such as the church at Duren, 8, where it modifies the time-honoured greek-cross to produce a Protestant 'auditory' that strikes a just balance between centralizing and longitudinal tendencies, 9.



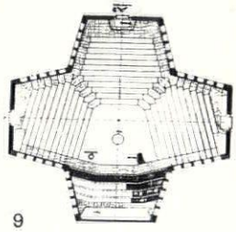
6



7

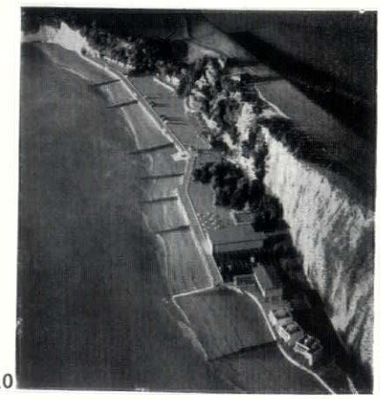


8 *Bouw*



9

DESIGN FOR VIEWING. The best cure for subtopia is prevention—but prevention of the constructive, not the restrictive, kind. A Channel-side beauty-spot where car-borne visitors crowd to watch the sea and ships, without leaving their cars, sounds an ideal setting for a mess, but the plan for St. Margaret's Bay, near Dover, by G. A. Jellicoe and Partners, 10, aims to strangle subtopian tendencies at birth by providing better alternatives. Wartime military dereliction has provided virtual *tabula rasa* for redevelopment (in so far as land-ownership permits) and the new scheme takes the car-parking problem in hand from the start, providing a concentrated viewing-parking area at the foot of the concealed cliff-road



10

(upper centre of illustration)—compare the ARCHITECTURAL REVIEW's scheme for riverside rehabilitation at Bewdley (AR, November, 1953)—a largely-hidden long-stoppers' car-park among the buildings (lower centre) and treating the rest of the somewhat limited area of level ground as strictly pedestrian, with new constructions oriented at right-angles to the shore-line to shelter the main pedestrian area from raking, coast-wise winds.

The Townscape Tradition

After Professor Pevsner's observations on the past and future of English Town Planning in his Reith Lectures, attention was drawn to a forgotten article by H. B. Creswell which had appeared in two parts in the *Architects' Journal* for December 10 and 17, 1924. Written when the garden-city type of plan was already degenerating into a rule-of-thumb, and the Canberra competition was a skeleton in many cupboards, this article constitutes a remarkably prophetic attack on paper planning, confronting designers with many of the same problems of conscience and method that have been scrutinized in the last decade in the ARCHITECTURAL REVIEW'S Townscape and Subtopia campaigns.

Thus: 'Town planning . . . more than any other architectural subject has become mired and obscured by the outpourings of experts' and 'He (the town planner) exercises his ingenuity to the neglect of his imagination, and tries to learn from science what sympathy alone can teach . . .' Mr. Creswell devotes much of his energy to demonstrating the fatuity of symmetrical and radial plans, which cannot be appreciated by the ordinary citizen perambulating the pavements of his town, and although that specific type of paper plan is no longer in vogue, his objections could apply, *mutatis mutandis*, to more recent types of diagrammatic planning based upon land values, density diagrams, universal characters of habitation and so forth.

Though the words by which he identifies the humane virtues of a town are not precisely those currently in use—mystery, variety, charm—his adherence to the central tradition of English design is made clear by his use of the word *picturesque* to define the over-all characteristics of the type of planning which, rather than the Renaissance, he regards as ideal. Now in his eighty-sixth year, Mr. Creswell is a rare and lively survivor of the days of Voysey and Aston Webb, and his reminiscences are as instructive as his prophecies. And now that private house-building is getting under way again in England, it is useful to recall that his celebrated *Honeywood File* and related works constitute a far more salutary cautionary code for the domestic architect than even the most exhaustive check-lists.

Intelligence

The Minister of Housing and Local Government has appointed Dr. W. G. Hoskins (reader in Economic History at Oxford University) to his advisory Committee on buildings of special architectural or historic interest. He has appointed Professor P. W. Richards and Mr. H. Wardale to the National Parks Commission.

Sir Percy Thomas & Son are the architects for the BBC's new Welsh Broadcasting headquarters to be begun at Llandaff in 1958.

CORRESPONDENCE

Outrage in the West

To the Editors,

SIRS,—New Year is a period when a wise person makes a resolution not to make good resolutions if he is critical enough to know that there is little chance of him putting those resolutions into effect. There seems to me to be a parallel here between our national plight as shown by your issue *Outrage* of last year with the good resolutions it shows to be possible, and the creeping doubt that anything will be done about it. It is because I am unwilling to harbour that particular doubt that I am writing to you.

One of the outstanding events of my year of 1955 was to show your *Outrage* issue to about 40 of my friends and business acquaintances who I fear would not otherwise have seen it. In most cases the response was sympathetic and even encouraging: in no case did anyone disagree with *all* aspects of your presentation of the problem though some objected to certain parts. Industrial ugliness was appreciated by all; but several could see no danger in an increasing subtopia.

My main point in writing is not however, to voice a miniature Public Opinion Poll, but to state that in my opinion all the problems you spotlighted in *Outrage* are present in distressing quantity in Swansea, and there is little probability as yet of any local objective recognition that remedial measures are necessary where they would be effective, or that radical far-seeing changes must be planned. I need hardly mention to you the industrial wastes which scarify the hinterland of Swansea. These should be such a warning that in future it should be ensured that the clearing of sites, the demolition of buildings and plant, the levelling or featuring of tips are as much part of the normal costs of any particular undertaking as the original exploitation of the land and erection of buildings were.

Surely, too, in Swansea, one can see the spread of subtopia over all and any type of landscape; valley, hillside, hilltop, coastal cliffs or bays; quite irrespective of whether this is justified scenically or economically. Furthermore, the Gower peninsula, now deemed to be of National Park status, is in danger of further encroachment by municipal action. There is also much disappointment with the new Swansea centre. There has been too much acceptance of mediocre building which is typical of many other town centres and little to enable a citizen to feel any individual pride in *his* town.

I am confident that active measures to combat the evils and errors of subtopia will only come as a result of continued action by such journals as yours, and I wish you success in future enterprises you undertake.

Yours, etc.,
CHARTERED SURVEYOR.

Mumbles, Swansea.

The New Brutalism

To the Editors,

SIRS,—After reading Reyner Banham's article on the 'New Brutalism' one wonders just what all the fuss is about. Is there really anything *new* in the New Brutalist creed? The definition of New Brutalist architecture (formal legibility or Image memorability, exhibition of structure, materials used as found) applies to almost the whole of Mies van der Rohe's architecture right from the Barcelona Pavilion through to his latest works on the IIT Campus, the Farnsworth house and the Mannheim theatre project. Yet, when the Mies Vernacular is introduced into England at Hunstanton, a building which Philip Johnson has described as a tribute to the genius of Mies van der Rohe, it has to be justified by yet another, and even more fabulous '—ism.'

Yet the only essential difference between a 'Mies building' and a 'Brutalist building' would seem to be in the degree of expression of the services of the building; and surely beyond a certain point such a display of the intestines of a building merely disturbs the total æsthetic emotion evoked by the building as an Image. No, however much we may be grateful to the Smithsons for introducing the Mies Vernacular to England and thus reminding us that honesty of structure and materials are essential canons of the Modern Movement, the attempts to justify that form of design followed relentlessly and without fuss by Mies van der Rohe seems both superfluous and partitious.

'Beauty is truth, truth is beauty, that is all ye know on earth, and all ye need to know.'

Yours, etc.,

Bristol. G. A. BROWN.

[The author replies: *There are times when one despairs of one's powers of explanation. It is clear that nothing beyond the second paragraph of page 358, or the last illustration on the facing page made any impression on Mr. Brown at all. Surely the second page of illustrations should have made clear to him, as no words can, that it was not a Mies vernacular that was under discussion—unless he can tell me what is Miesian about Yale Art Centre or the Sheffield University project? Far from attempting to justify Mies (could anything be more gratuitous?) I was trying to explain how it was that buildings so various in form could all be subsumed under the same 'stylistic' label as Hunstanton's pure Miesian rectangles.*

Had Mr. Brown pursued my argument as far as the last page he would have found that this attempted explanation led me into aesthetic and philosophical considerations that suggest that truth (to material, structure function) can be many other things beside beauty, and still, the Brutalists would maintain, be great architecture. If performance justifies these assertions (and I think it will) then there will indeed be something to make a fuss about, for the Brutalists will have pioneered a road out of the academic trap of thinking in exclusive *terms—beauty equals truth equals beauty, functionalism equals a glass box and nothing else—and made a way towards* inclusive *thinking, where architecture is everything you like to make it, provided performance (in every sense of the term) pragmatically proves you right.*]

Bomarzo

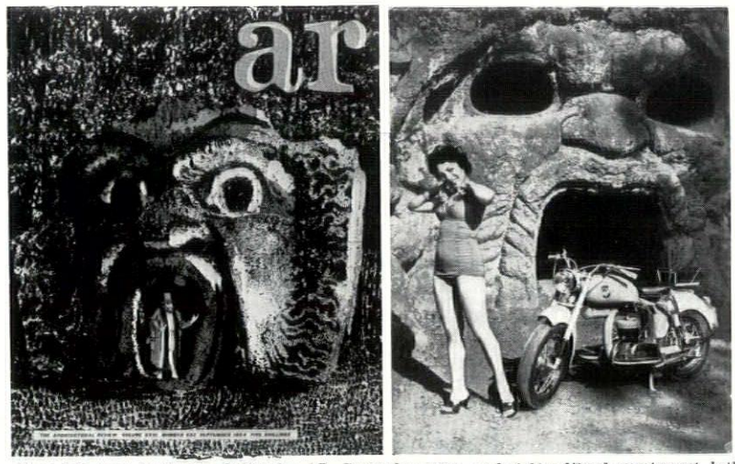
To the Editors.

SIRS, Inspired by Mr. Colin Davidson's article in THE ARCHITECTURAL REVIEW on Orsini's phantastic rock monsters at Bomarzo, I visited them recently and, while there, wondered how these derelict fair-ground absurdities might possibly be used in combination with the art or life of today.

This question was answered a few days later when buying a newspaper at a kiosk in sight of that Baroque beauty, the Basilica of Santa Croce at Lecce, where the attached contemporary postcard, juxtaposing art of the sixteenth and twentieth centuries, caught my eye.

Yours, etc.,

British Embassy, Athens. NIGEL BICKNELL.



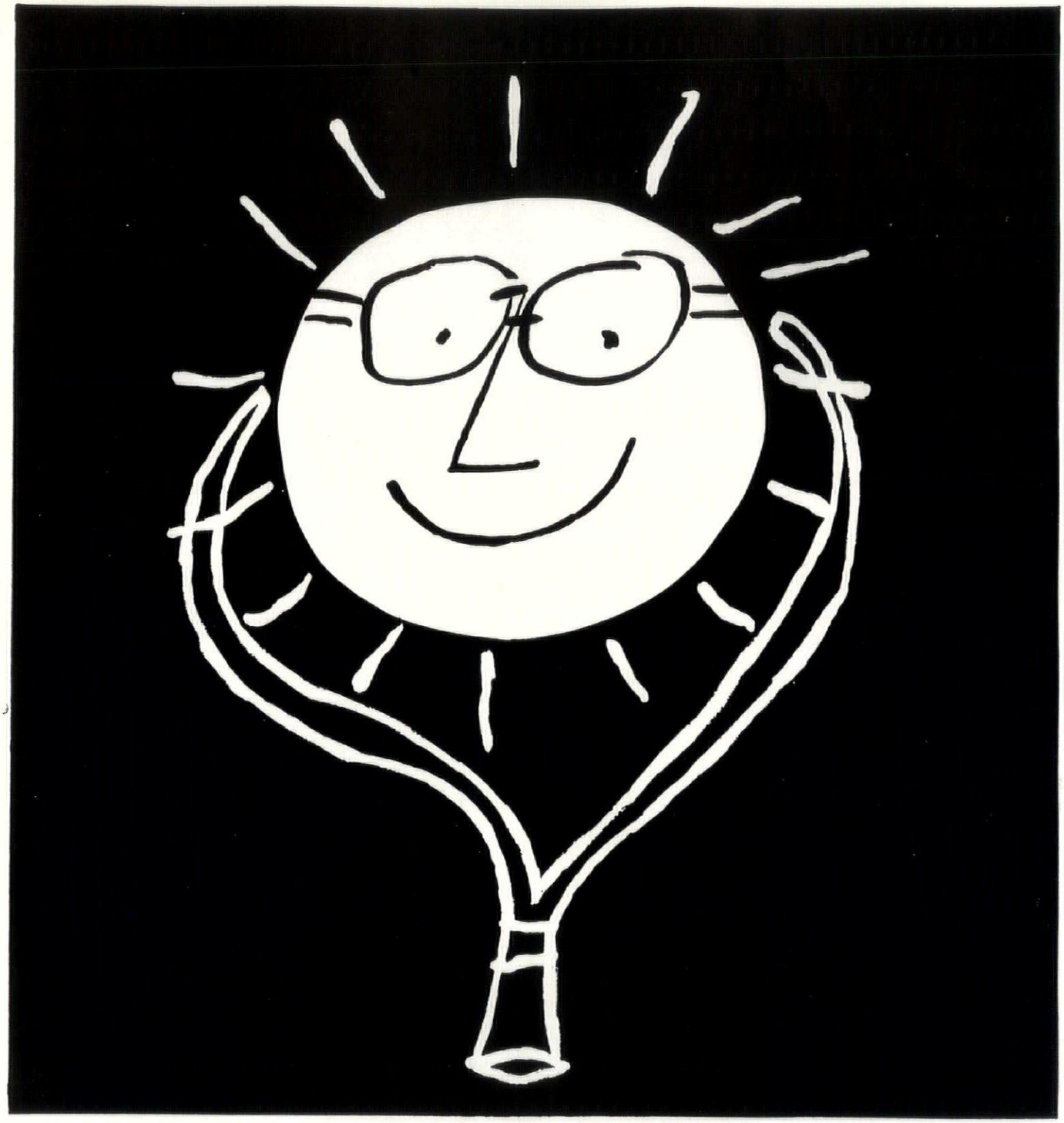
Above, left, cover by Gordon Cullen for AR, September 1954, *and right a literal counterpart, both representing a mask in the Orsini garden at Bomarzo*

ACKNOWLEDGMENTS

The colour blocks on pages 163 and 167 were made available by courtesy of C. Miskin & Sons, Barrett & Wright Ltd. and Hadfields (Merton) Ltd.

COVER, Lemaire & Wennink. MARGINALIA, pages 151–2: 4, 5, H. Robertson; 6, 7, Paul Pepper; 10, Wainwright; Bomarzo (right), Grillo. RONCHAMP, pages 156–161: J. Stirling. SCHOOL AT PUTNEY, pages 162–9: Galwey, Arphot. OXFORD RELIEVED, page 170, Aero films; page 173, Country Life. GOLD COAST, pages 176–187: Peter Pitt. EDWARDIAN BEQUEST, pages 188–192: all except exhibit reproductions, Galwey. CURRENT ARCHITECTURE, pages 193–6: School at Herne Bay, Galwey; Hospital at Alexandria, Toomey, Arphot; Station at Potters Bar, J. R. Pantlin. MISCELLANY, pages 197–204: Exhibitions, 1, 5, Tate Gallery; 3, 4, MMA; 6, S. Lambert; Oriel Chambers; 1, 7, Stewart Bale; rest, J. Stirling. Lumps on the Skyline: 2, Galwey; 4, Toomey; 8, S. W. Newbery. Gabo Sculpture, Lemaire & Wennink. SKILL, pages 205–216: Showrooms in Bond Street, Mann Bros.; Showrooms in Park Lane and Harrogate, E. Hyman; Shop in Hemel Hempstead, J. Hadland. Design Review: Mural, Toomey; Chandeliers, J. Wuidart.

Mr. Clifford S. Smith was associated with the author of 'Brewers' House Styles' (AR, December, 1955) in the selection of material.

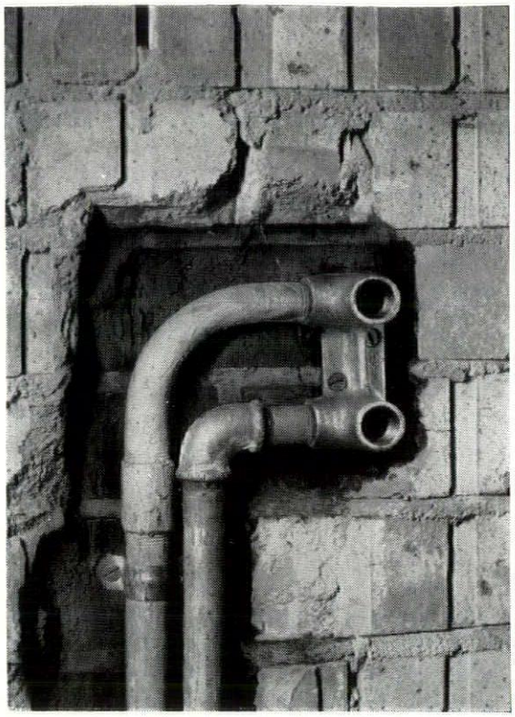


. . . say **health**

. . . say **light**

. . . say **Metal Windows** - *Rustproofed*

ISSUED BY THE METAL WINDOW ASSOCIATION, BURWOOD HOUSE, CAXTON STREET, LONDON, S.W.1



HOW ASCOT JIGGED FITTING SAVES MONEY

106,000 Ascot Jigged Walled Fittings have now been put into new homes by 183 housing authorities.

How this fitting saves money is revealed by the following figures based on actual costings.

EXAMPLE ONE

Cost of fitting an Ascot 503 sink water heater sold for cash :

Using a Jigged Wall Fitting which had been installed when the property was built ... £1.7.0 — £1.10.0

Normal installation without a Jigged Wall Fitting ... ... £4.0.0 — £5.0.0

CASH SAVING .....say **£3.0.0**

EXAMPLE TWO

The effect of a Jigged Wall Fitting on the hire purchase terms for an Ascot 503/0 sink water heater:

Charge per week when the heater is connected to a Jigged Wall Fitting already installed 1/- -1/10 per week

Charge per week including cost of normal installation without Jigged Fitting ... ... 2/- — 2/5 per week

WEEKLY SAVING .....say **9d**

✳ *Note: These figures may vary from one district to another, but are reliable averages.*

The advantages of the Jigged Wall Fitting to the consumer and to the Gas Undertakings are real. The Fitting is supplied by Ascot to Gas Undertakings at cost.

Vigorous efforts are indicated to get it installed in all new houses and flats; the cost of putting it in is trifling.

ASCOT GAS WATER HEATERS LIMITED · 255 NORTH CIRCULAR ROAD · LONDON · NW10

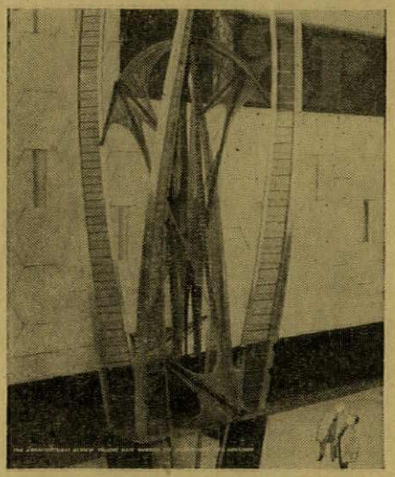
A member of the Parnall Group of Companies

WHG/A.104

THE ARCHITECTURAL REVIEW

Readers will find this issue a somewhat reduced version of the REVIEW'S *usual self, a result of the handicap that the* REVIEW, *in common with all other British magazines and many newspapers, has been placed under by the printing dispute. Several features have had to be held over, including an analysis of the Oxford road problem and the* REVIEW'S *recommendations for solving it, and these will be published as soon as circumstances allow. This issue, even in its reduced form, has been printed under considerable difficulties, which account for some irregularities in the numbering of the pages. The advertisement pages are also reduced in number, but these have not suffered so badly as the editorial pages owing to the chance that their printing was further advanced when the stoppage occurred.*

Volume 119 Number 711 March 1956



The cover shows a close-up of the lower part of a giant street-side sculpture, designed by Naum Gabo, which is to flank the walls of the new De Bijenkorf store in Rotterdam. This project will provide Gabo, after many disappointments, with an opportunity to realize his ambitions for architectonic sculpture on a scale worthy of his genius, and of the noble part that the idea of a synthesis of the constructive arts has played in the growth of twentieth-century design.

151 **Marginalia**

152 **Correspondence**

154 **Frontispiece**

155 **Ronchamp** *by James Stirling* The schism between two possible meanings of Functionalism, emphasizing the mechanization of structure in U.S.A., designing for human use in Europe, had already become apparent with Lever House and the *Unité* at Marseilles, but the emphasis on space and volume in Europe has probably reached its most extreme point in Le Corbusier's chapel at Ronchamp. This, Mr. Stirling observes, is the culmination of a tendency in Le Corbusier to proceed from the general to the particular, so that his recent works tend to be masterpieces of a purely personal kind, without the universality and programmatic quality of his earlier works. Nevertheless, his recent buildings have won a degree of popular acceptance that is still denied to his masterworks of the Twenties, and this may be due to the fact that their appeal is purely visual and does not demand intellectual participation. But also, now that contemporary painting no longer provides a laboratory of plastic research, architects tend more and more to draw on folk and popular arts for inspiration, a change of attitude that is paralleled by the independence of structure and material at Ronchamp, the same forms being used, in spite of a design change from framing to mass-walling. Le Corbusier, in fact, is no longer creating new forms according to a rational approach to structure, but simply drawing on, and mannerizing, his enormous formal erudition.

162 **School at Putney:** *Architects, Powell and Moya*

170 **An Edwardian Bequest** *by William Gaunt* Late Victorian taste in the Arts, and in the kind of architecture and interior decoration that took its standards from the lives and works of the late Victorian painters cannot be better seen in England than at the Russell Cotes Museum, Bournemouth. Collected, housed and bequeathed by Sir Merton Russell Cotes, whose fortunes had risen with those of Bournemouth and its Royal Bath Hotel, the paintings represent the manner of the well-connected artists who supplied large narrative paintings to a well-to-do clientele in the Seventies and Eighties, while the building itself, and its interior, projects, in Mr. Gaunt's phrase, 'a state of mind' rather than a style—a state of mind that is a compound of admiration for exotic buildings, and a desire to live a gracious life according to the manner that had been codified by the studio-houses of such representative masters as Lord Leighton and Alma Tadema.

175 **Current Architecture**

Skill

205 **Showrooms off Bond Street, W.1:** *Architects, Gordon and Ursula Bowyer*

208 **Chemist's Shop in Hemel Hempstead:** *Architect, Maurice Hardstaff*

209 **Showrooms in Park Lane, W.1, and in Harrogate, Yorkshire:** *Designer, Hulme Chadwick*

212 **Design Review**

213 **Techniques: Aluminium Roof Coverings** *by Robert Maguire*

216 **The Industry** 218 **Contractors, etc.**

Directing Editors J. M. Richards, Nikolaus Pevsner, H. de C. Hastings, Hugh Casson

Executive Editor Ian McCallum

Art Editor Gordon Cullen

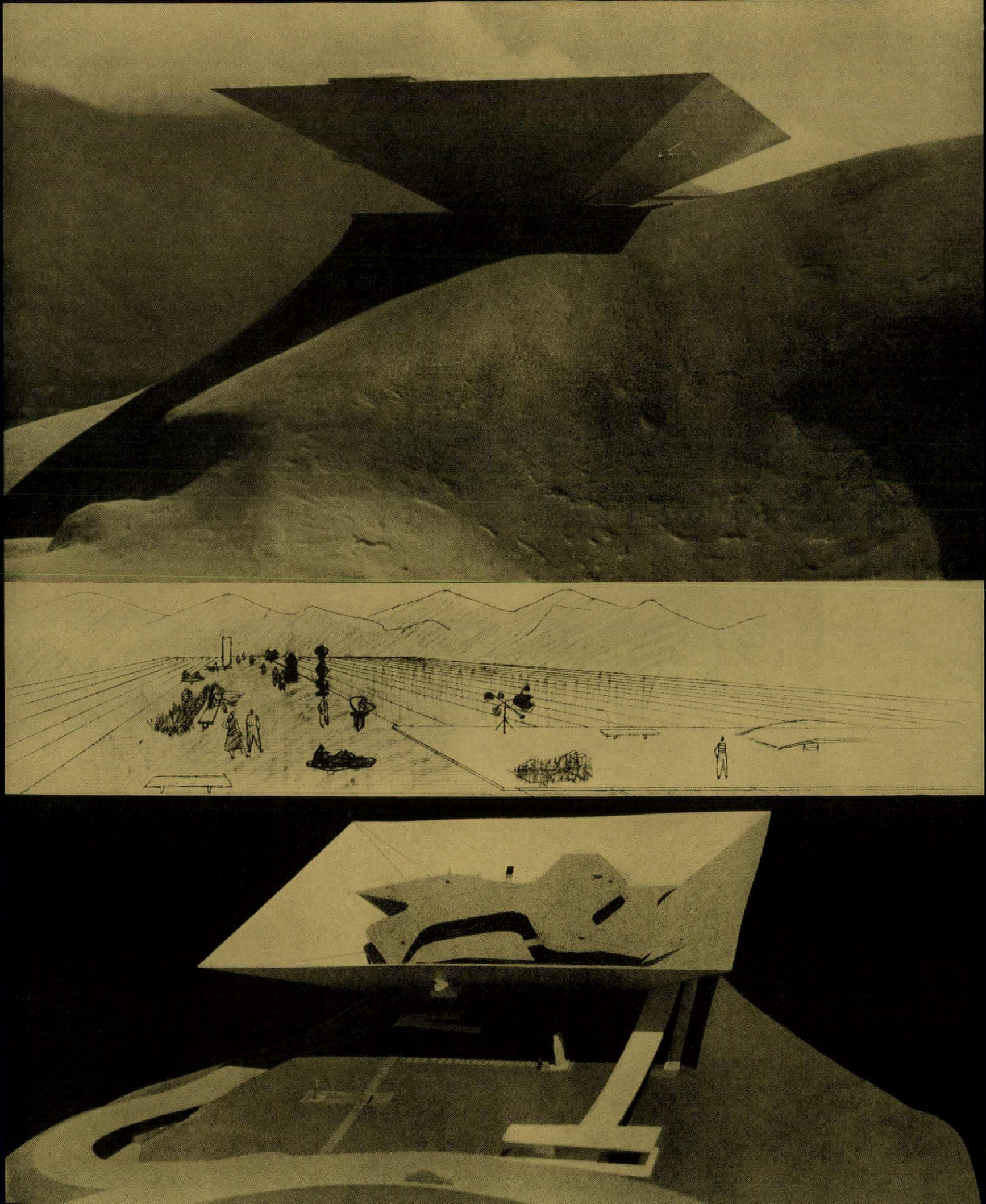
Assistant Editors production, Ian Nairn. research, S. Lang. literary, Reyner Banham. Editorial Secretary. . Whi 0611-9

SUBSCRIPTION RATE: The annual post free subscription rate, payable in advance, is £2 18*s.* 0*d. sterling, in U.S.A. and Canada* $9. *An index is issued half-yearly and is published as a supplement to the* REVIEW.

THE ARCHITECTURAL REVIEW

9-13 Queen Anne's Gate, Westminster, S W 1 · Whitehall 0611

FIVE SHILLINGS



The continuing originality of Brazil's Oscar Niemeyer as an inventor of architectural form is dramatically emphasized by his project, opposite, *for a Museum of Modern Art in Caracas, capital of the booming oil-state of Venezuela. Its spectacular aspect, perched on the edge of a nearly vertical cliff, arises from a desire to create a shape that should be more than merely functional, yet make maximum use of natural lighting, should take the eye by the purity of its line, and symbolize the creative force of the Modern Movement. The funnel-like shape, top, effectively expresses the way in which it catches the sunlight, filters it down through ranked sun-louvres flanking the roof terrace, centre, to flood over the suspended mezzanine, seen in an unroofed model, bottom, and down into the floors below.*

James Stirling

RONCHAMP

LE CORBUSIER'S CHAPEL AND THE CRISIS OF RATIONALISM

With the simultaneous appearance of Lever House in New York and the Unité in Marseilles, it had become obvious that the stylistic schism between Europe and the New World had entered on a decisive phase. The issue of art or technology had divided the ideological basis of the modern movement, and the diverging styles apparent since Constructivism probably have their origin in the attempt to fuse Art Nouveau and late 19th century engineering. In the U.S.A., functionalism now means the adaptation to building of industrial processes and products, but in Europe it remains the essentially humanist method of designing to a specific use. The post-war architecture of America may appear brittle to Europeans and, by obviating the hierarchical disposition of elements, anonymous; however, this academic method of criticism may no longer be adequate in considering technological products of the 20th century. Yet this method would still appear valid in criticizing recent European architecture where the elaboration of space and form has continued without abatement; and the chapel by Le Corbusier may possibly be the most plastic building ever erected in the name of modern architecture.

The south tower of the chapel, emerging as a white thumb above the landscape, can be seen for many miles as one approaches the Swiss border. The rolling hills and green woodlands of the Haute-Saône are reminiscent of many parts of England and Wales, and the village of Ronchamp spreads along either side of the Dijon-Basle road. After climbing a steep and winding dirt-track, leading from the village through dense woodland,

one reaches the bald crown of the hill on which the chapel is situated. The sweep of the roof, inverting the curve of the ground, and a single dynamic gesture give the composition an expression of dramatic inevitability. The immediate impression is of a sudden encounter with an unnatural configuration of natural elements such as the granite rings at Stonehenge or the dolmens in Brittany.

Far from being monumental, the building has a considerable ethereal quality, principally as a result of the equivocal nature of the walls. The rendering, which is whitewashed over, has been hand thrown and has an impasto of about 2 inches. This veneer suggests a quality of weightlessness and gives the walls something of the appearance of papier-mâché.

Notwithstanding that both roof and walls curve and splay in several directions, the material difference of rendered walls and natural concrete roof maintains the conventional distinction between them. They are further distinguished on the south and east sides by a continuous 9-inch glazed strip, and though the roof is not visible on the north and west sides its contours are suggested by the outline of the parapet. There is a similarity between the chapel and the Einstein tower which is even less conventional, but only inasmuch as the walls and roof are fused into one expression.

The whitewashed rendering is applied to the interior as well as to the exterior and the openings scattered apparently at random over the south and north walls splay either inwards or outwards, similar to the reveals of gun-openings in coastal fortifications. On the inside of the west wall these openings splay inwards to such a degree that from the interior the surface takes on the appearance of a grille. It is through this grille that most of the daylight percolates to the interior, yet the overall effect is one of diffuse light so that, from a place in the congregation, no particular feature is spotlighted as in the manner of a Baroque church.

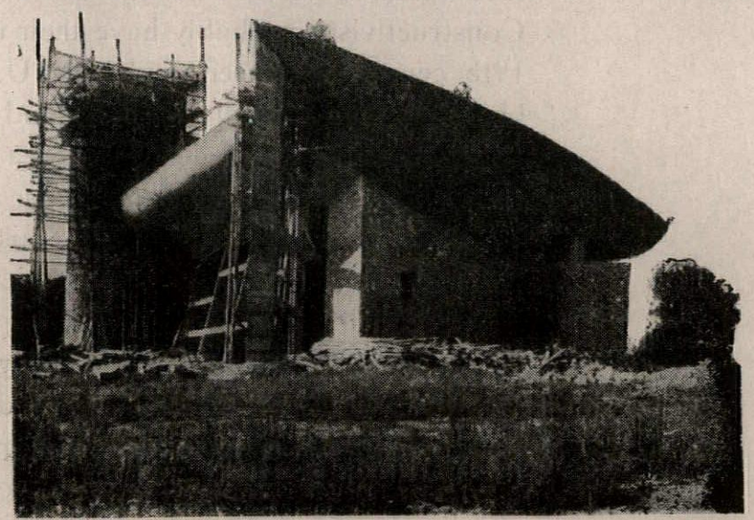
Where the roof dips to its lowest point, a double-barrelled gargoyle projects outwards to shoot rainwater into a shutter-patterned concrete tub. This element is surprisingly reminiscent of South Bank festivalia and something of the same spirit is conveyed by Le Corbusier in his stove-enamelled murals covering both sides of the processional entrance door. The same applies to the inscriptions on the coloured glass insets to the window openings. These linear applications suggest a final flourish and appear superfluous and even amateur in comparison with the overpowering virtuosity in moulding the contours of the solid masses.

The usual procedure in examining buildings—an inspection of the exterior followed by a tour of the interior—is reversed, and sightseers emerging on to the crown of the hill proceed to walk around the building clockwise, completing $1\frac{1}{2}$ circles before entering the chapel where they tend to become static, turning on their own axis to examine the interior.

Echoing the sag of the roof, the concrete floor dips down to the altar-rail which appears to be a length of folded lead. The various altars are built up of blocks of polished pre-cast concrete (probably with a marble aggregate) which are cast to a marvellous precision. The roof, together with the concrete alms-boxes and swivel-door, represents an incredible French ingenuity in using this material.

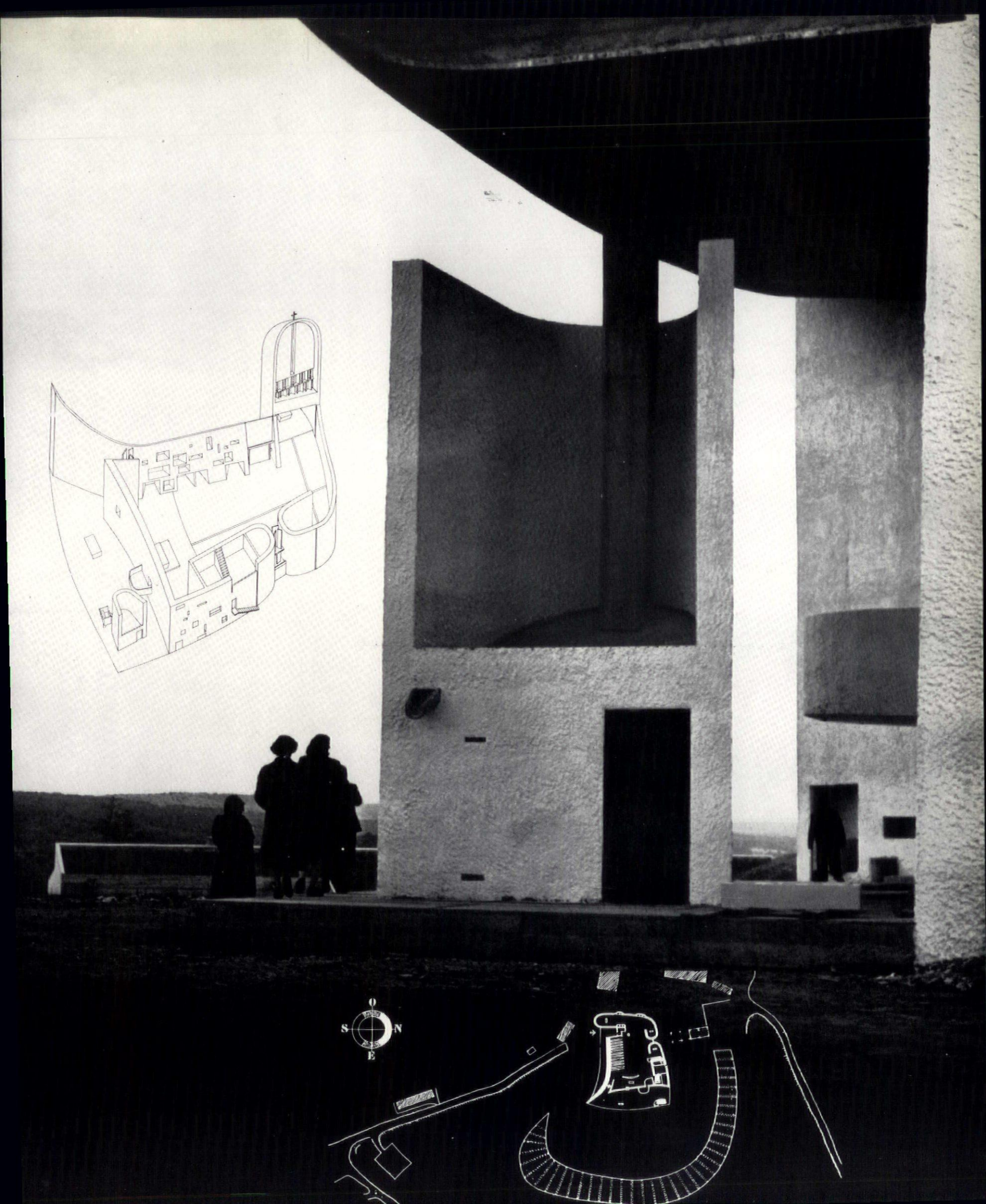
The wall adjacent to the choir gallery stairs is painted a liturgical purple and the whitewash on the splayed reveals of the openings returns on to the purple wall to a width of 3 inches, thus resembling the painted window surrounds on houses around the Mediterranean coast. Small areas of green and yellow are painted over the rendering on either side of the main entrance and also on the reveals to the opening which contains the pivoting statue of the Madonna. The only large area of colour is confined to the north-east chapel and tower; this has been painted red for its entire height so that light pouring down from the top gives this surface the luminosity of 'Dayglow.' The three towers which catch the sun at different times of the day and pour light down on to the altars are in fact vertical extensions of each of the side chapels.

Even with a small congregation, the superb acoustics give a resonance suggesting a cathedral space and the people using the chapel do so naturally and without any sign of embarrassment. As a religious building, it functions extremely well and appears to be completely accepted. It is a fact that Le Corbusier's post-war architecture has considerable popular appeal. The local population, both at Marseilles and at Ronchamp, appear to be intensely proud of their buildings. Remembering the pre-war conflicts, it is difficult to ascertain whether the

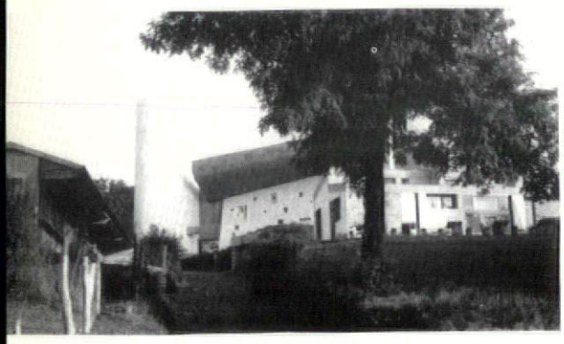


1, The chapel under construction and before rendering the walls, which are of load-bearing stone taken from the old chapel.
2, Opposite, plan and axonometric superimposed on a view across the east wall, over the hostel towards Switzerland.

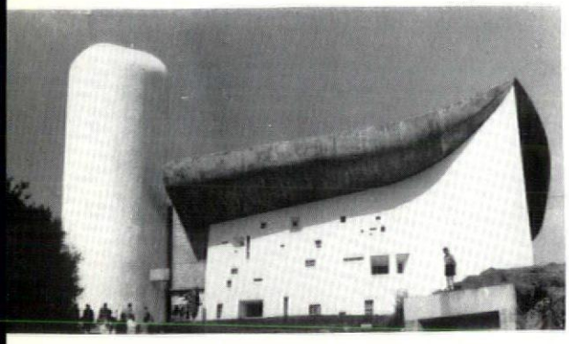
[*continued on page* 161


O
S
N
E

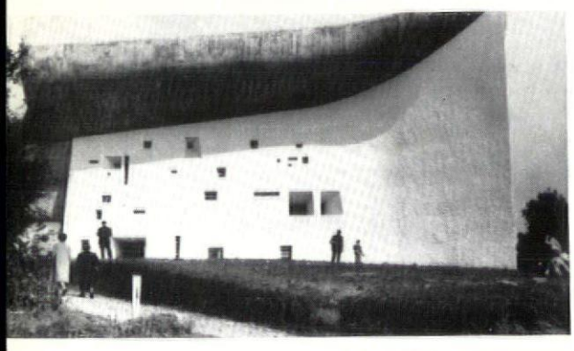
3



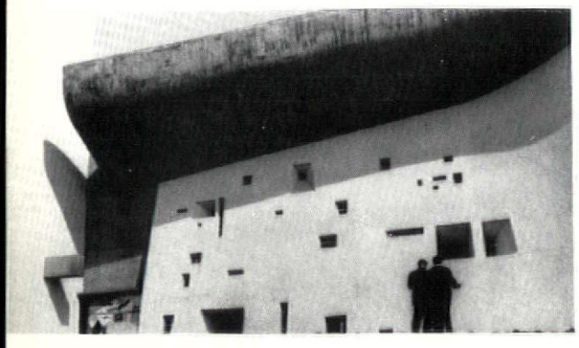
4



5

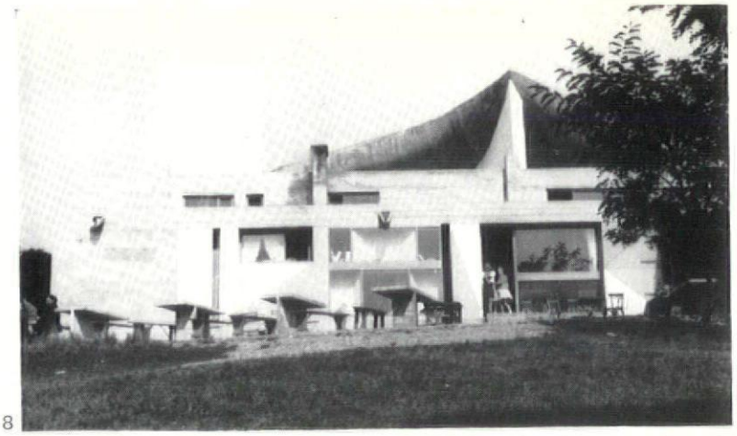


6



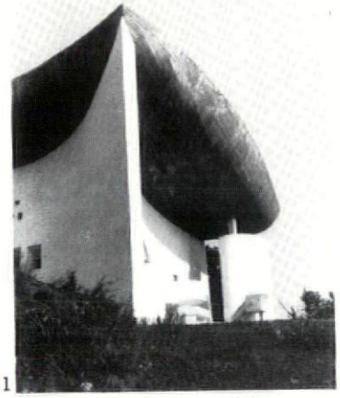
7

Above, the approach to the chapel. 3-7, the track, climbing from the village through a densely wooded area, only affords occasional views of the chapel, which suddenly comes into view (top photograph). The track continues to the ceremonial entrance past the hostel on the right and the priest's house on the left.



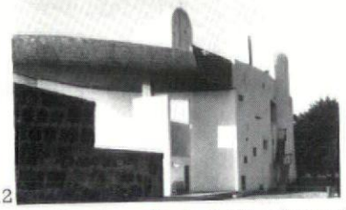
8

8, the chapel roof is seen above the hostel which is built throughout of in-situ concrete walls, incorporating timber and glass shelving units. Tables in the foreground are in precast concrete.



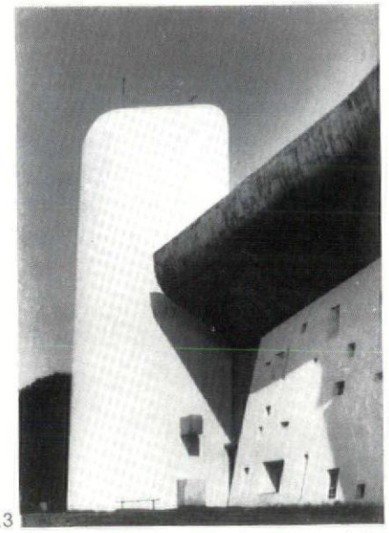
11

11, *the concave east wall forms a cyclorama for special services on pilgrimage days.*



12

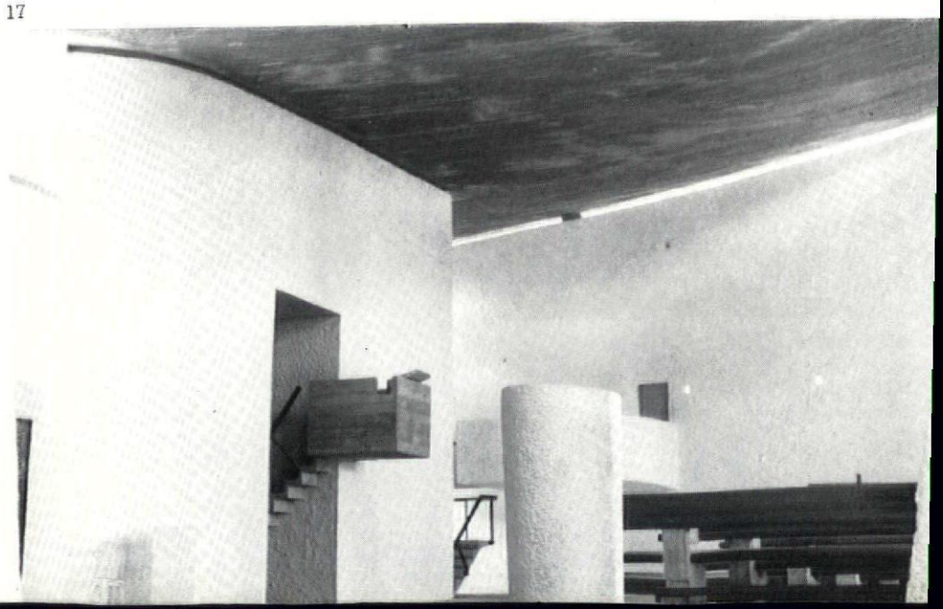
12, *view from the foot of the ziggurat marking the site of the previous chapel destroyed during the war, when it was used as an observation post.*

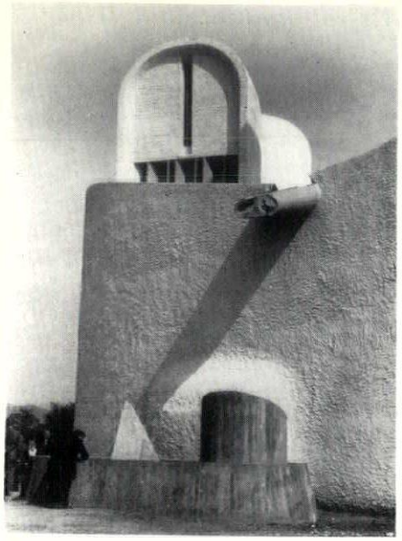


13

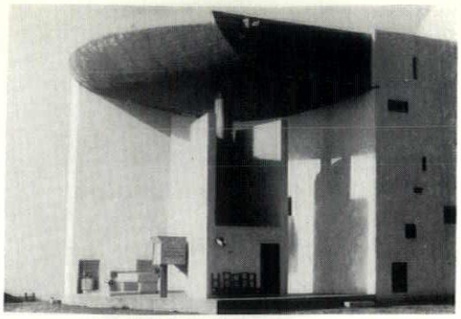
13, *close view of the south wall with external altar and pulpit.*

17





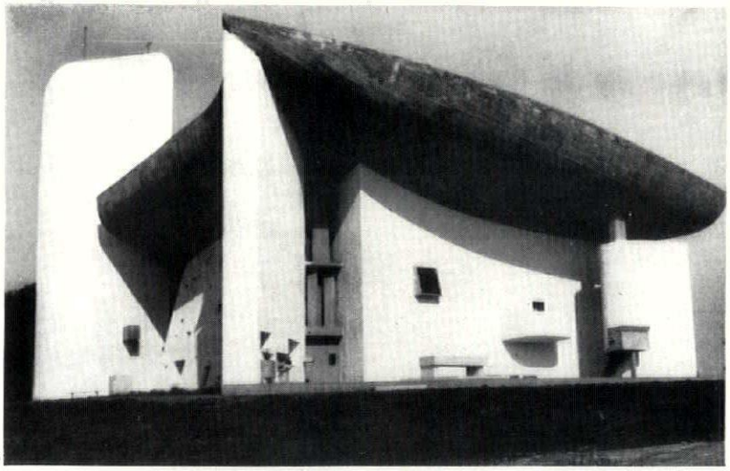
9, *the convex wall behind the rainwater tub denotes the position of the confessionals inside the chapel.*



10, *the glazed strip between walls and roof cuts back into the side wall for a short distance on the corner.*

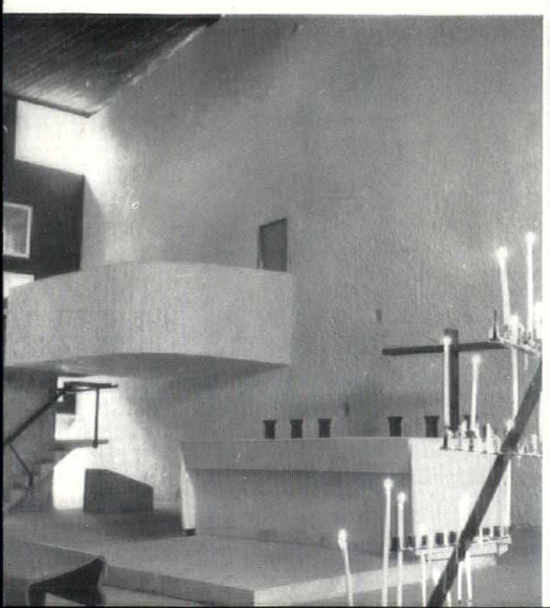
15, *the normal entrance between two of the side chapels. Note the expansion joint between the chapel tower and the main wall.*

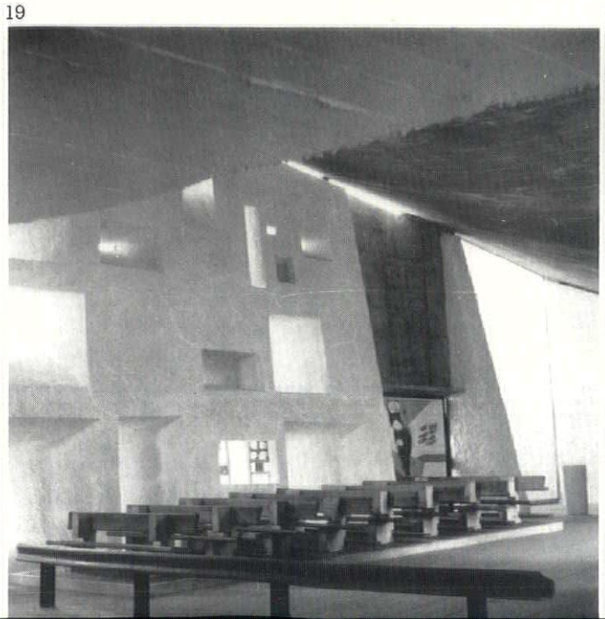
14, *the side chapel towers are provided with a concrete grille which catches the sunlight at different times of day.*

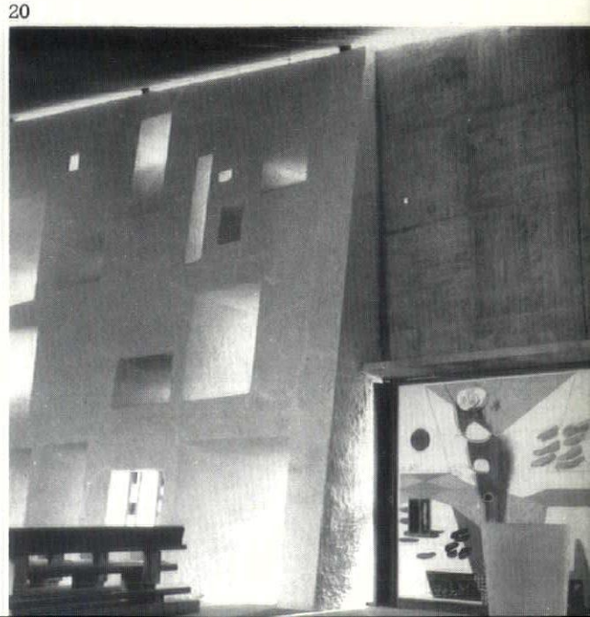


16, *looking from the east towards the external altar and pulpit.*

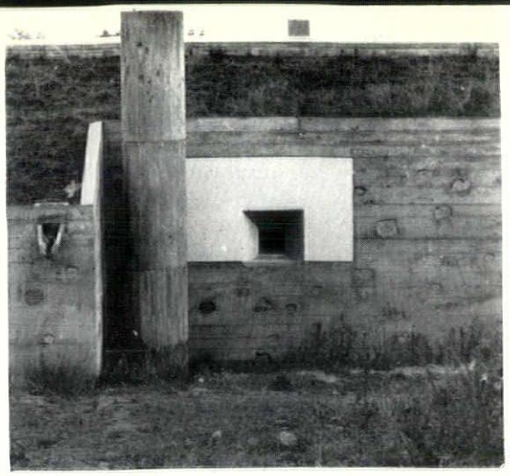
Below, interior views of chapel. 17, *the glazed strip separating walls from roof continues round the interior as a groove on those sides where the roof does not overhang the walls externally. The foreground font is of precast concrete given a hammered finish.* 18, *purple wall to the left, flanking the staircase to the choir gallery. The altar is built up of precast concrete blocks.* 19, *view from beneath the choir gallery towards the ceremonial entrance.The roof sags to its lowest point approximately along the centre of the nave.* 20, *brightly coloured mural by Le Corbusier on the pivoting ceremonial entrance door.*





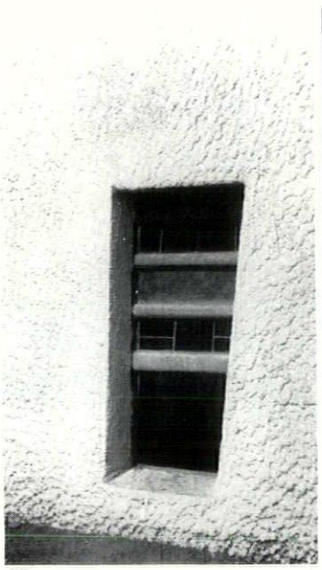


21

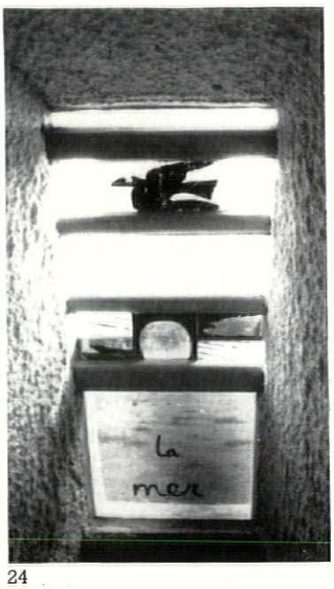


22

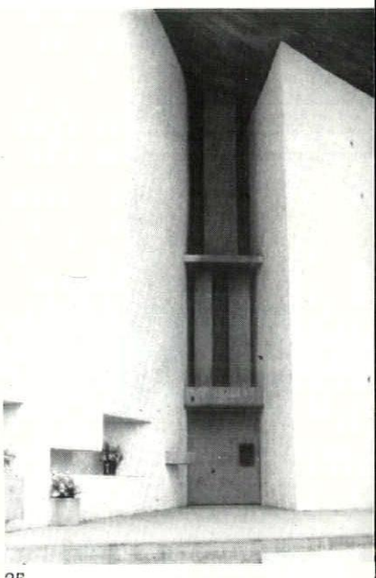
21, the ceremonial entrance. 22, rear of the hostel showing the grass-insulating roof, the surface of stones which have been set close against the shuttering and the white rendered window surround. 23 and 24, exterior and interior of the same window: the precast concrete transoms are pressed into the rendering on either reveal. The clear, coloured, or decorated glass insets are puttied into the transoms. 25, pivoting concrete door with in-situ louvres above.



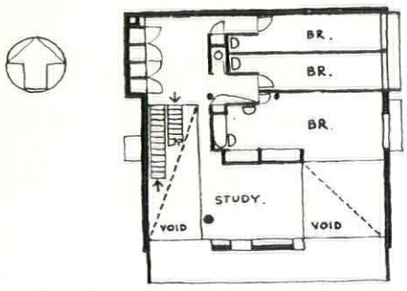
23



24

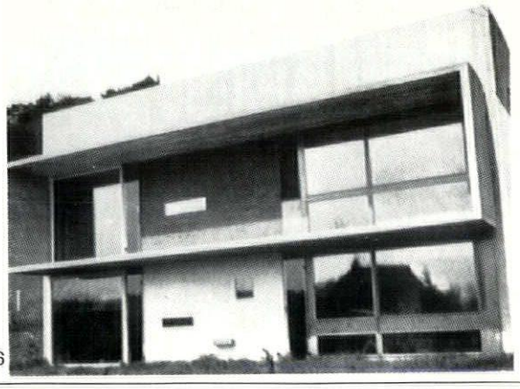


25

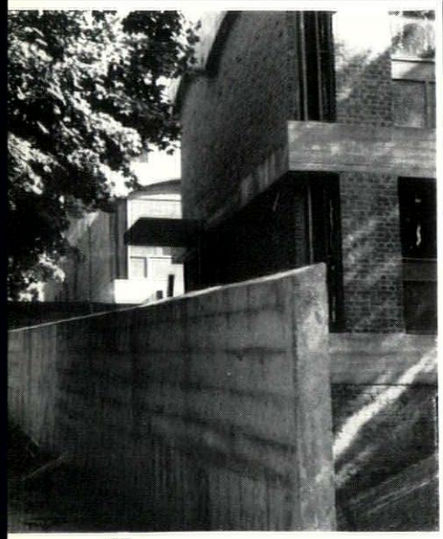


First Floor

House near Paris by Andre Wogensky

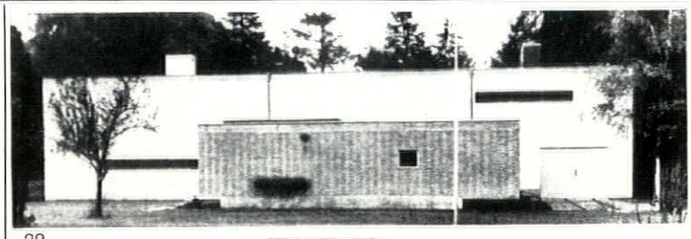


26

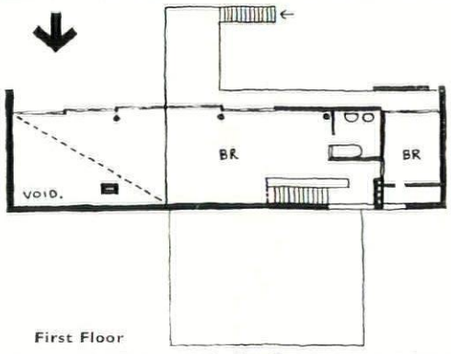


27

Maison Jaoul by Le Corbusier



28



First Floor

House outside Rotterdam by Van Den Broek and Baksma

These three houses, generally regarded as being amongst the most important of European post war avant garde *architecture, all show similar trends towards the arbitrary. On neither front nor sides of the Wogensky house, 26, are the exciting double volumes of the interior apparent: the exterior not being the result of the interior. This external disregard of the section also occurs on the house outside Rotterdam, 28, which is further complicated by an ambiguity of structure part weight bearing, part steel frame. The horizontal slit windows and the rendering of the brick wall seem to refer to a concrete asthetic. At Maison Jaoul, 27, the principle of triple brick structural walls panelled in at the short ends, and the balcony as an extension of the structural floors is most clearly stated. However, with the house closer to the road all principles are inverted, a balcony is propped up at the side and the non-structural end is bricked in. The flight from the 'academism' of pre-war modern is questionable when it produces an architecture of the irrational.*

continued from page 156]

change is a social one, or whether it lies in the public or Le Corbusier. Garches is still regarded with suspicion by the public, either on account of its style or the manner of living of its inhabitants.

It may be considered that the Ronchamp chapel being a 'pure expression of poetry' and the symbol of an ancient ritual, should not therefore be criticised by the rationale of the modern movement. Remembering, however, that this is a product of Europe's greatest architect, it is important to consider whether this building should influence the course of modern architecture. The sensational impact of the chapel on the visitor is significantly not sustained for any great length of time and when the emotions subside there is little to appeal to the intellect, and nothing to analyse or stimulate curiosity. This entirely visual appeal and the lack of intellectual participation demanded from the public may partly account for its easy acceptance by the local population.

Basically it is not a concrete building, although it has all the appearance of a solidifying object; the walls, however, are constructed in weight-bearing masonry. The initial structural idea of outlining the form by a tubular metal frame wrapped over with wire-meshing on to which concrete was to be sprayed for some reason was not carried out. With no change in the conception, this outline was filled in with masonry, rendered over and whitewashed to the appearance of the initial idea. The interior of the west wall became so interrupted with openings that it was found necessary to imbed in the masonry a concrete frame to form around the window openings. This freedom from the precept of the correct use and expression of materials, apparent in other post-war European architecture, has little parallel in the New World where the exploitation of materials and the development of new techniques continues to expand the architectural vocabulary.

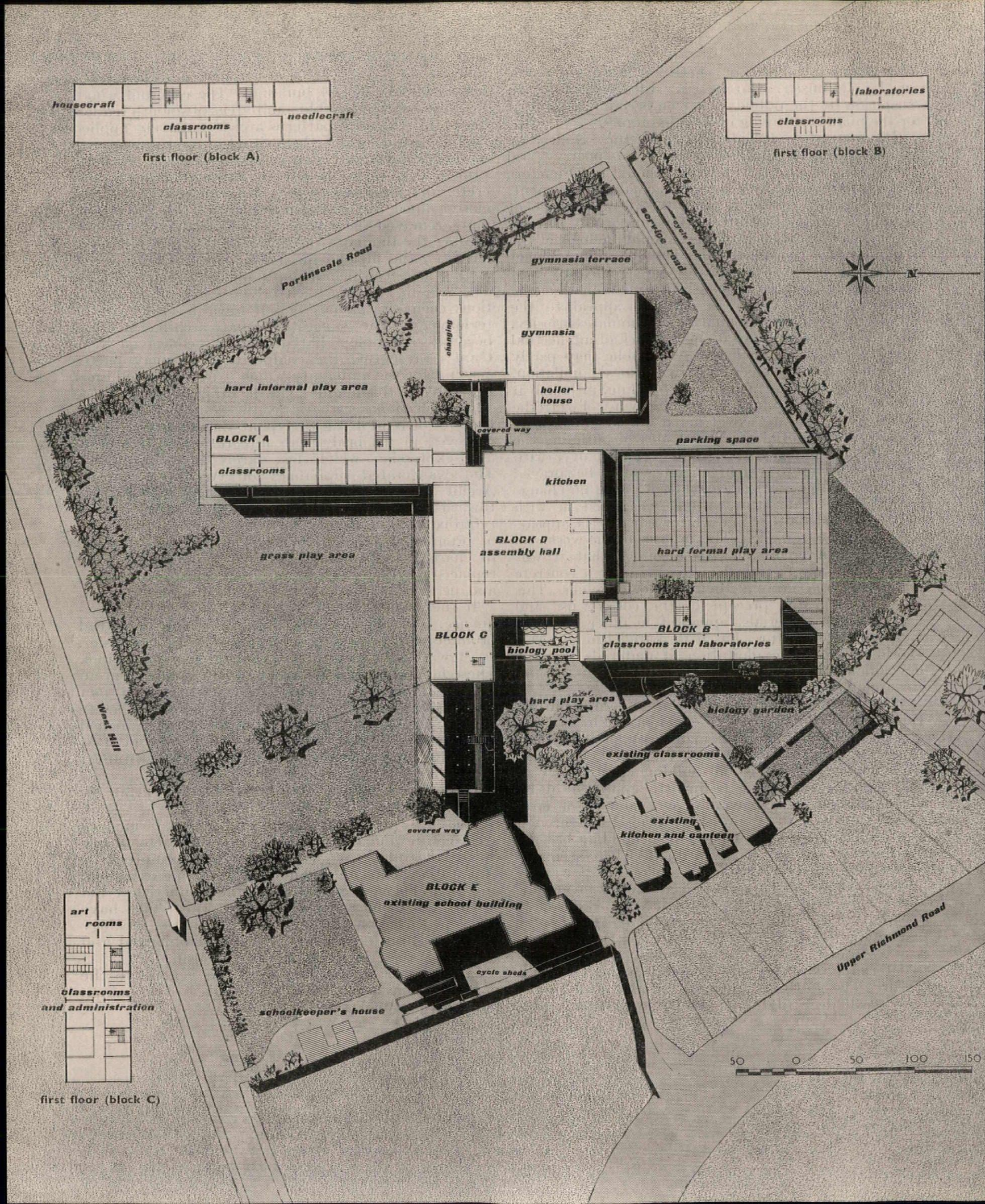
With the loss of direction in modern painting, European architects have been looking to popular art and folk architecture, mainly of an indigenous character, from which to extend their vocabulary. An appreciation of regional building, particularly of the Mediterranean, has frequently appeared in Le Corbusier's books, principally as examples of integrated social units expressing themselves through form, but only recently has regional building become a primary source of plastic incident. There seems to be no doubt that Le Corbusier's incredible powers of observation are lessening the necessity for invention, and his travels round the world have stockpiled his vocabulary with plastic elements and *objets trouves* of considerable picturesqueness. If folk architecture is to re-vitalise the movement, it will first be necessary to determine what it is that is modern in modern architecture. The scattered openings on the chapel walls may recall de Stijl but a similar expression is also commonplace in the farm buildings of Provence. The influence of popular art is also apparent in the priest's house and the hostel buildings. The external woodwork is painted sky blue and areas of smooth rendering painted over in patterns are decoratively applied to the outside walls; their situation and appearance do not express any formal, structural or aesthetic principle. All the walls of these outbuildings are in concrete, and large stones have been placed in the mix close against the shuttering, so that when the boarding is removed the surface of these stones is exposed.

Since the Bauhaus, the fusion of art and technology has been the lifelong mission of Gropius, and yet it is this aspect which denotes his least achievement. The Dessau building itself presents a series of elevations each of which is biased towards either art or technology. The suggestion that architecture has become so complex that it needs be conceived by a team representing the composite mind may partly account for the ambiguity which is felt with buildings generated in this manner. On the other hand, Maillart, who evolved his æsthetic as the result of inventing theories of reinforcing to exploit the concrete ribbon, achieved in his bridges an integration of technique and expression which has rarely been surpassed. The exaggerated supremacy of 'Art' in European Architecture probably denotes a hesitant attitude towards technology, which itself has possibly been retarded by our derisive attitude towards the myth of progress, the recent belief that true progress lies in charity, welfare, and personal happiness, having replaced the Victorian idea of progress as the invention and perfection of man's tools and equipment.

If the application of technology is of little consequence, nevertheless the appearance of industrial products still has some importance for Le Corbusier, as shown by the handrails to the stairs on the chapel. These handrails, which appear to be cut-offs from an extruded section of rolled steel joist, are in fact specially cast and the top flange is set at an acute angle to the web. The movable louvre is a logical development in resisting intense sunlight and it is surprising to find them above two of the entrances to the chapel; however, a closer inspection reveals that they are 4-inch static concrete fins set at arbitrary angles, suggesting movability.

The desire to deride the schematic basis of modern architecture and the ability to turn a design upside down and make it architecture are symptomatic of a state when the vocabulary is not being extended, and a parallel can be drawn with the Mannerist period of the Renaissance. Certainly, the forms which have developed from the rationale and the initial ideology of the modern movement are being mannerized and changed into a conscious imperfectionism.

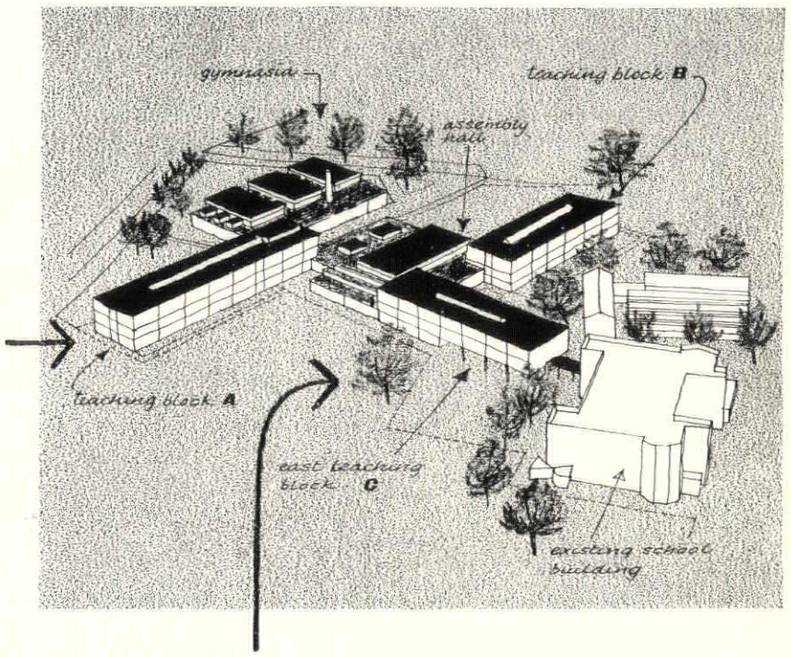
Le Corbusier, proceeding from the general to the particular, has produced a masterpiece of a unique but most personal order.


housecraft
needlecraft
classrooms
first floor (block A)
laboratories
classrooms
first floor (block B)
Portinscale Road
service road
cycle shed
gymnasia terrace
N
changing
gymnasia
boiler house
hard informal play area
covered way
BLOCK A
classrooms
parking space
kitchen
BLOCK D
assembly hall
grass play area
hard formal play area
BLOCK C
biology pool
BLOCK B
classrooms and laboratories
hard play area
biology garden
West Hill
existing classrooms
existing kitchen and canteen
covered way
BLOCK E
existing school building
cycle sheds
Upper Richmond Road
schoolkeeper's house
art rooms
classrooms and administration
first floor (block C)
50 0 50 100 150

SCHOOL AT PUTNEY

ARCHITECTS | **POWELL & MOYA**
Assistant in Charge | **Robert Henley**
Assistants | **Peter Jones and Peter Stewart**

1



Above, diagrammatic sketch, showing viewpoints of the two photographs on this page.

1 and 2, south-west views of classroom blocks, with pre-existing school buildings on the right.

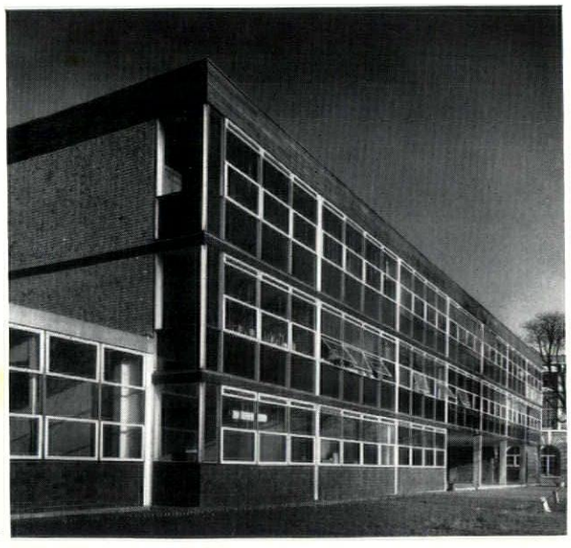
This is an extension to the existing Mayfield girls' school in West Hill, providing 1,620 new places and converting the school into a girls' comprehensive. The old building and temporary buildings are used in conjunction with the new. The existing site on the north side of West Hill was increased to nine acres by taking in adjacent bomb-damaged properties. The extension contained many old trees, most of which have been kept.

The aim has been to keep the design as intimate and small in scale as possible. The teaching blocks have central corridor access with cloakrooms formed in them on ground and first floors. Laboratories and practical rooms are at the end of each block. The open portion of the ground floor of the east teaching block is a covered play area (also forming a link between the old building and the new) and an entrance hall leading to the assembly hall group. The auxiliary halls can be thrown open into the main assembly hall by sliding folding doors and when enlarged can accommodate the whole school. No separate dining rooms were allowed and dining takes place in the assembly hall. Kitchens (next to the assembly hall) and

2

3

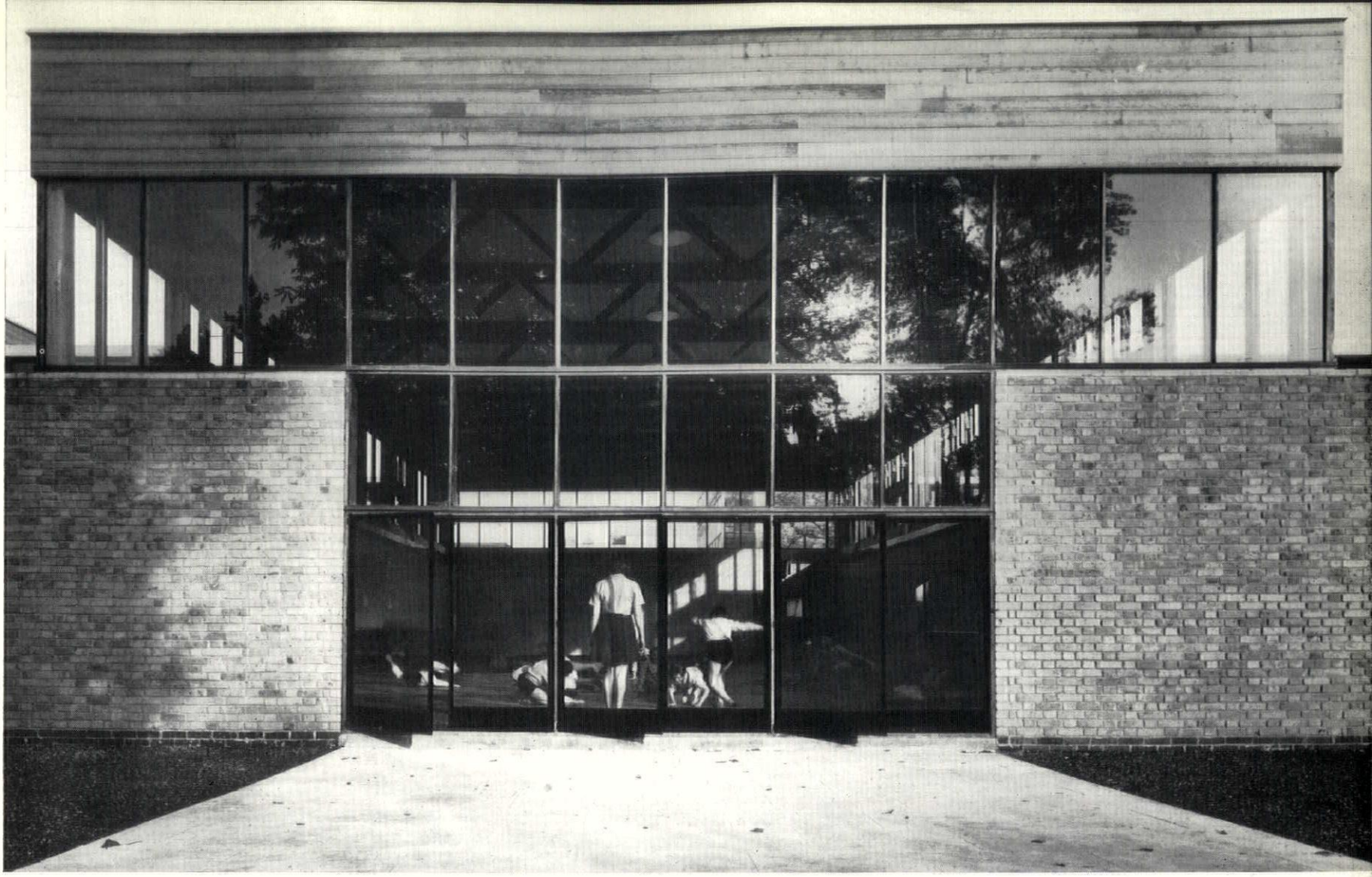
3, general view of the school from Portinscale Road, with south teaching block in centre and gymnasium on left. 4, eastern teaching block, showing covered play space beyond (incorporated as ground floor of block). Facing page, 5, one bay of the gymnasium. 6, west front of gymnasium, with terrace in two colours of asphalt.



4

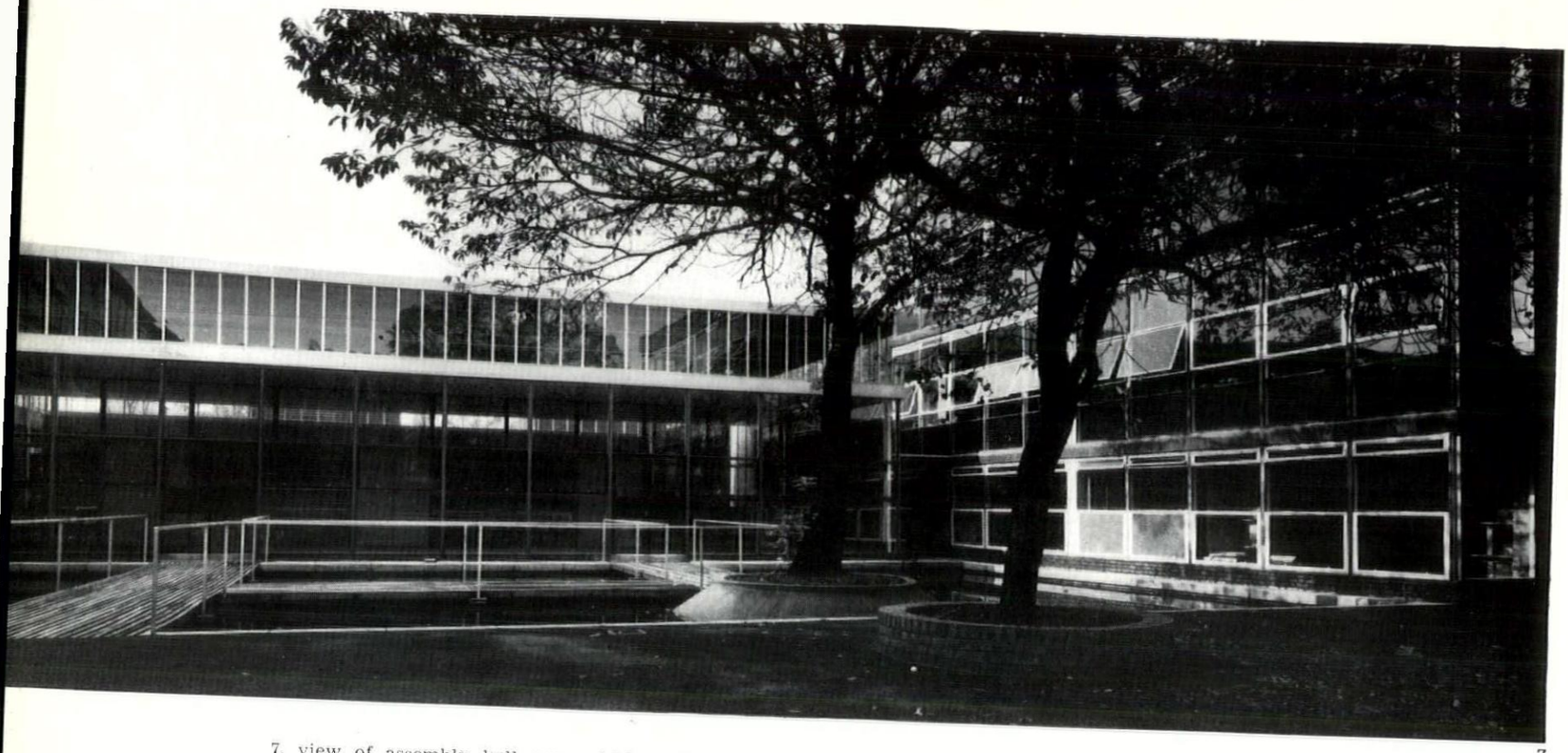
boiler-house open on to a service yard remote from the rest of the school.

The new buildings were designed during a steel shortage and it was felt that, with three-storey buildings, brick structural walls would not only save steel but should also provide an economical solution. At the same time, for good day-lighting without excessively high rooms, wide windows were necessary. The main structural walls are therefore the internal brick cross walls (common brickwork 9 in. thick at all floor levels). The floors are prestressed reinforced concrete and the roofs are timber. In the few positions where a solid wall was not practical it has been replaced by an r.c. beam and columns. The crosswalls have white glazed bricks bonded in at the exposed ends: external brickwork is 13½-in. thick with London stock facings. The infilling is glass in oiled hardwood frames with the opening lights in galvanized steel painted white ; below the cills, coloured



5

6



7

7, view of assembly hall across biology pool, with classrooms on right. 8, passage along east side of assembly, linking classrooms. 9, view of abstract mosaic design on main staircase. 10, close-up of the same. 11, the main staircase in the eastern block, looking west. 12, covered play space, looking west from eastern block. 13, inside covered way, showing entrance to play space, left, and hard outside play area, right.

stove enamelled asbestos cement sheets are screwed to the back of the hardwood frames, which are glazed with ¼ in. roughcast glass ; the internal skin is of 4-in. clinker blocks, plastered. On the ground floor below cill level the frames are replaced by blue brick stable-yard paving slabs laid on edge, bonded and tied back to the inner clinker skin. The flank walls to the main staircase in the eastern block are finished in vitreous mosaic, by Philip Suffolk: one portrays the nine Muses and the other is abstract. The internal colours are predominantly light grey and yellow, with white ceilings ; radiators and exposed pipes are warm dark grey, bright colours being used in small areas only—for example in the fanlights above the doors. Most of the doors are plastic faced and are red at staircase entrances, white for classrooms, black elsewhere: locker fronts in the corridors are dark grey, green and black.

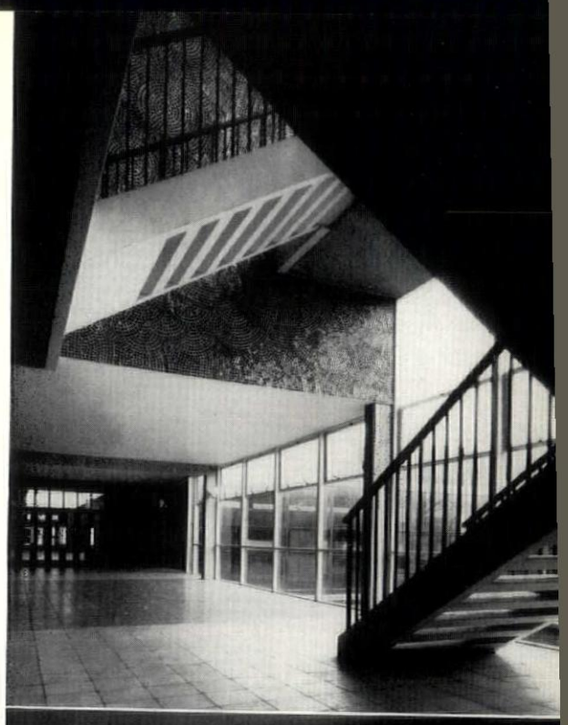
SCHOOL AT PUTNEY

8

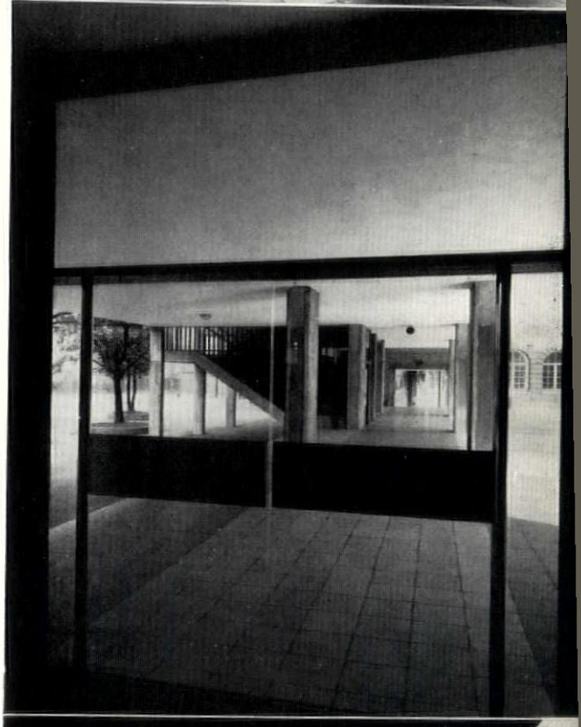
The assembly hall roof is supported on exposed rolled steel columns and consists of two steel space frames like inverted hipped-end pitched roofs. To avoid freestanding columns the side aisles are suspended from the roof frames by steel rods. The space frames are lined with asbestos cement sheets faced with mahogany lapped boarding, varnished. The solid walls are faced with unglazed wall tiles, 4 in. by 4 in., in

9

10



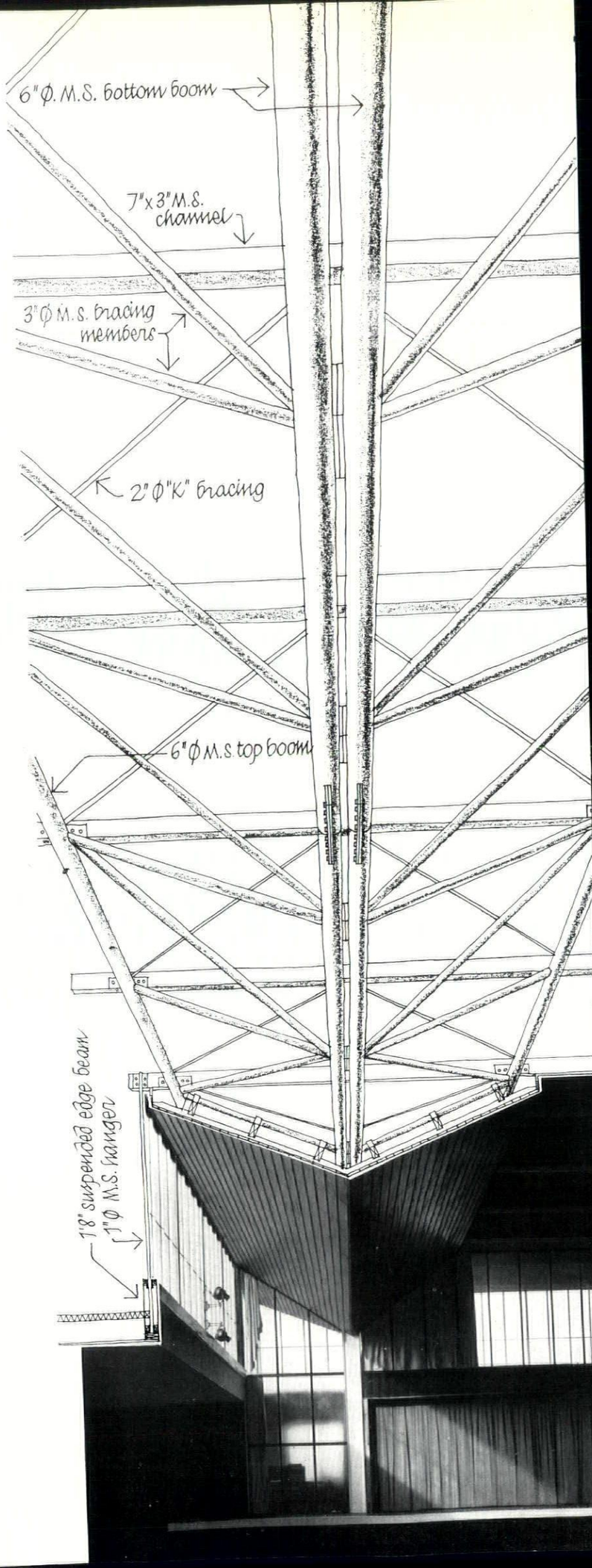
11



12

13

Right, detail of assembly hall space frames



SCHOOL AT PUTNEY

14

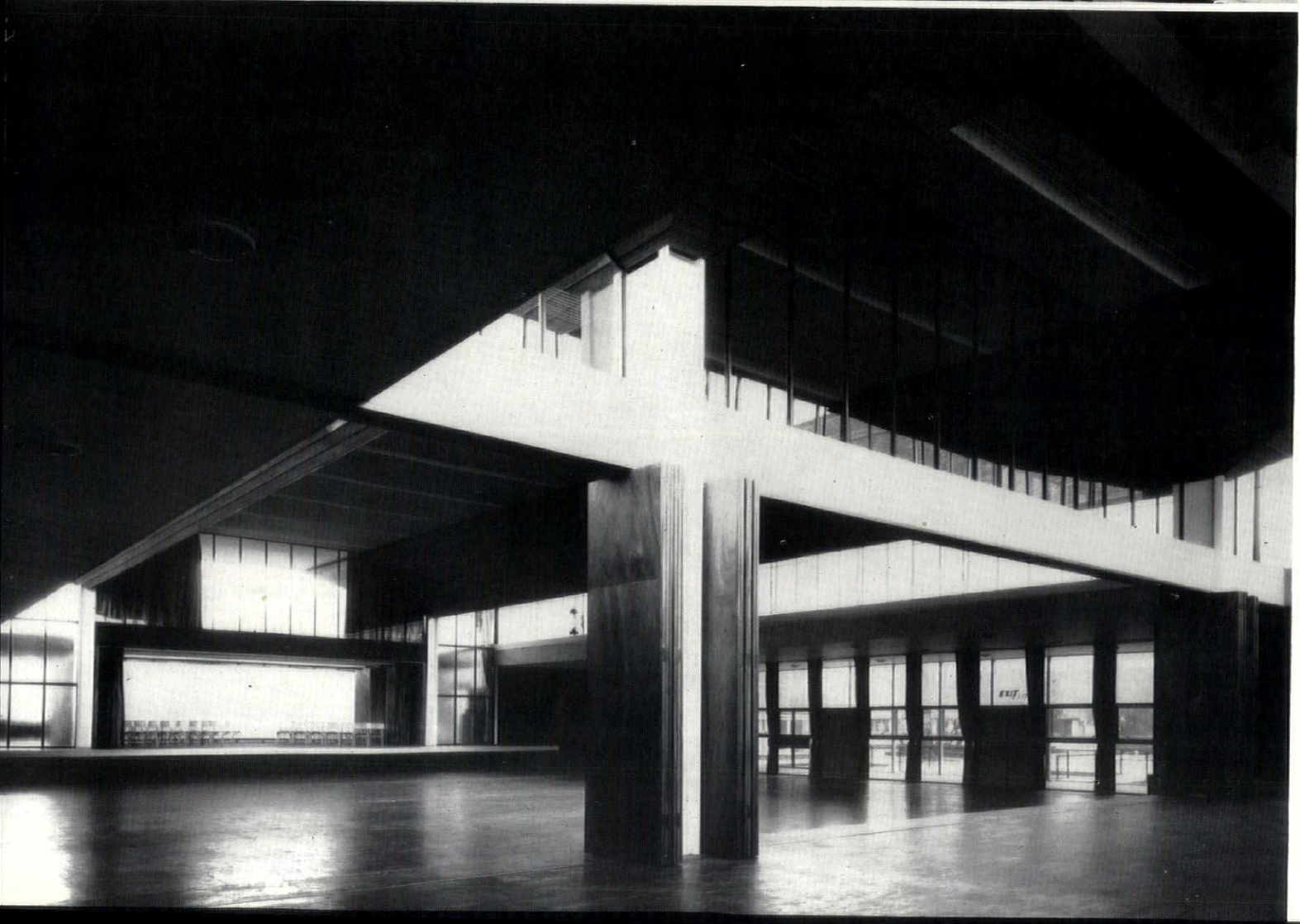
14, south end of assembly hall, with sliding doors folded back against structural columns. 15, main body of hall from the stage, with sliding doors closed. 16, view towards stage from side aisle under suspended roof.

white, grey, pale blue and dark brown: the floor is Missanda hardwood blocks. The hall is heated by embedded floor panels. The kitchen roof is steel and timber supported on load-bearing mullions, the boiler-house roof of prestressed reinforced concrete and the gym. roofs are of timber (hardwood trusses on hardwood posts which are supported on load-bearing brick walls).

The gymnasium has load-bearing brick walls, and hardwood windows with galvanized steel centre-pivoted opening lights: the roof is made up of mahogany trusses carried on hardwood posts which are buttressed by the roofs of the changing rooms, and rest on a reinforced spreader beam on top of the walls. The floor has Gurjun strip flooring on battens.

There is an electric impulse clock system, with clocks in most rooms, and a combined broadcast, public address, class changing and fire alarm system. The tender price was £194 per place, and the net cost, excluding external works, £178 per place: the accommodation per place, including the play areas, is 67 sq. ft.

15



16

AN EDWARDIAN BEQUEST

The Russell Cotes Museum, Bournemouth, described by William Gaunt

'Vignettes painted on a . . . palette—What appears to be a photograph is also a painting': so the catalogue of the Russell Cotes Gallery, Bournemouth, describes exhibit no. 223, above, by J. Bernard. But these words could characterize the whole gallery—paintings pre-occupied with a photographic attitude to their subjects, but those subjects and their settings drawn from Art, not Life, vignettes on a palette. And since Art influences Life, East Cliff Hall, which was built to house the Russell Cotes collection and still does to this day, takes the style of its interiors from the idea of artistic living which was enshrined in its pictures, and in the Notting Hill studio-houses of the artists who set their style. For Sir Merton Russell Cotes, who formed the collection and gave it to the City of Bournemouth, took his taste, both in pictures and interior decoration, from the successful English painters of the years of his late-Victorian affluence. As a result, East Cliff Hall and its contents form a unique surviving record, as William Gaunt points out, of an attitude to Life and Art which has perished almost entirely.

The nature and result of the late nineteenth century patronage of art are vividly illustrated by the Russell-Cotes Art Gallery and Museum at Bournemouth.

Strange to modern eyes as something in a dream is the exterior of the building with its pink-tiled tourelles, its cupolas and swelling glass-enclosed terraces, bowered among rhododendrons and palms on the East Cliff, looking out over the green and purple waters of Poole Bay. Strange, too, is its interior, the vast hall, 1, rich with dark oak, the central fountain of marble let into its parquetry, surrounded by shrubs and statuettes—where blonde goldfish swim across the yellow rays of mosaic beneath the tinkling jet; the staircase with its life-size group 'The Bathers,' 3 (how cunningly the rib of wool, the coy loops and bows on the young woman's costume are counterfeit in marble); the open first-floor gallery where the flash of Victorian gold leads the eye to the serried picture-frames; the rooms around, each with its surprise, its note of fantasy—the trompe l'œil palette so skilfully painted, that a real photograph seems to be stuck on it, the busts by Italian professors of the 1880's, 10, a Pietro Calvi of Milan, a Lot Torelli of Florence (some distributed on the seaward balconies, peer in through the windows with eerie effect, 11), the prodigious array of canvases by Edwin Long, R.A.—one pauses before his 'The Chosen Five,' 4 (five feet by eight, excluding the massive frame), that depicts, in the style of 1885, the beautiful maidens of Crotona, sitting to Zeuxis for his picture of Helen of Troy.

Here in singular completeness is the decor of the late Victorian mansion, the wallpaper with its raised and embossed patterns in crimson and gold, the panels of amber-stained glass painted with birds, the columns of russet marble, 2, the gilded cherubs in relief that sport around the walls, the rococo screens of bedroom and boudoir. Here, also, is the essence of Period in painting and sculpture—more concentrated, perhaps, than in any comparable collection. All this suggests a threefold analysis; of the structure, the scheme of interior decoration and the assemblage of objects of art, but every approach directs us in the first place to the personality and ambitions of Sir Merton Russell-Cotes whose house this was (a present, that is, to Lady Russell-Cotes in 1901—and to Bournemouth from them both in 1908). The analysis, even if it must be extended beyond his lifetime (Sir Merton died in 1921) is substantially that of a patron's dream and some biographical particulars are needed to explain the building that bears his name.

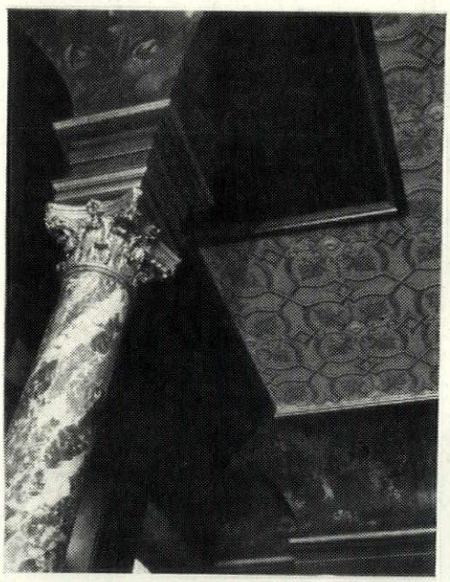
It was in 1876 that he became the proprietor of the Royal Bath Hotel at Bournemouth, a fortunate moment, for the resort was just growing popular. It had arrived late among seaside places. When Queen Victoria was crowned it consisted only of a few fishermen's cottages and a coastguard station; it is an apposite fact that five years before Russell-Cotes took over the hotel on the East Cliff the population of Bournemouth was about 7,000; that five years after it was nearer 17,000—the subsequent leaps and bounds of its progress need no detailing. The hotel owner rose to wealth, local eminence as Mayor and in due course a knighthood, by his own business capacity aided by Bournemouth's swift expansion. To confirm and dignify his status, like others in that prosperous era, he dreamed of a 'palace of art' full, like the palaces of old, of splendid and beautiful things. For many years, while his wealth was mounting, he collected paintings and statuary. Now that so many of the works he brought together seem, to say the least of it, 'old fashioned' it is worth noting that he was contemporary in his tastes and in this he was fairly typical of the new race of patrons. Unlike the connoisseur of the previous century, who would balance the old master with the new, cautiously adding a Wilson to a Claude, a Gainsborough to a Gaspar Poussin, he favoured strongly and almost exclusively the work of living men.

There was a new race of artists (as wealthy as their patrons) catering sympathetically for them. Not relying on dealer or adviser, backing their own fancy, Russell-Cotes bought the pictures that looked opulent and grand, like the huge 'Jephtha's Vow' (1885), 5, by his favourite, Edwin Long; or had an amusing story to tell, 'Tick-Tack,' (1881), 6, by Briton Riviere—a puppy listening (note the subtlety of the title) to his master's ancient watch; or contained a sentiment to muse on—'One More Day drops into the Shadowy Gulf of Bygone Things, (1875) by B. W. Leader. He had no prudish objections to the figure, though he did ask that the too-copious breasts of Jezebel in Byam Shaw's picture of 1896, 8, should be covered by a jacket, but Venus by E. Matthew Hale (1883) was allowed to sit more or less naked (on a golden throne), 9.

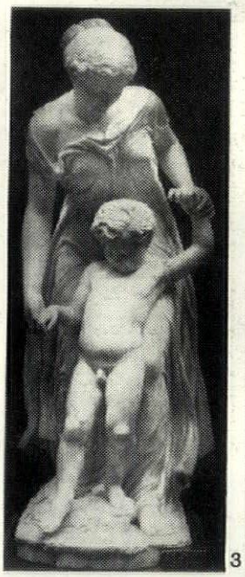
Further adventures in collecting depended much on personal association. His taste for Victorian-Italian sculpture may be traced to his visits to Italy (he travelled a good deal). A visit to Japan in 1885 with Lady Russell-Cotes accounts for a diversity of bamboo objects, netsukes and lacquer, preserved in what is now known as The Mikado's Room, 13. An admiration for Sir Henry Irving, who stayed at the Royal Bath, inspired the 'Irving Collection,' 12, including the pistols he used as Dubosc in 'The Lyons Mail' and the ancient Roman skull on which he meditated as Hamlet.

For a time the pictures and

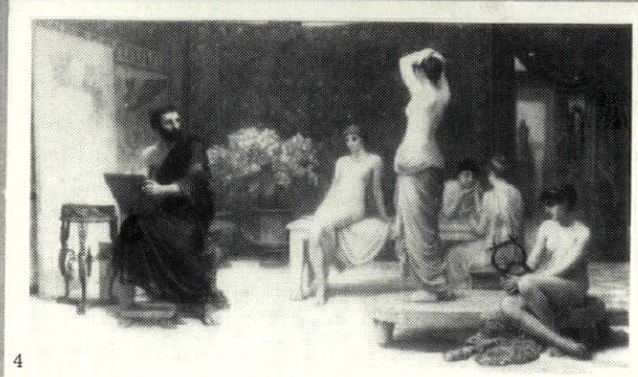
1



2

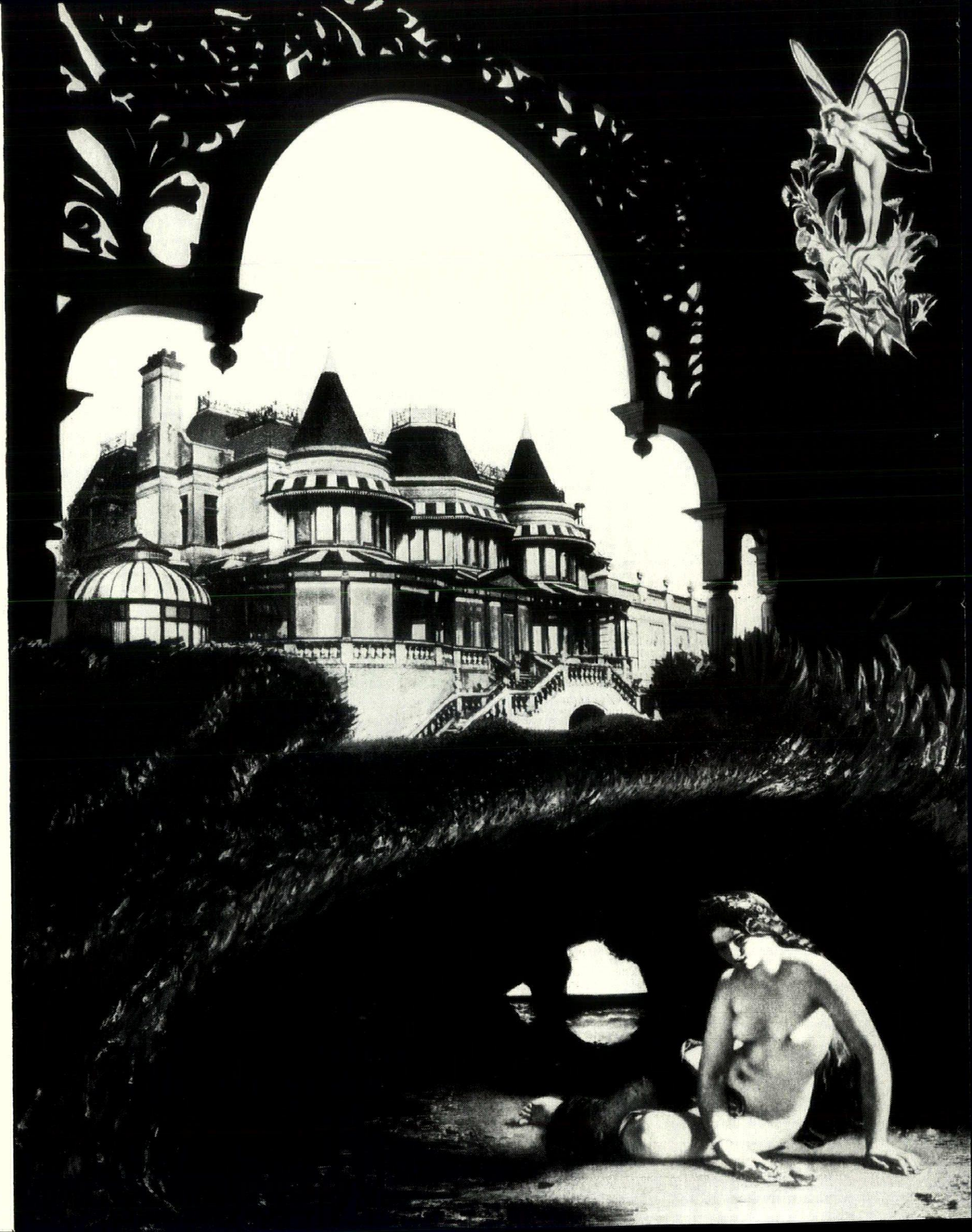


3



4

1, the entrance hall to the Russell-Cotes Museum (East Cliff Hall, Bournemouth) with marble fountain, shrubs and statuettes. 2, one of the russet marble columns in the house, with frescoed vaulting and embossed ceiling. 3, life-size group, 'The Bathers,' (artist unknown). 4, 'The Chosen Five,' by Edwin Long, R.A., which depicts the maidens of Crotona sitting to Zeuxis for his portrait of Helen of Troy.



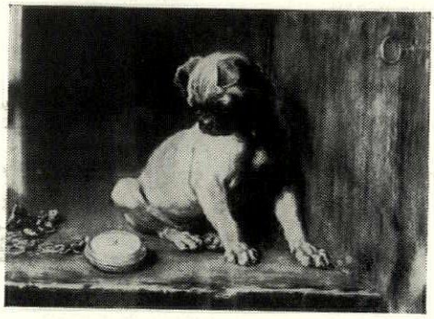
sculpture were widely distributed, moving, mainly about the Midlands, as the 'Russell-Cotes Loan Collection,' yet they demanded a worthy and permanent home. Sir Merton had in mind a house, close to the hotel but surpassing it in magnificence. Built in the closing years of the nineteenth century this was East Cliff Hall, now forming the main part of the Gallery and Museum. The visitor is still likely to be impressed by the dramatic nature of propinquity and contrast as between hotel and mansion. A plain, white, solid building of that mid-Victorian kind sometimes called 'Georgian type', the Royal Bath Hotel seems as it were to have given birth to a vision, the Museum, a few hundred yards away, a vision that evades architectural category. Ought it to have had a local character? There was nothing to conform to. Bournemouth, unlike Brighton, had no Regency buildings which might or might not set a style—and it was a necessary premise that the palace of art should be distinct from the hotel.

What resulted may be called the projection of a state of mind. There was an architect, J. Fogerty, A.R.I.B.A. (his firm was local but no longer exists), yet, as so often in the late Victorian age, the dreamer stood at the architect's elbow, urging his wish for the surroundings of the Tudor noble, the Italian prince, the laird in his ancestral castle. It was Sir Merton Russell-Cotes who aimed, as he tells us in his privately printed autobiography, at a combination 'of Renaissance, Italian and Old Scottish Baronial Styles.' The interior of the mansion bore a likeness to others somewhat earlier than its date. The popular Victorian painters had set an example in their own luxurious houses that wealthy middle-class patrons confidently followed. They, if anyone (it was reasonable to argue) should know what a palace of art ought to look like: and East Cliff Hall among other homes of the wealthy paid its respects to their judgment. The Parthenon frieze, repeated in Lord Leighton's studio, had its further replica on Russell-Cotes's staircase. In the artists' homes were many fountains: those of Millais, Leighton and Alma Tadema were famous and it was only fitting that the palace of art at Bournemouth should have its fountain also. In his classical villa in Grove End Road, Alma Tadema inscribed maxims of art over the doorways and it was perhaps in admiring imitation that Russell-Cotes caused to be painted in Old English letters maxims of his own. An Italian decorator of his own choice covered the ceilings with paintings that had the more up-to-

Seen in capriccio by Kenneth Browne, through the rich tracery of one of its screens, East Cliff Hall, Bournemouth, with its Italo-Tudor-Baronial turrets, exhibits the same blend of the material and the wishful as the pictures it houses. Collected by Sir Merton Russell-Cotes, who built the hall, they range from the aethereal realism of Falero's 'Butterfly', above, to the fleshy fantasy of W. E. Frost's 'Sea Cave', below.

5, *'Jephtha's Vow'* (1885) *by Edwin Long.* 6, *'Tick-Tack,' a puppy listening to his master's watch* (1881), *by Briton Riviere.* 7, *'The Siren' by Charles Landelle.* 8, *'Jezebel'* (1896) *by Byam Shaw.* 9, *'Psyche kneeling before the throne of Venus'* (1883) *by E. Matthew Hale.*

5



6

7

8

9

10, one of the galleries on the seaward side of the house, containing Italian busts, mainly of the 1880's; *the same can be seen,* 11, *from the inner galleries.* 12, *the Henry Irving Room, the result of Sir M. Russell-Cotes' great admiration for the actor.* 13, *the Mikado's Room, containing the collection brought back by Sir M. and Lady Russell-Cotes from their tour of Japan in* 1885.

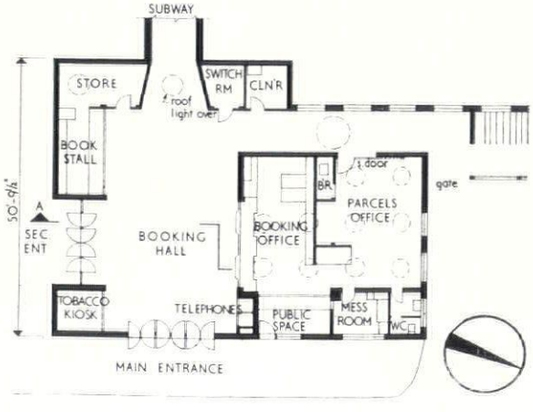
date flavour of the café-restaurant of the 'nineties.

East Cliff Hall made a munificent gift to Bournemouth, with the addition of four top-lit galleries for pictures (opened in 1919), as the Russell-Cotes Art Gallery and Museum, though the story of its growth was then by no means finished. As a repository of the Victorian 'rich man's art' in its domestic setting, and, for a subsequent age, an historic and social 'document,' it was complete as Sir Merton left it. On the other hand, the annexe of 1919 foreshadowed the municipal gallery and an endowment fund provided the means of indefinite extension. What sort of additions were, and could be, made remains to be considered.

The basic collection, so much bound up with the personal taste and experience of its owner, was not very easy to build on. Dissecting it impartially one finds no central core of what we could all agree are masterpieces. While almost exclusively composed of nineteenth century works, it by no means fully represents the nineteenth century. There are virtually no Pre-Raphaelites or only belated by-products that give little idea of Pre-Raphaelite aims. A sea-picture, for instance, by John Brett, reveals none of the quality of his work in the fifties. A painting by Arthur Hughes, of 1888 (reproduced in the Souvenir of 1924 though disappearing from the catalogue later), seems sadly different from his inspired early productions. In spite of a large Albert Moore, the leading classicists are scantily represented. Foreign works were never excluded and there is a hint of Barbizon, of Corot and Diaz in the original catalogue, but at no time a trace of a French Impressionist. 'Art is to the eye what music is to the ear' was one of the maxims inscribed (and still faintly visible though it has been painted out) on one of the walls: but this sentiment did not prompt the purchase of a Whistler symphony or nocturne. The trustees have tried various lines of development. One is to add nineteenth century pictures and as recently as 1932 more Edwin Longs were
10 acquired. A handsome recent
11 purchase, Rossetti's 'Venus Verticordia,' may be said to fill a gap, even if it seems a little out of its element. Another plan is to add works as near to the original collection in style or spirit as our own century affords—which is of more debatable value and raises a host of new questions. It is fair to say the original standard was not æsthetically high. To make it a present-day canon logically involves the acquisition of the æsthetically imperfect. One is compelled to think of the possibilities of confusion among lay visitors, seeking for education in art as to what is good and what is not; confusion also as to what modern art really is; and what an ideal municipal gallery should be (if this is, as its endowment and extensions suggest, a municipal gallery in embryo).

Here, of course, are problems that have beset all our late nineteenth century galleries including the Tate Gallery (another Victorian patron's dream) which has met them by its prolonged series of excisions and transformations designed to give a better proportioned view of British art as a whole. Yet the Russell-Cotes Gallery is a special case. It began as a house. It is instructive to see the close connection between the
12 interior and a particular kind of
13 painting and sculpture. To alter the collection materially would be to lose the character of a period piece. It is a 'museum' (ambiguous word) only in a very individual sense, though a 'Geological Terrace' now adds its interesting monoliths of lias, diorite and Kentish rag, to such 'museum' specimens as the netsukes of the Mikado Room and the pistols of Dubosc. The essence of its pictorial art is that of the 'eighties, even if the old pictorial vein continues to 'Anno Domini, 1940, as I see it,' a painting by William Turner in which a fool in motley, sitting on a table amid guttering candles, burns pound notes. It is architecturally, and as a collection for anyone with a period sense, a queerly fascinating creation of an affluent age and person, and his dream of splendour.

1. *pedestrian way to the main building from the south.*



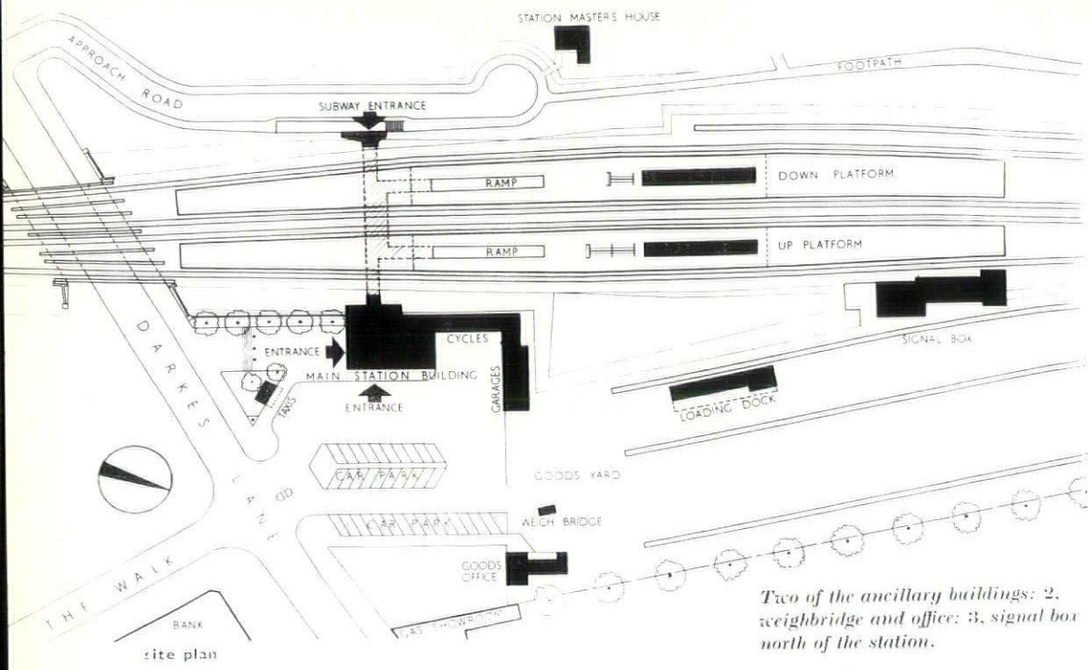
ground floor plan, main station building. scale 1 32 in. = 1 ft.

STATION AT POTTERS BAR, MIDDLESEX

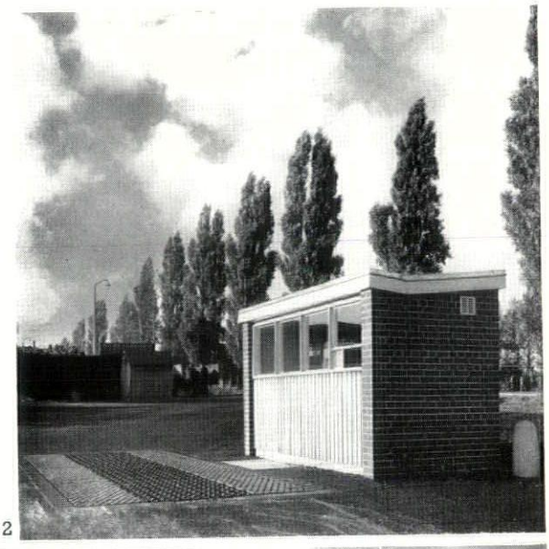
CHIEF ARCHITECT, B. R. EASTERN REGION: H. H. POWELL

ARCHITECT-IN-CHARGE, JAMES WYATT

The station is a complete reconstruction caused by widening the main Eastern Region line from London to the North. From the architect's point of view, this entailed providing signal box, loading deck, weighbridge shelter, goods offices, main station building, finishes to subways and ramp, platform buildings and station-master's house; the canopies and platforms themselves were not under the architect's control. Potters Bar has typical suburban traffic, mostly London-bound season-ticket holders; for this reason there is more public accommodation on the 'up' platform and direct access to the platforms through the booking office is arranged so that it is not impeded by ticket-buying queues. The ticket control is in the subway between the ramps to the platforms.



site plan



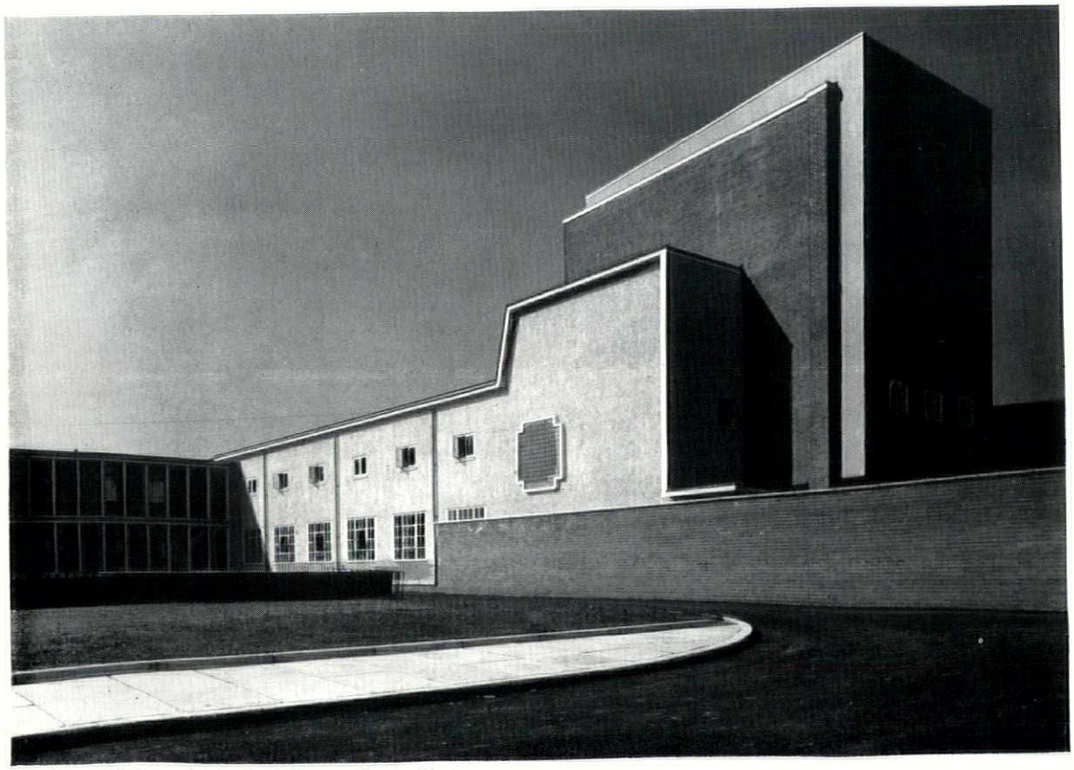
2

Two of the ancillary buildings: 2, weighbridge and office; 3, signal box north of the station.

3

The main station building is constructed with in-situ reinforced concrete beams, slabs and columns, with load bearing external brick walls. The platform buildings are constructed with unpierced brick panels forming piers, linked by braced light steel angles supported on tubular columns behind the windows, with a light timber roof. The signal box is load-bearing brick, with the signal room independently supported on a reinforced concrete platform standing on four reinforced concrete columns, and consisting of a light steel roof covered with steel decking supported on 2-inch solid steel columns.

In the booking hall, blue glazed wall-tiles have been used up to the clerestory level, between the openings: the suspended ceiling is perforated acoustic boarding to reduce the noise level resulting from the hard finishes elsewhere.



4, *the north (supply) end of the services spine.*

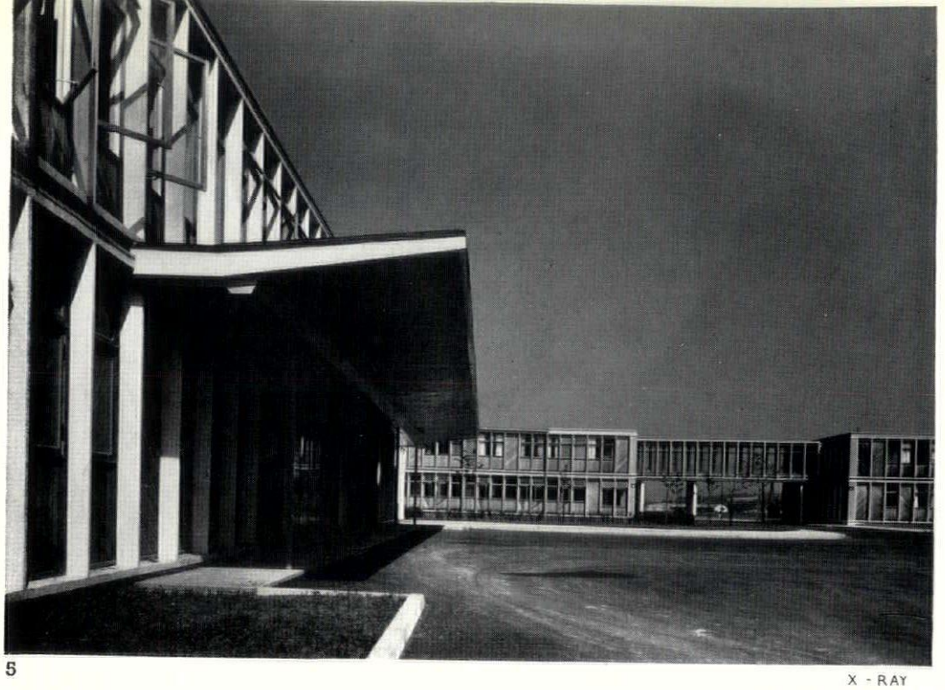
HOSPITAL AT ALEXANDRIA, DUMBARTONSHIRE

ARCHITECT: J. L. GLEAVE

CHIEF ASSISTANT: T. R. SCOTT

This is a 150-bed general hospital on the west side of the valley separating Loch Lomond and the Firth of Clyde; the first new hospital to be finished in Britain since the war. Two principles controlled the design: a maximum height of three storeys, to use the shelter afforded by hills west and south; and the need for flexibility. The result is a central permanent spine for communication and services, with accommodation groups attached to it that are capable of being extended both horizontally and up to three storeys.

The spine contains a basement 'soiled duct' which takes all refuse; the ground floor is used for general communication, and the first floor for food supply only. The spine and the links connecting it to the standard units are load-



5

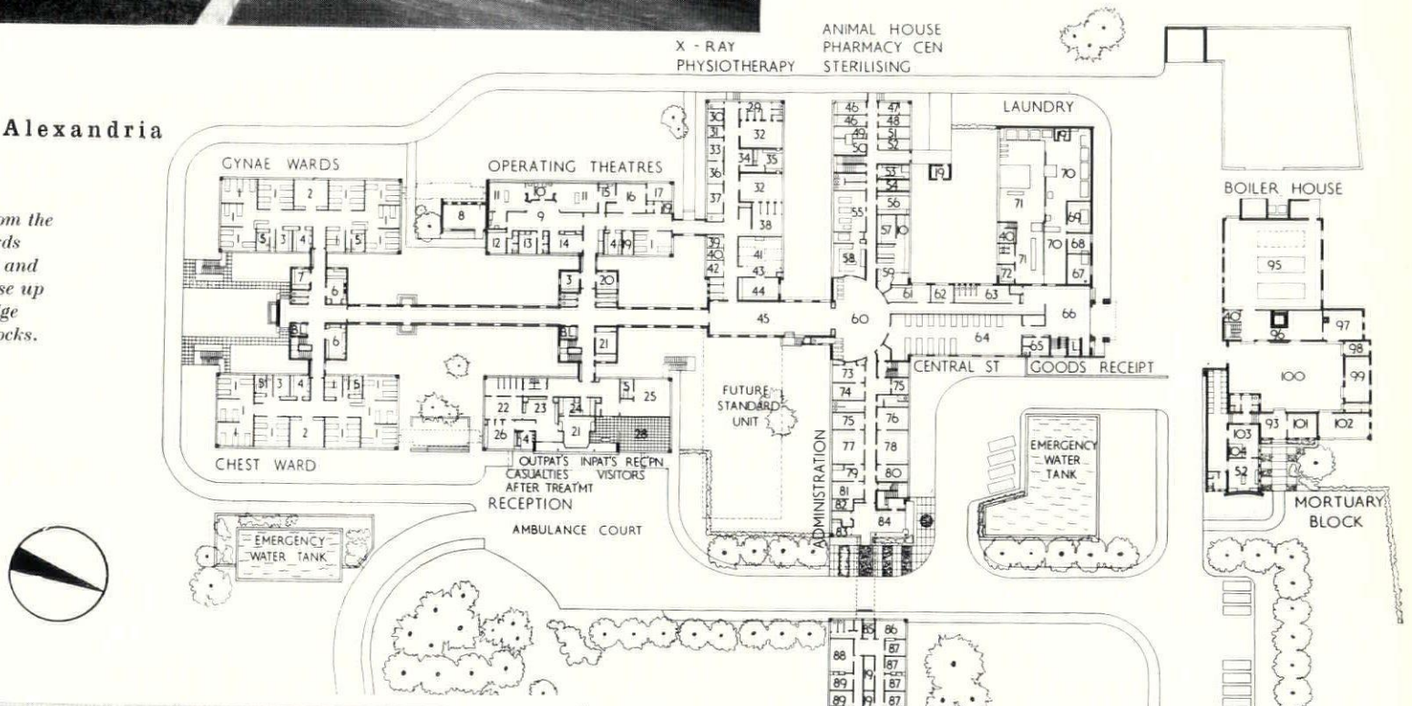
bearing brickwork rough-cast. In acting as a distribution channel it runs southward from the tower which contains the tanks and lift motors, and 'points' towards the wards: it is faced with golden brown brick and fluted asbestos cement sheets. The semi-circular central supplies hall is on the ground floor underneath the tower, connecting as many service departments as possible.

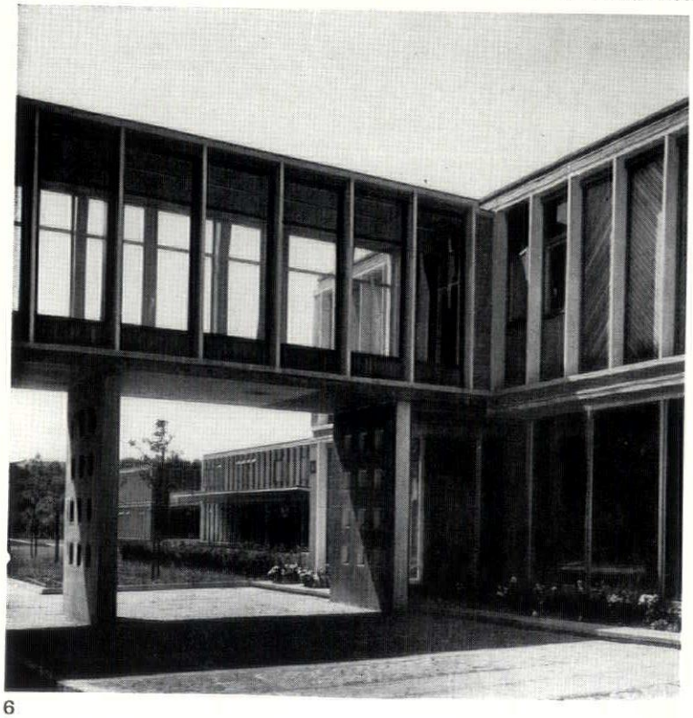
The ward units themselves are a standard size of 100 feet by 40 feet, steel framed on a 40-inch grid with reinforced concrete floors and roofs, and faced with five types of infilling panels using glazing and cedar boarding. Each ward unit houses 50 patients, but in an emergency 280 beds can be accommodated altogether. Most of the ancillary rooms are in the link block, and the wards are largely subdivided by glazed screens.

Radiant panels are used to heat the operating rooms to minimize the risk of dust-carrying convection currents: the general heating is by hot water, but steam boilers are installed because of the need for sterilizing equipment.

Hospital at Alexandria

5, main entrance from the south, looking towards administration unit and nurses' home. 6, close up of the first floor bridge between these two blocks.



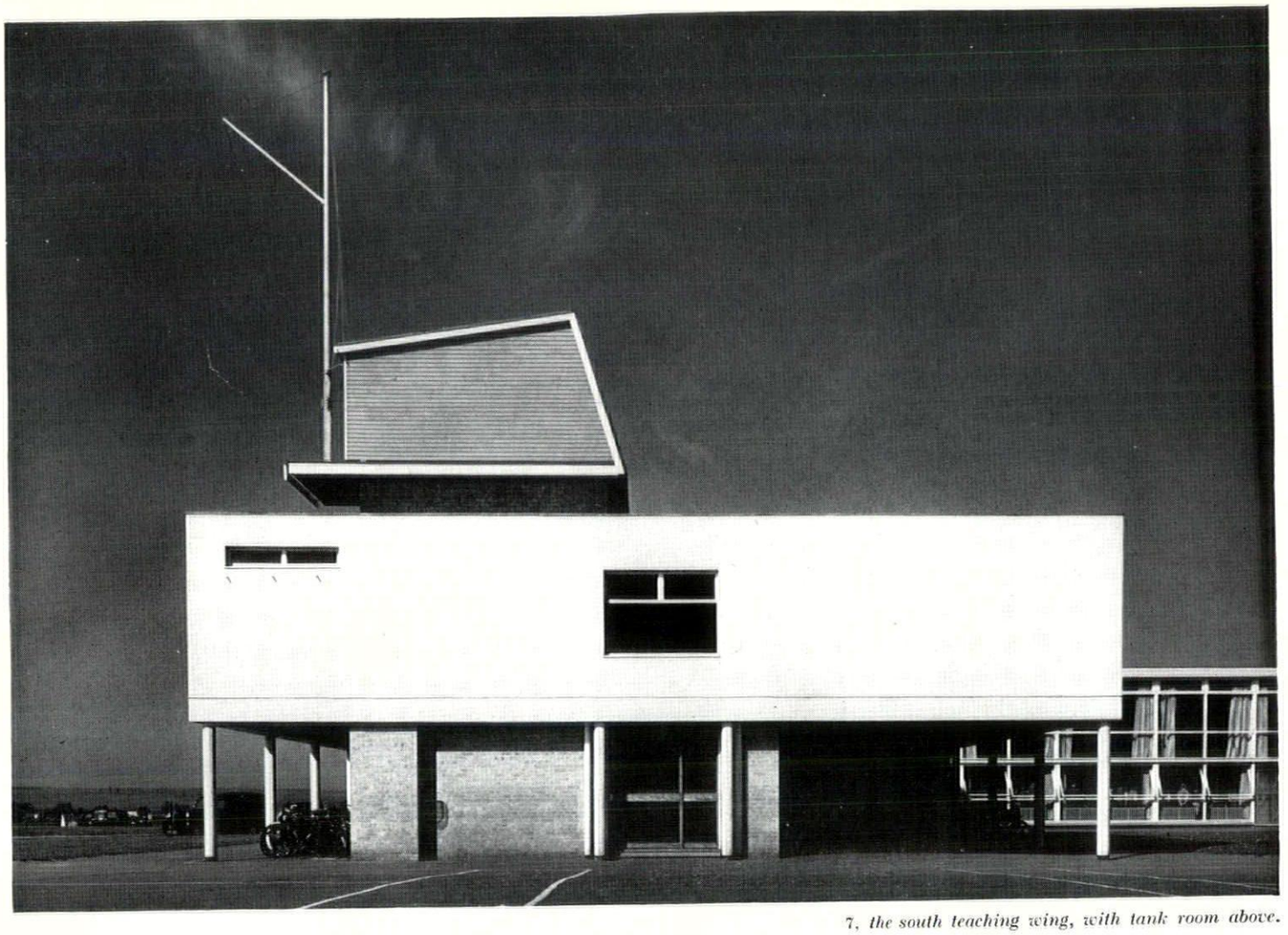


6

key:

1. wards.
2. sitting, dining room, visitors.
3. sister and prep. room.
4. sluice.
5. bath.
6. ward kitchen.
7. ward linen.
8. air treatment room.
9. operating theatre hall.
10. sterilizing room.
11. operating theatre.
12. nurses' changing room.
13. doctors' changing room.
14. anaesthetizing room.
15. scrubbing-up room.
16. plaster room.
17. bandage room.
18. splint room.
19. store.
20. prep. room.
21. social worker.
22. consulting room.
23. waiting space.
24. records.
25. in-patients' reception.
26. treatment room.
27. reception office.
28. visitors' room.
29. cubicles.
30. radiographer.
31. film store.
32. X-ray.
33. viewing and reporting.
34. wet viewing.
35. developing room.
36. radiologist.
37. emergency X-ray.
38. patients' waiting room.
39. wax room.
40. office.
41. treatment cubicles.
42. sunlight room.
43. physiotherapy.
44. gymnasium.
45. lobby.
46. infected animals.
47. food store.
48. quarantine.
49. cage disinfecting.
50. cage washing.
51. normal animal house.
52. post-mortem room.
53. cylinder store.
54. spirit store.
55. central sterilizing room.
56. bulk store.
57. drug store.
58. central syringe.
59. pharmacy.
60. central supply.
61. hospital linen.
62. sewing room.
63. women staff cloaks.
64. central stores.
65. male staff cloaks.
66. goods receipt hall.
67. infected work.
68. disinfected work.
69. foul wash house.
70. sorting and washing bay.
71. finishing and packing.
72. staff dispatch room.
73. assistant matron.
74. matron.
75. typists.
76. secretary.
77. accounts department.
78. board room, audit, waiting.
79. accountant.
80. medical superintendent.
81. wages department.
82. cashier.
83. porter.
84. entrance hall.
85. kitchen.
86. domestic staff sitting room.
87. domestic.
88. sisters' sitting room.
89. sisters' bedroom.
90. kitchen laundry.
91. nurses' sitting room.
92. nurses' bedroom.
93. visitors.
94. games room.
95. boiler house.
96. plant room.
97. stand-by diesel.
98. hospital switch room.
99. transformer.
100. service yard.
101. chapel.
102. workshop.
103. mortuary.
104. chill room.

ground floor plan **scale 1/96 in. = 1 ft.**

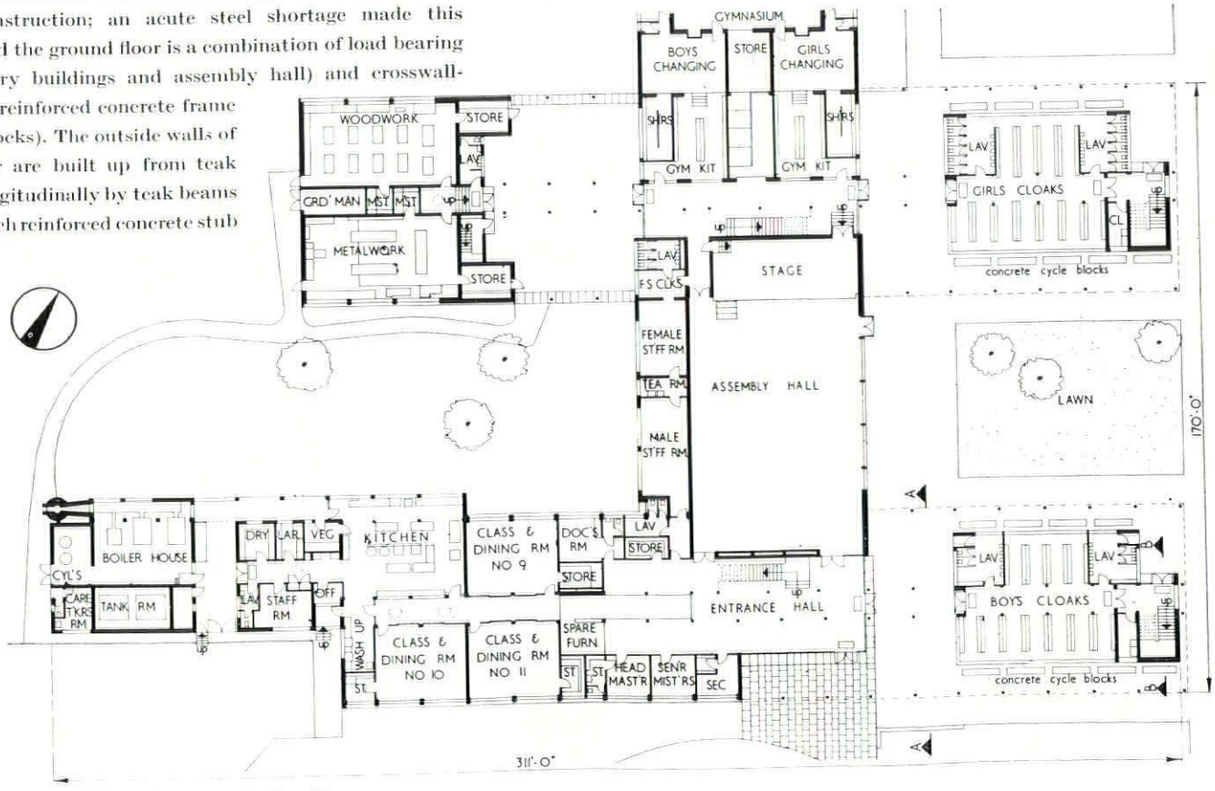


7, the south teaching wing, with tank room above.

SCHOOL AT HERNE BAY, KENT

ARCHITECTS: LYONS, ISRAEL AND ELLIS

A three form entry mixed county secondary school in Bullockstone Road, on a gentle sloping site giving southward views over the Isle of Thanet. The spine of the building runs N.W.–S.E., with two classroom arms intersecting it and enclosing the assembly hall: a gallery in the latter joins the arms at first floor level. The whole building was intended to be of frame construction; an acute steel shortage made this impossible and the ground floor is a combination of load bearing brick (ancillary buildings and assembly hall) and crosswall-and-pier and reinforced concrete frame (classroom blocks). The outside walls of the first floor are built up from teak posts, tied longitudinally by teak beams bolted to 6-inch reinforced concrete stub columns which carry the roof beams. The clients asked that wood wool slabs (6 feet long) should be used wherever possible and this suggested a column-to-column grid of 12 feet. The rendered brick panel on the south elevation is painted deep blue: panels in the first floor frames are black, grey-green and yellow; steelwork inside the assembly hall is painted white.

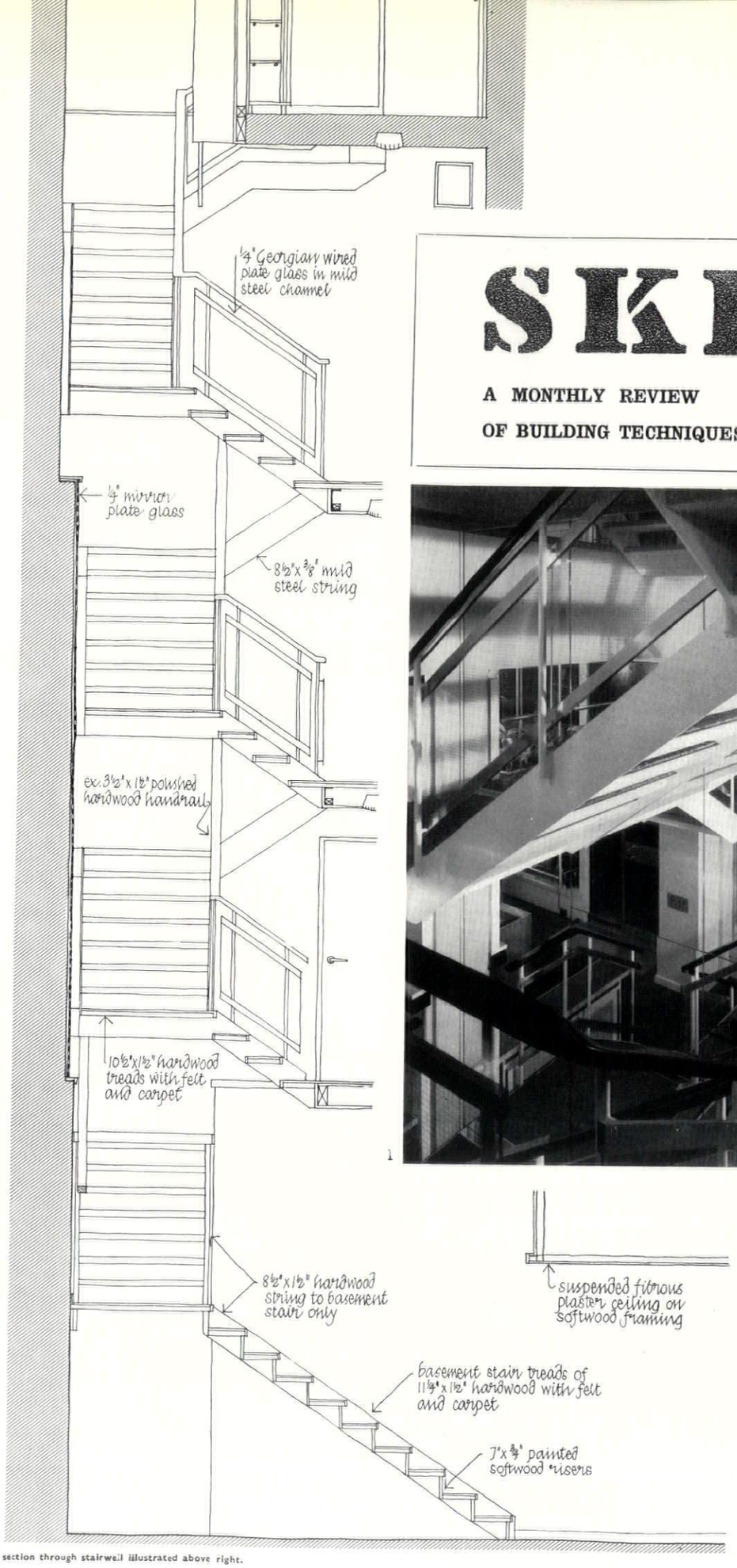


ground floor plan scale 1/48 = 1 ft.

SKILL

A MONTHLY REVIEW
OF BUILDING TECHNIQUES & INDUSTRIAL DESIGN

1 interiors
2 design review
3 techniques
4 the industry



section through stairwell illustrated above right.

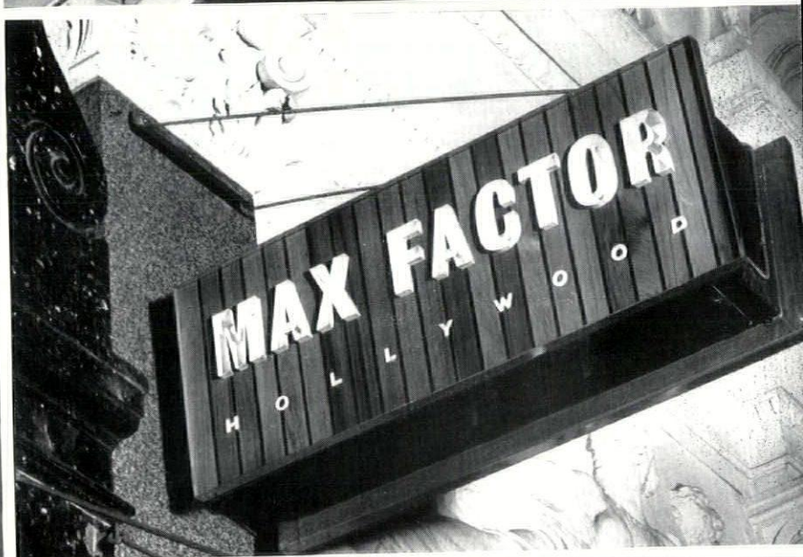
1 INTERIORS

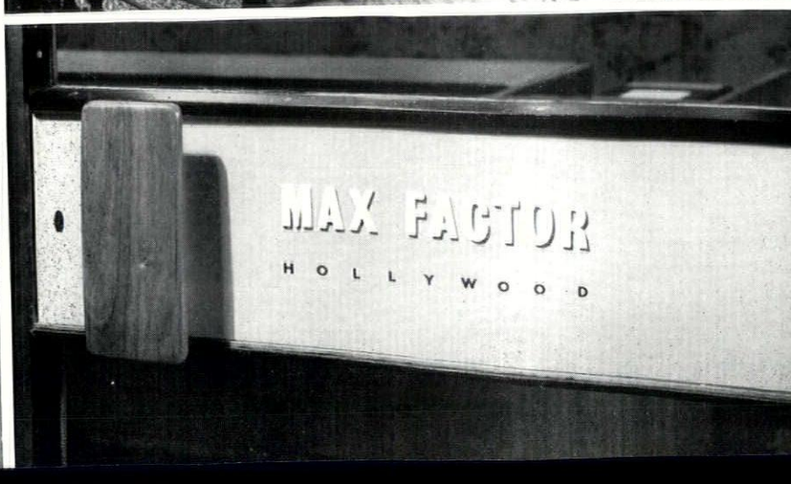
BEAUTY SALON OFF BOND STREET, W.1

Architects: Gordon and Ursula Bowyer

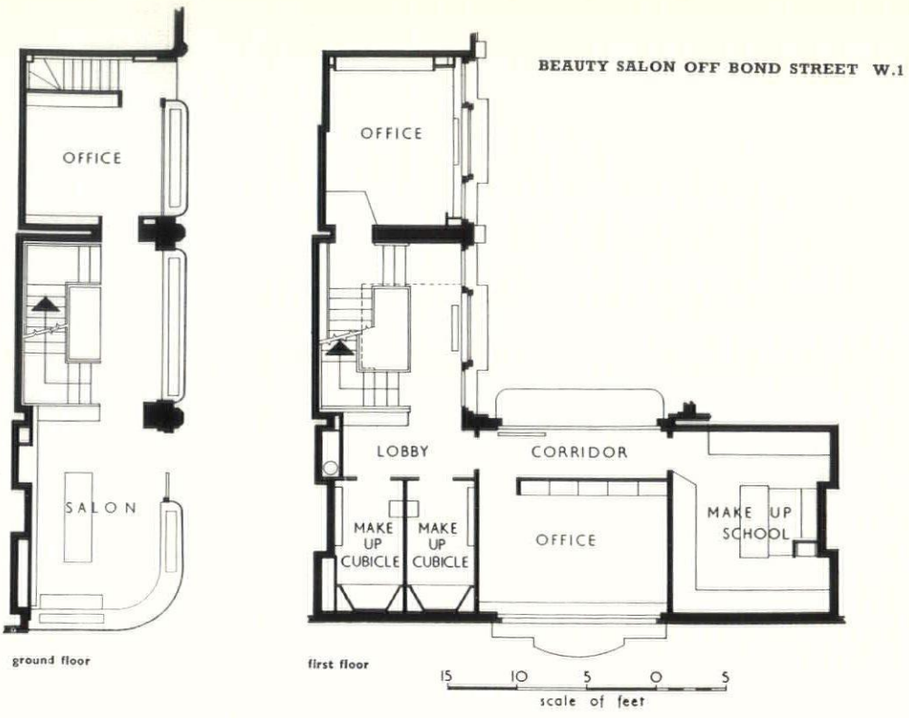
These premises for Max Factor are on the corner of the Royal Arcade, at the Bond Street end. Space is severely limited at ground level, but the first floor extends over the Arcade and the basement under it. At street level are a salon for the sale of cosmetics and making of appointments, a

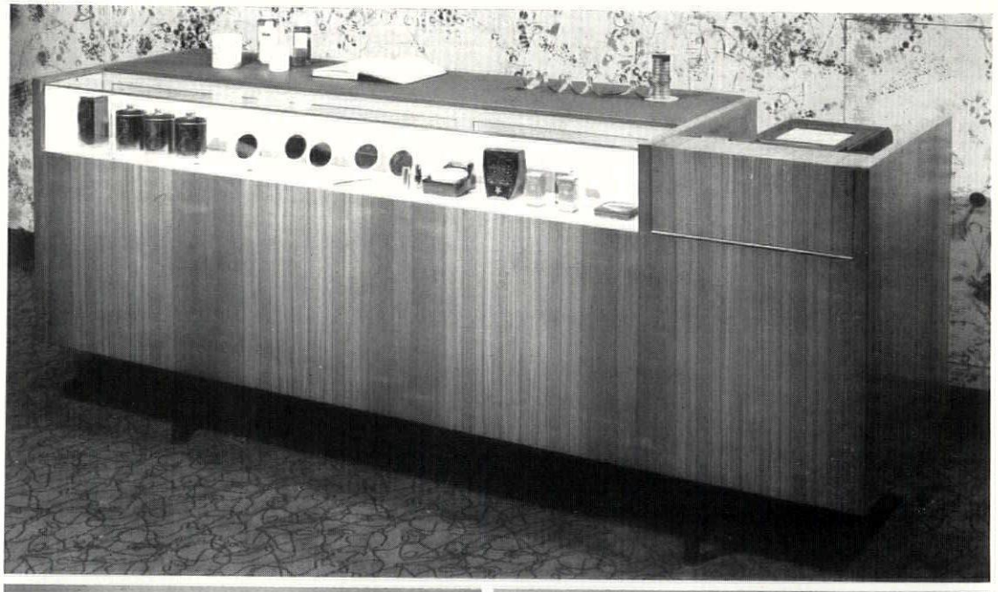
MAX FACTOR
MAX FACTOR


MAX FACTOR
HOLLYWOOD

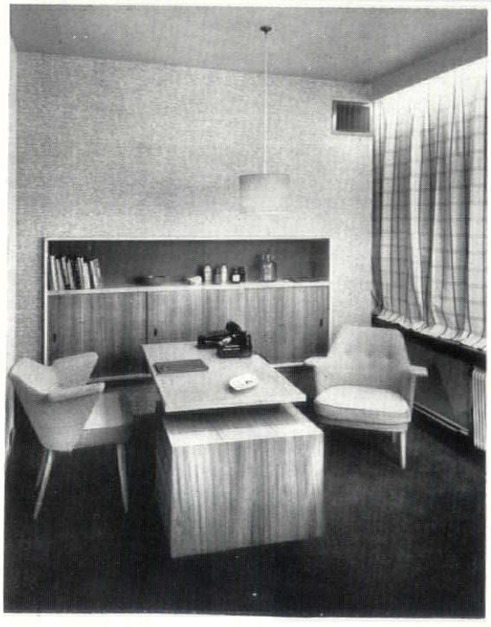

MAX FACTOR
HOLLYWOOD

small private office and a service entrance to the basement; on the first floor are two executive offices, an 'instruction room' and two make-up cubicles, on the second a small office and theatrical make-up cubicle, and in the basement a store-room, rest and powder rooms for customers and cloak-rooms for staff. Two existing staircases were replaced by one with a new mezzanine landing. In the salon the window-backs were removed and the window-beds narrowed, as all displayed objects are small and more space could thus be gained inside. The panel facing the entrance, with a display recess between its two sections, conceals air-conditioning trunking and heating pipes. The rear wall is completely mirrored; the new stair in front of it consists of carpet-covered hardwood treads and welded steel strings painted white, with an ebonized handrail and a wired glass balustrade. A flower-box on the mezzanine has sycamore strip facings. The ceiling is lemon yellow. The office behind is in the same general colours; a mirror covers one wall with, under it, a bronze lighting trough directed at the ceiling. On the first floor over the Arcade is an office with large semi-circular net-curtained windows looking on to Bond Street and down the Arcade. One side is treated as a corridor but is part of the office in conception, with a storage fitting division up to door height and glazing above. Each part has the same floral wallpaper on the outer walls, and the ceiling sloping down from the windows to the glazed screen to contain the air-conditioning ducts above. The 'instruction room' adjoins this office and has round the perimeter a continuous mirror and plastic-covered shelf with drawers underneath. Recessed into the ceiling are six pairs of fluorescent tubes masked by opal perspex, which can give a variety of lighting effects; pigmy lamps in the side mirrors add sparkle. The rest-room in the basement has a fibrous plaster ceiling vaulted to follow the lines of existing brick arches; the free-standing structural pier is clad with mirrors and vertical mahogany strips.





7



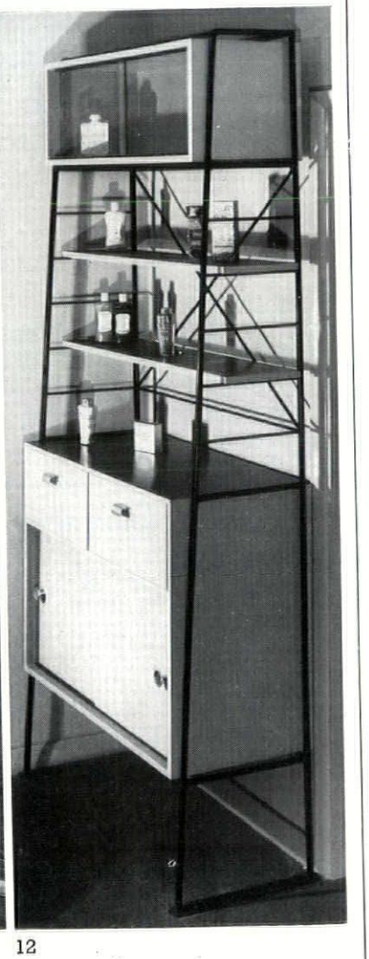
8

9

Opposite , 2, *top left, part of front to Royal Arcade.* 3, *top right, stairs and mezzanine from ground floor salon.* 4, *bottom left, the rest room in the basement: mahogany strips on right clad an existing free standing pier.* 5, *centre right, sign in Bond Street;* 6, *below right, centre panel to entrance doors: the lettering here and throughout the showrooms was designed by Kenneth Grange. On this page,* 7, *counter in the salon; polished elm veneer with grey-blue leather top.* 8, *office at rear of building on first floor: pink ceiling, grey carpet, black and white matting paper in end wall.* 9, *the other office on the first floor, on the bridge over the arcade entrance.*

10

11



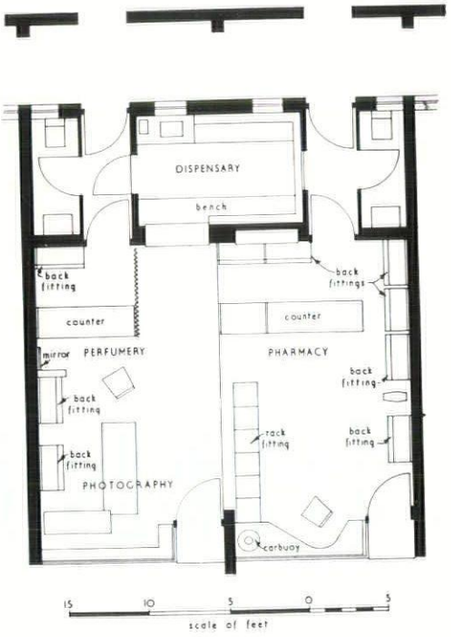
12

10, view from entrance of pharmacy looking through central rack fitting towards perfumery counter. There are five display boxes in the rack: grey outside, red, yellow, blue, white and green inside. 11, *3-foot and 6-foot components making up pharmacy counter.* 12, *one of the back fittings: metalwork sprayed black, wood painted grey with tops in polished Honduras mahogany veneer.* 13, *window fitting for photographic department.*

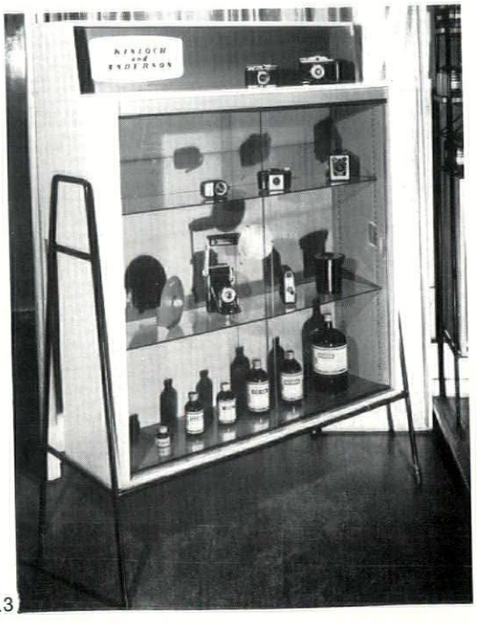
CHEMIST'S SHOP IN HEMEL HEMPSTEAD

Architect: Maurice Hardstaff

The shop in the town centre of Hemel Hempstead originally consisted of two independent units of 12 feet frontage by 20 feet depth with lavatories and stores behind. The shop floors of the two units

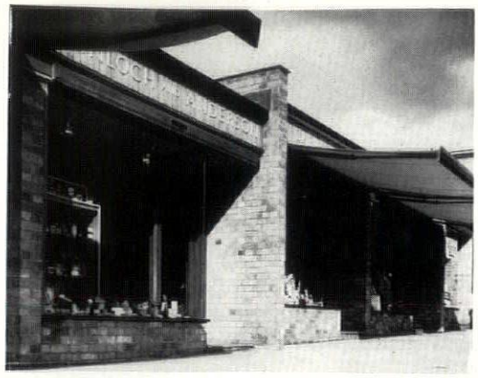


have a difference in level of 6 inches. The dividing wall was removed completely to make a single shop with two entrances and a room at the rear large enough to form a dispensary. One set of lavatories was removed to make a storeroom. The problem of the 6-inch difference in floor level was limited to a 3-foot wide passageway between an open display rack and a counter, which, to invite attention to the step, is here brightly coloured. To achieve an open type of display, with a minimum of



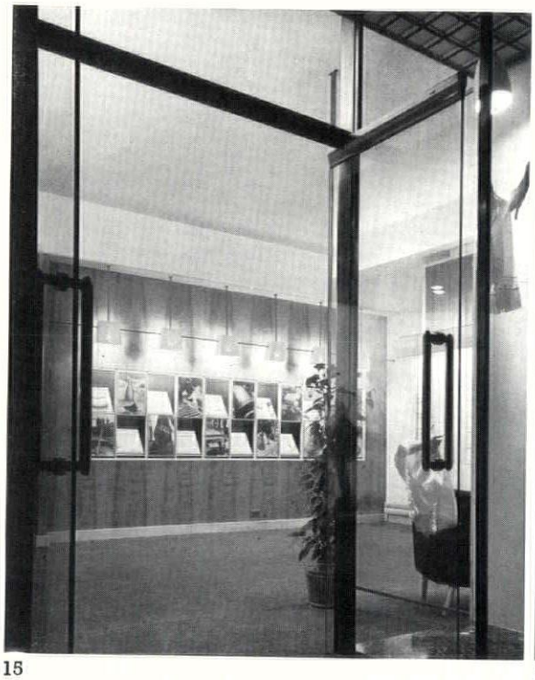
13

visual barriers, metal supports in conjunction with timber display and storage units were used, which in the limited space available leave a high proportion of floor space available to customers. The fittings are of six kinds: display counters; a storage counter; high-back counter storage and display units; a display rack; a hanging display and storage unit, and a window display unit. The shelving in all the units is adjustable, and drawers are set on rollers for ease of manipulation, and the boxes and shelves in the central rack fitting can be removed or adjusted as desired. The door furniture is of anodized aluminium. The Italian chairs are made of woven cane on metal frames.



14, *exterior of chemists' shop.*

The colours of the items displayed demanded a neutral background in most cases and two shades of grey have been used for the inside and outside of fittings. A long counter and one display box are red; and the other display boxes white, yellow, green and blue. The metal frames are throughout cellulosed black. The counter and shelving tops have wax polished Honduras mahogany veneer. The lighting is by simple ceiling units and reflector lamps in swivel units. The heating is by three portable convector units.



15

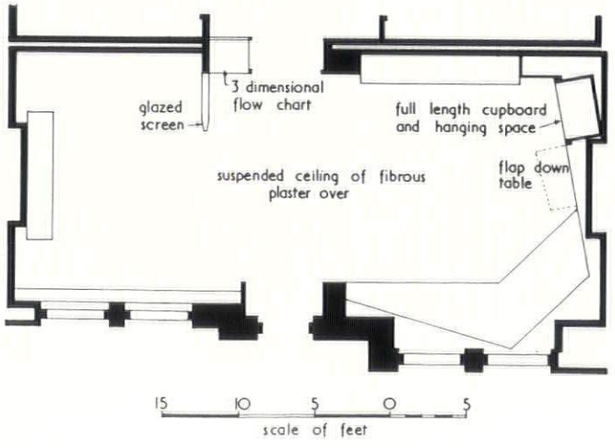
16

15, *the industrial display panel seen from the entrance, consisting of alternate vertical photographs and inset sloping panels in a surround of veneered French poplar.* 16, *fabric display on pivoted metal frames: glazed screen on right.*

SHOWROOM IN LONDON, W.1

Designer: Hulme Chadwick

Two rooms have been thrown into one for the ICI Terylene showroom at 144, Park Lane, London. The structural wall dividing the two front rooms of the first floor was removed and the deep beam spanning the opening was masked by a lowered 'canopy' ceiling with inset lights. This also masks the light source illuminating the platform display. The wall at the end of the room left of the entrance has been placed at a slight angle to the outer wall of the house enabling a deep cupboard with full-length hanging space to fit behind it. Garments are stored in a chest of drawers in the showroom itself and displayed immediately above. At the other end of the room, against a lemon-coloured



17, *wall between entrance and fabric display.* 18, *platform display on right: garment display above chest of drawers behind plant on left.*

wall, fabrics are shown on pivoted metal frames; a light canopy over allows for tungsten or colour-matching fluorescent lighting. Industrial exhibits are carried in inset sloping panels lit from a glass soffit above, framed up with alternate vertical panels carrying photographs.

17

18

19

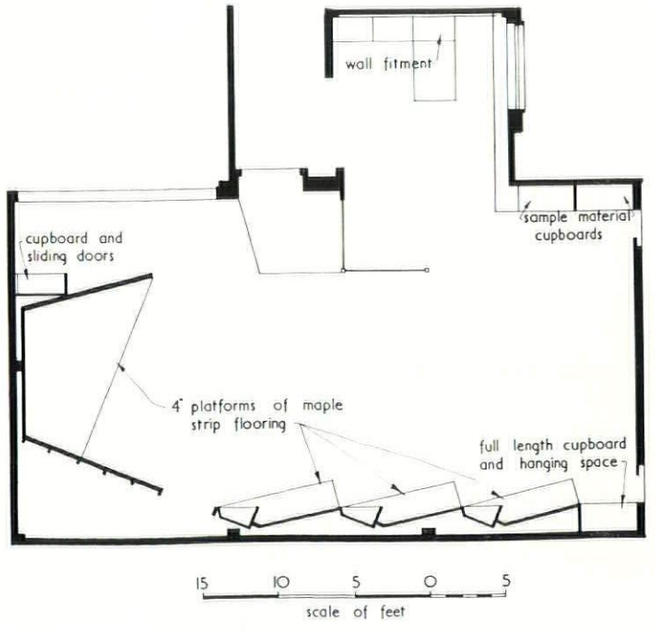
20

19, *left, platform display: centre, industrial exhibits: right, vertical feature formed of terylene cord threaded through holes in steel rings.* 20, *looking past vertical feature to end panel displaying ropes and fishing nets.*

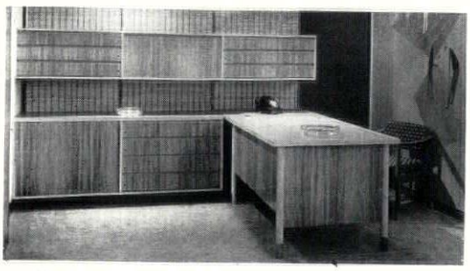
SHOWROOM IN HARROGATE, YORKS

Designer: Hulme Chadwick

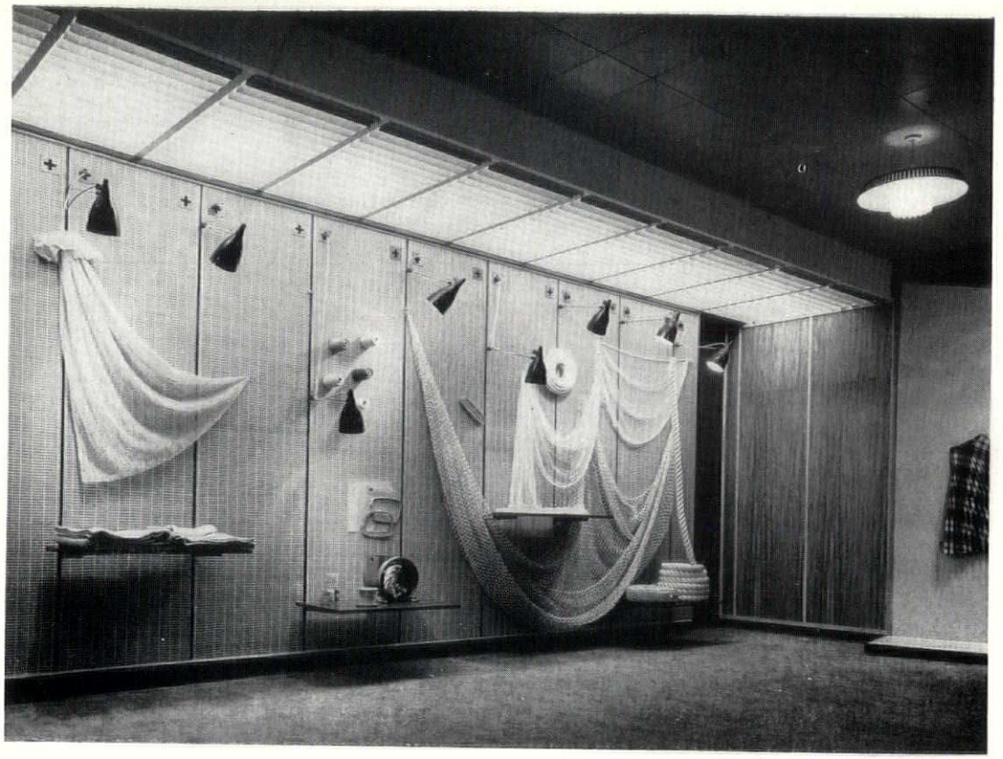
The ICI Terylene showroom in Hookstone Road, Harrogate, allows for widely varied display techniques, being divided into sections by panels of building board covered in woven cane and cotton with recessed bronze channels into which either shelf brackets or light fittings can be fixed at any level. The ceiling is of stove enamelled metal units which can be removed and rearranged, allowing any variation in the arrangement of the pendant light fittings. The vertical feature mounted on a platform of sycamore planks divided by ebonized strips is formed by terylene cord threaded through holes in the two steel rings; 'eyeball' light fittings are set in the mirror soffit. The arrangements for industrial exhibits are as in London, except for the use of the vertical panels for carrying captions only. The low ceiling strip over it is of fibrous plaster, the square



openings being covered with copper mesh for extract ventilation. Fresh air is introduced through the continuous grille on the riser between ceiling levels. The stage display has a side wall of narrow tongued and grooved hardwood; the beams over it have a bar on the back for fixing concealed lights. The mural by Warner Cooke depicting the uses of terylene is on unpolished cedar veneer, sealed after completion with hot wax.



21



22

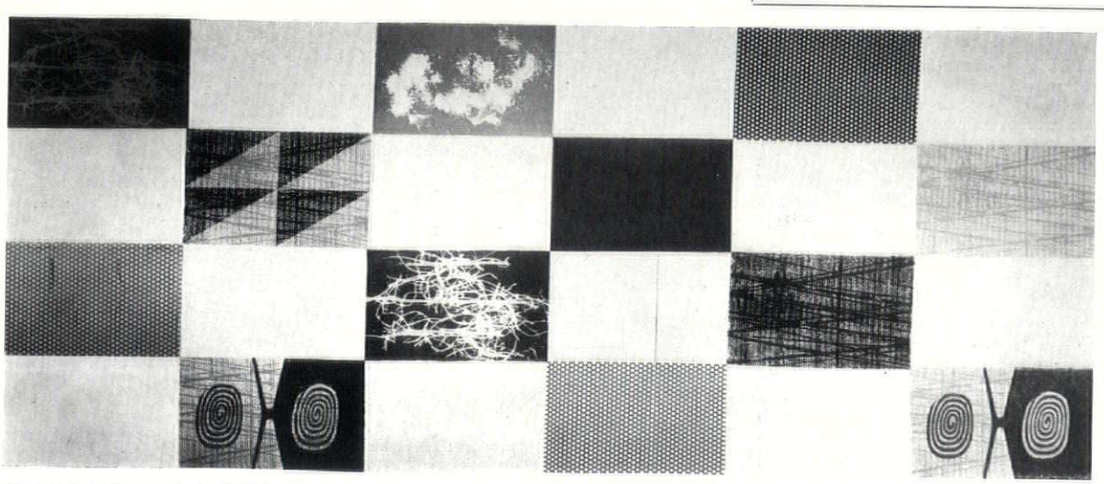
21, desk and wall fitment in sycamore and almond wood veneer. 22, close-up of the rope display showing light fittings fixed into recessed bronze channels.

2 DESIGN REVIEW

Prefabricated Murals

This is not the place to criticize murals, prefabricated or not, but the raw material of Michael Rothenstein's prefabricated murals has a rare and arresting combination of precision and imagination. This raw material consists of six designs printed by silk screen with waterproof plastic pigment on sheets of paper 20 inches by 30 inches. Wallpaper and textile design, under the influence of the seasonal rush to get out new ranges, is so sensitive to nuances of fashion that it perpetually tends to miss the imprint of style. This is why architects have the greatest difficulty in putting their hand on patterns that will articulate an interior without dressing it up. Five of these papers have the imprint of style rather than of fashion. They give the impression that the artist's mind is reacting to the stimuli that have been at the root of the architectural imagination of the last twenty years. The colour too is a shock of pleasure. It is sobering to notice that, however earnestly we train designers, a painter's colours usually have this effect.

The sheets are obtainable from Pre-fabricated Murals, Godstone Road, Bletchingly, Surrey. Prices: Loose sheets, in one colour, 7s. 6d., in two colours, 10s. 6d. Over 50 sheets, in one colour, 5s., in two colours, 7s. 6d. per sheet.

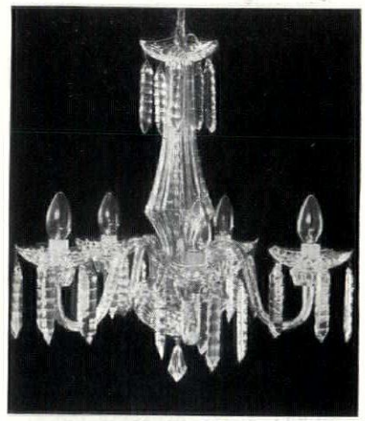


Prefabricated murals by Michael Rothenstein.

Waterford Glass Chandeliers

It is possible for the first time for over a hundred years to buy a new Waterford chandelier. This should be an event in the lighting industry. In fact it takes all the fun out of hunting for antique crystal, and may fill interior designers with uneasiness. In the century since the Waterford Glass factory shut down, gas lighting superseded candles, to be superseded in its turn by electric lighting. The uneasiness is not due to surprise that after half a century of clean, labour-saving, modern electric light an industrialist can confidently market the designs here illustrated. It is due to lack of certainty that anything we can offer can compete with the glamour of a crystal chandelier.

Electric lighting has great potentialities, but for the architect it is anything but labour-saving. The time and effort necessary to work out a satisfying scheme are hardly ever employed. Most people have not seen electric lighting to compete with the charm of candelabra. The



Two new Waterford glass chandeliers.

period of what was unfortunately called architectural lighting—concealed, diffused and deadened light—has taken some living down. It is now coming to be understood that some form of brightness and glitter is essential, except in the field of fluorescent lighting where science has jumped ahead of art again. The

magic of candelabra was in the combination of massed candles and faceted glass. The glitter of the crystal is what we need today. But the chandelier now offers us massed flex and faceted glass. The little saucers shaped to catch the wax from the electric light bulbs seem irrelevant. A vague disappointment is caused by the stillness of the flame-shaped bulbs.

Yet the twentieth century holds the answer to this problem. Since candles do not liven our decorations by their flicker, our artists supply us with mobiles to give back this lost movement to our flameless interiors. The traditional chandelier is a marvel of ingenuity for massing weak lights with the help of crystal. The directors of the Waterford Glass factory are right in thinking that crystal has something to offer to electric lighting. But this will only be so if the problem is looked at with skill and curiosity, if the brilliance of the material is matched by the brilliance of an artist's mind. The kind of mind that invented the mobile is the kind of mind that will bring magic to the crystal lighting fitting of today.

Where is such a mind to be found? I would respectfully urge the directors of the Waterford Glass factory to look for it among designers, young or eminent, or among sculptors of an abstract or constructivist bent.

D.R.

3 TECHNIQUES

ALUMINIUM ROOF COVERINGS

by Robert Maguire

Strictly speaking the title of this article is a misnomer, for, apart from the use of super-purity aluminium for some fully-supported roofing, aluminium as such is not used. In practically every case where we refer to aluminium we mean one or another of its alloys, and this has resulted in some confusion and much prejudice. Each of the many alloys has its own very distinct properties; some for example may be capable of taking high stresses while being subject to corrosion on extreme exposure, and others the very opposite. The wrong attribution of many diverse properties to aluminium in general has not augured well for its reputation as a building material.

*A small selection of alloys has been developed specially for use in building, and there can now be no doubt as to their efficiency, provided always that the right alloy is used in the right place.**

It is now almost platitudinous to point out that new materials, when first introduced, are usually pressed into the forms already developed for other materials which are superficially similar, and that only after considerable development do they assume forms sympathetic to their own nature. This was certainly the case with aluminium in its application to roofing, with the exception, surprisingly enough, of the very first known example—the church of San Gioacchino in Rome. Here, in 1897, the cupola and semi-cupolas were covered with thick (2 mm.) sheet, which was fixed with rivets.

When aluminium first became available at an economic price, metals had been used for roofing in three ways. These were (*a*) traditional fully-supported roofing, in lead, zinc and copper; (*b*) corrugated sheetings designed to span between purlins, e.g., the notorious 'corrugated iron'; and (*c*) a few more or less experimental examples of single-lap tiles, e.g., the cast-iron tiles on the Houses of Parliament. Of these, corrugated sheetings were the obvious choice for application of the metal, for several reasons. The traditional methods of laying fully-supported roofing required a malleable metal, and only very pure aluminium—not then an economic proposition—would be suitable. Single-lap tiles presumably appeared to have no promising future. On the other hand, the production of corrugated sheetings was ensured a safe market for industrial building purposes. This was fortunate, for besides providing a severe testing ground, industrial building gave scope for early development in a field where efficiency was put before æsthetic considerations.

The advantages of aluminium over other materials for corrugated sheetings soon became apparent; it withstood corrosion even in a heavily polluted atmosphere and so required little maintenance, it had great strength for its light weight, cutting down the cost of substructure, and moreover looked well, weathering to a matt grey colour.

The acceptance by architects (and partly by the public) of materials having a crisp engineering character has had two incidental results which have given an impetus to the more recent development of aluminium sheetings. First, they have been lifted out of the purely industrial field and put into general use; and second, the design of even the cheaper type of industrial building has been given much greater attention. The manufacturers of aluminium sheetings have responded to the resulting demands for improved systems of roofing and wall cladding and there is now not only a wide choice of orthodox corrugated sheetings with complementary ranges of flashings, closure pieces and other accessories, but also a number of more highly developed systems making fuller use of the potentialities of the material.

In the last decade it has also been possible to produce super-purity or commercial-purity aluminium at an economical price, and due to the comparatively high price of the other metals suitable for fully-supported traditional roofing, aluminium has now established itself as a highly successful substitute, although it has not as yet produced any significant change in technique.

More recently still, single-lap tiles of aluminium alloy sheet have appeared on the market.

orthodox corrugated sheetings

These sheetings are made from NS3 (B.S. 1470 : 1948), an alloy containing a small percentage of manganese, which increases the strength of the aluminium without any substantial sacrifice of durability. Their range of thicknesses varies according to the profiles used, but the most frequently used gauges are 18, 20 and 22 SWG (0.048 in., 0.036 in. and 0.028 in. respectively).

3-inch Pitch Sheet. This profile, 1, conforms to the familiar standard pattern developed for other materials, although it is not entirely suitable as an aluminium profile. It will span up to about 5 feet between purlins, but where loads are likely to be heavy or the roof likely to be walked on frequently, one of the specially developed profiles such as Industrial Trough should be used.

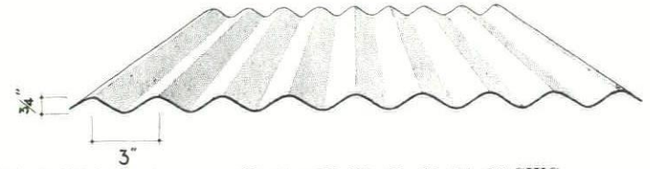
It is made in a great variety of lengths and widths; from 6 feet to 12 feet in length and with 8, 9½, 10, 12 and 14 corrugations in width. By adjusting the overlap of the sides of sheets to give a lap of 1, 1½ or 2 corrugations, the effective width of the sheets may be varied from 21 inches to 42 inches. In this way the cutting of sheets is avoided.

Owing to the shallow depth of the profile, 3-inch pitch sheeting is not suitable for roofs under 15° pitch.

2⅔-inch Pitch Sheet. This profile, smaller but otherwise similar to the 3-inch pitch, is produced to conform with the North American standard profile known as '2½ inch by ½ inch.'

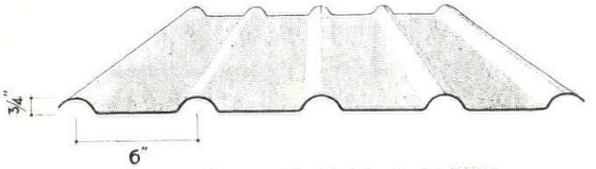
Mansard Sheet. So called because it is reminiscent of the traditional batten-roll jointed lead on Mansard roofs, Mansard Sheet, 2, was designed primarily for the cladding of vertical surfaces. In spite of the limitation of a single-corrugation side lap, it has been used extensively for roofs, especially of houses. It may not be used for roofs of less than 22½° pitch.

Industrial Trough Sheet. The design of this profile, 3, is a successful



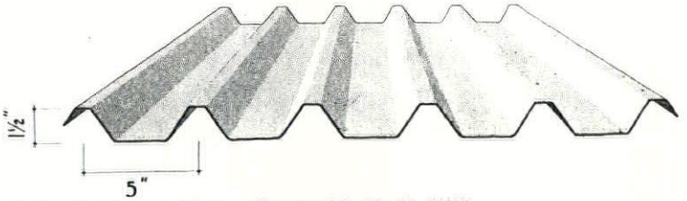
1, 3-*inch Pitch Sheet.*

Gauges: 18, 20, 22, 23, 24, 26 *SWG.*
Lengths : 4 *to* 12 *feet.*
Effective widths: 8, 9½, 10, 12, 14 *pitches.*
Minimum roof pitch: 15°.



2, *Mansard Sheet.*

Gauges: 16, 18, 20, 22, 24 *SWG.*
Lengths: 4 *to* 12 *feet.*
Effective widths: 5, 6, 7 *pitches.*
Minimum roof pitch: 22½°.



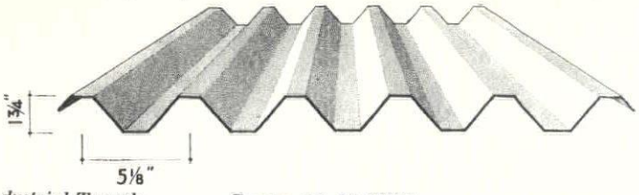
3, *Industrial Trough Sheet.*

Gauges: 18, 20, 22 *SWG.*
Lengths: 4 *to* 16 *feet.*
Effective widths: 5, 6, 7 *pitches.*
Minimum roof pitch: 15°.

[continued on page 213

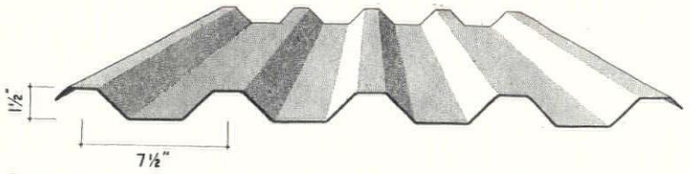
* For experimental evidence and a number of interesting case histories see *The Durability of Aluminium in Building*, published by the Northern Aluminium Co. Ltd., 1954.

continued from page 212]



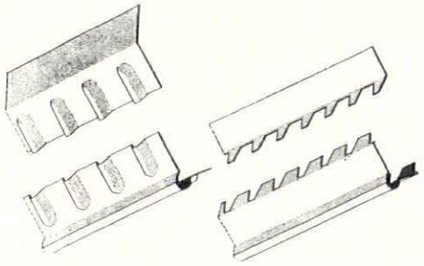
4, *Industrial Trough Type T Sheet.*

Gauges: 18, 19 *SWG.*
Lengths: 4 *to* 12 *feet.*
Effective widths: 5, 6 *pitches.*
Minimum roof pitch: 9°.

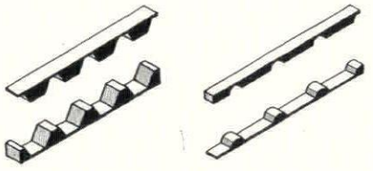


5, *Rogerstone Building Sheet.*

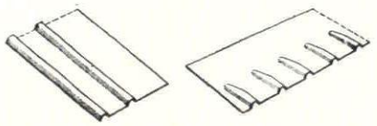
Gauge: 21 *SWG* (*others to order*).
Lengths: 6 *to* 12 *feet.*
Effective widths: 1, 2, 4 *pitches.*



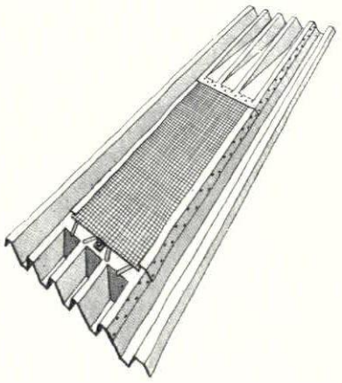
6, *Closure strips combined with preformed ridges and eaves flashings.*



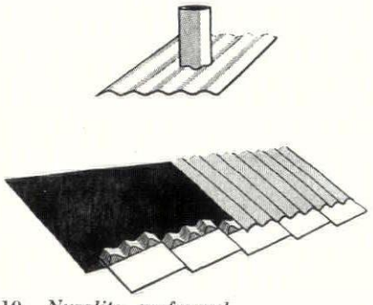
7, *Closure blocks of expanded p.v.c.*



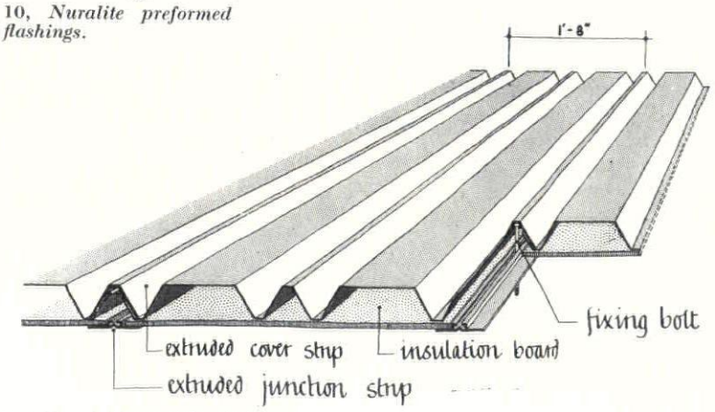
8, *Preformed flashings in aluminium alloy.*



9, *A standard rooflight.*



10, *Nuralite preformed flashings.*



11, '*Kynalok*' *secret fix cladding.*

attempt to use the properties of aluminium to greater advantage. The objectives were (*a*) to provide the maximum cover and strength with an economical amount of material, (*b*) to meet British Standard loading conditions over purlin spacings up to 7 feet, using 20 SWG sheet, (*c*) to resist denting by the boots of maintenance parties, and (*d*) to shed water quickly on low-pitched roofs.

The profile is asymmetrical, since to meet requirement (*c*) the crests are narrow, while the troughs are wide (as required by (*d*)). Even on low-pitched roofs—down to 15°—the one-corrugation side lap is sufficient.

Industrial Trough Type T Sheet. Although not as resistant to damage by foot traffic as the Industrial Trough Sheet, this type, 4, has the advantage that it may be used over purlin spacings of up to 9 feet and at only 9° pitch.

Rogerstone Building Sheet. This sheeting, 5, is not intended primarily for roofing, but for the construction of complete frameless buildings. Its profile is based on a 45° slope and a wide pitch, to provide general adaptability rather than efficiency in spanning between purlins. Nevertheless it may be used to span up to 9 feet.

Curved Sheetings. Some of the sheetings already described are available curved to constant radii.

Fixing. The standard method of fixing the sheets is by bolts, or drive-screws, through holes located in the crests of the corrugations. For fixing to metal purlins, a standard range of hook-bolts and U-bolts is available, and these are used with bituminous felt washers under the aluminium washers. Fixing to timber purlins or battens is most effectively done by drive-screw, a type of nail with a coarsely-pitched screw shank; these should have neoprene or butyl washers under their heads. The laps between sheets are secured by seam bolts.

Fastenings should preferably be of aluminium; with other metals there is always the danger of bimetallic corrosion enlarging the size of the hole and causing leaks or weakening the fixing. Hot-dip galvanized or sheradized steel fittings may be used, however, but in no circumstances copper, brass or bronze.

Accessories. The difficult problem of filling the spaces left by the corrugations at ridges and eaves has been met in various ways. Since preformed ridges are now a usual feature, one convenient method in use is to combine them with the closure piece, and to provide a similar arrangement for the eaves, 6. This avoids a multiplication of parts, but has the disadvantage of not taking up small inaccuracies in the profile of the sheeting. The only way of overcoming this last difficulty is to use an elastic material. A range of closure blocks in expanded p.v.c. is available, 7, suitable for use with 3-inch Pitch, Industrial Trough, Industrial Trough Type T and Mansard sheetings.

To make transitions between corrugated sheetings and other materials, strips of preformed flashing are supplied, 8. Some makers have enlarged their ranges of accessories to include features such as skylights, 9, and louvred ventilators; the 3-inch Pitch sheeting can also be used with the corrugated rooflights now made in resin-bonded glass fibre and perspex.

Nuralite Flashings. Owing to the danger of corrosion when aluminium comes into contact with other metals and with strongly alkaline substances, the use of other common flashing materials in conjunction with aluminium sheetings is restricted. One suitable material, however, is Nuralite, a thermo-plastic composition of asbestos and bitumen. A range of preformed flashings and closure pieces in Nuralite has recently been introduced, 10, and these have the advantage that they may be welded together and to the aluminium by means of a blow-lamp.

secret fix systems

Partly perhaps because the bolt-hole method of fixing cannot be guaranteed absolutely weathertight, and partly because the manufacturers feel that aluminium sheetings would have more appeal to architects for general purposes if the honest-to-goodness fixing bolts were concealed or eliminated (and also in the name of efficiency), a number of systems have recently appeared which have as their main characteristic some form of secret fixing. These systems, like their more orthodox forerunners, are designed to be used for wall cladding as well as for roofing.

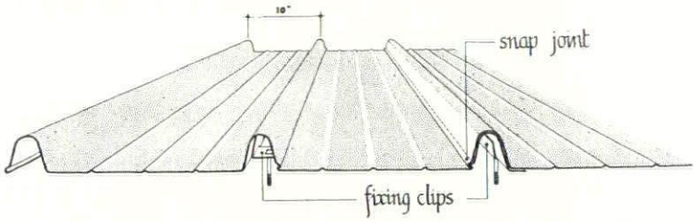
Kynalok Secret Fix Cladding. This system, 11, is probably the first in which extruded aluminium alloy sections have been introduced as standard components. An extruded section is used as a cover strip between individual sheets, and since it also slides over and retains the heads of the fixing bolts, it clamps the sheets to each other and to the supporting structure. Being more substantial than the thin rolled sheets, it also acts as a beam between purlins and enables the sheets to span greater distances.

An insulating board lining is an integral part of the system. Extruded junction strips are provided which receive the edges of the boards while forming a fixing groove for spring clips which retain both boards and sheeting until the cover strips are fixed. The thermal transmittance value of the complete cladding has been calculated at U=0.238 (allowing for 15 m.p.h. air flow externally), and if this appears surprisingly low, it must be remembered that, in addition to the good insulation provided by the board and the 2 inch air space, the aluminium itself has a high reflectivity and low emissivity.

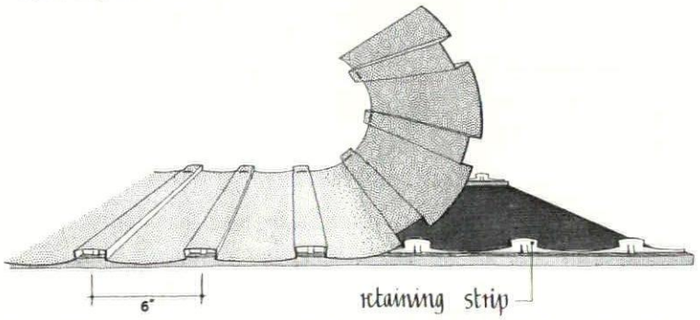
The spacing of the cover strips at 20 inch centres is intended to facilitate the combination of the cladding with other building elements based on a 40 inch module. Accessories to the system include 'perspex' rooflighting sheets moulded to the same profile, and standard roof ventilators.

Noral Snaprib Sheet. Less of a departure from conventional practice, this sheeting system, 12, uses the old principle of secret-nailed boarding: one edge only is fastened, and then covered by the adjacent edge of the next unit, at the same time providing a positive fixing for the latter. In this case the positive fixing and covering are achieved by a simple snap-joint incorporated in the edge corrugations. Concealed beneath this snap-joint are the fixing bolts for the lower sheet, and there are further bolts under the centre corrugation of each sheet engaging with special spring clips. To overcome the problem of off-set where the ends of sheets overlap, special overlap sheets with a reduced profile are supplied.

In passing, it is interesting to note that the makers have given each component part a serial number including the letter S (S1, S3, SA4,



12, '*Snaprib*' *secret fix cladding. The sheets are obtainable in lengths up to* 20 *feet.*



13, '*Fural*' *secret fix cladding. The bands, which are* 2 *feet* 3 *inches wide, are unrolled across the roof, requiring no side lap joints.*

etc.) and the confusion this is likely to cause perhaps warrants a plea on behalf of the unfortunate architect. The same manufacturers also refer to their alloys by the numbers 2S, 3S, etc., alloys which are already given the British Standard references S1A, NS3. Other makers have similarly given alloys of British Standard specification and number their own reference numbers, with the result that it is some time before one knows exactly which alloy, system or component part one is talking about.

Fural. Invented by the Swiss architect J. Furrer, this system, 13, was in use on the Continent for some time before its introduction into this country. It differs from other systems in two main respects: the material is in the form of a horizontally continuous skin which is unrolled across the roof, and a dovetail-action spring fixing replaces all bolts and perforations. The spring-clip principle has been applied to every flashing detail, and an exceptionally large range of standard components has been evolved in order to avoid any perforation of the skin.

fully-supported roofing

For fully-supported roofing aluminium alloys of high purity are the most suitable, as they are more easily worked to the traditional forms. Three grades of so-called pure aluminium are specified in B.S. 1470 : 1948—

S1A	...	99.8% minimum purity
S1B	...	99.5% ,, ,,
S1C	...	99.0% ,, ,,

The higher the purity of the metal the greater its durability and malleability, and for work of very high quality or where great ease of working is the main requirement, super-purity (99.99 per cent) aluminium is available, although it is not as yet covered by a British Standard. The alloys NS3 (1¼ per cent manganese) and NS4 (2 per cent magnesium) are also suitable.

All these materials are work-hardening, that is, their hardness is developed by cold working during manufacture, and can be regulated by adjusting the manufacturing process. In this way it is possible to retain durability while losing to some extent the softness of the metal which, although excellent for easy working *in situ*, tends to make the roof liable to unsightly denting and scratching. The materials are obtainable in five tempers, each designated by a suffix:—

O	... ...	fully soft
¼H	... ...	quarter hard
½H	... ...	half hard
¾H	... ...	three-quarters hard
H	... ...	fully hard.

The recommended gauges of sheet are 18, 20 and 22 SWG, and the widths of panels should not exceed 3 feet. The metals described are obtainable in sheet form and in coiled strip up to 2 feet 6 inches wide.

Substructure. Full support for the metal must be provided over the whole area of the roof, together with some means of fixing for the battens or cleats. Tongued and grooved boarding is of course ideal, but where fireproof construction (such as reinforced concrete slab) is necessary, dovetailed timber battens must be fixed flush with the surface of the screed. A point arises here which will be discussed in greater detail later: aluminium should be kept from direct contact with both timber and cement in situations where moisture may accumulate. It is therefore necessary to provide an insulating underlay, and bituminous felt (not of the self-finished kind) is suitable for this purpose.

Types of Jointing. For the main joints between sides of sheets there are three traditional forms. The *standing seam*, 14, is suitable for pitched roofs of 15° or more, and consists simply of a double lock welt at the top of the turned-up edges of the sheets. On flat roofs or pitches up to 15° a batten roll should be used. The *square batten roll*, 15, is formed around a batten of slightly tapered section (the taper allows for thermal movement). The sides of the sheets are dressed up and welted to the capping strip. The *conical roll*, 16, has a less heavy appearance and is an effective compromise between the other two methods.

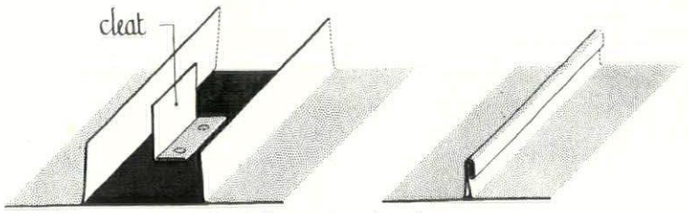
Transverse joints should be slightly staggered, and are normally formed of a double welt. On flat roofs a fall of 2 inches in 10 feet is necessary, and also a vertical 2 inch drip to accelerate run-off is recommended at 10 foot intervals. All flashings are worked *in situ* from the same material as the roofing.

Fixing. The fixing of the sheets is entirely by cleats formed of strips of the parent material. These are fastened to the substructure by aluminium nails, or clamped down by the battens.

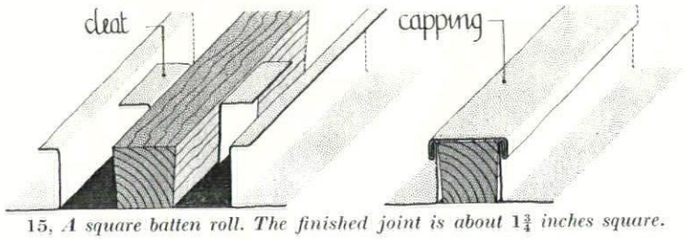
single-lap tiles

Two makes of aluminium alloy single-lap tiles have recently been introduced. The Prefatile, 17, has a single-corrugation side lap and an interlocking end lap into which the fixing clips are rolled. The makers claim that these tiles may be used at a minimum pitch of 9°. Special ridge and eaves tiles and flashings are also available.

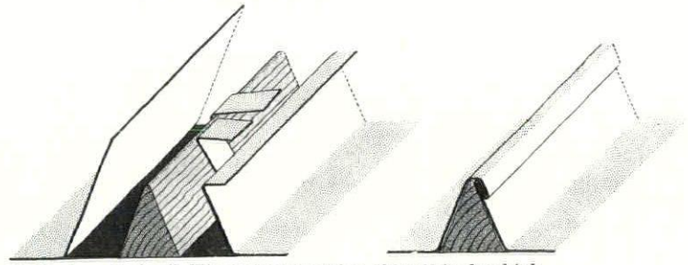
The Gordon tile, 18, is made in two patterns; lozenge—and panel—shaped. The lozenge tile has interlocking joints on all edges, and is fixed by nailing through a lug at the top corner. The panel tile has interlocking sides and a plain end lap.



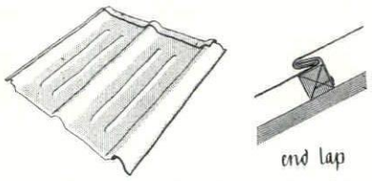
14, *A standing seam for fully-supported roofing.*



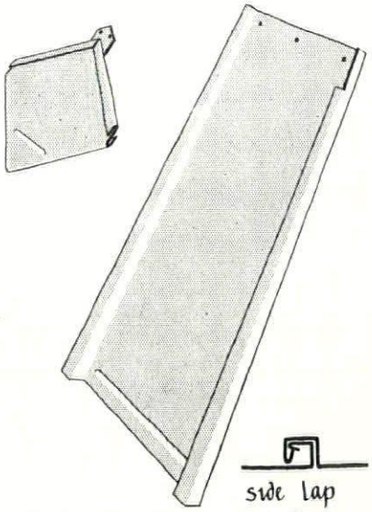
15, *A square batten roll. The finished joint is about* 1¾ *inches square.*



16, *A conical roll. The finished joint is about* 2 *inches high.*



17, *The 'Prefatile' aluminium alloy single-lap tile.*



18, *The 'Gordon' tile. Left, lozenge type; right, panel type.*

proximity to other materials

It has been mentioned earlier that aluminium should not be used in direct contact with various other metals, or with wood and cement, lime or plaster in situations where moisture is likely to collect. Contact with metals such as copper, brass, iron and steel gives rise to electrolytic action resulting in corrosion. In some instances, such as the use of aluminium sheeting on steel purlins, contact is inevitable, but action can be prevented by placing an insulating layer of suitable paint or mastic between the metals. Bituminous paint is suitable for this purpose. Contact with copper and brass should, however, be entirely avoided, while stainless steel, zinc and lead are harmless except in coastal districts.

Aluminium roofs should not be installed in positions where water from roofs of other metals is liable to discharge on to them.

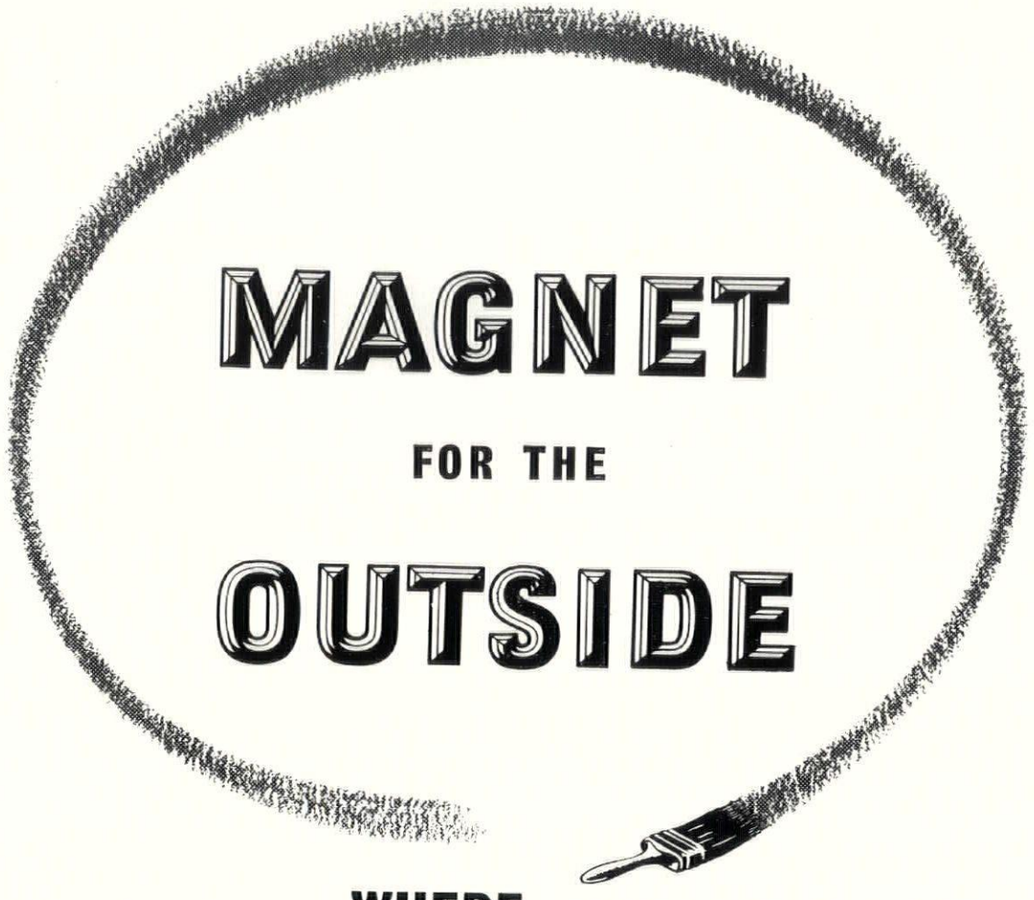
Contact with cement and lime mortars in damp conditions may cause chemical attack on the aluminium, and so it is advisable to paint the metal with bituminous paint in places where this is likely, such as the turn-in of a wall flashing. Wood framing adjacent to aluminium should be painted (surprisingly enough) with an aluminium primer to prevent its absorbing moisture and becoming a potential source of corrosion.

[continued on page 216

MAGNET

FOR THE

OUTSIDE



WHERE

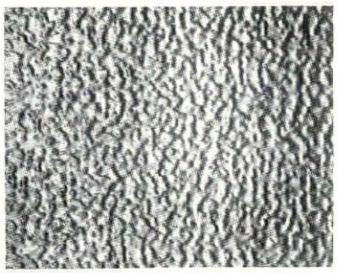
PAINT

MUST DO MORE THAN DECORATE

Magnet could be chosen for its looks alone ; for its lustrous gloss and dense film. For the variety of shades given by 30 intermixable colours. But first and foremost Magnet is a white lead base hard gloss paint —

and **WHITE LEAD PAINT LASTS.**

ASSOCIATED LEAD MANUFACTURERS LIMITED · LONDON · NEWCASTLE · CHESTER



19, *Heavy and light 'Stucco' rolled finish for aluminium roofings.*

surface treatments and painting

Surface treatments for aluminium are of two kinds; mechanical textured finishes and chemical finishes.

Almost any low-relief pattern can be mechanically embossed on aluminium sheet or rolled products, but one type of finish has been developed specially for roofing purposes in order to overcome certain disadvantages in its appearance. These are that small dents, due to foot traffic during laying or maintenance, show up quite out of proportion to their size owing to the high reflective quality of the metal, and also that the bright rolled metal creates too much glare in the year or two before it has weathered. The 'stucco' finish, 19, is designed to break up the reflected light while not reducing the reflectivity of the metal—this being one of its most useful properties, making for good thermal insulation. The finish is available for commercial purity (S1C) metal and the alloy NS3 in sheet form, and for standard corrugated sheetings in most profiles.

Two chemical surface treatments are now available for aluminium roofings; the 'Alocrom' and 'Pylumin' processes. Both these processes were developed primarily to give a suitable key for painting and enamelling, but in reinforcing the natural oxide protective film they also provide some extra resistance to corrosion.

The 'Alocrom' finish is pale grey-green in colour, and the 'Pylumin' finish grey. They both have an attractive appearance, but since they were not intended as decorative treatments, no guarantee is given that colours will be even or matching, especially over large areas. They are not available for coiled strip.

The 'Fural' system of roofing is also available stove enamelled to any colour on the Munsell range.

acknowledgments

Figs. 5, 6, 12, 19: Northern Aluminium Co. Ltd.; 4, 7, 8, 9: British Aluminium Co. Ltd.; 10: Nuralite Sales Ltd.; 11: Imperial Chemical Industries Ltd.; 13: S. W. Ronald & Co. (London) Ltd.; 17: Prefatile (G.B.) Ltd.; 18: J. & J. Cuthbertson Ltd.

4 THE INDUSTRY

Paper-backed Veneers

The successful fixing of wood veneers has usually required the skilled hand of a craftsman, but the Aga Trading Company suggest it can be a much simpler operation. They are marketing a paper backed, but very thin wood veneer which can be pasted down, preferably using the proprietary glue 'Agastik.' As the veneer is so thin, the surface of the object should be smoothed, filled or faced with hardboard before covering with veneer.

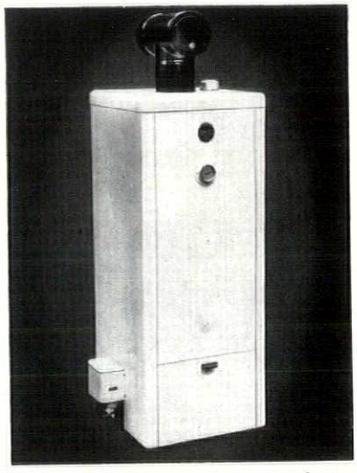
The 10 veneers are available in the following widths:—

Matt: 19¼ inches wide, 3s. 10d. per yard. 27½ inches wide, 5s. 3d. per yard. 32½ inches wide, 6s. per yard.

Polished: 19½ inches wide, 4s. 6d. per yard. 27½ inches wide, 6s. per yard. Distributors: S. Leboff & Co., Ltd., 19 Virginia Road, London, E.2.

The Oilmaster Oil-fired Domestic Storage Water Heater

The article in the AR for July, 1955, on Domestic Oil Burning Equipment was concerned principally with forced draught burners using Class A gas oil. Since then the Oilmaster water heater has become available, providing an interesting and alternative system to those described in July. It is fitted with natural draught wickless burners for use with either paraffin or any gas oil (D.E.R.V.) up to 35 seconds Redwood and consumes about ¾ gallon a day. A 30-gallon storage tank is contained in the unit so that no further hot water tank is necessary. Two models are now in production, the 25,000 BTU model, which heats 30 square feet of radiating surface in addition to normal household hot water, and the 35,000 BTU model which heats 50 square feet of radiating surface as well as normal household requirements. In both cases space is left for an immersion heater. The smaller model costs £67 3s. 0d. and to reduce the initial installation cost of a large oil tank the firm supply a clip-on 4½-gallon daily service tank



The new Oilmaster storage water heater.

[continued on page 218

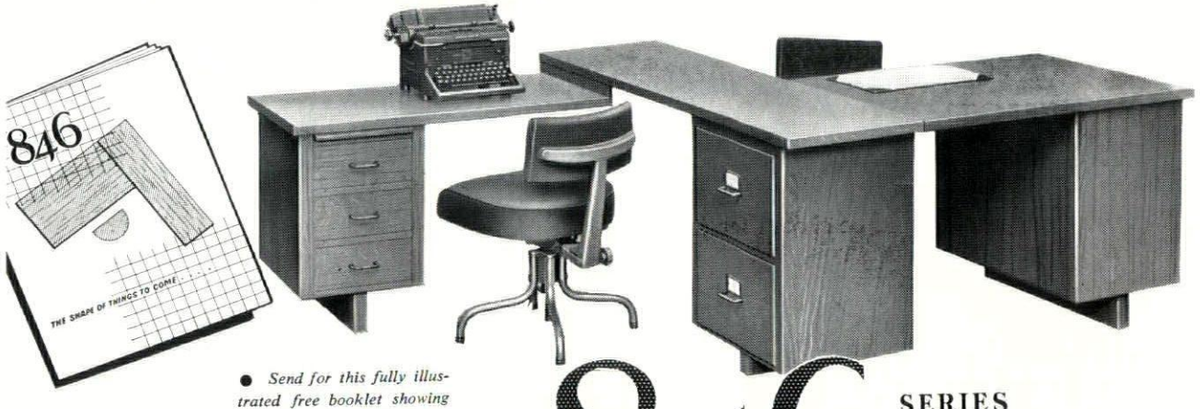
33% floor space saved 25% more desk area

If you are "pushed" for space . . . if you have to get more people in the same space . . . if you need *functional* office furniture designed specially for *your* business—then you should consider "Eight-for-Six" furniture.

Why? Well it seats eight where six used to be. It gives *more* desk area in spite of *reduced* floor space. It is "hand-tailored" to fit each job, i.e., with desks, pedestals and fitments as *you* need them. You can start with one or two work stations (or hundreds) and add as you expand. And each work station will be planned to give maximum output with minimum movement.

Your business can have this "time and motion" studied "Eight-for-Six" furniture—with or without noise-repelling partitions. And the cost is very similar to ordinary office furniture.

May we send you further details please? (*We will submit a plan without obligation for* your *offices.*)



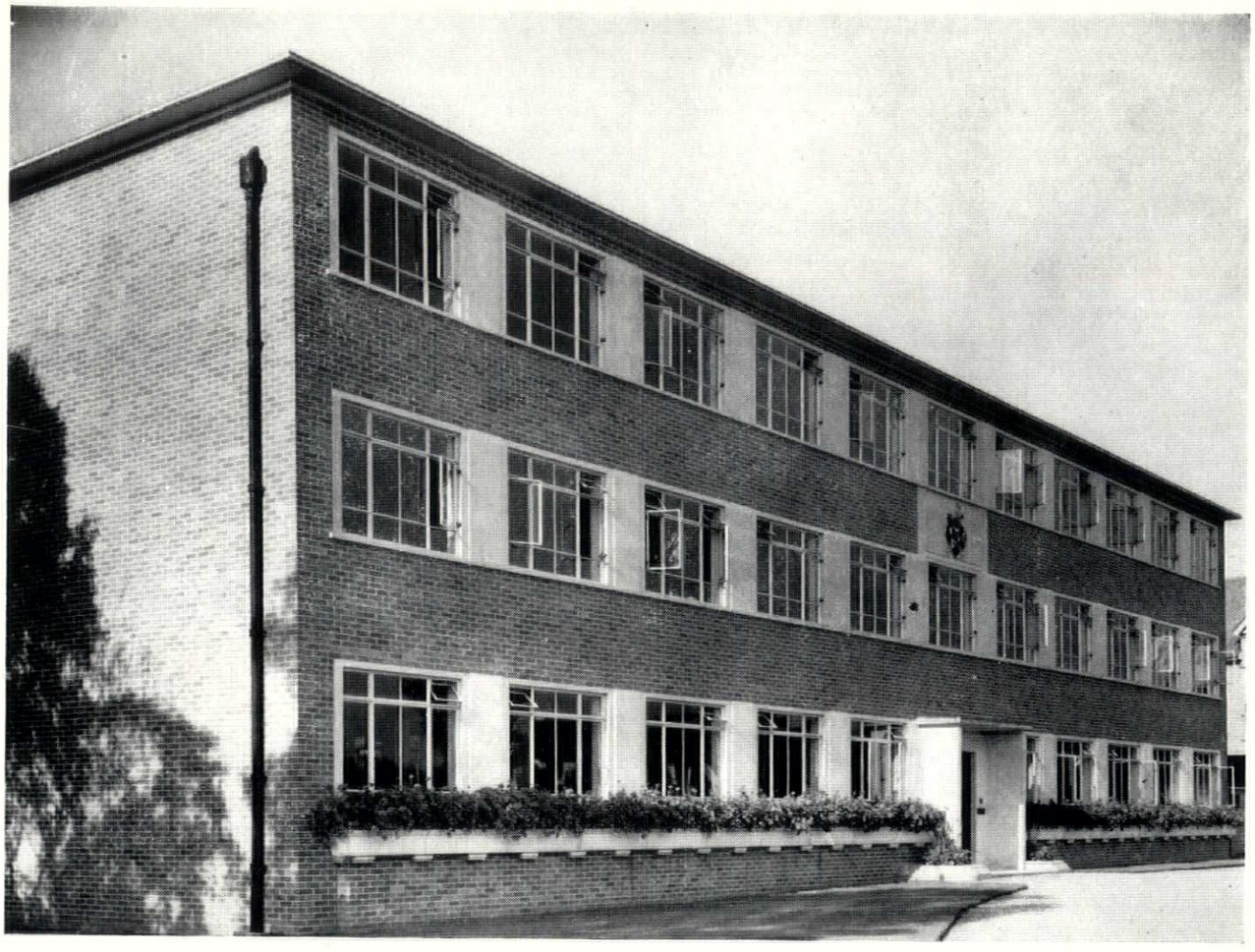
● *Send for this fully illustrated free booklet showing wide variety of seating plans.*

Shannon Systems

846 EIGHT-FOR-SIX SERIES

System OFFICE FURNITURE

The Shannon Ltd. — 35 Shannon Corner — New Malden — Surrey



New Building for GLYN MILLS & CO., Lampton House, Hounslow, Middlesex, faced with Ibstock Golden-Brown Multi hand-made bricks.

Architect: F. G. Broadbent, F.R.I.B.A., Goodhart Rendel & Partners. Contractors: Demolition & Construction Co. Ltd. Bricks supplied through Finnis, Ruault & Nicholls Ltd., London.

Much of the attractiveness of good brickwork arises from texture of bond and joint. When this is allied to bricks of light and varied colour—as with the Ibstock Golden-Brown multicolour sandstocks used for this new building for Glyn Mills & Co.—the fine appearance imparted is one also of great durability.

Ibstock FACINGS for Colour

Owing to present demand, supplies of facings of most types are booked for a long time ahead and reservations for 1956/57 are now being made.

IBSTOCK BRICK & TILE CO. LTD., NEAR LEICESTER - - - 'Phone IBSTOCK 391 (2 Lines)
LONDON: L.M.R. GOODS DEPOT, WRIGHT'S LANE, KENSINGTON, W.8 - 'Phone WESTERN 1281 (2 Lines)

continued from page 216]

for an extra £4; no figure is as yet available for the larger 35,000 BTU model.

*Turley & Williams, Ltd., Maidstone Buildings, 74-76, Borough High Street, London, S.E.*1.

Reflector Fluorescent Lamps

Particularly in display lighting, but also in any restricted space, one of the principal drawbacks to installing concealed lighting is the large space taken up by a reflector. The bulk of the cover fascia is often too much for present-day detailing, besides adding considerably to the cost. Faced with these problems Mazda have introduced a 40-watt 4-foot fluorescent tube with a 'built-in' reflector. The tube has the standard 2 pin caps, but over 60 per cent of its circumference is coated internally with a reflecting powder coating. This powder transmits some light so that the tube does not present too sharp a contrast between 'open' and 'closed' surfaces.

Altogether it is claimed that the new tube has 90 per cent of the luminous efficiency of an ordinary fluorescent lamp and provides 1.75 times more additional window brightness than a non-reflecting lamp. Its price is 13s. 9d. plus tax.

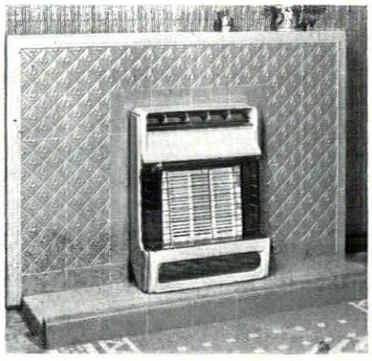
*The British Thomson-Houston Co., Ltd., Crown House, Aldwych, W.C.*2.

Getting the best out of an Electrical Installation

In most domestic jobs the architect is his own electrical engineer, just as he is his own structural engineer and his own heating and ventilating engineer. For though he can with some justification disclaim a specialist's knowledge in these subjects when he is working on larger, more complex jobs, when he is working on a house or flat he cannot. Unfortunately, literature on the bare electrical essentials is very hard to find. 'Getting the best out of an electrical installation,' published by M.K. Electric Ltd., is a modest ten-page affair, but has the great virtue of stating how to design a domestic circuit, which type of switch to use for each purpose, and how to tell a good switch when you see one. The book is free from either advertisers' or technicians' mystifications, is readily understandable and can be obtained from *M.K. Electric Ltd., Wakefield Street, Edmonton, London, N.*18.

The Gas Miser

One of the new fires to attract attention at the Building Exhibition



was Cannon (G.A.) Ltd.'s Gas Miser. This is a normal gas fire with ducts running behind the radiants in order to provide a certain amount of convected air, and a detachable guard rail is fitted in front of them. A regulator adjusts the rate of consumption to 36 cubic feet, 22 cubic feet and 12 cubic feet per hour, and it is claimed that the latter provides background heat for a 2,000 cubic foot room at a penny an hour. The makers have wisely considered the question of cleaning, and access to the hot air grilles is obtained by removing the top chromium-plated cover strip, and the lighter flint is easily changed by unhooking the fender. The Miser does, however, have a chamfered back base which looks as though it may harbour dust. The fire is obtainable from the usual retailers at a cost of £29 18s. 10d., including tax.

CONTRACTORS etc

Secondary School, West Hill, Putney. *Architects:* Powell & Moya. *General contractors:* C. Miskin & Sons. *Sub-contractors: heating and mechanical services:* Barrett & Wright Ltd. *Pre-stressed concrete floors:* Costain Concrete Co. *Damp proof course:* G. M. Callender & Co. *Bricks:* Richard Parton Ltd.; Stoneware Ltd. *Wood window frames:* Walter Lawrence & Son. *Slate facings:* The Bow Slate & Enamel Co. *Steel windows:* The Crittall Mfg. Co. *Structural steelwork:* Carter-Horseley (Engineers) Ltd. *Electrical installation:* The Berkeley Electrical Engineering Co. *Boiler house chimney:* Chimneys Ltd. *Balustrading and metalwork:* The Birmingham Guild Ltd. *Tarmacadam:* A. C. W. Hobman & Co. *Lightning conductor:* W. J. Furse & Co. *Patent glazing and aluminium windows:* Aygee Ltd. *Chain link fencing:* Chain Link Fencing Ltd.; Peerless Fence Products Ltd. *Precast concrete:* Malcome Macleod & Co. *Terrazzo:* W. B. Simpson & Sons. *Bituminous felt roofing:* Wm. Briggs & Sons. *Main staircase steelwork:* Scaffolding (G.B.) Ltd. *Sanitary fittings:* Stitsons Sanitary Fittings Ltd. *Asbestos spray:* Turners' Asbestos Cement Co. *Stove enamelled asbestos:* The Atlas Stone Co. *Sill tiles:* McKenzie Brytiles Ltd. *Glass domes:* T. & W. Ide Ltd. *Doors:* Veneercraft Ltd. *Wall tiling:* Dennis M. Williams. *Roller shutters:* Dennison, Kett & Co. *Wood block and strip flooring:* Horsley, Smith & Co. (Hayes). *Thermoplastic, rubber cork and P.V.C. sheet flooring:* Semtex Ltd. *Remote control gear:* Arens Controls Ltd. *Ironmongery:* Alfred G. Roberts Ltd. *Sliding folding door gear:* E. Hill Aldam & Co. *Cloakroom fittings (metalwork):* R. Smith (Horley) Ltd.; (*woodwork*): W. H. Gaze & Sons. *Main entrance doors:* Fred'k Sage & Co. *Metal faced ply:* Venesta Ltd. *Horticultural works:* Gilliam & Co. *Oil and emulsion paints:* Hadfields (Merton) Ltd. *Distemper:* The Walpamur Co. *Alkyd rubber varnish:* Vitretex (England) Ltd. *Staircase mosaic:* Philip Suffolk. *Reinforced plaster partitions:* Pantentee: Highworth Processes Ltd.

Buildings in the Gold Coast. *Architects:* James Cubitt and Partners.

Kumasi College of Technology: General contractors: Gee, Walker & Slater Ltd.

Sekondi Training College and Secondary School: General contractors:

[continued on page 220

Visit the Shell and BP Display

'OIL FUEL IN INDUSTRY'

At the Factory Equipment Exhibition, Earls Court, 9-14 April

OIL FUEL IN INDUSTRY, the Shell and BP display, is the central feature of the Factory Equipment Exhibition at Earls Court this year. It covers 12,000 square feet of floor space and is the largest display of its kind ever assembled in this country.

Shell-Mex and B.P. Ltd., in co-operation with many equipment manufacturers and the Factory Equipment Exhibition organisers, are staging a comprehensive display of oil-burning equipment for space heating, steam raising and other factory heating processes. This is the chance of a lifetime. It may be many years before there is another opportunity to see such an interesting and informative display on the subject of oil-fired heating—the most effective, flexible and labour-saving form of heating now available to British Industry.

continued from page 218]

B.B.C. Building Contractors.

Sekondi Regional Library: General contractors: B.B.C. Building Contractors Ltd. *Sub-contractors: Terrazzo tiling:* Addi Ltd.

Industrial Development Corporation Showrooms and Offices, Accra. General contractors: Messrs. African Finance and Investment Corporation Ltd.

Guest House in Accra and Gold Coast Legion Memorial Hall, Accra. General contractors: The Construction and Furniture Co. (West Africa).

The electrical sub-contractors for all the above-mentioned West African buildings were Drake & Gorham (Contractors) Ltd.

Railway Station at Potters Bar, Middlesex. *Architects:* H. H. Powell, Architects' Department, British Railways, Eastern Region. *Consulting Structural Engineer:* A. E. Beer (main station building). *General contractors signal box, covered bench, goods offices, main station building, platform buildings, finishes to subway and ramps, external works:* Kirk & Kirk Ltd.; *Station master's house:* Samuel Worboys Ltd. *Sub-contractors: concrete blocks:* Broad Manufacturing Co. *Bricks:* Sydney A. Hunter Ltd. *Structural steel and pressed metal:* Henry Hope & Sons. *Pre-cast concrete roof beams:* Concrete Ltd.; Shockcrete Ltd. *Slate sills:* The Bow Slate & Enamel Co. *Special roofings:* D. Anderson & Son. *Roofing felt:* Highways Construction Ltd.; D. Anderson & Son. *Glass:* Aygee Ltd.; The Crittall Manufacturing Co. *Wood block flooring:* Hollis Bros. *Patent flooring:* The Marley Tile Co. *Cast glass dome lights:* T. & W. Ide Ltd. *Central heating and gas fitting:* W. Richardson & Co.; Matthew Hall & Co. *Gas cookers:* General Gas Appliances Ltd. *Gas water heater:* Ascot Gas Water Heaters Ltd. *Boilers:* Auto-Control Boilers Ltd.; Ideal Boilers & Radiators Ltd. *Electric wiring, telephones:* British Railways. *Electric light fixtures:* Falk Stadelmann & Co.; The General Electric Co.; The Merchant Adventurers of London Ltd.; Hume Atkins & Co.; Ionlite Ltd. *Door furniture:* James Gibbons Ltd. *Furniture and ticket office fittings:* A. J. Binns Ltd. *Collapsible gates:* Potter Rex Ltd. *Plumbing:* J. H. Shouksmith & Sons. *Sanitary fittings:* Rownson Drew & Clydesdale Ltd.; William E. Farrer Ltd. *Pressed metal lockers:* G. A. Harvey & Co. (London); James Gibbons Ltd. *Pressed metal doors:* Williams & Williams Ltd. *Sunblinds:* J. Avery & Co. *Metal windows:* Henry Hope & Sons; The Crittall Manufacturing Co.; Aygee Ltd. *Plaster:* Pollock Bros. (London). *Joinery: hardwood doors:* Beves & Co. *Tiling:* Carter & Kernahan Ltd.; St. James Tile Co. *Furniture:* Conran Furniture, Leabank Office Equipment Ltd.; George Parker Ltd.; Beves & Co. *Leather cloth for seating and paint:* Imperial Chemical Industries Ltd. *Office fittings, ticket office:* D. Burkle & Sons. *Clocks:* Gent & Co. *Water supply:* Barnet Water Co. *Vitreous enamelled signs:* Mead McLean & Co. *Ticket collector boxes and traffic barrier:* Holland & Hannen & Cubitts Ltd. *Neon signs:* Claude-General Neon Lights Ltd.

Hospital at Alexandria, Dunbartonshire. *Architect:* J. L. Gleave. *Consulting engineers: structural:* George Davie; Crawford & Partners. *Heating, ventilating and electrical:* Ian Hunter & Partners. *Quantity surveyors:* A. L. Currie & Brown. *General contractors:* Angus M. MacDougall & Co. *Sub-contractors: Civil engineering contract: reinforced concrete foundations (stage 1):* Crowley Russell & Co. *Reinforced concrete foundations (stage 2):* Angus M. MacDougall & Co. *Steel work, metal staircases and balconies:* Redpath, Brown & Co. *Precast concrete floor and roof beams:* Concrete Ltd. *Precast ground floor beams:* Girling's Ferroconcrete & Co. *Concrete reinforcement:* The Expanded Metal Co. *Joiner, casements:* John Cochrane & Co. *Assembly panel:* James Y. Keanie Ltd. *Plumber, cast lead, gas fixtures and fittings, water supply:* William Fleming & Co. *Sanitary fittings (Shanks) supplied by* Thomas Graham & Co. *Plasterwork:* R. Y. Ritchie & Co. *Tile work (stage 1) and reinforced concrete mullions:* Toffolo Jackson & Co. *Tile work and terrazzo (stage 2), wall finish:* John Youdon & Sons. *Roofing (stage 1):* William Briggs & Co. *Roofing (stage 2):* Ruberoid Co. *Ironmongery:* Parker, Winder & Achurch. *Rubbish hoists, dark blinds:* John Bryden & Son. *Flooring:* Semtex Ltd. and Korkoid Decorative Floor (*stage 1*); George Stevenson (Gesco Cork) (*stage 2*). *Electrical wiring (stage 1):* Jas. Kilpatrick & Son. *Electrical wiring (stage 2). Electric heating:* Claude Hamilton & Son. *Fire alarm bells:* Jas. Kilpatrick & Son; Claude Hamilton & Son. *Lifts:* Pickerings Ltd. *Heating (central) (stage 1):* James Combe & Son. *Heating (central) (stage 2) and ventilation:* G. N. Haden & Sons. *Heating (grates in cottages):* Alexander Dunn Ltd. *Electric light fixtures:* Merchant Adventurers; Frederick Thomas. *Telephones:* G.P.O.; Standard Telephones & Cables Ltd. *Clocks:* Gent & Co. *Painter:* Guthrie & Wells. *Kitchen equipment:* James Stott & Co. *Roller shutters:* William Holt & Co. *Laundry:* D. & J. Tullis Ltd.; Thomas Bradford & Co. *Furniture supplied by* Wylie & Lockhead Ltd.; Findlater Smith Ltd.; David Elder; D. MacDonald Bros.; Watson (*typewriters, desks, etc.*). *Sterilizing equipment and electrical medical equipment:* Ministry of Works. *Hose reels and fire appliances:* Pyrene Co. *Metal windows:* Henry Hope & Son. *Pressed metal water tanks:* Braithwaite & Co. *Bed screens:* John Weston & Co. (Medino Screens). *Glass:* Scottish National Glass & Glazing Co. *Stair-treads:* Ferodo Ltd. *Shrubs and trees:* Sportsworks Ltd.

Secondary School, Herne Bay, Kent. *Architects:* E. D. Lyons, L. Israel and T. B. H. Ellis. *Consultants: structural:* Malcolm Glover & Partners. *Heating and electrical:* Stinton Jones & Partners. *Quantity surveyor:* Thurgood, Son & Chidgey. *General contractors:* J. J. Clayson & Son. *Sub-contractors: structural steelwork:* Matthew T. Shaw & Co. *Roofing felt:* General Asphalte Co. *Roof lights:* Henry Hope & Son. *Metal windows:* J. Thompson Beacon Windows Ltd. *'Accotile' flooring:* Neuchatel Asphalte Co. *Wood floors:* Horsley Smith & Co. *Roller shutters:* Shutter Contractors Ltd. *Gym kit racks and balustrading, etc.:* The Wessex Guild. *Terrazzo pavings:* Fendalls Stone & Paving Co. *Curtain tracks:* John Lewis & Co. *Flooring:* Marbolith Flooring Co. *Sliding door gear:* J. W. Hall & Co. *Terrazzo partitions:* Enfield Stone Co. *Towel guards:* Venesta Ltd. *Ironmongery:* James Gibbons Ltd. *Metal valances and glass dome lights:* Haywards Ltd. *'Carda' windows:* Holcon Ltd. *Cast iron chimney cap:* Chimney's Ltd. *Lettering and numeral plates:* Dales (Lettering) Ltd. *Sanitary fittings:* John Bolding & Son.

Check these points....

★ **Completely flush surfaces.** All sections entirely interchangeable.

★ **Deep section** gives rigidity, fire resistance, and freedom from 'drumming'.

★ **Wide colour choice** in hard, stove enamelled finish.

★ **Exceptional sound resistance.** Rubber mounted along entire length.

★ **Resistant to corrosion.** Special electrolytic zinc coating process makes Chatwood partitioning especially suitable for tropical or other humid conditions.

★ Flexible and convenient to install or move. Range of panel sizes and tailoring to suit special circumstances makes Chatwood partitioning adaptable to every architectural surrounding.

-then specify **Chatwood**

STEEL PARTITIONING

For further details write, call or phone: Central 0041

CHATWOOD MILNER LTD

The Chatwood Safe and Engineering Co. Ltd. · The Milners Safe Co. Ltd.

Central Sales Office: 58 Holborn Viaduct, London, E.C.1

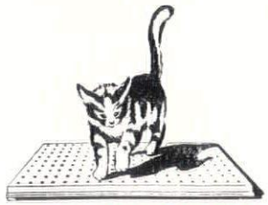
back to Noise tomorrow

After a quiet weekend's golf, going back to work midst the noise of an office or factory is an unpleasant prospect. The trouble really is *other* people's noises. They merge with the sounds you want to hear, creating an unsuspected strain. Noise can be defeated once and for all—by Cullum, Britain's most experienced acoustic engineers. They'll restore the balance of sounds to a comfortable working level. Call in Cullum immediately.

Sound control by CULLUM

THE ACOUSTIC CONSULTANTS AND CONTRACTORS

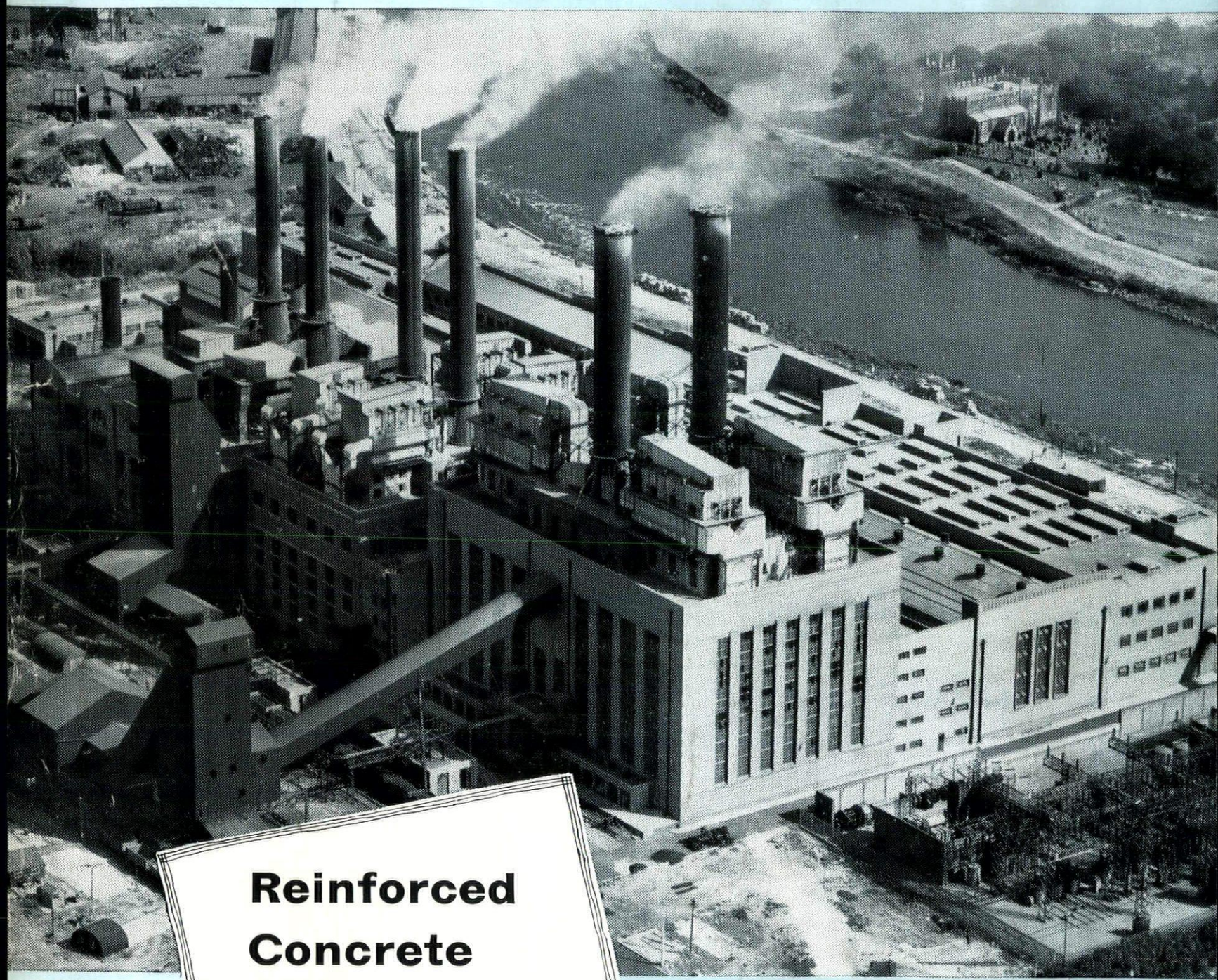
Concessionnaires for **ACOUSTI-CELOTEX**



PROGRESS WITH QUIETNESS HORACE W. CULLUM & CO. LTD., 58 HIGHGATE WEST HILL, LONDON, N.6 Tel: FIT. 1221

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

Construction at its best . . .



NORTH WILFORD
POWER STATION

Contractor: Thomas Bow, Nottingham. Reproduced by permission of R. A
Finch, Esq., O.B.E., M.I.C.E., City Engineer & Surveyor, City of Nottingha

Reinforced Concrete Design by...

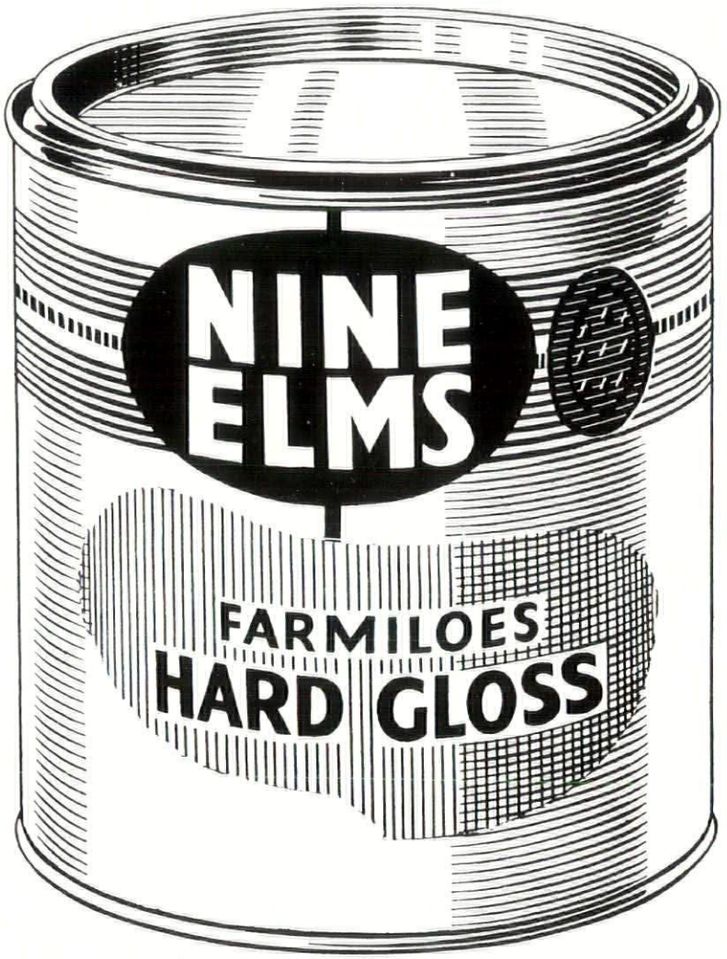
BRC

Specialists in Reinforced Concrete Design and Suppliers of Reinforcement

THE BRITISH REINFORCED CONCRETE ENGINEERING CO. LTD., STAFFORD

LONDON, BIRMINGHAM, BRISTOL, LEEDS, LEICESTER, LIVERPOOL, MANCHESTER, NEWCASTLE, CARDIFF, GLASGOW, DUBLIN, BELFAST

THE ARCHITECTURAL REVIEW VOLUME CXIX NUMBER 712 MAY 1956 FIVE SHILLINGS



good—for years!

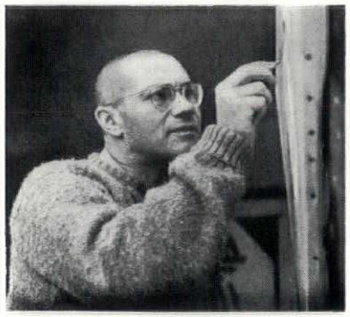
The trusted product in a new pack

T. & W. FARMILOE LIMITED, TRADE MARK NINE ELMS BRAND WESTMINSTER, S.W.I. *VICtoria 4480*

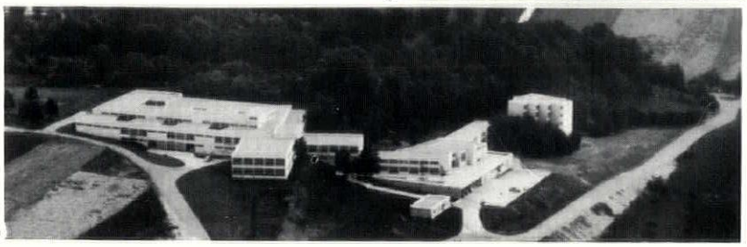
Also at: 1 OXFORD STREET, BELFAST · 48A HINCKLEY ROAD, LEICESTER · COMMERCE WAY, LANCING.
109 CLIFTON ROAD, BALSALL HEATH, BIRMINGHAM · 14B RUSHAMS ROAD, HORSHAM.

MARGINALIA

MAX BILL. Long recognized as the truest spiritual successor of the functionalist tradition of the Bauhaus, Max Bill, 1, has now been officially entrusted with the torch of total education by Walter Gropius himself. At the inauguration of the *Hochschüle für Gestaltung* in Ulm, of which Herr Bill is rector and Head of the Architecture Department, as well as designer, Dr. Gropius spoke of that 'right education which can lead to a right co-operation between artist, scientist and man of affairs,' and wished for



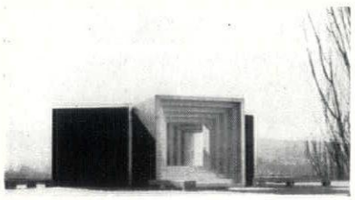
1



2

school and staff the ability to 'mobilize in themselves the creative powers indispensable to this concept of unification.'

The inauguration of the Hochschüle, 2, which gives Bauhaus ideas a firm footing on European soil once more, is the culmination of a life that Bill has devoted to the promulgation and development of a conception of design that is bold, spare and rational, and a belief that 'absolute beauty is the standard for form,' and 'form is the sum of all functions in harmonious unison.' These ideas, though domiciled in Europe, are accorded world-wide acceptance, and Herr Bill's works to date, both in the plastic arts and in theoretical writings, have been gathered together by the Argentinian, Tomaso Maldonado, in a book whose square format and page-size make it a natural shelf-companion to Max Bill's own book, *Der Form*. The pictorial record, alone, which Maldonado offers, is impressive enough, and tends to confirm the feeling shared by many critics, that his project for the *Unknown Political Prisoner* competition, 3,



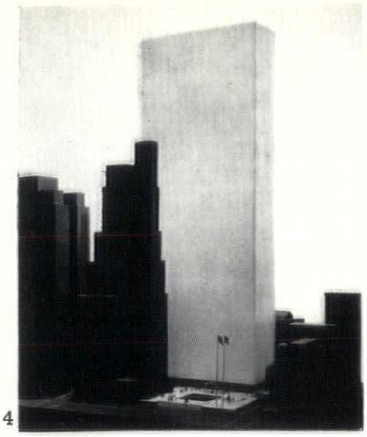
3

is his masterpiece to date—the theme helped him to fuse his formal and sociological interests at a high level of geometrical purity, and the focus of the monument, a tall, three-sided mirror-faced column, realizes precisely the integration of material, geometry and human symbol which he regards as the heart of æsthetic creation.

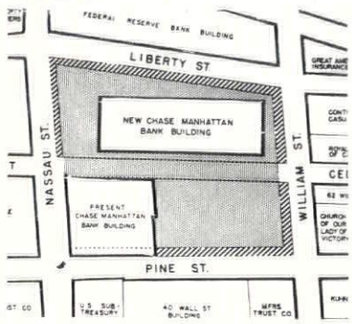
LOUISVILLE BRIDGES. Words of the *Townscape* type have already achieved some currency in USA—even *Magazinescape* has appeared, and presumably *CinemaScape* can be only just around the corner of a newer, wider screen—but the usage is normally little more than a verbal ploy, and rarely carries Townscape's fundamental, derivational meaning of there being something to see, a view. Therefore it is gratifying to find that lively organ of civic aesthetic consciousness, *The Arts in Louisville*, leaning almost too far in the other direction, and using such phrases as '. . . the Townscape is cut in half by . . . the sidewalk handrail . . . completely destroying the unity of whatever Townscape you may see.' This, indeed, shows a sharper sense of the word's meaning than much use of it in England, where it often seems to stand for a game of halma played with bollards.

The occasion of these observations on the Louisville Townscape was the newly projected, though often-mooted, Louisville–New Albany Bridge, the strictures on view-bisecting handrails being directed at the existing Clark Bridge, and even more stringent abuse at the ageing, rust-streaked K. and I. bridge, where 'no driver dares enjoy the view, lest he swerve a few inches aside and crash.' Among the possible evils of a hastily-designed bridge was, surprisingly by English standards, the danger of *over-specification*, the tendency to over-do with stone-faced embankments (Chinese Walls, to Louisville) bridge approaches that ought to be underdone with elevated roads that leave riverside park-strips open to use—and view.

ANOTHER CANYON GONE. An example of high-pressure high-rise development in a high-land-value financial district—an example that should be noted by English developers and civic authorities with similar problems—is provided by the projected Chase Manhattan building in Downtown New York. The emerging form of this development, 4, is a result of ingenious co-operation and negotiation between the developers, Chase Manhattan Bank, the architects, Skidmore, Owings and Merrill,



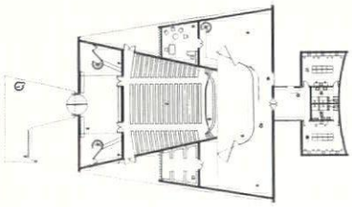
4



5

and the civic authorities—notably the redoubtable Commissioner Moses. Though precise details of the architecture are by no means settled, the size and location of the main building-envelope is fixed, and its relation to the plaza and underground parking area can be seen. Not only will this clear a welcome open space in an overbuilt area, but the plan shows, 5, that the consequent reorganization of the whole of two city blocks athwart Cedar Street will benefit the city by extensive road-widenings. But beyond this, the clearing of such a large area down to the first floor, and the survival on the site of only two large buildings—one of them not aligned to the adjoining streets—will produce a dramatic break in the celebrated, but inhuman, canyon-like development of New York's financial district.

COMMUNITY THEATRE IN RIO. Once again the functional adaptability of those 'Brazilian Silhouettes' that are so often criticized for their allegedly purely formalistic qualities, has been demonstrated by Affonso Reidy. The small, 300-seat theatre which he has designed for the Marechal Hermes neighbourhood presents externally, 7, a 'conventional' *mariposa* (butterfly) side elevation, with sloping walls and double-pent roof, but examination of the plan, 6, will show that this formal disposition of the parts gives a highly workable distribution of the interior spaces, and ample floor-area backstage—where it is most needed—without creating a building which, like so many theatres on open sites, appears too bulky at the back. The landscaping and planting of the open areas adjoining the theatre was in the hands of Roberto Burle-Marx, as was the design of the controversial drop-curtain. A feature of the building which has attracted almost universal approval, however, rather than controversy, is the large single centre-pivoted door which controls public access to the foyer, 8.



6

FRAMELESS DOME. Deviating from the 'classic' type of Geodesic dome which treats structure and covering separately, Buckminster Fuller's latest experiment, a 55-ft. three-quarter-sphere, 9, has an homogeneous structural skin composed of

9

10

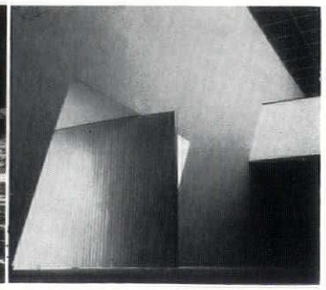
Architectural Record

363 standard plastic elements formed dish-wise with raised flanges along their edges, 10, through which bolts pass for assembly purposes. Intended for military use (though not for the Marine Corps), the new dome is intended to withstand extreme temperatures and wind-loadings up to 200 m.p.h.

Alvin Lustig

One of a distinguished and still-rising generation of American graphic designers, intimately concerned with the emergent sign-and-symbol school of commercial communication, Alvin Lustig died in December, 1955, of a disease which, with the ruthless logic of Greek tragedy, had already robbed him of his eyesight. A friend and supporter of the ARCHITECTURAL REVIEW, his work was most recently illustrated in Marginalia in February

7



8

of this year, and had, in the months immediately preceding his death, been on exhibition at the Museum of Modern Art, New York.

Green Belts

It was obvious when Green Belts were first incorporated into planning policy that sooner or later human nature—in the generally understood meaning of the term—would assert itself against such a flagrant concession to intangibles. To be specific, when the building land ran out. This is now happening around London; the first sign of the reaction against Green Belts was a widely-reported speech by a member of the building trade at Newcastle, and the brew reached editorial form in the *Contract Journal* for January 12. To quote: 'Green belts undoubtedly have their value from an æsthetic point of view. But the sensible question to be asked is, can the country afford them? It is not appropriate to venture an opinion here—except, perhaps, to point out that however desirable green belt plans may be in theory, there is evidence piling up to show that they can be a hindrance and sometimes an expensive luxury if they prevent the country from earning its bread and butter.' That speaks for itself—and expediency has seldom spoken more succinctly.

It is difficult to guess at the eventual outcome: precedent would suggest that the Green Belts are doomed to sink under that familiar triad of callousness, indifference and expediency. But planning, if it is tough at all, is apt to be very tough, and Mr. Sandys has quite clearly indicated that he intends to preserve the one (London) Green Belt that so far exists, and to create the others that are so badly needed in the provinces. Their designation has evidently now become urgent.

CORRESPONDENCE

Glasgow's Overspill Problem

To the Editors,

SIRS,—Glasgow's overcrowding and overspill problem is of an almost incredible severity and is not yet widely enough realized. The necessary overspill is about the same in numbers (300,000 persons) as that facing the London County Council, and far worse in proportion to area, resources, etc. Yet the provision is far less, being at present one new town under the 1946 Act (East Kilbride), another (Cumbernauld) on the point of starting, and no equivalent or parallel to the English Town Development Act to promote more general dispersal.

The overcrowding in central Glasgow which renders some dispersal inescapably necessary is unparalleled in Britain. At the end of the war 700,000 people were living on 1,800 acres, about three square miles, with a gross density of 400 to each acre. Calculations based on the 1951 census have brought out startling facts, e.g., that in central Clydeside 42 per cent of the dwellings are of one or two rooms only, compared with the nearest English case, Tyneside, 12.6 per cent (see a paper presented at St. Andrews in 1954 by Mr. Robert Grieve to the Town Planning Institute). Even now, after a continuous process of decrowding, in the area of the Hutcheson town/Gorbals Redevelopment Scheme the highest net density is estimated at 730 persons per acre, and the average at not less than 400. In one area about to be redeveloped three-quarters of the families have to share with others the use of a closet on the common stairs.

The strangest feature of a strange situation is the lack of general interest in the dispersal which is the indispensable first step in any adequate reconstruction. Yet now it is possible to visit and see at no great distance from each other three sharply contrasted sets of housing conditions—first a central slum, say Hutchesontown-Gorbals, second a recent all-tenement housing scheme, say Barlanark or Cranhill, third the new town of East Kilbride—and mentally to compare the three as frames for life. A day so spent could hardly fail to bring the statistics alive and stimulate a sense of urgency.

Yours, etc.,

ELIZABETH B. MITCHELL.

Town and Country Planning Association, Scottish Section.

John Rodker

To the Editors,

SIRS,—Perhaps you will allow me the space to contribute this further note on John Rodker, whose sudden death last October you have already noted. Your readers may like to know a little more of the poet to whom architectural development in this country owes so much. I knew him well for over twenty-five years and had a number of opportunities of talking to him in his own home.

His publishing, while in his Farringdon Avenue office, of 'Towards a New Architecture' and 'The City of To-morrow,' was, to my mind, one of the most farseeing actions of a farseeing mind. John Rodker appreciated unerringly the integrity of Corbusier the architect and artist, and, with a selfless intellectual compulsion which was one of his outstanding qualities, had the whole work translated and published for the benefit of architecture everywhere and particularly in this country. During this time many fine limited editions came from his 'house.' The translation from the French by Powys Mathers (who was Torquemada of the *Observer*) of 'The Eastern Art of Love' with the most charming dry-point illustrations by Hester Sainsbury, was one of the most important. There was also 'Restif de la Bretonne,' which has already been mentioned in the REVIEW, and the witchcraft books amongst which 'Malleus Maleficarum' was the most magnificent, and attracted much attention in the world of letters.

As a publisher he was adventurous and outstanding in his choice of MSS, and examples of his work were shown in the New York exhibition of beautiful books somewhere about 1928. His prose was, as one would have expected, the prose of an instinctive poet and passages in his autobiographical 'Other Fronts' are of a moving and fierce beauty. As a host John Rodker was welcoming, gracious and kindly. Though retiring by nature, he was a brilliant and encouraging conversationalist; an evening spent with this truly cosmopolitan man in his own house was a rare experience.

Yours, etc.,

H. A. N. BROCKMAN.

Glynde, Sussex.

Gobbledigook

To the Editors

SIRS,—In retrospect of your past year's work, I find so much good work spoiled by an article that appeared in your December, 1955, issue; namely an article entitled 'The New Brutalism' by one Reyner Banham. Having left a very foul taste in my mind, I look forward to your old self again in the coming year.

Mr. Banham seems to be far more concerned apparently with the æsthetics of words than with their actual meaning (if there was any at all actually). I find myself amused at what appears to be the current interest in the work of A. and P. Smithson (what we in this country might call the work of a 'poor man's Mies') but appalled at your writers' putting them in a class with the work of Louis Kahn (and especially his Fine Arts building for Yale University) . . . in fact, its outright insult!

Perhaps 'The New Brutalism' articles might better be retitled 'The New Intellectualism' and have much more elbow room to move about in . . . at least Mr. Banham's article seems to fit more appropriately the case. In fact, if I may be so bold to say, many years ago you coined a wonderful word 'Tommyrot,' which we in the U.S. have recently recoined into 'Gobbledigook' . . . all to fit the same circumstances. So much for Mr. Banham.

Gentlemen, I beseech thee! You are practically all there is left in architectural publication — don't leave your readers to the mercy of any more nonsense such as that which hurtled the barriers of 9-13, Queen Anne's Gate.

Yours, etc.,

RICHARD SHARPE.

Somers, Conn., U.S.A.

Intelligence

Dr. Walter Gropius has been appointed architect of the new American embassy at Athens.

Eduardo Fernando Catalano, Argentine architect, has been appointed Professor of Architecture at the Massachusetts Institute of Technology.

The City of Cologne announces an international competition for the redevelopment of the surroundings of Cologne Cathedral. The first of the four prizes is DM 20,000; in addition the City of Cologne will purchase five entries at 2,000, DM each. Details can be obtained from German embassies or legations; the closing date is June 30th this year.

The Council of Industrial Design's 'Design Centre,' a permanent display of well-designed British products, was opened in Haymarket, London, on April 26 by the Duke of Edinburgh.

The tenth CIAM Congress will take place at Dubrovnik, Jugoslavia, in July, 1956. The theme will be: 'The habitat: problems of interrelationships,' and subjects studied will include the relations between dwellings and community buildings, between built-up volume and space between buildings and between motor-car and pedestrian freedoms.

The CIAM Summer School will be held in Venice from September 6th to October 6th this year. All information can be obtained from the following address: Scuola Estiva CIAM, care of Istituto Universitario di Architettura, Fondamenta Nani 1012, Dorso Duro, Venezia, Italy.

An exhibition of the work of Roberto Burle Marx, Brazilian garden designer, is at the Institute of Contemporary Arts, London, until May 26.

E. R. Collister, head of the firm of E. R. Collister and Associates, architects of the factories at Aveley and Basildon illustrated on pages 256–260, is 40 and married. He served articles between the ages of 16 and 18, studied at the AA from 1934 to 1938 and began practice in the latter year. Between 1940 and 1946 he served with the 14th Army Signals in Burma, was DAQMG, and on demobilization resumed practice. His firm has been responsible for much large-scale industrial work, including the Marconi factories at Chelmsford and at Basildon New Town.

Corrigenda

Photographs 17-20 in the article on Ronchamp published in the March issue were taken by Dr. Alan Vandyke Price.

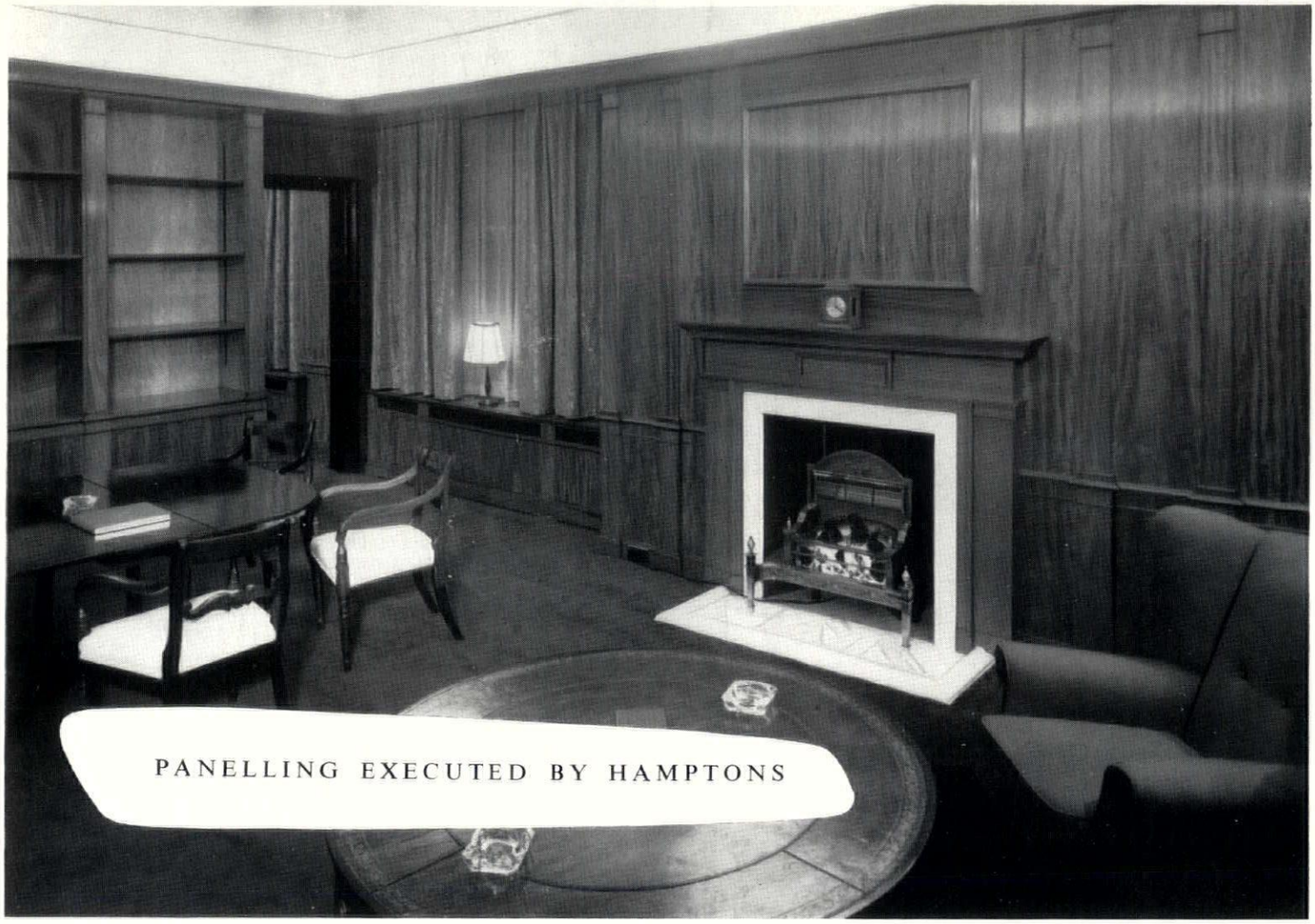
The quantity surveyors for the school at Putney by Powell and Moya, illustrated in the March issue, were Davis, Belfield and Everest. The structural engineers were Ove Arup and Partners, the heating engineers, J. Roger Preston and Partners and the electrical engineers the Chief Engineer's Department of the London County Council.

The following photographs of the school were taken by Peter Pitt: nos. 5, 7, 8, 11, 12, 13, 14, 15 and 16.

The Chapel of the Royal Foundation of St. Katharine. of which the new altar was illustrated in January Correspondence is in Ratcliffe, not Shadwell as mentioned. The sculptor of the altar was Keith Murray; Ralph Beyer designed and cut the lettering and panel decorations.

ACKNOWLEDGEMENTS

COVER: Galwey, Arphot. MARGINALIA, pages 221–2: 2, Aicher; 7, 8, A. Michel; FRONTISPIECE (OXFORD RELIEVED), page 224: map, HMOS; photo, Aerofilms. BUILDINGS IN THE GOLD COAST, pages 230–241: Peter Pitt. EGYPTIAN REVIVAL, pages 242–254: 1, 2, 3, 8, 9, 43, NBR; 13, Clarence Davis Coll., Mus. of City of N.Y.; 16–18, E. R. H. Read; 19, Warburg Inst.; 23, 26, 33, R. B. Fleming; 21, Mansell Coll.; 24, Vatican Gall.; 33, Foto GFN; 37, by gracious permission of H.M. The Queen; 48, Bibliotèque Nationale; 44, J. D. K. Argles. TWO OFFICE BLOCKS, pages 255–7: Coventry, Colin Westwood; Watford, E. Eves. TWO MOTOR CAR FACTORIES; page 259, E. Nixon Payne. CURRENT ARCHITECTURE, pages 263–6: Factory at Crawley, Norman Gold; School at Belper and Factory at Solihull, Toomey, Arphot. MISCELLANY, pages 267–274: Exhibitions, 1, 5, Tate Gallery; 3, 4, MMA; 6, Sam Lambert; Oriel Chambers, 1, 7, Stewart Bale; rest, James Stirling. Lumps on the Skyline, 2, Galwey; 4, Toomey; 8, S. W. Newbery. Gabo Sculpture, Lemaire & Wenninck. SKILL, Interiors, pages 275–280: Wedgwood rooms, Millar & Marris; offices in Berkeley Square, 8, 11, 14–17, A. Cracknell; rest, J. R. Pantlin. Design Review, pages 280–3: carpets, Kordes; 10, Priscilla Conran; 13, Heal's; woven coverings, Toomey.



Conference Room: Banco de Santander.
Architects: S. F. Everson & D. F. Searles, A/A.R.I.B.A.

CONTRACTORS for the DECORATING and complete FURNISHING of BOARD ROOMS, GOVERNMENT, INSURANCE and BUSINESS OFFICES, CHURCHES, THEATRES, HOTELS, CLUBS, STEAMSHIPS, YACHTS, RAILWAY COACHES, BANKS, TOWN HALLS, HOSPITALS, SCHOOLS and every description of PUBLIC INSTITUTION.

GENERAL BUILDING · ELECTRICAL INSTALLATION · HEATING & PLUMBING
SANITARY WORK · FIBROUS & SOLID PLASTER · JOINERY · DECORATING

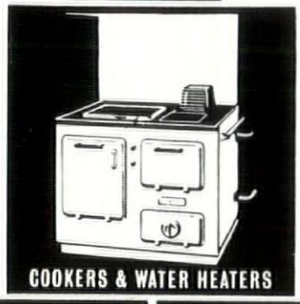
BY APPOINTMENT TO H.M. THE QUEEN FURNISHERS & REMOVERS

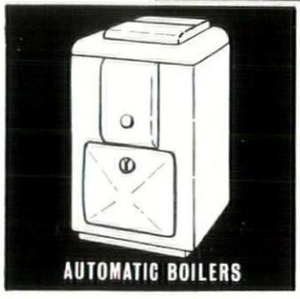
HAMPTONS

BY APPOINTMENT TO H.M. QUEEN ELIZABETH THE QUEEN MOTHER FURNISHERS

HAMPTON & SONS LTD., CONTRACT DEPT., 158, NEW BOND ST., LONDON, W.1. Tel: Hyde Park 7010
(1015)

Specify modern solid fuel appliances





...for efficient heating at lowest cost

Nothing is as cheap for continuous domestic heating as solid fuel. And nothing is as popular—particularly when it's burned in modern, newly-designed appliances. More and more householders are finding that the new fires, stoves, boilers and cookers give far more heat, are much cleaner and easier to run—and look very well in any setting. And more and more are demanding them.

To help you select appliances and install them correctly, the C.U.C. offers the following services :

List of Recommended Appliances—published twice yearly, offered free of charge. **C.U.C. booklets** on appliances and their installation, also fuel storage. These are listed on the coupon below and are free of charge. Fill in the coupon and send it to the C.U.C. for those you—or your staff—would find useful.

C.U.C. Training Courses are held in London and Glasgow for the staffs of builders and local authorities. Instruction in installation is given by experts. Special one-day courses are held in Technical Colleges in various parts of the country for those who cannot attend the courses in London or Glasgow. For full information about all C.U.C. Training Courses, write to the C.U.C. at the address below.

C.U.C. INFORMATION CENTRES

in many major cities display the latest appliances, have leaflets, and can give you expert information. See their addresses below.

BIRMINGHAM: Burlington Passage, New St.
BRISTOL: 5 Broad Quay, City Centre.
CAMBRIDGE: 24 St. Andrew's Street.
CARDIFF: 9 Castle Street.
GLASGOW: 341 Bath Street.
LEEDS: 99 Albion Street.
LONDON: The Building Centre, 26 Store Street, W.C.1.
MANCHESTER: 257 Deansgate.
NEWCASTLE-UPON-TYNE: 18 Saville Row.
NOTTINGHAM: 4 and 6 St. Peter's Gate.
PLYMOUTH: Royal Cinema Buildings, Athenæum Place.

The Coal Utilisation Council, 3 Upper Belgrave Street, S.W.1

Please send me the following : **(Please cross out those not needed)**

List of Recommended Solid Fuel Appliances
Insulation Booklet—"Make Your House Cosier in Winter"
Architectural Design Data for Solid Fuel
Fuel Stores for Houses and Flats
Common Fixing Faults

Name .....

Address .....

..... A.R.4.

THE ARCHITECTURAL REVIEW

The recent dispute in the printing trade, which held up the production of all periodicals printed in the London area, made it impossible to bring out an April issue of THE ARCHITECTURAL REVIEW. All subscribers will have the term of their subscription automatically extended by one month.

Volume 119 Number 712 May 1956

The cover shows, in sale-catalogue terminology, a *Sphynx*, crowned with oak-wreath to accept candelabra (missing); gilt gesso over wood; length 17½ in., height 11¾ in., without base. Early nineteenth century, French work? (from the collection of THE ARCHITECTURAL REVIEW). But the question mark after the common attribution of such stray pieces to a French source must appear more than ever justified in view of the article by Professor Pevsner and Dr. Lang on p. 242, from which it is clear that the accepted short-cut derivation of English Regency Egyptianisms from Napoleonic France, must now give way to an awareness of a rich and continuous tradition of interest in Egypt that goes back beyond Napoleon to the Emperor Hadrian, or even further.

221 **Marginalia**

224 **Frontispiece**

225 **Oxford Relieved** Oxford's central traffic jam effectively fragments its academic life, the traffic noises make a mockery of its cloistered precincts, and traffic vibration threatens its old buildings. Town and gown are substantially agreed that the centre must be relieved, but recent Ministerial insistence that a plan be completed has merely interacted with the complicated internal political situation to produce an unhappy couple of compromises which would ruin the High, in order to save Christ Church Meadows. The background to this unsatisfactory solution is the web of conflicting Collegiate interests, all determined that a new road shall not flank their own sacred walls or cross their own hallowed views, and these have combined with deep-rooted English sentimentality about fields to make of Christ Church Meadows an area that may not be touched. But the fact remains that whatever individual heads of colleges may think, the Meadows offer by far the most promising solution, and a relief road across them, if skilfully landscaped and taken underground at the right points—as Gordon Cullen's sketches indicate—and properly integrated with other traffic reorganizations, would offer maximum improvement with least damage to amenity.

230 **Recent Buildings in the Gold Coast:** *Architects, James Cubitt and Partners*

242 **The Egyptian Revival** *by N. Pevsner and S. Lang* The opening of Bullock's Egyptian Hall in 1812 set a fashion for revived Egyptianisms that ran on into the general stylistic vocabulary of late Regency and Early Victorian building in England. But on what sources did the architects of the hall, themselves, draw for their inspiration? The standard superficial answer is to refer across to the immediately preceding vogue for Egypt in France, triggered by Napoleon's campaigns and Vivant Denon's publications, with such enthusiasts as Thomas Hope of Deepdene as transmitters of the taste across the Channel. But, as might be expected, the situation is far more complex than that, and the pursuit of the Egyptian taste back through the centuries is found to involve more than mere fashionable fancies and the unbuttoned eccentricities of otherwise serious designers. The authors find themselves required to bridge the gap between Piranesi's *Cammini* and the Canope of Hadrian's villa, and thus to detail the standing of Egypt in the eyes of the Greeks and Romans, in the eyes of the Middle Ages, and of the Humanists of the quattrocento; to show the persistence of Egyptian motifs in Mannerism and the baroque; the slow rise of serious Egyptology, and the equal rise of a belief that the Egyptians had possessed a mysterious wisdom, now lost—a belief that added much of the power and dignity possessed by Egypt in the eyes of Freemasons and Romantics in the years immediately preceding Napoleon's campaigns and Bullock's Egyptian Hall.

255 **Two Office Buildings:** *Architects, W. G. Hattrell and Partners*

258 **Preview: Two Motor-Car Factories:** *Architects, E. R. Collister and Associates*

263 **Current Architecture**

Miscellany

267 **Exhibitions**

268 **History**

270 **Sculpture**

270 **Criticism**

273 **World**

273 **Books**

Skill

275 **Wedgwood Showrooms:** *Designer, Alec Heath*

278 **Showrooms in Berkeley Square, W.1:** *Architects, James Cubitt and Partners*

280 **Design Review**

283 **Techniques: Standard Colours** *by Lance Wright* Never before have a nation's colourmen, chief users, and professional advisers banded together to evolve a prescribed range of colours for use in building, and for this reason, if no other, the publication of BS.2660, 1955 (colours for building and decorative paints) is an event of consequence to architects. But the reasons for evolving this new British Standard are not only technical, they are also aesthetic, and aim, by judicious simplification and restriction of the range of hues and values available, to give the architect a more secure basis on which to develop his colour-schemes. Mr. Wright explains the content of the new standard range, the form in which it is presented, and the additional information beside hue and value which is given on the cards.

286 **The Industry** 288 **Contractors, etc.**

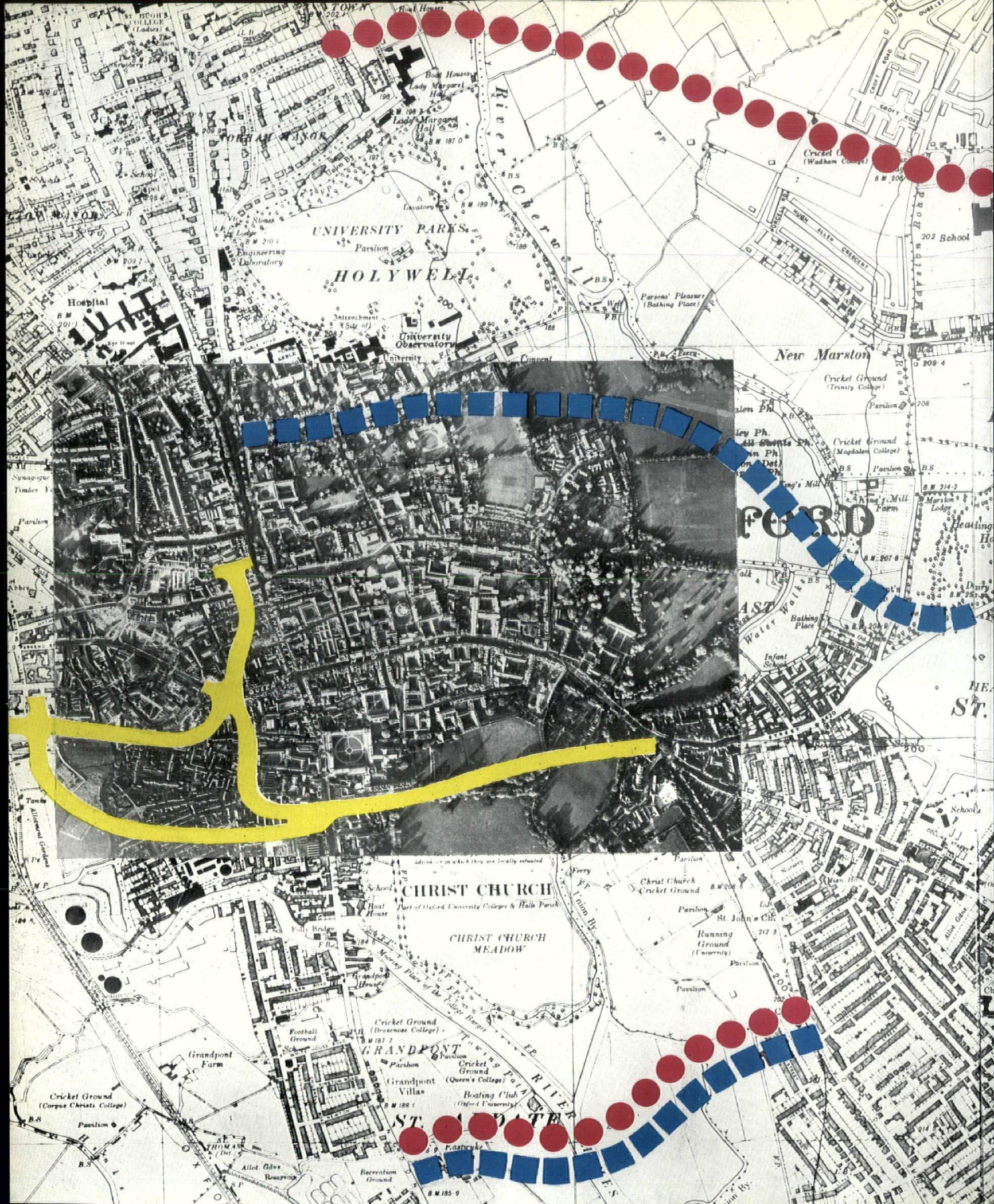
J. M. Richards
Directing Editors Nikolaus Pevsner
H. de C. Hastings
Hugh Casson
Executive Editor Ian McCallum
Art Editor Gordon Cullen
Assistant Editors production, Ian Nairn. research, S. Lang. literary, Reyner Banham. Editorial Secretary. . Whi 0611-9

SUBSCRIPTION RATE: The annual post free subscription rate, payable in advance, is £2 18s. 0d. sterling, in U.S.A. and Canada $9, in Italy Lire 5550. Italian subscription agents: A. Salto, Via Santo Spirito 14, Milano; Librerie Dedalo, Via Barberini 75-77, Roma. An index is issued half-yearly and is published as a supplement to the REVIEW.

THE ARCHITECTURAL REVIEW

9-13 Queen Anne's Gate, Westminster, S W 1 · Whitehall 0611

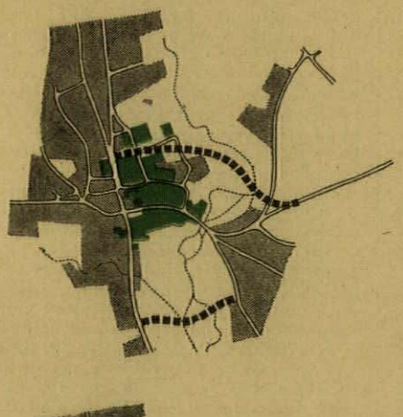
FIVE SHILLINGS



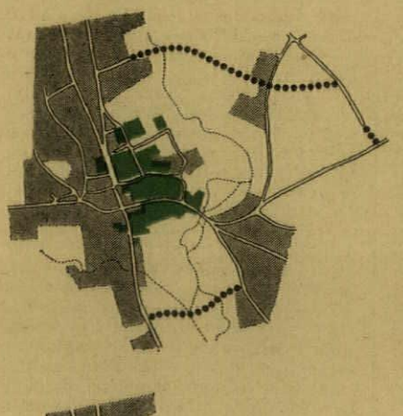
UNIVERSITY PARKS
HOLYWELL
Engineering Laboratory
Hospital
University Observatory
River Cherwell
Parsons' Pleasure (Bathing Place)
New Marston
Cricket Ground (Trinity College)
Cricket Ground (Magdalen College)
King's Mill Farm
Marston Lodge
Bathing Place
Infant School
CHRIST CHURCH
Part of Oxford University Colleges & Halls Parish
CHRIST CHURCH MEADOW
Christ Church Cricket Ground
Running Ground (University)
Cricket Ground (Brasenose College)
GRANDPONT
Grandpont Farm
Grandpont Villas
Cricket Ground (Queen's College)
Boating Club (Oxford University)
Cricket Ground (Corpus Christi College)
Recreation Ground
Football Ground
Folly Bridge
Boat House
Union By.
Ferry
Mooring Place of the College Barges
Towing Path
Allot. Gdns.
Reservoir
Allotment Gardens
Tanks
Synagogue
Timber Y
Pavilion
School
Cricket Ground (Wadham College)
Marston Road
Water Walk

OXFORD RELIEVED

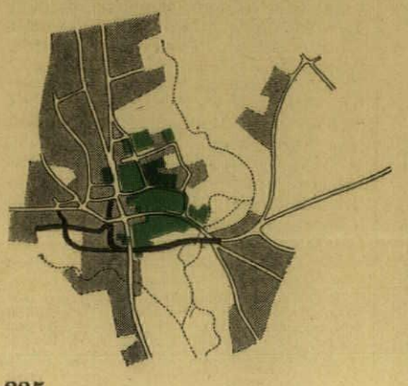
To list, let alone illustrate, all the plans purporting to relieve the centre of Oxford which have so far been advanced would take up much space that could be better applied. We therefore show three: two purely for their menacing topicality and a third representing the triumph of logic in town-planning. A fourth, Lawrence Dale's father-plan, produced as far back as 1942, is not illustrated, but essentially it is a forerunner to Sharp's, the chief difference being that Dale's Meadow road takes a much wider sweep to the south. As Dale lit the torch, however, we should salute him.



1, Oxford City Council's plan (blue ←) submitted to the Minister of Housing and Local Government after a meeting of the Council on November 7, 1955. (At this meeting an amendment proposing to bring the southern road north of the river, along the southern boundary of Christ Church Meadow, was defeated only by the Mayor's casting vote.) Another proposal to take the northern road north of the Parks, so saving St. Giles, was defeated by 4 votes.



2, the University's Plan (red ←). On November 29, 1955, Congregation carried by 416 votes to 66 a resolution to oppose unreservedly any decision to construct inner relief roads between Norham Gardens on the north and the Isis and the New Cut on the south before the effects have been observed of . . . the construction of intermediate relief roads. The particular routes chosen for the latter are shown opposite.



3, Thomas Sharp's Plan (yellow ←), commissioned in 1945 by Oxford City Council and published in 1948, which contained the proposal for a 'mall' crossing Christ Church Meadow along its northern border, linking up to the north by a loop west of Carfax, around which would be sited a new shopping and civic centre. This proposal was never adopted by the City Council.

It is a dictum of Dr. Thomas Sharp's that no one who has ever been connected with Oxford in any way should have anything to do with the Oxford traffic-relief problem. Give a man a B.A. Oxon. and no more you can ever do for him will cure his prismatic eyesight as far as the problem is concerned; he will always be able to see everything but what is before his eyes. Of course, Dr. Sharp is privileged in that when these disqualifications are applied to him he emerges unscathed; but he has a right that only a warped instinct would deny to postulate them. He loves Oxford with an ardour bred of a long and intimate, although comparatively late acquaintance, and with freedom from bias save in favour of what he believes to be essential for Oxford's salvation.

Regional prejudice is bound to play a part in forming the opinions of many colleges in the University on the different schemes. Opinion against an inner relief road through Christ Church Meadows is naturally strongest in the colleges that abut on the Meadows (notably in Christ Church itself), or are concerned with alternative compromise schemes that do not involve a Meadow road, while hottest against the new official scheme that includes a road entering St. Giles through the site of the 'Lamb and Flag' are the ones on the north side of Broad Street; note that these two sets of colleges are also most keenly *in favour* of that arch-compromise, the pair of roads, one north of the Parks and the other south of the Isis, used in conjunction—alas, all too possibly to cloak an appearance of being too much swayed by their separate private interests. (The Master of Trinity has been alone amongst college heads in the outer fringes of the University area in pleading for an inner relief road). And then the colleges for which the idea of closing Magdalen Bridge to all forms of wheeled traffic larger or noisier than the bicycle has the most charm are, of course, those that front the High, and their chief spokesman has been Mr. Sparrow, the Warden of All Souls. The others, who know that the High cannot be effectively so closed without the aid of one or other of the possible inner relief roads, call the idea reactionary and inimical to the commercial interests of the city; the most sincere exponent of this view is Mr. A. B. Brown, of Worcester College, who also has a seat on the City Council. We are far from asserting that those who hold opinions coloured by regional interest are not entitled, and in certain cases, virtually bound to do so; nor that the fellows of Oxford colleges, when they say they care for the beauty of Oxford, do not really mean it; but it must be our cry that absolutely no compromise in planning terms is possible: better by far a continuance of the *status quo* and no solution at all. Posterity has been freely invoked by all, but posterity will judge the plan as a plan.

At this point we should mention that the principal guardian of the truth, throughout the more recent stages of the Oxford controversy, unfortunately disabled by his position as Vice-Chancellor of the University from speaking or voting in Congregation last year, has been Dr. A. H. Smith, Warden of New College. Although, except on its Holywell side (added in the last century), his college is perhaps the most secluded in Oxford, he has been the liveliest and most eloquent protagonist in the campaign for the restoration of Oxford's lost peace—and not by reactionary means, as his support for a road across the Meadows as the only solution plainly shows. The fact that New College, by its position, cannot belong to one of the regional 'parties' has been seen by some as detracting from the weight of his argument; but to an outsider it is clear, to vary the theme of Dr. Sharp's dictum, that it gives him the special authority attaching to disinterest. Dr. Smith's attitude has apparently cost him some friends; but, as he has said, popularity matters little at his age. (He is 72.)

Why has an Oxford plan ever been thought necessary at all? The High Street has for a long time been held to possess an exceptional and perhaps unique beauty, which had been suffering (visual) damage from the motorized traffic, light and heavy, that passes through it all day and during most of the night. The vibration it set up had even begun to affect the fabric of some of the colleges along its route: (this factor, however, has lost some of its earlier cogency since the traffic is now so congested, and passes so slowly, that the colleges are no longer physically in danger.)[1]

The High, even if its finer buildings have suffered no actual vandalism, is now almost impossible to dissociate from an unceasing din and the smell of petrol fumes; and each of Oxford's inhabitants must spend many hours a year waiting on the pavements in the High for a break or halt to occur in the trail. (Between St. Mary's Church and Barclay's Bank, and between Magdalen and Rose Lane are the points where crossing is most hazardous.) Although the tall vehicles make the buildings look forlorn and the colour of tarmac blends ill with that of stone, and the beauty of the High is extremely difficult to appreciate except on a Sunday morning, it is not primarily a question of the buildings—although if one pauses to survey the damage to Oxford's serene *genius loci* caused by the erection of one building, the new Bodleian Library, at the east end of Broad Street, there is a temptation to lose heart and think that Oxford is no longer there to save. Nor is it a question of the High alone: for the noise is not at its most hair-raising, *qualitatively*, in the main streets—the narrow streets, especially Turl Street, Holywell and Catte Street, being worse afflicted by a smaller (but much too large) volume of traffic. It is a question of the University, considered simply as a place where thousands of people learn, teach and carry out research. Because it has grown imperceptibly, the volume of traffic is taken almost for granted. Even when it is agreed that the nuisance is grave, it is usually assumed that the problem of overcoming it completely is too immense

[1] At night, when the congestion is reduced danger persists; the ceiling of a bedroom in the part of New College overlooking Holywell was recently shaken down by a heavy lorry passing at night.

to begin considering as a realizable possibility. Let the reader conjure up before his mind's eye the Oxford into which he can peep any day through the camera obscura of such geniuses as Ackermann or Buckley (and forget the classic and fearful description Gibbon gave of eighteenth-century Oxford in his *Autobiography*). It is quite as remote as Prospero's cloud capp'd towers and gorgeous palaces, although the ruins of that blissful calm are still perceivable in such corners of the town (apart from enclosed college properties) as Merton Street, from which its surface of cobble-stones keep most car-drivers. Besides the many faint-hearted people who do not believe the closing of Magdalen Bridge to be practicable and dare not admit that better conditions are within reach, others, turning timidity into a positive conviction, say that it would make Oxford a dead city, comparable to Baalbek or Petra. Of course it will kill a tramp if you scrub off all his dirt at one sitting, and a Fakir who is accustomed to a bed of nails is supposed to die if made to sleep in a feather bed. But does the breath of life come out of exhaust pipes? Will the purpose of Oxford life die if the streets and squares are reduced to comparative silence? This invertedly sentimental argument against making the centre of Oxford a precinct is the worst bogy obscuring the fact that the problem of Oxford is not one of abstractions and politics, but one of town-planning, viz., relationships between solid objects firmly placed on the ground. Every college is distinct in its own way from the rest, but the University has existed since the Middle Ages to draw their more serious pursuits into one channel; and if it would be intolerable even to imagine a stream of cars taking a short-cut through a college quadrangle or garden, it is surely as much so that the University is riven into four parts (two, only containing single colleges, Worcester and Pembroke, apiece, are fragments) by two of the busiest trunk roads in England.

These trunk roads existed, it is true, long before the twentieth century brought the gangrene of motorization; and although the High was once above all the *High Street*, providing the central means of communication for townsmen and members of colleges going about their business, it could support and enjoy its supernumerary role as a trunk road without any conflict of interest.[2] It doubtless did the dons of eighteenth-century Oxford much good, besides enlivening the whole town, to have stage coaches and farm wagons making noisy, brief appearances. But now the High sinks under its tremendous topographical burden, while perforce it continues in its unchangeable local function. The dons, graduates and undergraduates of this century on the whole know plenty about life, and in common with most of us wish to get away from any nuisances, and particularly noises, which interfere with the pursuit of their professions.

Many other towns have traffic problems quite as bad as Oxford's, which perhaps prompted the A.A. and the R.A.C. to declare recently that no traffic problem existed in Oxford at all. But a university city cannot in this respect be compared with an industrial or even a market city. Oxford's problem, simply because it affects a very large university in which most of the undergraduate study is subsidized by the government, takes priority over that of cities which are without universities; and the government, if it is wise, should spend a lot of money to obtain so vital an end. As the University spreads into new colleges, faculties and laboratories, the need for unity and close pedestrian (and velocipedal) relationship between them is increased. This should be realized by the creation of a precinct, bounded by the route of the single relief-road that we shall recommend. It is a pity that Worcester College, the women's colleges and the area of St. John's Street, where so many undergraduates, from all colleges, have lodgings, should lie in a position that makes their inclusion in this precinct impossible; but none of them would be brought closer to the traffic by the building of our proposed relief-road than they are at present. The speed of motor-traffic within the precinct should be restricted to a limit of no more than 20 miles per hour, and should not be allowed to park in the streets for more than thirty minutes at a time. And some additional cobbled street surfaces, quite apart from pleasing the eye—we will not press that point—would keep this traffic slow, if it did not keep most of it at bay altogether. Above all, it is necessary to encourage the parking of cars, when possible, off the streets altogether and outside the precinct, in parks for convenience's sake as close to its boundary as possible. A car-park already exists in Gloucester Green; others should be sited near the Plain and in the replanned St. Ebbe's area.

We have heard much about the loss of trade which the shopkeepers in the centre of Oxford might suffer by the closing of Magdalen Bridge. But just as nothing is likely to make those dons who order *friandises* from Fortnum & Mason alter their habits, so inhabitants of the centre and suburbs of Oxford, and of the country neighbourhoods round about, will continue, as they always have done, to use Oxford for shopping; they provide almost the entire custom for the shops; and, indeed, their cars, as the lessening of traffic congestion on Thursday (early-closing day) afternoons indicates,[3] form a large proportion of those which pass Carfax. And, as for tourists, nothing will or should keep them out. Dr. Thomas Sharp's plan for Oxford made the proposal that the Morris Motor and Pressed Steel works in Cowley, which attracted thousands of new inhabitants to the vicinity of Oxford from depressed areas between the wars, should, for the University's sake, be moved to another part of the country. His reasons were that for want of a main-line passenger station and adequate shopping, window-shopping and entertainment facilities near their homes, and for want of an alternative route for reaching the existing BR(W) station in West Oxford, the inhabitants of Cowley use the centre of Oxford for every possible purpose.

The position of Cowley in relation to the main London-Birmingham railway line indeed rules out any but a highly complicated solution to that difficulty. But to whatever extent Cowley might be developed with the object of making it an independent centre, the bright lights of the big town, the old and historic town, will never cease to draw their thousands, who may have no other aim than simply to be in the centre and, vaguely, to see what is going on. On practical grounds alone, this idea (alone among Dr. Sharp's) seems an impossible chimera, the insistence on which can only cause confusion and wound otherwise sympathetic feelings; and the University's debt to Lord Nuffield for the vast benefactions he has bestowed upon it must rule out any question of its supporting a scheme for his removal from Oxford. The Cowley problem is closely allied to Oxford's *pedestrian* problem, the importance of which only a few, and in particular Professor A. L. Goodhart, President of University College, have stressed. A new shopping centre (with or without the super-markets in the American manner which Professor Goodhart so warmly advocates) west of Carfax, on the north-south loop road embodied in our plan,[4] will undoubtedly relieve the human congestion in the streets of the University area; and the abolition of the Market (the interests of which will be transferred westward to the new shopping centre) which festers between the High, Cornmarket Street, Turl Street and Market Street, will also keep out some of the heavier traffic which blocks central Oxford. If, as Dr. Sharp suggested, the site of the Market were to be occupied by a rebuilt Oxford Union (which would thus be perfectly placed—at the very centre) Market Street could presumably be paved over and turned into a pedestrian way, with bollards at each end. In conclusion to the argument, 'Saving the High' and allowing its architectural beauty to be relished is not enough; for the High without the University is nothing. If we must have images of brick, stone and plaster, let the slogan be extended to—'saving the High, the Broad, the Turl, Catte Street, Ship Street, Holywell, Longwall, Merton Street, Oriel Street, Radcliffe Square, and New College Lane—not forgetting St. Giles, Museum Road, Parks Road, South Parks Road, and Mansfield Road.'

The action of Mr. Duncan Sandys (Minister of Housing and Local Government) in forcing Oxford City Council to take a decision, considered apart from its incidental consequences and the way it was carried out, was salutary, and motivated by an enlightened desire to see Oxford University rid of its tremendous traffic nuisance for ever. The City Council was invited to put forward its final considered and official plan: this, by an unhappy chance, turned out to consist of an inner road north of the centre emerging halfway along St. Giles, coupled with a road, termed an 'intermediate' relief road on the south bank of the Isis, across from Christ Church Meadows. Why was this inner road chosen in preference to one of the oft-suggested roads across the Meadow? We can assume that the Council realized such a suggestion was fraught with political consequences too dangerous to be braved: for Christ Church itself has in the past resisted with frantic energy any such proposal ever made.

Englishmen, by and large, care much more for a field than for a piece of architecture, and for a simple building more than for street architecture and townscape: thus Christ Church probably felt that, by agreeing to the construction of an inner road passing through the Meadows, it would betray a sacred trust and run the risk of carrying a stigma for as long as the aristocratic tradition prospers. It is not unfair to say that the same body of opinion as would fight tooth and nail to save Christ Church Meadows, will contemplate with perfect equanimity the destruction of the college playing fields in Mesopotamia and south of the Isis, and the little Arcadia stretching northwards from Addison's Wall (heavily overshadowed by New Marston on one flank, but in other respects, intact). We do not claim for a moment that Christ Church Meadow has no points in its favour; but only that it can absorb the road without losing its own nobility, whereas the delicate little network of waterways, meadows and shaded walks on the north side of the city would be utterly ruined by a large road passing through it. We know that some sacrifices must be contemplated if an inner relief scheme is ever to come into being; but we do not believe that, in the case of the Meadows, a sacrifice of beauty or of 'amenity' is involved. To return to the history of recent events. . . .

The City's announcement of its plan, under Mr. Duncan Sandys's auspices, caused the University, more concerned to prevent the threatened damage to St. Giles than upset by the basic deficiency of the plan as a plan, to vote (in Congregation on November 29 last) for the dropping of all inner-relief plans until the effect of completing the outer by-passes, developing better shopping facilities in Cowley and better parking facilities near the centre of the City and the construction of intermediate relief roads, had been observed—by the time all of which has happened, many of the voters will be in a Place where the relief road problem is not pressing.[5] By a vote taken the next week, to establish which of the two inner roads it would prefer if forced to decide on one or the other, it came out in favour of a road through Christ Church Meadow. The City of Oxford is now especially anxious that its plan should be carried out, again for a political reason: viz., fear of the blow which its prestige would suffer if Mr. Sandys, in desperation at the University's fierce resistance, decided to refer the whole matter to an impartial committee, as he may have done by the time this article has been published. One can appreciate its grim desire to succeed where its predecessors have failed and (a desire shared by all) to see the wretched business settled once and for all; and its plan, which at least, in a ruthlessly realistic and *easy* way, attempts to solve the real problem, is infinitely to be preferred in principle to the cynical course demanded by more than six senior members of the University to one, of, in effect, doing nothing towards solving the problem (which is saving Oxford). Would that the University were not unconsciously right in attacking the St. Giles Plan, at the same time as being hopelessly wrong-headed! The road across Christ Church Meadow (whether Sharp's, Minn's or Lawrence Dale's) may well have received its kiss of death from the University's fatal vote in its favour on December 7. Now we see the harm which has resulted from Mr. Sandys' intervention. The Christ Church lobby may have quietly won its battle. Mr. Sandys should have allowed all opinions to be expressed and all votes to be taken in their due course, before allying himself, in a

[2] That a traffic problem did exist then is, however, proved by the removal from Carfax of Otho Nicholson's conduit in 1787.

[3] This circumstance was pointed out by Mr. E. T. Williams, Warden of Rhodes House.

[4] This Shopping Centre in West Oxford has figured in many plans, and the City has long recognized it as part and parcel of the St. Ebbe's redevelopment plan, which is only waiting for marching orders. A little despatch on the City's part (we speak without inside knowledge but with feelings that most of Oxford must share) might have averted the recent destruction of the Clarendon Hotel in Cornmarket, which alone with Tom Tower at the southern end saved that street from utter commonplaceness, and its replacement by Woolworth's large new building which, other considerations apart, deprives the New Shopping Centre, if it is ever built, of one of its chief members.

[5] The proposer of the motion was the Warden of Merton; its chief supporters and propagandists were Sir Maurice Bowra, Warden of Wadham, and Mr. A. B. Brown, of Worcester College.

way that anyone who did not help to plan the *coup* can see to have been fortuitous, with one plan in particular and that unhappily, not, the best. Oxford, like Rome, was not built in a day. After all, the St. Giles plan—rather, the part of it which affects St. Giles—might have been borne if it were merely a matter of losing the 'Lamb and Flag' and the three adjacent buildings on the north, and in effect of losing the splendour remaining to St. Giles. But the whole conception is hostile to any idea of a university precinct. For one thing, it isolates, arbitrarily, a large and important collegiate and academic area, besides the women's colleges, an area which includes Keble and a large group of laboratories. Secondly, and more important, it places the road which is to carry all the heavy northbound traffic passing through Oxford against the very buildings of St. John's (its forecourt and the great width of St. Giles protect that college from much traffic nuisance at present), immediately against the frontage of Rhodes House, the portico of which would have to be truncated to accommodate it, and between the University and its Parks. The loss of valuable house property between St. Giles and Mesopotamia would be tragic—as Museum Road and South Parks Road are neighbourly areas, quite free from blight. The suggested amendment which takes the road from Museum Road, north up Black Hall Road, via the west end of Keble Road, into St. Giles, making a round-about of St. Giles churchyard, causes the same nuisance to the same people who are threatened by the 'Lamb and Flag' route, and instead of breaking St. Giles's back, neatly chops off its head. This whole plan, apparently so drastic, is itself a compromise.

Its other half, the road crossing over to the south bank of the Isis below the New Cut, and designed to carry traffic bound for the south and west, is much less controversial; it commits none of the obvious offences which would have brought the citizens of Oxford up in arms, as the St. Giles proposal has done. It is only strange how little concern seems to be felt for the 'amenity' of the river, where the Colleges row and anyone can at present boat or stroll in peace. It only seems to us, particularly in view of the fact that a road linking the Iffley and Abingdon roads by another bridge only a few hundred yards further downstream has been approved by the City Council, that effort and expense are being duplicated. This consideration—that two roads would be doing the work that one can do without any difficulty or inconvenience to drivers—leads inevitably back to the Meadow road which, if placed sufficiently far over to the north side of the Meadows, removes any need whatever for a relief road, inner or intermediate, on the north side of Oxford: that is, as long as it should be made to continue through into the St. Ebbe's area which, having long been scheduled for redevelopment, is ripe for the purpose; and round by way of the Union site and the (at present) perilous junction of George Street and Cornmarket into St. Giles and so northward. Regional traffic bound from East Oxford for the Radcliffe Infirmary, the Acland Nursing Home, the Morris radiator works off Woodstock Road, the cake factory, or any of the colleges, schools and homes in North Oxford would thus have a much less circuitous route (and one better suited to vans and fast ambulances) than Holywell or Catte Street and Parks Road which it has to use at present. North-bound *through* traffic could be diverted out to a by-pass road recently plotted along the eastern border of Port Meadow, hugging the railway as far as Wolvercot (practical and attractive, as well as infinitely less destructive than the approved by-pass encroaching upon Wytham Woods). However—and this is a local matter entirely—a road linking the areas of Marston and Headington with North Oxford at about the point of the present Marston Ferry, or rather to the south of it, is altogether desirable. If the loop round towards the north via St. Ebbe's, etc., were created, no better site could be desired for the New Shopping Centre, and for the desperately needed parking facilities.

The next question is the form of the road and the route it should take. To take the two main suggestions as to route advanced so far in their chronological order, T. Lawrence Dale[6] carries the road along the south side of the Meadows, bridging the Cherwell above its delta, and sweeping round to St. Aldate's where, apart from the St. Ebbe's neighbourhood which is already due to disappear, only Salter's boathouse would need to be destroyed. Certainly the landscaped mall Dale suggests would complete the vista of the Meadows in a spectacular fashion. The road raised on concrete stilts, of which Mr. P. D. Henderson, an economics don at Lincoln College, is an enthusiastic exponent, has even greater visual possibilities and makes a sublime virtue of necessity (*sic*). No one should in any circumstances accept the Meadows road in the spirit of an awful compromise with the juggernaut of modern civilization, acceptable only if concealed to the maximum; if the old classroom maxim may be repeated, it is only worth doing at all if it is done really well. It would further permit free passage underneath it for walkers in the Meadow and for rowing men and spectators bound for the river. Before turning to Sharp's route (the Merton Mall on the north side of the Meadow), the proposal of Mr. Roy Harrod of Christ Church (a believer in the sanctity of the Meadow) for a tunnel under Oxford to deal with the whole problem should be mentioned. The clay on which Oxford stands is perfectly suitable for such a project. Expensive it must be but if it is the solution, another one or two hundred thousand pounds on top of the estimated cost of the other schemes should not be allowed to come between Oxford and its salvation. A long tunnel, however, would be an unpleasant thing even were it necessary. If, due to the advance in air transport or to other causes less easy to predict, the traffic using the surface of the earth and wishing to pass through Oxford returned from being a perpetual (tidal) bore to a summer trickle, the tunnel would be a supreme monument to man's misdirected ingenuity, an Erewhon museum piece *par excellence*, while the Meadow road would still commend itself, if only as a semi-pastoral alternative to the High, even if the fastest earth-bound traffic had become the donkey.

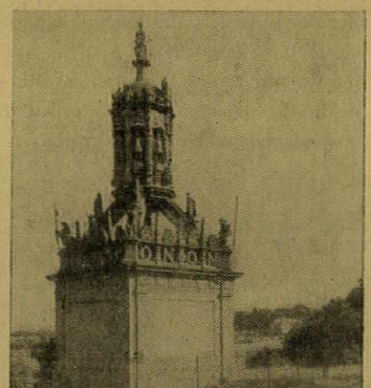
Sharp's route, alone amongst those so far suggested, is truly logical. His 'Merton Mall' presents drivers who do not intend to stop in Oxford with an incentive to take a route other than the High (even supposing Magdalen Bridge to be left open to four-wheeled traffic). In two respects, even so, the exact path of his road is out of keeping with the spirit which should inform the making of an Oxford plan. For one thing, it passes within 50 yards of the front of the Meadow Buildings of Christ Church, the nuisance of which not even double glazing would much allay, and grazes the north flank of St. Catherine's Society, a new and important non-residential collegiate body, at the same time cutting it off from the University area, just as the north road proposed in the recent City plan cuts off Keble. St. Aldate's, furthermore, is a street quite as well worth preserving in its entirety as St. Giles[7]; but this is secondary to the other points. All three points, however, as will be seen, are eliminated by our plan.

That Christ Church, in the Augustan age, did not entrust its Meadows to Le Nôtre or Capability Brown is a misfortune of a very providential nature; for if the Meadows had been given the treatment, opposition to their use as a means of solving our traffic problem would need no special pleading at all, but would, except perhaps to a ruthless minority, be self-justificatory. But if inviolability cannot be claimed for them on aesthetic grounds alone, do they still provide for the inhabitants of Oxford a breathing-space that cannot be done without? Yes; at the moment, they do—at least, in the present state of Oxford, we can give this argument the benefit of the doubt. But with the transference to the Meadow road of the traffic which now chokes Oxford streets broad and narrow, breathing-space, although it can never be undesirable, would be at less of a premium. Besides, the Parks and the walks through Mesopotamia would remain untouched (and have we forgotten the gardens of St. John's, Worcester, Merton, Corpus Christi, Balliol, Trinity, Wadham, Exeter, Jesus, Pembroke, Magdalen and New College, and the Botanic Garden, to mention but the best?)—and it will still be possible for mothers wheeling their babies in prams and all the other users of the Meadows to make the circuit without physical hindrance and, down at the river end, in much the same peaceful atmosphere that they can enjoy now. The traffic through the Meadows will not be silent; no, but the Meadows are inanimate and the noise will not injure *them*. The inhabitants of Oxford will have a peaceful town to live and move about in, instead of a suffering one, and that, not what happens to the Meadows, is the really important thing.

[6] Expounded in his witty book 'Towards a Plan for Oxford City' (Faber, 1944).

[7] Although it has more new buildings alien to the *genius loci*, the ancient ones that remain—Christ Church, Pembroke, Littlemore Hall, Bishop King's palace, etc., are more venerable; and whereas the breadth of St. Giles is stately, the declivity of St. Aldate's is dramatic.

Tail-piece. *Here, unseen and decayed in the park at Nuneham Courtenay near Oxford, stands the symbol of Oxford's exiled peace, the conduit which a student of Christ Church, Otho Nicholson, designed in* 1610 *and which stood at Carfax until its removal in* 1787. *Both Dale and Sharp called for its return, in appendices to their plans, and doubtless it will come back some day; but it should not come back until Oxford is ready to receive it, i.e., till the closely built-up centre is freed from congestion. In particular it should be re-erected nowhere but on its original site—not in the middle of a roundabout, for example, nor in a municipal playground, surrounded by palings.*



Acknowledgments: the map on page 224 is reproduced by courtesy of H.M. Ordnance Survey; and the engravings at the bottom of page 228 by kind permission (left) of C. Sanders & Co. and (right) of Lady Hurst.

THE ARCHITECTURAL REVIEW'S PLAN FOR OXFORD

The increasing pressure of traffic in Oxford is forcing a climacteric change in the pattern of the town. The paradox is that the very agent which appears to be destroying the town may be the means of its salvation.

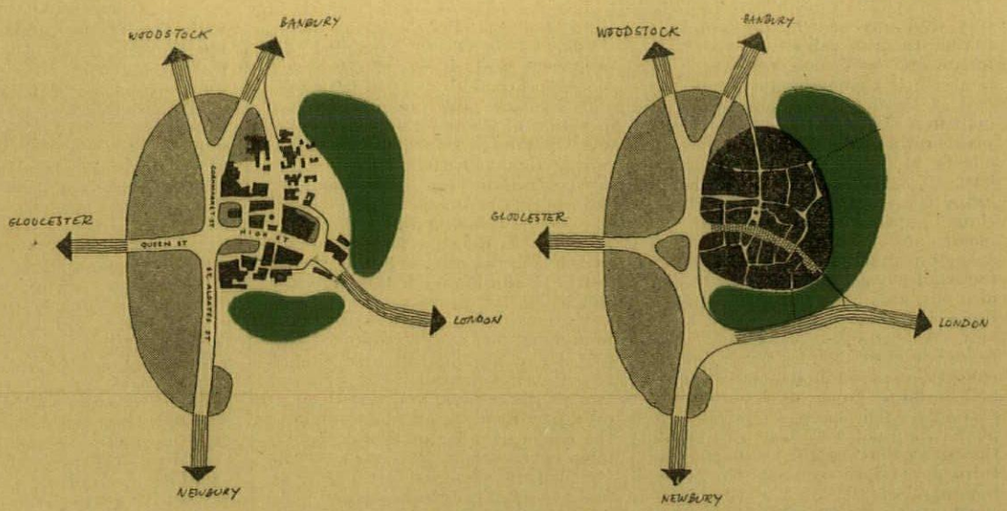
There is an irreducible hardcore which is OXFORD, which must be maintained because it is splendid and unique and gives meaning to the rest. This hardcore lies to the north and south of the High. At present the traffic-choked High is dividing and fragmenting this core. The true function of the High is threefold. (1) It provides communication between Oxford and its University. (2) It is a Linear Forum. (This implies fair pedestrian use of the street and also that architectural display which binds the University together, illuminates it with a climax of collegiate scenery.) (3) It is

Oxford's High Street. By relieving the High of its ARTERIAL traffic we can allow it to resume its true function. For a relief road to work it must be close enough to the road relieved to act as a workable alternative. It cannot if it is half a mile away. If it were it would not be local, or immediate, enough to sieve out the central traffic. It would be ignored and the problem would remain.

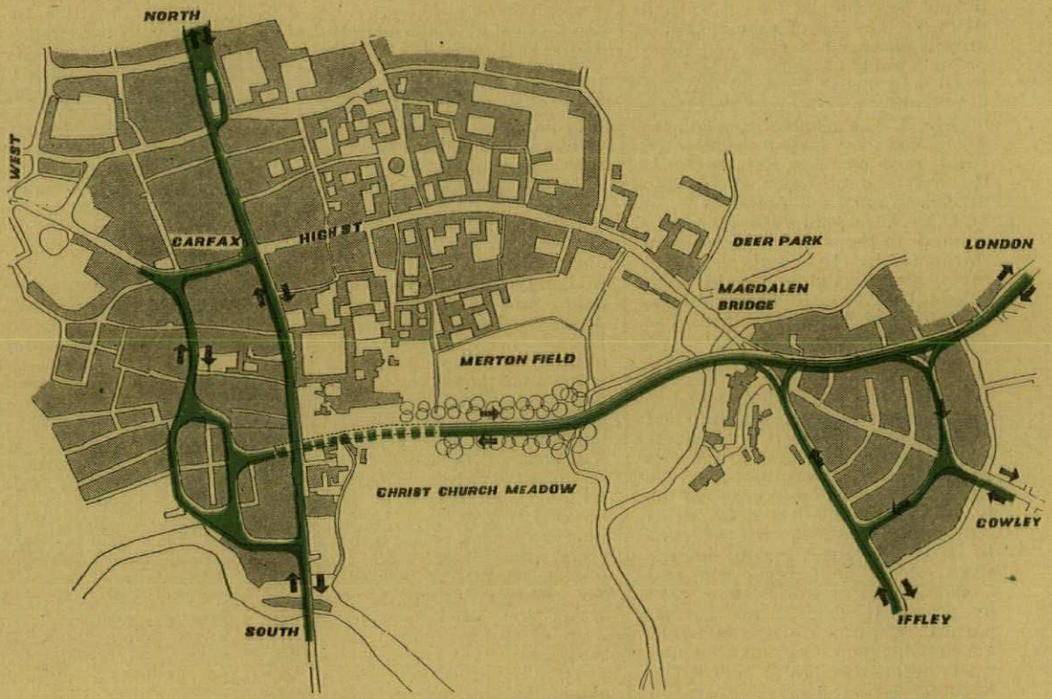
If this is agreed then there is only one route the relief road can take and that is from the Plain to St. Aldate's across Christ Church Meadow. The essential crossing at Carfax would therefore have to be reconstituted farther south.

At this point the latent drama of the situation becomes obvious. The High relieved becomes the spine of the University and where the University stops it stops. It stops at Magdalen Tower and here nature and topography cry out to be used, for by joining (visually) Merton Field to Magdalen Deer Park and Mesopotamia we can surround this great limb of University with a continuous mantle of green. Seen from the new road (and it is from this road that travellers will observe Oxford) could there be a more dramatic introduction to a university city, as it skirts and leaves the green belt intact? Spires, walls and towers, unmistakably collegiate, set in a girdle of trees, meadows and rivulets which provide the necessary articulation between the observer and the University so that it can be comprehended and visually grasped as an organism.

And when, later, the University precinct, as it can now be properly called, is explored, the High has resumed its ancient and proper role of Linear Forum, a grave, heraldic display of stone enlivened by its function as High Street. To see this double picture, to see how both externally and internally this sharpening of the focus brings the University within the emotional grasp is the act of imagination we ask. This is the solution of the paradox; we are being compelled to transform Oxford into the most lucid of university towns.

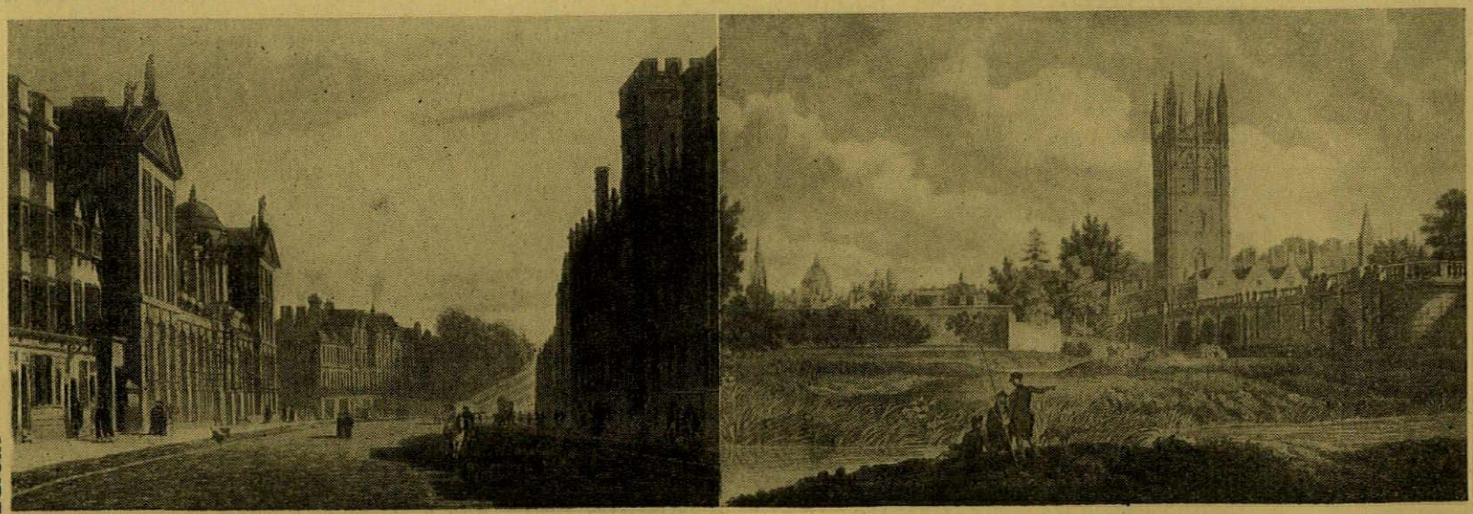


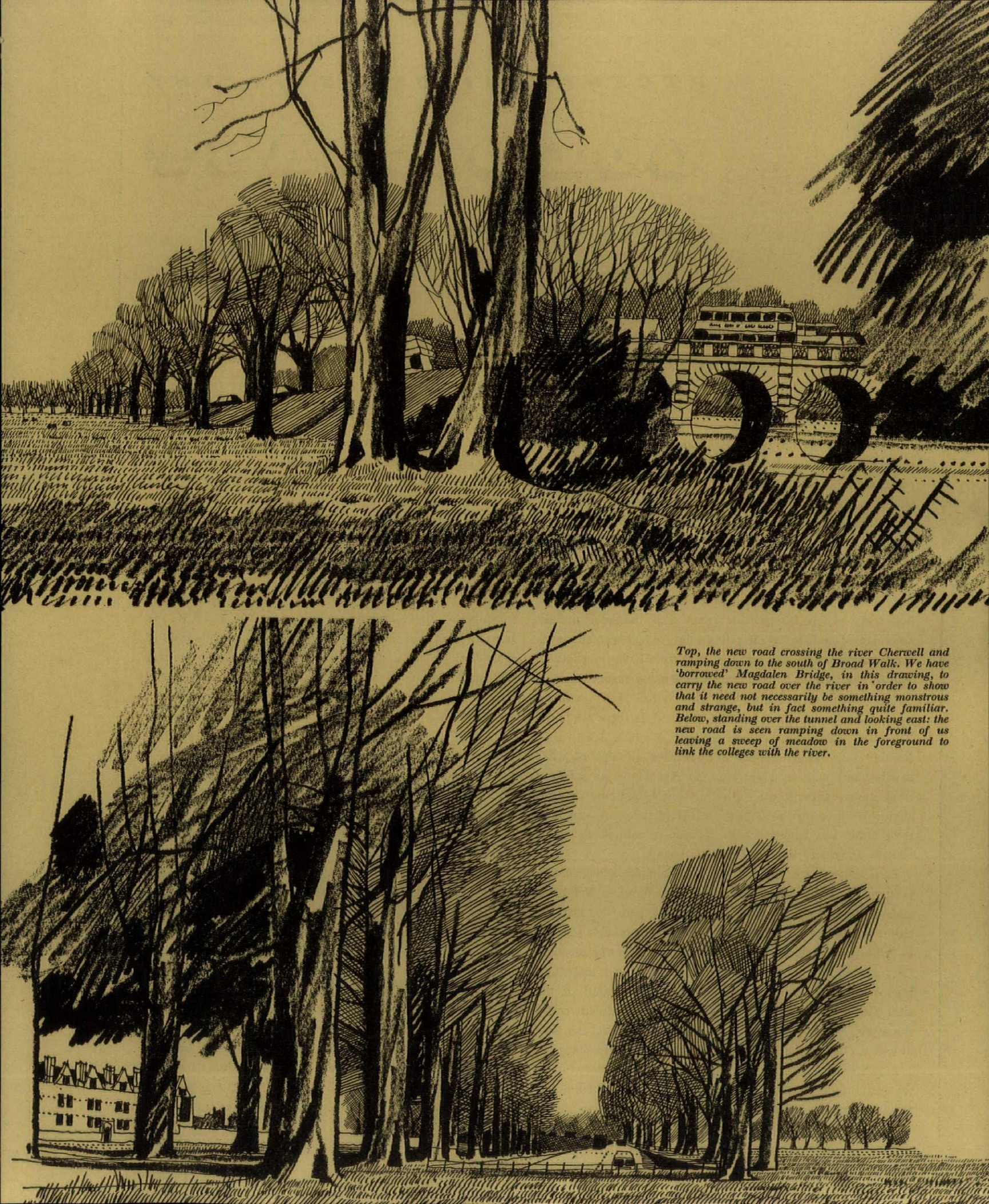
Left, Oxford as it is, presented diagrammatically. The High, acting as arterial road, explodes and shatters the University precinct. Right, Oxford relieved. The new road sweeps into the town allowing both the green girdle to become a visual reality and the University to establish itself as a precinct illuminated by the High. This is the climacteric shift of pattern, a tremendous opportunity to establish the proper pattern between nature, university and town.



Above, the relief road proposed here, together with its necessary approach roads to the east and west, is shown in green. At the east the dominant road is to London, the Cowley and Iffley roads joining it by spurs employing two levels. The road runs at high level across the Cherwell; thence it slopes down to ground level and runs south of Broad Walk, utilizing its trees and a projected new avenue as screening. In order to preserve contact between University and river the road would pass underground in Christ Church Meadow (dotted green line) and continue under St. Aldate's to debouch on to a roundabout in the vicinity of Albert Street and Speedwell Street.

Below, these two views, though not necessarilly ideals to be aimed at, illustrate the kind of quality that would result from the proposals. Inside, the Linear Forum. Outside, this is the viewpoint from the proposed road; the meadows and rivulets articulating between us and the University making it a comprehensible visual statement.

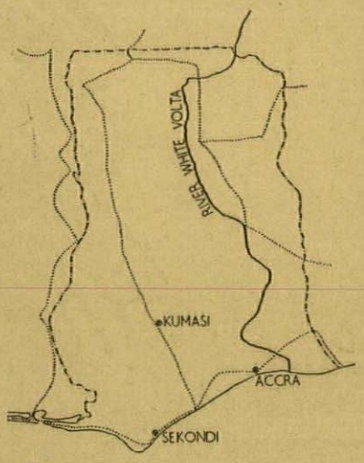




Top, the new road crossing the river Cherwell and ramping down to the south of Broad Walk. We have 'borrowed' Magdalen Bridge, in this drawing, to carry the new road over the river in order to show that it need not necessarily be something monstrous and strange, but in fact something quite familiar. Below, standing over the tunnel and looking east: the new road is seen ramping down in front of us leaving a sweep of meadow in the foreground to link the colleges with the river.

RECENT BUILDINGS IN THE

GOLD COAST



ARCHITECTS | JAMES CUBITT AND PARTNERS

Ambitious lands that seem to demand a grand manner of design, the West African countries were largely pioneered for English architecture by Fry, Drew and Partners (Architectural Review, May 1953). Notable among the offices who have subsequently designed for West Africa are James Cubitt and Partners, who have evolved for Kumasi College (which they discuss in the article below) and the other buildings on the following pages, their own equally original response to the climatic and social conditions of the area.

Kumasi, the capital of the Ashanti, lies about 7° north of the equator in hilly, densely wooded country. It is in a sense cosmopolitan, like most big African cities. There is a considerable and relatively free coming and going of Africans of many tribes and nations—West Africa is not very passport-minded. The climate is oppressive, relative humidity extremely high, and the maximum sun temperatures as hot as those anywhere on the equator. Owing to the humidity, shade temperature does not exceed 96°F and the altitude—about 900 feet—means fairly cool nights. The jungle is mainly secondary; that is to say the primary jungle had been cut down for farming in the past and the great trees have forced their way up through the banked and tangled lower vegetation.

In Kumasi itself a European quarter has been developed around the Residency outside the town. Here there are park-like open spaces, not laid out with the eye of a Brown or a Repton, but pleasant enough. They give an idea of what can be done without great cost. At Aburi, further south, a Government agricultural station gives a better clue to what should be done on the College site. Here there are specimen trees from the tropics—teak and cocoa plantations, great clumps of spidery bamboo and sisal bushes.

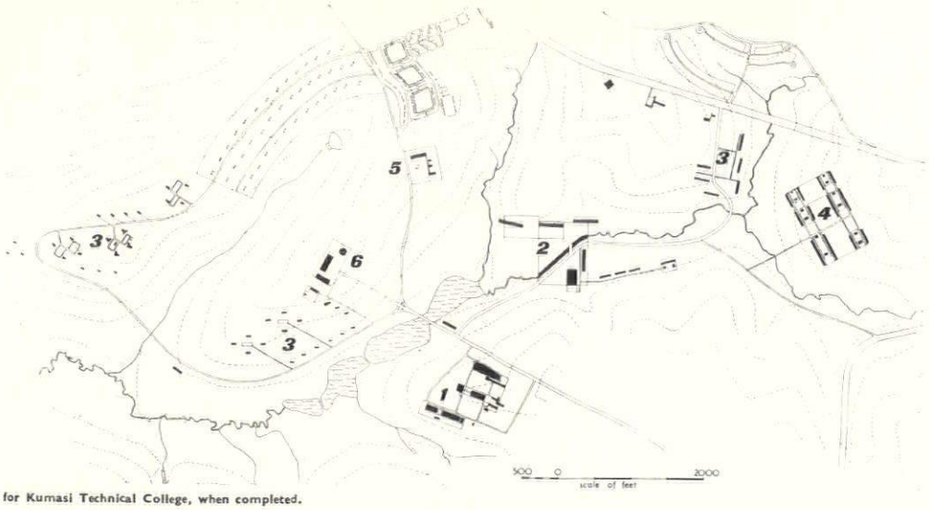
Landscaping was one of the first things we considered, perhaps by this confessing ourselves very English. Yet on a site of this extent, about 2½ square miles, and with difficult siting problems for the actual buildings, it is probably sensible to bring the ground in to help. Already a number of temporary (sic) buildings occupied the best building land and their layout paid no attention to the final development of the site. The one peg to hang our coat on was a stream called the Wiwi, passing diagonally across the site, with a fair flow of water, clear in the dry season, muddy and ugly in the rains.

Late in October, 1951, we were approached as to whether we would undertake the work of 'architect-designed' buildings. Having agreed, we were required as soon as possible to allocate zones for the various activities of the College, and particularly to make sketch designs for the large engineering workshops. We had then not set foot on the site but worked from survey drawings which proved remarkably accurate.

There were, and are, two main architectural problems. The first was to select areas suitable for the main groups of buildings; that is, areas where the natural ground level would aid in placing the buildings facing north and south. This is essential both to get the advantage of the light prevailing south breeze and to prevent the heat of the S.E. and S.W. sun from striking into the buildings. Secondly, some hundreds of individual buildings are required—there will finally be over 200 staff bungalows alone. Architectural coherence could only be gained by visually relating the three main groups of buildings—the teaching area, halls of residence and the 'acropolis,' this being the name given, for want of another, to the hill bearing the main group of ceremonial buildings.

By dint of many set-up perspectives, a model, and observation, where possible, on the site itself, we are reasonably satisfied that this grand scale for the three main groups will work satisfactorily. The treatment of the rest of the site is necessarily domestic, and should be a foil to the larger work.

The interest of this is, we think, rather similar to that of several South American projects. In terms of capital cost it is not particularly large—at the most 3½ million pounds, a relatively small sum compared with many other single buildings. Yet it is something which must be conceived and carried out in the 'grand manner.' We should not like to define exactly what this means, but we do not mean grandiose. Here is an opportunity to use every faculty of insight, skill and imagination, as well as downright common sense, to bring into harmony many buildings of different kinds and to create from them a whole which has one quality. Eschewing contemporary jargon, the word is 'classic.' Despite a thousand difficulties, we hope we shall eventually achieve this.



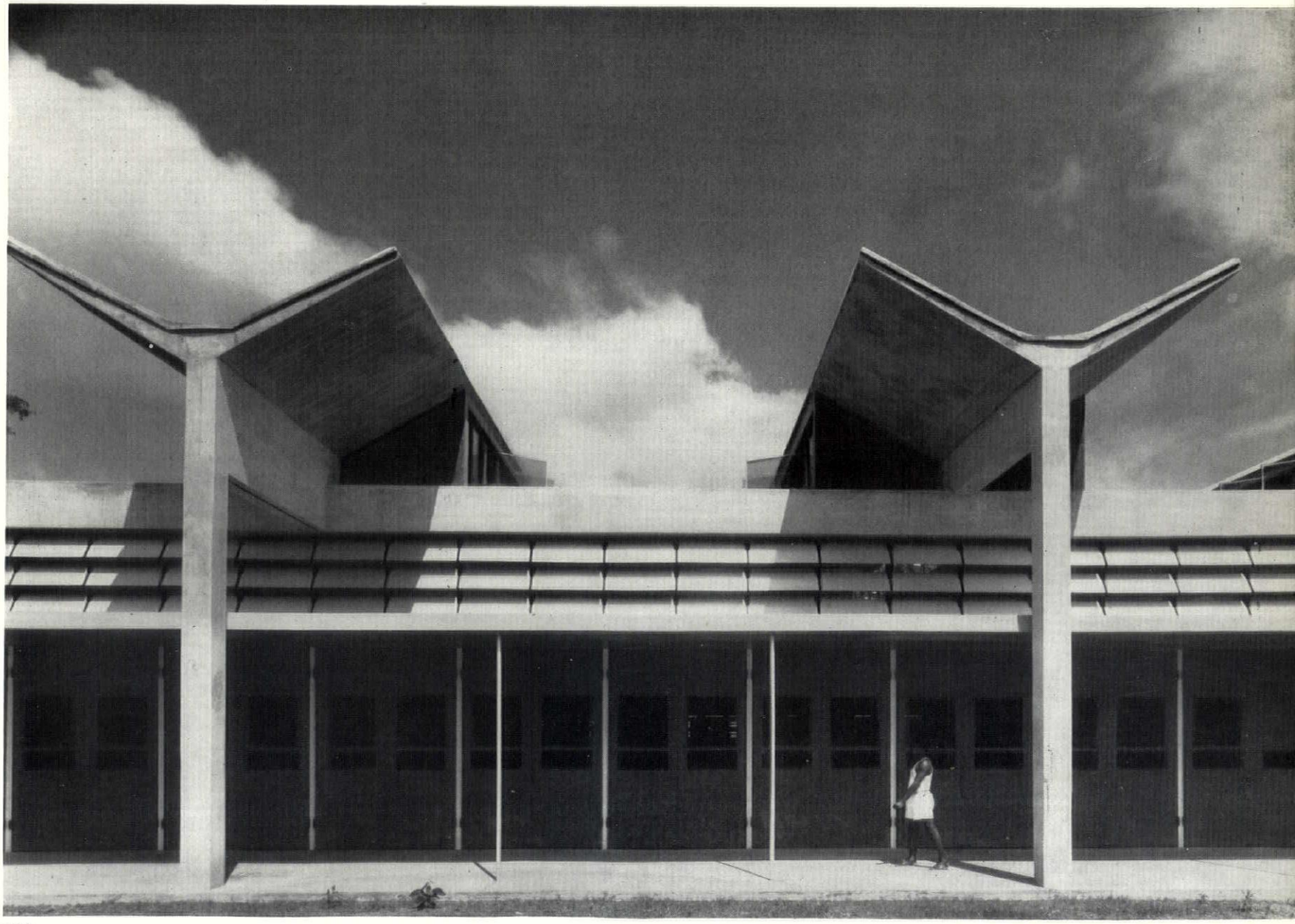
site plan for Kumasi Technical College, when completed.

key: 1, main teaching area. 2, halls of residence and dining rooms. 3, staff housing. 4, labourers' housing. 5, power station. 6, assembly hall and chapel.

1. KUMASI COLLEGE OF TECHNOLOGY

A. workshops

1, engineering workshops; the reinforced concrete Y-beams suspend the wooden roof, and the covered way runs rounds the perimeter.

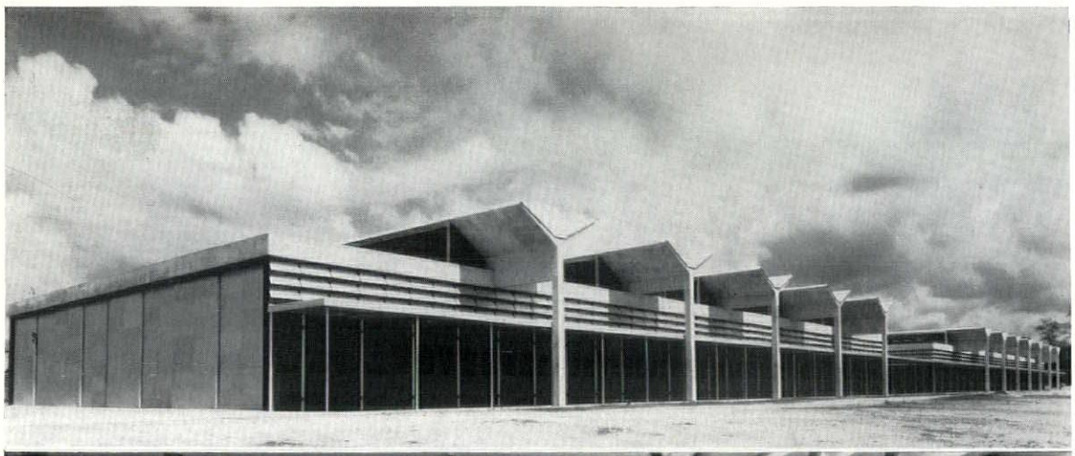


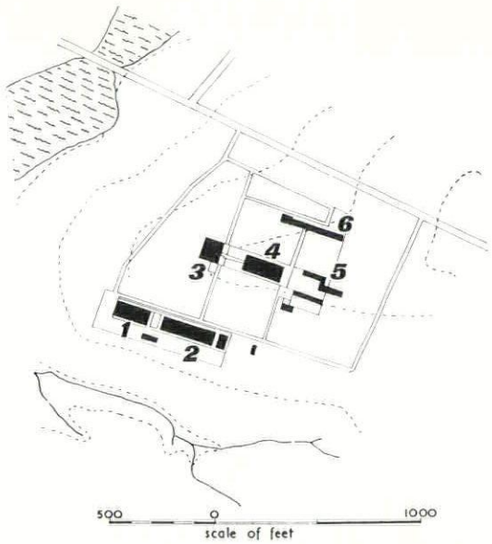
Kumasi, capital of the Ashanti, and the second largest town of the Gold Coast, lies on hilly, densely wooded country about 7° north of the Equator, and has an oppressive climate. The area of the College site, which is about four miles outside the city, south of the main Accra-Kumasi road, is about 2½ square miles and divided diagonally by a valley running roughly north-south.

The first task was the allocation of zones for the various activities of the College: teaching, administration and ceremonial, students' residence, staff and labourers' housing, etc.; and it was essential both to take advantage of the prevailing light southerly breezes and to prevent the S.E. and S.W. sun from shining into the buildings. Visual coherence could only be gained by relating the three main groups of buildings: teaching area, halls of residence and the 'Acropolis', i.e. the hill bearing the ceremonial buildings.

The engineering workshops in the teaching area (which were the first permanent buildings for the College to be completed) consist of a building 533 feet by 100 feet, which includes a gap of 60 feet dividing the workshops into two parts of six and eight bays respectively. Construction is by a series of r.c. Y-beams at 30-ft. centres, spanning the building on single lines of columns, which provide a means of clerestory lighting and ventilation over the whole floor area. The timber trussed flat roofs between the Y-beams are suspended from them by steel rods. The two end bays are roofed with flat r.c. slabs to provide longitudinal stiffening with the U-section edge beam which connects the Y-beams, and also forms a rain-water gutter. The clerestory contains individually controlled power-operated banks of pivoted windows glazed with non-actinic glass, the windows moving through 135°. A covered way runs around the perimeter beneath the Y-beam overhangs. The wall below the canopy consists of continuous rows of pressed steel doors containing glazed panels and openings of small adjustable louvres, making it possible to open up entire sides to catch the breeze. In the west end only are there full-height sliding garage doors. The two types of floor finish are coloured granolithic cement screed, and tiles. The suspended timber trusses between the Y-beams are lined with acoustic plasterboard and a layer of resin-impregnated fibre glass on top.

The pharmacy building is a large single-storey block, 16 ft. high, and forms the central mass in the group, running east to west. The main entrance is approached from a raised terrace to the west 100 feet by 90 feet. Research laboratories and administration offices are grouped on a narrow mezzanine over the central corridor. A north-south wall divides the chemistry and metallurgy department from the rest of the building. Complex drainage and services are in ducts cast in r.c. floor slab. Drainage of chemicals is in acid-resistant earthenware channels discharging into a neutralizing chamber. Duct covers are timber and removable for easy maintenance





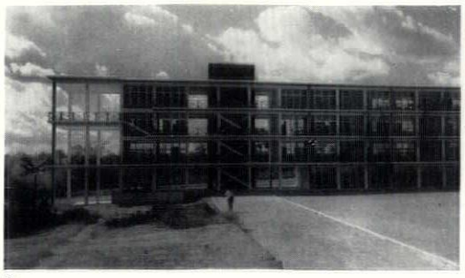
key: 1, workshop block. 2, workshop laboratories. 3, library. 4, pharmacy. 5, science blocks. 6, classroom block.

2, general view of engineering workshops; 60-ft. gap between parts is visible, and end bay roofed with r.c. slab. 3, interior, showing rows of pressed steel doors and banks of windows above.

4

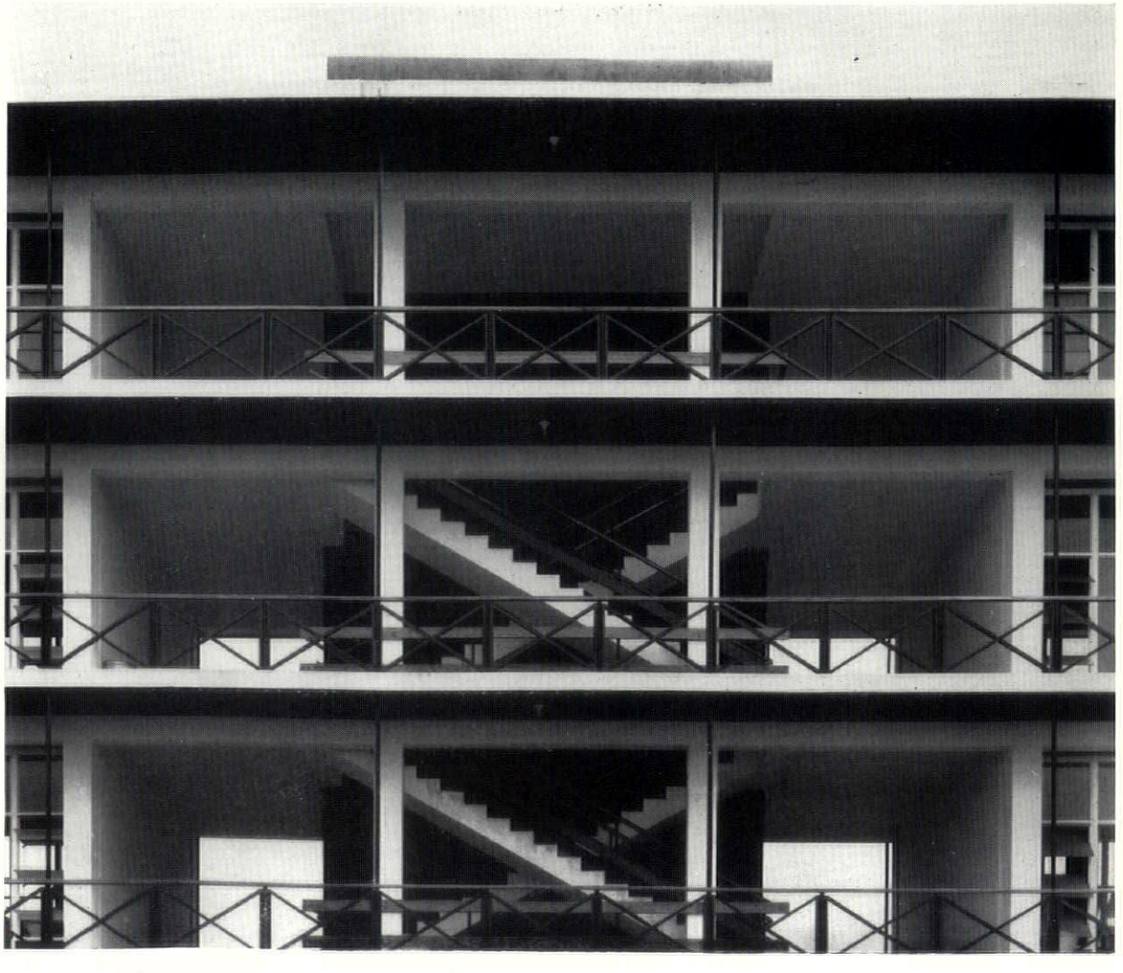
B. lecture room block

4, entrance to lecture-room block at west end (seen at left of 5). 5, general view from the south. Water tank and solid slab wall containing ducts are plainly seen in centre. 6, closer view



5

of same, showing scissors stair-case against solid wall. All rooms are entered from balconies.

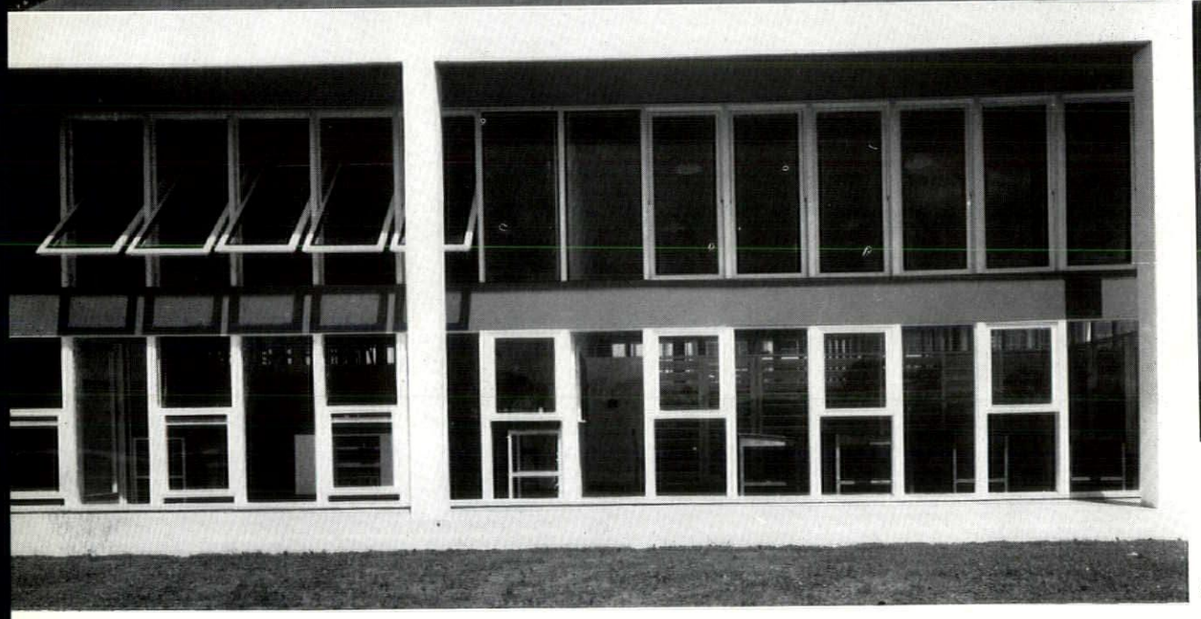


6

C. pharmacy block

7, pharmacy building, occupying the central position in the main teaching area, seen along the causeway leading from the library. 8, south wall (north wall is similar) of block showing structural columns, at 25-ft. centres. 9, inside of block seen from mezzanine on which offices and research laboratories are placed. Ceiling height is 16 ft.

7



8

9

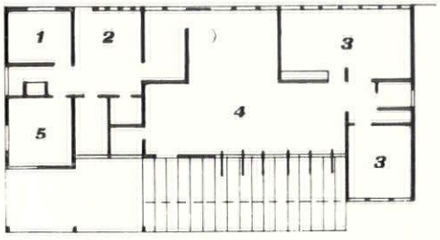
and cleaning. The r.c. structure is independent of all the walls. Columns at 25-ft. centres carrying deep transverse beams form a colonnade on the north and south sides; the mezzanine is carried on a double row of internal columns. The main transverse beams are all upstand to provide a flush soffit for visual and air-flow reasons. The lavatory blocks at the west are load-bearing block walls, and are roofed by a continuation of the mezzanine slab. The enclosed area is planned generally on a 3 ft. 1½ in. square grid uninterrupted by structural columns, to make possible a large degree of standardization in the joinery of walls and partitions.

The general lecture-room block is at the north edge of the general teaching area, and is 336 feet long. The duplication of types and number of rooms indicated a four-storey building. The rooms are in the centre served on both sides by open galleries which assist as sun-breaks. A double scissor staircase rises from the main entrance, with a subsidiary staircase on the west end. All cross walls are solid and infilling walls consist of hand-operated metal louvres. Since this is the highest building on the site a large water tank has been incorporated on the roof and the vertical duct is housed in a solid slab wall. Construction is r.c. frame, with a perimeter ring beam from which the galleries on the upper floor are cantilevered. All electrical services are taken in the slab; punkah fans are installed in all classrooms. Walls are rendered and painted, and the floors are composition tiles and granolithic.

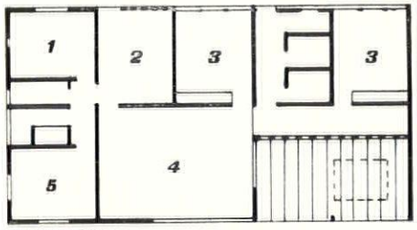
The building and engineering classrooms and the advanced physics block contain lecture rooms and drawing offices. (The site will later contain two additional laboratory blocks.) The engineering building is of two storeys with open balcony access on the south. The physics building contains laboratories, dark rooms, etc., on the first floor, and tutorial rooms on the ground floor. Both buildings have r.c. frame with infilled walls similar to those in the main classroom block.

10, main teaching area from the north-east ; lecture-room block to the right, the science block left and pharmacy block centre.

D. housing



plan of type A house.



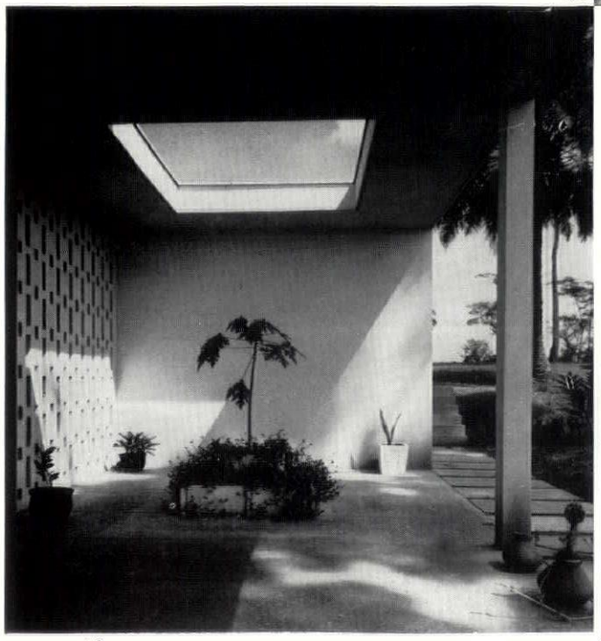
plan of type B house.

5 0 35

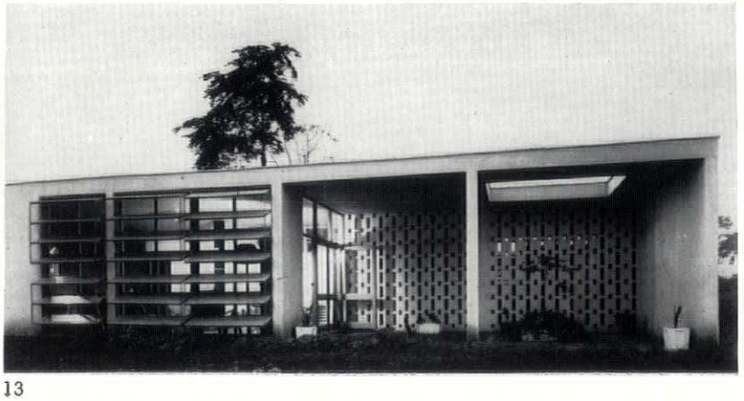
key: 1, kitchen. 2, yard. 3, bedroom. 4, living room. 5, boy's room.

11

11, type 'A' staff housing, with three bedrooms and car-port on left of frontage. 12 and 13, type 'B' smaller houses with two bedrooms ; 12 shows open impluvium in verandah roof and 13 banks of louvred windows.

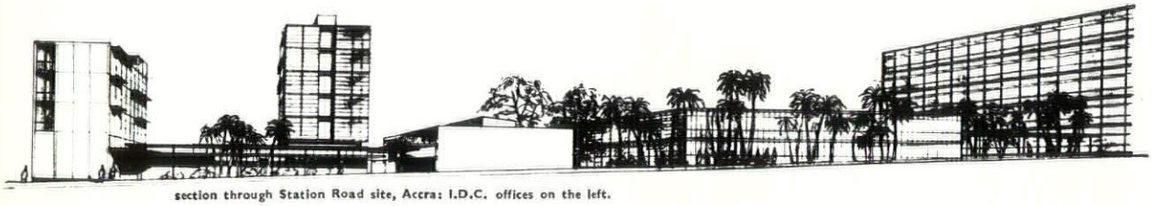


12

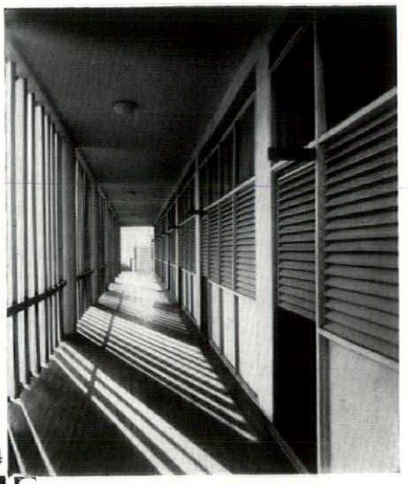


13

2. OFFICES AT ACCRA



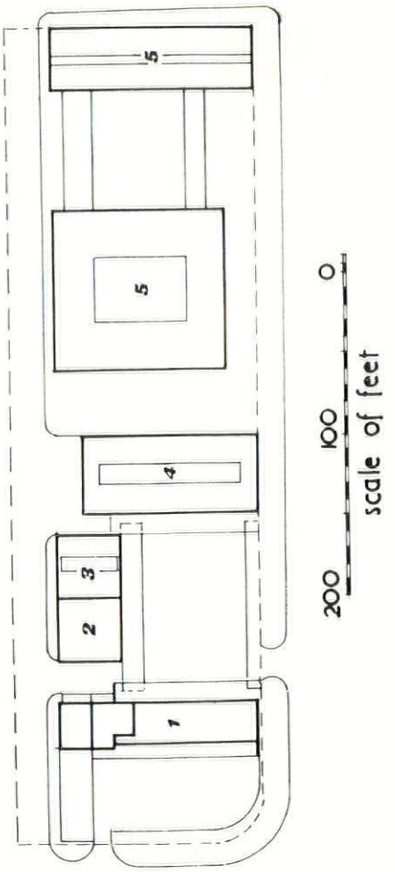
section through Station Road site, Accra: I.D.C. offices on the left.



14

14, inside open access corridor on south side of block. 15, general south view of offices showing louvred bays open and shut.

15



plan of Station Road site.

key:
1, I.D.C. offices.
2, Co-op. bank.
3, offices.
4, Co-op. store.
5, C.M.B. offices.

The block of offices was originally intended to form part of a larger scheme consisting of a Co-operative bank and store, offices for the Industrial Development Corporation, for the Cocoa Marketing Board, and for other semi-governmental organizations. Its hill site is one of the finest in Accra, with a view over the city towards the sea. The four-storey block houses the directors and staff of the Government I.D.C. and personnel of affiliated organisations. The ground floor and mezzanine are used as a showroom for furniture and other manufactures made in I.D.C. factories; the flat roof is used for open-air film shows and receptions. The upper floors are served by a lift. The construction is r.c. frame with hollow-tile floors and sandcrete block infill walls. The open access corridors on the south side are clad entirely with vertical louvres, of which each bay can be separately hand controlled. Since the I.D.C. building was completed in 1953, a five-storey Co-operative bank has been begun, and additions to the original project are contemplated.

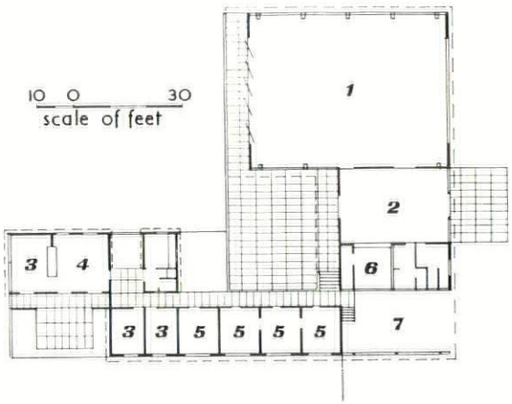
3. MEMORIAL HALL AT ACCRA

16, south (entrance) front of hall, which is constructed largely of local timbers.

This small assembly hall, built as a memorial to Gold Coast personnel killed during the last war, is sited near the centre of Accra and contains a foyer and bar, offices, cloakrooms, and a small flat for a resident secretary.

The building is largely in local timbers, though laminated roof trusses were made for economy reasons in Holland and shipped out to Accra.

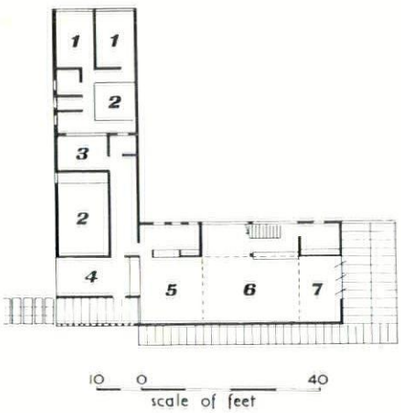
key: 1, hall. 2, foyer. 3, bedrooms. 4, caretaker's living room. 5, offices. 6, bar. 7, car-port.



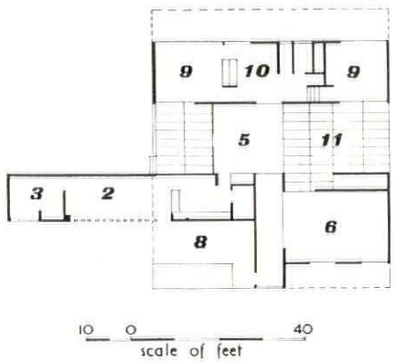
17, interior of entrance foyer to Memorial Hall

4. HOUSING

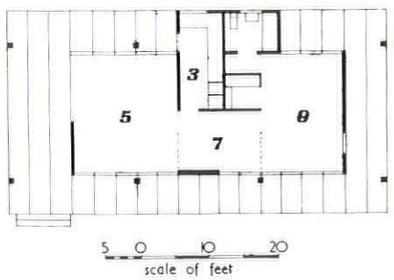
Facing page, top, Library Board bungalow, Accra. Bottom left, and right, above, examples of different types of bungalows in the Volta River project. Right, extreme bottom, the Hardy guest house.



library board bungalow, ground floor.



type house, Volta River project.



guest house at Accra.

key: 1, boy's room. 2, yard. 3, kitchen. 4, garage. 5, dining room. 6, living room. 7, study. 8, car park. 9, bedroom. 10, dressing room. 11, patio.

Library Board bungalow

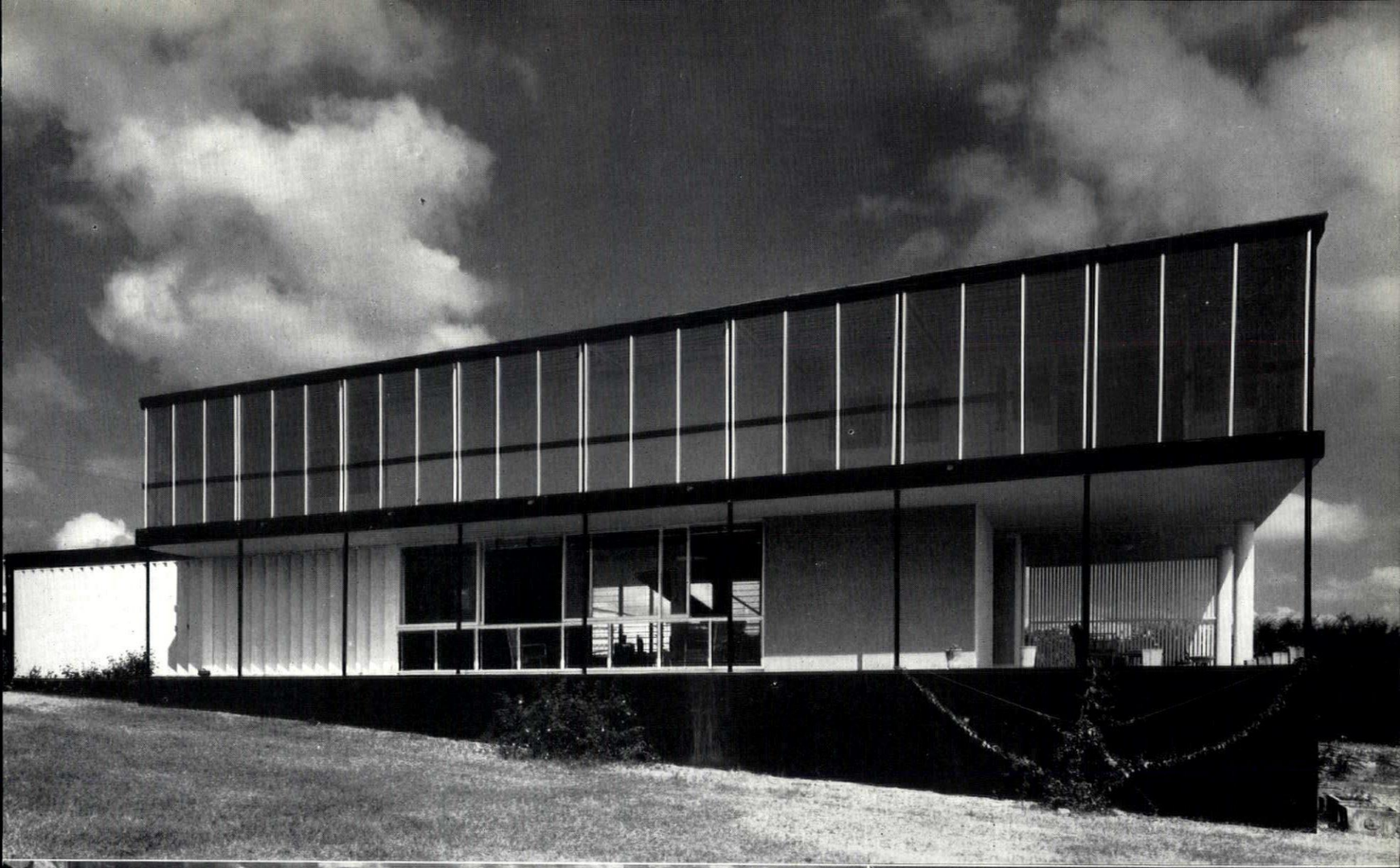
The bungalow has a r.c. frame with sandcrete block infillings, perforated concrete blocks and various types of timber panel. The ground floor is cement paved ; other floor finishes are semastic tiles. Joinery is painted or polished hardwood.

Volta River project

These houses, consisting of two types, were intended to house senior officials concerned with the planning of the Volta River project and Tema harbour. The site is some distance from Accra, near the airport, and is part of a plan for a new residential area. There are some twenty houses in all, which were built under a cost-plus contract, since at the time it was virtually impossible to get any contractor to give firm estimates. They were the first (in 1951) to be designed by Cubitt's in Accra.

Guest house at Accra

This small bungalow, consisting of two rooms, is built in the grounds of an existing house for the use of house guests. Two special features are the slatted timber ceiling slung beneath the r.c. beams, thus giving permanent cross ventilation below the roof, and the use throughout of standard glass adjustable louvres.



5. SCHOOL AT SEKONDI

The main axis of the site runs north to south, and an over-all southward slope makes the most of the breeze from the south. Each school had to be kept as a quite separate group, yet retaining common services and approach road. There is no main electricity or drainage, but the water supply is to be made available before the completion of the contract.

In the residential Teacher Training College the assembly hall serves both as a covered assembly area and a dining room for 120 students, its plan being therefore largely dictated by the layout of the kitchen, stores, etc. Ventilation is by use of pivoted doors and flaps and perforated blockwork walls. Deep timber trusses give a maximum depth of ventilated space between the roof coverings and the hall and kitchen ceiling. A slatted soffit throughout the whole length of the building allows a free passage of air through the trusses.

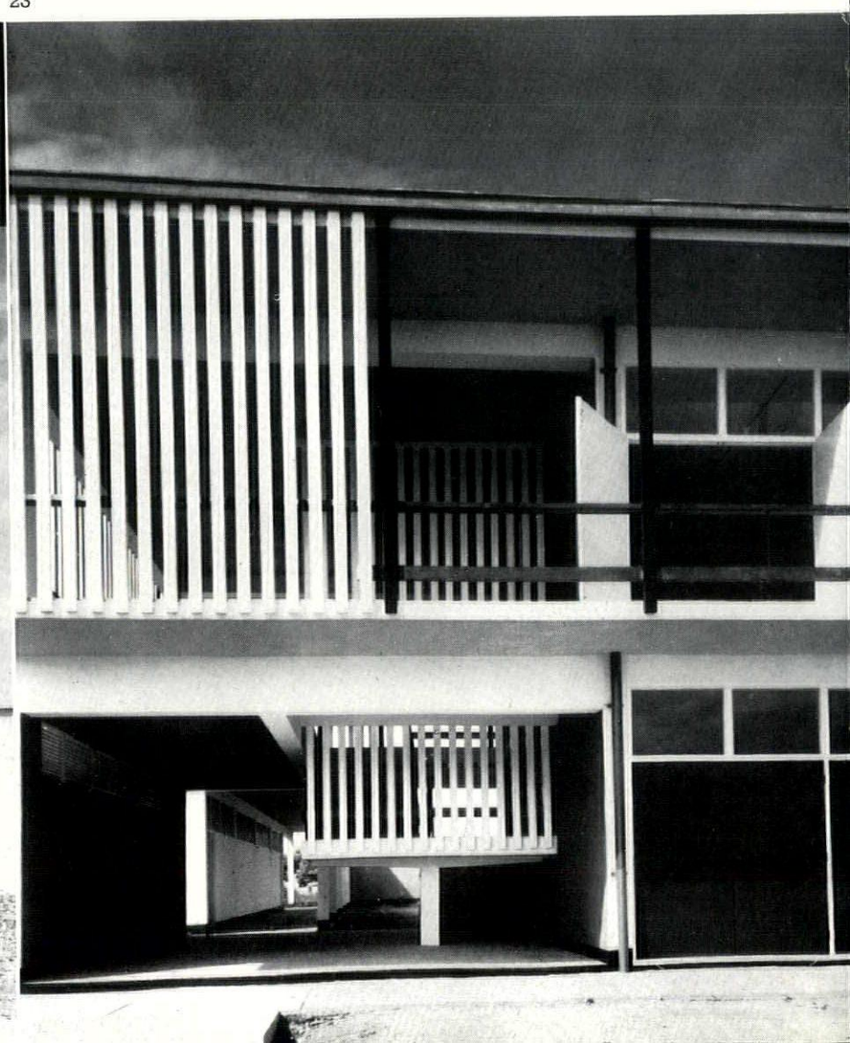
Three dormitory blocks for 40 students each are allowed for this college giving the required proportion of 40 female to 80 male students. Lavatories with luggage storage are provided for each floor in a block separated from the dormitories by the main access staircase. Self-contained accommodation for a housemaster was placed adjacent to the dormitories. The classroom block of the college is designed on a standard bay so that panel infillings are completely interchangeable. The flat roof has a 3-ft. overhang to the south to give adequate protection from the sun, while the north elevation has a 6-ft. overhang combining the necessary sun break with a covered access way. In the secondary day school the classroom blocks are on similar lines, the only feature peculiar to them being the staircase tower on one of them which also supports the main water supply tank for the school.

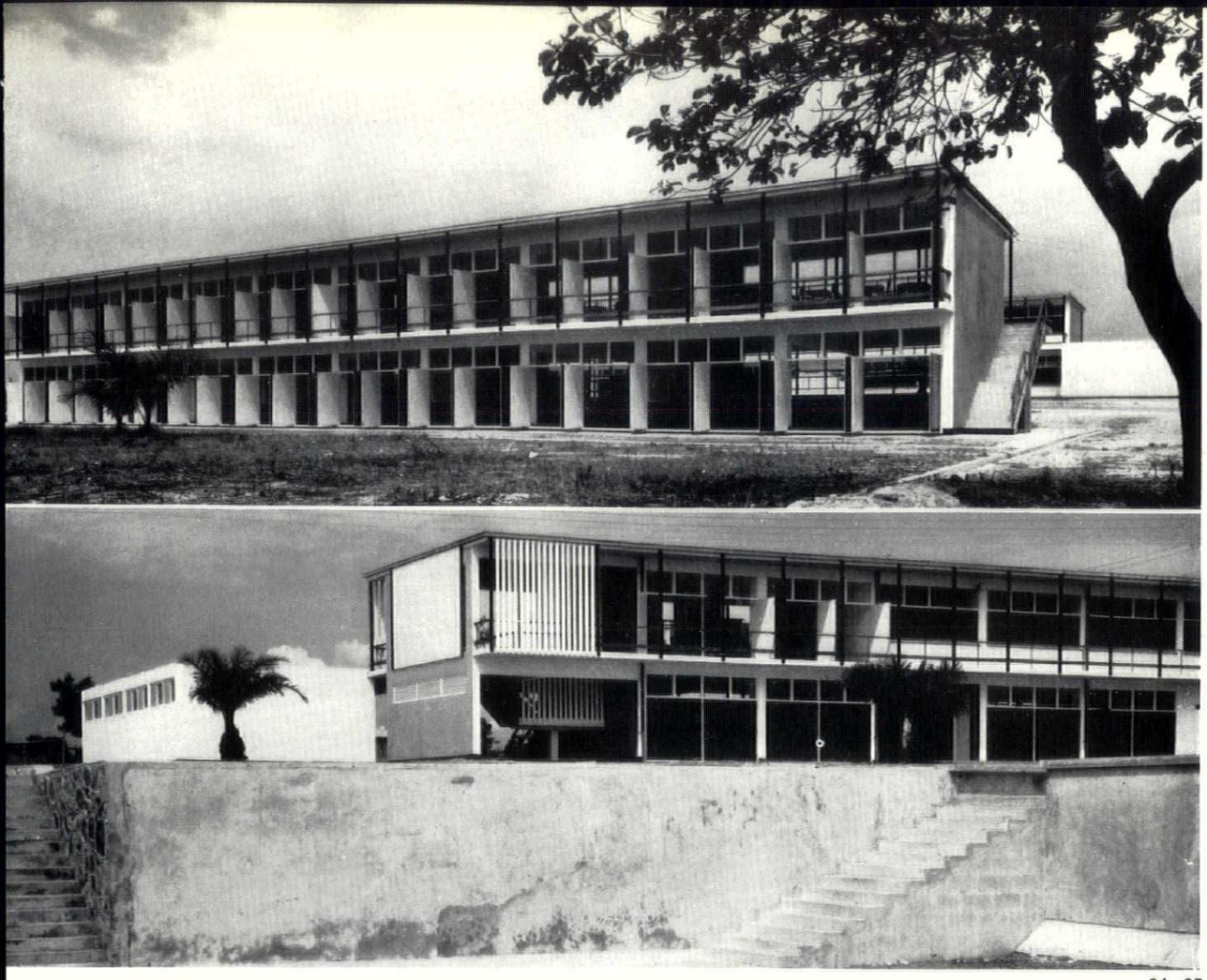
The structure generally is r.c., and flat roofs are used throughout. Single-storey buildings are normally a combination of load-bearing wall and r.c. frames with a simple solid r.c. roof. Two-storey buildings are fully framed r.c. structures with non-load-bearing partitions and infilling. Load-bearing walls are carried on strip foundations, and a lightly reinforced toe is always provided in place of a ground beam to the slab periphery.

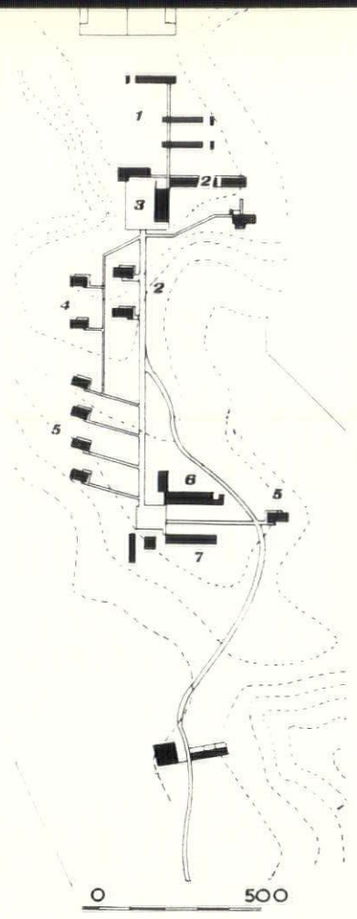
22, secondary day school classroom block, with staircase tower. 23, west end of science block, showing access staircase and lavatory block through covered way. 24, the same, general views from north and 25, from south.

22

23







site plan.

key:

Teachers' Training College
1, dormitories.
2, staff housing.
3, assembly hall.
4, classrooms.

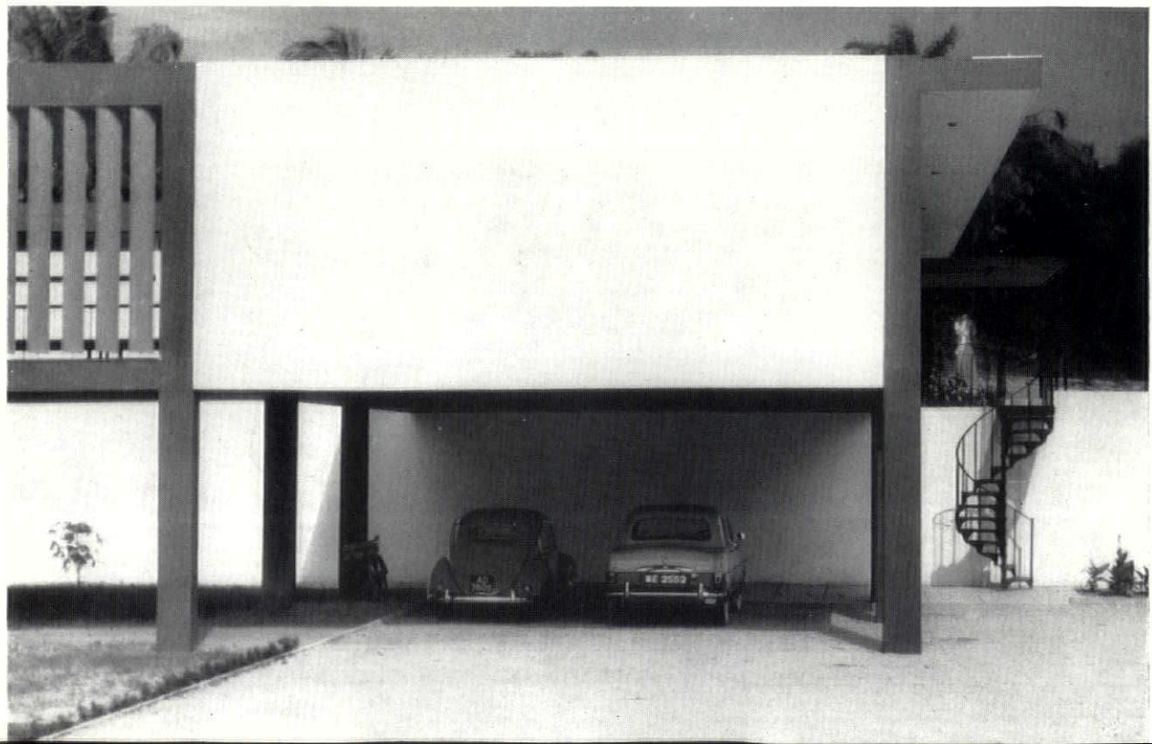
Secondary Day School
5, staff housing.
6, science block.
7, classrooms.

24, 25

6. LIBRARY AT SEKONDI

The library plan is H-shaped with the lending library in the southern bar and the reference in the northern. In the connecting link is a corridor, with office and w.c. on one side. Parallel to it on the west side is a balcony lined with sun-breakers for sitting out. The courtyard on the east side is used by vans supplying books.

26. the north-south retaining wall, centre, reduces the considerable slope of the site to two terraces. The balcony is seen left.



1

2

The Egyptian style came late among the revivals. The Egyptian Hall in Piccadilly, by P. F. Robinson, 1, was built in 1812 and Foulston's Library at Devonport (which still stands), 2, in 1823. The origin of the revival is not as simple as may be thought. It is easily traced back to Piranesi's Cammini, published in 1769, but what were Piranesi's sources? That is the subject of the investigation conducted on the following pages.

Nikolaus Pevsner and S. Lang

THE EGYPTIAN REVIVAL

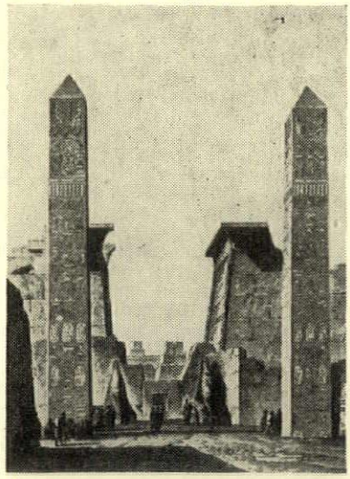
'Piranesi will go down to posterity with deserved reputation, in spite of his Egyptian and other whimsies, and his gusto of architecture flowing out of the same cloacus as Borromini's, and other hairbrained moderns.'
—James Barry to Edmund Burke, April 8, 1769.[1]

The Egyptian Hall and the nineteenth century

In 1812 Edward Bullock opened his Egyptian Hall in Piccadilly, **1**, a permanent side-show where 32 stuffed monkeys and 11 stuffed sea lions could be seen side by side with 'an exquisite model in rice paste of the death of Voltaire by Monsieur Oudon,' a Holy Family done in wool, Mexican curiosities and an Egyptian mummy.[2] The architect of the façade was P. F. Robinson,[3] and it was one of his first buildings of consequence. The Sale Room was not by him but by Papworth, as appears from an illustration in Ackermann's *Repository* dated 1819.[4]

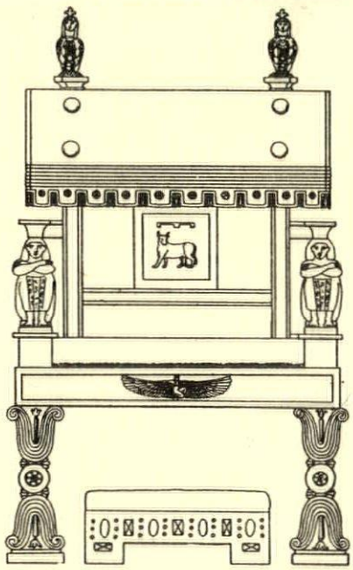
The Egyptian Hall, and especially Robinson's façade, set a fashion, but it also followed a fashion. The great Sir John Soane disapproved of the fashion. 'What,' he exclaimed, 'can be more puerile and unsuccessful than the paltry attempt to imitate the character and form of their [the Egyptians'] works in small and confined spaces; and yet, such is the prevalence of that monster, Fashion, and such the rage for novelty, that we frequently see attempts of this kind by way of decoration.'[5]

Amongst the progeny of the Egyptian Hall Foulston's Library at Devonport, **2**, of 1823, and the Egyptian House at Penzance, **3**, of *c.* 1830 are copies rather than imitations. But what did Robinson himself imitate? The familiar answer is a French vogue started by Napoleon's Egyptian campaign. The campaign took place in 1798. Vivant Denon published his *Voyage dans la Basse et la Haute Egypte*, **4**, in 1802.



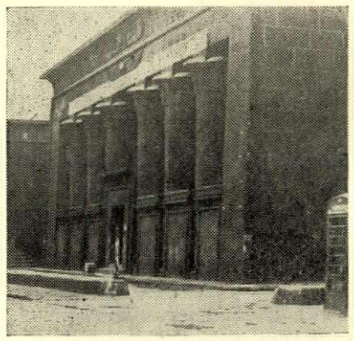
4, an engraving of the entrance to the temple at Luxor published by Denon in his Egypte *of* 1802, *following Napoleon's campaign of* 1798.

In 1807 Thomas Hope, enthusiastic follower of the Parisian Empire style illustrated Egyptian furniture and decoration, **5**, in his *Household Furniture*, and Percier and Fontaine, Napoleon's favourite architects and decorators, also used egyptianisms.[6]



5, Thomas Hope, who published his Household Furniture *in* 1807, *introduced several designs in the Egyptian taste.*

That far the story is well known and seems convincing. The echoes of the early nineteenth-century fashion of Paris and London can be heard in the English provinces and as far away as America. Egypt was associated with mystery and the cult of the dead, with 'immense grandeur' and 'magnitude,' the 'colossal,' the 'uniform and monotonous,' the 'awful and majestic,' **6**. All these terms are applied by Soane to Egyptian architecture.[7] But Egypt also conjured up huge masses of stone and overpowering might, and so Masonic Lodges, cemeteries, law courts and prisons



7, the facade of John Marshall's flax-spinning mill at Leeds of c. 1843 *is inspired by the temple of Dendera.*

3, the Egyptian house in Penzance, copied from P. F. Robinson's Egyptian Hall in Piccadilly. It still survives.

6, John Martin, the painter of phantasmagoria, grandeur and the colossal, made use of the new fashion irrespective of historical necessity or truth, as in the Feast of Esther.

[1] *The Works of James Barry*, 1809, vol. I, p. 163.

[2] *See A Companion to Mr. Bullock's London Museum and Pantherion . . . now open for public inspection in the Egyptian Temple . . . in Piccadilly*, London, 1812. Also H. Honour in *Country Life*, vol. CXV, 1954, p. 38, etc.

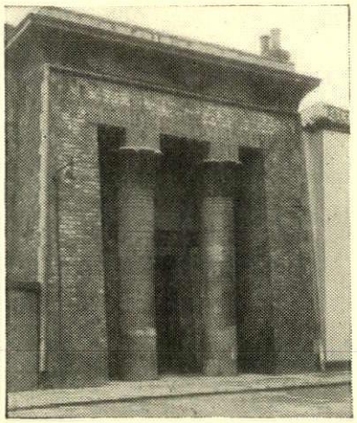
[3] Robinson (1776-1858), who had been supervising assistant to Porden on the Moorish stables at Brighton, and later published two successful pattern books of Tudor houses and of cottages, is known for his work at Leamington. He built York Castle in Doric, Trelissick in Cornwall in Ionic, and in the chalet style at the Swiss Cottage in Regent's Park.

[4] Second Series VIII, 153, according to information kindly communicated by Mr. Stratton Davis. Papworth, the architect of Cheltenham, in 1827 provided Bullock with plans for a new town to be called Hygeia, which Bullock who had gone to America intended to build on land which he owned on the Ohio River in Kentucky. (See S. Giedion: *Space, Time and Architecture*, first edition, Cambridge, Mass., 1941, pp. 505 and 510.)

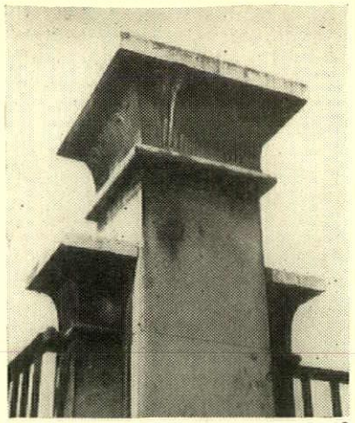
[5] *Lectures on Architecture*, ed. A. T. Bolton, Sir John Soane's Museum Publications, No. 14, 1929. The Lectures were delivered between 1809 and 1836.

[6] In their *Receuil de décorationes intérieures* of 1812. There is only one example, a 'secrétaire exécuté pour M.V. à Amsterdam' —the town where Thomas Hope came from. Two years earlier Soane's pupil, J. M. Gandy, in his *Rural Architect* had suggested and illustrated 'Lodges after the model of the Egyptian Entrances to their temples.'

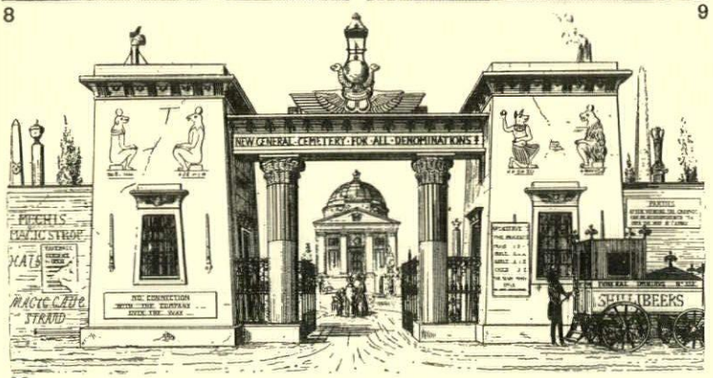
[7] *See Lectures*, pp. 20-21.



8



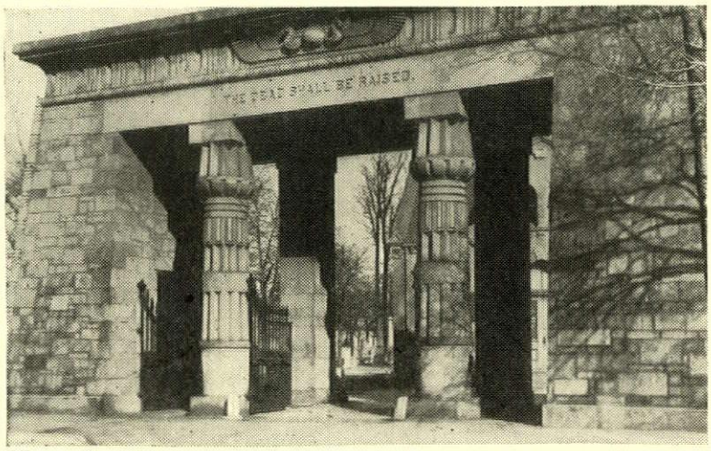
9



10

11

12



13

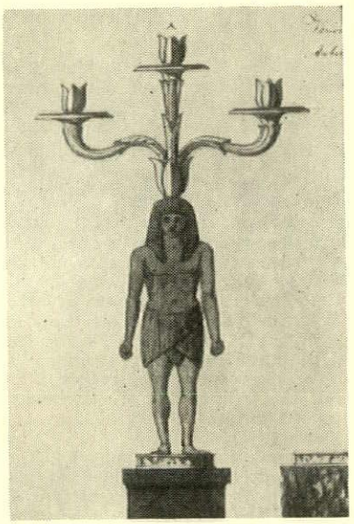
The Egyptian revival as seen in early nineteenth-century buildings in Britain and America. Egyptian architecture, because of the cult of the dead amongst the Egyptians, became associated with cemeteries. 9, *Stoke Newington, London* (1840). 13, *New Haven, Connecticut* (1845-8). *Pugin in his* Apology for the Revival of Christian Architecture *castigates this same fashion,* 10. *As the seat of wisdom and mystery Egypt provided the style for Masonic Lodges.* 8, *Boston, Lincs, copied from Denon. Court houses also took on the Egyptian costume, no doubt because of its association with the majestic.* 11, *County Court House, Newark, N.J.* (1837). 12, *the Tombs, New York* (1836-38) *both by John Havilland.*

took to Egyptian borrowings, **8-13** (alongside). Other buildings occasionally participated too. The Egyptian Hall in Piccadilly and its offspring are an example.[8]

Another is the remarkable flax-spinning mill of John Marshall at Leeds, **7**. This, with its Egyptian temple façades, its chimney-stack in form of an obelisk, its iron columns and brick arches inside, and its original roof garden (with drainage inside the columns) is not datable with precision, but probably belongs to the year 1843.[9]

Egyptiana in the eighteenth century

But the Egyptian Revival of 1800–1840 cannot be the whole story, or else how could one explain those cases of Egypticism in England and on the Continent which can with certainty be dated before Denon? They are not frequent, but by no means exceedingly rare. Thus,



14, *a design for a candelabra made for Henry Holland by C. H. Tatham in* 1796, *just before Napoleon's campaign. Originally at Carlton House, it is now at Buckingham Palace.*

for example, a pair of candelabra at Buckingham Palace, **14**, which come from Carlton House is decorated with Egyptian figures.[10] They were designed for Henry Holland by Charles Heathcote Tatham, an interesting architect not yet sufficiently appreciated. He was in Italy in 1796 and sent the design from there. In about 1779, the younger Dance made some designs for Shelbourne House which included a fireplace with two Egyptian figures, and in 1778 Soane published an 'Egyptian temple' in his *Designs in Architecture.*

Similarly for France, Hautecoeur in his invaluable *Histoire de l'architecture classique en France*[11] quotes a number of examples of the 'eighties.[12] In Italy the best known examples are the decoration of the Camera dei Papiri in the Vatican Library by Anton Raphael Mengs, **15**, done about 1770, and the prominent use of two Egyptian figures to flank a doorway in the Museo Pio-Clementino in the Vatican. The two figures came from Tivoli and will later on occupy us a good deal. In addition a book published in 1787 described a part of the gardens of the Venetian senator Angelo Querini's Villa Altichiero, near Padua, in which some pieces of Egyptian sculpture were displayed. The owner had given it the name Canope. Canope was a town in Egypt, and the Emperor Hadrian had taken over its name for the Egyptian part of his villa near Tivoli.[13]

Now in most of these cases the attitude to Egypt is patently different from that of the early nineteenth century. The sense of portentous might of Egyptian masonry and details does not seem to be present. Indeed no coherent conception of a specific Egyptian character seems present at all. Forms are used for the fun of using them. The intention of the odd garden pavilion or fireplace is additional variety rather than a statement of mood. The age of Strawberry Hill and Chinoiserie allowed entry to Egyptian forms as yet another piece of exotic entertainment not different in kind from the Pagoda, the Mosque and the Alhambra in the grounds of Kew or indeed the prostyle Greek Doric temple at Hagley.[14]

Piranesi

Two questions, however, remain. Where did information come from which enabled designers to do Neo-Egyptian, and who started the Rococo fashion as against the early nineteenth century Romantic fashion? The second question must be answered first, and can be answered in full. The source of the fashion, as of many others, is Piranesi. His Caffé Inglese in the Piazza di Spagna in Rome, **16**, dates from about 1760, and its walls were crowded with Egyptian motifs assembled no doubt largely for the fun of it, and his *Cammini* came out in 1769 and have quite a number of Egyptian specimens, **17, 18.** Here we have indeed a primary source;[15] for Piranesi himself wrote a letter on November 13, 1768, to Thomas Hollis which is now at the Society of Antiquaries attached to their copy of the *Cammini.* In this he

[8] One case of direct American offspring must be recorded, the Bazaar and Casino of Mrs. Frances Milton Trollope at Cincinnati opened at the end of the twenties, it seems. Mrs. Trollope was a friend of the Bullocks (*see* Una Pope Hennessy: *Three English Women in America*, London, 1929, p. 70). Alexander Jackson Davis incidentally claims in his diary to have 'introduced into the United States the Egyptian fashion, by exhibiting designs at the National Academy of Design in 1829.' (*See* R. H. Newton: *Town and Davis*, New York, 1942, p. 61.)

[9] In that year it was described in the *Penny Magazine*, p. 503. The details, we read there, were ' derived from the drawings and designs of Bonomi and David Roberts.' The younger Bonomi (1796-1878) was an architect and had been in Egypt in 1824-33 and again in 1842. David Roberts (1796-1864) is known as a painter of architectural subjects. He published books on the Holy Land, Syria, Arabia, Egypt and Nubia in 1842 and in 1846-49. We owe the reference to the Marshall factory and to the literature on it to Mr. C. Sharp.

[10] Illustrated in H. Clifford Smith, *Buckingham Palace*, London, 1931, pl. 109.

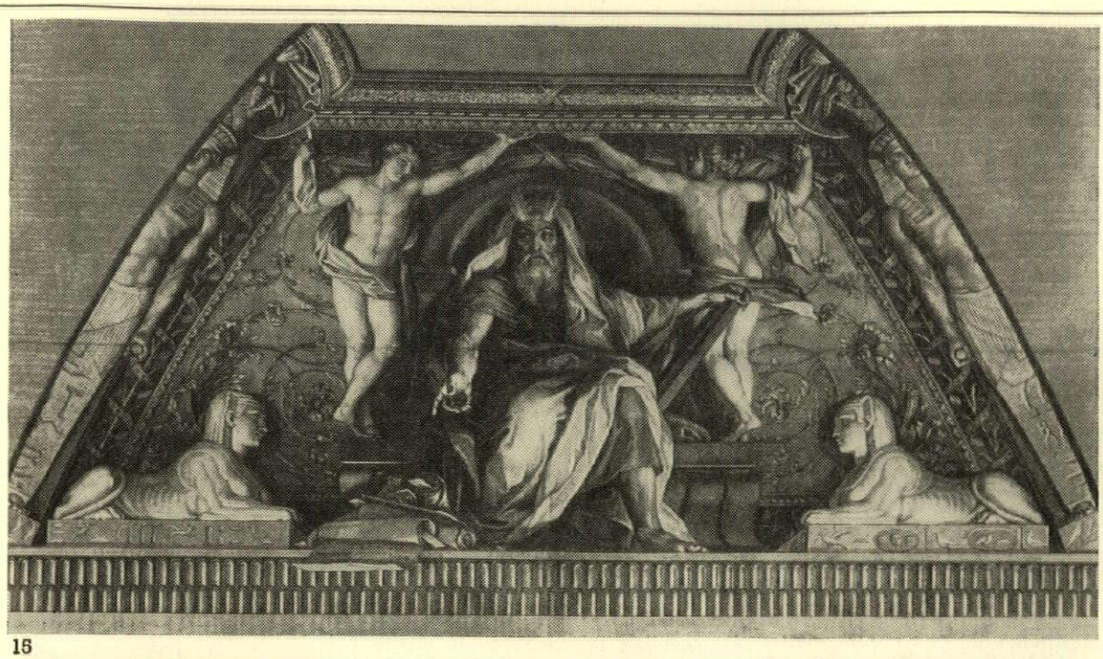
[11] Paris, 1943-1953; 5 volumes in 7 parts. The pertinent volumes are 4 and 5.

[12] For instance, a salon of 1786 in a financier's house of the Place Vendôme, a temple front in the park of Étupes by Kléber, dated 1787, and another temple front used by Desprez for the decoration of a play staged in Sweden in 1787.

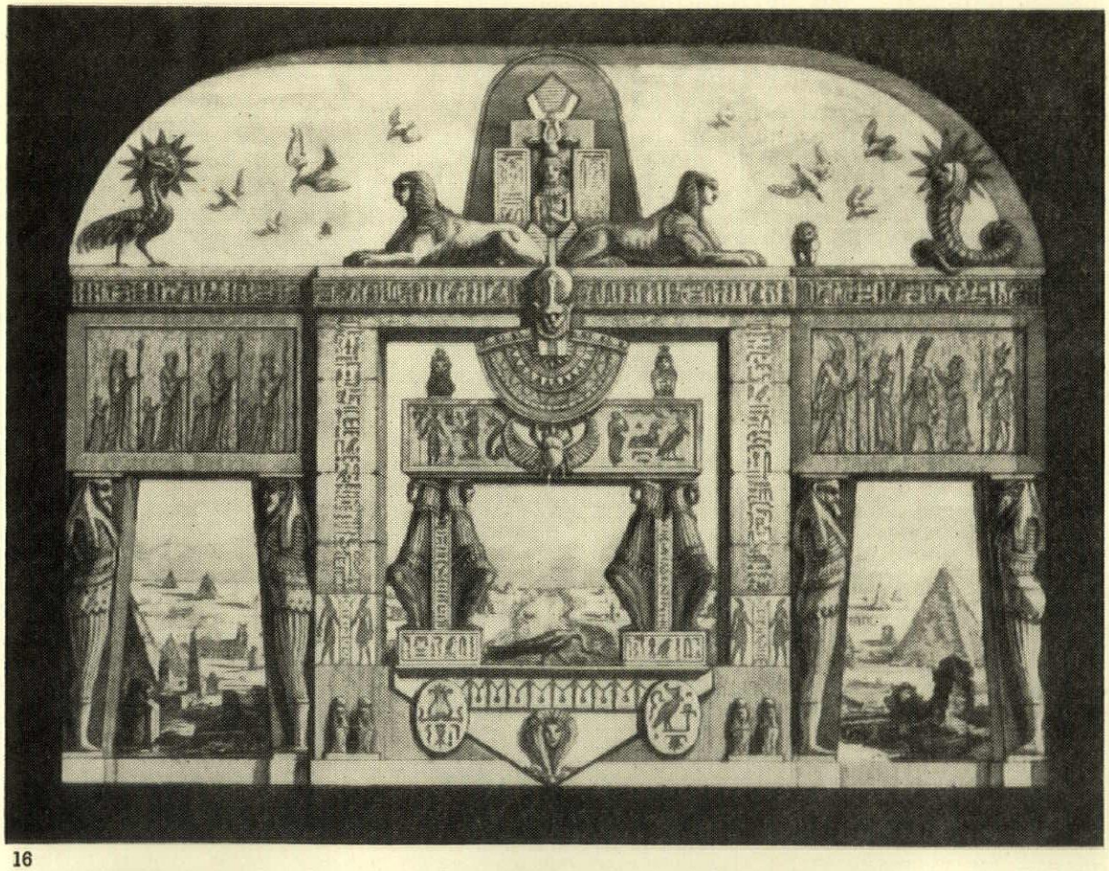
[13] Mme. J. W. C. D. R.: *Altichiero*, Padua, 1787. The authoress is Justine Wynne, Countess de Rosenberg. Count Rosenberg had been Austrian Ambassador in Venice. Before she married him, she had been one of Casanova's innumerable mistresses, and before that she was pursued by Andrea Memmo, a Venetian patrician who followed her as far as Paris. Memmo, apart from being the editor of that interesting architectural theorist, the Padre Lodoli, was one of the earliest Venetian freemasons, having been initiated by Casanova. The immediate cause of Casanova's arrest and confinement to the Piombi was this very initiation.

[14] The Villa Altichiero had, apart from the Canope, a Chinese Pavilion and a *Bois de Young.*

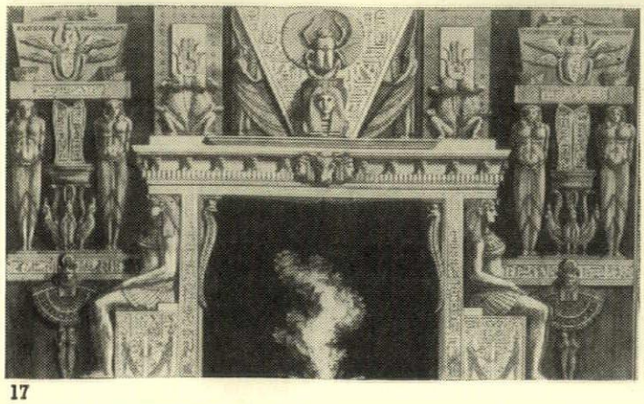
[15] The literature on Piranesi is too extensive to be quoted here. The most recent book is Hylton Thomas on Piranesi's drawings (London, 1954). This contains a bibliography. Reference must also be made to a correspondence in *The Times Literary Supplement* (June 26 to July 31, 1953) à propos an article published on February 13.



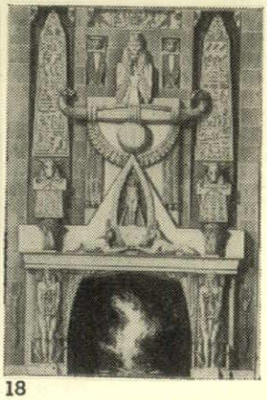
15



16



17



18

Napoleon's Egyptian campaign cannot have been the only source for a revival of the Egyptian style, since Mengs about 1770 *aptly decorated the Camera dei Papiri of the Vatican Library with sphinxes and caryatids,* 15. *Still earlier Piranesi followed only his fancy when in* 1760 *he covered the Caffe Inglese in Rome, today only known from his* Cammini (1769), *with Egyptian sculpture and hieroglyphs, adding pyramid landscapes,* 16. *Obelisks with hieroglyphs, sculpture and Egyptian symbols can also be found adorning several of the fireplaces in the same publication,* 17, 18.

writes: 'Vederete in quest' Opera usato ciò che peranche in questo genere non era conosciuto. L'Architettura Egiziana, per la prima volta apparisce; la prima volta, dico, perchè in ora il mondo ha sempre creduto non esservi altro che piramidi, guglie, e giganti, escludendo non esservi parti sufficienti per adornare e sostenere questo sistema d'architettura.'

Here then is the Egyptian Revival as a *capriccio*, in the sense in which Tiepolo etched capricci and Guardi painted capricci, and in which the term went on to Goya and his famous series of the *Caprichos*. The capriccio is a Rococo form, and Piranesi's Egyptian may indeed be called a Rococo-Egyptian, if one takes a broad enough view of the possibilities of the Rococo. A style which comprises Neumann's architecture can well comprise Piranesi's *Carceri* and even the grandest of his Roman visions. That this interpretation of his Egyptian revival has nothing outré or far-fetched is borne out by two characteristic references, one caused no doubt by the *Cammini*, the other curiously anticipating them.

The younger Blondel in volume III of his *Cours d'Architecture* published in 1772 writes this—a passage of the greatest interest indeed: 'Il y a plusieurs années qu'il sembloit que notre siècle était celui des Rocailles; aujourd'hui sans trop savoir pourquoi, il en est autrement. Alors le goût Grec et Romain nous paroissoit froid, monotone: à présent, nous affectons la charge de la plupart des savantes productions de ces Peuples; et, sans trop y réfléchir, nous prétendons que les autres Nations s'assujetassent à faire usage de notre manière de décorer, soit que nous imitions, dans nos appartements, la bissarreries des ornaments de *Pekin*, soit que nous ramenions, dans l'ordonnance exterieure de nos édifices le goût pesant des premières inventions de Memphis. . . . Il ne nous reste plus qu'à introduire le goût gothique dans notre Architecture, et peut-être n'en sommes-nous pas éloignés.'[16] In 1757 Sir William Chambers in the Preface to his book on *Chinese Buildings* quoted the use made of Egyptian pieces by Hadrian in the Canope of his villa near Tivoli as classical authority on the strength of which we also should be permitted to indulge in innovations for the sake of variety. The innovations he then recommends are Chinese motifs. We shall have to revert to Hadrian's villa later.

For the moment, what is important is that China and Egypt are linked in both these passages,[17] and that both passages are clearly Rococo in their way of arguing. Blondel's remark is his shocked answer to Piranesi's *Cammini* with their actual revival of Egyptian forms, Chambers's remark is no more than a suggestion of a potential revival, based on an actual revival sixteen hundred and fifty years ago.

But what are the links between Hadrian's and Piranesi's revival, if any exist? Evidently the prehistory of Neo-Egyptian must be traced back much further than is usually done, and that is what this article sets out to do in a very tentative and provisional way.

[16] Vol. III., p. LVIII.

[17] Hautecoeur refers once or twice to Cornelius Pauw's *Recherches Philosophiques sur les Egyptiens et les Chinois*, 1773, a book read e.g. by Goethe. The idea must however be older; for Stukeley in 1743 asserted a common principle for Chinese script and Egyptian hieroglyphs (*see* W. R. Dawson, in *Studies presented to F. Ll. Griffith*, London, 1932). Soufflot in 1741 regarded it even as possible that the Egyptians were a Chinese colony. (*See* J. Mondain Monval: *Soufflot*, 1918, p. 98.)

Egypt in Greece and Rome

It could, of course, start in ancient Greece and with the acceptance of Isis and other Egyptian deities into the Greek Pantheon. Isis was considered the daughter of Chronos or Hermes or Prometheus and identified with Ceres or the many-breasted Diana of Ephesus or indeed more generally with Nature. Rome had an Iseum and Pompeii had one.

19, *the Romans, whose empire included Egypt, frequently borrowed from her art; here is an engraving after the figure representing the Nile, whose left arm rests on a sphinx.*

Caracalla used Egyptian motifs in capitals in his Baths and may have built a Serapeum. Other Roman Emperors brought obelisks from Egypt and re-erected them. There were also pieces of Egyptian sculpture and copies from them. The most famous display has been mentioned already twice: Hadrian's Canope in his villa near Tivoli. Sphinxes were known widely, and one of the best-known works of Roman sculpture, the reclining figure of Father Nile now in the Vatican Museum, **19**, rests his elbow on a sphinx; whether such tombs as the pyramid of Cestius or the Sepulchrum Scipionum (also known as the Meta Romuli) were designed in imitation of Egyptian Pyramids cannot now be said with certainty. They are slenderer in shape and stand midway between an obelisk and a pyramid. Roman writers knew a great deal about Egypt, which is not surprising, as the principal monuments of her art and architecture lay within the boundaries of the Empire. And as the works of Pliny, of Diodorus Siculus (*temp.* Augustus) and of Ammianus Marcellinus (fourth century A.D.) were used in the early Middle Ages and rediscovered in the Renaissance, so knowledge of Egypt also continued and reappeared.

Middle Ages

Amongst the Fathers of the Church Eusebius and Gregory of Nazianzus say much about Egypt, and in the seventh century Isidore of Seville in his *Etymologies*, the most popular early medieval encyclopædia, mentions hieroglyphs and obelisks and (as a 'genus sepulcrorum') pyramids.[18] But after the conquest of Egypt by the Mohametans in 642 knowledge of the country and its monuments naturally grew dimmer. However, certain works of the Egyptians remained visible in Rome —notably the obelisk now in the Piazza di S. Pietro. This stood all through the Middle Ages just East of the two round chapels which were added on the south side of Old St. Peter's. So some interest in the curious nature of Egyptian culture and script must have kept alive. For otherwise how could one account for the re-use of the Egyptian capitals of the Baths of Caracalla, when the church of S.M. in Trastevere was built in the twelfth century, and for the earliest case of an Egyptian revival which has so far come to light, the completely solitary and unconnected appearance of four sphinxes carved in Central Italy in the thirteenth century? One of them, **20**, is now in the museum at Viterbo and others are at Città Castellana and in the Cloister of S. Giovanni in Laterano in Rome.[19] They are by Cosmati decorators, that at Viterbo being signed 'Fra Pasquale, 1279.'

Travellers on their way to and from the Holy Places occasionally touched Egypt, and the tales of those from France have been collected by J. M. Carré.[20] They have not much to tell us. But they mention the 'sepultures des rois d'Egypte qui on nommait piramides' and the 'statue d'Isis' nearby 'qui se monstrait plus haute que les tours de Nostre Dame de Paris.'[21] It seems from Carré's book that the great pyramid was entered by a traveller for the first time in 1504.[22] At the same time in Rome a few of the many Egyptian pieces brought by the Emperors for the purpose of the cult of Isis began to reappear prominently; for instance, when the church of S. Maria sopra Minerva was rebuilt in 1347.[23] At the same time an Egyptian cynocephalus was copied in Rome. But in none of these scattered pieces of evidence concerning Egypt can one discover any special interest in Egyptology. That changed with the coming of the Renaissance.[24]

Quattrocento

The first fact which must be recorded is Christoforo de Buondelmonte's discovery in 1419 of the so-called *Horapollo*, a fifth-century Greek text on hieroglyphs.[25] What Buondelmonte discovered was a fourteenth-century transcript or version of the book. He found it on the island of Andros in the Aegean. The book had an enormous influence on Egyptological studies in the fifteenth century and after. Ficino translated it into Italian in 1463. The translation was printed in 1471, the Greek text (by Aldus) in 1505. Scholars thought that here at last they had found the key to the mysteries of Egyptian wisdom.[26] For an idea that Egypt held the secret of much magic and wisdom seems never to have disappeared completely. So it was most welcome when Poggio Bracciolini came across a manuscript of Ammianus Marcellinus in a German library. Niccolo Niccoli copied it with his own hands. A little later Poggio also translated parts of Diodorus Siculus.

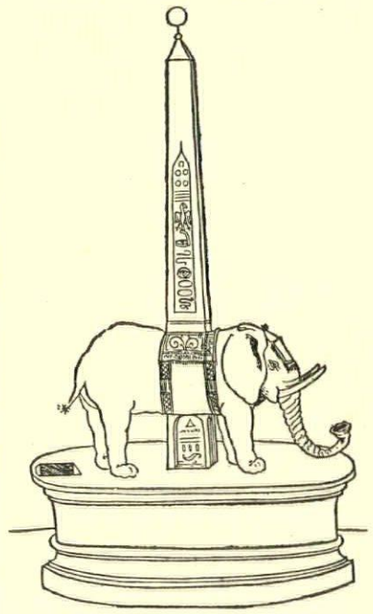
The next important date is **1435**, the year when Ciriaco d'Ancona set out for Egypt, probably on a trading enterprise. His humanist friends, however, asked him to look for inscriptions, and he found near the largest of the pyramids of Gizeh an inscription which he sent to Florence. At about the same time Alberti, always in the forefront of humanist interests, mentioned in his *De Re Aedificatoria* pyramids, obelisks (though only in passing) and hieroglyphs.[27] They also occur in Flavio Biondo's *Roma Instaurata*, which was completed in **1446**. For concurrently there was a growth of interest in Rome in the surviving documents of Egyptian art.[28]

In consequence of this interest Egyptian motifs were occasionally introduced by Quattrocento artists into their works. Amongst the earliest are the pyramid in the background of Ghiberti's Gates of Paradise in the second of his bronze doors of the Baptistery in Florence, **21**, (1425–52),[29] and the obelisks on Pisanello's medal of John VII Palaeologus (1438–39) and on other medals of his. After 1450 and especially after 1480 cases get more frequent. But the two only important ones still concern original Egyptian pieces re-used in Quattrocento contexts and not Egyptian motifs re-created by Italian artists. The first refers to the foundation of the Capitoline Museum by Sixtus IV about 1475. He exhibited there two sphinxes of basalt.[30] The second is the re-erection at the portal of the Episcopal Palace at Tivoli of the two caryatids, **22**, probably from Hadrian's Canope. They are those already mentioned as now being at the Museo Pio-Clementino.[31] The re-erection was, it seems, due to Pius IV (1458–64).[32] They were drawn by Giuliano da Sangallo towards the end of the century.[33]

High Renaissance and Mannerism

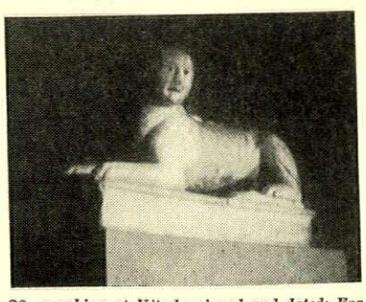
In paintings of the late Quattrocento and Early Cinquecento Egyptian motifs appear more often than one usually realises. They are easily overlooked, because they are nowhere given prominence. Examples are the hieroglyphs in Mantegna's frieze in the Triumph of Caesar, various motifs in Pinturicchio's decoration of the Appartamento Borgia in the Vatican Palace (1493–95);[34] and obelisks as well as hieroglyphs in the *Hypnerotomachia Polifili*, **23**, that most exquisitely illustrated of early Venetian books. The Hypnerotomachia came out in 1498, and one immediate derivation from it, recently established by Dr. Gombrich, carries us over from the Quattrocento to the Cinquecento.

Bramante, the architect who turned the Early into the High



23, *an elephant with an obelisk from the* Hypnerotomachia Polifili *of* 1499—*a modest forerunner of Bernini's much grander structure.*

Renaissance, intended to put up on the Belvedere in the Vatican an inscription in pseudo-hieroglyphs commemorating Julius II and himself. The technique of these pseudo-hieroglyphs was clearly to be that of an inscription printed and deciphered in the Hypnerotomachia. Bramante also—a sign of a much deeper concern with Egypt—intended at one stage to turn the axis of his new church of St. Peter's by ninety degrees for no other reason but to have the old obelisk in front of the new church. Fontana in the end achieved this nearly a hundred years later, by shifting not the church but the obelisk.[35]



20, *a sphinx at Viterbo signed and dated: Fra Pasquale,* 1279. *It demonstrates an interest in things Egyptian at a surprisingly early date.*

[18] In Migne's *Patrologia Latina*, Vol. 82, coll. 552 and 654.

[19] For S.M. in Trastevere *see Architektonische Studien des Kais. Dtsch. Archaeol. Inst.*, Heft III, 1889, p. 77. For Viterbo, etc., *see* A. Venturi: *Storia dell'Arte Italiana*, Vol. III, Milan, 1904, pp. 796, etc.

[20] *Voyageurs et écrivains français en Egypte*, Cairo, 1932.

[21] *Le Voyage d'outremer de Jean Thenaud*, etc., ed. C. Schefer, Paris, 1884, pp. 53-54. Thenaud travelled in 1511.

[22] Carré, Vol. 1, p. 6, note ji.

[23] *See* K. Giehlow: Die Hieroglyphenkunde des Humanismus, in *Jahrbuch der kunsthistorischen Sammlungen des Allerhöchsten Kaiserhauses*, Vol. XXXII, 1915, an extremely valuable paper of which we have made much use on this and the following page.

[24] For the next paragraphs *see*, apart from Giehlow's paper, the book by L. Volkmann; *Bilderschriften der Renaissance*, Leipzig, 1923.

[25] The Provost of King's College, Cambridge, Professor Glanville, kindly drew our attention to F. Sbordone: *Hori Apollonis Hieroglyphica*, Naples, 1940. We are very grateful to the Provost for having looked through our article before it went to press.

[26] *See* J. Seznec: *Survival of the Pagan Gods*, Bollingen Series, Vol. 38, New York, 1953, p. 100, etc.; also the late Fritz Saxl's unpublished lecture on the Appartamento Borgia.

[27] Book VIII, chapters 2 and 4.

[28] The *Anonimo Magliabecchiano* for instance noticed about 1410-15 a 'Julia' near the Porta Salaria, and a Julia is a *guglia* or an obelisk. He also mentions an obelisk in the Circus Maximus which was still half-covered by debris. Poggio in his *Historia de Varietate Fortunae* speaks of obelisks in the Hippodrome (i.e., the Circus Maximus), and on the Capitol, apart from the one by St. Peter's (ed. Paris, 1723, p. 20); of Pius II—so Miss Ruth Olitzky informs us—it is recorded that he ordered some obelisks to be unearthed (*see* Campana's *Vita*, in Muratori, *Rer. Ital. Script.*, III, 2, Pt. 1, 982). Even a little earlier Nicholas V, the first humanist on the Papal throne, intended to re-erect the obelisk of Old St. Peter's in front of his new church to be rebuilt in the Renaissance style. The reason for this intention was that the obelisk was considered a witness of the martyrdom of St. Peter. Paul II took this legacy over, and of Raphael it is known that he offered to transport an obelisk from the Mausoleum of Augustus to St. Peter's for 90,000 ducats (*see* V. Golzio: *Raffaello*, Città del Vaticano, 1936, p. 101, from the diary of the Venetian ambassador Marino Sanuto). However, nothing happened, until finally in 1586 Fontana re-erected the obelisk of St. Peter, and of this more will be said later.

[29] But Professor E. Wind has recently tried to explain the pyramid here as an echo of Origen's idea of Noah's Ark as a pyramid—a mathematical-mystical fantasy already refuted in the twelfth century by Hugh of St. Victor. *See Studies in Art and Literature for Bella de Costa Greene*, Princeton, 1954, p. 419.

[30] *See* E. Müntz: *Raphael*, Paris, 1881, p. 590, from Fulvio's *Antiq. Urbis.*

[31] *See* E. Visconti: *Museo Pio-Clementino*, 1784, col. 2.

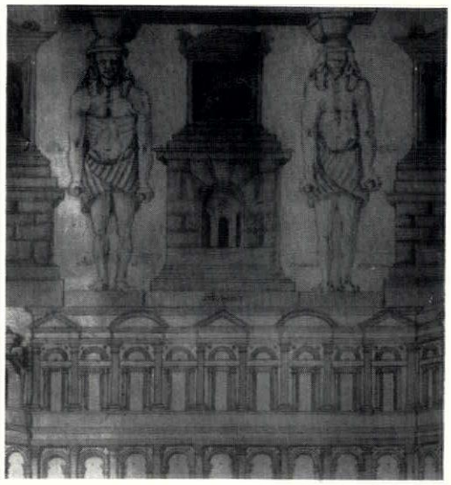
[32] The *Villa Adriana* is mentioned for the first time in the Renaissance in Flavio Biondo's *Italia Illustrata*, 1450. *See* H. Winnefeld: Die Villa des Hadrian, in *Jahrb. d. deutschen Archäol. Inst.*, 3. Ergänzungsheft, Berlin, 1895, specially pp. 2, etc.

[33] Giuliano also drew an obelisk with hieroglyphs (Bayonne Museum).

[34] These are based on Nanni da Viterbo, whose activities were discussed by Professor Saxl (see note 26). Nanni fabricated a family tree for the Borgias, tracing them back to Osiris, faked Egyptian texts and proceeded to excavate Egyptian sculpture on Italian soil. The intention was to link up Etruscan with Egyptian and ultimately the Pope with Osiris. The fakes are said to be in the Museum of Viterbo, but on a recent visit could not there be traced.

[35] E. H. Gombrich, in *Journal of the Warburg and Courtauld Institutes*, Vol. XIV, 1951, p. 12).

21



22

With the coming of the Renaissance of the ancient arts, the interest in matters Egyptian also greatly increased. The hieroglyphs, undeciphered as yet and to remain so for another four centuries, were thought to be the key to all ancient wisdom, and Egyptian monuments gained in importance. In c. 1435 *Ghiberti introduced a pyramid into one of his panels of the Gates of Paradise at the Florentine Baptistery,* 21. *Among the surviving Egyptian monuments on Italian soil were the two caryatids from Tivoli drawn by Giuliano da Sangallo (Barberini Sketchbook),* 22. *These were almost certainly Raphael's prototypes for the caryatids in the Stanza dell' Incendio,* 24.

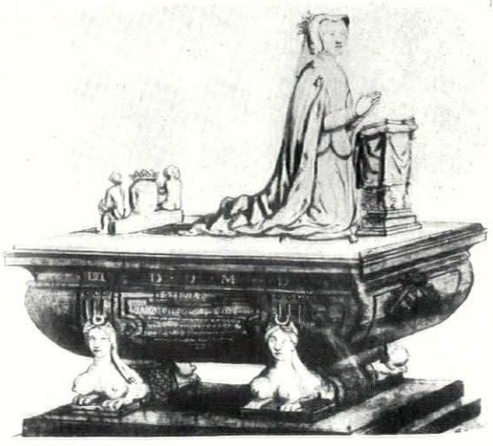
24

28

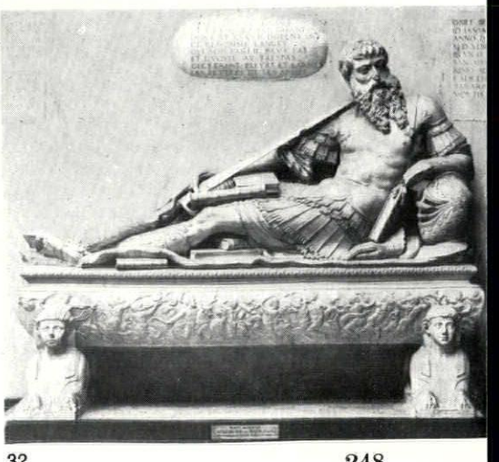
28, these two, probably female, caryatids of c. 1540, flanking a gateway at Fontainebleau, are also closely related to those at Tivoli (see 22 on preceding page).

33

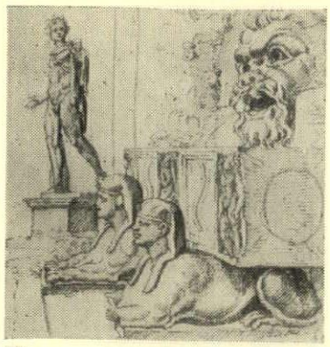
An ancient sarcophagus resting on two sphinxes in the Vatican Gardens as recorded by Heemskerck, 25 on the facing page, may have inspired the mid-sixteenth century monument of Angelo Cesi, 33, in S. Maria della Pace in Rome by Vincenzo de Rossi (the Cesi family owned a famous collection of antiques), that of Diane de Poitiers, 31, and that of Guillaume du Bellay, 32. Fragments of this last monument are now at Versailles.



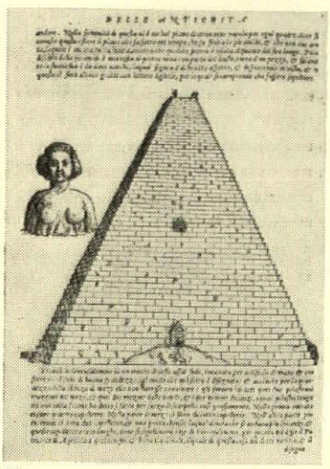
31



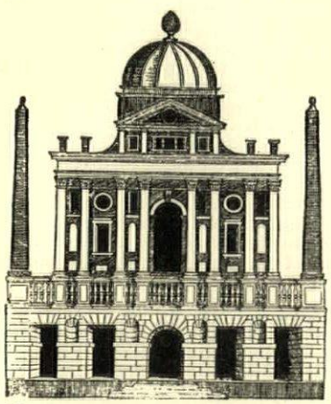
32



25



26



27

25, *Sarcophagus resting on two sphinxes, drawn in Rome by Marten van Heemskerck between* 1532 *and* 1535. *This may have inspired the monuments illustrated on the facing page. Serlio also recorded Egyptian monuments, e.g., a pyramid, and sphinx,* 26, *and obelisks and made use of them as well, e.g., in his design for a church,* 27.

Egyptian evidence multiplies in the Cinquecento, and so we can now confine our record more strictly to what matters visually rather than philologically. The first piece of evidence seems curiously enough so far to have escaped comment: the caryatids, **24**, on the entrance and exit walls of Raphael's Stanza dell' Incendio in the Vatican Palace (1514–17). Raphael had earlier already made use of the motif of the many-breasted Diana of Ephesus who (as has been said before) was often identified with Isis, on the throne of the figure of Philosophy in the ceiling of the Stanza della Segnatura (*c.* 1509). From Raphael Egyptian motifs passed on to his pupil Giulio Romano who used them in his *Triumph of Scipio* at the Louvre.

During the late years of Raphael and the years of Giulio Romano a document became known which was to play a considerable part in the future development of Egyptology, the so-called Tabula Bembi (see title-piece of this article, which is taken from the border of the tablet), named after Raphael's friend the humanist Pietro Bembi, who was librarian of the Vatican and later Cardinal. It is, however, not known where exactly and in what circumstances it was found. It is a bronze tablet inlaid with gold and silver and covered with hieroglyphs, figures and all kinds of monsters half-man, half-beast. The Tabula Bembo was published by Enea Vico in 1559. In 1544 Celio Calcagnini's *De Rebus Aegyptiacis* came out, in 1556 Piero Valeriano's *Hieroglyphica*, a treatise based on the travels of his uncle Fra Urbano to whom the book was dedicated.

By then illustrations of works of Egyptian art and architecture had also become more numerous. Marten van Heemskerck, who drew antiquities in Rome during his stay of 1532–35, shows a sarcophagus resting on two sphinxes as well as other sphinxes and obelisks, **25**. Serlio in his third book (of 1540) shows a pyramid, several obelisks, and a somewhat fanciful head of a sphinx, **26**, and says that he had been given the measurements of the pyramid by Cardinal Grimani who had taken them personally. In his fourth book (of 1537) there is a church façade, an original design of Serlio's, provided with two obelisks, **27**. However, with regard to pyramids and obelisks one should be careful. They may well have been used without any specific Egyptian intentions. There was after all just outside Rome the Pyramid of Cestius, and artists of the sixteenth century may have regarded the obelisk also as a Roman rather than an Egyptian characteristic.

It is different with three works of decorative sculpture actually carried out, a doorway at Fontainebleau and two funeral monuments, one in Rome, the other also in France. They must be registered—and this has not been done so far—as the real beginning of the Egyptian Revival. The doorway[36] at Fontainebleau, **28**, is flanked by two large, unmistakably Egyptian and probably female caryatids, and belongs to the extensive and varied works carried out for Francis I about 1540.[37] It leads from the west side of the Jardin de Diane to a staircase and a passage towards the Cour du Cheval Blanc. No-one knows who designed it, but its style and especially the heavy pediment seems more likely for Primaticcio than for Rosso Fiorentino. Also Primaticcio was using Egyptian motifs, including incidentally sphinxes, in the decorative parts of his paintings in the Galérie d'Ulysse at Fontainebleau (begun shortly after 1540), **29**. To explain the caryatids of the doorway it may be enough to refer to those of Tivoli drawn by Sangallo, to Bramante's known visit or visits to Tivoli to draw the antiquities of the town[38] and its environs, and to Primaticcio's task of taking casts of ancient sculpture to France. In addition, Giulio Romano's *Triumph of Scipio* already referred to is known to have been in the hands of Francis I by 1534.

It may also from a different and perhaps more significant angle be useful to an understanding of the doorway at Fontainebleau to remember Primaticcio's adherence to the formal and spiritual tenets of Mannerism and ascribe the explanation of his choice of so odd, so unexpected, and so novel a motif to that. Moreover, it is just possible that there was over and above all these a more recondite and subtle reason. We have already seen that Isis had ever since antiquity been identified with Diana of Ephesus. There is a book of *Imprese* or devices published in 1566 by G. Ruscelli in Venice, and

30, *the* Impresa *or device of Henri II of France, incorporating Diane de Poitiers' emblems; from Ruscelli's* Imprese Illustri, *Venice*, 1566.

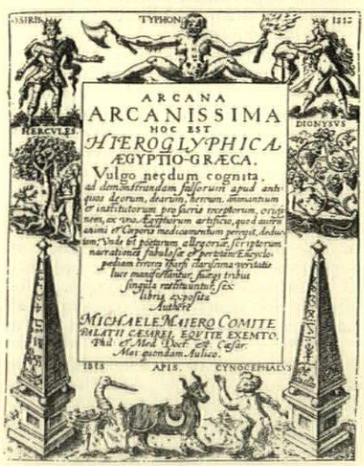
this, on page 180, shows, **30**, an impresa for Henri II of France, a crescent moon flanked by two Egyptian caryatids.

Now the crescent moon is certainly an allusion to Henri's mistress Diane de Poitiers, and the caryatids therefore may well play on the suggested identity of Greek Diana and Egyptian Isis. However, Diane was no more than a lady at the court of François I. There is no evidence seriously to point to a liaison between the king and her. She fell in love with Henri II when she was thirty and he thirteen—that is in 1529 or 1530. So whether an allusion to her at François I's favourite palace about 1540 is probable or not must remain open. There is, however, one fascinating piece of corroborating evidence in favour of the equation Diane de Poitiers—Diana—Isis. In a series of (not surviving) pictures for Anet, Diane's country house, the temple of Isis appeared in the image of the Château of Anet.[39] And in her funeral monument completed in 1576 the sarcophagus, **31**, rested on four sphinxes. It was drawn by Gaignières, and fragments of it are said to remain in the cellars of Versailles.[40]

Now that was in 1576, but Guillaume du Bellay's monument at Le Mans Cathedral, **32**, which also rests on sphinxes, was made about 1557, and Vincenzo de Rossi's of Angelo Cesi at S. Maria della Pace, **33**, according to the experts even as early as about 1550.[41] The two are closely connected in design. Both have a semireclining effigy on a sarcophagus, [42] and both sarcophagi are carried by frontally placed sphinxes. Rossi's source is not far to seek. He may well have known such antique sarcophagi as that drawn by Heemskerck (*see* fig. 25) and the sculptor of the du Bellay monument (probably Pierre Bontemps) may just have known Rossi's. But there is also a tenuous connection between Guillaume du Bellay and Egypt. Du Bellay, who was the brother of the bishop of Le Mans and the cousin of Joachim du Bellay, poet of the Pléiade (who incidentally made a poem on Diana), was a friend of Pierre Belon, and Belon was sent to the East as an ambassador of Francis I, saw Egypt, dared to enter a pyramid, and in 1553 published his *Observations* on what he had seen in Greece, Asia Minor, India, Arabia and Egypt. He described pyramids and also a sphinx.

Reorientation in the mid-sixteenth century

With Belon, and also Calcagnini and Valeriani (that is, the mid-sixteenth century), the beginning of a new phase is reached. Now for two hundred years journeys were undertaken more and more frequently and thoroughly, reports were published which were less and less fanciful, research was carried out into Egyptian history and especially Egyptian script, and speculations into the mysteries of Egyptian wisdom went parallel. The hermetic studies seem to have found their centre early in the seventeenth century in the Order of the Rosy Cross or the Rosicrucian Order. Alchemy was a partner in the murky business. The man to be mentioned in our context is Count Michael Maier, who was born in Holstein in 1568, became physician to the Emperor Rudolph II (who was addicted to magic of all kinds), later visited Amsterdam and London, published his *Arcana*



34, *the title page to Count Michael Maier's* Arcana Arcanissima *of* 1614, *displaying Egyptian symbols to which are added Greek gods and heroes, and 'Marvels of the East.'*

Arcanissima, Hoc est Hieroglyphica Aegyptio-Graeca in 1614, **34**, and two books on the Rosicrucians a little later (*Silentium post Clamores, Themis Aurea*).[43]

29. *Van Thulden's engraving after a fresco by Primaticcio in the Galerie d'Ulysse at Fontainebleau illustrates the home-coming of Ulysses.*

[36] Our attention was first drawn to its existence by Mr. John Summerson.

[37] M. Jean Adhémar kindly provided us with this date.

[38] *See* Vasari, ed. Milanesi, Vol. 4, p. 154.

[39] F. A. Yates: *The French Academies of the Sixteenth Century*, London, 1947, p. 135.

[40] J. d'Orliac: *The Moon Mistress*, London, 1931, p. 312.

[41] *See* Gramberg in Thieme-Becker's *Künstlerlexikon* and A. Venturi: *Storia dell'Arte Italiana*, Vol. X, pt. 2, Milan, 1936, p. 285.

[42] A type created by Sansovino at S. Maria del Popolo about 1500 and imported into France by the Chabot Monument now at the Louvre.

[43] *See* J. B. Craven: *Count Michael Maier*, Kirkwall, 1910. Mr. C. H. Josten, of the Oxford Museum of the History of Science, drew our attention to the *Arcana*.

35, *George Sandys visited the Pyramids in* 1610 *and illustrated his* Relation of a Journey, *London,* 1615, *with the first fairly correct portrait of the pyramids, giving them the right shape and proportions.*

It is a far cry from these muddled imaginings to the clear and matter-of-fact representation of the pyramids in their landscape setting in G. Sandys's *Relation of a Journey, begun anno domini 1610*, London, 1615, **35**. Sandys calls them 'the barbarous monuments of prodigality and vain glory.'[44] He was not impressed by unsolved secrets.

As for art and architecture of the late sixteenth and early seventeenth centuries not much needs reporting. Bits of Egyptian decoration are carried on by Mannerists in divers places, the title page of Dosio's *Relics of Rome* (1566), Ruscelli's *Imprese* mentioned above (also 1566) which contains Egyptian devices for others as well as Henri Deux,[45] and there is also a decorative little campanile from Ferdinand II's *Kunstkammer*[46] at Ambras, now at the Vienna Museum. All this is work on a small scale.

On a large scale the most important events to draw public attention to Egyptian history and hieroglyphic script were the erection of several obelisks in public squares in Rome. The beginning was Sixtus V's town planning scheme. The obelisk in front of St. Peter's, to which reference has been made earlier, was erected by Domenico Fontana. It was a feat of engineering. The erection was done in fifty-two stages, and up to nine hundred workmen were engaged on it. The final moment was reached on September 10, 1586, in the presence of thousands of onlookers. The obelisk in front of S. Giovanni in Laterano followed in 1588, that in the Piazza del Popolo in 1589, that facing the apse of S. Maria Maggiore also before 1614.[47] All three are referred to in Maier's *Arcana*.

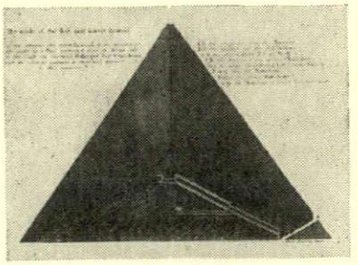
Seventeenth-century Egyptology

For the mid-seventeenth century three names deserve special mention, Peiresc, Greaves and Kircher. Claude-Nicolas Fabri de Peiresc, 'that illustrious and incomparable virtuoso' as John Evelyn called him,[48] was born in 1580. He lived most of his life at Aix, but visited Italy in 1599–1602, Paris in 1605 and England for a month in 1606. The years 1616 to 1623 he spent in Paris. He was a scholar brilliant in many fields, and a friend of men of such varied attainments as Malherbe, Casaubon, Gassendi and Rubens. He was one of the first to use a telescope, one of the discoverers of the nebula of Orion, the first to see Mars and Venus in daylight, the designer of the first map of the moon, one of the discoverers of the chyliferous vessels in the human body and the possessor of a large collection of books and curiosities. He never published anything but carried on a vast correspondence with the whole of Europe.[49] From this we see that Egyptology was included in the wide range of his interests. He tried to solve the mystery of hieroglyphics by research into the Coptic language. A letter of his to Camden[50] of 1618 deals with a figure of Isis which Camden possessed or knew of. Camden also wrote about this to the Dutch scholar Sweertius who asked for the advice of Rubens, 'antiquarii et seculi nostri Apellis.'[51] Indeed somewhat later, in 1636, Rubens sent Peiresc the drawing of a mummy which may have belonged to him.[52] In the case of Camden's figure, Peiresc consulted Lorenzo Pignoria, who in 1669 re-edited the Tabula Bembi, **36**, and Girolamo Aleandro who was secretary of Cardinal Francesco Barberini. The Barberini seem to have been specially interested in Egyptian matters. The celebration arranged in 1634 by Cardinal A. Barberini in honour of King Charles of Poland was given an Egyptian subject though not an Egyptian guise.[53] The designs for the occasion seem to have been made by Andrea Sacchi, [54] one of the leading Roman painters of the day. In the Barberini Palace at Palestrina is a mosaic pavement from the famous temple of Praeneste which depicts Egyptian life and which Poussin used for his Flight to Egypt painted in 1658 for Chantelou.[55]

In 1633 Peiresc was visited by a German Jesuit, aged thirty-one, Athanasius Kircher. Kircher was working on the Egyptian script and for this reason went to call on Peiresc. He had with him an obscure treatise in Arabic by one Barachias which he wanted to publish. Peiresc engaged him as his secretary—another was the Jew Solomon Azubius—and then made him go to Rome and try to get Cardinal Francesco Barberini's help. Kircher indeed went to Rome and remained there for the rest of his life. On thoroughly unsound foundations he succeeded in establishing himself as the recognized authority on Egyptian matters. He began by following Peiresc's promising idea of searching for Coptic relationships with Egyptian hieroglyphs, and got hold of a Coptic-Arabic glossary which Pietro della Valle had brought to Rome from Egypt. He published it as *Prodromus Coptus* in 1636. Pietro della Valle (1586–1652) had spent twelve years in the Orient, but published his *Viaggi* only thirty or forty years later in 1650. The journey, one of many which took place in the seventeenth century, is of artistic importance in so far as it seems possible that Stefano della Bella, the Italian engraver who lived in Rome from 1633 to 1639 and in Paris from 1639 onwards, made his remarkable pyramid landscape, **37**, as a projected illustration to della Valle's book.

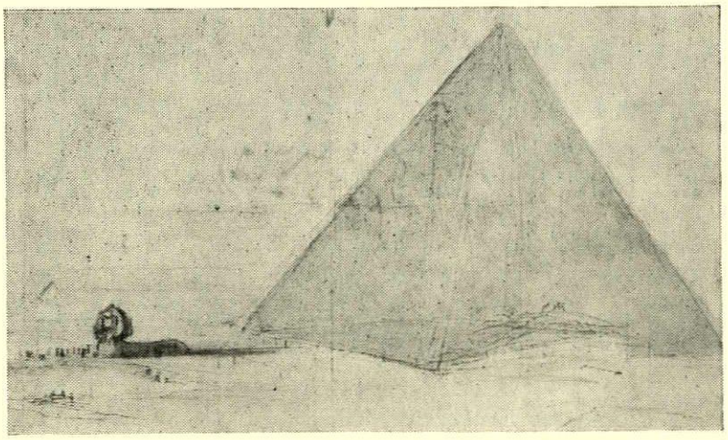
Stefano della Bella's landscape[56], however, which remained the most accurate representation for some time to come, was in all probability based on a better source of information than Pietro della Valle. It is known that Stefano was a friend of the physicist and orientalist Tito Livio Burattini, and Burratini had been in Egypt in 1637–40.[57] On his return to Europe he seems to have travelled in France and Germany before settling down in Poland. It was probably during those years that he met Stefano in Paris.[58]

Now Burattini spent his time in Egypt with an Englishman, John Greaves. Greaves (1602–52) was of all seventeenth century travellers perhaps the most important. He was a fellow of Merton College, professor of geometry at Gresham College, London, and later of astronomy at Oxford. In 1648 he was for political reasons deposed from his chair at Oxford, the same chair to which Christopher Wren was elected twelve years later. Greaves published his *Pyramidographia* in 1646. The book is the first scientific treatment of the pyramids. It is based on a thorough visit with Burattini to the interior of the Great Pyramid, and contains accurate measurements and a drawn section, **38**.

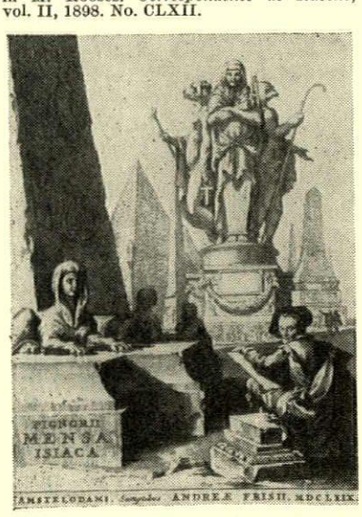


38, *in the* Pyramidographia 1646, *John Greaves, Professor at Oxford, gave the first measured drawings of the Great Pyramid; he was assisted by T. L. Burattini.*

Athanasius Kircher was the very opposite of Greaves, inaccurate, fantastical, calmly successful. He lived in the Collegio Romano in Rome, made large collections (now



37, *a drawing by Stefano della Bella which clearly aims at exactness—the pyramid has been corrected to get it right. He probably derived his information from his friend Burrattini, see* 38.



36, *Pignoria's title page of the re-edition in* 1669 *of the Tabula Bembi (see head-piece) is still in the fantastic tradition.*

[44] p. 127.

[45] pp. 155, 401.

[46] *See* illustration in J. von Schlosser: *Kunst- und Wunderkammern der Spätrenaissance*, Leipzig, 1908, fig. 34.

[47] Others came later. The obelisk now on the Pincio was found in the sixteenth century and taken to the Palazzo Barberini in 1633, that of Bernini's fountain in the Piazza Navona was erected in 1649, that by the Pantheon in 1711, and Pius VI put up three obelisks: 1787 (Quirinal), and 1789 (Trinità dei Monti and Montecitorio).

[48] Letter of Jan. 10, 1657.

[49] *See* P. Humbert, Paris, 1933, and G. Cahen-Salvador, Paris, 1951, also F. W. Gravit in *The University of Michigan Contributions in Modern Philology*, No. 14, 1950, and *Bull. de la Société d'Archéol. Copte*, Vol. IV, 1938.

[50] *G. Camdeni . . . Epistolae*, ed. T. Smith, London, 1691, p. 212.

[51] *ib.*, p. 224, Rubens's answer is printed in M. Rooses: *Correspondence de Rubens*, vol. II, 1898. No. CLXII.

[52] R. Lebegue: *Les Correspondants de Peiresc dans les anciens Pays Bas*, Brussels, 1943, p. 49.

[53] *See* R. Enking: *Der Apisaltar J. M. Dinglingers*, Glückstadt, Hamburg and New York, 1939, p. 24, etc.

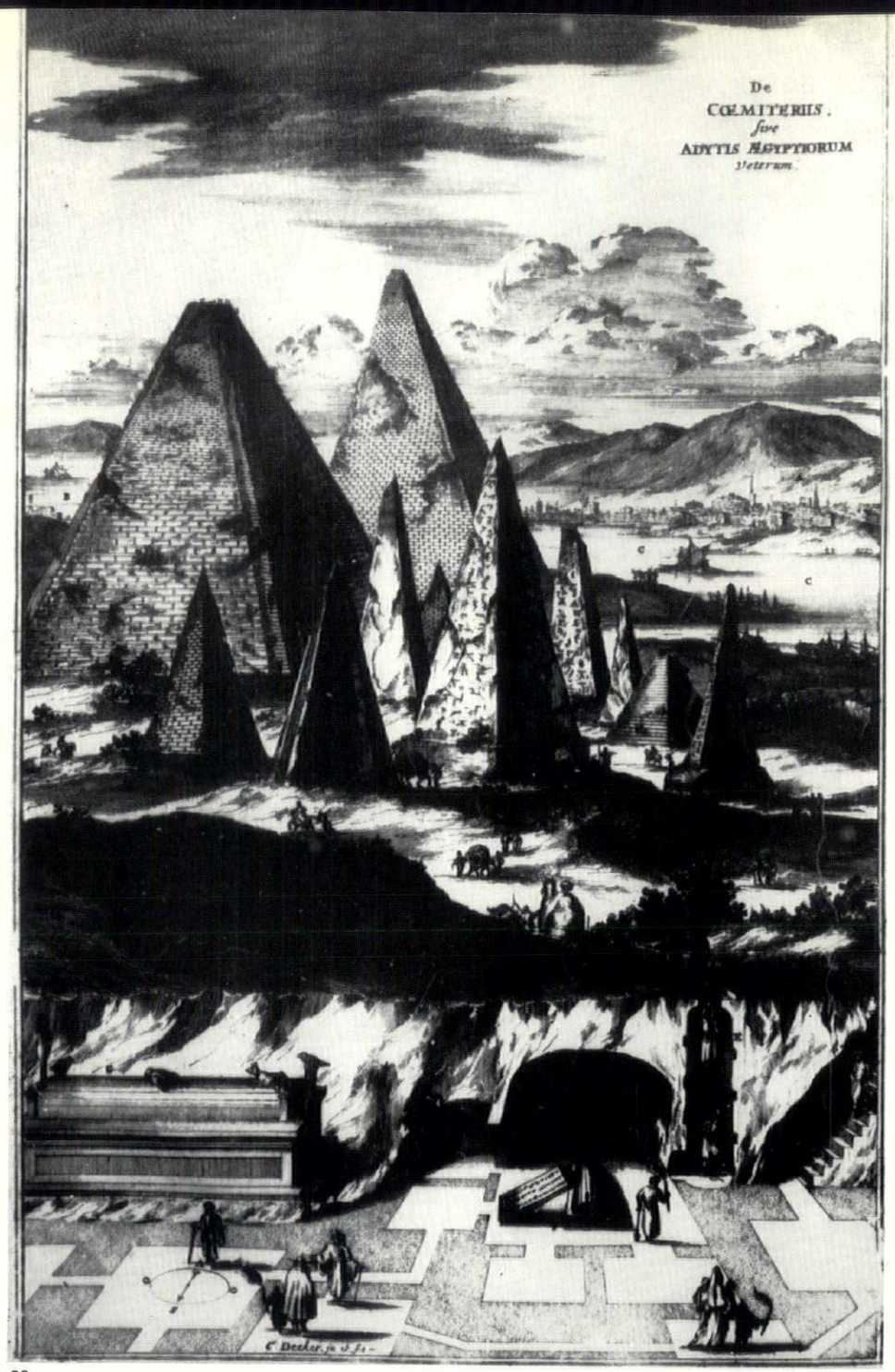
[54] *See* the illustrations in V. Mascardi's *Festa fatta in Roma alli 25 di Febraio, MDCXXXIV*, Rome, 1635, one of which is marked 'A.S. inventor' (*see* also Preface).

[55] *See Lettres de Poussin*, ed. P. du Colombier, Paris, 1929, p. 299.

[56] *See* A. Blunt: *The Drawings of G. B. Castiglione and Stefano della Bella in the Collection of H.M. the Queen at Windsor Castle*, London, 1954, p. 30, catalogue No. 124. Mr. Wilfrid Blunt has pointed out that the sphinx actually differs from both Sandys's and Valle's descriptions. The lion's body is however mentioned by Pliny.

[57] A. Favaro in *Mem. del R. Ist. Veneto di Science, Lettere ed Arti*, Vol. XXV, 1896, p. 76. Here Burattini in a letter to Hevelius, the astronomer, calls Stefano his 'singularis amicus.'

[58] Burattini also supplied Kircher with information. *See* Kircher's *Oedipus*, mentioned below, Vol. II, pt. 2, pp. 303, etc., and Vol. III, pp. 339-41.

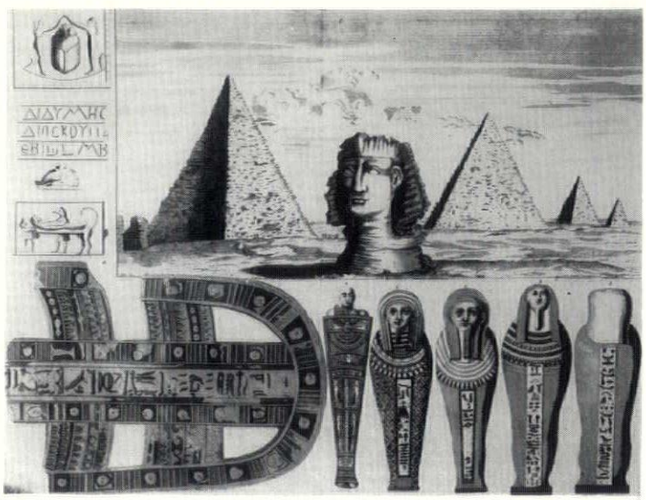


39

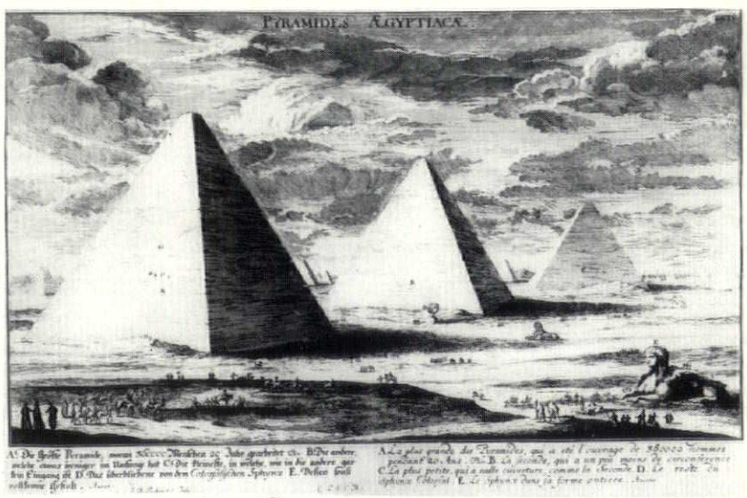
42

Athanasius Kircher published volumes of bogus Egyptology. His fantastical conceptions are well illustrated by the frontispiece to Sphingis Mystagogae *of* 1676, 39, *left. The Danish traveller Norden, who visited Egypt in* 1837, *gives his sphynx a terrifying expression,* 42, *true to myth and legend.*

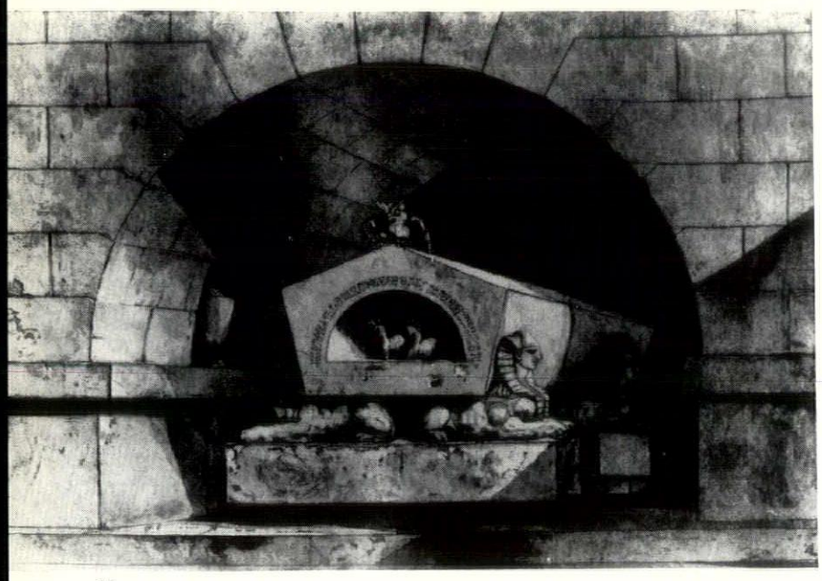
Monfaucon, the antiquary, introduced Egypt into his comprehensive Antiquité Expliquée *of* 1719-24, 40. *The first to convey something of the grandeur of the pyramids was J. B. Fischer von Erlach in his* Entwurff einer historischen Architektur *of* 1721, 41: *he also gave several reconstructions of the sphinx.*



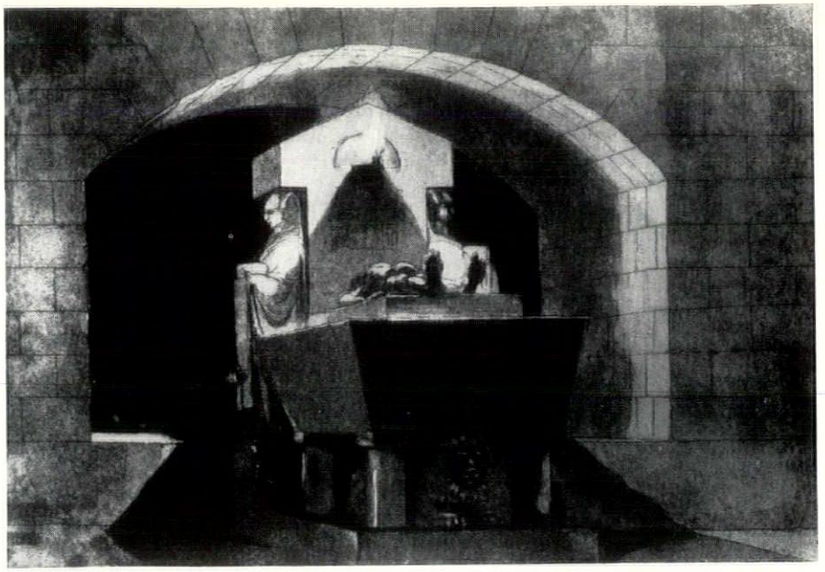
40



41

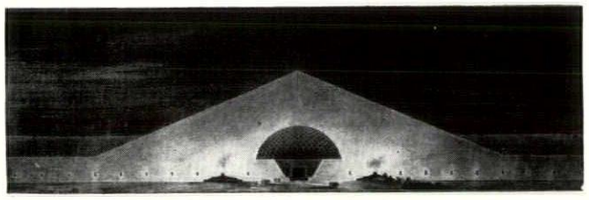


45

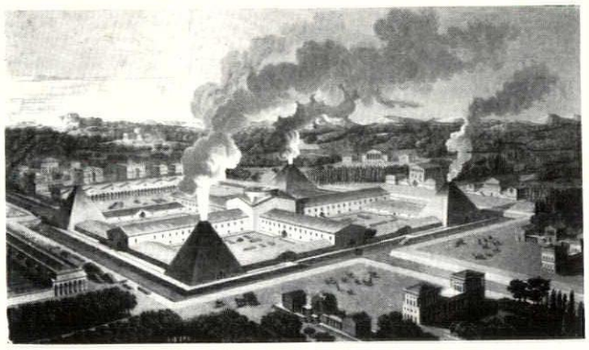


46

The art of the later eighteenth century, like that of the sixteenth, favoured Egyptian motifs. 45, 46, *two grandly macabre designs for tombs by Desprez, between* 1777 *and* 1780; 47, '*Camera sepocrala Egiziana*' *by Mauro Tesi,* 1762, *a more picturesque interpretation.*



48



49

The architects of the Age of Reason found in the clear-cut form of the pyramids an ideal shape devoid of unnecessary trappings, truly 'great' and truly colossal. 48, *design for a Cenotaph by Boullée, in the Bibliothèque Nationale.* 49, '*Vue perspective de la Forge*' *by Ledoux from his* L'Architecture.

47

partly in the Vatican, partly presumably somewhere at the College, where however they cannot be traced) and published sumptuous folios of bogus egyptology: 1643 *Enigma Aegyptiana Restituta*, 1652 *Oedipus Aegyptianus*, 1666 *Obelisci Aegyptiani*, 39. He died in 1680.

The Museo Kircheriano was the first museum taking a more than casual interest in Egyptian material. Egyptian statues, statuettes, inscriptions, etc., existed of course in plenty of Italian, French and also English collections. Kircher mentions the Farnese and other Roman collections, the collection of the Duke of Tuscany, and of a merchant van Werle in Amsterdam. There is also the story of two statues which arrived at Marseilles in 1632. They got into the hands of Fouquet, Louis XIV's minister, and the owner of Vaux-le-Vicomte, then of Le Nôtre, Louis XIV's gardener, and then of Bernini de Valentiné, Controleur Général de la Maison du Roi.[59] In England Sir Hans Sloane as well as Dr. Mead owned mummies.[60]

Eighteenth-century antiquarians

The chief books between 1680 and Piranesi's *Cammini* are Montfaucon's, Norden's and Caylus's.[61] Bernard de Montfaucon (1655–1741), a Benedictine, travelled in Italy in 1698–1701 and published his *Antiquité Expliquée* in ten volumes in 1719–24.[62] It is the first comprehensive general archaeology, and it gives Egypt (which Montfaucon did not know personally) its due place. To him as to Sandys a hundred years before the Egyptians are amongst the barbaric forerunners of Greek civilization, but he illustrates a pyramid landscape, mummies, sphinxes, gods and goddesses and so on, **40**.

Travellers of the same years who were much read and used are J. M. Wansleben, Jean de Thevenot and Paul Lucas. For its illustrations rather than any archaeological value Johann Bernhard Fischer von Erlach, the great Austrian architect, must here also find mention. His *Historische Architektur* was completed in manuscript in 1712 and published in Vienna in 1721 and at Leipzig in 1725. An English translation came out in 1730. The short text accompanying the plate with the pyramid and the sphinx, **41**, refers to Thevenot and Lucas, and explains the addition in the foreground of a Roman sphinx 'volveris pennis, pedibus fera, fronte puella' as Ausonius put it. On other plates are Egyptian vases which Fischer had seen. Two of them belonged to a nobleman in Naples and were drawn by Fischer in 1685, two had belonged to the Gonzaga collections at Mantua and were drawn by him from a drawing in the possession of Queen Christina of Sweden in Rome.[63]

Norden's *Travels in Egypt and Nubia* was the most comprehensive and informative travel book up to date. It came out in French in 1755 and in English in 1757, but F. L. Norden, a Dane from Glücksburg, had visited Egypt as early as 1737 and 1738 and addressed a letter on Egyptian antiquities, **42**, to the Royal Society in 1741, the year in which he came to London. In the same year he became one of the founder members of a club which called itself the Egyptian Society.

William Stukeley of English prehistory fame[64] was another early member. Yet another founder member was Richard Pococke, who had explored Egypt at exactly the same moment as Norden. Their barges might indeed have passed one night on the Nile. Pococke is best known for his lively descriptions of tours through England, Scotland and Ireland. In 1741 he explored the Mer de Glace near Chamonix and thereby carved himself a niche in the history of Alpinism as well. His *Observations on Egypt* came out earlier than Norden's *Travels*, in 1743. Norden's and Pococke's books were the most widely used books on Egypt in their time. Norden's is superbly illustrated. With so much information and so many pictures about, it is no matter for surprise that the most common objects of Egyptian art, obelisks, sphinxes and pyramids were reproduced or translated freely in Europe in the eighteenth century. Sphinxes in gardens, **43** and **44**, are so common and often look so frankly Rococo that one tends to forget their Egyptian ancestry. Obelisks are more common still and more obviously naturalized. Pyramids are rarer, though the border-line between obelisk and pyramid is not always easy to draw, especially with the Roman monument to Cestius as a universally known non-Egyptianly steep pyramid. However, Vanbrugh knew the difference; for in 1724 he mentions à propos Stowe both a '*Gulio* or Pyramid' in the middle of a pond (that is an obelisk) and 'The Pyramid at the end of one of the walks' which is to be 'a copy in miniature of the most famous one in Egypt and the only thing of this kind, I think, in England.'[65]

It would indeed have been surprising, if eighteenth century England had not given hospitality to Egyptian forms in her picturesque gardens graced with the Roman and the Chinese, the Gothic and the Greek and occasionally even the Moorish. A rare French counter-example is the curious and boring novel *Sethos* written by Jean Terrasson in 1731 and translated at once (1732) into English. This is the story of a virtuous and courageous, wise and kindly Egyptian prince, and holds in its moral and form an intermediate position between Fénélon's *Télémaque* (1699) and Montesquieu's *Lettres Persanes* (1721). The moral is that of Fénélon and the age of reason, the form is Rococo in so far as the Rococo liked to clothe its enlightened or its sceptical messages in outlandish forms. Besides the *Lettres Persanes* there is Voltaire's *Zadig* to remind one of this and Horace Walpole's *Letter from Xotlo* (1757), and indeed, as was pointed out earlier, Piranesi's *Cammini*.

Egyptian mysteries and wisdom

But there is another aspect to *Sethos*, and this takes us one decisive step beyond Piranesi and the attitude of the Rococo. Two whole books of the ten of which Sethos consists are given over to a description of the prince's initiation into the mysteries of Isis. Here there is a link with the suggestive obscurities of Michael Maier and the Rosicrucians. Egypt in *Sethos* appears not only as one of a number of curious countries, but as the seat of wisdom and of hermetic secrets. The novel, as far as our knowledge goes, is in this respect unique for its date.

If one wants to see more examples of this new attitude, one has to go to the crucial years about 1760, the years in which in all fields the Rococo ended in the dawn of the Classical and Romantic Movement, the years indeed of the *Nouvelle Héloise* as much as of the *Contrat Social*, the *Antiquities of Athens*, as much as of Goethe at Strassburg.

In Egyptology the new spirit first makes itself heard in the *Receuil d'antiquités, égyptiennes, étrusques, grecques et romaines* by Anne-Claude-Philippe de Tubières, Comte de Caylus (1692–1765).[66] Caylus had travelled extensively in Italy, Greece and Asia Minor. His book began to appear in 1752. It contains the earliest appreciation of specific aesthetic qualities in Egyptian art.

This is now no longer merely considered an initial stage of what was going to be classical Greek art, but art in its own right. And this change of judgment was not due to any denial of the primitive character of Egyptian art, but to a growing respect for primitivity. Here the understanding of Egyptian and of Greek Doric run parallel.[67] The Egyptians are now *ce peuple sage et éclairé*, and their buildings are so solid and bare and massive that to an Egyptian Greek temples and other buildings 'devoient paroitre des châteaux de carte chargés de colisfichets.' These passages were published in 1759 and 1762. They were to find an enthusiastic echo in the designs of the younger generation of French architects almost at once. Their own dreams of gigantic ponderously symmetrical groups of buildings for vaguely public purposes were encouraged by the Academy and even more the *Académie de France* in Rome. A first published result is Peyre's *Livre d'Architecture*, which came out in 1765. A typical example is the 'Temple Funéraire destiné a honorer les cendres des rois et des grands hommes, dédié à Monsieur de Voltaire.' This is by Jean-Louis Desprez (1743–1804) and was premiated by the Academy in 1766. Its centre is domed inside but crowned outside by a steep pyramid à la Cestius, and there are plenty of obelisks about, short as well as long and needle-like. Now Desprez went to Rome in 1777 and there, like the other young French architects of his generation, caught the Piranesi germ. The useless vastness of their Parisian academic programmes became imbued with Piranesi's sense of fantastically exaggerated contrasts in scale and also with Piranesi's enthusiasm for the primeval and colossal. The *Cammini* had been out for eight years, when Desprez arrived. He left to settle in Sweden about 1780. In the course of these four years he must have done the four aquatints of tombs, of which two are here illustrated, **45** and **46**. In them, in spite of all their dependence on Piranesi, the Egyptian forms are, we suggest, presented with a totally new intention. What Blondel and Patte had called the 'formes carrées, pesantes' of the Egyptians and still mentioned in one breath with the 'marmousets des Gots,'[68] is now beautiful because it is square and weighty. The heavily ashlared segmental arches lie low above the sombre tombs.

In order to appreciate to the full the visual novelty of these designs of Desprez, they may for a moment be compared with an etching by Mauro Tesi called *Camera Sepolcrale Egiziana*, etc. The subject is more or less the same, but the spirit is utterly different. Tesi was born in 1730. He taught Count Algarotti design, and after Algarotti's death in 1764 sent a letter and some of his drawings, including the Egyptian Tomb Chamber to the Earl of Chatham.[70] The Tomb is mentioned in a letter of 1762,[71] that is before Piranesi's *Cammini*. Tesi lived in North Italy, not in Rome, and was a stage designer. So it is not likely that he knew the Caffé Inglese. Tesi's *Camera Sepolcrale*, **47**, is theatrical, and it is certainly Rococo

43

44

Sphinxes appear frequently as ornaments in eighteenth-century gardens. **43** *is at Chiswick,* **44**, *by Ferdinand Tietz, at Veitshöchheim, near Wurzburg.*

[59] *See* MS. entry in the British Museum copy of Kircher's *Oedipus*, 1654 (BM. 87, L. 7) supposed to come from G. Brice's *Description de Paris*.

[60] Letter of the Duchess of Portland, 1742, quoted in G. R. de Beer: *Sir Hans Sloane*, Oxford, 1953, p. 117.

[61] We say: the chief books; there were of course many more. Blondel for instance in his *Cours* from which we have quoted before and which was the principal corpus of architectural theory in France in the later eighteenth century names as his sources for Egypt P. W. Dorigny's *L'Egypte ancienne* of 1762 and the measurements of the pyramids taken in 1693 by Jean-Matthieu de Chaselles.

[62] English translation by D. Humphries, 1721-1725.

[63] Book V, pl. 2 and 3; *see* H. Sedlmayr in *Das Münster*, Vol. V, 1952, p. 265, etc.

[64] *See* S. Piggott, Oxford, 1950, pp. 144 and 154. Stukeley's Egyptian interest is referred to in note 13.

[65] L. Whistler: *The Imagination of Vanburgh*, London, 1954, p. 183.

[66] *See* S. Rocheblave, 1889. The quotations below come from the *Receuil* Vol. III, Avant-propos and Vol. V, p. 3.

[67] On this *see* the present authors in THE ARCHITECTURAL REVIEW, Vol. CIV, 1949. Since that paper was published, a few addenda and corrigenda have come to our notice. They are listed here as a postscript. Soane's Triumphal Bridge acquired its Doric columns only in 1778. In 1776, in the drawings for the Royal Academy, they were still Corinthian. Soane had visited Paestum in 1778. In the same year Piranesi's volume on Paestum came out (*see* D. Stroud in THE ARCHITECTURAL REVIEW, 1956). Greek Doric columns in England appeared at the Warwick County Gaol as early as 1779 (*see Country Life*, Vol. CX, 1951). The Greek Doric columns at Hammerwood Lodge in Sussex of c. 1793-4 are chiefly memorable, because they are by Benjamin Latrobe (*see* T. Hamlin, 1955). Greek Doric columns in France, according to Hautecoeur, are used in Antoine's chapel of the Charité, c. 1778-80, and in Brongniart's church at Romainville in 1785-7 (Vol. IV, pp. 23, 256, 342). Finally one early example from Sweden: Skärva House of 1785 designed by the owner Admiral Chapman (*see* O. Sirén: *China and Gardens of Europe*, New York, 1950, p. 210 and pl. 186) and one from Russia: lighthouses of c. 1792 as Doric columns, designed by Zakharov (*see* G. G. Grimm: *Zakharov*, 1940, figs. 1-4).

[68] *Cours*, Vol. IV, p. 245.

[70] F. Viglione, in *Studi di Letteratura Italiana*, Vol. XIII, 1919, p. 67.

[71] Count F. Algarotti: *Opere*, Venice, 1791-4, Vol. X, pt. II, p. 244.

in its picturesque disorder.[72]

Revolution, freemasonry and romanticism

The style which appears so powerfully in Desprez's tombs of the late seventies is that nowadays often called the style of the French Revolution, regardless of whether the architects working in this style were in fact for or against the revolution. The most famous is Ledoux who was born in 1736. But the researches of the late E. Kaufmann and of Dr. Rosenau have shown that he was preceded by Boullée, born as early as 1728.[73] Boullée's monumental designs for a projected treatise on architecture in general belong largely to the eighties, **48**. Here we find the Egyptians praised for their 'idées très grandes' and the 'genre colossal' of their images. It is likely that, when Boullée wrote this, he was acquainted with a prize essay submitted to the *Académie des Inscriptions et Belles Lettres* in 1785 by a much younger architect and writer Antoine-Chrysostome Quatremère de Quincy (1755–1849). Quatremère de Quincy's was an analysis of Egyptian architecture and a comparison with that of Greece. He is on the side of the Greeks, as is to be expected, but—even if not for reasons of praise—he also emphasizes the excessive solidity of Egyptian work, its unremitting monotony, its preference for the colossal—and he adds, almost against his will, it seems, that one cannot help admiring these qualities in Egyptian buildings. The essay[74] was published only in

49, *Pyramid in the park of Maupertuis, probably designed by Ledoux.*

1803, but its contents were no doubt known beyond the Academy. Boullée never published his large and magnificent drawings.

Ledoux was luckier. He published his *Architecture* in 1804, and there the new message of Egypt is felt and expressed to the full. The pyramid was one of his favourite themes, because of its trenchancy, and its geometrical simplicity, **49**. He may even have had a chance of building a pyramid in a picturesque garden—if, that is, the pyramid of *c.* 1780 at Maupertuis, **50**, is by him.

While in this group inspiration from Egypt is inspiration from a primeval civilization,[75] Egypt as the source of hermetic mysteries appealed to another group within the growing romantic movement. Here we have to look to the history of freemasonry and to the unexpected fact that Egyptian rites and embellishments do not seem to have entered freemasonry seriously before the 1780s. Traditions existed of course tracing back the craft and the skill of masonry proper to Egypt. The earliest English manuscript on the mason's craft tells of the origin of the craft 'in Egypte lande,' and the second earliest relates how the Israelites 'lernyd ye craft of masonry' in Egypt.[76] Craft guilds in the course of the sixteenth and seventeenth centuries developed into lodges of a membership called 'speculative,' that is philosophical, instead of vocational, and by 1717 the First English Grand Master was elected. But masonic documents of the following decades seem in no way to stress any special connection with Egyptian wisdom or Egyptian rites[77] in spite of the fact that the Rosicrucian Order, as we have seen, had quite marked Egyptian sympathies, and that in the course of the eighteenth century the Rosicrucian movement so often crossed the path of the growing movement of freemasonry. The ingenious move to the pyramids for a suggestive ceremonial seems to have been made by masons in the third quarter of the century. We are chiefly concerned with two names, Carl Friedrich Köppen and the notorious Count Cagliostro. Köppen published in 1778 his *Crata Repoa, oder Einweihung der ägyptischen Priester* (i.e., initiation of the Egyptian priests). His lodge at Berlin was called the Afrikanische Bauherren and seems to have been founded as early as 1756. It came to an end in 1787. Cagliostro[78] received a life sentence in 1789. He travelled in the Orient in the sixties and became a mason in London in 1777 and had his lodge in Paris in the rue de la Soudière in the eighties. A private temple of Isis was attached to it, and Cagliostro was its grand master, second only to that mysterious character, the Grand-Cophta who never appeared but was always round the corner. 'Der Grosskophta' became the title of a minor play by Goethe, inspired by the *cause célèbre* of the diamond necklace.

However much Cagliostro and his Egyptian Rites were a fraud, the Egyptian ritual in a very short time established itself in the lodges of the masons. The master of the lodge Zur wahren Eintracht at Vienna in 1781 was Ignatz von Born. He founded a Journal for Freemasons (*Journal für Freimaurer*) in 1784 and in the first volume of this published a long paper on the

50, *title-page of Mozart's* Magic Flute, *as first published in* 1791. *Its character derives from Piranesi.*

mysteries of the Egyptians.[79] In the same year 1784 Mozart had joined another masons' lodge in Vienna, after having been an apprentice in Born's lodge in 1783. Here clearly are the premises of the *Magic Flute*, **50**, with its text by Schikaneder, another mason, based partly on masons' ceremonial, partly on the initiation rites in Terrasson's *Sethos*.[80]

Now, as soon as later eighteenth-century Germany and primeval mysteries as well as primeval simplicity in art and architecture are considered, the connoisseur of the history of ideas will at once turn to Johann Gottfried Herder, the most universal spirit of *Sturm und Drang* and the inspirer of Goethe. And indeed, just as in the appreciation of folk poetry and of Shakespeare, Herder is the first to reveal to the full what Egypt might have to give the romantic age. Here is a strange passage to prove this claim, translated as best one can translate German *Sturm und Drang*. It comes from the *Älteste Urkunde des Menschengeschlechtes*[81] and dates from 1774.

'According to legend, the first Egyptian temples, like the sacred heights and groves of all nations, were without images and statues. People say stones were worshipped because they were meant to represent statues, represent the earth; but I say they were not to represent anything but what they were: stones, memorials, the first monuments in the world. Hence people liked so much to combine everywhere square and round shape—and it became the well-known figure of Hermes: stone with a sphere on, that is, in the eyes of the Greeks, and the interpretation of the Egyptians, stone with a human head. From this derived the whole system behind the first steps in art. All this is still told wrongly in the histories of art. For what has this first raw, square, sphere-surmounted stone to do with a human statue as a work of art? In the shapes of the stones they wanted to connect the square and the sphere with the point, the One . . .

'When man turned into the open from the cave and added art, to create a building, a lasting building, what could be made by putting together stone and shape, but pyramid and obelisk? Square, sphere, and point connected in the simplest, most lasting manner—what else could it be?[82]

This passage from Herder completes the story of the Egyptian Revival. It is the philosophical foundation of the early nineteenth century, severe, primeval Egyptian Revival, just as Piranesi's *Cammini* is the foundation of the earlier playful and fantastical revival. Mannerism had made Egypticism first possible, the Rococo gave it one expression, *Sturm und Drang*, the architects of the French Revolution, and the Romantics another, while Egyptology ran parallel all the time, reporting facts either in a detached manner or with a bias this way or that.

---

[72] It might be worth investigating whether Egyptian theatrical sets may not have appeared in the mid-eighteenth century. P. Zucker: *Die Theaterdekoration des Klassizismus*, Berlin, 1925; C. Ricci: *La Scenografia Italiana*, Milan, 1930; G. Freedley: *Theatrical Design from the Baroque through Neo-Classicism* 3 Vols., New York, 1940, and J. Scholz: *Baroque and Romantic Stage Design*, New York, 1950, are silent.

[73] E. Kaufmann, in *Transactions of the American Philosophical Society*, New Ser., Vol. 42, 1952; H. Rosenau, London, 1953.

[74] *De l'architecture égyptienne* . . . 1803, pp. 208, 219, also 83.

[75] The group extended beyond France. Selva in Italy clearly belonged to it, and in Germany Friedrich Gilly and also the less well-known J. P. Krahe—*see* H. Vogel: Aegyptisierende Baukunst des Klassizismus in *Zeitschrift für bildende Kunst*, Vol. LXII, 1928. For *Selva see* Elena Bassi, Padua, 1936, p. 43.

[76] *See* D. Knoop and G. P. Jones: *The Mediaeval Mason*, Manchester, 1933, and the many papers published by Professors Knoop and Jones, especially in the *Ars Quatuor Coronatorum*. The manuscripts referred to are Regius and Cooke, of the late fourteenth and early fifteenth centuries.

[77] *See* A. E. Waite: *A New Encyclopaedia of Freemasonry*, 1921. Waite and other masonic writers are positive on this point. There are, however, occasional minor indications of a connection between freemasonry and the mysteries of Egypt in the mid-eighteenth century. An example is the mock procession held in London by the Scald Miserable Masons in 1742 to annoy the masons who at that time were holding real processions. In this mock procession there appeared 'the Sun Hieroglyphical to rule the Day, the Moon emblematical to rule the Night.' *See* J. Nichols and G. Steevens: *The Genuine Works of William Hogarth*, 1810, Vol. II, p. 161.

[78] H. d'Almeras, *Cagliostro*, Paris, 1904.

[79] An excerpt of this was put into his *Symbolische Weisheit der Aegypter*, Berlin, 1793, by Karl Philipp Moritz, the author who died at the age of thirty-seven in 1795, whose psychological novel *Anton Reiser* Goethe admired so much, and who had in 1782 travelled in England. His entertaining report of the journey is familiar in English translations.

[80] On the history of freemasonry in Germany and Austria, *cf.* F. Kneisner: *Geschichte der deutschen Freimaurerei*, Berlin, 1912, also still J. G. Friedel: *Geschichte der Freimaurerei*, Leipzig, 1861.

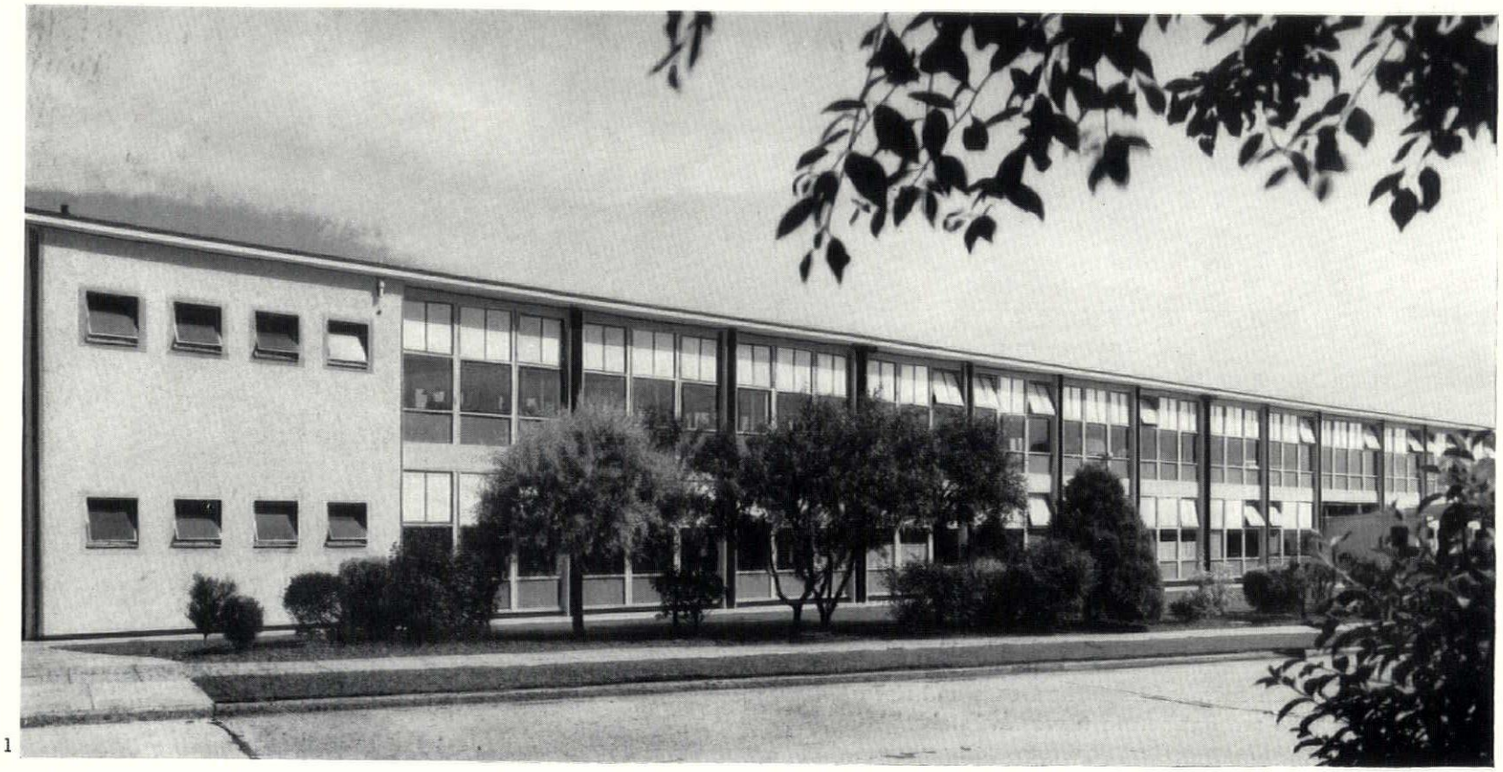
[81] Ed. Suphan, Vol. 6, p. 416, etc.

[82] Herder, Alteste Urkunde des Menschengeschlechts (1774): 'Nach der Sage waren auch die ersten Aegyptertempel, wie die heiligen Höhen und Haine aller Nationen, ohne Götterbilder und Statuen: Es heisst man verehrte Steine . . . "Sie sollten Statuen vorstellen, die Erde vorstellen"—und ich sage, sie sollen nichts vorstellen, als was sie waren, Steine, Denkmale, die ersten Denkmale der Welt. Daher verbanden sie so gern allwegen das Viereckte und Runde—und es ward die bekannte Hermesfigur: Stein, worauf eine Kugel lag, das ist, nach dem Auge der Griechen, und der Deutung der Agypter Stein, mit einem Menschenkopf, daraus dann das ganze System des ersten Kunstschrittes entstanden, was noch in allen Kunstgeschichten—falsch ist; denn was hat dieser erste rohe viereckte, kugelgedeckte Stein mit einer Menschlichen Statue als Kunst gemein? In der Figur der Steine suchten sie ferner das Viereck, und das Rund mit der Spitze, dem Eins zu verbinden. . . . Als man nun in freie Luft kam, und sich die Kunst zufügte; zum Gebäude, zu ewigem Gebäude, was konnte aus Stein und Figur anders werden, als Pyramide und Obelisk? Viereck, Runde und Spitze auf die simpelste, ewigste Art verbunden, was konnt anders werden?'

TWO OFFICE BUILDINGS

ARCHITECTS | **W. S. HATTRELL AND PARTNERS**

1, Coventry office building, south front, from approach road leading from Banner Lane. 2, entrance, in middle of south front.



1

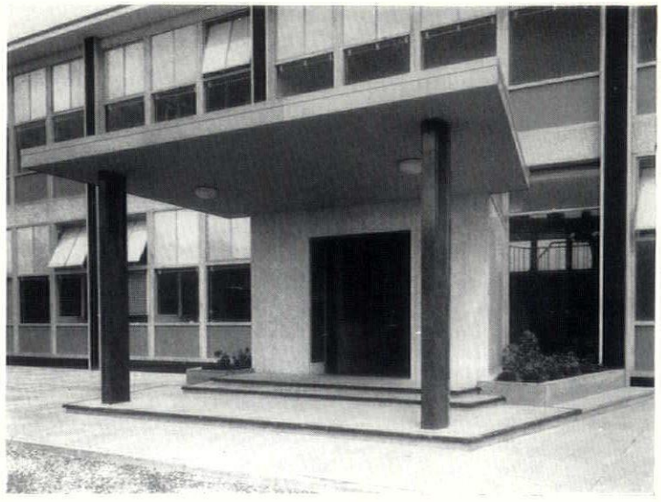
1. AT COVENTRY

assistant architects: John Roake and John King

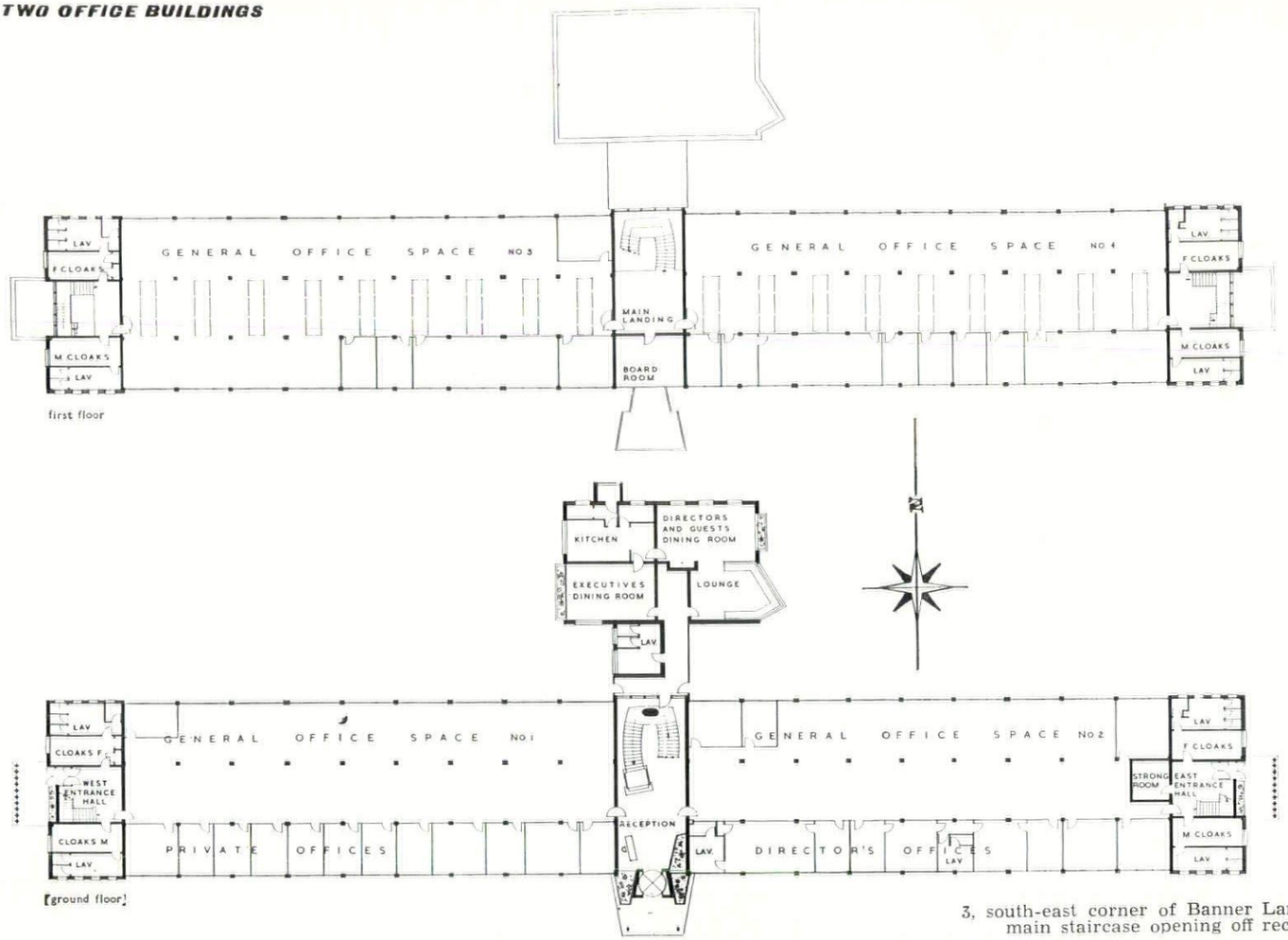
This new detached office block in Banner Lane, Coventry, replaces a combined office and factory building which was destroyed by fire.

The external cladding consists of prefabricated galvanized steel frames, glazed in the upper half with opaque glass, in the lower with clear glass, and below this containing insulated solid panels, externally faced in blue. The main staircase opening off the reception area is r.c., the intermediate landing being cantilevered from the central column, the cantilever supporting the upper and lower flights of the stairs. Although the glazing on either side of the block provides adequate light normally, the drawing office has top lights in addition. The whole building is heated by pierced aluminium panels with glass-wool insulating material above. To maintain even temperature throughout, weatherstats are incorporated to correct differences between the north and south sides.

Internally, all columns have been left from the special sanded shuttering with normal decoration applied direct to the surface. The office floors are finished in linoleum



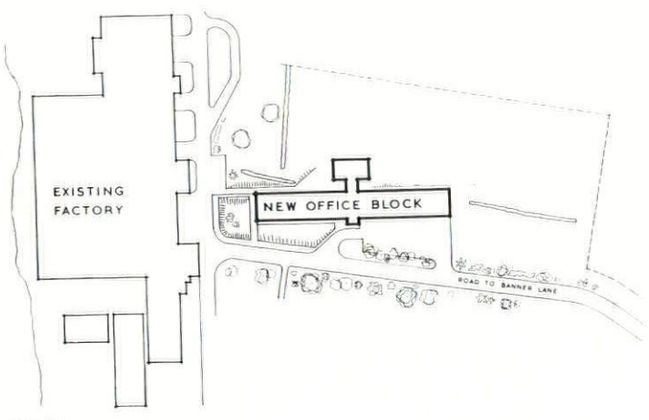
2



3, south-east corner of Banner Lane offices. 4, main staircase opening off reception area.

tiles fixed direct to the screed, with a weatherproof membrane underneath the ground-floor rooms. Wood blocks are used in the main entrance hall. The treads and risers to the r.c. staircase are finished in travertine slabs.

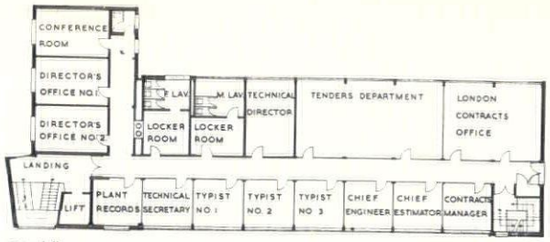
The reveals of the exterior concrete columns are slabbed with dull glazed warm grey faience, the fronts being painted black. The lavatory blocks have brick walls finished with Derbyshire spar-dashed rendering. At the main entrance the structure containing the revolving door is faced externally with travertine marble ; the r.c. supporting columns to the main canopy are faced with red granite, and the canopy fascia is in anodized aluminium.



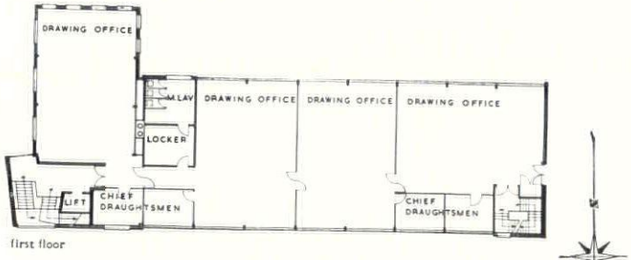
site plan

3

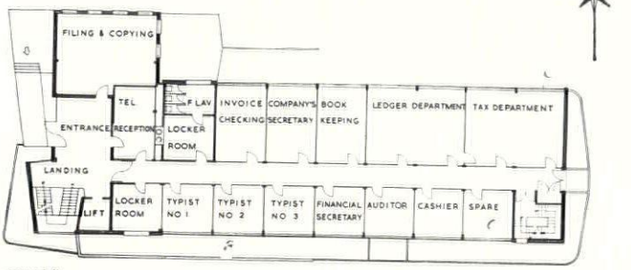
4



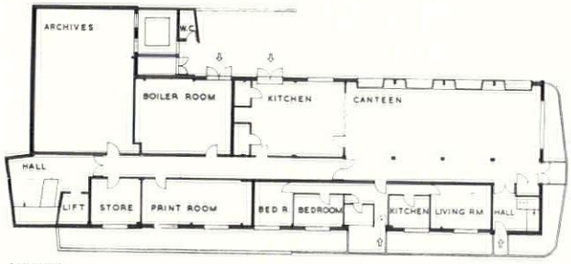
second floor



first floor



ground floor



basement

2. AT WATFORD

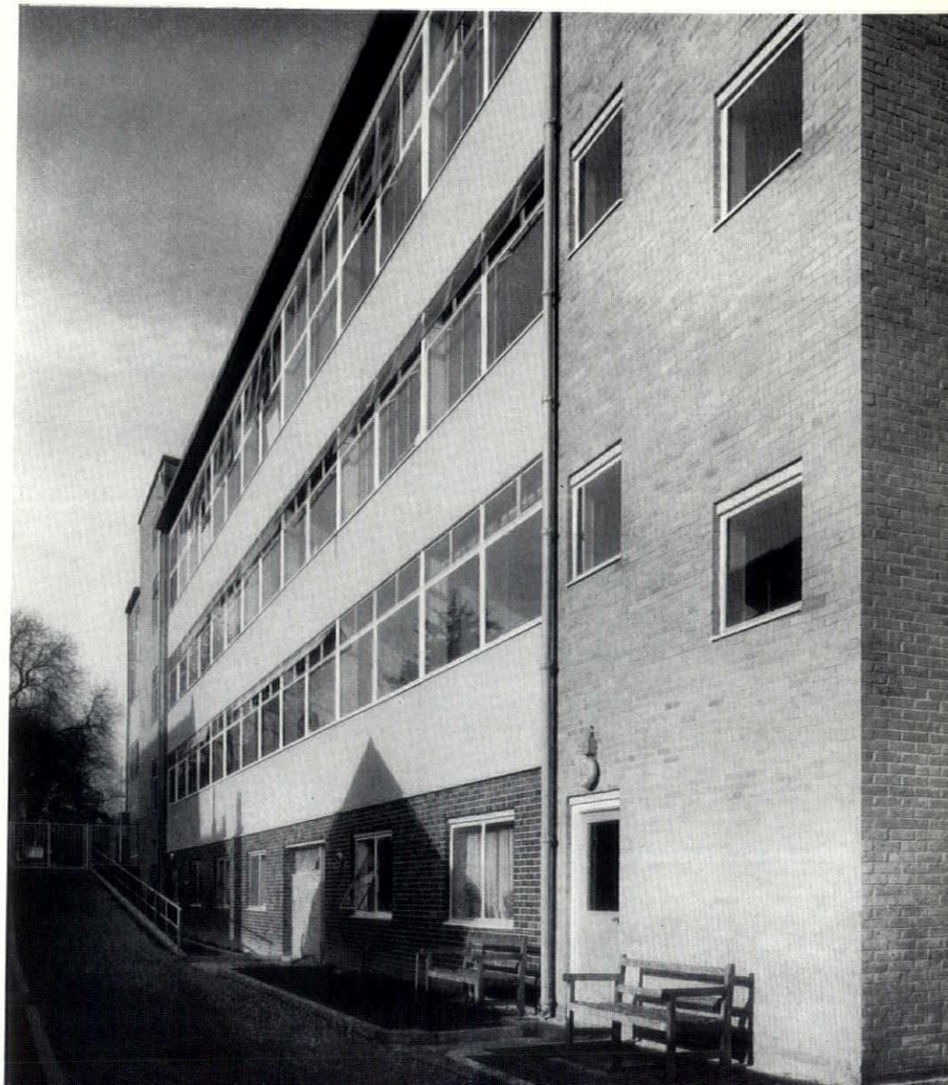
assistant architect: G. Hammond

The site of these offices is approximately 270 ft. deep by 100 ft. frontage to the east side of Clarendon Road, Watford. The ground slopes considerably from the entrance eastwards. The accommodation required made a multi-storeyed building desirable, and owing to the slope of the site it was possible to plan the main entrance from Clarendon Road at ground-floor level, with the access to the basement from the lower ground level.

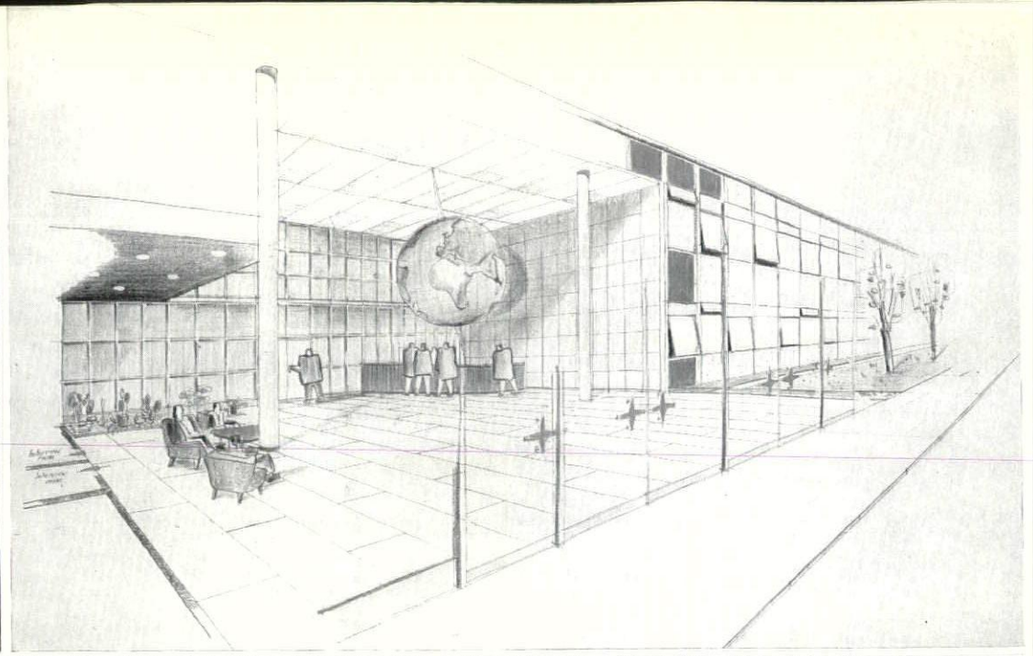
The structure is r.c. with brick cladding and in-situ fair-faced concrete panelling on the north and south elevations. A continuous expansion joint is provided at the junctions of the two main blocks of the building, and the main service duct is located in the same position, carrying all plumbing, heating, ventilation, electrical and telephone services, together with the boiler flues. The internal partitions are of $2\frac{5}{8}$ in. building board, with hardboard facing giving an estimated sound reduction factor of 40 decibels. Heating is by aluminium ceiling panels, except within the basement service areas, where heating coils and radiators are used. The suspended ceilings also accommodate a fire alarm system. The external brickwork finishes are Buckinghamshire mixed greys, with brindle facings from the basement to the ground floor; Leicestershire sandstock bricks are used in the panel on the west elevation. All external paint surfaces are finished in two tones of grey and white. The internal floor finishes are as follows: travertine to the entrance and stairs, terrazzo to the lavatories, linoleum in the offices and corridors, wood blocks in the directors' suite and conference room, and buff quarry tiles in the kitchen.

Office building at Clarendon Road, Watford. 5, from the south-east and, 6, from the south-west.

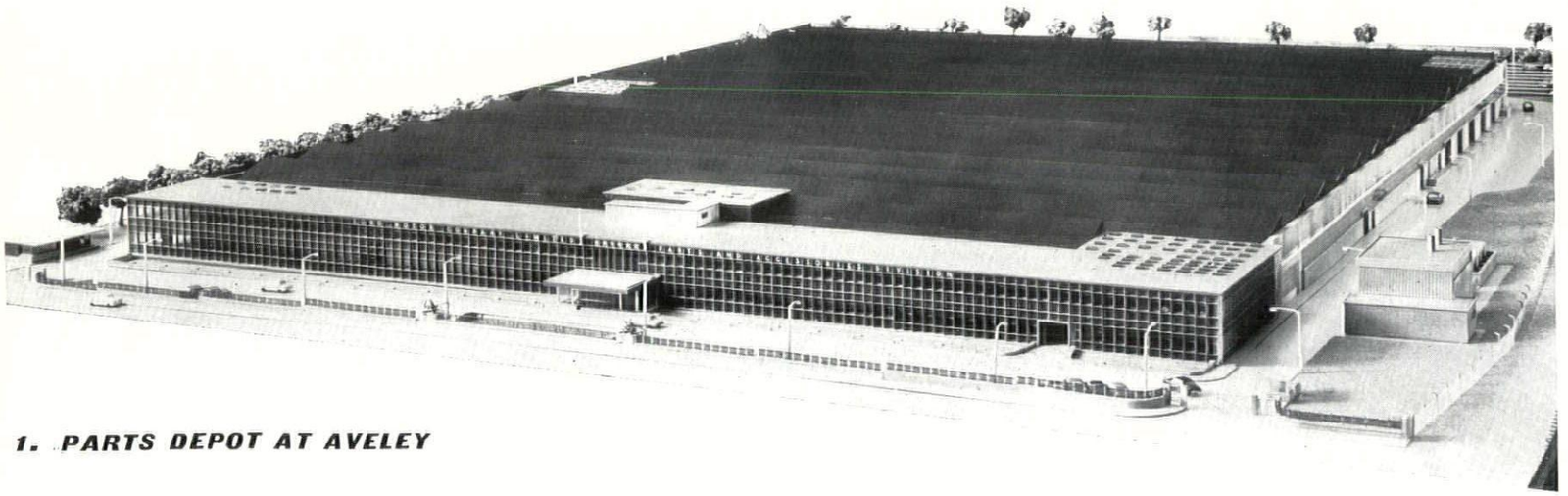
5


6

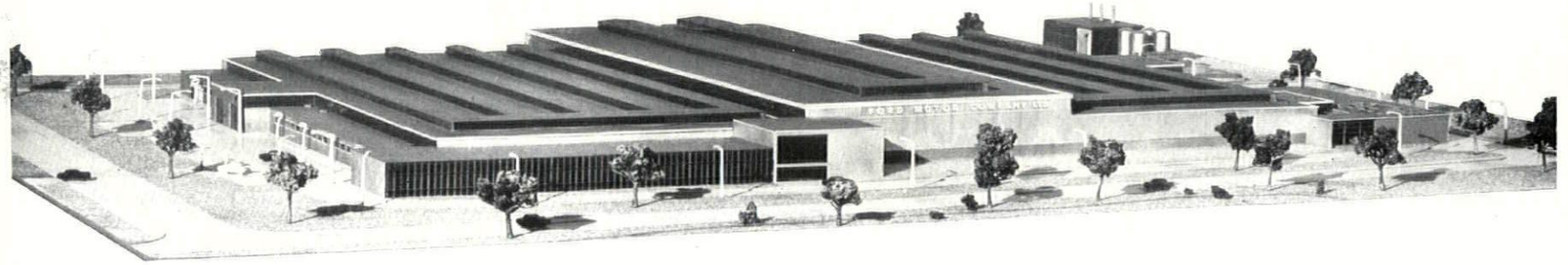
The work of E. R. Collister and Associates for Ford Motor Company signals the first clear emergence in England of one of architecture's patterns for survival after the second industrial revolution. Design for flexible use and maximum performance in this case depends on: 1) complete integration of specialist consultants into the office team, so that the service offered to clients is truly comprehensive, 2) fusion of the project-team with the client's organization during the whole design-programme, and 3) fundamental research on the structural consequences of the client's requirements. The aim of the comprehensive service provided inside the architects' office and their intimate co-operation with Ford experts from Detroit has been to create architecture which fits the client's need like a glove, producing a close relationship between form and function which conveys its own æsthetic satisfactions.



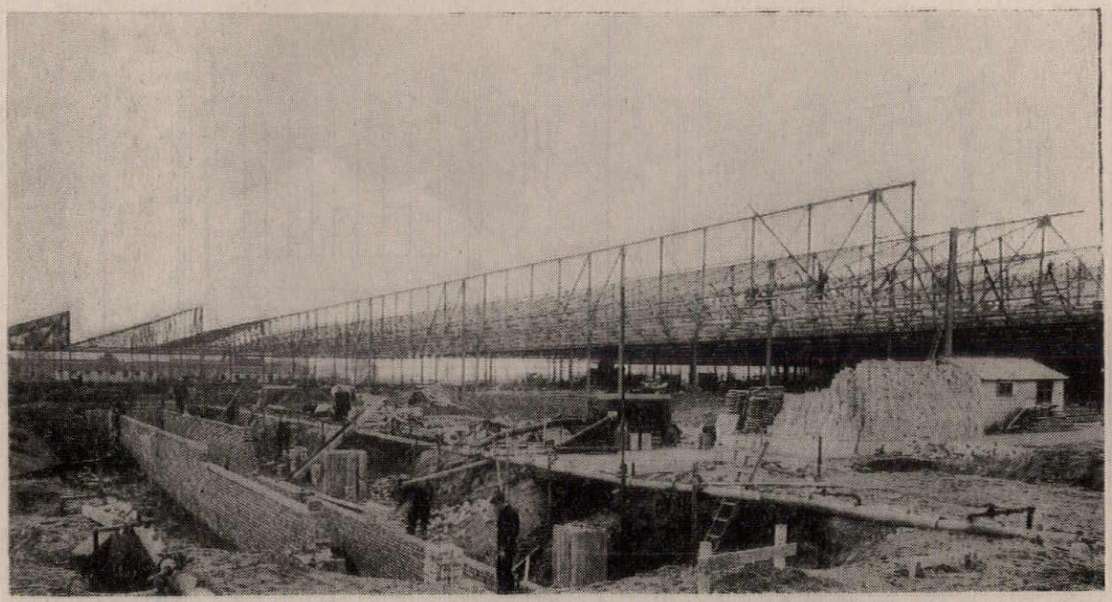
Above, sketch of the entrance and foyer to the Parts Depot at Aveley.



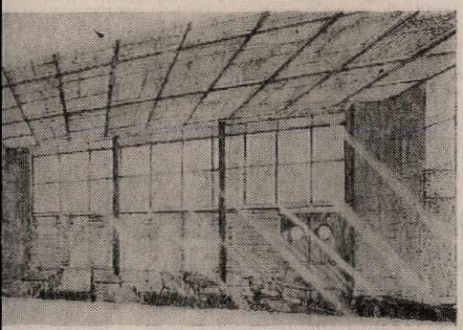
1. PARTS DEPOT AT AVELEY



2. MANUFACTURING PLANT AT BASILDON



Progress on the depot at Aveley, photographed on March 1 this year. In the foreground is the crawlway which will pass underground from the boiler house to the main building. Use of the 'well point' system enabled work below ground level to be carried out in the dry.



The Works Canteen.

TWO MOTOR-CAR FACTORIES

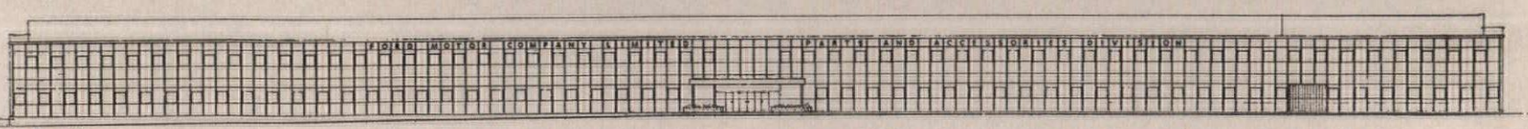
ARCHITECTS | **E. R. COLLISTER AND ASSOCIATES**

1. PARTS DEPOT AT AVELEY

This project was designed to achieve maximum use of the site with as few auxiliary buildings as possible. Nearly 350,000 square feet are devoted to storage area, formed by 16 bays 43 feet by 525 feet. The frame is steel, with lattice girders spanning 75 feet, forming the north light, and trusses 43 feet long are spaced at 12 feet 6 inches centres. The height from the floor to the underside of the truss is 18 feet. On the south side of the storage area is a two-storey office building 54 feet by 525 feet. The depot area has been planned as openly as possible, the only permanent features being the loading and unloading bays, the towveyor and the electrical sub-station. The loading bays are constructed 4 feet below the depot floor level and each of the 10 bays will accommodate two trucks and trailers standing side by side. Special hydraulic flaps or 'dock levellers' are fitted at the back of each bay so that mobile motorized handling gear can be run on to the trucks, the levellers taking up any variations in levels. Over each set of loading bays are cranes which travel in two directions. The towveyor is a continuous chain set in the depot floor, and small trucks are coupled to it by a quick-action towbar dropped from a truck through the continuous channel in the floor, to engage with a link in the chain.

Some areas of brickwork are allowed for, in order to give contrasting texture and colour, and this has been achieved by building the lower portion of the perimeter walls on the east and west sides in facing brickwork, generally 8 feet 3 inches in height, from pavement level to the underside of the continuous metal windows. The brick walls have an inner skin of 4¼ inches thick blocks treated fairface. There is a 2 inch cavity between the facing bricks and the inner block wall which are tied across the cavity with twisted wall ties. Immediately above the brickwork are 9 feet 4 inches of glazed metal windows and above this 12 feet 6 inches of pressed aluminium sheet cladding from the head of the metal windows to the walkway, and above the walkway to form a parapet wall. These panels are delivered complete and fixed to cladding rails which are part of the steel framework.

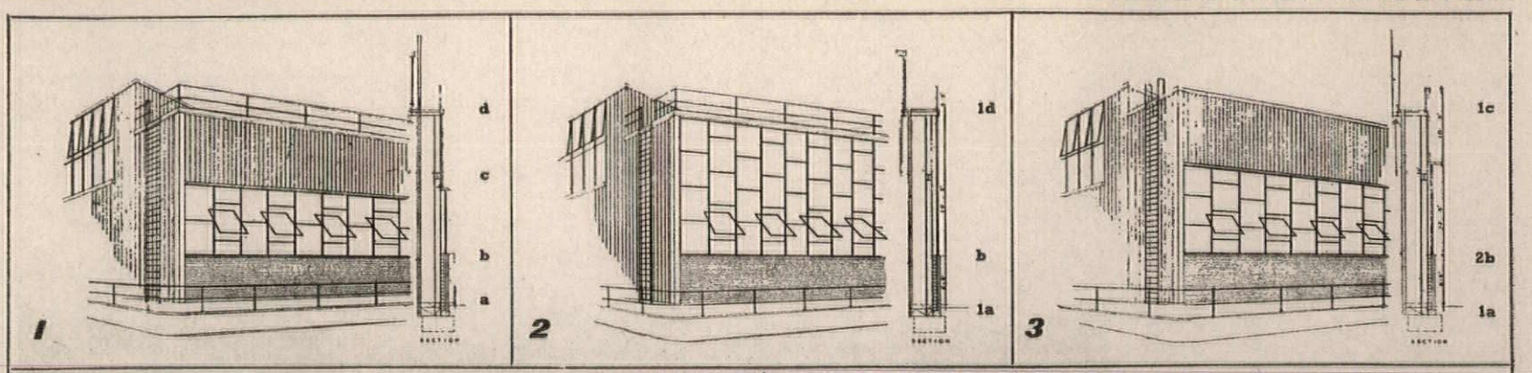
As a northward extension is contemplated for the future, the north wall below the patent glazing is clad with pressed aluminium and rolled pressed metal sheeting, both of which can easily be removed and



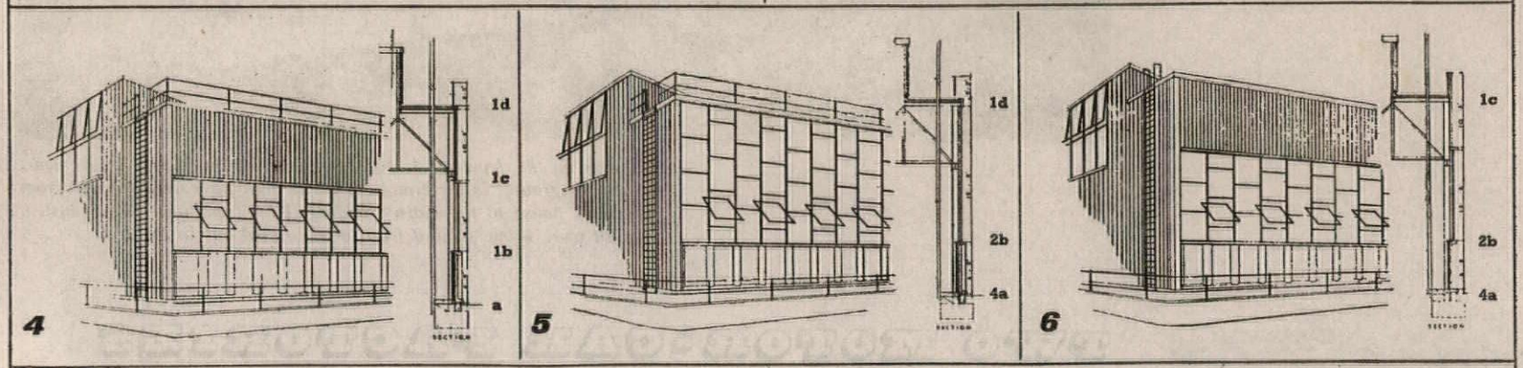
South elevation.

alternative walling treatments for main stores, Parts Depot, Aveley.

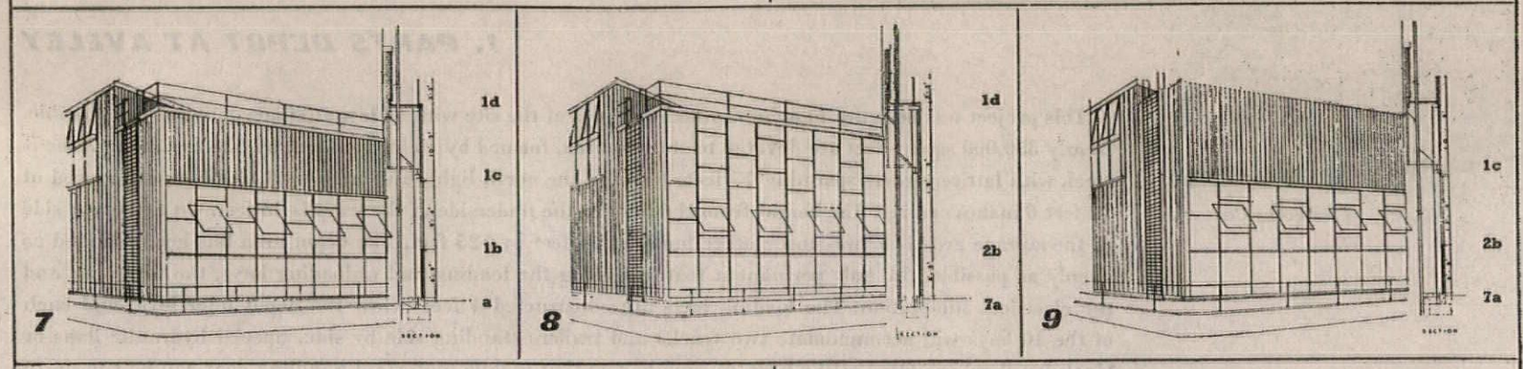
Elements which are repeated in successive diagrams are numbered by the drawing in which they first appear.



1. a, external: brick base 4½ ins. to approximately 6 ft. 9 ins. high; cavity 2 ins.; internal: 4½ in. blocks; with pressed metal cills. Total thickness: 11½ ins. b, metal window approximately 9 ft. 4 ins. high. c, pressed aluminium panel walling 10 ft. 3 ins. high above windows, with pressed metal coping at walk-way. d, 3 ft. 6 ins. high tubular metal handrailing. **2.** *a, same as* **1.** *b, glazed curtain walling 19 ft. 6 ins. high with coping at walk-way. c, as* **1.** *d.* **3.** *a, as* **1.** *b, glazed curtain walling approximately 13 ft. high. c, as* **1.** *c, with internally metal faced balustrade walling to walk-way.*



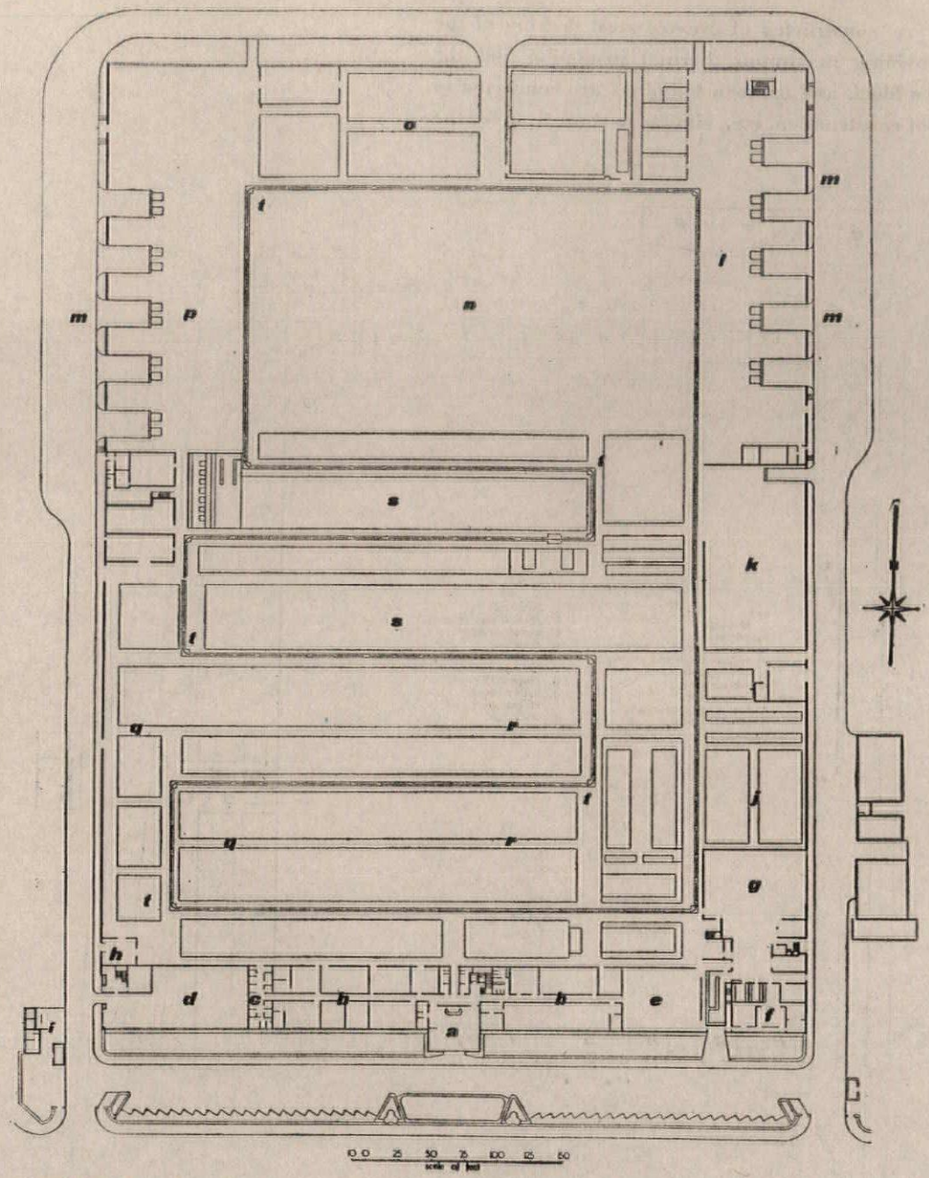
4. *a, external: pre-stressed concrete wall cladding 3 ins. thick to approximately 6 ft. 9 ins. high; 2 in. cavity; internal: 1½ in. insulation building board faced on cavity side with building paper and ¼ in. hardboard on inside face. Total thickness: 6¼ ins. Metal windows, pressed aluminium panel and handrailing as* **1.** **5.** *a, concrete cladding as* **4.** *b, curtain walling as* **2.** *c, handrailing as* **1.** **6.** *a, concrete cladding as* **4.** *Curtain walling, pressed aluminium panel and balustrade walling as* **3.**



7. *a, external: asbestos sheeting with mineral rendering to approximately 6 ft. 9 ins. high; 2 in. cavity; internal: insulation building board, as* **4.** *a. Total thickness 4½ ins. Metal windows, pressed aluminium panel and handrailing as* **1** *and* **4.** **8.** *a, asbestos sheeting and building board as* **7.** *b, curtain walling as* **2** *and* **5.** *Handrailing as* **1.** **9.** *a, asbestos sheeting and building board as* **7.** *b, metal windows as* **1.** *c, pressed aluminium panel as* **3.** *A further alternative consisted of glazed curtain walling for the full height with top coping and handrailing.*

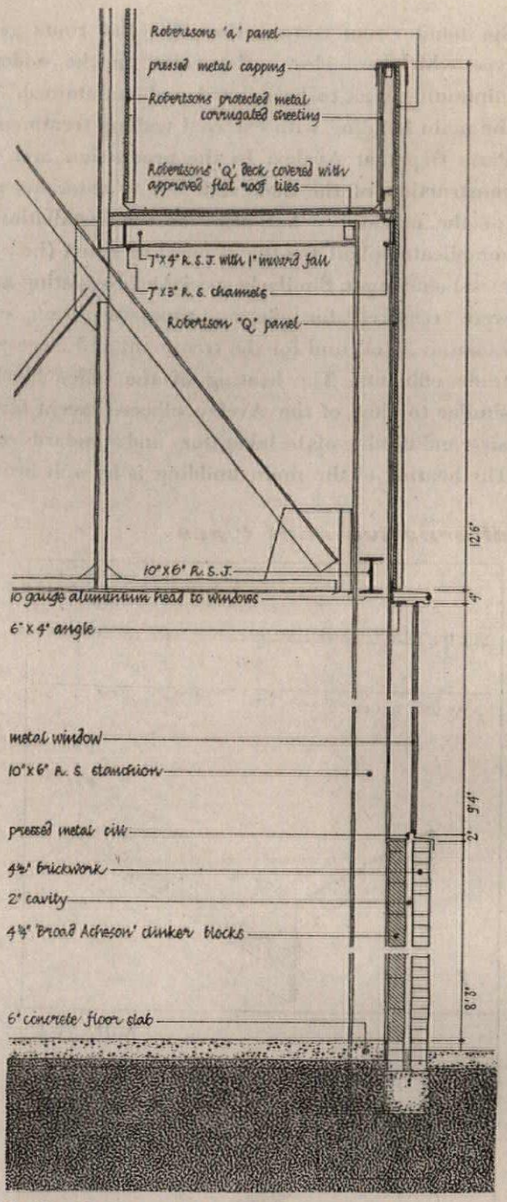
The type finally selected was as follows: Lower walling, 4½ in. facing bricks externally to 8 ft. above finished floor level, with 4¼ in. cellular clinker blocks internally. Metal windows 9 ft. 4 ins. high (universal section) with pressed metal cills and heads, and pressed aluminium panel walling to 12 ft. 6 ins. above windows, also to form balustrade wall to walkway. Reasons: (1) although dry construction was considered desirable, brick was used as Essex is a 'brick county' and to provide variety of texture and colour; (2) the building is completely surrounded with service roads, and brick outside and blocks inside were thought most resistant to corrosion, bumping, scoring, etc.; (3) thermal insulation value was reasonably good and the curtain walling above the base would in any case have counteracted a cladding of better thermal insulation value; (4) the slightly higher cost of brick is balanced by lower maintenance costs.

re-erected with minimum wastage. The office building is directly connected to the depot. The first floor and the roof are constructed from pressed steel flooring and decking respectively. These again provide for rapid construction, and, in the case of the flooring, maximum flexibility for electric and telephone cables. The external walls of the office block are constructed of curtain walling on a 4 feet 6 inches module using dark blue rough cast glass infill panels. Most of the office partitioning is of standard steel construction to allow for easy alteration in layout. Permanent partitions are formed by load-bearing blocks treated to suit the decorative requirements. Heating of the depot is by 41 oil-fired heaters, fixed in the roof space, with deflectors. The office building is heated by skirting units with a tempered air and exhaust ventilating plant.



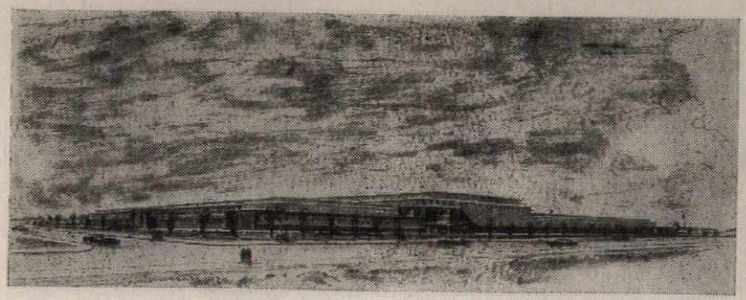
ground plan of Parts Depot, Aveley.

key
a, entrance hall and exhibition space
b, offices, lecturing, stores, etc.
c, medical.
d, garage.
e, dining room.
f, private dining rooms.
g, works canteen and servery.
h, works entrance.
i, search lodge.
j, carton store.
k, casemaking.
l, receiving.
m, loading docks.
n, sheet metal.
o, inactive stock.
p, shipping.
q, slow moving.
r, fast moving.
s, packing.
t, towveyor.



Section through end of northlight and walkway.

2. MANUFACTURING PLANT AT BASILDON

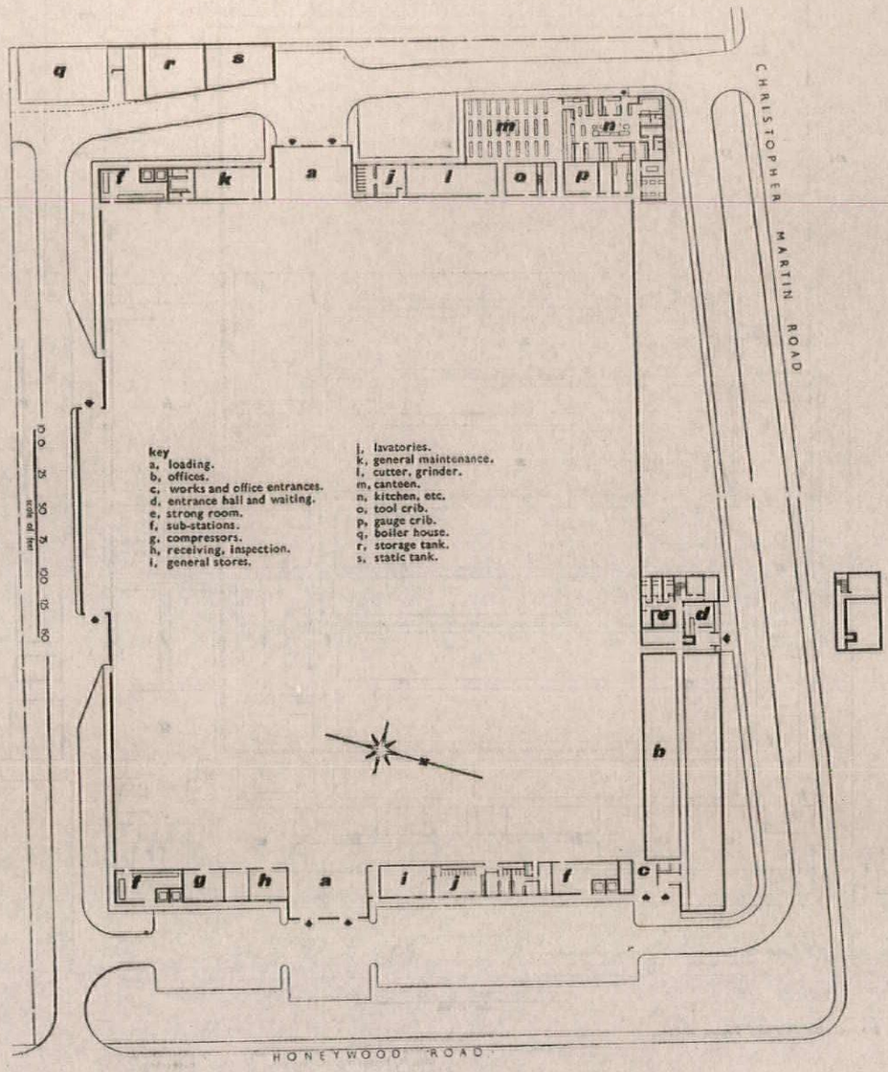


North-east corner of factory from Christopher Martin Road.

This production plant has been designed to achieve the maximum use of the site with provision for future extension. In planning, consideration has been given to all the manufacturing problems of the clients, from the delivery of raw materials through to the despatch of the finished component parts.

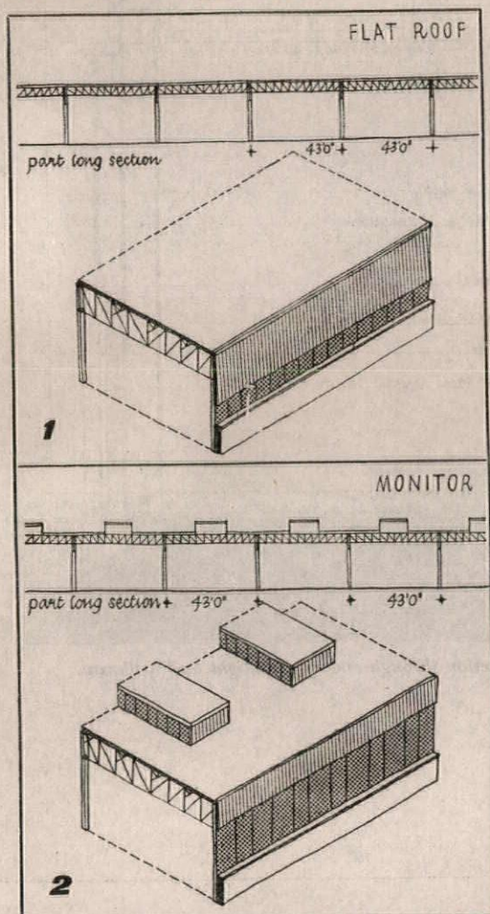
In the centre of the production area are two bays 80 feet wide running from north to south which are 27 feet high from finished floor level to the underside of the lattice girders. These 80 foot bays are served by overhead travelling cranes supplying raw materials from the storage area at one end to automatic machines below. On either side of them the roof level is dropped to reduce the height from the floor level to the underside of the lattice girders. Natural light and ventilation to both the high bays in the centre and the lower areas on either side is obtained by means of glazed upstands in

the monitor roof construction. The flat roofs generally are constructed of pressed steel decking of the type which provides a flat soffit on the underside providing maximum thermal insulation and the minimum areas to be painted and maintained. The office block and canteen buildings are connected to the main building with external walling treatment and roof construction, etc., similar to those used for the Parts Depot at Aveley. In the production area the construction of the floor slab has to cater not only for the machinery but also for the installation of complicated plant for the disposal of swarf (i.e., oily metal shavings). Similarly special acid-resisting areas were required for plating processes (hub caps, radiators, etc.) and for the treatment and disposal of trade effluents. The heating of the office block is similar to that of the Aveley offices, except for the air-conditioning of the laboratory and standards room. The heating of the main building is by unit heaters.

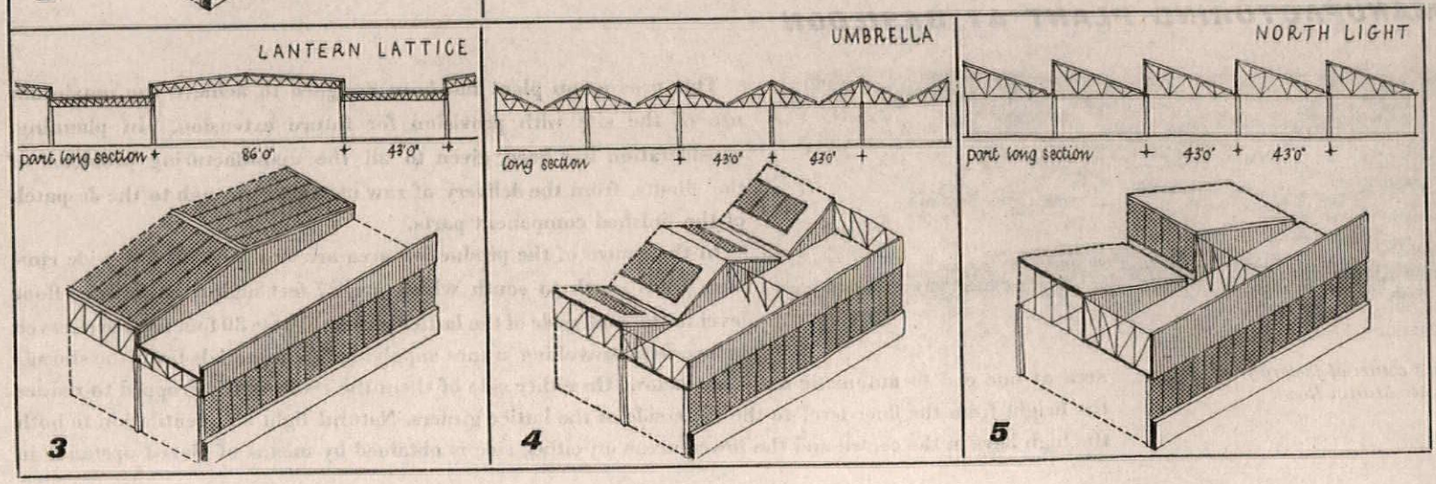


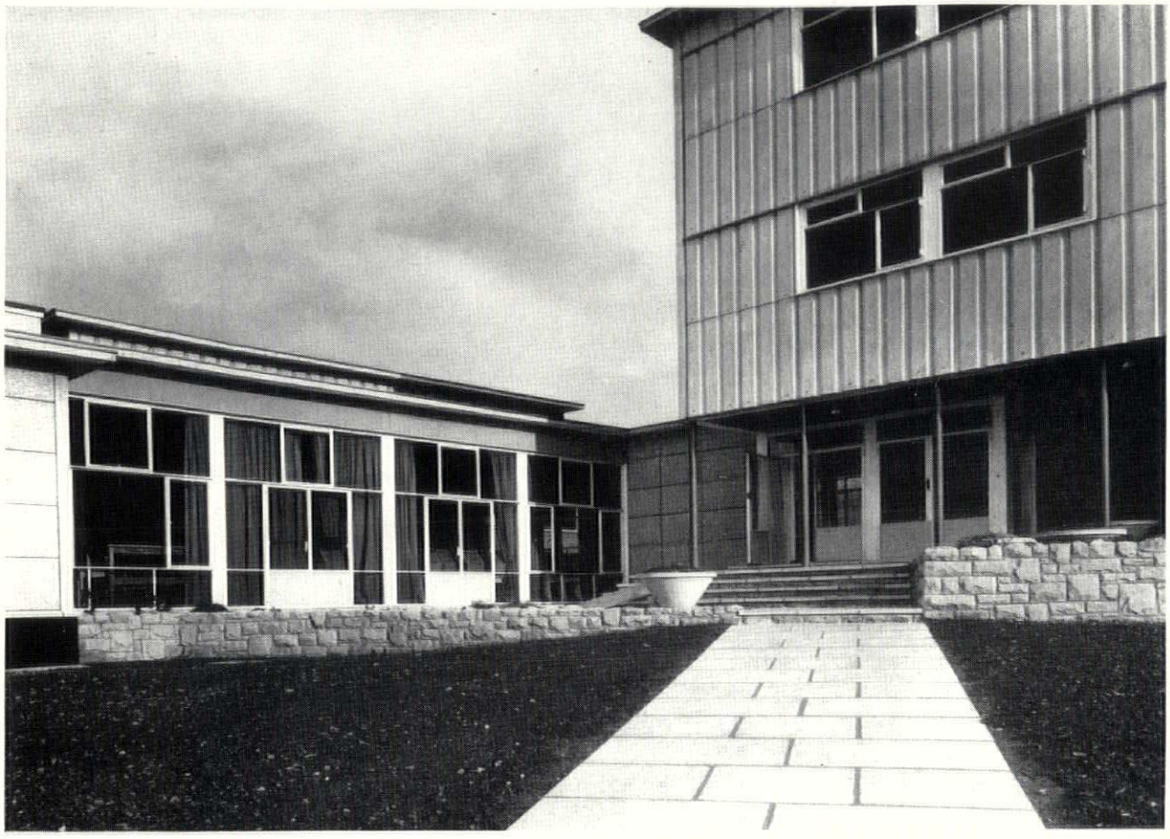
ground plan of Manufacturing Plant at Basildon.

alternative roof types

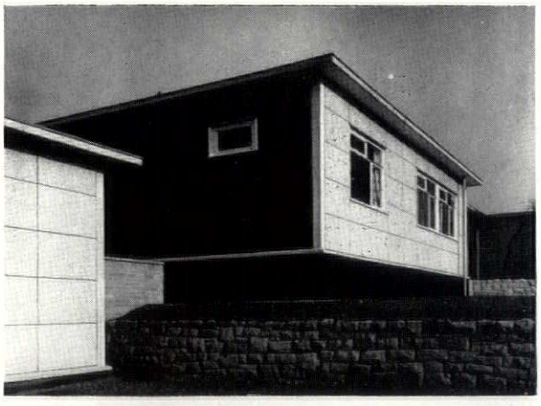


Of the five alternatives shown here, the northlight (5, below) was chosen for Aveley. Although structurally not the most economical, it will give the best light distribution and is the most suitable for various services. For example, 41 2½-ton independently oil-fired heaters are to be housed in the roof, half of which will distribute fresh air in the summer. It enables the erection of internal walk-ways for watchmen and heater-servicing. At Basildon, monitors are being used, the deciding factor here being that two 50-ton travelling cranes will run right through the 80-ft. wide bays running north to south.





1, main entrance to the school: dining part of assembly hall on the left. The retaining walls are local limestone.
2, kitchen and part of boiler house from the west: the side wall of the kitchen is painted dark green.
3, covered way between main school and practical block. 1



2

3

SCHOOL AT BELPER, DERBYSHIRE.

ARCHITECT: M.O.E. DEVELOPMENT GROUP,
in collaboration with F. HAMER CROSSLEY, County Architect

This is the fourth in the series of research schools completed by the Ministry of Education. The structural experiment was the use of a new frame on a 40-inch grid manufactured from cold-rolled sections of light gauge steel, and the educational problems were threefold: the school had to be run either on a house basis (5 × 90 pupils) or a form basis (15 × 30 pupils); the stage area had to be capable of being used as a music room, and a target of 70 square feet per place (instead of the 1952 average of 75 square feet per place) had to be achieved without reducing the teaching space. The site is near Bargate Road on the hillside east of Belper and has a slope of 1-in-10. Existing hedgerows have been retained on the north and south sides: two of the four hedgerow oak trees are now isolated, one being used as a central focus to the entrance court.

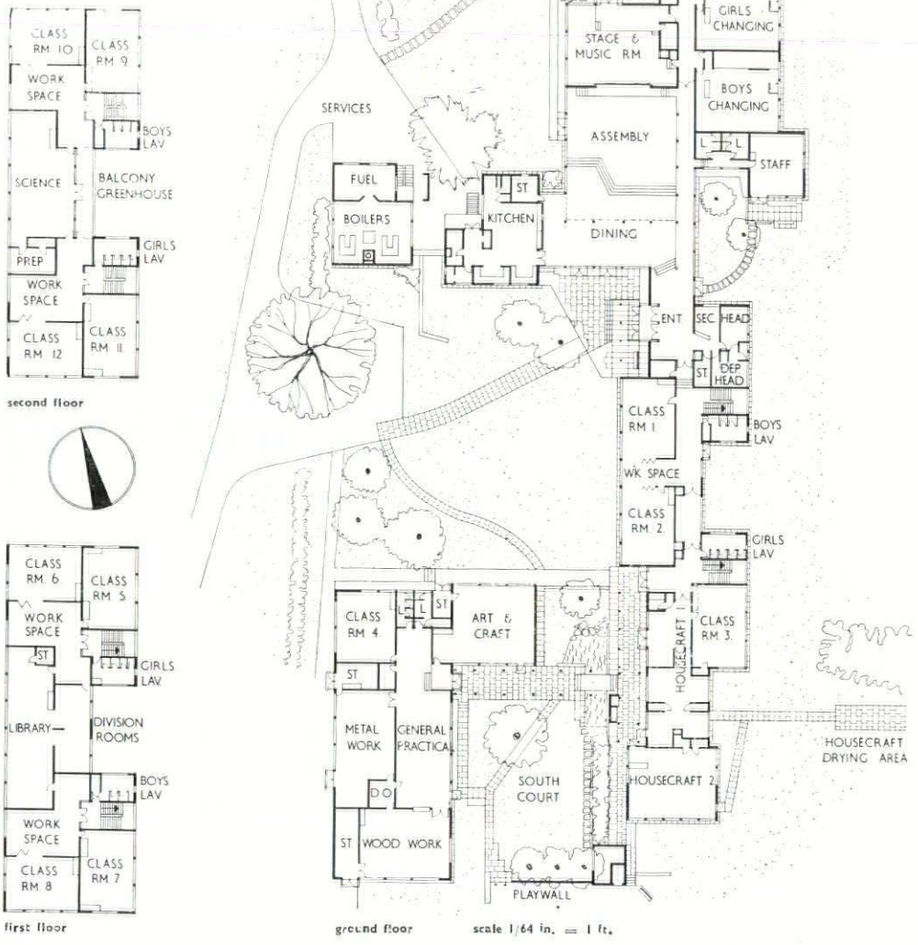
The main blocks run parallel to the contours, with circulation space cut to a minimum by grouping associated rooms around entrances and staircases. Kitchen and boiler house step down the contours on heavy black podia; the practical block is linked to the main school by a covered way, and the south end is closed by a brick play wall to produce a court. The frame is made in two sizes—to span up to nine modules with 8–12-foot rooms, and to span 12–15 modules with up to 18-foot high rooms. The smallest possible stanchion was used, 4½ inches square, so that it could be contained between the two wall skins for fire protection. The frame was then developed as a series of independent 'table tops' supported by stanchion 'legs' at selected points. The main beams carry loads from one direction only and are fixed to the sides of the stanchion both on the perimeter and internally. Stanchions do not have to line up across the buildings, but can slide in either direction on the 40-inch module, and spacings can be varied to suit window and door openings. Two types of cladding were used—concrete slabs on the

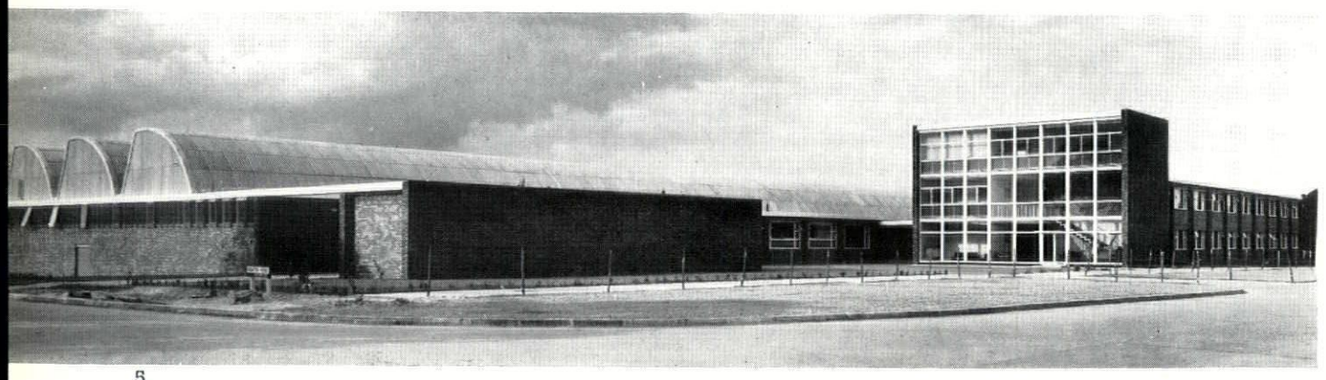
4, general view from south-west; practical block in foreground.

School at Belper

ground floor and lighter asbestos cement sheeting above, which proved just as efficient as a weather-proofer and required fewer fixing rails.

Inside, the assembly hall complex serves a variety of purposes—morning assembly, dining room and simultaneous teaching in music room and assembly hall: the ceiling is precast 40-inch square fibrous plaster panels suspended by softwood bearers wadded to the beams. The staircases are a follow-on from the general structure; the slung beams are factory welded cold-rolled steel, and arrive on the site with the balusters already attached. They span from landing to landing and carry precast concrete tread and riser units.





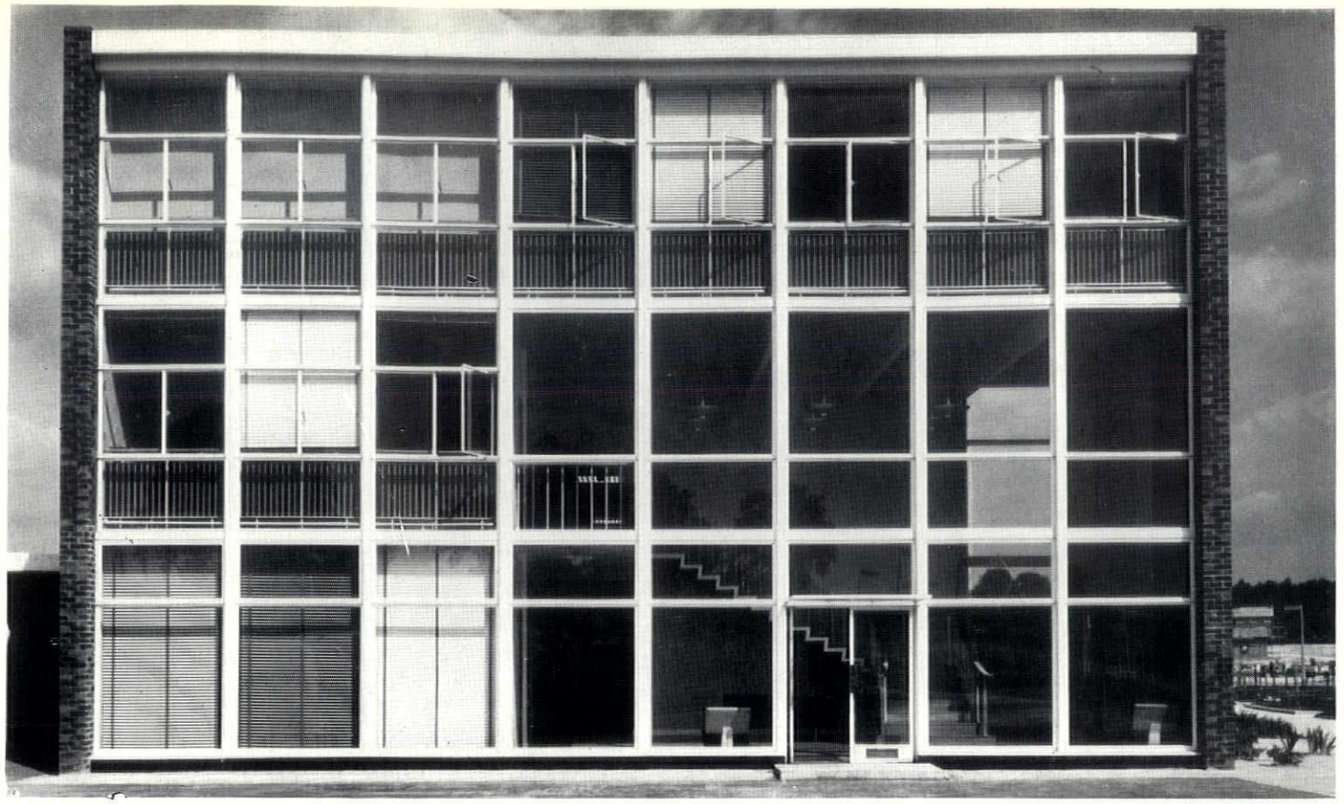
5

5, the factory from the south-west: main workshop on left with lavatories and locker rooms in front, administration buildings beyond entrance tower on right.

FACTORY AT CRAWLEY NEW TOWN

ARCHITECTS: J. M. AUSTIN-SMITH AND PARTNERS

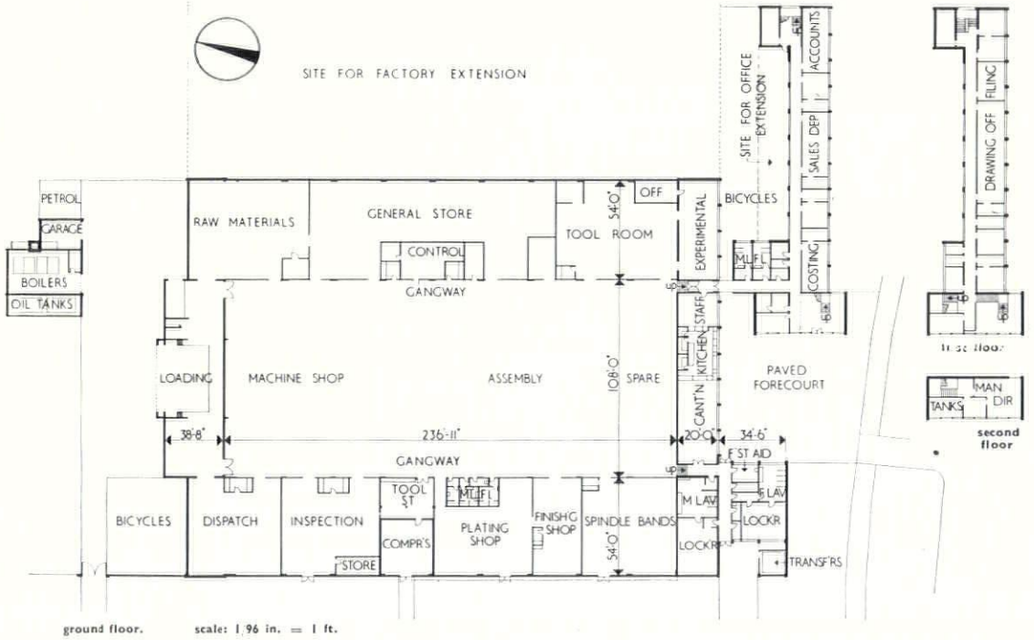
The factory manufacturing rubber anti-vibration mountings fronts Manor Royal on the New Town industrial estate; the offices and the factory are united only by a corridor and can be extended independently. The offices are two storey, with a three-storey tower at the west end containing a two-storey entrance hall and, on the top floor,



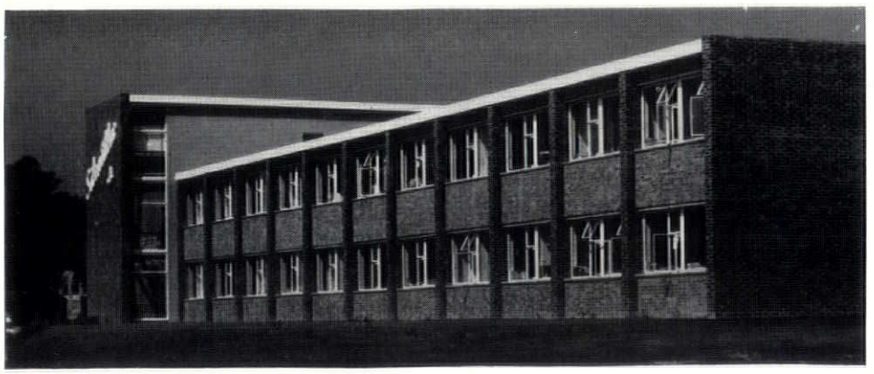
6

Factory at Crawley New Town

6, three storey entrance tower with welded steel frame of box stanchions and horizontal channels. 7, administration block from the east, with rendered rear wall of tower beyond.



the managing director's suite and water storage tanks on special mountings provided by the client to reduce noise transmission. The tower has an exposed welded steel frame with metal windows secured directly to it: the administration block is constructed of precast edge beams spanning between the brick piers and carrying the lighter-coloured infilling bricks. The factory has built up R.S.J. columns and loadbearing brickwork, faced with non-loadbearing brick except on the east side, which is asbestos cement sheeting to make future enlargement easier. The northlight roof is carried by prismoidal steel shells clad with asbestos cement sheeting which have greater rigidity than flat sheets: at each side of the central span the shells are supported on welded portal frames and built-up stanchions. They are completely free of cross ties so that a travelling crane can be used along each bay.



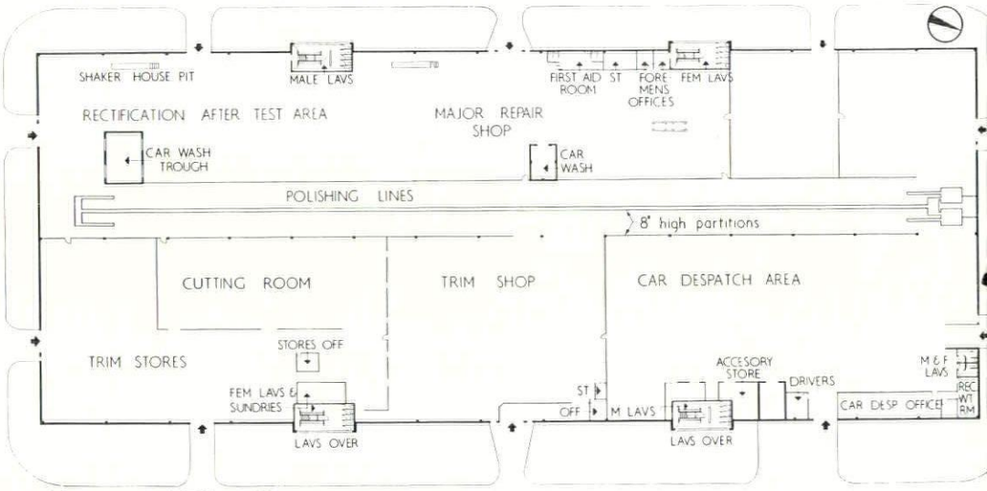
7

8, *one of the high level lavatory blocks on the west side.*

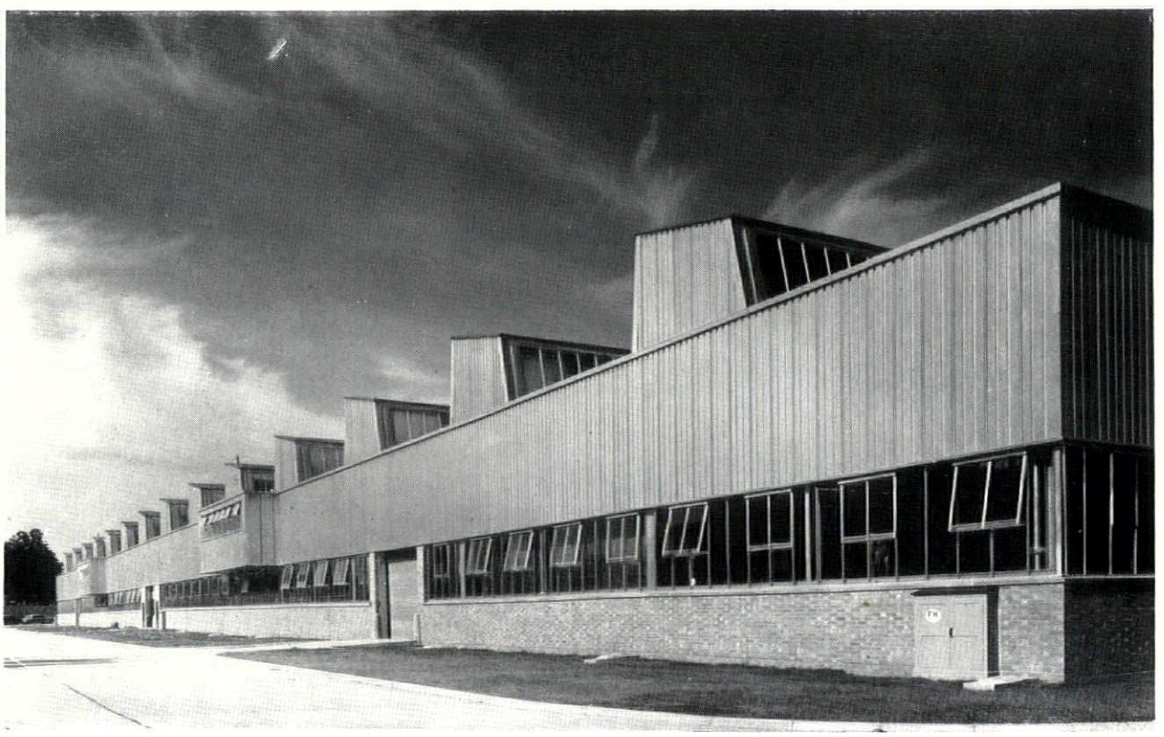
FACTORY AT SOLIHULL, WARWICKS.

ARCHITECTS, HASKER AND HALL

This is the first of a series of workshop units being built to extend the Rover works at Lode Lane, Solihull. It is a single storey monitor-lit workshop, 19 feet high to the roof trusses, with four high-level lavatory blocks cantilevered out from the walls in pairs on the long sides. The workshop is built of steel framed bays 100 feet long spanned by lattice beams set above the roof level to form one side of the monitor roof lights. The external walls are 9-inch non-loadbearing brickwork up to 4 feet 6 inches and aluminium patent glazing and corrugated sheeting above. The roof is aluminium decking covered with insulation board and mineralized felt with a gravel finish: the foundations are mass concrete with r.c. ground beams.



ground floor. scale 1/96 in. = 1 ft.



9, *west façade: glazing and aluminium cladding above* 9 *in. brickwork.*

EXHIBITIONS

PAINTING

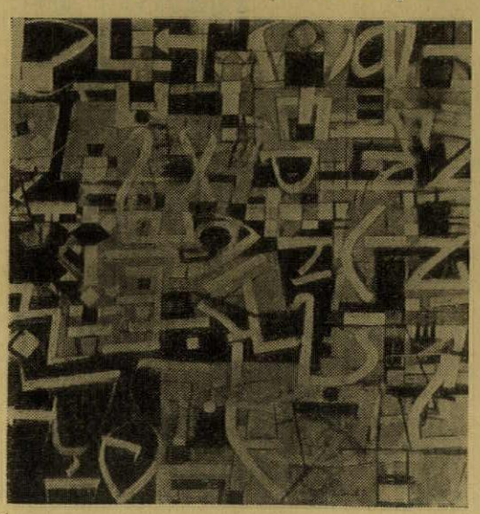
I was shocked by the smug assurance with which English critics 'dismissed' the most mature and civilized paintings in the Tate Gallery exhibition of 'Modern Art in the United States.'

It is insulting and insensitive to go on praising American realism (so delightfully crude and vital, but quite unexportable, of course, with all that loneliness and old fashioned radicalism!) and at the same time treat the work of Tobey, Pollock, Still, Rothko and Guston, which brilliantly exemplifies a new kind of painting, as a brash and uncouth reflection of European abstraction. It is an alien art, and I think I could understand any kind of resistance to it that was not based on the assumption of European superiority.

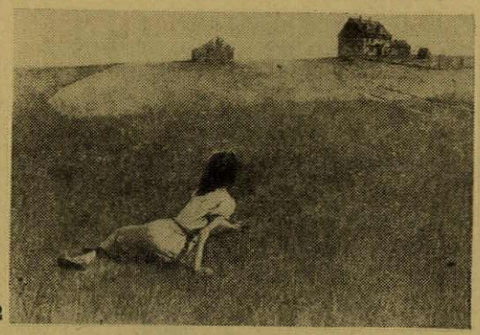
But to be inconsequential for a moment, and make a generalization that positively reeks of smugness, my impression is that America has no great figurative painters, for I must confess that the only closed forms in American art that give me any satisfaction are the animals and nudes of the self-taught painter Morris Hirshfield. His 'Tiger' in the Tate exhibition was splendidly and impulsively heraldic, but in an early, tentative work by Pollock the large outline drawing of a she-wolf, half hidden under paint that seemed to have nothing to do with it, was neat, lifeless and conventional, and the toothy image of a woman that grins through de Kooning's beautifully manipulated paint turns him into a facetious Soutine.

The painters whose work is removing American art from the European orbit seem to me to share only one concept with their contemporaries on this side. That is to say, they think of the canvas not only as a physical support but as an impenetrable plane, but in their case this acknowledgement of the flat reality of the canvas goes hand in hand with an attitude to the act of painting that is dictated by the physical fact that paint operates as a coating. It is out of a positive delight in coating a canvas that they have evolved an art of 'activated' surfaces free from figurative interruptions.

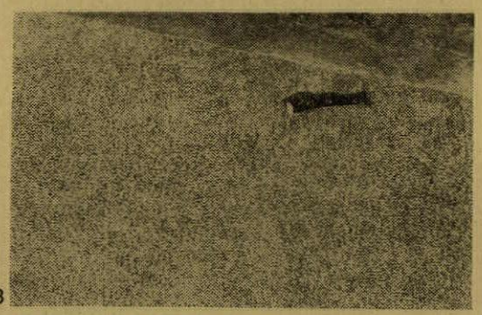
Adherence to this double concept has its discursive side. Loren Maciver, for instance, paints a contour-map-view of a bit of sidewalk, with the tarmac worn into holes and chalked with a hopscotch bed, and Tomlin's uncentred, extendable, shallow-space abstract, 1, with its fragmented white letters hovering over a geometrical ground, seems to derive from a façade with projecting signs. There are also artists who



1

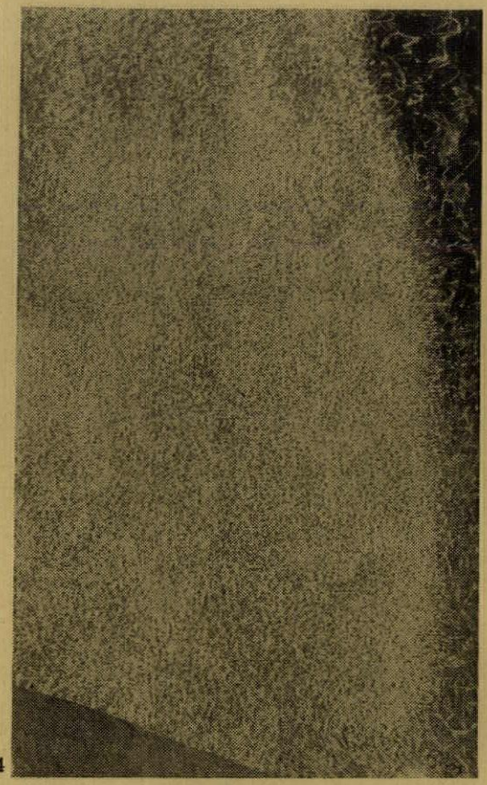


2



3

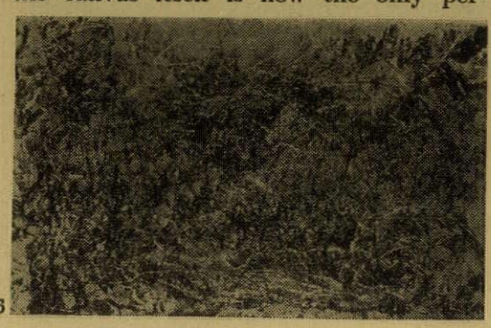
unconsciously side with this view of painting. Wyeth's crippled Christina, 2, whose loneliness has captured all but the stony-hearted, is a kind of pathological excrescence on the face of the cornfield. No one would claim that the girl is an outstanding contribution to the art of delineating the figure, and it is the living coat of wheat flowing across the canvas in a million fine brush strokes that gives the picture its strange distinction. Likewise, Ben Shahn's vision of a great sheet of pebbles, in 'Pacific Landscape, 1945,' 3, is not liberalized by the dead body. He has tried to side-track his vision into something resembling the last fade-out in a war film, but the picture intends us to be intoxicated by its delirium of multiplication.



4

It was, I think, Mark Tobey who first perceived that these visions of close-knit minutiæ were diminished by humanistic interpolations. He used to paint pictures containing hundreds of little human figures like pebbles on a beach, and in his 'Edge of August,' 4, a tight-packed swarm of tiny, light-edged ideographs makes an exquisite pelt for his masonite panel, and he lets this pelt 'slip' a little, to show a margin of naked panel. 'Edge of August' was the object-lesson and pivot of the exhibition. Tobey is, of course, far more the æsthete than Shahn or Wyeth—preoccupied by story-telling—are ever likely to be, but one feels that he understands their essential vision better than they do themselves, and he makes us see that the edge of sky in one picture and the edge of sea in the other are thin illusionist stand-ins for his margin of uncovered panel.

In the work of those who have reaped the benefit of his 'purism' one finds an edge of naked canvas again and again, for the canvas itself is now the only per-



5

missible background. These younger men work on a larger scale, their paint surface is less dense, more luminous, rippled by stranger winds, and in the lyrical art of Pollock, 5, Rothko, Still and Guston it is always a 'splendid and convulsive mantle.'

Ambitious attempts to understand and absorb this new kind of painting are being made in every art-centre in Western Europe, but it isn't easy for a culture that is worried about its chances of survival to approach an art of such vitality without becoming over-demonstrative. Magda Cordell, whose work has just been exhibited at the Hanover Gallery, is making a thoroughgoing effort to find her bearings in these magnetic fields, and is as fumblingly and compulsively 'dedicated' as those Americans who changed their style

6

after the 1913 Armory Show. Her painting is forceful and she is obviously at ease in front of a large canvas, but she tends to romanticize and illustrate her vitality by marking the area to be painted with the outline of a blown-up nude or by arranging unnecessary explosions in outer space, 6, and thereby centering the interest in a conventional European manner.

I think that the way in which these painters have established an art of great subtlety on the basis of a matter-of-fact acceptance of paint as a covering for a bare surface is an example of American pragmatism in action. It puts the artist into an expediently democratic relationship with the car-body sprayer and the house painter without reducing the grandeur or mystery of his art. It is essentially a mural style, it claims the interest of many American architects, it has so effectively liquidated iconographical problems that it has already contributed its disengaged note of urgency or serenity to the worship of God in new American synagogues, and I feel that it is not going too far to paraphrase William James, who claimed that the truth of an idea is a process, and declare that for most Americans who still oppose it, this is an art that will be made true by events.

Robert Melville

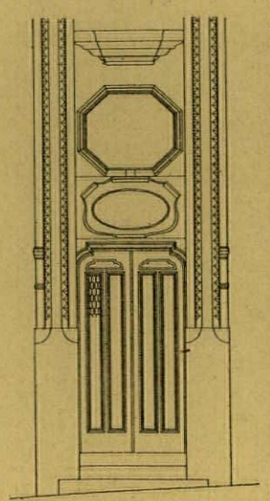
FOOTNOTE: The paintings illustrated here are all above medium size, and small reproductions cannot begin to do justice to the liveliness of their detail.

HISTORY

ORIEL CHAMBERS

The list of Victorian framed buildings that can now be seen to forecast modern architecture is steadily growing; few show such a mixture of boldness and assurance as this rediscovered pair in Liverpool by Peter Ellis. Oriel Chambers stands at the junction of Covent Garden and Water Street, Liverpool, on the site of Covent Garden Chambers which was destroyed by fire in July, 1863. The date of the building is inscribed upon the façade as 1864. It was not occupied at the time of the publication of *Gore's Liverpool Directory* in 1865, where first mention of the building appears in 1867. There was no 1866 issue. *The Builder* of November 4, 1865, describes it as a 'new office building'. The client was the Rev. Thomas Anderson, whose initials and motto 'Stand Sure' appear on the façade. The architect was Mr. Peter Ellis. In 1949, when the building was first measured, the name of the architect seemed to have been lost. However, as the result of a short article in the *Liverpool Daily Post* describing the research, a letter was received from the architect's grand-daughter revealing his identity. This was later confirmed by Mr. Paterson, the owner of 16, Cook Street, which was designed by the same architect. It was suggested that Peter Ellis was a London architect who came to Liverpool specially to design these two buildings. A check was made in *Gore's Liverpool Directory*, and it was found that Peter Ellis had practised in Liverpool at various addresses, including Oriel Chambers, from 1834 until his death*. His obituary in the *Liverpool Daily Post* of October 21, 1884, describes him as 'architect and surveyor—head for more than half a century of the leading practice, in his way of business, in Liverpool.' Although only Oriel Chambers, 1864, and 16, Cook Street, 1862, can be attributed to him at present, it is likely that further examples of his work will be discovered as a result of the revived interest in these two buildings.

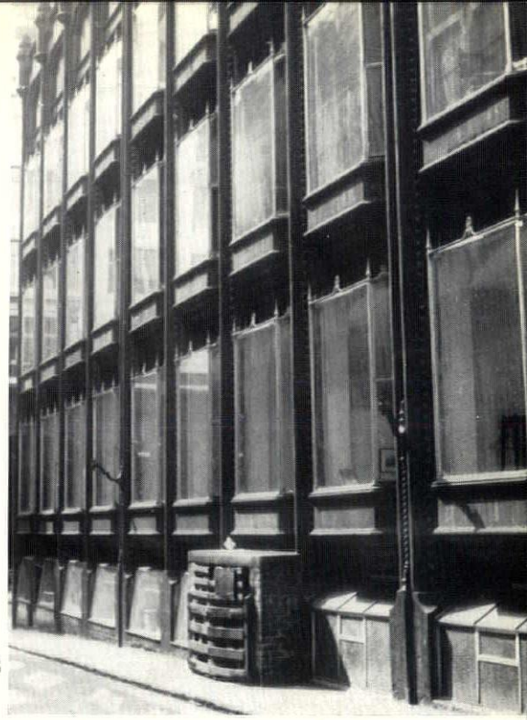
Oriel Chambers did not meet with the approval of contemporary critics. The qualities revealing, to our minds, incredible foresight on the part of the architect served to inflame the critical tongues of the day. Perhaps with a sigh of regret for the passing of such robust criticism, we read in the *Builder* of January 20, 1866: 'The plainest brick warehouse in the town is infinitely superior, as a building, to that large agglomeration of protruding plate glass bubbles in Water Street, known as Oriel Chambers. Did we not see this vast abortion—which would be depressing if it were not ludicrous—with our eyes, we should have doubted the possibilities of its existence. Where, and in what, are its beauties supposed to lie? That is the question which has troubled us in our dreams, and the more we strive to comprehend it, the further we are from the resolution of the difficulty. Could we speak in the singular number, we should exclaim with Hamlet: "Oh, my prophetic soul, my Uncle," for surely the design must have been inspired by a pawnbroker, the tastes are so similar. To show more clearly the ruling principles of composition this building is worth a little close study. The inspiring motive—the happy thought has been the word "Oriel," and truly it is a poetic word and one conveying visions of fine old gabled manses, rich in carving and corbels, but richer in the lovely covering of grey and green, mural paintings by nature, touches by the mellow hand of time. An oriel window is an inspiring object, but a row of windows, falsely so called, all bad to commence with, all exactly alike, is the reverse. Did we say a row?—we should have said a *tier* of rows—a sight to make the angels weep. If from the "bubbles" we pass our eyes to what is called the skyline, it is perhaps, if anything more execrable, from the curved copings, which in the meagrest versions of Elizabeth could not pass muster, up to the shapeless spiritless pinnacles, all is bad. It is really—if we are to be good—no use mincing matters and we sincerely hope that this building will prove unique



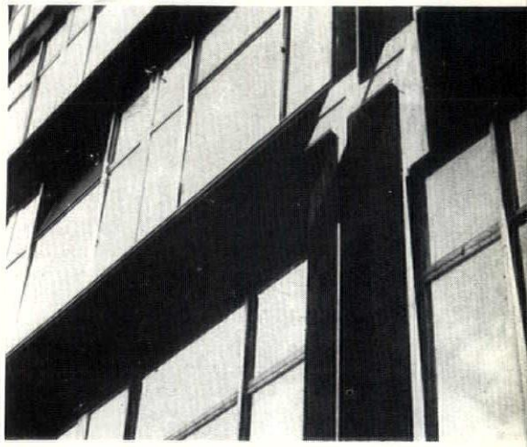
detail of the main entrance.

*Professor Hitchcock kindly communicated to the editors a letter which he had received from Mr. Peter Dovell, Perth, W. Australia, with permission to print it. It contains a list of directory entries for Peter Ellis, senior and junior. They are taken from Gore's Directory: 1810-14, Ellis, Peter, joiner and flour dealer; 1816-21, Ellis, Peter, joiner; 1824-25, Ellis, Peter, joiner and builder; 1827-29, Ellis, Peter, builder; 1832, Ellis, Peter, architect and builder; 1835, Ellis, Peter, gentleman, and Ellis, Peter, jnr., architect; 1839, Ellis, Peter, gentleman, and Ellis, Peter, junr., architect; 1841-68, Ellis, Peter, architect; 1871, Ellis, Peter, architect and civil engineer; 1872-84, Ellis, Peter, architect and civil engineer. Office, 10, Oriel Chambers; 1886, no mention of Ellis, Peter, but Ellis, Mrs. M. H.

1



2



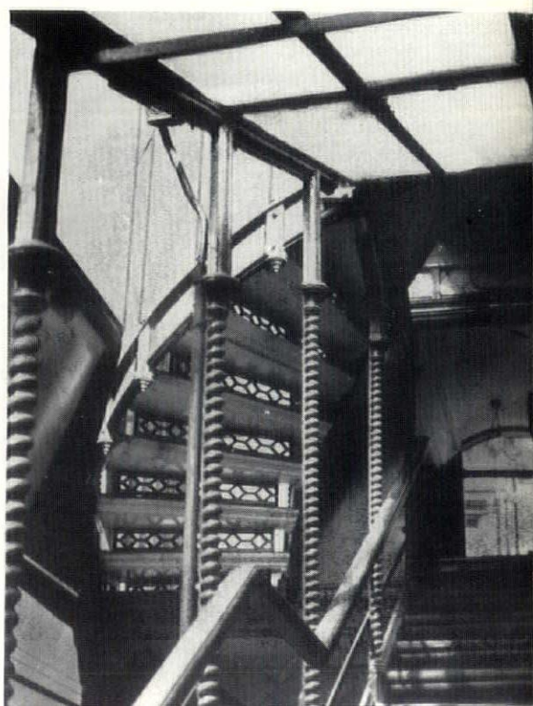
3

Oriel Chambers: 1, *Water Street elevation and main entrance: half of the return elevation in Covent Garden was destroyed in* 1941. 2, *close-up of Covent Garden front showing the degree to which each unit is an oriel.* 3. *rear elevation in Oriel Close.*

16, Cook Street: 4, *rear elevation at junction with circular staircase tower. The windows are cantilevered forward in bands as on the rear elevation of Oriel Chambers.* 5, *street elevation, and* 6, *inside the stairwell.*

4

5



6

in its way and the first and last in such a style.'

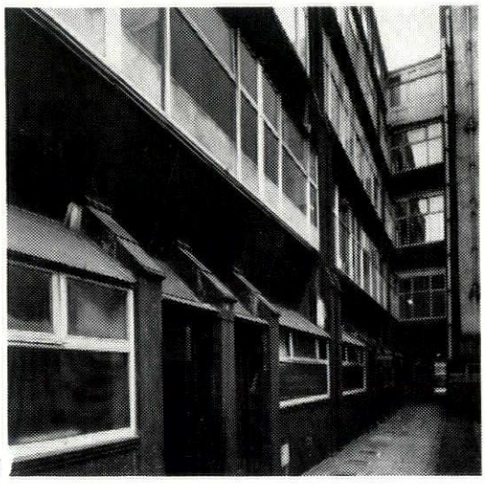
It is not surprising that the building proved unique in its way. Today one may stand under the rear elevations of Oriel Chambers and 16, Cook Street, and be forgiven for calling them the most contemporary in Liverpool. In 1921, a more restrained Professor Reilly wrote: 'The oddest building in Liverpool — Oriel Chambers. It is a sort of honeycomb of numberless plate glass oriel windows held together by a stonework skeleton frame designed to look like cast iron. One feels sure it obeys every detail of Mr. Ruskin's lamp of truth, it is at once so logical and disagreeable, but I hope it will not be destroyed for many years to come. Its humour as a cellular habitation for the human insect is a distinct asset to its town.'

In May, 1941, hopes for its preservation were nearly set at naught, the rear portions being destroyed by high explosive bombs. Further demolition was carried out in the interest of public safety, with a complete lack of sympathy for the unique character of the building. The destruction revealed a complete cast iron frame. The York stone—'cast iron'—verticals to the Covent Garden and Water Street elevations were, after all, an expression of the construction concealed behind them. Having survived almost ninety years of hostility and derision, the building, now partially in ruins, became the object of serious investigation and humble appraisal.

The construction consists of a cast iron frame with flat brick arches, the spandrels of which are filled with concrete. These arches always span parallel to the street elevations, those in Water Street serving to resist the thrusts of those in Covent Garden, aided by wrought iron ties buried in the spandrels. The vertical members are not continuous. The stanchions interlock at each floor and the building has apparently been constructed floor by floor, the partition walls acting as bracing to the stanchions until the next floor beams were placed in position and the floors completed. Lateral bracing is provided by the brick chimney cross walls seen on the plan. The construction leaves the walls free from load-bearing duties and full advantage of this has been taken by the architect in his treatment of the elevations. The main walling material is glass, always cantilevered forward, sometimes in areas of punctuation as in the oriels of the Water Street and Covent Garden façades, sometimes in horizontal areas stretching the whole length of the building as in the rear elevations of both Oriel Chambers, 7, and 16, Cook Street, 4. The repetitive effect produced by the frame has been accepted by the architect with little compromise. Stone dressings and Gothic details are sparingly used as embellishment on elevations to the main streets and as a means of emphasising the collection of loads at the columns and their distribution to the ground. The plate glass oriels, pushed forward to catch the light, produce a shimmering 'cut glass characteristic' to the main façades, but it is in his treatment of the rear elevations that the architect makes his greatest appeal to our minds. Here he has shorn the building of all extraneous ornament. At each floor level the glass is cantilevered forward, verticals are abandoned and bands of glass stretch continuously across the building. In 16, Cook Street, where they are boldly contrasted against the sweeping curves of the spiral staircase, the effect is especially fresh and exciting. The mastery and confidence shown in the treatment of these elevations make it difficult to realize that they were designed over 90 years ago and that their architect remains unrecognized and unacclaimed both by his own generation and by ours. As further evidence is accumulated, it seems likely that Peter Ellis will be acknowledged as a pioneer of the modern movement in this country.

Geoffrey Woodward

FOOTNOTE: The above article was based on research carried out in 1949 by Richard Beattie, James Mount, Neil Prendergast and the author, who measured the building and produced a short historical report when students of the Liverpool School of Architecture.

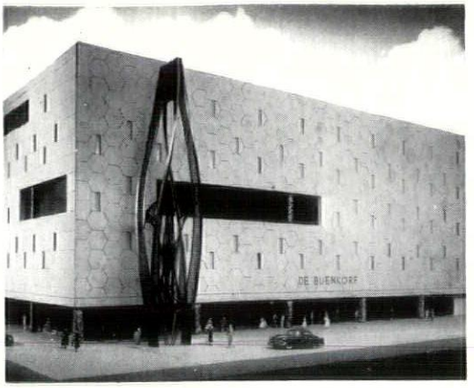


7

SCULPTURE

GABO IN ROTTERDAM

Architectural sculpture on a grand scale and in a public place is a rare privilege to come to any artist nowadays, and Naum Gabo's five-storey-high commission for Rotterdam



1

comes to him with double justification.

Not only has worked long and seriously at the concept of a constructive sculpture proper to modern architecture, but his hopes of realizing his projects have often been cheated at the last moment (see, for example, the Esso constructions, ARCHITECTURAL REVIEW, March, 1955).

This new project, however, should be completed by September, and will provide, at long last, an opportunity to judge the performance of constructivist sculpture against the claims made for it, and the hopes that many modern architects have pinned to it. In this case the commission came to Gabo at the instance of the architects of the new De Bijenkorf store (replacing Dudok's old one) Marcel Breuer and A. Elzas, and the placing of the sculpture's strong vertical accent has been carefully related to the fenestration of the long façade of their design, 1. It is structurally related also, for its heavily-stressed foundations are tied into the underpinning of the building. The two main elements rising through the pavement are to be of pre-stressed concrete faced in black marble, while the rising and twisting members of the main structure* are hollow steel ribs, and the inner structure is of bronze wire sprung over a stainless steel skeleton.

P.R.B.

* See also the cover to the March issue.

CRITICISM

LUMPS ON THE SKYLINE

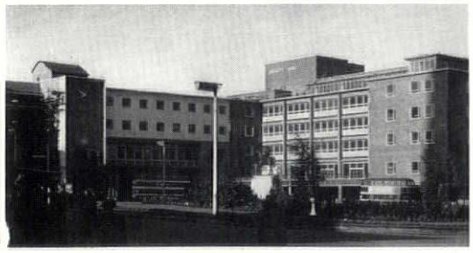
New techniques are not all gain. Of course it is wonderful for the architect to have them at his disposal, but some of them pose as many problems as they solve, and one of the tests of good modern architecture is whether the new techniques it employs have been absorbed into the current idiom

and used in a positive architectural way. If they are only being used as engineering expedients, then the architect is guilty of trying to have the use of new techniques without paying the price.

One of the technical developments which he persists in using in just this way, even though it is now many years old, is the lift. The electric lift was an invention that revolutionized city buildings, and on its use the practicability of tall offices and flats depends. Yet architects have not yet managed to integrate lifts into the design of their buildings. The difficulty is that lifts need motors, and motors are most economically housed above the top of the lift-shaft, resulting in an excrescence on the roof. Architects must have been aware of the problem for many years, but they have made surprisingly few efforts to solve it, with the result that housing for lift-motors, and other necessary objects like water-tanks, give to many elegantly detailed blocks of offices and flats an arbitrary and clumsy skyline quite out of keeping with the scale and slickness of the structures of which they should be an integral part.

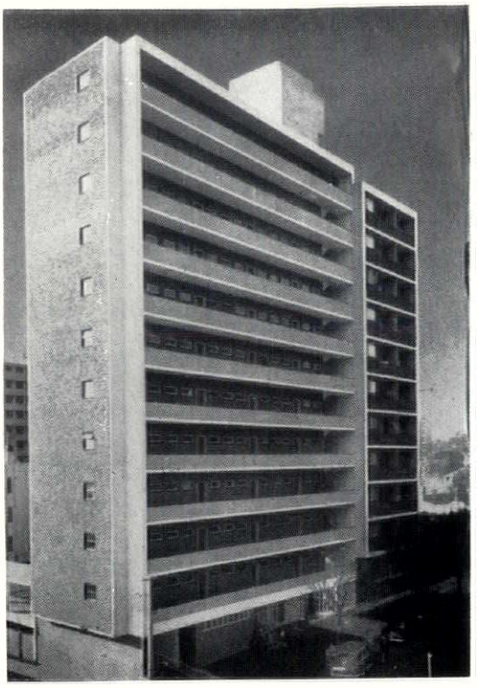
I say 'surprisingly' because it appears oddly out of proportion that architects should take so much care over many details of their design, and yet appear to accept philosophically something so obtrusive that it often brings all this care to nought. Is the reason that at the stage at

1



2

which the aesthetic properties of a design—the proportions, the refinements of detail, the scale, the silhouette—are most carefully considered, such things as lift-motors and water-tanks are not shown on the drawings and their eventual presence, therefore, not taken into account? Yet it seems hardly likely that the architects would not notice, and be perturbed by, their presence later. Is it that the fashion for making models of all projected schemes, and therefore the habit of judging their



3

effect while looking at them from above, has drawn architects' attention away from the skylines which these excrescences dominate? Yet it is difficult to believe that architects do not look with as critical an eye at the finished product as they do at the small-scale model.

Or is it a financial matter? Have architects been prevented from solving this problem by the increased pressure that is put on them by the demand for cheapness? It is true that some of the obvious methods of avoiding lumps on the roof (which I will come to later) involve a slight reduction in lettable floor-space or a slight increase in the height of a ceiling, so perhaps a clumsy and untidy skyline is simply the price we pay for driving costs down too far. Yet architects fight—and often win—battles to persuade clients to spend money on such things as better finishing materials, the preservation of trees, sculpture or a more spacious entrance-hall, which strict regard for the functional minimum would rule out at once. Why do they not seem ever to put up a fight to get excrescences taken off the roof, or to be allowed to treat them as part of the architecture of the building?

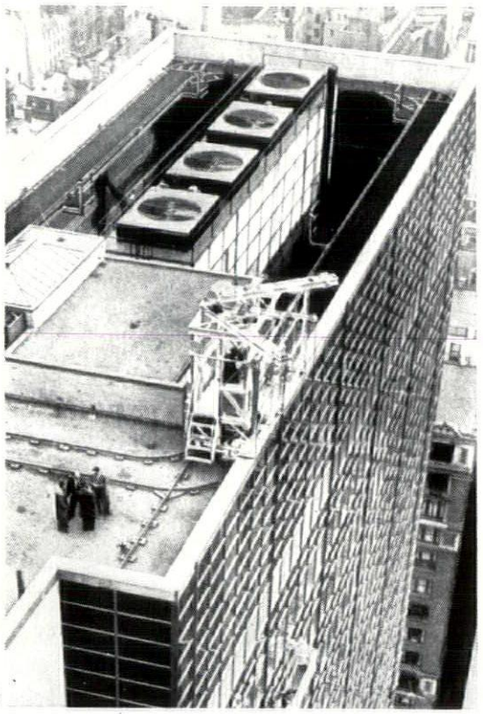
The strange thing is that this failure to design the skyline or to control what goes on it is as common in the good buildings, 1 (Istanbul) and 2 (Coventry), as in the less good. 3 (Johannesburg) is typical of hundreds like it and, to take an example nearer home, the new LCC flats on the fringe of London are acknowledged to be among the best buildings of our day, to which endless preparatory study has been given. Admirable they are—*except* for the clumsy great structures that rise above their roofs, 4, which is all the more unforgivable because it is the silhouette of these flats and the use made of them as towers on the skyline that determine their placing and proportion. No doubt the LCC, with all its resources in the way of development teams, and its opportunities of applying the lessons of one undertaking to the next, is studying this problem; but a solution has become really urgent.

As a beginning, it may be useful to summarize some of the possible ways of solving the problem and the merits and drawbacks of each. There seems to me to be five possible ways, as follows:

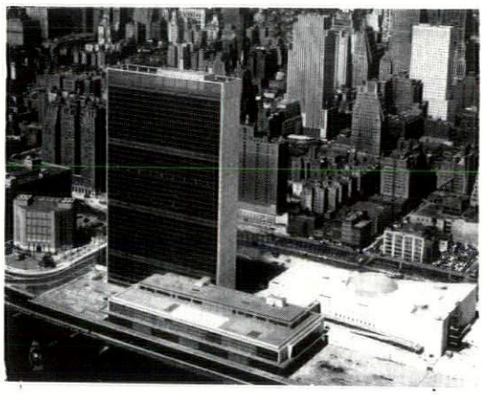
a. To avoid the need for structures on the roof by devising a lift-motor that can operate from the side or the bottom. This is in a way an evasion of the problem, since at best it means transferring the burden to other shoulders than the architect's, and this would be regrettable because in general architecture finds a useful stimulus in solving just this sort of problem. Also, it leaves the water-tank problem untouched.

b. To screen the roof-structures by carrying up the external walls for an extra storey, as was done, for

4



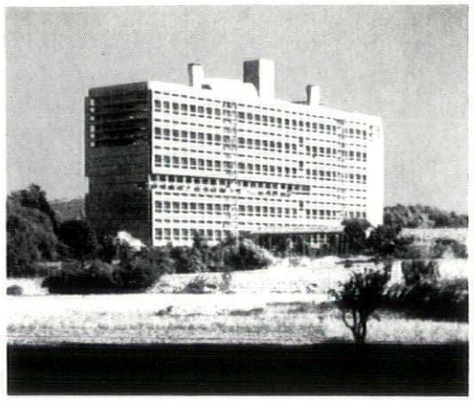
5



6

example, in the Lever building, New York, 5. Alternatively this screen wall can take the form of an open grille, as in the U.N. Secretariat, 6. This solution is no doubt costly and will not appeal to the more puritanically minded, who regard any form of camouflage as being against modern principles. It is certainly what one might call a negative, as distinct from a positive, solution, but it does ensure a level skyline.

c. To do the opposite of *b*: expose all the roof structures but in a positive way, making them an important, even a dominating, part of the sculptural form of the building; that is, to take the attitude that because of all its mechanical services, which require to be placed on the roof, a level skyline is illogical and artificial, and advantage should be taken of this to give personality to the building as well as a means of escape from the rectilinear monotony of the standard cellular structure. The obvious examples are Le Corbusier's *Unité d'Habitation* at



7

Marseilles, 7, and the subsequent buildings of the same kind. The trouble is that to do this successfully needs a man with more talent, and a surer instinct, as a sculptor than most architects possess; also that it creates problems of competition with the building next door. It is all very well to crown an isolated tower-block with a complex and excitingly related series of sculptural forms, but the effect might become ridiculous if someone else tried to do the same thing on an adjoining site. A less spectacular, and more utilitarian, example of the positive solution was Tecton's aerodynamic clothes-drying structure at Finsbury, 8.

d. To stop the lift one storey below the top, allowing space for the lift-motor

8

at the top of the shaft without letting it rise above the roof. This is a tidy solution to the lift-motor problem (though not to the water-tank problem) if the principle be accepted that occupants of the top floor can reasonably be asked to walk up one flight (or, with clever planning, half a flight) of stairs. This does not sound much to ask, although allowance must be made for an increasing tendency to regard the very top floors of high blocks of offices and flats as the most desirable (on account of clearer air and unobstructed outlook); the most desirable means that the highest rents can be charged, and the highest rents mean that the occupants must be pampered more than any others. This difficulty specially applies to offices, because those who pay the highest rent for a top floor regard it as an affront to be asked to walk up any stairs at all, and as beneath their dignity to compel their visitors to do the same. The difficulty with flats is less, and with maisonettes it disappears altogether, since the entrance is on the lower of the two floors of which a maisonette is composed. The lift machinery (given proper sound insulation) can be incorporated within the upper floor, at the sacrifice of a small amount of bedroom floor space; so can the water-tanks, as long as enough head can be provided for any water-taps required at the upper level. For residential blocks, therefore, to build maisonettes rather than flats, at least on the top two storeys, seems to come very near to a solution, though both the bathroom and the kitchen might have to be placed on the lower storey of the maisonette.

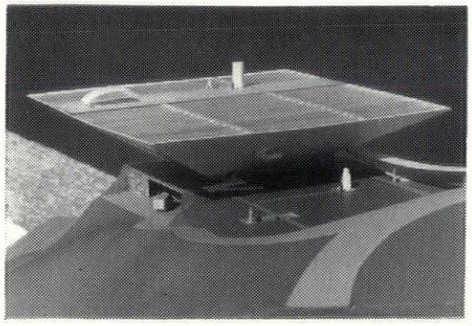
e. To make most of the rooms in the top storey of the building higher than the rest, leaving space for lift-motors and water-tanks above the ceilings of the remainder. This again is a tidy solution and has the advantage of suggesting at the same time an interesting answer to the other problem of modern cellular buildings: how to make them stop instead of merely leaving off. If the top storey is higher than the rest it will require a different window treatment, terminating the rhythmic repetition of the windows below without the need to resort to an imitation cornice. It can, of course, be regarded as extravagant in cubic space in the sense that the building will now rise a few feet higher without providing any addition to the floor area, but there is an answer to this. The answer applies only to office blocks, but that is where it is most important since the maisonette solution, described in *d*, does not apply to them. The answer is that nearly all office buildings require board-rooms, restaurants, welfare rooms and other large rooms of which the ceilings must be higher. To place such rooms on the top floors would justify the extra height here, would enable tanks and lift-motor rooms to be placed above the ceilings of the other, normal-height, rooms on the same floor and would give the special rooms the better outlook and airiness that are so valued at the top.

J. M. Richards

WORLD

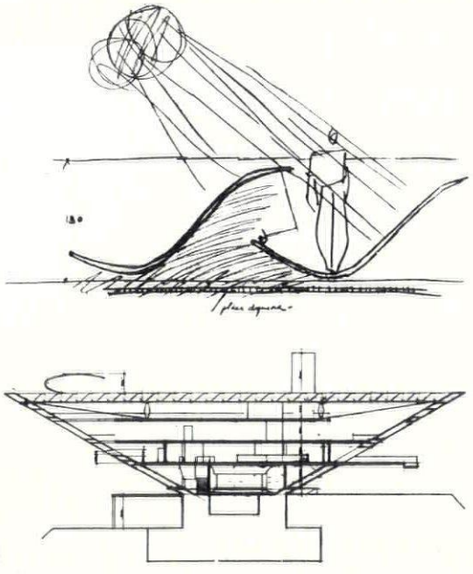
MUSEUM IN CARACAS

Museums of Modern Art seem to have become as constituent a feature of contemporary Latin American



1

architecture as University Cities, and the remarkable new Campus buildings in Caracas, Venezuela, are now to be partnered by an even more remarkable museum designed by Oscar Niemeyer. As in the case of Affonso Reidy's project for Rio de Janeiro

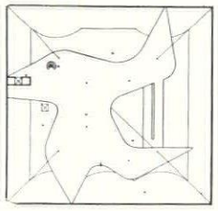


2

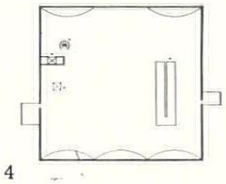
(ARCHITECTURAL REVIEW, May, 1954) the problems and advantages of nearly-vertical sunlight have been major factors in the design, and the germ of the museum's highly characteristic form (see AR March, 1956, p. 154) arises from the architect's desire to create a dramatic and monumental shape against the sky while using as little as possible of the rather restricted site, and taking full advantage of zenithal illumination.

The result—sensational as it may appear—has thus a generating logic inherent in it. The roof spreads wide to catch the sun and apart from the sculpture terrace, 1, and certain structural elements, consists almost entirely of sun-louvres whose form, 2, is such that they distribute an even fall of light over the interior and its sloping, windowless walls. Fluorescent elements to boost this illumination are carried within the louvres, so that the fall of the light is not altered under night or evening conditions.

Directly under the roof is a suspended mezzanine, 3, hung partly from above and partly by cables from the corners of the structure. Occupying less than fifty per cent of the area of the building at this datum level, it admits a flood of varied light to the main exhibition floor below. This floor in turn is lunetted along two sides, 4, to admit light to the administrative areas which surround the main entrance foyer. Below this again is a



3



4

cinema-auditorium which, of course, does not require daylighting.

In a continent where sunlight is one of the most potent building materials at the architect's disposal, few designs can have played upon it in so masterly a way, and the Museum of Modern Art, Caracas, must give pause to those hostile critics who maintain that Niemeyer's originality has become purely formalistic.

M. Santiago

BOOKS

ROOFLESS, RATIONAL, ORIGINAL

IRISH CHURCHES AND MONASTIC BUILDINGS, VOL. 1, *By Dr. H. G. Leask, Dundalgan Press, Dundalk,* 27s. 6d.

Maurice Craig made a list in a BBC talk of all the Irish medieval churches with roofs on—eight, I think—and proposed that the cypress-girt ruins of the others had purely picturesque value. Dr. Leask's book goes up to the 1180's, and describes the ornament and construction of about a hundred buildings in detail, treating them purely as architectural examples in the Gothic Revival way. Between these opposing views, what is quite certain is that the Irish parish church ruins and their churchyards are a complete language of melancholia, from the austere dignity of St. Margaret, behind Collinstown, to the bleak peasant desperation of Turlough (appropriately, next door to Lord Lucan's Castlebar: history is the fourth dimension of the Connaught landscape).

They are also a component in one of the few original (non-Roman-derived) cultures in Western Europe, and as such, succeed or fail, they deserve all the notice they can get. The oratories and the round towers are a promising beginning. Yet, maddeningly, there is no original style to accompany the extraordinary monastic organization—each priest with his tiny church, and everyone up the round tower when the Danes came. There is no equivalent of the Ardagh chalice or St. Patrick's Bell: instead, after the eighth century, there are wayward variations on whatever imported brand of Romanesque came to hand, expressing in a hazy way not the last of the Celts but the first of the Anglo-Irish. The qualities you would give to Swift's prose could as well be given to these churches and fragments which Dr. Leask illustrates so fully—tart, witty, never undignified: made up of oblique and often unexpected comments, but always related to a main stream of strictly rational ideas. As for convoluted 'Celtic' wildness you have to find that in Herefordshire via Aquitaine—a case of art-historical truth being stranger than any possible art-historical fiction. Perhaps the style was out of key, for Irish Gothic churches, to be dealt with in Dr. Leask's second volume, made a much more strange selection of the available elements—but it was still a selection.

The sites supply all the missing wildness and other-worldliness, and this is what the book cannot indicate—it is a sober statement of dates and styles: an admirable textbook, no less and no more. If that deters people from going to the magical realities that are waiting in County Meath or Roscommon or Tipperary, it's a great pity.

Ian Nairn

DARTMOOR

DARTMOOR: BUILDING IN THE NATIONAL PARK. *Architectural Press for the Devon County Council. 5s.*

This book is in effect the first instalment of an answer to those who, on reading the REVIEW's Outrage issue, said: 'OK it's a mess: now show us what should be done.' It could have been, so easily, 'the same old stuff'—the few really good examples of building and planning going hand-in-hand with the landscape that pop up in every textbook: admirable, but beyond the physical and imaginative means of the ordinary client, the ordinary council and their builders.

Instead, here are minimum standards: not 'follow this and you may produce something marvellous,' but 'follow this and you can't go seriously wrong.' Dartmoor is sufficiently clear and individual, and the landscape's demands are strong enough, for it to be possible to lay down rules in common sense terms. They aren't aimed at the first-rate architect but at the people who actually put up 95 per cent of the buildings.

Appeals like this have been made before, and a stony reception they have had, too. This one is a little different: published not as a private venture, but by the local planning authority with the uncompromising aim of helping 'intending developers to submit plans which are likely to obtain the most favourable consent from the local planning authority.' In other words, planning is using the only big stick in its armoury—Dartmoor

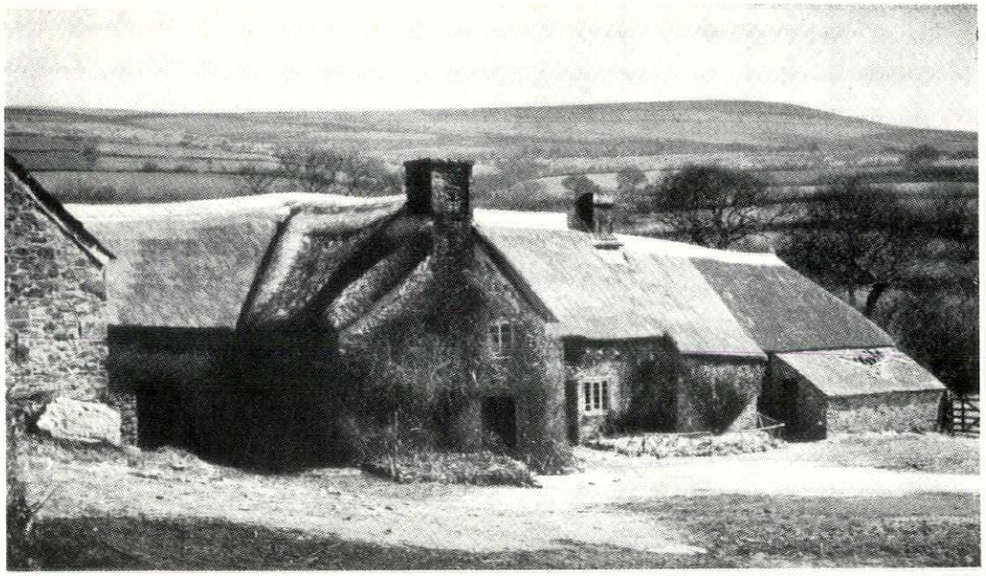
may still be bedevilled by the three Service departments,* the ministries and the statutory undertakings, but it now stands some chance of getting decent housing built on it, thanks to this book, which is the clearest and most honest local government publication I have read.

The emphasis is all on local stone (or common sense equivalents) horizontal grouping, unobtrusiveness in the landscape, and so on. This does not mean that modern architecture on Dartmoor is doomed: the book quotes Powell and Moya's house at Toys Hill with approval and says that the only reason similar Dartmoor examples have not been illustrated is that, so far, there aren't any (and looking at the rebuilt centre of Exeter, I can perhaps see why).

The combination of preservation and experiment in the right proportions brings the Devon County Council somewhere near enlightened patronage, in a wry-faced twentieth century way. The example ought to be followed: books like this should appear under the auspices of each county for each topographical entity. If the printing costs come out of the allotment for private gardening in public places, so much the better.

Ian Nairn.

* Not quite: the National Park Committee, after a hard fight, have recently (Jan. 1956) prevented a R.A.F. mast on Great Links Tor.



A misdirected appreciation of the picturesqueness of farmhouses has led to innumerable suburban reflections; ironically these are now often the acme of elegance to the farmer—or, more often, the farmer's wife—and form the new farmhouse style while the old work tumbles down through neglect. But rural buildings also have harder and more positive virtues: they are little intuitive geometrical theorems. In these examples from Dartmoor the theorems are about similar and congruent forms in the landscape: ridge-line and horizon, rubble walls and rock outcrops. Top, Lake Farm, Sourton; bottom, Ouldsbroom Farm.

Shorter Notices

GUNNAR ASPLUND. *By Eric de Maré. Art and Technics. Newman Neame*, 10*s.* 6*d.*
AUGUSTE PERRET. *By Ernesto Rogers. Milan, Il Balcone. Price in England*, 9*s.* 6*d.*

Il Balcone's series 'Architetti del Movimento Moderno,' and *Art and Technics*' series of 'Architectural Biographies' have a good deal in common. Both offer pocket editions of the life and works of major architects in formats that are almost identical, with a block of illustrations preceded by expository essays. But beyond that, similarities evaporate—the *Balcone* approach is systematic, not to say scholastic, and aims to give complete coverage to the canon of Pioneers and post-Pioneers established by Pevsner and Giedion, whereas the *Art and Technics* series seems chosen almost by the fall of the dice, and has thus given us a good accidental coverage of pre-Regency architecture, plus—somewhat inexplicably—Mr. de Maré's essay on Asplund. Between the covers of the books the contrasts continue to override the similarities; though both authors are known to be politically *engagé*, Dr. Rogers contrives to be entirely objective and to offer a serious—if rather abstract—study of the place and meaning of a great architect as seen through the eyes of another working designer. There is an exhaustive list of Perret's works, and an equally exhaustive bibliography; such an apparatus of scholarship, in fact, that one regrets the persistent misdescription of the Chana Orloff studio-house the more, as it is the only blemish on a valuable addition to the Perret literature.

Mr. de Maré, on the other hand, passes the eye of a rather old-fashioned kind of architectural connoisseurship over the work of Asplund, and makes little attempt to be historically objective – to say that Asplund 'was responsible for saving modern architecture from the perversions and superficialities of the Paris *Exposition* of 1925' and 'saved the modern movement from eclipse,' seems to be asking too much of a readership which will, presumably, have heard of the Bauhaus, and of the Weissenhof exhibition of 1927. But as the Envoi to this book reveals, Mr. de Maré probably regards the life and work of Asplund as a moral paradigm of the condition of the architect in a politically perverse society (as he sees it), for he seems obsessed by the symbolic aptitude of Asplund's last major work, the Woodlands Crematorium.

P.R.B.

ARCHITECTS' WORKING DETAILS, VOL. 3. *Editor, D. A. C. A. Boyne (Architectural Press.* 21*s.*).

A long time ago all one required for reference to the very stabilised building techniques was a large tome on construction, and the rest just followed. Today the need for regularly published details on current practice is a very real one. Techniques change rapidly with materials, and without the guidance of recent solutions the task of detailing can be very heavy.

The Architectural Press series of *Architects' Working Details*, of which Volume 3 has just appeared, makes a valuable contribution to satisfying this need. The details are taken from the series published bi-weekly in *The Architects' Journal* during 1953, '54 and '55. The only marked difference in content from the earlier volumes is the omission of any staircase details, and the publishers state that this section will be reintroduced in the next volume.

M.B.

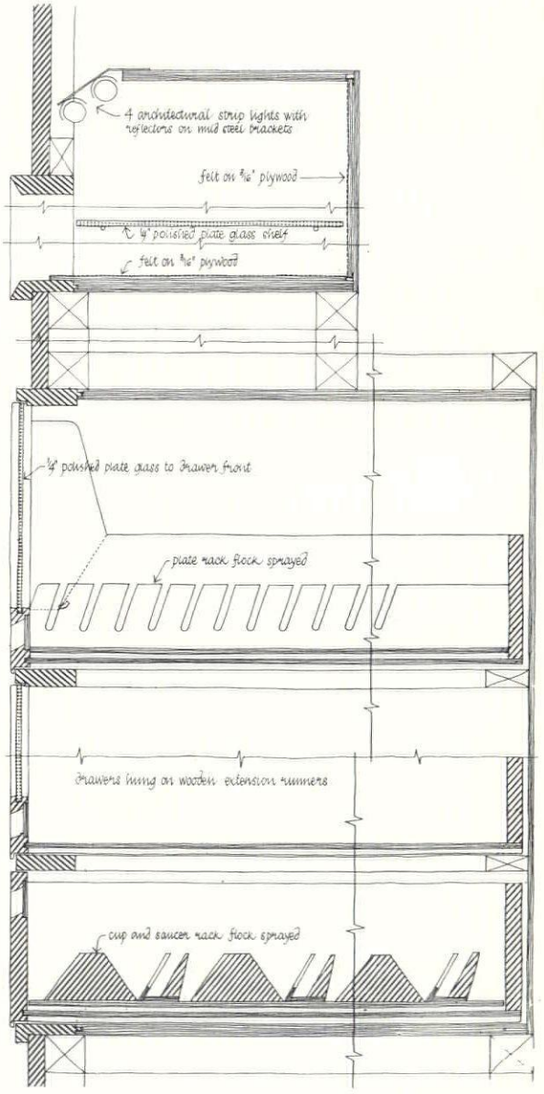
Books Received

HOW TO DRAW INTERIORS. By Cedric Dawe. Studio. 5s.
WINDMILLS IN KENT. By J. W. R. Adams. Kent C.C.
DECORATED PORCELAINS OF SIMON LISSON. Golden Head Press. 1½ gns.
HOW TO MAKE BUILT-IN FURNITURE. By Mario del Fabbro. F. W. Dodge. $6.95.
ARCHITECTURAL ENGINEERING. F. W. Dodge. $11.50.
THE PRACTISING ARCHITECT. By Alec S. Eggleston. Melbourne U.P. 37s. 6d.
WOHN BAÜTEN VON HEUTE. By K. Müller-Rehm. Rembrandt Verlag. DM32.50.
BUILDING PLANNING AND DESIGN STANDARDS. By Harold E. Sleeper. Wiley. $12.00.

SKILL

A MONTHLY REVIEW
OF BUILDING TECHNIQUES & INDUSTRIAL DESIGN

1 interiors
2 design review
3 techniques
4 the industry



1, one of the standard wall-fittings for the display of china used throughout this series of showrooms. The same fitting, consisting of an open show-case above and pull-out glazed show-cases and drawers below, is shown in section on the right. The wood is West African guarea. The display in this photograph is at Beale's, of Bournemouth.

1 INTERIORS

SHOWROOMS FOR WEDGWOOD CHINA

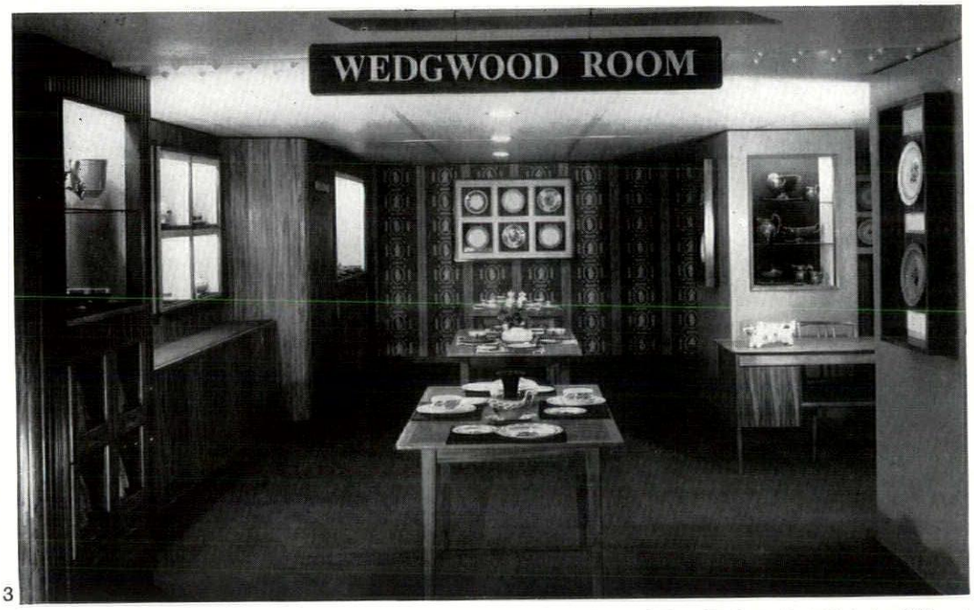
Designer: Alec Heath

The Wedgwood Rooms, started in October, 1953, represent a new departure in the retail selling and distribution of pottery, and three rooms were opened in that year, two in London and one in Birmingham. Since then, others have been designed in Belfast, Bournemouth, Cardiff, Glasgow, Oxford and Newcastle. They consist of shops within stores, the area occupied varying considerably; it may

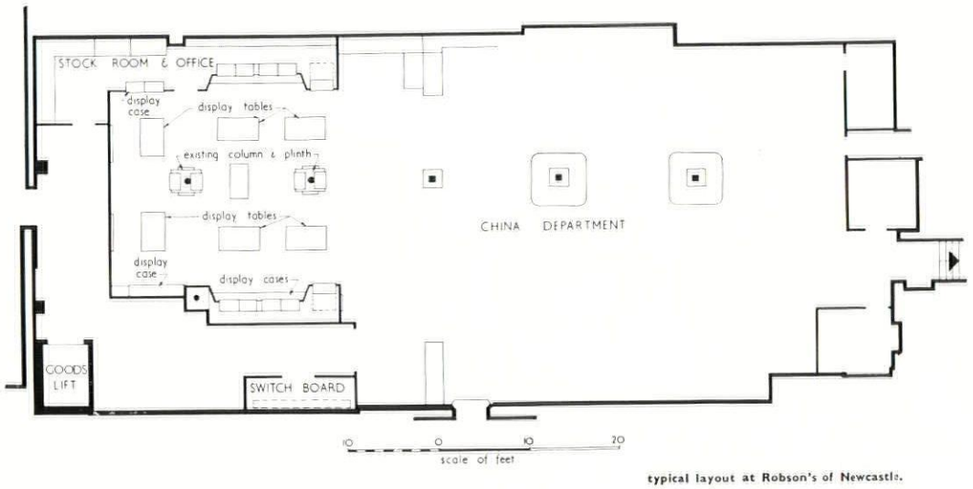
consist of either an open or some enclosed area, with ceiling heights from 7 to 14 feet.

Display units have to show some 30 to 40 patterns of table ware, with separate displays for 'fancies' (i.e., vases and all pieces other than tableware). To allow for quick occupation of sites after official approval, display boxes were designed in two-tiered units consisting of groups of twos, fours and sixes, used in various combinations. At least one 32-piece dinner set has to be shown, and for this a simple open drawer unit is used. Each display is backed with a dark grey felt placed on movable ply panels. For patterns not available from immediate stock glass-fronted plate filing cabinets are used, each containing some hundred plates and a smaller quantity of matching cups and saucers in separate drawers. Polished West African guarea is used for the vertical boarding and solid cabinet work, matched by a Queensland maple veneer for doors and large polished surfaces. These have a light colouring and a faint warm reddish texture. Tables are used for display with place settings of china and earthenware patterns; the table used is made of solid West African mahogany with a Nigerian cherry veneered top. A smaller table can be placed in the centre of one of the larger tables for displaying 'fancies.' Table mats are used extensively and in addition to the plain colours in linen and velvet, special mats have been hand-woven by Barbara Sawyer and Hilary Bourne. A Wedgwood wallpaper designed by Richard Guyatt has been used in most rooms. The floor covering consists of gun metal, dark grey or cedar green carpet. Tungsten filament lighting is used throughout, as showing the range of subtle colours to best advantage.

2



3

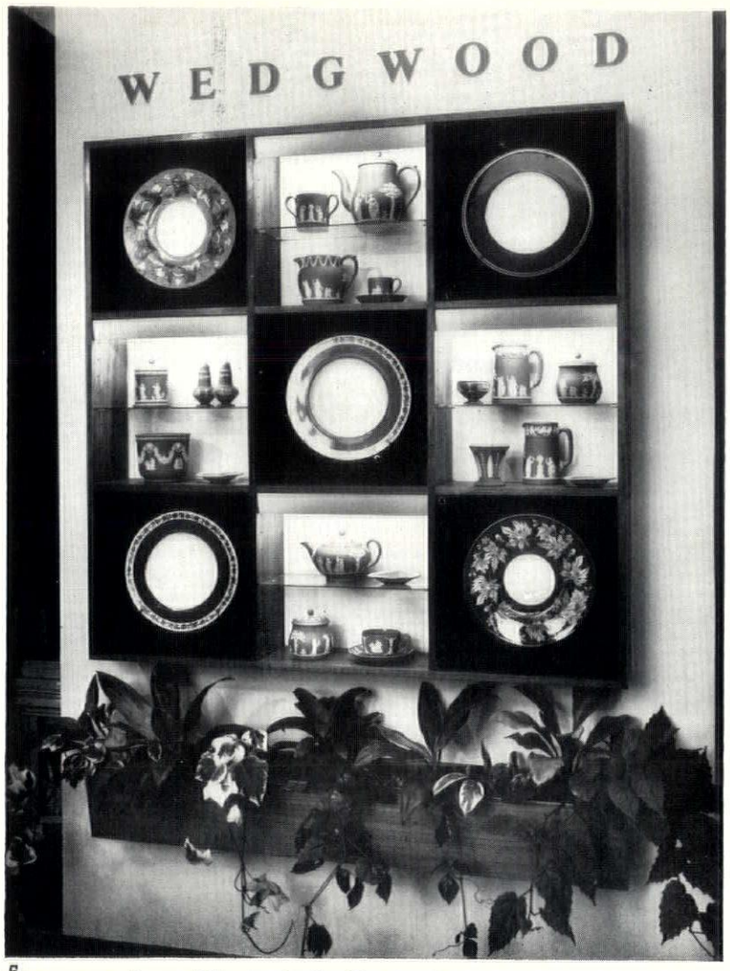


typical layout at Robson's of Newcastle.

Above, two of the displays installed in different department stores, using the same standard wall-fittings, furniture, etc.: 2, in Hampton's, of Kensington; 3, in Robson's, of Newcastle. The typical plan on the left shows the display in the latter showroom. On the extreme left of 3 is the showcase shown in detail on page 275.

4

4, another type of standard display unit, with a metal frame and glass shelves, backed with wooden slats, shown in use at Glasgow.

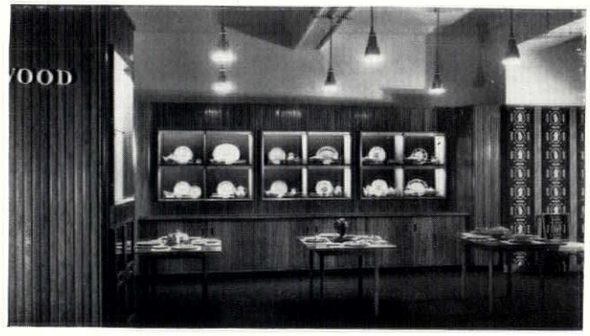


5

5, one of the standard wall-units, displaying china against alternate dark and light backgrounds, shown in use at Marshall and Snelgrove's, London.

Two more Wedgwood rooms, using the same standard display units: 6, at Storey's, of Kensington; 7, at Elliston and Cavell's, of Oxford. The woods used for the wall-fittings are West African guarea and Queensland maple; the tables are West African mahogany with Nigerian cherry veneered tops. The wallpaper was designed for Wedgwood by Richard Guyatt.

6



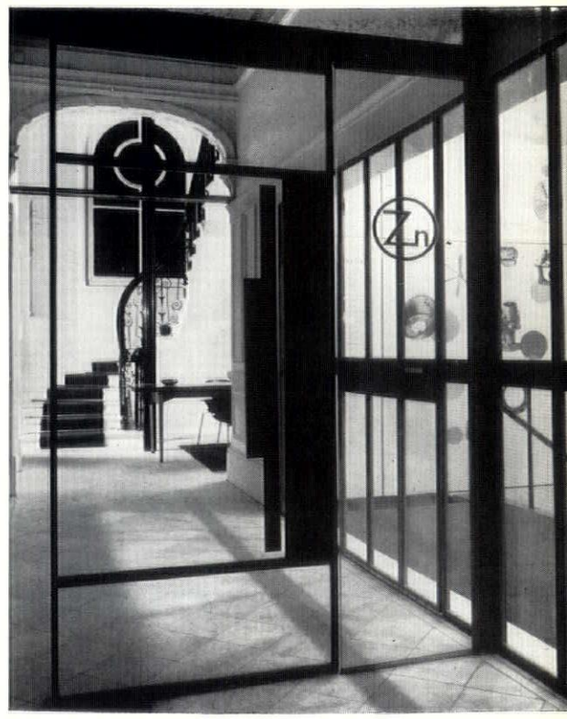
7

OFFICES IN BERKELEY SQUARE, W.1

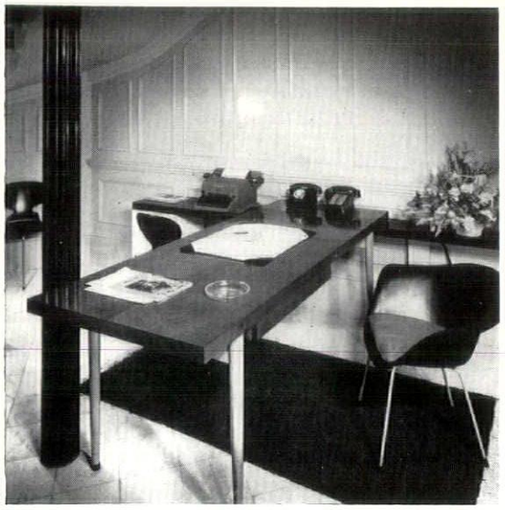
Architects: James Cubitt and Partners

This six-storey building in Berkeley Square was finally chosen (in spite of its somewhat awkward Edwardian plan and character) as being most suitable for the London offices of the Zinc Development Association. To have modernized the Edwardian interior would have been expensive, and it was decided to preserve and even reinstate it where appropriate as a background, but also to introduce simple, specially designed built-in furniture and furnishings.

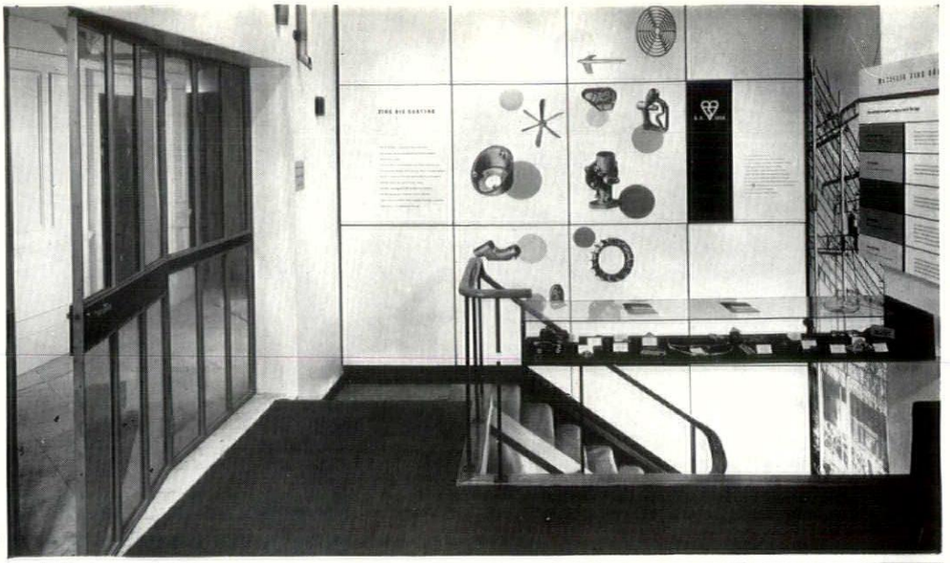
On the ground floor the entrance and reception hall were opened up by means of glazed doors and a glazed firescreen, with permanent wall display panels on the walls. No radical alterations were made to the library, which has an extremely ornate ceiling. Very bright primary colours were, however, used in the curtains, notice boards and chair covers, and the ceiling indirectly flood-lighted. The first floor contains two large adjoining rooms, separated by a 9-foot high partition which can be folded back for receptions; at other times, indirectly lit silk curtains are hung in front of it. The ceilings were neo-Adam but dimly lit and coloured; they were revitalized by the addition of gilt, white and pale grey with indirect light to give them sparkle, the walls in both rooms being painted white to 'float' the ceilings. The wall-to-wall carpeting is dark mauve. A twin pedestal table of solid Spanish mahogany which had belonged to a regimental mess was installed in the board room; matching chairs are re-upholstered in light yellow



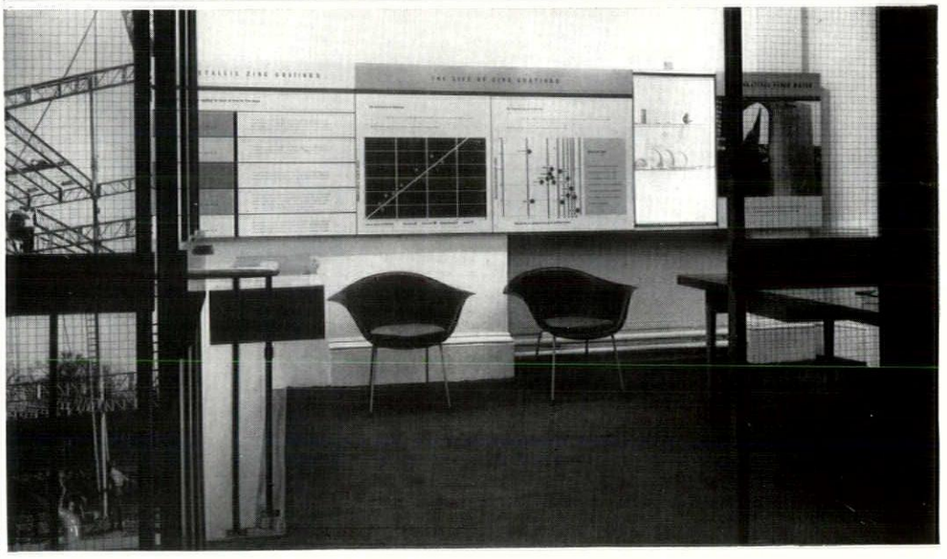
8, the entrance hall showing, at the far end, the reception area at the foot of the original Edwardian staircase and, on the right, glazed screen with information room beyond. See plan on next page.



9



10

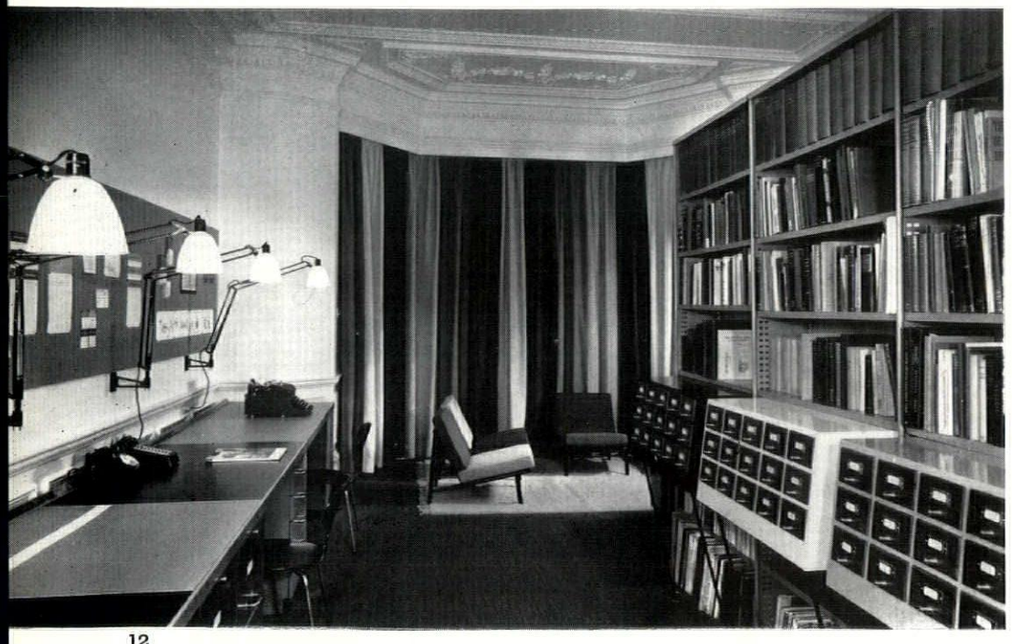


11

9, *furniture in the reception area (see preceding page).* 10, *information room (ground floor) with glazed doors to entrance hall on left and stairs to basement on right.* 11, *wall display in information room.*

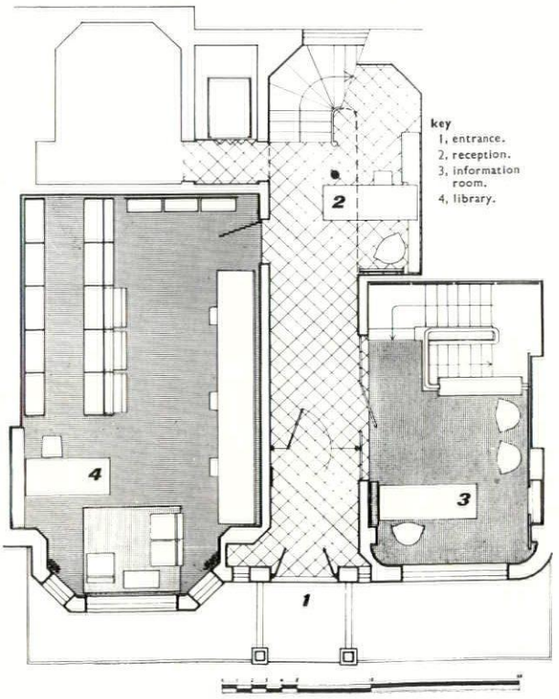
hide. The volume of the room required a large central object, and for this purpose a chandelier was used. The George II gilt mirror at the end of the room hides a projection slit used when films are shown, and slides up and down on secret spring balances. However, to kill the strong period flavour, a few very severe pieces of furniture were specially designed, and finished in black lacquer and marbling. The window curtains in both rooms are of unbleached raw silk.

In the director's room the cupboard fitting behind the desk is supported on brackets from the wall. Above it is an indirect light box which acts as the main source of background light, and is finished in Macassar ebony and lacquer with the glass panels framed in brass. The purpose



12

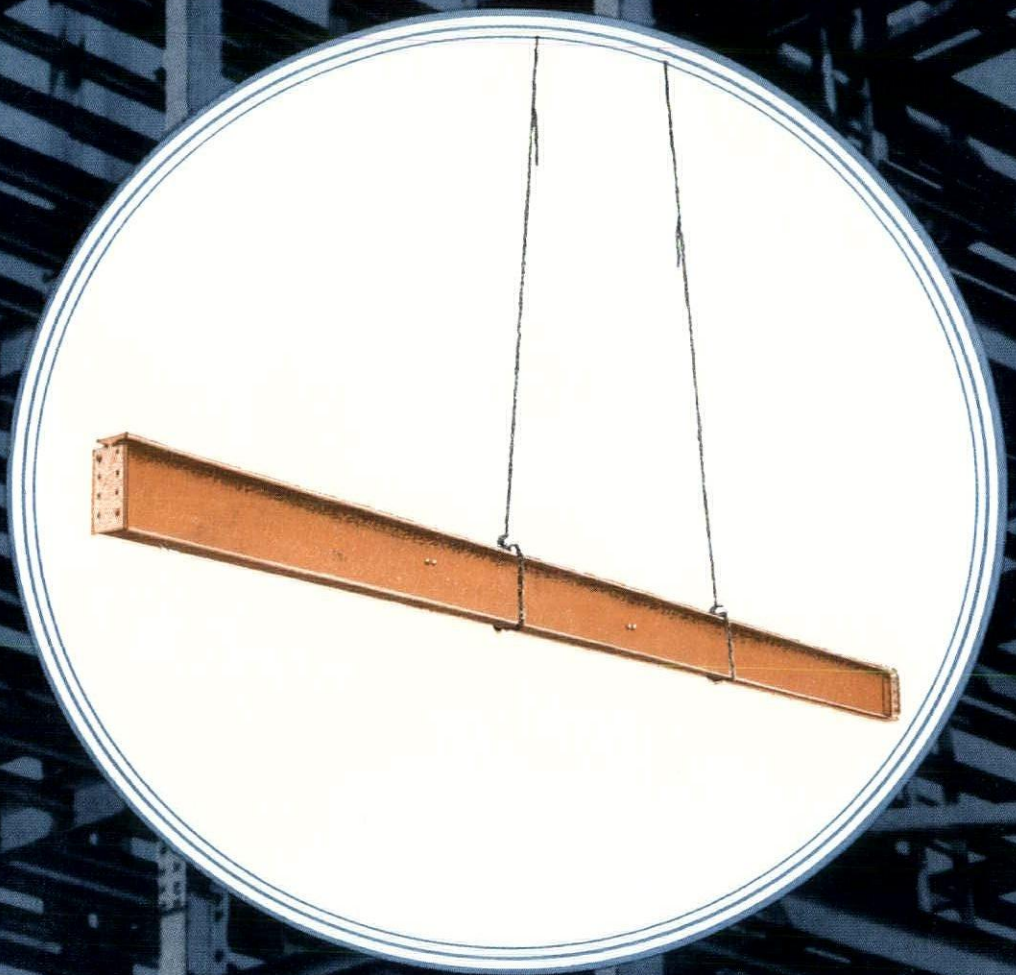
12 (*below*), *ground floor library, looking towards the bay window, which has curtains of bright primary colours.*



ground floor

EDINBURGH WEAVERS 102 MOUNT ST LONDON

STRENGTH
SECURITY



SIMPLE AND STRAIGHTFORWARD
structural steelwork

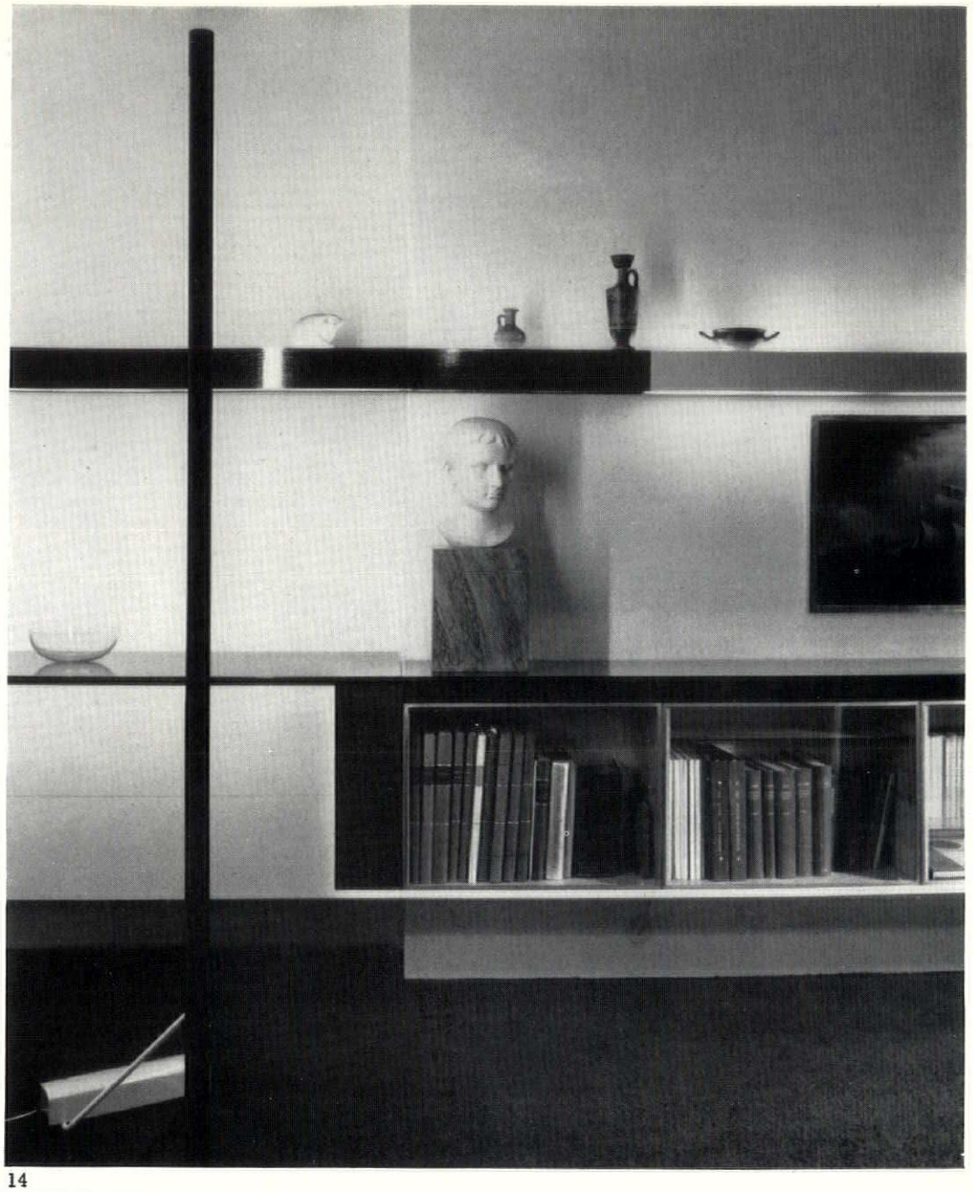
BRITISH CONSTRUCTIONAL STEELWORK ASSOCIATION,
ARTILLERY HOUSE, ARTILLERY ROW, LONDON, S.W.I

B·C·S·A

made desk is also veneered in Macassar ebony and has a green leather top and beech legs. As far as possible all 'phone and desk-light wires have been hidden and telephones kept off the desks. White cotton diaphanous day curtains hide the window framing. The carcass furniture for the chief technical officer's room is veneered in pear and mahogany; the walls are light grey and the bookshelf recess behind the desk is painted dark green.

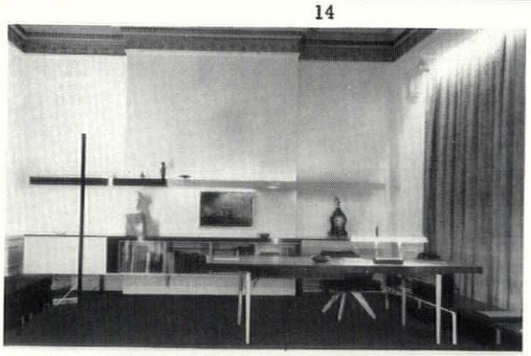
13, *council room on first floor (see plan at foot of page), showing marbled cabinet in front of curtains, behind which is a folding partition separating council room from director's office.*

13

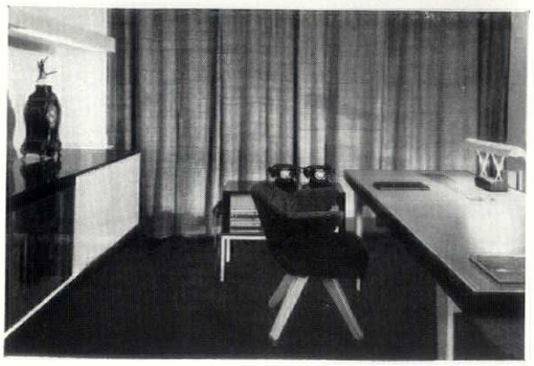


14

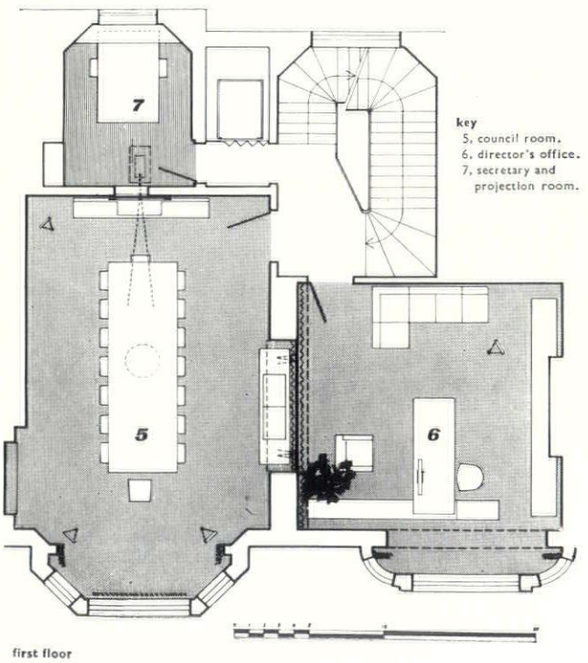
14, *close-up of wall-fitting in director's office.* 15, *general view of director's office showing wall-fitting and desk.* 16, *detail of desk, chair and telephone unit.*



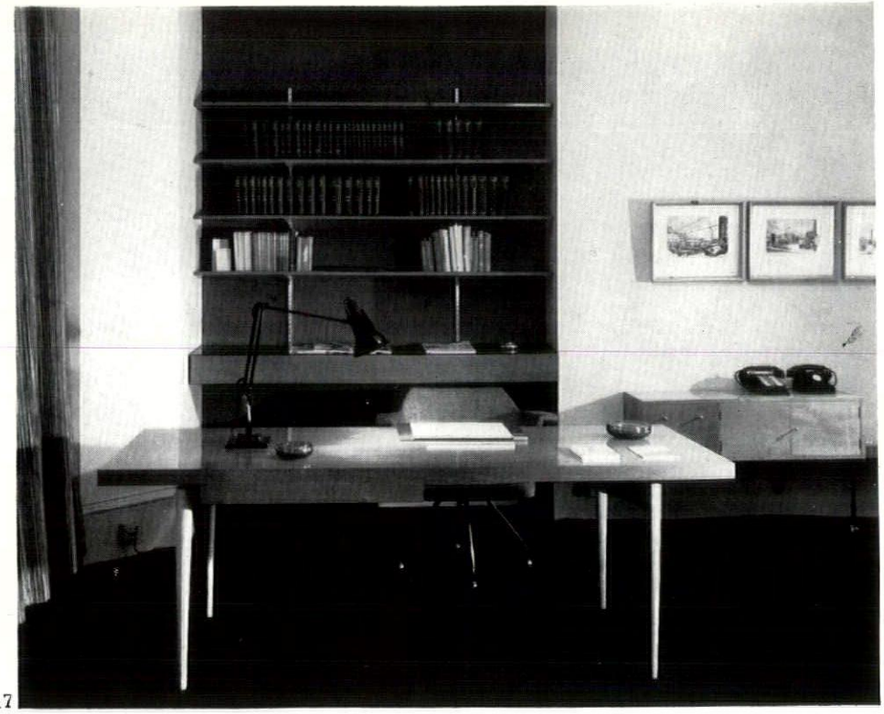
15



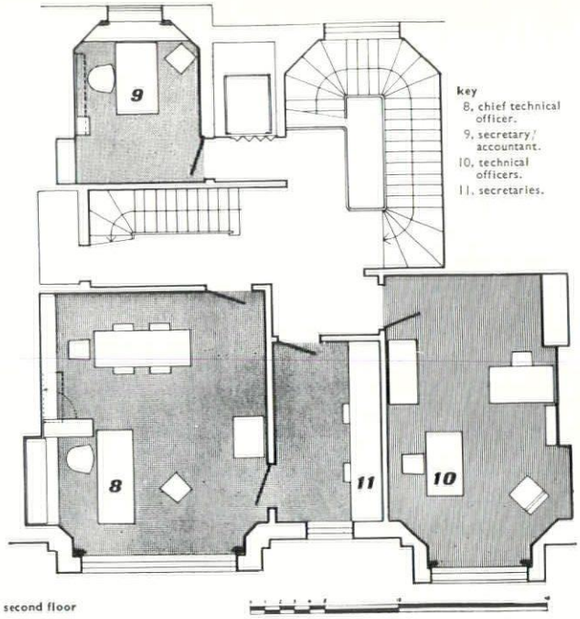
16



first floor



17



17, *technical officer's room on second floor. The telephone unit against the wall on the right swings out at right angles for use when sitting at the desk.*

2 DESIGN REVIEW

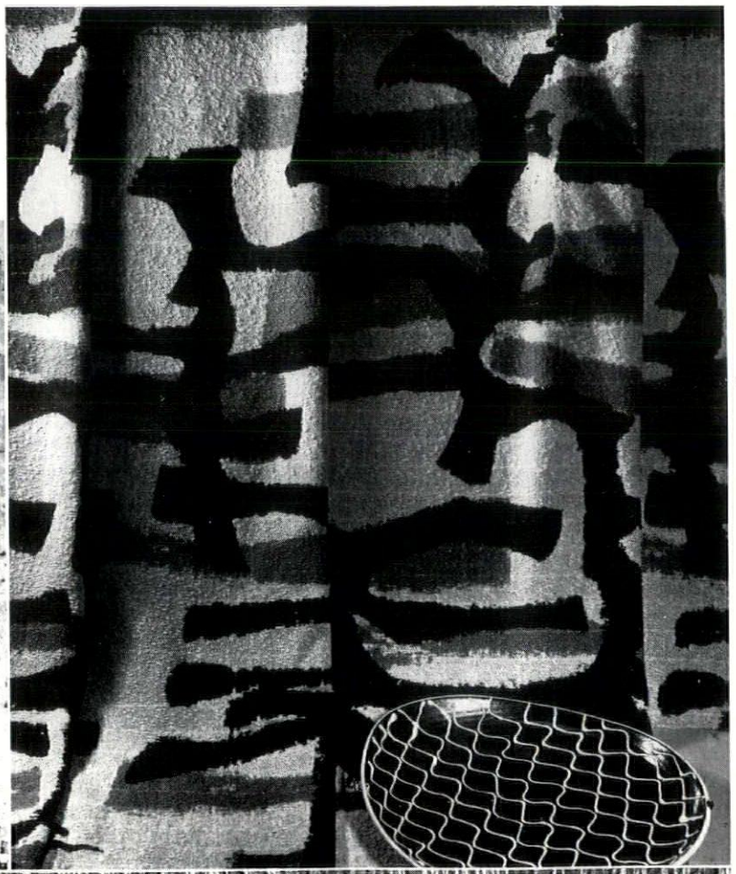
Tibor textiles designed in combination with Stockwell carpets

For a designer to overcome practical and conventional difficulties to the extent of producing ranges of textile floor-coverings in a common scheme is a feat of pertinacity. Tibor Limited and S. J. Stockwell & Co. (Carpets) Limited are to be congratulated for taking the trouble to study the actual problems of interior design that their wares are intended to solve, rather than the sales statistics to which many manufacturers confine themselves. They presented their fabrics in combination in February.

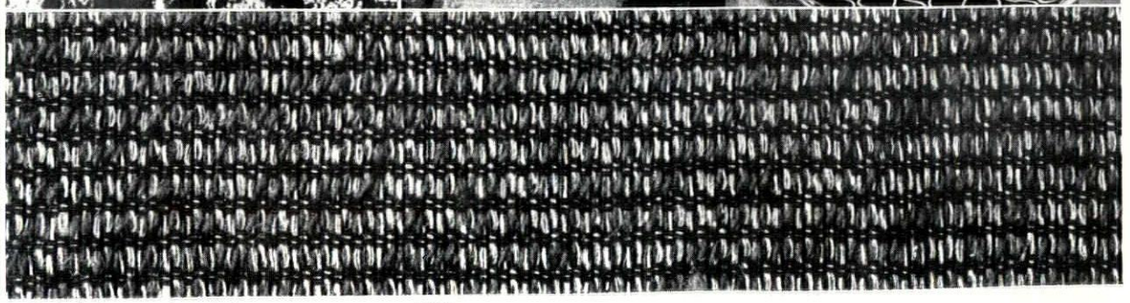
Last August I criticised weave designers for focusing their eyes too near the loom, with the result that it is difficult to find heavy woven materials with a large-scale pattern. Tibor Reich answers this challenge with a range of 'texture-prints.' Cost has been cut down by using the weave to produce the texture and printing a large pattern on the woven fabric. The cloth in which these designs are produced, Windsor, is also produced in plain natural, black-white, and a range of six colours vat dyed.

Stockwell carpets are offering a range of rugs, 'Viceroy,' designed by

1



2



3

1, *Palmas*, 48 *inches wide. This design incorporates non-tarnishing metallic thread.* 2, *Raw Coral*, 50 *inches wide. Approximate retail price* 21*s. per yard.* 3, *Tiara, woven in cotton, wool, rayon and metallic thread: a most successful fabric to look at, and its components seem to offer great durability,* 35*s. per yard.*

R

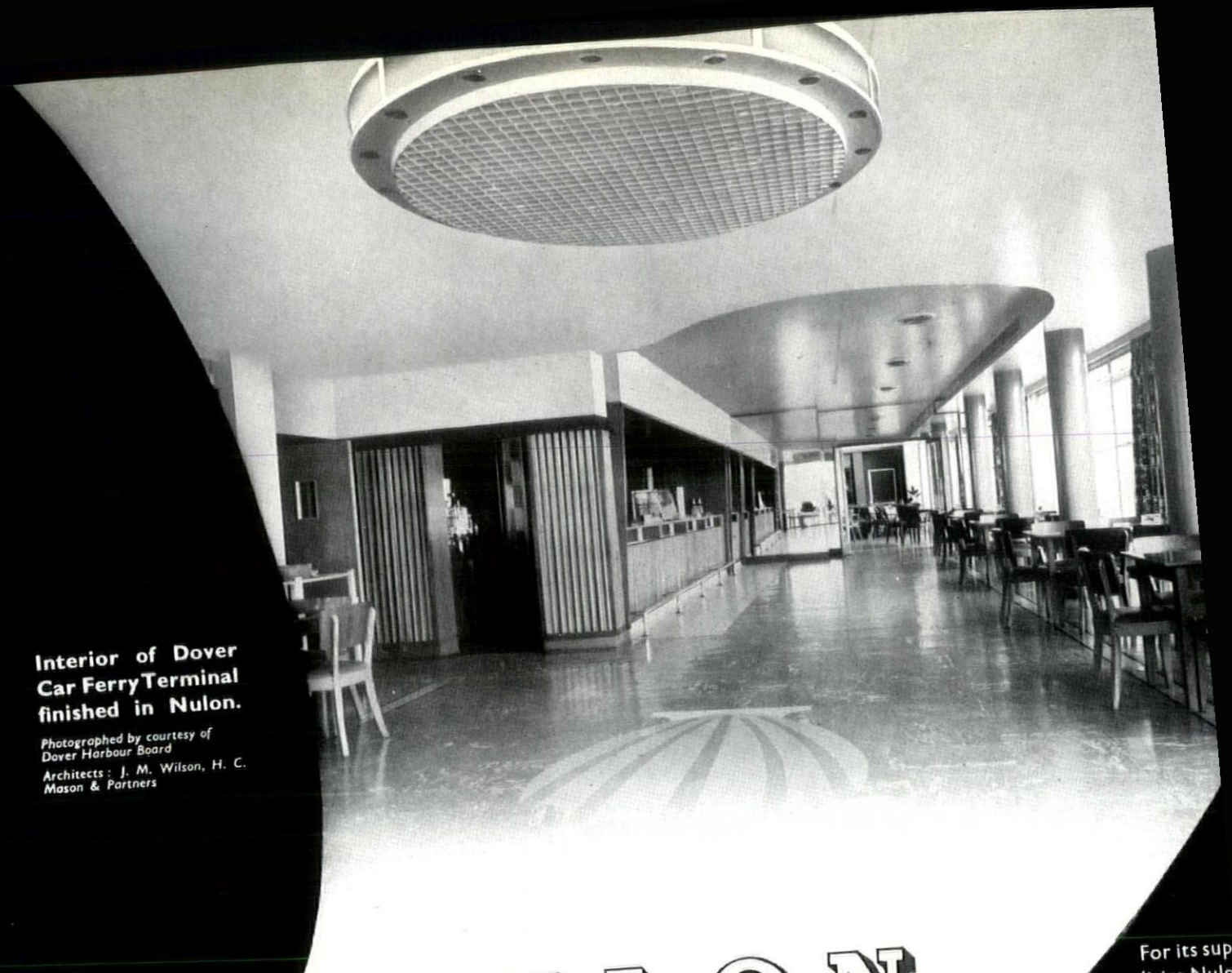
signed by N. K. Hislop. ural birch and the loose cushions are upholstered

stockwell

Viceroy deep all-wool pile rug with textured effect in a variety of colours and sizes to your specification. In three grades: "Standard,"

TIBOR

"Pancho"—this is an original Texture-drape design by Tibor Reich. The colours available include Black/White, Kingfisher/



Interior of Dover Car Ferry Terminal finished in Nulon.

Photographed by courtesy of Dover Harbour Board

Architects: J. M. Wilson, H. C. Mason & Partners

NULON

SUPER EMULSION PAINT

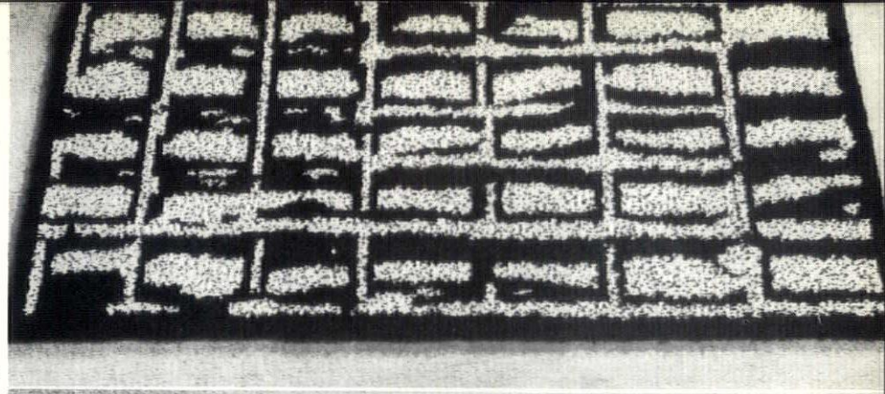
For its sup
qualities Nulo
sion Paint was s
for the interior
Dover Car Ferry Te
It is available in two fin
'Felted Flat' and 'Satin Shee
in exterior quality 'Nulon Ex
Very easy to apply by brush, sp
roller it has remarkable spreading
and is most economical. Nulon dries
hours, is free from smell, enabling ro
be occupied immediately. It is ideal for
shops, hotels, offices, etc.

Other high-grade specialities: OL
ENAMELS—Flat, Eggshell and Satin
Finishes, especially suited for very hig
interior decoration. OLIVETTE HIGH G
ENAMEL PAINTS—Superlative gloss f
in Interior and Exterior qualities.

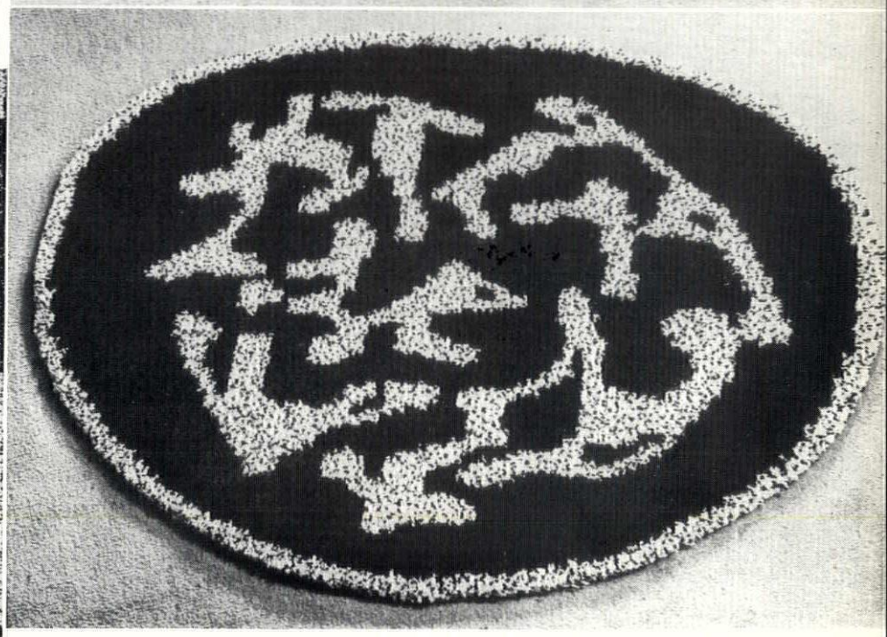
LEIGH PAINTS

Tibor Reich and Donald Grierson. The firm is ready to produce the designs in rugs of ANY SIZE, ANY SHAPE and ANY COLOUR that the customer wishes. This is indeed, as the makers claim, an outstanding service, and a welcome change from the contention that 'the public' does not want whatever one is asking for.

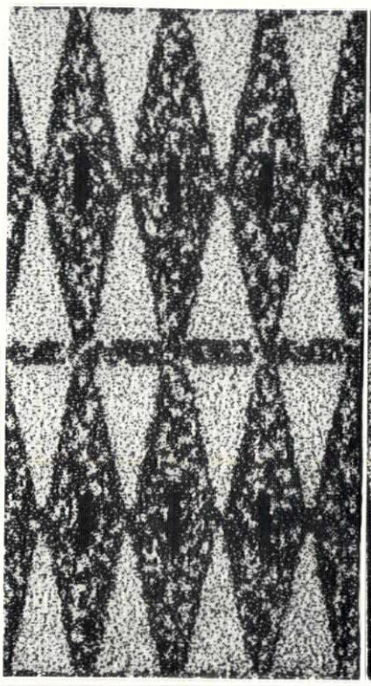
4, *Caribbean. Its pleasing irregularity as well as the texturing both camouflage dirt and prevent the rug from reading as an obtrusive rectangle and so reducing the scale of an interior.* 5, *Mexicano, the largest in scale of these rugs. They represent a real attempt to provide rugs in the scale and spirit of modern architecture.* 6, *Cerayork. A simple grid skilfully understated.* 7, *Tinta. The free shape of this rug is proof of the manufacturer's claim that they are ready to produce rugs in 'any shape.' This is a useful innovation, the only way to get away from rigid, geometric shapes in floor coverings having previously been to go to the expense of close carpeting. These rugs are priced in three grades: Standard* 18*s.* 3*d., Super* 24*s.* 3*d., Supreme* 34*s.* 9*d. per square foot, including purchase tax.*

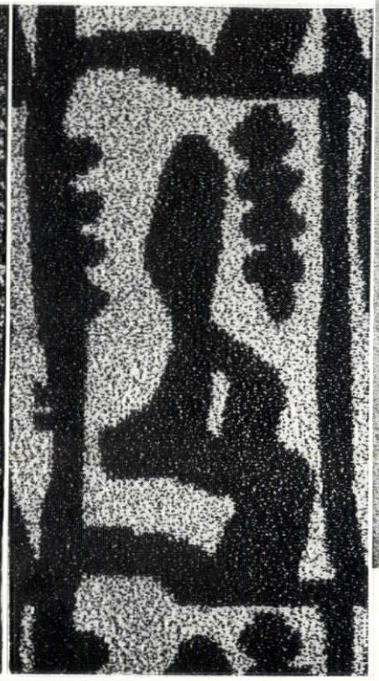


6



7





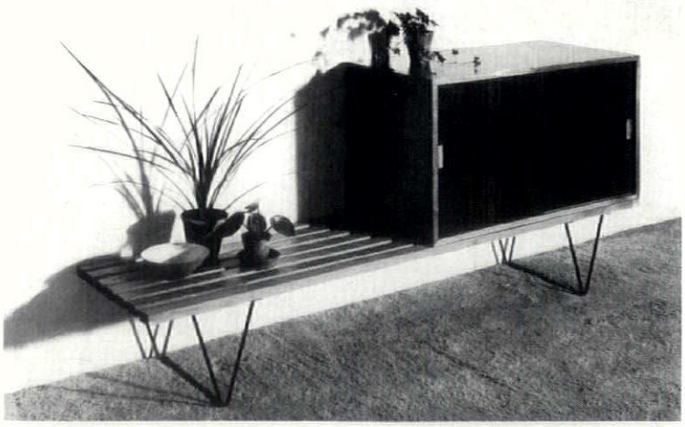
4
5

Storage units II

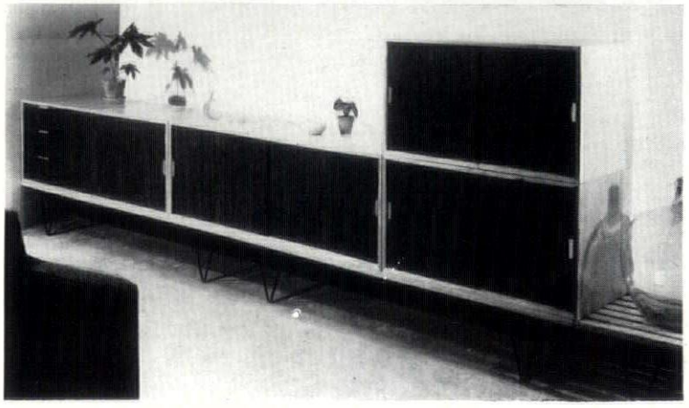
The social revolution in post-war Britain has placed elegancies of individual cabinet work right in the luxury class. Two makes of storage unit in a medium price range have achieved elegance largely by using very light metal sections as their supports. From the range of storage units designed for Hille of London, by Robin Day, these box units used in conjunction with the slatted bench have flexibility and distinction, 8 and 9. The cases are solid mahogany and the doors and drawer fronts are veneered in Brazilian rosewood. 4 foot 6 inch units are from £29 10s., 3 foot units from £23 2s. They are also available in ash from £21 4s. The bench is £12 17s. 6d. 9 shows two 4 foot 6 inch units and two 3 foot units. The supports are in rod.

Conran Furniture has several arrangements of storage units with square or angle section supports. 10

11



8



9

10

8, *Hille cabinet unit, designed by Robin Day, on a 6-ft. slatted mahogany bench.* 9, *two 4 ft. 6 in. units and two 3 ft. units arranged on slatted mahogany benches.* 10, *Conran arrangement of storage units in enamelled steel framework.* 11, *cabinet faced with photostatic enlargements of tree sections.*

12

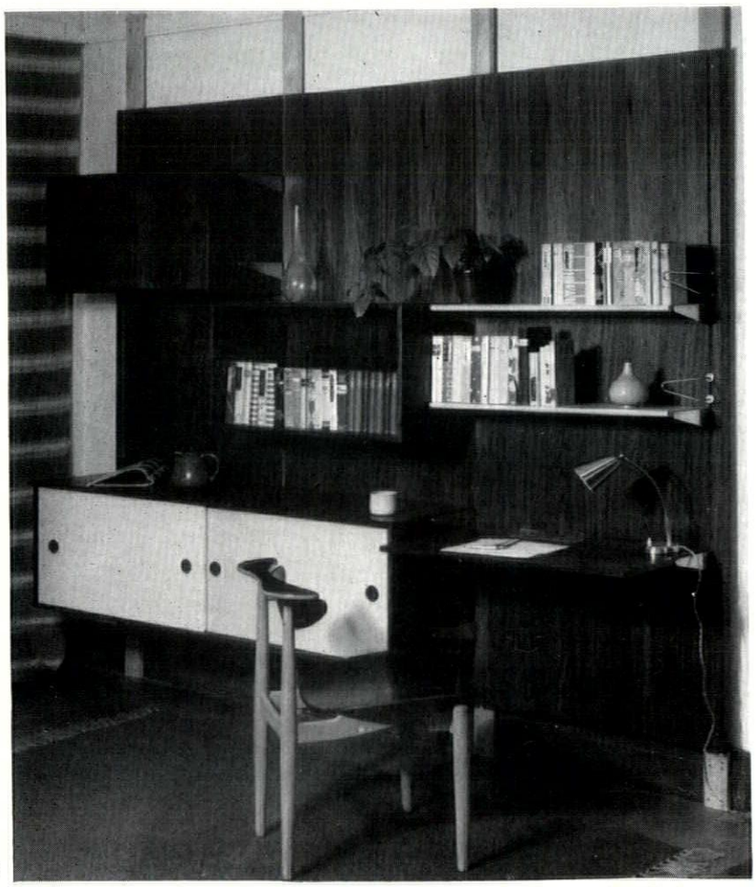
12, *Conran cabinet 'Sb.'*

Unit S1 uses simplicity rather than artifice to achieve its decorative effect. S1 is 3 feet 9 inches by 4 feet by 10 inches at £25 11s. with £2 4s. 5d. tax. The metal framework is in ½ inch square section steel stove enamelled black or white. The sliding doors are in Laconite, stove-enamelled red, white or black. 11, S3b is a dignified storage cabinet 4 feet by 3 feet 4 inches by 15 inches at £22 8s. with £1 1s. 6d. tax. The artifice here so successfully used is the photostatic enlargement of tree sections. 12, Sb is a more complicated cabinet with very nice detailing. The doors can be in the same finish as S1 or as shown here. The combination of the photographic pictorial decoration with the cabinet-work is beautifully conceived, and this highly sophisticated conceit is decadent and delightful as long as it is viewed as a single idea and not as a change of direction for this vigorous designer. This piece is £42 with £3 9s. tax.

Storage Unit from Denmark

Finn Juhl uses wall panelling as a means of integrating a variety of useful storage units. Vertical metal fixing strips run between tall rosewood veneered panels. To these the various cabinets and shelves can be hung at any height required. This is an elegant piece of furniture, not a cheap one. It is quite usual in Scandinavia, but the greatest rarity in Britain, to achieve elegance by means of the quality of materials and finishes, without departing from extreme simplicity. In this country people who can afford the best woods and cabinet work also expect to pay for complicated formwork, curves and inlays; thus at the price level which would allow simple designs a really good finish, simplicity is out. Anyone who wants it must get it from abroad.

On sale at Heals; prices: complete as shown here £210 5s. Panels £13 each. Supports £2 15s. each. End fillets £2 each. Long cabinet with painted doors £70. Small cabinet with glass doors £32. Small cabinet with veneered doors £33 10s. Writing shelf £10 15s. Pine shelves £4 5s. Brass book ends 15s.



13

Cabinets fixed to wall panelling, by Finn Juhl, with conversation chair.

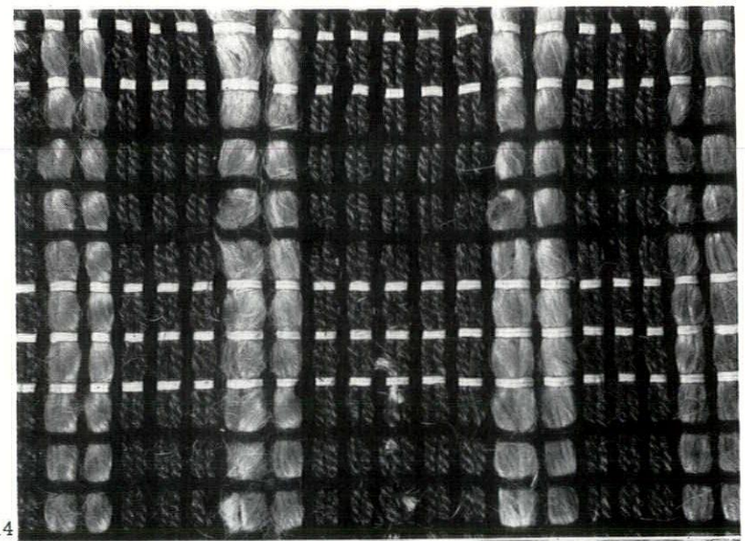
The Finn Juhl conversation chair in rosewood and beech, also shown, is obtainable at Heals. Price £11 10s. D.R.

Woven wall and floor coverings

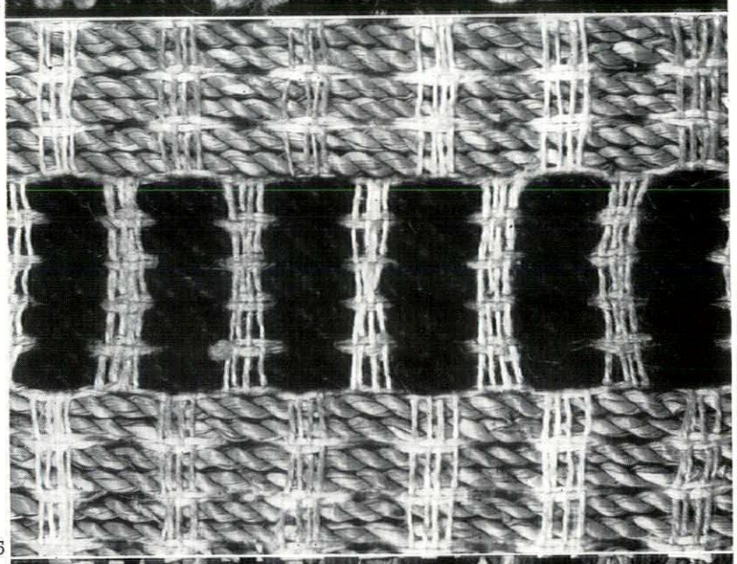
Peter Collingwood weaves such materials as hemp cord, plastic covered flex, unspun jute, flax and raffia in combination with traditional

By Peter Collingwood: 14, *unspun jute, grey sisal and cotton on a black and white striped cotton warp.* 15, *seagrass, hemp and rope, dyed dark brown on a warp of natural and bleached hemp.*

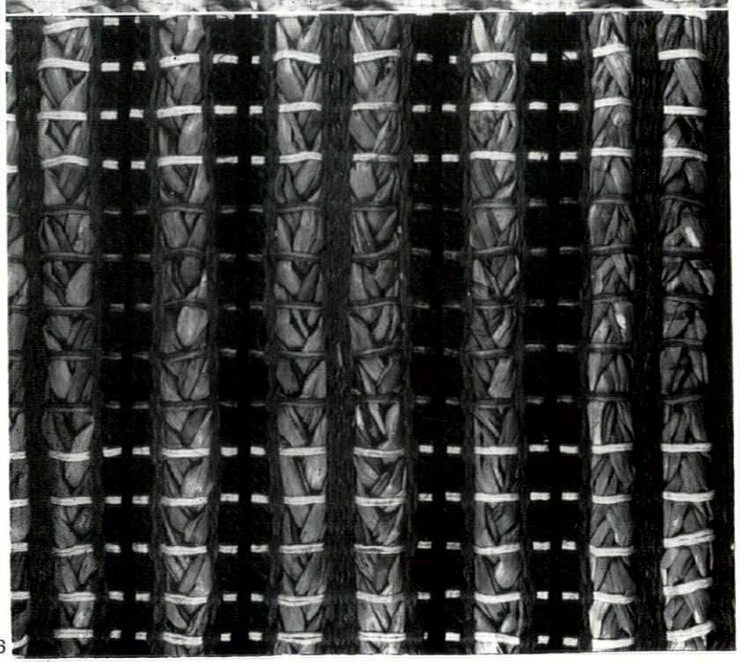
By Brian Knight: 16, *plaited rush, coir dyed dark green, linen and cotton on a warp of khaki and black cotton.*



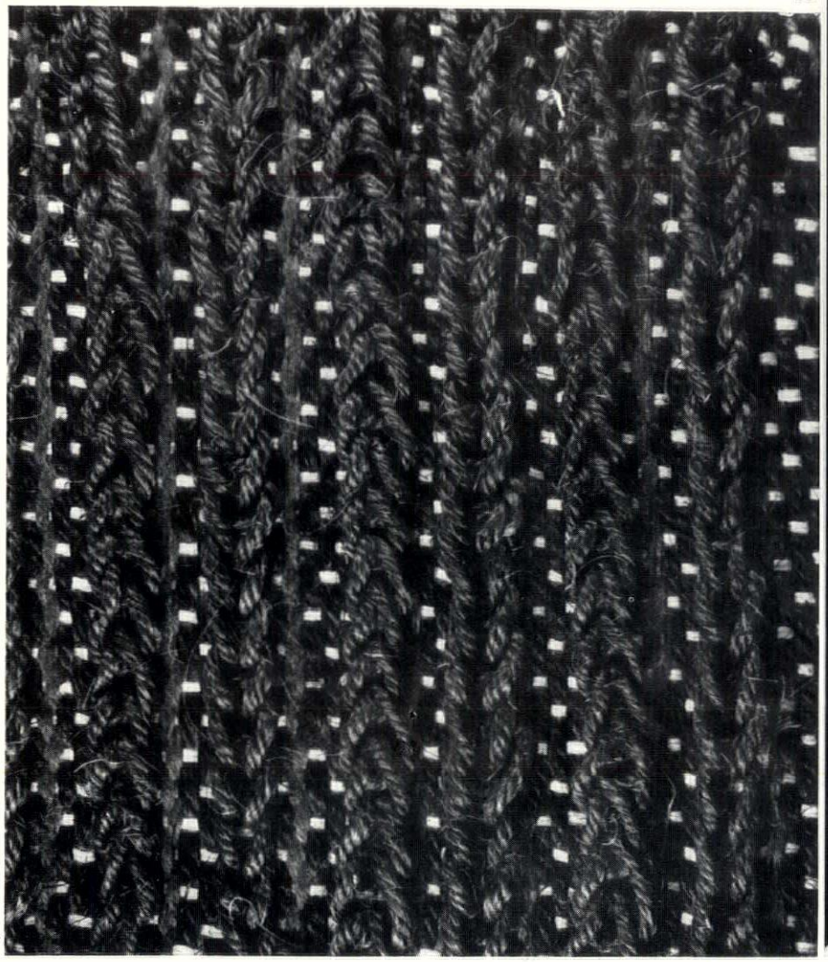
14



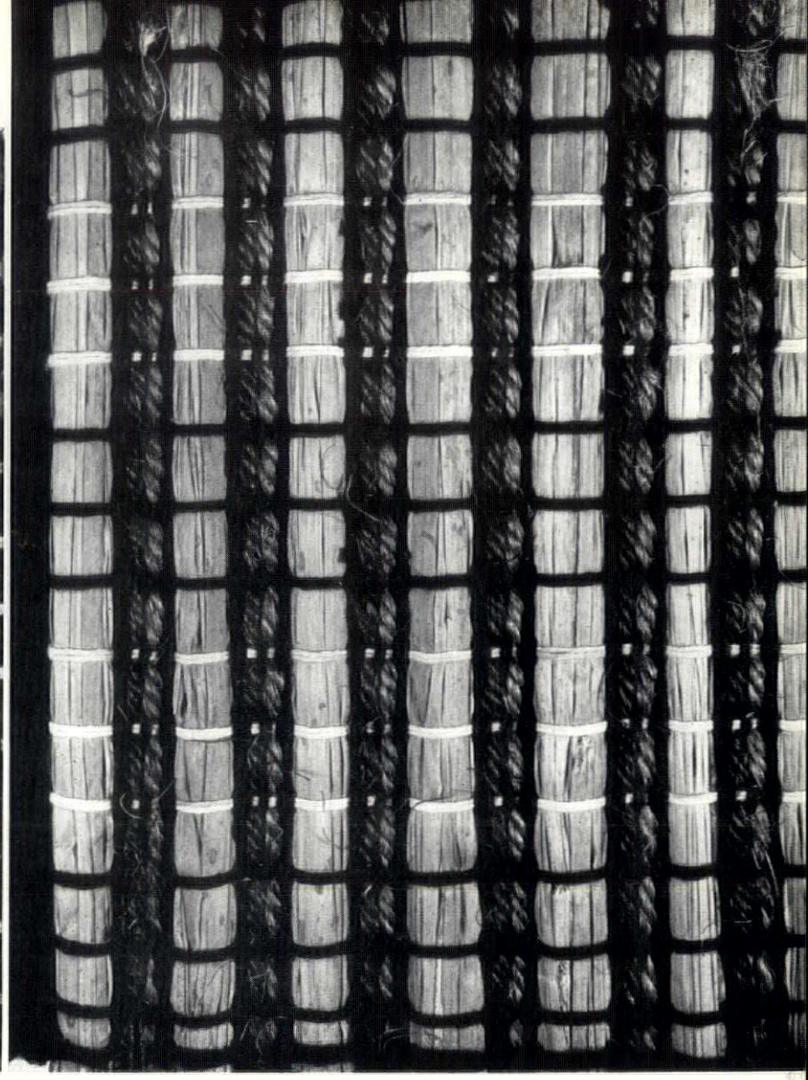
15



16



17



18

By Peter Constantinidis: 17, *dark green and black sisal and red-brown hemp on a cotton warp.*
By Anne Beaufoy: 18, *rush, sisal dyed two shades of green, and black cotton, on a black and white cotton warp.*

flooring materials, rush, sisal, coir and seagrass. As well as novelty he achieves richness and an unlimited variety of pattern and texture. Where such materials as hemp and cotton are used this can work out extremely cheaply—a mat 30 inches by 50 inches can cost from 12s. to 15s. Low cost is, however, in roughly inverse relation to durability. The hardwearing materials, rush or plastic covered flex, are of course more expensive. The less hard-wearing combinations can be used to great effect as hangings for decorative or functional use, as a background for display of objects, or behind the seats in a coffee bar.

All these weaves are done on the simplest type of loom. 18 is in fact a beginner's first piece of weaving.

D.R.

Corrigenda

The drawing of a typical assembly of Ladder Units, (Design Review, AR February, 1956) should have been attributed to the designers of Magpie Furniture, Martyn Collins and James McKay Spence.

3 TECHNIQUES

STANDARDIZED COLOUR

by Lance Wright

Though British Standards are not mandatory, the publication of BS.2660:1955 (Colours for building and decorative paints) is an event without parallel in the history of colour in building. For it is the first time that a nation's colourmen, chief paint users and professional advisers have banded together to give their support to the use by the building public of a prescribed range of colours. This publication could prove as decisive in the general history of architecture as, say, the publication of a standard number pattern for modular co-ordination; for its interest is æsthetic as well as technical and its objective is as much to create an informed colour sense among architects as to simplify the problems of paint stockists.

The first step towards the new standard was taken in 1952 by the paint industry (to be exact by the Paint Industry Colour Range Committee) who called upon the RIBA to help them decide on a range of 50 or 60 colours to replace the many existing ranges and simplify the ordering of paints. The RIBA considered that the scope of the range should be widened, studies were begun at BRS, and it was finally agreed by all that the range itself should be expanded to about 100 colours, that it should be addressed to all users of building paints and that it should be enshrined in a British Standard.

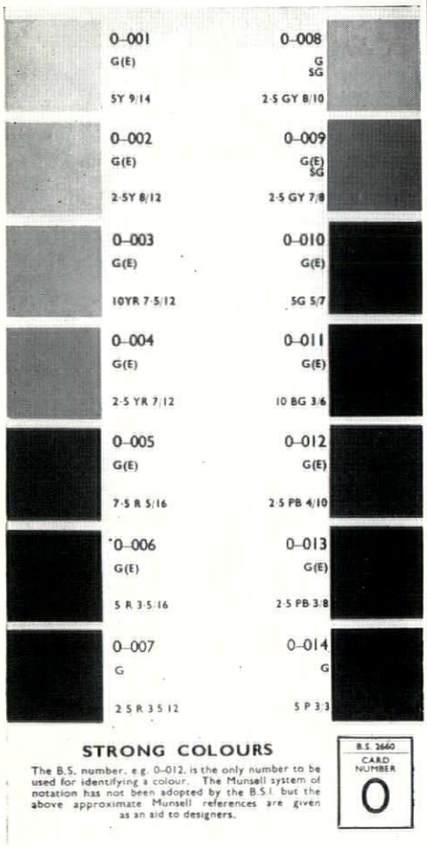
This would not be the first time that a British Standard had been devoted to colour, for *Colours for ready mixed paints* (latest version 381c:1948) dates back to 1930. But the purpose of BS.381c has always been to define what is meant by such time-honoured descriptions as Post Office Red and Peacock Blue: and not to select colours for preferential use. A closer precedent for the new standard is given by the Archrome Colour Range of 47 colours, published by the Ministry of Education in 1953 for use in schools. For this, like the new standard, was intended to be an instrument to help architects to use colour and not merely to define it. In fact the contribution of the Archrome Range to the new standard is considerable. There is, for instance, the use of the Munsell notation to locate colours; there is the relation of each colour in the range to its reflection factor; there is a legacy of actual colours, for 36 of the original Archrome colours have found their

way into the new standard; lastly and most important of all there is the legacy of experience to which the use of the Archrome range has given rise.

The case for standard colours

The notion of 'standardized colour' is not immediately attractive to architects, for they tend naturally to assume that the colour sense is not to be satisfied by anything short of an unlimited choice. From the first we must make it clear that the purpose of the new range is not to chase all other colours out of existence, but merely to reduce the number of colours which manufacturers need keep in stock. From the architect's point of view the main purpose is, surprisingly enough, aesthetic. It is an unfortunate fact that, for all their art school training, perhaps not one architect out of five hundred in the present generation has succeeded in developing an architectural colour sense. The reason for this is precisely that he has too much to choose from and that the chances of his developing this sense are hindered, not helped, by the present custom of the trade whereby each manufacturer publishes his own range and gives his own names to all colours in it.

The case for a limited range is based on a number of observable facts. The first of these is that the architect has certain definable requirements regarding strength (chroma) of colours: if therefore all colours falling outside the ranges serving these requirements were removed then one source of pointless embarrassment and error would be cut out. This is a negative factor:



Colour Card No. 0, half full size. The top number opposite each colour is the serial number in the range, the bottom number is the Munsell reference. The letters in between (G (E), G, SG) relate to the classes of paint in which the colour can be obtained in reliable form. '(E)' means external quality, 'G' means gloss and 'SG' means semi-gloss. There is also an abbreviation 'M' for matt.

allied to it is the positive consideration that at least one approach to a successful colour scheme is to use colours from a limited number of different hues. This leads to the concept of building up families of colours on a principle which has some analogy with that used by modular co-ordination experts when they use common denominators to provide dimensions which will 'mesh' together. If it were necessary to provide large families of *all* hues a range would still be unmanageably large. The fact that the eye is far more sensitive to colours in the yellow end of the spectrum suggests that this section calls for a fuller provision than the others.

The significance of hue 'families' becomes clearer when we consider the third and last attribute in the Munsell notation, 'value.' 'Value' means in practice 'degree of lightness' in a colour and corresponds closely to the percentage reflection factor. By using a family of colours which are connected to one another by hue but which differ in lightness, the architect is free to adjust his reflection factors and—even more important—to model his surfaces.

The content and form of the range

It is reasonable to discuss the manner in which the range is presented and the colours it contains together, since form and content are so closely related. The object of the designers was to produce an instrument for use, a sort of architect's eye-sharpener. The form chosen was ten cards each about 9½ inches high and 4½ inches wide. The colour patches were then ranged down the left- and right-hand edges of the face of each card (there are none on the back) and so aligned that they 'bleed off.' One of these cards is devoted to the 'strong colours,' that is, to the strongest colours in each hue, and one to the greys. The remaining eight are shared out according to hue with, on average, one hue to a card. Since the yellow end of the spectrum is more fully and the blue-green end more sparsely represented, the yellow-reds have two cards while the blue-greens and blues share one card and the purple-blues and red-purples share another. Next, the colours are ranged from light at the top of each card to dark at the bottom, with the low-chroma colours in the left-hand column and the fairly strong chroma colours on the right. This latter division is particularly important as it corresponds to the two main use categories of paint.

'Low-chroma colours' are the soft background colours used for large areas. They range up to about chroma 6, and include the very interesting group of dark low-chroma colours which are so useful for painting machinery and the exteriors of buildings. The 'fairly strong chroma colours' are those which are generally used on small well-defined areas to give contrast. When, therefore, the architect has to make a choice in one or other of these categories he has merely to fan out the cards in one direction or the other in order to get all the suitable alternatives in the range simultaneously displayed, and displayed not only together but in a descending order of lightness. This division into 'low' and 'fairly strong' chroma is kept up in the two cards which display two hues, owing to the fortuitous circumstance that the blue-greens and purple-blues are low chroma and the blues and red-purples fairly strong chroma.

With the range fanned out in front of him the architect can very quickly grasp its anatomy. It would not be helpful to enumerate all the colours, but one or two points call for notice. One of these relates to the problem of the neutrals. These are, of course, an exceedingly valuable asset; but experience with the Archrome range showed that where pure neutrals (i.e., any colours which have the simple N notation in the Munsell Atlas) are used with large areas of a particular hue, they tend to appear tinged with a colour from the opposite end of the spectrum to the hue of the surrounding colour: if this is warm the neutrals look bluish, if this is cold the neutrals look yellowish. In these circumstances, if the effect of neutrality is to be preserved, greys must have a slight hue affinity with the surrounding colour. Thus, though three genuine neutrals have been taken over from the Archrome range (N7, N8, N9) these have been supplemented with a group of warm greys, each a half-step away from the neutral (2.5 Y 8/0.5, 2.5 Y 6/0.5, 2.5 Y 4/0.5, and 7.5 R 6/0.5) and two cold greys (10 B 4/0.5 and 7.5 B 2/1). This same consideration led to the adoption of two warm off-whites, 10 YR 9.25/1 and 5 Y 9.25/1.

The low-chroma section of the range is dominated by 'families' of fixed hue and chroma, but with stepped lightness values. There is, for instance, the 10 YR group (i.e., yellow-red veering towards yellow) which shows a run of four shades of chroma 2 with lightness values of 3, 6, 8 and 9. Another family of chroma 2 is the 5Y set with three lightness values of 6, 7 and 8. One peculiarity of the Munsell notation is that in colours of low chroma the hue is not apparently decisive in settling appearance: thus the runs of the 10 YR and 5 Y are not yellow-reds and yellows as commonly understood but brown-greys and green-greys. Some of the most interesting colours in this low-chroma group fall in the small group of low value (i.e., dark) colours, such as 5 G 2/2 which is a blackish green, 7.5 B 2/1, a dark blue-grey, and 5 Y 4/4, an olive green much used for chalkboards.

The 'fairly strong chroma' colours, though they are generally linked to the low-chroma colours, give a more balanced if sparser coverage of the spectrum. These are the 'good' full-bodied colours which, as their chroma is high, have the appearance which their hue notation would suggest. The 14 'strong' colours of Card O are intended to indicate the strongest colours that are likely to be used on an architectural scale, and represent at the same time the limits of chroma to which each of the 14 major hues can be manufactured in a reliable form. With these it is interesting to notice that, whereas true red and scarlet can be carried as high as chroma 16, purple cannot be carried above chroma 3.

Conclusion

Time alone can tell if this range is going to meet all the needs of a generation. The important fact is to remember that it is emphatically an architect's range, and that it has been drawn up not with the object of standardizing current trade usage (as is the case with too many British Standards) but to make the best use of our knowledge and experience. As these expand, the range will change, for its publication marks a beginning, not an end. Certainly the difference between this and the ordinary run of manufacturers' colour-cards is very striking. A common characteristic of the latter (at least until a few years ago) was the predominance of creams, stones and buffs, the reason being that these are used on the largest surfaces and are therefore sold in the greatest bulk. The designers of the new range, however, are of the opinion that what matters is not the quantity of a paint which is used but the number of times it is specified. Thus, though the range is characterized by the runs of related low-chroma colours, it also shows a better selection of 'strong' and 'fairly strong' colours than any predecessor.

The original motive for publishing a range at all was technical, not aesthetic. From the point of view of paint technology the significance of the 101 colours is that all can be manufactured at reasonable cost in a form which may be considered reasonably 'fast.' In fact the cards go further than this. Opposite each colour is a symbol which advises whether the colour can be readily manufactured in gloss (all qualify for this), in semi-gloss and in gloss for external use. This is not, of course, the same thing as saying that all paints conforming to these colours will in fact prove reliable, for the specification specifies *colours* not *paints*. In fact paints form one of the outstanding weaknesses in the architect's armour of specifications. For though there are rigid specifications for so many of the ingredients of paint there are virtually none for the finished product. The reason for this is apparently that the paint industry includes a large number of small firms and that the method of testing paints is considered too costly for many of them. At the same time it is worth noticing that the Ministry of Supply and the LCC have both laid down firm requirements for the quality of paint, and that it should not be long before all paint users are given similar protection.

Another inevitable shortcoming of the standard is that (like BS.381c before it) it does not attempt to 'define' colour in the precise sense which we usually expect of British Standards; in the sense, that is, of stating what tolerances can be allowed. The Munsell references help to locate a colour but do no more. This is a very practical problem, but our present knowledge of colour does not permit a simple, easily workable solution. Another point of which architects will be painfully aware is that the Standard applies only to *paint* colours, not to colours which are applied to building materials by other methods. There is, for instance, no necessary congruity between these 101 colours and those which are applied to tiles or to melamine plastic sheets. If only they were extended to these important architectural surfaces the incentive to use the Standard would be even stronger. It is strong, all the same, and it is for architects to do justice to the imagination of the sponsors of the range by using it intelligently and to the full.

Corrigenda

In the article 'Prestressed Precast Floors' (AR February, 1956) illustrations 12 and 13 were accidentally transposed. 12 and not 13 showed a section of Stahlton floor and 13 showed the St. Paul's Cray floor.

[Trade Notes on page 286

An example of a hotel purpose-made window. A general view showing the pleasing facade enhanced by Beanes windows.
Photographs by courtesy of the Proprietors of the Tavistock Hotel, Ltd.

WE MAKE THE CHARACTER YOU CREATE

In an age of standardisation
and mass production, there are still
some trades which require the exercise of
human skill and ingenuity. One of these is
the ancient craft of metal working seen
at its most dexterous in the fabrication
of purpose-made metal windows.

We like to think, as one of the oldest and
most experienced practitioners of this craft,
that it is our business to give practical
expression to your finest thoughts—in fact, to
make what you *create*. Why not write to us
and find out more about our purpose-made
windows, and how they can be of use to you in
working out problems to which there
is no 'standard' solution.

A. Beanes & Co. Ltd.

Metal Window Manufacturers for 70 years.

BRIDGE WHARF.
BISHOPS BRIDGE ROAD.
LONDON, W.2.
Phone: PADdington 4058 / 3144

continued from page 284]

4 THE INDUSTRY

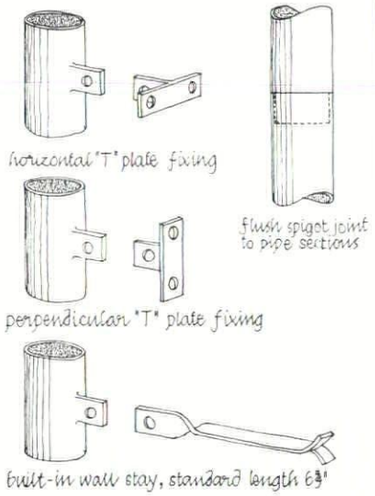
A New Swatch-Book

At the time of writing there is a certain anxiety concerning what sort of response the new range of 101 colours is going to receive from the trade (see article on British Standard colour ranges on pages 283-4). Though only use can prove its value, it has every appearance of being excellent: the colours are good in themselves and there is a varied choice in the parts of the range where a choice is wanted. One of the first firms to pin their colours to this mast is T. & W. Farmiloe Ltd., the manufacturers of Nine Elms Paints, who present the full range in the form of a truly magnificent swatch-book. The leaves are generous in size and they are parted to enable you to test the effect of any one shade when used with any other. The colours are matt, but a captive sheet of stiff cellophane is bound in with the book to enable you to judge the approximate effect of each tint in gloss paint.

T. & W. Farmiloe Ltd., 17-23, Rochester Row, London, S.W.1.

Enamelled Rainwater Goods

Although 'Vitreflex' pressed steel enamelled rainwater goods recently increased their prices by 43½ per cent, they are still a few pence cheaper per yard than a similar traditional cast-iron pipe with three coats of paint. Economics apart, Vitreflex supply an interesting jointing system shown below which consists of a simple 1⅛ inch sleeve at the pipe ends with a hidden fixing plate. The LCC have used this joint on several estates and the clean appearance does much to make external plumbing less obtrusive. The steel used has a low carbon content and is rolled to



14–16 gauge. Colours unfortunately are limited to a range of eleven, and it is well to note traditional English taste—four of the eleven are greens and another is a near green.

Vitreflex Limited, Dafen, Llanelly, South Wales.

Mk II Heat Pump

During this month Ferranti hope to have an improved Heat Pump on the market, the MK II, on sale at £106 15s. plus £53 1s. 7d. purchase tax. The MK II gives improved performance, and the fan switch has been placed at the front of a redesigned cabinet.

Though heat pumps are becoming quite well known—they cool larders, make ice and heat domestic hot water—there are many points in their installation requiring some care and Ferranti have issued a manual on this subject. When designing round a heat pump unit, the manual states that the distance between heater and storage tank should be restricted to 20 feet (i.e., a 40 foot maximum loop on the insulating pipe track) and when fixing in a single-storey building the hot water tank should be above the machine and not more than 6 feet away from it. The manual adds that a 30 gallon lagged storage tank is generally sufficient, but where household consumption is likely to exceed 60 gallons per day it suggests an immersion heater set at 140°F. be fitted. Flow and return pipes are ½ inch and should be lagged as the storage tank.

Like all machines, it has its stated maximum which it is well to observe. Best results are obtained in a larder not exceeding 15 foot super with a tile or concrete floor and insulated walls. Efficiency is impaired by hard water scaling, and if a water softener is not fitted to the domestic supply it is advisable to fit a micromet cartridge to the pump. This does not exactly soften the water, but prevents furring up. (Cartridges should be renewed twice a year and are

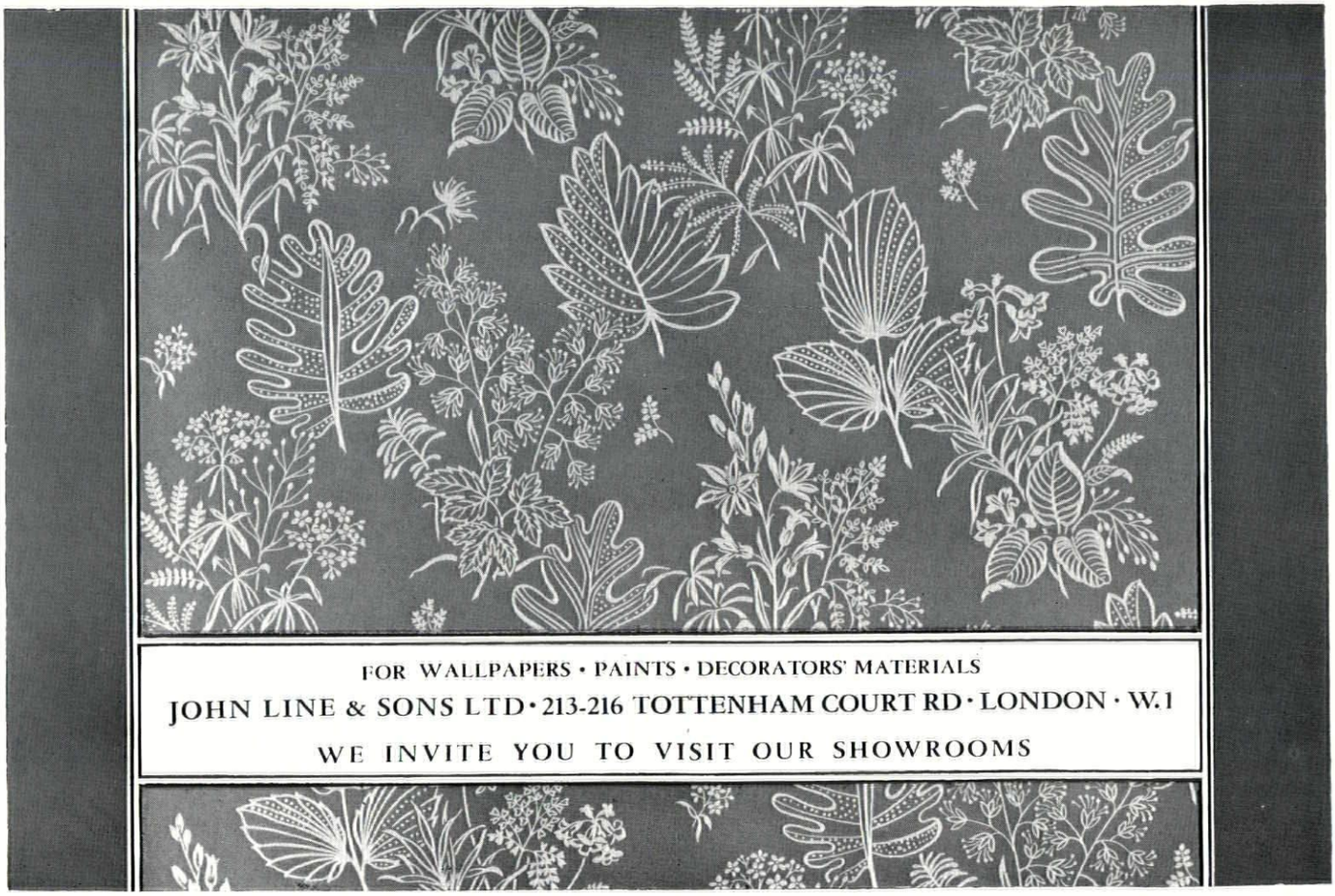
obtainable from The Jackson Electric Store Co. Ltd., 143, Sloane Street, London, S.W.1, or Radiation Group Sales Ltd., Radiation House, 7, Stratford Place, London, W.1.) Finally, general estimates based on the MK I machine suggest that consumption of electricity is likely to be 3 units per day plus one unit per user per day.

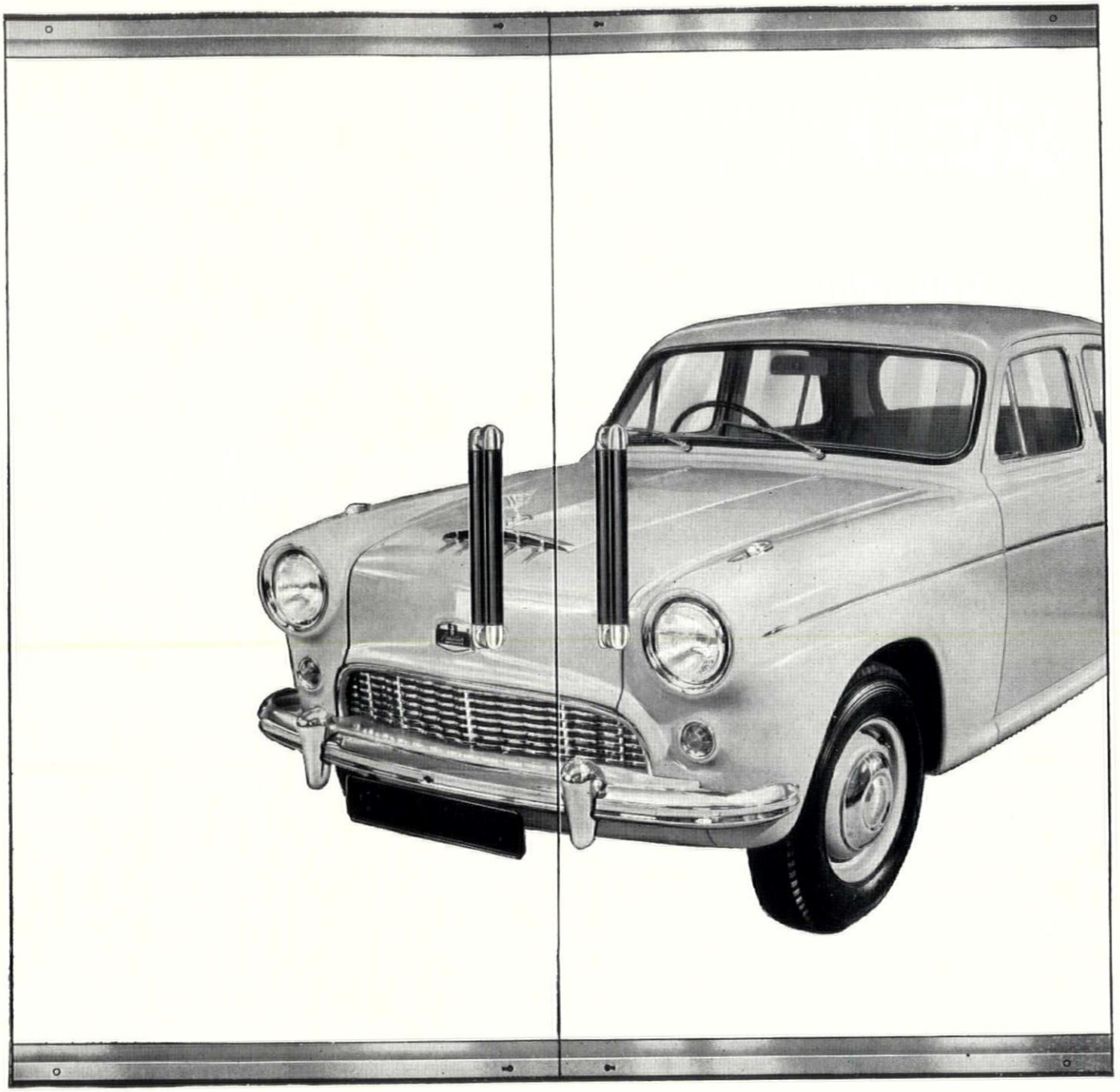
Ferranti Ltd., Heat Pump Department, Moston, Manchester, 10.

The Radisil Electric Fire

There have been silica covered electric fire elements on the Continent for sometime, but it is believed that Hanovia are the first manufacturers in this country to introduce them to the English market. The fire has a self-supporting spring-wound element enclosed in a silica sleeve, and is available in 250, 500 and 750 watt

[continued on page 288

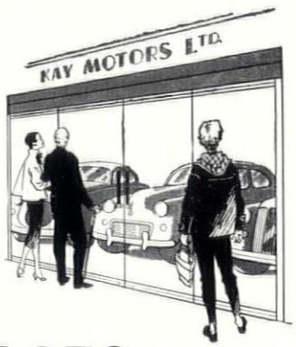




To see inside—is to be inside

Many devices have been used to encourage people to "step inside". But nothing does it so gracefully and effectively as "Armourplate" Glass Doors. They add so much to outward appearances and act as an entrancing visual link between inside and out. So easily kept clean, "Armourplate" Glass Doors are always the most inviting entrances.

The standard height of "Armourplate" Glass Doors is 84" and they are made in standard widths of 30" and 36". Non-standard sizes can be made to order. Fittings, in a choice of finishes, and handles, in several styles, are supplied complete with the doors.



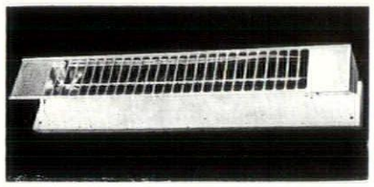
"ARMOURPLATE" GLASS DOORS

PILKINGTON BROTHERS LIMITED

CONSULT THE TECHNICAL SALES AND SERVICE DEPARTMENT AT ST. HELENS, LANCS. TELEPHONE: ST. HELENS 4001; OR SELWYN HOUSE, CLEVELAND ROW, ST. JAMES'S, LONDON, S.W.1. TELEPHONE: WHITEHALL 5572-6. *"ARMOURPLATE" is a registered trade mark of Pilkington Brothers Limited. Supplies are available through the usual trade channels.*

ADA16

continued from page 286]



ratings. These sleeves are only ¼ inch diameter, and are set against a hinged chromium-plated reflector with an anodized aluminium safety grille. Designed primarily as a wall fitting, the fire's silica sleeve gives additional protection in damp and steamy atmospheres (bathrooms, kitchens, etc.) and it reduces the danger of fires caused by brushing a naked element. A prototype can be seen in operation in the Village Hall at Wraysbury, Bucks, and from this the unit measuring 26 inches by 3½ inches by 4¾ inches deep has been evolved. The price including tax is £4 19s. 1d., and element replacements cost 2s. 6d., whilst the silica sleeve can be renewed for 15s.

Hanovia (Lamps Division of Engelhard Industries Ltd.), Bath Road, Slough, Bucks.

CONTRACTORS etc

Buildings in the Gold Coast. *Architects:* James Cubitt and Partners.

Kumasi College of Technology: General contractors: Gee, Walker & Slater Ltd.

Sekondi Training College and Secondary School: General contractors: B.B.C. Building Contractors.

Sekondi Regional Library: General contractors: B.B.C. Building Contractors Ltd. *Sub-contractors: Terrazzo tiling:* Addi Ltd.

Industrial Development Corporation Showrooms and Offices, Accra. General contractors: African Finance and Investment Corporation Ltd.

Guest House in Accra and Gold Coast Legion Memorial Hall, Accra. General contractors: The Construction and Furniture Co. (West Africa).

The electrical sub-contractors for all the above-mentioned West African buildings were Drake & Gorham (Contractors) Ltd.

Offices at Watford, *Architects:* W. S. Hattrell & Partners. *General contractors:* Holst & Co. *Sub-contractors: Internal partitioning and joinery:* Firmin & Collins Ltd. *Heating and ventilating, plumbing and gas supply:* G. N. Haden & Sons. *Electrical engineers:* J. W. Russell Ltd. *Kitchen equipment:* Benham & Sons. *Travertine flooring and terrazzo flooring and lining:* Art Pavements Ltd. *Tiling:* Carter & Co. *Metal windows:* Henry Hope & Sons. *Brickwork:* Dermot & Ferguson Ltd. *Balustrading:* Best & Lloyd Ltd. *Linoleum:* Korkoid Ltd. *Lighting fittings:* General Electric Co. *Fire alarm system:* Associated Fire Alarms Ltd. *Internal telephone:* Electrical Contracts & Maintenance Co. *Lift engineers:* Express Lift Co. *Blinds:* Tidmarsh & Sons. *Painting and decorating:* T. H. Kenyon Ltd. *Wood block flooring:* Stevens & Adams Ltd. *Roofing:* Ragusa Asphalt.

Offices in Coventry. *Architects:* W. S. Hattrell & Partners. *General contractors:* W. H. Jones & Son. *Sub-contractors: Reinforced concrete framework, floors and flat roofs:* Holst & Co. *Roof covering:* Standard Flat Roofing Co. *Frenger ceilings, heating, hot and cold water services:* G. N. Haden & Sons. *Gas incinerators:* West Midland Gas Board. *Fireproof doors:* Mather & Platt Ltd. *Automatic fire alarm installation:* Associated Fire Alarms Ltd. *Balustrade and core rails:* Scaffolding (G.B.) Ltd. *Glascrete roof lights and screen:* J. A. King & Co. *Metal windows* (4)*:* Henry Hope & Sons. *Flush doors:* Gliksten Doors Ltd. *Ironmongery:* Parker, Winder & Achurch Ltd. *Glazing:* Glass (Coventry) Ltd. *Venetian blinds:* London Blinds Ltd. *Fibrous plasterwork:* H. H. Martyn & Co. *Stone facings:* W. H. Fraley & Sons. *Cork flooring:* Korkoid Decorative Floors. *P.V.C. flooring:* Coventry Tile Co. *Concrete tile flooring:* Caledonian Concrete Products Ltd. *Terrazzo flooring:* Marbello & Durus Ltd. *Faience tiling to piers:* Hathernware Ltd. *Wood block floor:* R. W. Brooke & Co.

Factory at Aveley, Essex. *Architects:* E. R. Collister & Associates. *General contractor:* James Crosby & Sons. *Sub-contractors: Steelwork:* Fleming Bros. (Structural Engineers) Ltd. *Roofing, Q floors, Q deck, Q panel and Q grating:* Robertson Thain Ltd. *Patent glazing:* Henry Hope & Sons. *Metal windows:* Aygee Ltd. *Gutters:* G. A. Harvey & Co. (London). *'Wall-span' curtain walling with infill panels of 'Vitroslab' by Messrs. Plyglass Ltd.:* Williams & Williams Ltd. *Up and over doors:* Overhead Doors (G.B.) Ltd. *'Dravo' heaters for depot building:* Weatherfoil Heating Systems Ltd. *Facing bricks:* Proctor & Lavender Ltd. *Boilers:* G. W. B. Furnaces Ltd. *Paints:* Farrow & Ball Ltd. *First electrical contract—mains:* T. Clarke & Co. *Building blocks:* Broad & Co. *Skirting heating units:* Crane Ltd. *Asbestolux board:* The Cape Asbestos Co. *Rocksil insulating material:* Wm. Kenyon & Sons.

Manufacturing Plant at Basildon, Essex. *Architects:* E. R. Collister and Associates. *General contractors:* Sir Lindsay Parkinson & Co. *Sub-contractors: steelwork:* Fleming Bros. (Structural Engineers) Ltd. *Roofing, Q deck and Q panel:* Robertson Thain Ltd. *Facing bricks:* Proctor & Lavender Ltd. *Boilers:* G. W. B. Furnaces Ltd. *Paints:* Farrow & Ball, Ltd.

Factory at Crawley New Town. *Architects:* J. M. Austin Smith & Partner. *General contractors:* F. G. Minter, Ltd. *Sub-contractors: Concrete blocks:* Leca (World) Ltd. *Precast and prestressed concrete:* David Chaston Ltd. *Bricks:* J. Hunter; R. Passmore. *Structural steel:* Concrete & Structural Products, Ltd. *Erection:* Horseley (Engineers) Ltd. *Floor tiles and wall tiles:* Carter & Co. *Asbestos roofing:* W. Banks & Co. *Partitions:* Constructors Ltd. *Patent Glazing:* Prodorite Ltd.; Empire Stone Co. *Waterproofing:* Ruberoid Ltd. *Terrazzo floors:* Malacarp Terrazzo Co. *P.V.C. floor tiles:* Marley Tile Co. *Central heating:* Norris Warming Co. *Kitchen ventilation:* Benham & Sons. *Boilers:* Ideal Boilers & Radiators Ltd. *Electric wiring:* Berkeley Electrical Engineering Co. *Electric light fixtures:* Falk Stadelmann & Co. *Door furniture:* G. & S. Allgood Ltd. *Casements:* The Crittall Manufacturing Co. *Telephones:* Hadley Sound Equipment Ltd. *Folding gates:* Dennison Kett & Co.; Bolton Gate Co. *Automatic sump pump:* James Beresford & Sons.

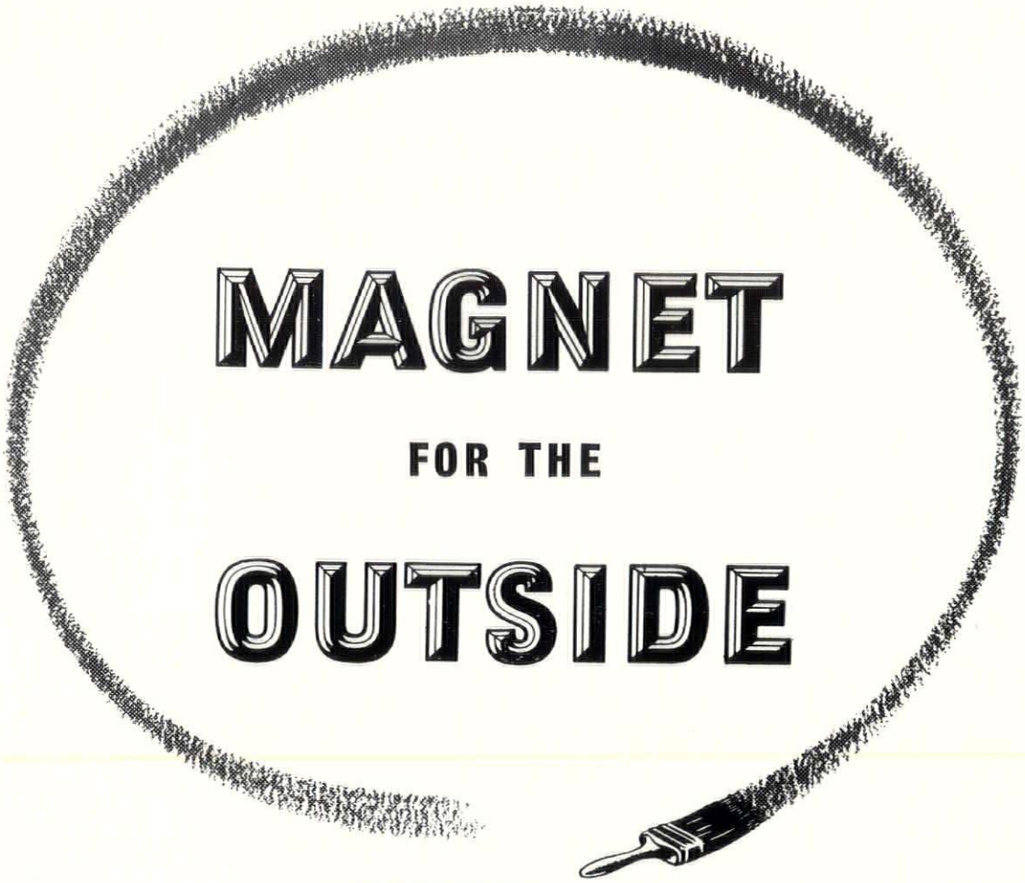
[continued on page 290

CHANGE OF ADDRESS

We wish to advise you that on and after April 3rd our new Chief Office will be :-

TRINIDAD LAKE HOUSE
232-242 VAUXHALL BRIDGE ROAD
LONDON S·W·1

Telephone: Tate Gallery 4388 (10 lines)
Telegrams: "Limmer, Sowest, London"



MAGNET

FOR THE

OUTSIDE

WHERE

PAINT

MUST DO MORE THAN DECORATE

Magnet could be chosen for its looks alone ; for its lustrous gloss and dense film. For the variety of shades given by 30 intermixable colours. But first and foremost Magnet is a white lead base hard gloss paint — and **WHITE LEAD PAINT LASTS.**

ASSOCIATED LEAD MANUFACTURERS LIMITED · LONDON · NEWCASTLE · CHESTER

continued from page 288]

Sanitary fittings: Dent & Hellyer Ltd. *Sectional steel water tank:* Braithwaite & Co. Engineers. *Metal bicycle stands:* Alfred A. Odoni & Co. *Lightning conductor:* W. J. Furse & Co. *Fireproof door:* Mather & Platt Ltd. *Sunblinds:* Danuara Ltd. *Incinerator:* Southalls (B'ham) Ltd. *Furniture:* Hille, of London, Ltd. *Cloakroom fittings:* G. A. Horney & Co. (London).

School at Belper, Derbyshire. *Architects:* F. Hamer Crossley, Derbys County Architect, in collaboration with Development Group, M.o.E. *General contractors:* F. Troy & Co. *Sub-contractors: Pre-cast plaster part, fibrous ceilings:* John Kent (London) Ltd. *Metal windows:* Henry Hope & Sons. *Asbestos-cement sheeting:* Turners-Asbestos Co. *Structural steel:* Brockhouse Steel Structures Ltd. *Pre-cast concrete wall slabs:* Stent-Precast Concrete Ltd. *Metal rainwater heads:* Greenwood & Airvac Ventilating. *Pre-cast concrete staircase steps:* Girlings Ferro Concrete Ltd. *Pre-cast concrete floor and landing slabs:* Hills (West Bromwich) Ltd. *Wood-wool, channel reinforced slabs:* Thermacoust Ltd. *Sliding folding timber doors:* Esavian Ltd. *Roof felting and dampcourse:* Ruberoid Co. *Mastic joints:* Mastic Jointing & Sealing Co. *Electrical installations:* Etna Lighting & Heating Co. *Chimney stack:* True Flue Ltd. *Heating and hot water supply:* Weatherfoil Heating Systems Ltd. *Sanitary fittings:* Adamsez Ltd. *Studded rubber tiles:* Haskel, Robertson & Co. *Hardwood floors:* Hollis Bros. Ltd. *Clay floor and wall tiles:* The Camden Tile & Mosaic Co. *Plywood w.c. cubicles and timber cycle sheds:* H. Newsum Sons & Co. *Vermiculite concrete ceiling panels:* Meta Mica Ltd. *Suspended plasterboard ceilings:* Anderson Construction Co. *Paints:* John Hall & Sons (Bristol and London) and Joseph Mason & Co. *Pre-cast manholes:* The Mono-Concrete Co. *Adhesives:* B. B. Chemical Co. *Coloured glazed tiles:* Carter & Co. *Acoustic tiles:* H. W. Cullum & Co. *Glazing:* Victus Glassworks (Romford) Ltd. *Plumbing:* J. C. Toogood Ltd. *Removable balustrades:* Haywards Ltd. *Changing room benches:* J. Leaver & Sons. *Tubular framing for kit hangers:* James, Sieber Equipment Co. *Ironmongery:* Beckett, Laycock & Wilkinson Ltd. and James Gibbons Ltd. *Joinery:* Troy Joinery & Cabinet Co.; Wheeldon Bros. ; W. Browne & Co. and D. Burkle & Sons. *Metal standard shelf brackets:* Libraco Ltd. *Gearing for movable partition:* W. J. Furse & Co. *Standard road, light fittings:* G. E. C. Ltd. *Furniture:* George M. Hammer & Co.; Russell Bros. (Paddington) Ltd. *Pre-cast concrete road light fittings:* Evans Concrete Ltd. *Stackable chairs:* Kingfisher Ltd *Housecraft flat furnishings:* Furniture Industries Ltd. *Chalkboard cloth:* E.S.A. Ltd. *Light fittings:* Pulford Brown Bros.; Hartley Electromotives Ltd.; Troughton & Young Ltd.; General Electric Co.; Merchant Adventurers of London Ltd. and Bushell & Saward Ltd. *Fire alarm equipment and clock:* Gents & Co. *Venetian blinds:* Home Fittings (G.B.) Ltd. *Tarpaving:* Constable Hart & Co. *Fencing:* Permafence Ltd. *Main entrance gates:* Mott & Partners Ltd. *Rubber link mats:* Tyre Products Ltd. *External door stops:* Gardiner & Sons & Co. *Curtain tracks:* Thos. French & Sons. *Pre-cast concrete kerbs:* Hilcrete Ltd.

Factory at Solihull. *Architects:* Hasker & Hall. *General contractors:* John Laing & Son. *Sub-contractors: Asphalt:* Ragusa Asphalte Co. *Reinforced concrete:* Concrete, Ltd.; British Reinforced Concrete Co. *Bricks:* London Brick Co. *Special roofings:* Wm. Briggs & Sons. *Aluminium cladding panels:* Robertson Thain Ltd. *Partitions:* Rowe Brothers Ltd.; Ditchburn Equipment (Sales) Ltd. *Patent glazing:* Hills (West Bromwich) Ltd. *Structural steel:* Rubery Owen Ltd. *Granolith stone:* Empire Stone Co. *Central heating:* Weatherfoil Heating Systems Ltd. *Gas fixtures:* Thos. de la Rue Ltd. *Electric wiring:* Lee, Beesley & Co. (Birmingham). *Electric light fixtures:* The General Electric Co. *Metal staircases:* Frederick Braby & Co. *Plumbing:* Shouksmith Ltd. *Window control gear:* Arens Controls Ltd. *Casements:* Crittall Manufacturing Co. *Roller shutters:* Roller Shutters Ltd. *Sanitary fittings:* B. Finch & Co. *Terrazzo:* Marbello & Durus Ltd. *Paint:* Permoglass Ltd.; Lewis Berger & Sons.

Offices in Berkeley Square, W.1. *Architect for structural alterations:* H. T. Cadbury-Brown. *Architects:* James Cubitt & Partners. *General contractors:* Brookes Builders Ltd. *Sub-contractors: specially designed furniture, fittings, inner entrance and glazed screen:* Andrew A. Pegram Ltd. *Display panels:* Hatts & Sandiford. *Carpets:* Heals Contracts Ltd. *Clocks, Council Room:* Messrs. Baume & Co. *Clocks, Directors' Office:* E. Hollander. *Light fittings:* Finmar Ltd.; Merchant Adventurers of London Ltd.; Troughton & Young Ltd. *Plants:* West End Flower House, Ltd. *Picture frames:* Robert Savage Ltd. *Sign writer:* Edward G. Truss. *Fittings:* Church & Co. (Fittings). *Furniture:* Hille of London, Ltd.; Finmar; Peter Jones; Tan Sad Chair Co. (1931). *Door plate:* Lettering Centre. *Library shelving and filing drawers:* Libraco, Ltd. *Council room chairs:* A. E. White. *Leather for covering chairs:* Joseph Clarke & Sons.

Showrooms for Wedgwood China at Glasgow. *Designer:* Alec Heath. *Contractors:* G. & W. Waller, Ltd. *Tables:* Hille of London, Ltd. *Chairs:* Gordon Russell Furnishings, Ltd. *Lighting:* Tungsten Filament Striplights. *Carpets:* William Templeton & Sons. **At Kensington, Newcastle and Oxford.** *Contractors:* G. & W. Waller, Ltd. *Wallpaper:* Cole & Sons. *Table and desks:* Gordon Russell Furnishings, Ltd. *Carpeting:* Berry Felt Carmilla. *Lighting:* Universal Metal Furring & Lathing Co.

Advertisements

Young Architect required for Structural Consultant's office (Age 21-24). Chance for young man to gain Civil and Structural background in good class work. Phone CHAncery 6630 2.30-3.30 p.m.

For Sale: Complete set "Wren Society Subscribers" 21 volumes with Index (University Press). Perfect condition. Best offer. Robertson, Huntington, Clonegal, Ferns, Eire.

'Brightside Heating & Engineering Company Ltd.' announce the appointment as from 1st January, 1956, of Mr. P. Baverstock as Manager of its Manchester Office at 40, Byrom Street, Deansgate, Manchester 3.

The Perfect Combination . . .

The best is often achieved only by a combination of two things. Such is the case with NACOFELT Roofing where good material and skilled laying go hand in hand . . . where every curve, every angle and every detail is built up as one unbroken surface by Neuchatel craftsmen. The proof of this perfect combination is to be seen on buildings all over the country.

FOR FELT ROOFING—SPECIFY

NACOFELT CRAFTSMAN LAID BY NEUCHATEL

SPECIALISTS FOR 80 YEARS IN ASPHALTE

For Tanking, Flooring, Roofing and Roads, and Approved Laying Contractors for Accotile Flooring.

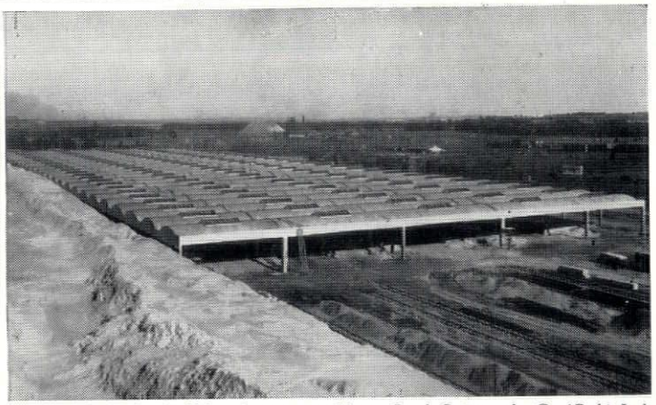
THE NEUCHATEL ASPHALTE COMPANY LTD.

58 VICTORIA STREET, LONDON, S.W.1 Telephone No. of Contracting Departments: RENown 1321

BRANCHES: BELFAST • BIRMINGHAM • CARDIFF • EDINBURGH • FROME • GLASGOW LEEDS • MANCHESTER • NEWCASTLE • OFFHAM (KENT) • PLYMOUTH • PORTSMOUTH

NEUCHATEL

CONCRETE CONTRIBUTIONS BY TWISTEEL



Kazerne Railway Sheds, Johannesburg, South Africa, Contractors: Messrs. Lewis Construction Co. (S.A.) Ltd.

To make sure of the highest standards in concrete design and construction, at the lowest cost in steel, money and time, call in the TWISTEEL Design Service. Their specialist knowledge, backed by many years of practical experience, enables them to advise architects and engineers, with certainty, on every aspect of design and planning for every type of construction involving the use of reinforced concrete: and they can also supply the reinforcement.

TWISTEEL DESIGN SERVICE

43 UPPER GROSVENOR STREET, LONDON, W.1 · TELEPHONE: GROSVENOR 1216

AND AT BIRMINGHAM MANCHESTER AND GLASGOW

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

Construction at its best . . .

PROTEUS PROP JET TEST HOUSE AT FILTON, BRISTOL

With movement hinges incorporated at the base of the columns, the specialist structural design of this building includes both reinforced concrete and reinforced brickwork and was prepared by The British Reinforced Concrete Engineering Co. Ltd., Stafford to the requirements of the Chief Architect to the B.A.C., Mr. Eric Ross, F.R.I.B.A.

Reinforced Concrete Design by...

BRC

We are proud to have played a part in speeding the development of the Proteus Prop Jet Engines powering the long range Bristol Britannia Airliner now being delivered to B.O.A.C.

Specialists in Reinforced Concrete Design and Suppliers of Reinforcement

THE BRITISH REINFORCED CONCRETE ENGINEERING CO. LTD., STAFFORD

LONDON, BIRMINGHAM, BRISTOL, LEEDS, LEICESTER, LIVERPOOL, MANCHESTER, NEWCASTLE, CARDIFF, GLASGOW, DUBLIN, BELFAST

ECTURAL REVIEW VOLUME CXIX NUMBER 713 JUNE 1956 FIVE SHILLINGS

at your service...

The famous range of
NINE ELMS paints available
in 101 colours
selected from the
R.I.B.A. Munsell range.

The incomparable
NINE ELMS Building Mastics.
FENESTRENE
(for Curtain Walling)
M.C.P.
(for Metal Casements)

The experience and
advice of the
specialists in our
Architectural Division.

We await your enquiries . . .

T. & W. FARMILOE LIMITED, ARCHITECTURAL DIVISION,

ROCHESTER ROW, WESTMINSTER, LONDON, S.W.1.

VICTORIA 4480

MARGINALIA

GARAGE IN SAN FRANCISCO. The multi-storey urban parking-garage appears now to an unavoidable building type—it is one of the essential pieces of equipment for maintaining circulation in central areas—but its final architectural form seems far from inevitable still. Basically it is a large filing-cabinet or storage-rack, and most so-called architectural approaches to the problem so far have only tried to dress it up as something else. Yet its inherent forms have their own architectural possibilities and the solution evolved by George Applegarth and his engineers, Ellison and Thomas, for a self-service garage in San Francisco, makes admirable use of the constituent elements, 1, making a handsome street-façade out of nothing but the balustraded floor-slabs, and using the access ramps in spiral form to give a corner treatment, 2, that is, literally, a new slant on Mendelsohn.

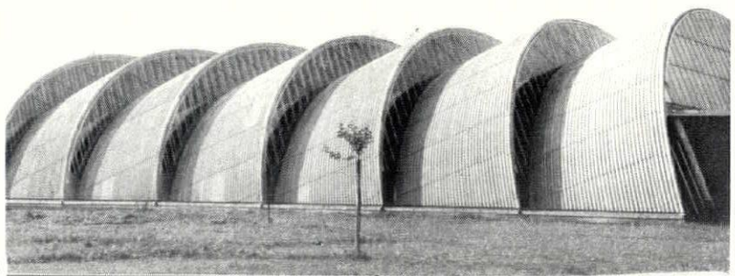
1

2

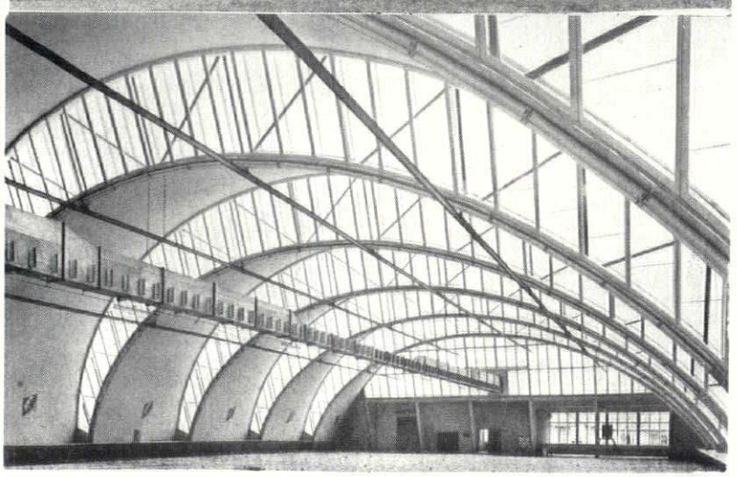
L'Architecture d'Aujourd'hui

CANTED CYLINDRICAL VAULTS. Inexpensive construction is not necessarily customary construction; unusual building forms can be made to answer cheaply to a specialized functional programme, and the new machine hall for an elastic factory at Gossau, Switzerland, 3, was built at 12 per cent less than the cost of a conventional factory structure of the same unencumbered floor-spread and performance. The architects, Danzeisen and Voser, were called upon to create a weaving-shed with a clear floor of 50 by 28.5 metres, northlit and well-insulated. The solution they evolved with their engineer, Heinz Hossdorf, was a run of seven canted cylindrical vaults of shell concrete construction, covered with two layers of cork and an outer armour of corrugated Eternit, which gives the added advantage of a good throw off for rain and snow. The north-facing lunettes between the high end of one vault and the low of the next, 4, are double glazed, with a steel truss-structure, which stiffens both vaults, between the two layers of glass.

3



4



Werk

US CONSULATE IN TRINIDAD. The enlightened policy of the US State Department regarding the design of its diplomatic buildings does not depend only on the use of designs by leading US offices; local architects are often associated with the design of new consular buildings from an early stage (AR, October, 1955). Occasionally such work is undertaken entirely by local designers, and a distinguished small-scale example of this aspect of the programme is the US Consulate General building in Port-of-Spain, Trinidad. Designed by Mence and Moore, an English firm which maintains an office in Port-of-Spain, the building is designed to provide office and garage accommodation for consular staff, and public facilities for visa business and other formalities. It consists of a regular rectangular block on pilotis, 5, the ground floor accommodation under this being loosely planned to provide public waiting-space, 6, storage facilities, and visa offices. On the upper floor, behind the long horizontal sun-breakers, are the typing pool, filing and coding rooms, and the offices of the Consul-General himself.

5

6

COTTON MURAL. The Stork Hotel restaurant in Liverpool, which has been designed by Reece Pemberton in 1955–6, has four murals in cottons, each representing cheerful gastronomic subjects, 7, and all framed together side by side. They were designed and executed by Margaret Kaye. The backgrounds are respectively bright red, blue, grey blue and grey green, and the designs are built up in plain and patterned cottons, threads and lace.

7

The Art of Re-issuing IV

The architectural classics of the Forties have a special flavour of their own—not for them the Playboy Pleasure Principles of the Twenties (AR, Marginalia, August, 1954), nor the pugnacious certitude of the Thirties (Marginalia, January, 1956)—the mark of the period is neutral, if persuasive exposition, aimed at a common reader who was, statistically at least, more common than the readers of Geoffrey Scott or Morton Shand.

Characteristically, as far as England is concerned, the two most influential appeared first over Sir Allen Lane's *Pelican* imprint—Nikolaus Pevsner's *Outline of European Architecture*, and J. M. Richards's *An Introduction to Modern Architecture*—and both, happily, are still with us. Mr. Richards's volume, which saw the light of day in 1940, was reissued earlier this year. It is now moving into its third hundred-thousand copies, its seventh printing and its third revision.

It is now established as the plain man's guide to the modern movement, and moreover is read in all English-speaking countries. It has played a part in establishing—of all things—the canon of accepted monuments on which the academic school of Italian theorists has based its theories (they have also paid it the compliment of plagiarising its diagrams).

As an instrument of the re-issuer's art it has one inestimable advantage—the whole material of the book is not contained within the matrix of an argument which begins on page one, and does not finish until the page before the index. Books of that kind—*Space, Time and Architecture*, for instance—grow unmanageable as more and more material is crammed into them, but *An Introduction to Modern Architecture* has an argument or exposition at its head, and the factual survey follows on behind. As a result, the number and type of buildings to be illustrated and described can be increased or revised according to need, while the opening chapters remain as compact and readable as ever. The book could go on growing and flourishing for as long as author and publisher may wish.

Prospect

The Royal Incorporation of Architects in Scotland has restyled its quarterly publication, and issue No. 103 has appeared as No. 1 of Architectural *Prospect*, with a cover

designed by Gordon Huntley and extensively revised typography and layout. The first of the restyled issues contains the sort of features that one might expect—personality-profiles, photographic competition, an interesting report on office experience in Denmark, and one on student experiences at US Universities—and also a well-deserved tribute to the pioneer architect-designed spec-builder houses by Alan Reiach for Morton and Johnstone at Joppa, outside Edinburgh, 8.

8

Prospect

ST. PAUL'S

The Holford plan for the surroundings of St. Paul's (the subject of an article on page 295) has had strong support from architects and architectural writers, and from many laymen besides. Below are extracts from some of the writings and speeches with which the plan was welcomed.

John Summerson, in The New Statesman and Nation:

. . . There is a grander possibility: that of remodelling the area around St. Paul's in such a way that the chaotic, arbitrary pattern of the city is brought into a local, precinctual harmony. This can be done—without artificiality, without archaism, without quixotic sacrifice. It is the natural and proud tribute of the twentieth century to the seventeenth. And this, it seems to me, is what Sir William Holford has succeeded in doing, with extraordinary technical skill and perfect appreciation of the nature of St. Paul's, both as a work of art and a historic building. . . .

Sir William has seized the vital point that one does not necessarily want to see St. Paul's as one huge eye-full. . . .

R. Furneaux Jordan, in The Observer:

St. Paul's is, and always has been, a glorified parish church hemmed in by the secular buildings of a maritime town. This does not mean that it must be denied a setting—far from it—but it does exclude all pretentious gestures and sham Italian glories. It means that the commercial buildings—which will arise anyway to wreck the scheme if they are not part of it—must not only be incorporated in the setting, they must themselves be the setting.

John Betjeman, in The Daily Telegraph:

The Holford plan keeps Wren's narrow vistas and recognizes that London is not a cathedral city like Ely or the Vatican or Wells, but a city with a cathedral in it, rising from the houses. . . .

As to the style of the buildings to be erected in the Churchyard, I think it would be the greatest mistake to make them monumental and of Portland stone like the Cathedral. I am even a little unsure of the look of Temple Bar placed alongside the North Front because it is so different in scale and so similar in style.

Julian Huxley, in a letter to The Times:

The Holford scheme takes account of this unique quality of the site. It gives us the vital quality of planned informality, in place of unplanned chaos on the one hand and doctrinaire grandiosity on the other. Above all, the plan has style. Do not let us forget that planning style is something quite different from architectural style, though some of Sir William Holford's critics seem to be confusing the two.

Sir Hugh Casson, in a letter to The Times:

Uniformity—the application of the straitjacket and the mask—is sometimes appropriate and may seem superficially attractive, particularly when judged from models and plans, and thus from an angle at which in fact it will never be seen, but too often it achieves order at the sacrifice of richness, freedom, and efficiency. Far more subtle and effective (and, indeed, more practicable) is Sir William Holford's conception with its carefully disposed contrasts of height and silhouette, of enclosure and open space, and how much more appropriate to the City of London, the true quality of which has always lain in its reticence and mystery.

The Hon. Lionel Brett, in a letter to The Times:

Sir William Holford has brilliantly succeeded, we think, in embodying the traditional and unique character of the City of London in forms which only our century could have conceived. It is possible to say without exaggeration that the piazza he envisages could be as lovely as those of St. Mark, and as spectacular. But it is not possible to prove it. Here we need an act of faith on the part of the Ministers, in the pure sense of an act in which one's personal opinions are subordinated to those of a greater consensus.

Brian Westwood (President of the Architectural Association) in a letter to The Times:

To me, and I believe the overwhelming majority of my profession, the principal merits are: That it carries on the interest and excitement of the informal balanced kind of planning exemplified in the eighteenth century by the *jardin anglais*; that it seeks to emphasize the formal architecture of the cathedral rather than compete with it, and gives the urban quality of enclosure rather than the obvious 'opening out' which is the alternative; it is human in its scale and approach and perpetuates the genuine character of the City as it used to be, in the manner judged to be most appropriate to our way of life at the present time.

I feel that the best possible authority has been commissioned and that a brilliant scheme has been produced. The design should therefore be accepted and not whittled down till it loses its vitality.

Basil Spence, in a speech at the RIBA annual dinner:

I believe Sir William Holford has provided a sensitive English setting to St. Paul's which is far more in The Tradition than any imitation could ever be because one must realize the simple fact that our forebears were not imitators of past styles but courageous and inventive discoverers. This, Sir, is our tradition—let us look at the Holford Plan in this light.

Christopher Hussey in Country Life:

Sir William Holford has had recourse to the empirical methods of landscape architecture—an essentially English art which has, in fact, created the settings of all the great Classical buildings in this country, and, whether conscious or unconsciously, shaped the typical cathedral close where buildings of varied shape and character combine with lawns and trees to make the perfect visual setting to monumental architecture. . . .

The (imaginary) buildings in every case are shown as of light, airy construction, so that the dramatic masses of the Cathedral are not diminished but set off, magnified. Varied as are their shapes, moreover, there is implicit throughout them the regular scale of proportion imparted by modular construction: that restatement of the Classical principle inherent in the use of parts made to standardized dimensions.

Leading Article in Country Life:

The correlation of the complex material factors involved by modern city planning with the promptings of the eye and imagination has come to be generally recognized as demanding of the town planner something of that empiricism which English garden designers were the first to realize as fundamental to pleasureable landscape and no less to town scenery.

The elastic organic method of planning is based on meeting fully all material requirements, but gives the latitude for account to be taken also of such imponderables as atmosphere, local character and scale, and for the uncompromising forms of modern building to be varied and grouped with regard to visual qualities. Previous plans for St. Paul's precincts have been unsatisfactory because they failed to make this synthesis. The new model, although adjustments no doubt will and (owing to its nature) can properly be made to it, shows outstandingly how the visual and the utilitarian can be fused into an organic composition—a modern restatement of the traditional cathedral close—by a sympathetic designer.

From a debate in the House of Lords, reported in The Times:

Viscount Esher: it would have been so easy to have surrendered to the clamour of the neo-Georgians and to have repeated, with wide open spaces and elaborate vistas, the vast areas which had destroyed the approaches to St. Peter's, Rome.

With courage and vision Sir William Holford gives St. Paul's some extra space, removes its thunderous traffic, and leaves the great cathedral surrounded, but by no means dwarfed or obliterated, by this cluster of housing.

Lord Mottistone: Sir William Holford's proposals seem to include everything. It is an enfolding plan that brings the City to the cathedral, which seems to have grown there and not to have been imposed. The plan is full of the element of surprise and happy in consequence, and it is wise not to have attempted complete symmetry where it can not be obtained. Ludgate Hill rules out complete symmetry.

Lord Conesford: the Holford plan is lively, vigorous and beautiful. It is in accordance with the English tradition, which is urbane and intimate rather than grandiose and monumental.

R. Gordon Brown, architect of the buildings in Hong Kong, illustrated on pages 316–325, has been Professor of Architecture at the University of Hong Kong since the school of architecture there was first established in 1950. He was trained at the AA, London, qualifying in 1937. After war service in the army he returned to the AA as Principal

of the school and was responsible for building it up again after its reduced war-time activities. He left in 1949 to become Professor of Architecture at Edinburgh University until leaving for Hong Kong. He is consultant to the Hong Kong government for their water-front reclamation scheme, and has designed a new City Hall. His private practice includes a new Government headquarters at Jesselton, North Borneo, amongst other work in that colony.

ACKNOWLEDGMENTS

COVER: Helen Simpson, Arphot. MARGINALIA, pages 291–2: Mural, S. Bale; Trinidad consulate, A. D. Porter; Prof. Brown, Elliott and Fry. FRONTISPIECE, page 294: H. Zinram. BANK OF ENGLAND PRINTING WORKS, pages 299–307: 2, A. Handford; rest Galwey, Arphot. DERELICTION II, pages 308–315: 1–4, 13, 18, Aerofilms; 5–7, 14, 16, 17: K. Browne, Arphot; 8, 9, 19: Air Ministry; 10, Mr. and Mrs. S. Darby; 11, Courier. JAMES ADAM AND THE HOUSES OF PARLIAMENT, pages 326–9: A. C. Cooper. CURRENT ARCHITECTURE, pages 330–2: Flats in Osnaburgh Street and Centre in Welwyn Garden City: J. R. Pantlin; House at Moor Park: Sam Lambert. MISCELLANY, pages 333–334: St. James's Park Footbridge, H. Simpson. Leine Schloss, 1, Staatliche Bildstelle, Berlin; 2, 3, H. Wolff. Soane Barn, Lewis & Randall. Reculver, Nairn, Arphot. Gothenburg Mural, Ulf Thoren. Exhibitions, 4, J. Underwood; 5, D. Farrell; 6, B. Seed. Embassy Buildings: 1, 2, MOW; 3, 4, Galwey. SKILL, pages 345–360: Hall at Southampton: J. Maltby. Design Review: TV sets, Hiller & Swatton; Elsam, Mann & Cooper, and others unnamed. 9, 10, Molinard; Denby Pottery, Toomey, Arphot. Industry: tropical screen, P. Pitt; light fitting, J. R. Pantlin.

THE ARCHITECTURAL REVIEW

Volume 119 Number 713 June 1956

The Cover contrasts the foliate ironwork of a doomed structure against the foliage among which it stands. The doomed structure is the suspension bridge in St. James's Park, soon to be demolished after a century of picturesque service. The foliate ironwork exemplifies the principles of ornament expounded by the designer of its decoration, Matthew Digby Wyatt, converting the lightness and thinness of the natural growth to a broader and flatter form in keeping with the nature of the material. The bridge is discussed in terms of history, structure and scenery, on page 334.

291 **Marginalia**

294 **Frontispiece**

295 **St Paul's** Whatever decisions are finally made about the rebuilding of the area around St. Paul's Cathedral, they have now become of the most acute importance for the immediate future of the rebuilding of the City, and their repercussions will extend far in time and space. Not only is the Cathedral an object of popular interest, symbolically important as an emblem of wartime resistance and post-war rebuilding, but the area around it has now become the battleground of two opposed and irreconcilable attitudes toward town-planning—the Grand Manner, and the Picturesque. A condition of crisis has been precipitated by Sir William Holford's announcement of his inability to produce, on the restricted area available, the kind of grand, geometricizing plan expected in some quarters, and his firm conviction that an informal and picturesque layout would be better adapted to the site, and offer a better foil to the church itself. He has embodied these views in a model which demonstrates his adherence to the English tradition of picturesque planning, exploiting variety of scale and pattern, surprise, concealment, courtyards and squares, instead of vistas and regularity. The model has been greeted with an impressive unanimity of approval both within the architectural profession and without, the only opposition coming from a few adherents of the Grand Manner. The Minister has not yet given his views, but he is now faced by what may prove to be the most influential town-planning decision of the post-war years.

299 **Bank of England Printing Works, Debden:** *Architects, Easton and Robertson*

308 **Dereliction : 2** *by Kenneth Browne* In the second of his articles on dereliction, Mr. Browne considers the situation in the Black Country, where more than one acre in eight is derelict, but where the techniques of reclamation with earth-moving machinery are better understood, since longer used, than in other parts of the country. By virtue of Ministerial resistance to the grabbing of usable agricultural land for housing, and a regional planning officer who is both an expert and an enthusiast for mechanized earth shifting, reclamation is becoming the rule, almost, in the Black Country. But what is done with the reclaimed areas is open to debate. They could have been used to introduce a landscape contrast to the industrial scene, and to re-define the vanishing boundaries between town and town, as was recommended in the West Midland Plan and in the preceding book, *Conurbation*. But this would require an over-all plan, such as the area does not yet have, and some resistance to the politically and financially attractive practice of using every acre of reclaimed land for housing. This tends to result, not in the redefinition of boundaries, but their smudging over with low-density urban sprawl, making Subtopia, instead of other Edens among the satanic mills. The area needs a positive landscaping programme, following such precedents as the transformation of the Wren's Nest, if it is to be as rich in human values as it is in industrial ones.

316 **Buildings in Hong Kong:** *Architect, R. Gordon Brown*

326 **James Adam and the Houses of Parliament** *by John Fleming* As the Palladians' dream of realizing Inigo Jones's Whitehall designs began to fade, the dream of a new Houses of Parliament took its place. Kent had such a design in hand in 1732, and the dream was passed on to the next generation, that of the pioneer neo-Classicists. That James Adam had projected such a building was known, but recently discovered letters among the Penicuik papers—discussed here by Mr. Fleming for the first time—now throw light on his manner of approaching the problem, and the kind of building he envisaged. References to the Parliament House design run through the correspondence from July, 1760, through 1761, and the following year as well. They show James Adam pondering such problems as the need for a members' coffee room in one letter, and the psychological effects of architectural forms in another. These letters can be linked with a body of drawings and sketches, some in his own hand, some by those of his professional assistants and teachers, and enable a positive identification of the sitter in a portrait by Batsoni to be made, since the subject's left arm rests on just such a capital as James Adam had described as 'for the portico of my great project.' However, the great project came to naught, James was soon absorbed into the business of the Adam office on his return, and the project remains, in Mr. Fleming's words, a first year student's exhibition project, however interesting the light it sheds on the origins of neo-Classicism.

330 **Current Architecture**

Miscellany

333 **Books**

334 **Obituary**

336 **History**

337 **Exhibitions**

338 **Project**

340 **Outrage**

341 **Decoration**

342 **Criticism**

343 **Pioneers**

344 **Editors Only**

Skill

345 **Interiors: Waiting Hall at Southampton** *Designers, Heal's Contracts*

349 **Design Review**

353 **Techniques: Daylight and Ventilation through the Roof** *by Robert Maguire*

358 **The Industry** 360 **Contractors, etc.**

Directing Editors J. M. Richards, Nikolaus Pevsner, H. de C. Hastings, Hugh Casson

Executive Editor Ian McCallum

Art Editor Gordon Cullen

Assistant Editors production, Ian Nairn. research, S. Lang. literary, Reyner Banham. Editorial Secretary. . Whi 0611-9

SUBSCRIPTION RATE: The annual post free subscription rate, payable in advance, is £2 18s. 0d. sterling, in U.S.A. and Canada $9, in Italy Lire 5550. Italian subscription agents: A. Salto, Via Santo Spirito 14, Milano; Librerie Dedalo, Via Barberini 75-77, Roma. An index is issued half-yearly and is published as a supplement to the REVIEW.

THE ARCHITECTURAL REVIEW

9-13 Queen Anne's Gate, Westminster, S W 1 · Whitehall 0611

FIVE SHILLINGS

bandstand
office block
office block
pedestrian forecourt
stone yard
chapter house
shopping centre
terrace over carpark
Newgate Street
St Martin's
St Augustine's
Lawn
choir school
Gateway House
CANNON STREET

Sir William Holford's plan for the precinct of St. Paul's is described in the article below as the first instance of a bold imaginative application of the principles of traditional English landscape planning to the problems of a modern city. The complex character of the subtly related spaces with which the cathedral is surrounded is shown in the two views of the model opposite. The viewpoints are indicated on the sketch plan, the tall block in the foreground being that which adjoins the northernmost arrow on the plan.

The Editors

ST. PAUL'S

Every so often—perhaps once or twice in a generation—there arises an architectural question in which some fundamental issue of principle is involved, so far-reaching in its significance that essential future progress may be said to depend on that particular question being answered in the right way. One such question is how the surroundings of St. Paul's cathedral are to be rebuilt. Here two planning principles are opposed, and here is the ground on which the battle between them may perhaps be fought out once and for all.

The St. Paul's precinct is a well-chosen battle-ground for the settling of differences of this importance because on the subject of St. Paul's the public's emotions are already engaged—and how difficult it is ordinarily to engage even the British public's interest, let alone its emotions, when it comes to matters of architecture. But in St. Paul's we have an exception. In the same way that the cathedral became, during the war, a symbol of London's survival after night upon night of bombing, it has become in peace-time, as the slow process of rebuilding has gone forward, the symbol of the nation's anxiety that, in spite of economic and procedural difficulties, the City Corporation should not fail to put in hand some boldly conceived and far-reaching improvements to stand on the credit side of the ledger whose debit side is represented by London's war-time losses.

The public therefore cares that the right thing, as distinct from the merely expedient thing, should be done; but it is bewildered by the opposed opinions that have greeted Sir William Holford's plan. This is because the issue of principle that lies behind the controversy is not understood; yet it is relatively simple. In the history of European town-planning two influences have been at work: on the one hand the monumental tradition—sometimes called the Beaux Arts tradition—associated especially with the French and culminating in the Grand Manner of Louis XIV, which superimposes on everything a formal, symmetrical pattern; and on the other hand the picturesque tradition, cultivated in England in the eighteenth century and symbolizing all the qualities the English then had in mind when they gave their allegiance to freedom and liberty in opposition to the absolutism and the dictatorship of the French.

This picturesque tradition, based on the exploitation of the *genius loci* and enriched

by such devices as concealment and surprise and by subtleties of planning so informal that they appeared to be the products of accident, reached its culmination in the landscape gardening movement. But in our time it has become evident that the English inability to design towns during the whole century that has elapsed since they were transformed into an urban race, has been due to their failure to adapt this picturesque principle—so exactly suited to their genius—to the purposes of urban landscaping. This Sir William Holford has at last done, boldly and imaginatively, at St. Paul's.

His critics consist of the very few who, by a process of reasoning, have convinced themselves that the formal, classical mode of planning is the right thing for London, and the many who had given no thought to principles nor looked with discerning eyes at St. Paul's, but expected him to produce something in the Grand Manner because they associate it with the settings of important public buildings. They were naturally disappointed when nothing of this kind was forthcoming.

How these two mutually exclusive traditions find themselves face to face in the precinct of St. Paul's can best be explained by giving some account of the events that led up to the presentation of Sir William Holford's plan. At the beginning of 1955, Mr. Duncan Sandys, in his capacity as Minister of Housing and Local Government, called for modifications to the County of London development plan, in so far as the area round St. Paul's was concerned, in the belief that an opportunity was being lost to provide a worthy setting for the cathedral. His decision was welcomed, because there had been much public despondency about the half-hearted replanning and the piecemeal rebuilding that had gone on elsewhere in the City, and the City Corporation forthwith appointed Sir William Holford to prepare a design for the whole precinct.

It was arranged that he should be guided in the early stages by a committee of three, consisting of the Minister himself and the chairmen of the town-planning committees of the City Corporation and the London County Council. It was obvious to Sir William Holford from the beginning that many people, officially and unofficially concerned with the project for St. Paul's, had strong preconceived views in favour of a treatment in the Grand Manner; the President of the Royal Academy was particularly active in putting forward his ideas for a precinct redesigned on this principle.

Sir William, however, with his profound knowledge of the London landscape, which he had studied over many years, was aware of the danger of jumping to superficially attractive conclusions and suspected that an answer of a very different kind was called for. But, keeping an open mind, he began by experimenting with a formal, geometrical layout and prepared a scheme in which a symmetrical forecourt at the west end of the cathedral was enclosed by an imposing semi-circular colonnade. This he showed to the Minister, but explained at the same time his reasons for the conclusion—which he had come to while working on this design—that such a treatment was wrong in principle.

These reasons cannot be better expressed than in the words he himself used to explain them in his report, which was issued with the model of his final design in March of this year. The first, symmetrical forecourt design is illustrated in the report, and of it Sir William Holford says: 'It offered no contrast to the cathedral; it was too large for the site; but not large enough to make a really monumental open space, such as, for example, the Piazza in front of St. Mark's in Venice. Except as a screen and a covered pedestrian way, it had no function, and would thus be very difficult for a contemporary architect to design in detail. Most important of all, the geometrical curve looked uncomfortable and

pretentious in front of the very square lines and angles of the western half of the cathedral, and even more so when seen with the drum and dome. . . . a strong symmetrical half-circle in the forecourt seems to rival the drum and helps to lessen the dominance of the great central feature.' Elsewhere he says: 'St. Paul's could be opened up on all sides . . . but any changes which tended to drain life away from the precinct instead of bringing it back could be very much to its eventual disadvantage.'

No compromise is possible on such questions of principle, and Sir William, being convinced, in spite of the pressure that was brought on him, that the irregular, anti-classical conception was the right one in the circumstances, pursued this idea indefatigably and created from it a wonderfully imaginative piece of urban landscaping, following traditional English principles. To quote again his own persuasive words: 'There is no major open space or piazza which introduces the building; it is either seen rising out of a picturesque conglomeration of lower buildings, itself only partly exposed (as in the well-known view from Fleet Street), or it emerges suddenly as one turns a corner into Godliman Street, or Dean's Court or Ave Maria Lane or Paternoster Row, filling the middle distance with its black and white masonry. The right principle to adopt in designing a layout for such a building must surely be to improve and increase the variety of viewpoints for those who move about the precinct, whether on foot or on top of a bus, and to achieve a sense of enclosure not by building a great wall or screen all round the cathedral (which would reduce its scale and lessen its interest), but by creating a whole series of smaller and related open spaces, each getting its character from some aspect of the building and using it to close the view from its approaches. Although the precinct has to be threaded through by pedestrian and carriage ways, there should be an attempt to give a sense of enclosure and composition to the forecourt, to Paternoster Square, to the shopping centre and to the tree-planted space round St. Paul's Cross.'

The chief elements in his composition are the varied skyline, incorporating views between his newly placed buildings of the trees, towers and domes in which the area is already rich, and the carefully related spaces between the buildings, forming an intricately interconnected sequence of, mostly pedestrian, courts and squares. The buildings themselves are frankly commercial as to purpose, as they always have been round St. Paul's. For St. Paul's is London's parish church, round the base of which the daily life of the capital traditionally ebbs and flows. Another merit of Sir William Holford's plan is that it can be put into operation without any need to expel these commercial comings and goings from the cathedral precincts. Unlike the classical type of plan, which looks nothing until it is complete, the Holford plan can proceed by stages, each of which will bring about a visible improvement in the shapeliness and amenities of London.

The plan was made public in March, and naturally received much attention in the Press. The reaction, on the whole, was highly favourable and the good qualities of the scheme—which by their nature are particularly difficult to expound—seemed to be well understood. A sympathetic analysis appeared in *The Times* and in the *Manchester Guardian*, an unusually telling appreciation by Robert Furneaux Jordan appeared in the *Observer*. John Summerson wrote in praise of it in the *New Statesman* and Christopher Hussey in *Country Life*. His article was supported by a leader in which the parallel between Sir William Holford's style of urban planning and the eighteenth-century landscape tradition was explicitly referred to. Even the *Evening Standard*, which does not usually show good judgment about this kind of question, printed a column of praise.

The only dissentient voices of any potency were raised in the leader columns of *The Times*, and the *Daily Telegraph*, where an article on the news pages by John Betjeman, most sympathetic to Sir William Holford's aims and achievements, was flatly contradicted in a fierce attack on the whole design. But the *Daily Telegraph* is known to have close contacts with the President of the Royal Academy, whose voice was also raised in dislike of the scheme in an interview in *The Times*. He declared that the French would not have designed it thus, thereby merely underlining the essential Englishness of Sir William Holford's conception.

Outside the Press, opinion was equally favourable; for example when Walter Gropius visited England in April to receive the Royal Gold Medal he expressed strong approval of the plan and what it stood for, and when, later in the same month, the plan was debated in the House of Lords the speeches were almost exclusively in its favour—which is of special significance because they represented responsible, but wholly disinterested, lay opinion. It is true that a group of Members of Parliament tabled a motion calling on the Minister not to approve the Holford proposals (and were answered soon afterwards by another motion, tabled by another group, in exactly the opposite sense), but this—the first motion—gave no sign of being founded on anything but prejudice and ignorance and only produced the reaction in most people that it should be part of the wisdom of the politician to know when to be guided by the experts.

The Minister is no doubt aware himself that this is where wisdom lies. At the time of writing he has not made known his views, but he showed his far-sightedness when he called for a worthier setting for St. Paul's in the first place. It only remains for him to show now that he is aware that this is too important an issue to leave to personal whim or prejudice, and that the weight of informed and expert opinion in favour of the plan is his proper guide to action.

The plan is now with the City Corporation for consideration. It is to be hoped that both the City and the Government will add their support to the approval already given by the experts and the public, so that all can at last agree on what is to be done at St. Paul's and proceed with the doing of it. That it is proposed to do it in this particular way is an encouraging indication that England is at last beginning to rediscover her lost planning traditions. If the Holford plan is rejected, or is destroyed by compromise, this promise of a revival of the art of town building in England will be set back half a century.

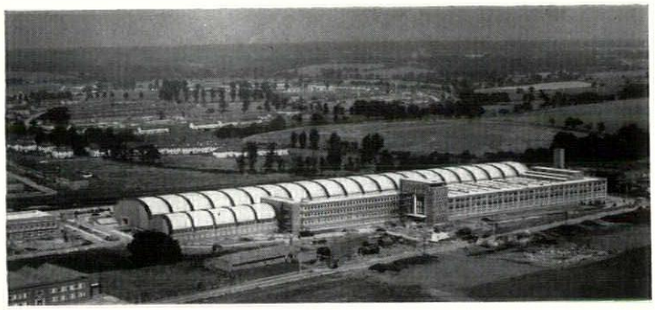
BANK OF ENGLAND PRINTING WORKS

ARCHITECTS | **EASTON AND ROBERTSON**

1, the main entrance of the administration section, which occupies the centre of the south front. The closely spaced glazing bars of the ground-floor windows were a security requirement. The brickwork is a brindled red. The reinforced concrete canopy has an undersurface of teak. The windows above are framed in Portland stone.

These Printing Works are at Loughton, Essex, on the Debden Industrial Estate at the edge of Epping Forest, 12 stations' distance from the Bank on the Central Line railway.

Since 1945, the number of Bank of England notes in circulation has increased by about 50 per cent ; these notes are printed by the Bank itself, whose printing works at Old Street, E.C.1 (formerly St. Luke's Hospital), have for some years been inadequate to deal with the volume of work. As a first step the Bank set up a planning section who, taking into account the domiciles



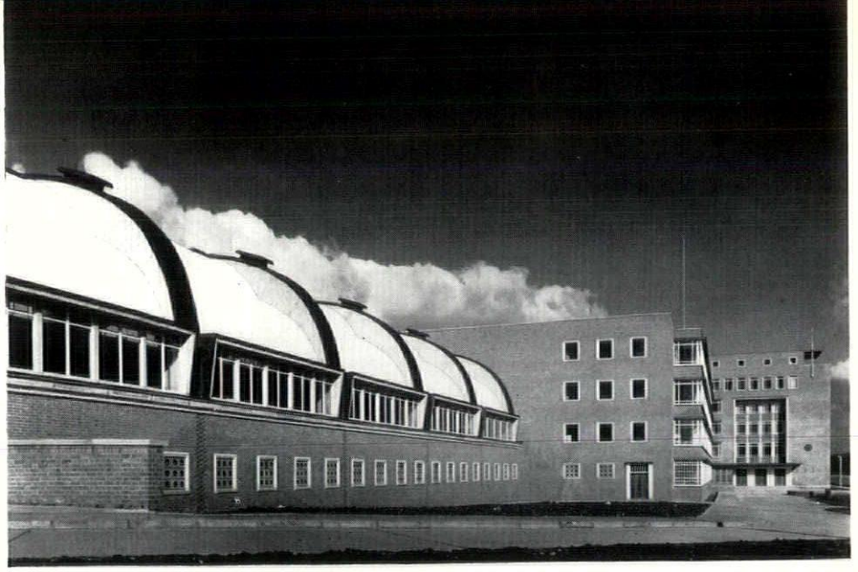
2

The printing works from the air. On the left, only half in the picture, is the canteen block. In the centre are the curved roofs of the large and small production halls, with the administration section alongside them.

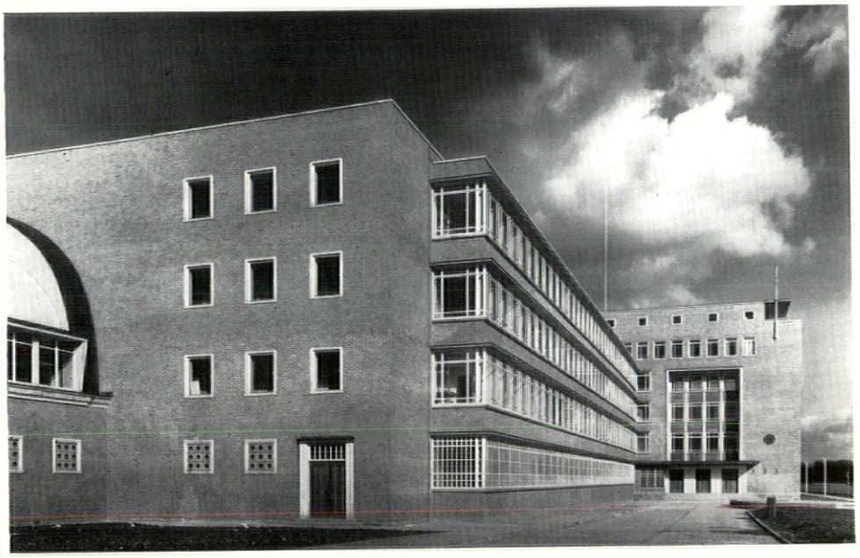
of its present staff, the availability of new printing labour and the need for as short a distance as possible between the Bank's head office and the printing works, decided on the NNE segment of London as the most suitable district for the new works. The architects were approached, and Ove Arup and Partners were called in as consulting structural engineers.

The site, which is leased to the Bank by the LCC, is about a quarter of a mile long by 200 yards wide, and adjoining the south side of the railway, east of Debden station. The main aim of the new works will be to print banknotes more efficiently and more cheaply ; the time spent on moving paper in the new hall will be half the time taken at St. Luke's. All the processes of engraving, colouring, overprinting and checking will be done in a continuous stream, the banknote paper entering at the east end and each process of printing taking it westwards. The new works will print, besides banknotes, papers and documents for the Bank's internal use and dividend warrants.

The planning is based mainly upon the productive flow for the printing processes, the main machinery hall providing an uninterrupted space of 800 feet in length by 125 feet in clear span width, with smaller adjoining halls and sorting rooms adjacent. There is provision for possible expansion along the uninterrupted north flank of the building. The clients required cleanliness, economical maintenance, concealment of services plus accessibility, and good even lighting, both natural and artificial, together with floor spaces for plant as far as possible



3



4

5

Above, the south front of the building. 3, the small production hall, with exposed concrete arch ribs. The whiteness of the roof is due to the spar with which the felting is covered for thermal reasons. Beyond the production hall is the four-storey office block. 4, a closer view of this block, looking towards the administration entrance. The south windows have continuous glazing. 5, the central feature of the south front, in which is the main administration entrance (see previous page). The recessed window panel over the entrance is faced with teak and framed in Portland stone. The dark spot beside it is a 'Britannia' plaque in bronze. On the right is the three-storey printing, workshop and chemists' section. This has structural members of reinforced concrete exposed and left untreated, with brick panels between. In front can be seen the detached concrete standards which provide site illumination.

uninterrupted by columns. A reinforced concrete structure was decided upon, with asymmetrical double concrete arches spanning the main hall and allowing for ducting and service space between the dual trusses. The building is mainly on two levels on account of the sloping site, with four upper floors of offices and three of general services on the south front. The main entrance, with the principals' offices above, lies between these two blocks. The canteen, also of reinforced concrete, with shell-type roofing, is a separate adjoining building linked to the factory by a subway. The exterior of this building, as of the printing works proper, is in facing brick with some of the basic structural elements exposed. The use of Portland stone has been limited to copings and a few window surrounds.

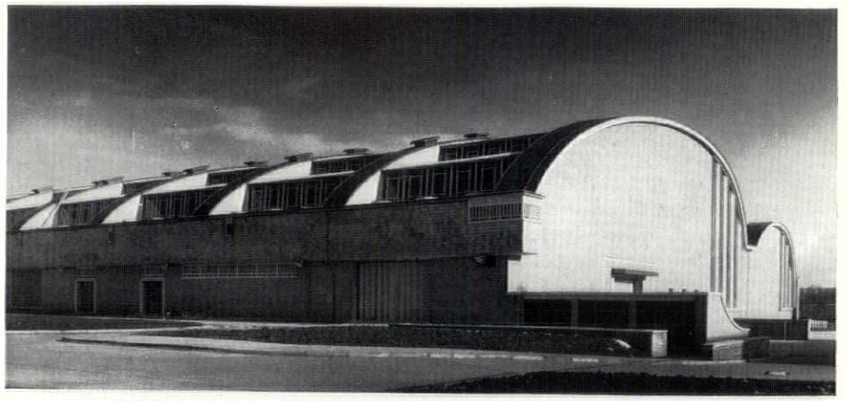
The main production hall is constructed with arched ribs, precast in segments, spanning the width, and with in-situ northlight shells spanning longitudinally between the ribs, the whole forming a sweeping asymmetrical curve. The shape was designed to enable the tiers of shell northlights to continue well beyond the centre line of the hall, and so to give more daylighting than is possible with symmetrically built construction. A security gallery runs the full length on either side—a trough shaped structure of which the base is formed by a beam spanning between the ribs and the sides by precast units. The arch ribs, which individually are only 9 in. thick, are constructed in pairs, with a 3 ft. 6 in. gap between them which accommodates ventilation, heating, electrical and plumbing services. Ducts for the cables are formed by rubber cores. The arches are each formed of two base sections cast in situ, and eleven segments precast in a casting yard set up on the site. The whole arch is prestressed together on the Freyssinet system, which is necessitated chiefly by the extreme slenderness of the arch members.

The hall was constructed a bay at a time, two arch ribs and their intermediate northlight shells being dealt with as one unit. For erecting the precast arch segments and for casting the in-situ shells, an articulated steel gantry was used on which the formwork was set up. The complete shuttering was raised into position when required for casting, and after the concrete of the shells had hardened, the whole assembly of gantry and formwork could be lowered, to be moved on to the next bay. The formwork used for the in-situ arch legs and the base of the galleries was prefabricated in large units and handled by the derrick ; the fluted front of the gallery was formed with precast units cast against teak formwork to ensure the highest possible finish. The formmarks have been designed, whether in metal or plywood forms, to be in sympathy with the modular rhythm of the structure. The only painted parts are the soffit of the arches, in pale primrose, and the front of the security gallery, in pale sea green. Window surrounds are white, and the tiled foreman's box, the facing brick of the infilling walls and the dado at the west end of the hall, ochre: the upper walls in this section are primrose yellow. Floor are generally wood block, with special hardwood strips in the line of heavy traffic.

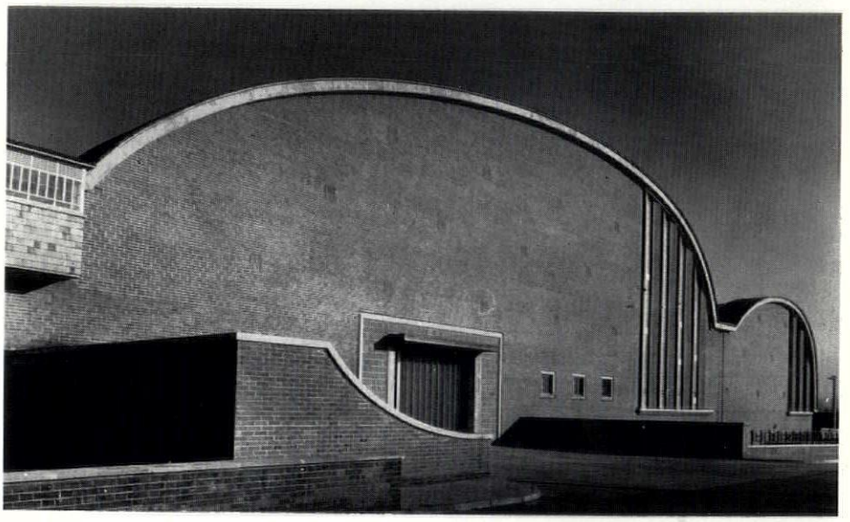
The general printing hall, adjoining the main production hall, is roofed by a series of northlight shells, cantilevered, four a side, from a central double row of columns. To allow for expansion and contraction caused

[continued on page 305]

Below, the main production halls. 6, from the north-west, showing the system of roof-lighting and the shingle-faced wall of the inspection gallery immediately below the curve of the roof. 7, the double curve of the west end of the two production halls. 8, the works entrance at the west end in its low-level courtyard. 9, the east end, with delivery yard and boiler-house.

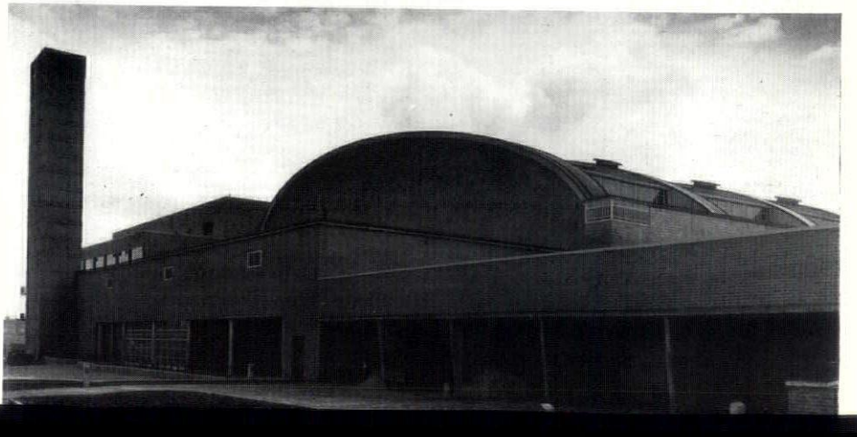


6



7

8

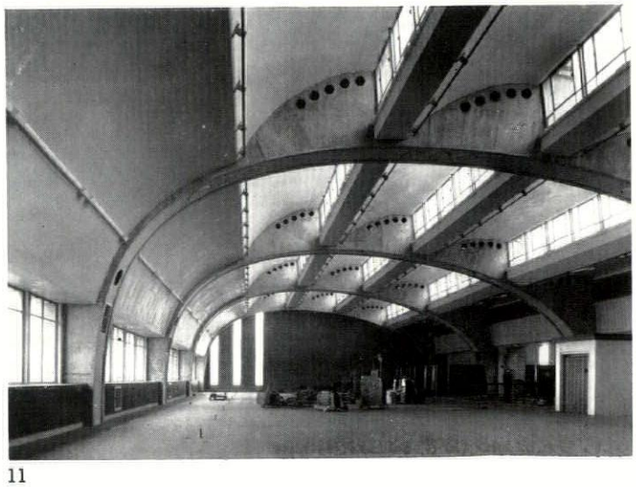


9

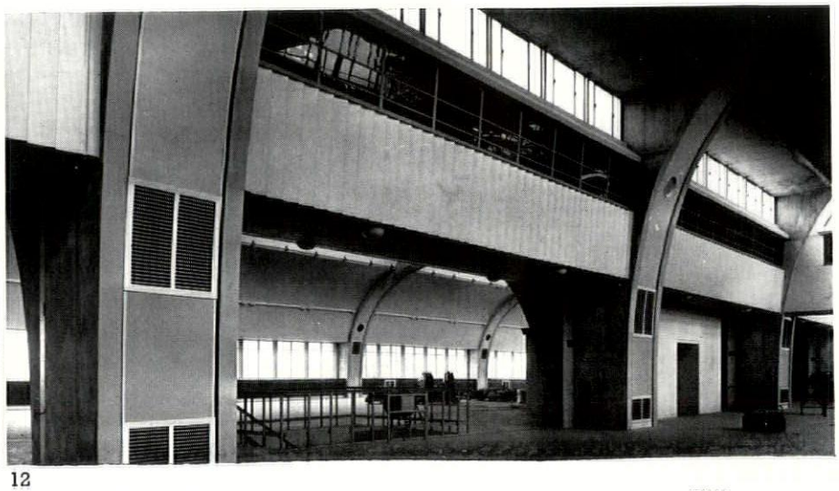
10

BANK OF ENGLAND PRINTING WORKS, DEBDEN

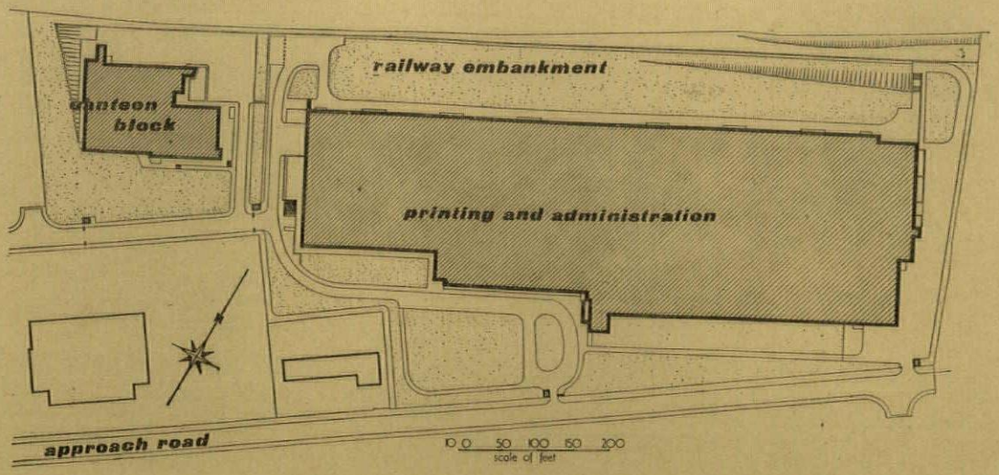
The most spectacular, as well as the most important, part of the building is the main production hall, occupying almost the entire length of the north side. Its exterior and brick gable end are shown on the preceding page. 10, the interior before the installation of machinery, with asymmetrically curved concrete ribs between which are vertical north lights. The low screens are to separate the working divisions and are removable. The floor is of wood blocks. All round the hall is a continuous security gallery from which operations at the machines can be watched. It is reached by a number of internal staircases. 12, a detail of the security gallery. The wall-surface below the windows is moulded concrete. Beneath the gallery can be seen the small production hall, of which the interior is shown in 11. The roof has a similar arched rib construction to that of the large hall.



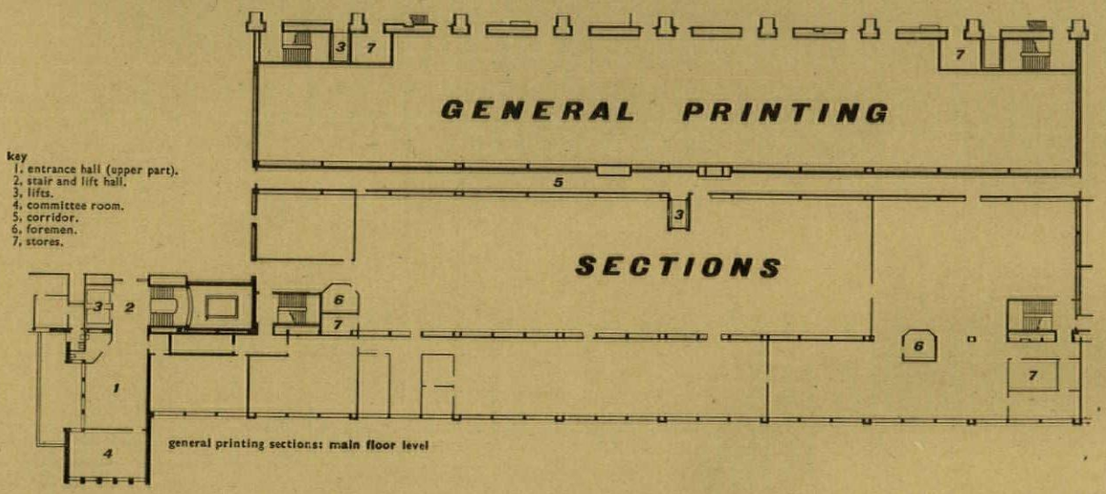
11



12



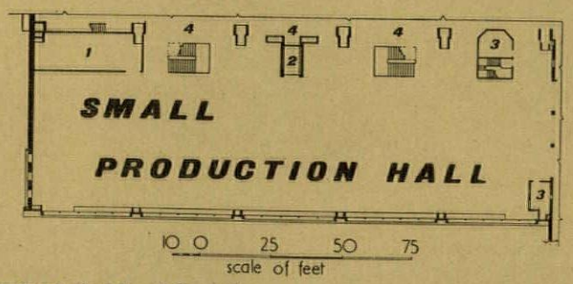
site plan



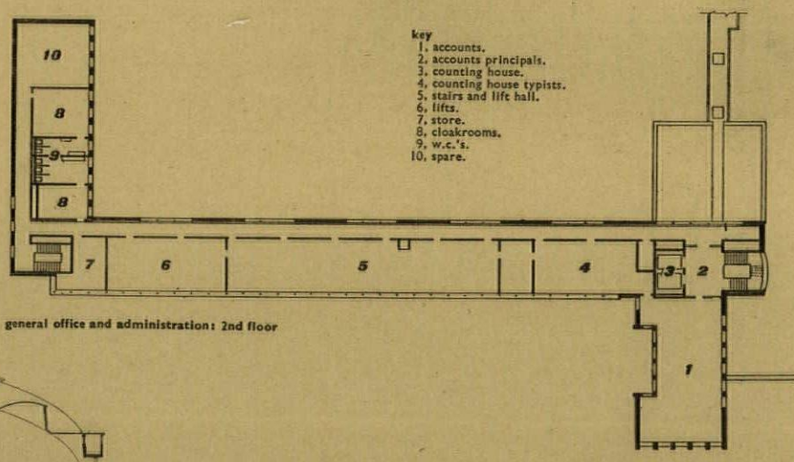
key
1, entrance hall (upper part).
2, stair and lift hall.
3, lifts.
4, committee room.
5, corridor.
6, foremen.
7, stores.

general printing sections: main floor level

key
1, baling room.
2, lift.
3, foreman.

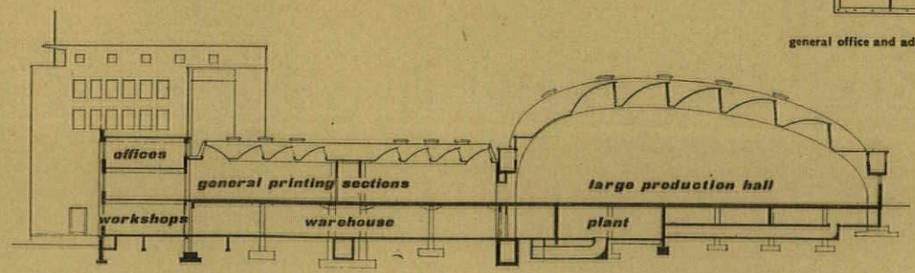


small production hall: main floor level

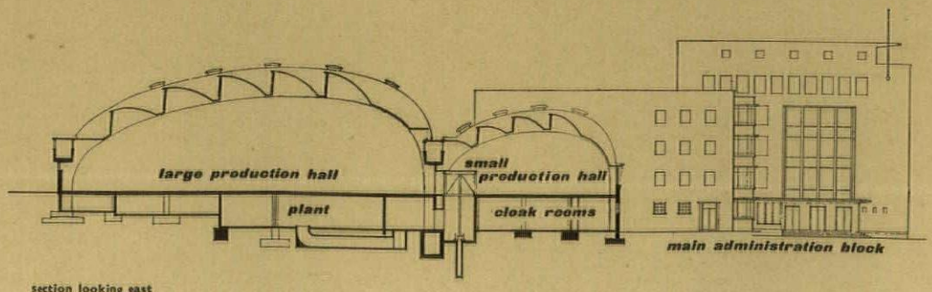


key
1, accounts.
2, accounts principals.
3, counting house.
4, counting house typists.
5, stairs and lift hall.
6, lifts.
7, store.
8, cloakrooms.
9, w.c.'s.
10, spare.

general office and administration: 2nd floor

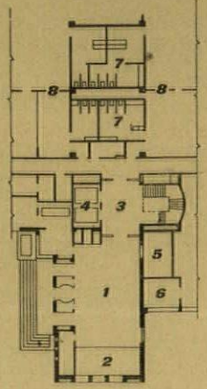


section looking west

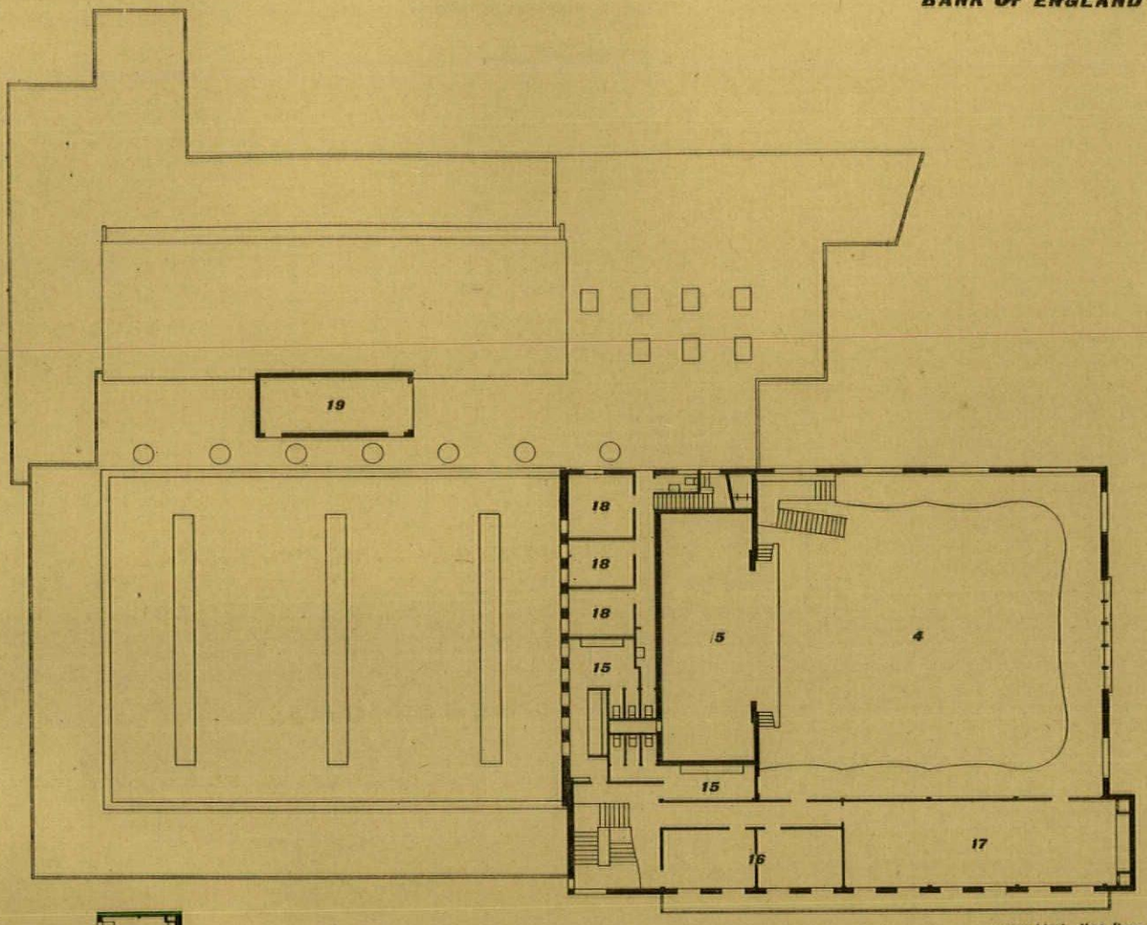


section looking east

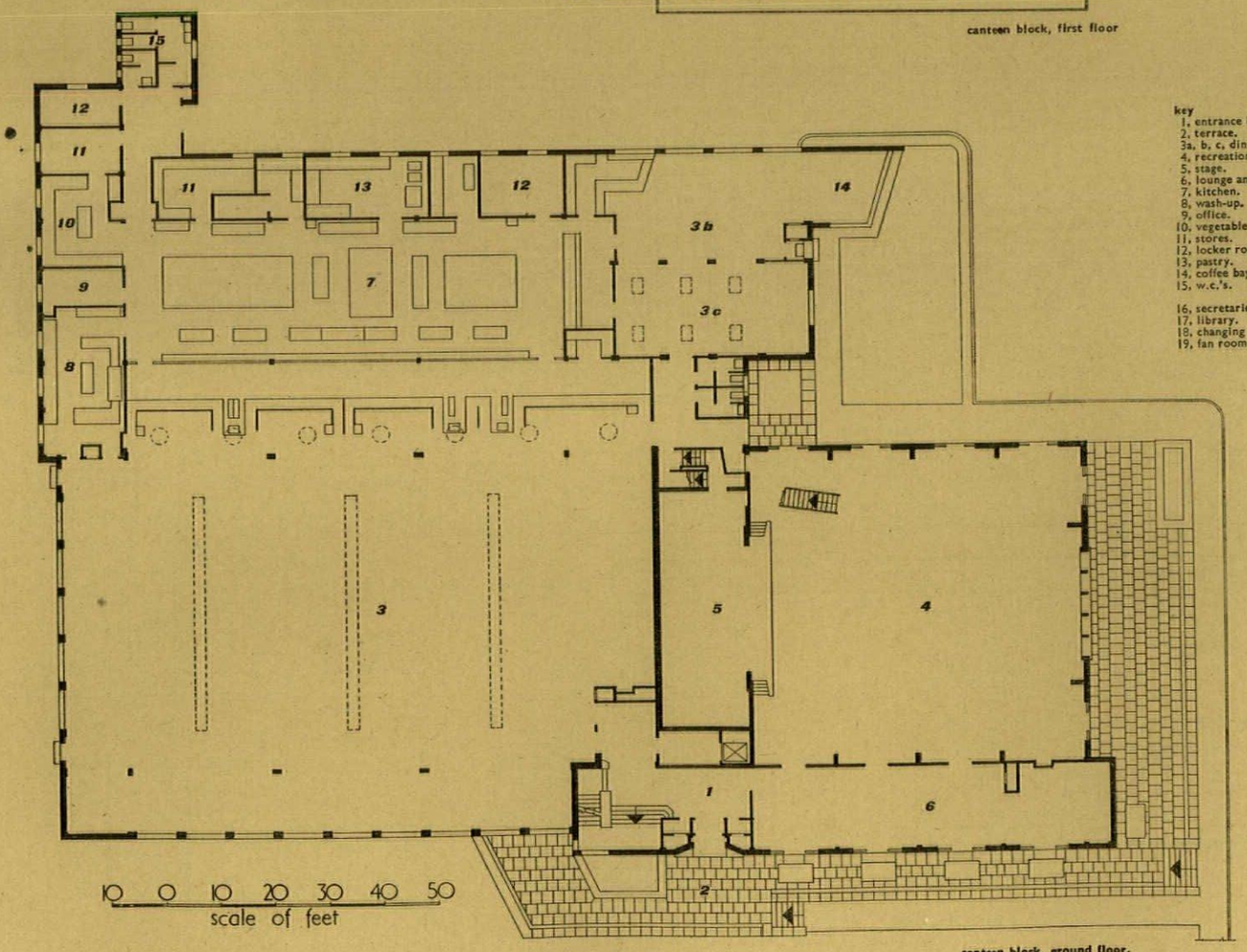
key
1, entrance hall.
2, visitors and waiting room.
3, stair and lift hall.
4, lifts.
5, enquiries.
6, store and gas meter.
7, w.c.'s.
8, cloakrooms.



main administration block: ground floor



canteen block, first floor



key
1, entrance hall.
2, terrace.
3a, b, c, dining rooms 1, 2, 3.
4, recreation hall.
5, stage.
6, lounge and tea room.
7, kitchen.
8, wash-up.
9, office.
10, vegetable preparation.
11, stores.
12, locker rooms.
13, pastry.
14, coffee bay.
15, w.c.'s.

16, secretaries of organization.
17, library.
18, changing rooms.
19, fan room.

canteen block, ground floor.

[continued from page 301]

by temperature changes, the edges of the cantilever roof are not structurally connected either side. This hall is divided into four independent bays, the roof of each being constructed with four prestressed concrete beams carried on the central pairs of columns with a cantilever of 45 ft. on either side. The precast concrete shells span between the beams, four shells side by side being carried on each cantilever arm. The hall is divided, longitudinally, by metal partitions, and the brick infilling walls are spray-painted with a cement glaze.

The basement below the printing hall is constructed on the 'mushroom' column and flat slab principle, with two central rows of columns corresponding to those in the hall above. The multi-storey administration blocks are reinforced concrete-framed. The reinforced concrete peripheral columns on the south block carry 21 in. reinforced concrete edge beams, and these in turn carry the floor of precast units, which are inverted L-shaped, grooved to fit on to one another, forming a floor of rib beams and slabs. A false ceiling below the ribs enables all services to be concealed. The main frontal columns were precast on the site. In the canteen block the kitchen is roofed by a single northlight shell spanning the full length of the building. The dining hall is roofed with three cylindrical shells spanning the width. The stiffening beams at each end rise above the line of the shell, and are pierced with large windows; the shells themselves also have a strip of central glazing. The recreation room, which is 63 ft. long by 60 ft. wide, is spanned in the 60 ft. direction by three shells. The two outer ones are simple cylindrical shells, 15 ft. wide, and designed to a radius of 8 ft. That in the centre, however, consists of a central cylindrical section designed to a radius of 24 ft. 7½ in., with on either side a reverse curved shell with an 8 ft. radius.

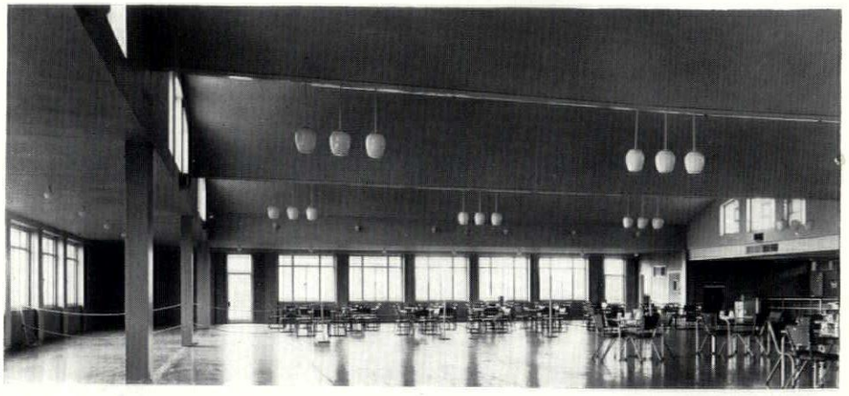
The fuel for the heating and ventilation plant is heavy fuel oil or coal tar. Mercury vapour, tungsten, and fluorescent lighting systems are used together or separately in production and other spaces.

13. the kitchen and service side of the canteen block, with continuous glazing on the north side of the shell roof, to light the kitchen.

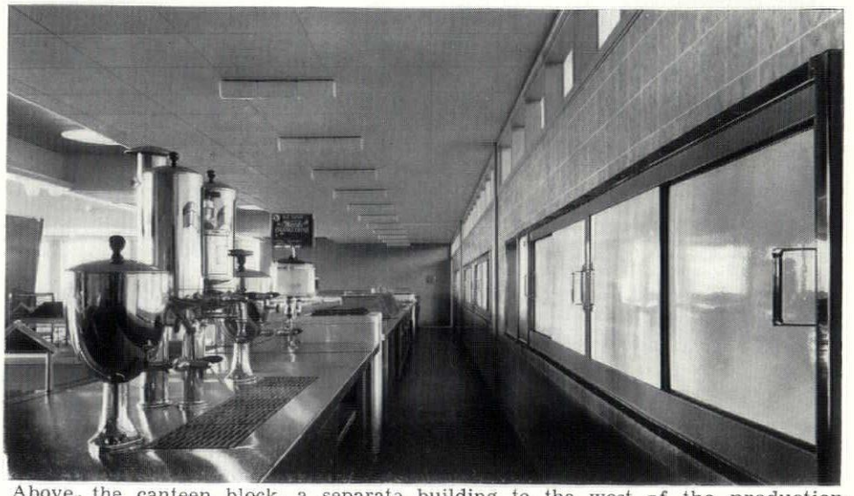
13

14

15
16



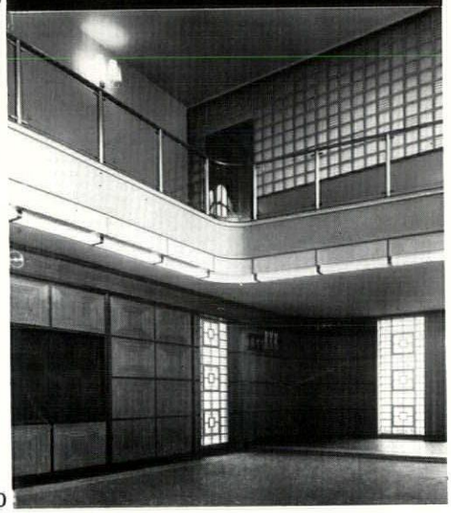
17



18

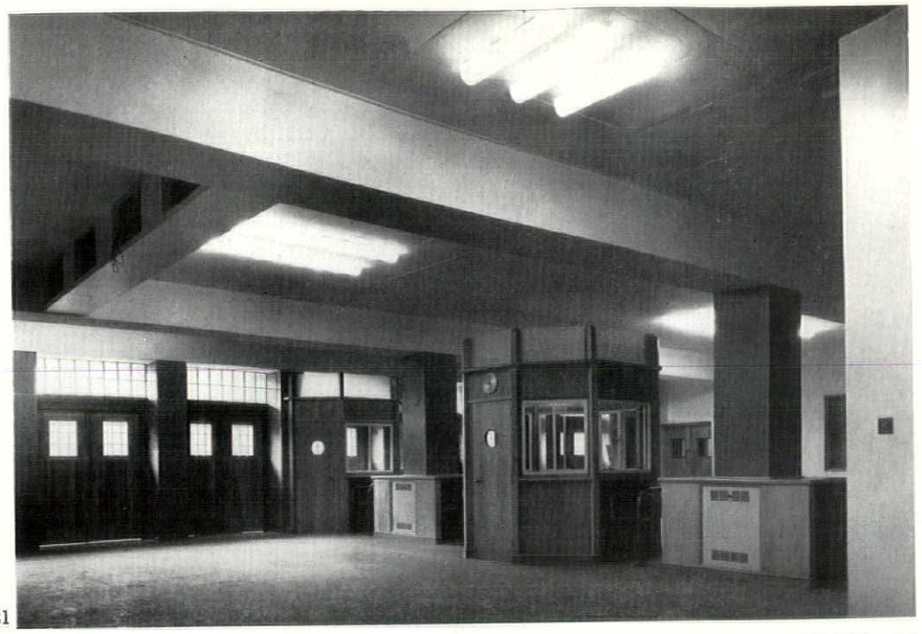
Above, the canteen block, a separate building to the west of the production halls (see site plan, page 303) 14, the south side. 15, the entrance hall looking towards the tea-room. 16, the free-standing reinforced concrete stair leading to the gallery of the recreation hall. 17, inside the canteen. The shell roof, in three segmental bays, is finished with an asbestos spray to deaden sound. 18, the service counter in the canteen. On the right are screens opening to the kitchen.

19

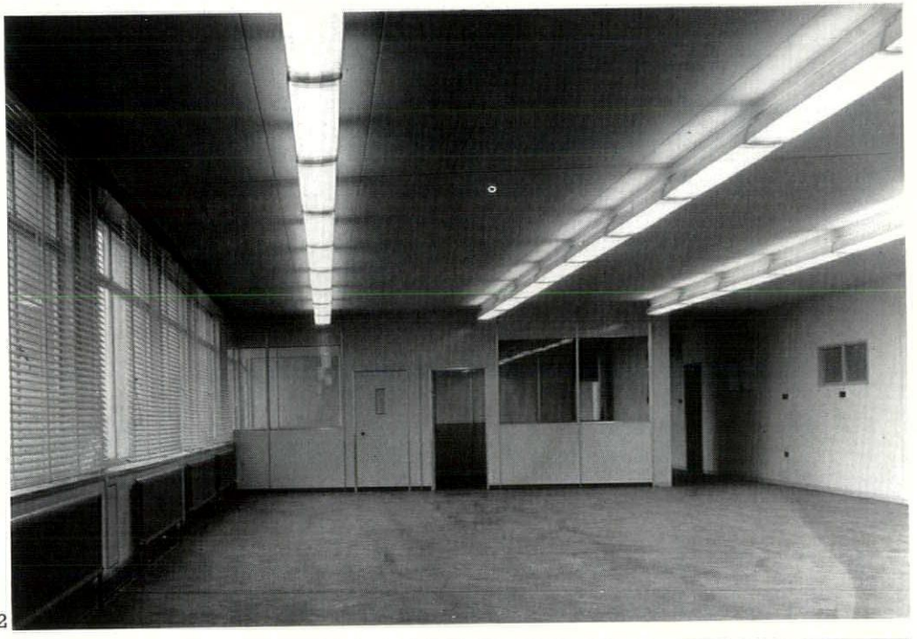


20

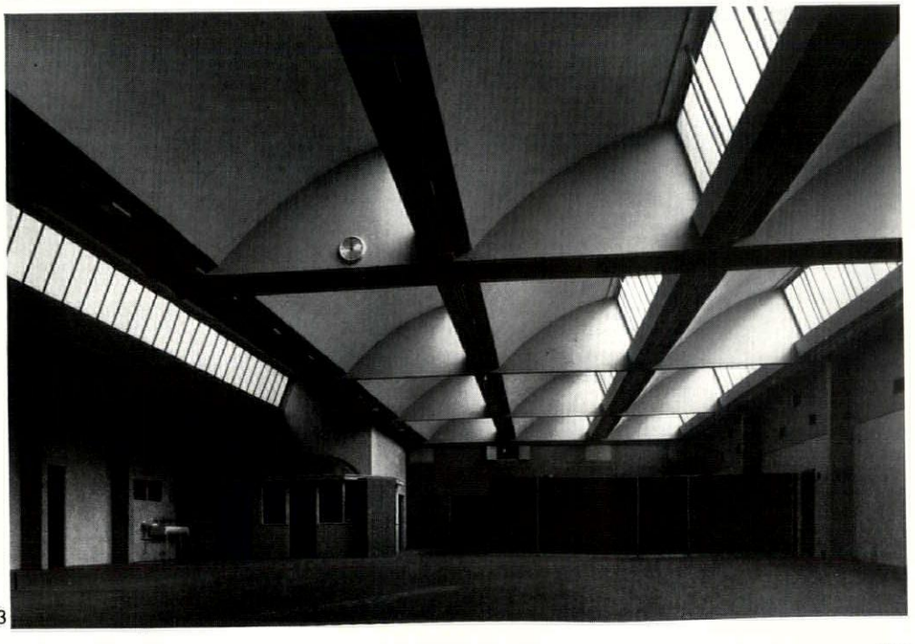
Inside the administration block. 19, the main staircase. It has polished metal standards and a white-painted guard-rail on the external face. 20, the entrance hall, with central open well (see plan on page 303), round which is the committee-room gallery. The ground-floor walls are panelled in cedar. The floor has cork linoleum in the centre and a travertine margin.



21



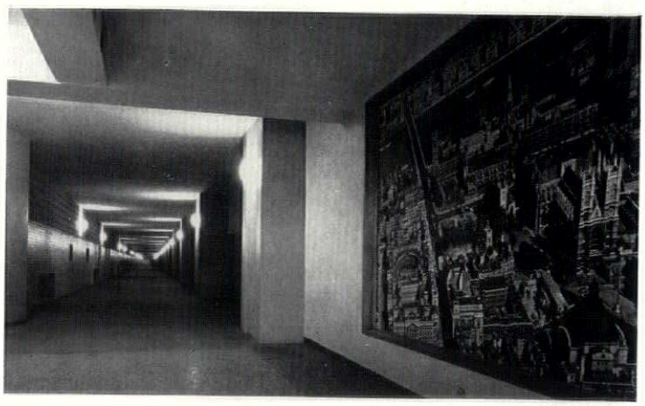
22



23

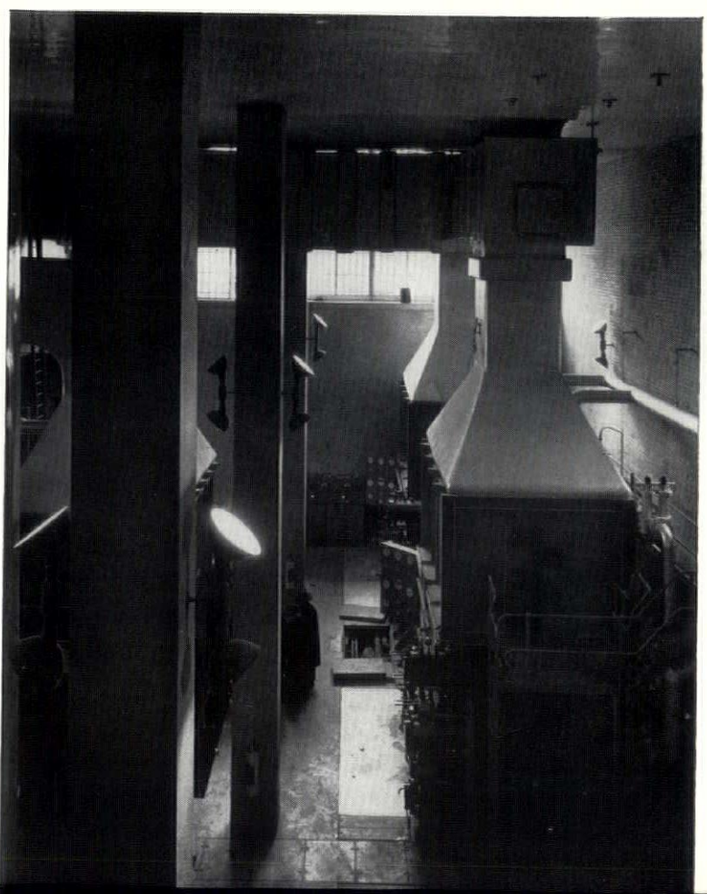
Above, some working-area interiors. 21, the main works entrance on the lower ground floor, with control turnstiles. 22, typical working space in the works section, with suspended ceilings and movable cross-partitions. 23, the general printing section showing the north-light roof, an independent construction cantilevered out from the columns framing a corridor on the right.

24



25

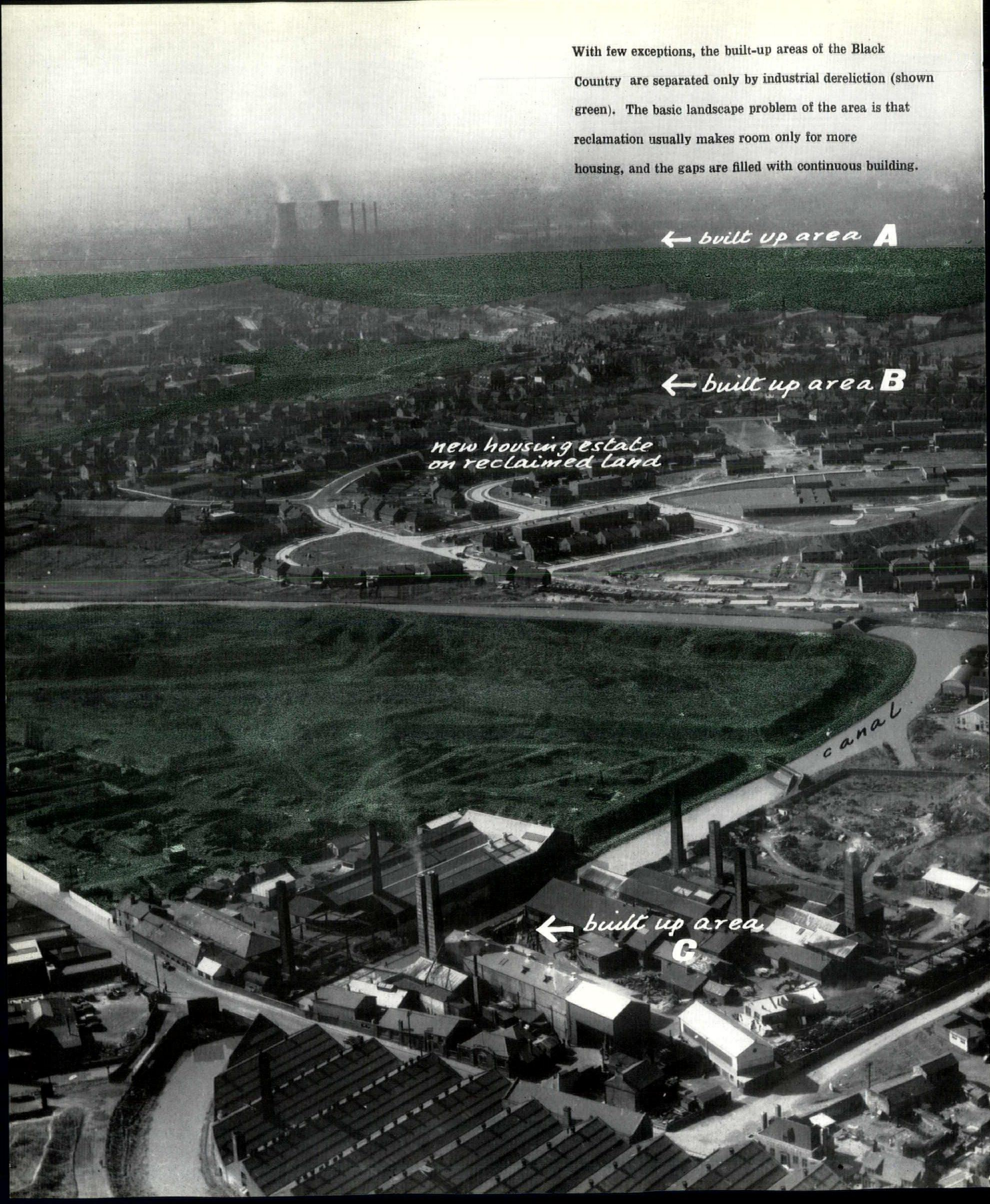
24, the service corridor which runs beneath the full length of the production area, giving access to services, lavatories, etc. The lower part of the walls is in glazed brick. 25, looking down the corridor from the staff entrance-hall which has as decoration (right) a photo-mural of Westminster.



26

26, looking down into the boiler-house from the gallery, showing the vertical boilers. It has a special ceiling with thermal and acoustic insulation.

With few exceptions, the built-up areas of the Black Country are separated only by industrial dereliction (shown green). The basic landscape problem of the area is that reclamation usually makes room only for more housing, and the gaps are filled with continuous building.



Kenneth Browne

In the first of his articles on Dereliction, Kenneth Browne showed a picture of creative land-reclamation getting under way in the wasted areas of Lancashire. In this second article he deals with the Black Country, an area which pioneered the reclamation of industrial badlands. But it is an area which has special landscaping problems because of its very high concentration of men and manufactures—problems which need to be solved if there is to come that day to which Lewis Mumford looked forward 'when Birmingham and the Black Country will be as solvent in human terms as they have been, in the past, in industrial and financial terms.'†*

Dereliction: 2

Smoke-stained, slum-ridden, prosperous, congested, the 140-sq. mile Midland industrial hive known as the Black Country presents one of the most difficult planning problems in Britain.

It consists of a score of close-packed industrial towns varying greatly in size yet each with its nucleus of individual character. These towns often run haphazardly together with no visual demarcation of where they begin or end, and are only separated, where separated at all, by great stretches of derelict land (9,300 acres of it in 1945),‡ barren and cratered like a battlefield—see opposite. This is a landscape of slag banks and spoil heaps, quarries and flooded subsidence flashes—landscape rendered unusable over the last 150 years by coal, ironstone and fireclay mining, iron smelting and brick-making. It is a landscape whose very contours have been completely changed by industry and in addition it is crisscrossed by a maze of canals and railways which thread through the densely built-up areas dividing the whole into innumerable small pieces of development. In this, the birthplace of the Industrial Revolution, the siting of everything was determined by immediate convenience and quick commercial returns, and in consequence houses and factories are jumbled together in a landscape of £ s. d. Although most of the heavy industries which caused the dereliction have now moved out of the area, with the exhaustion of the rich shallow coal seam, this is still the centre of the country's wealth, with a vast number of inter-dependent industries. It is a monster that works well but under extreme difficulties, for most of the factories are too small and, being mixed with the housing, unable to expand. To sort this out is a most difficult task, especially as any changes must be made 'with the steam up'—a ready-made excuse for doing nothing.

One result of an overwhelming concentration on industry in the Black Country is that it has not developed cultural and recreational amenities in proportion to its population, and for many years the lack of attractions, particularly open space, in the central areas

* AR, Nov., 1955.
† Foreword to *Conurbation* (a survey of Birmingham and the Black Country), published 1948 by the Architectural Press for the West Midland Group.
‡ More than 1 acre in every 10. Coseley, for example, out of a total acreage of 3,290 acres had 2,000 acres of dereliction.

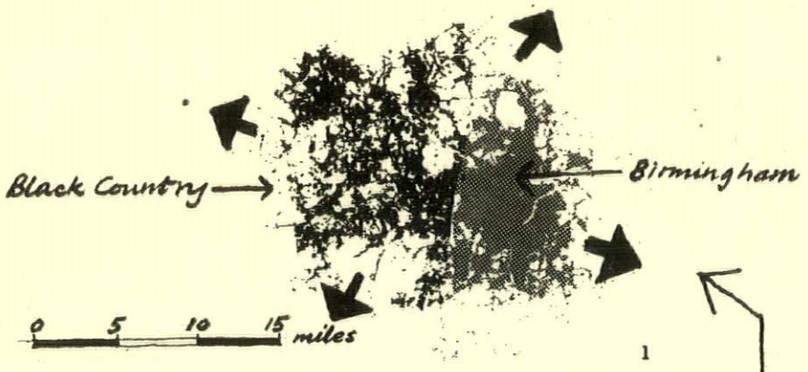
led to a 'flight to the fringes' by all who could afford it. The area was expanding like a balloon and eating deep into the surrounding countryside, 1 and 4.

Fortunately for the whole country, the need for drastic action to halt this spread was realized after the last war by the Ministry of Town and Country Planning. Though many local authorities, starved of suitable building land, were only too willing to buy up agricultural land for their new housing estates, the Ministry, to its credit, refused to 'clear' such schemes. As a result, the local authorities were forced to look elsewhere for land, and reclamation of the derelict land on their doorsteps provided the only answer.

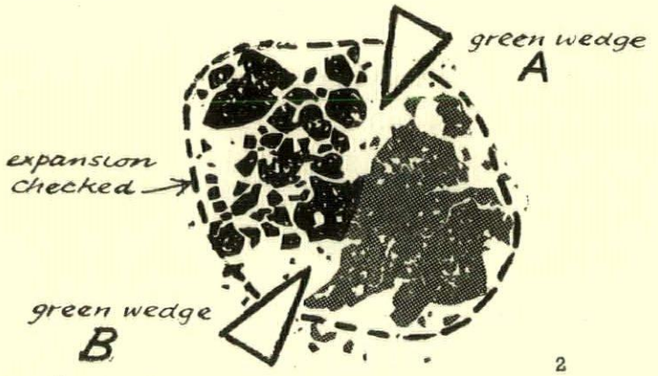
This, however, posed engineering problems which hitherto had been thought insurmountable. Though reclamation was no new thing here, prior to 1939 it had been tackled almost entirely by hand, mostly as labour relief, and recovery of the bigger sites had been dismissed as impossible. However, as a result of the war, great strides had been made in the technique of mechanical earth-shifting, and with machines such as the elevating grader, which could move 500-700 tons an hour, reclamation was a much better proposition. Fortunately for the local authorities, the Regional planning officer, Lieut.-Col. J. R. Oxenham, was an expert in the use of this equipment and a great enthusiast, and he geared them up to tackle their land reclamation problems using the latest machinery and co-ordinating all refuse dumping to levelling. His efforts were so successful that vast schemes of land recovery were unde taken involving such obstacles as the filling of marl holes 400 feet deep and the moving of thousands of tons of shale and slag. As a result councils were enabled to set a fast pace with their housing programmes and now, instead of their having to be persuaded, reclamation has been developed to the pitch that even private enterprise has found it an economic proposition and is following the councils' lead.

So far, so good, but what of the visual aspect—the Black Country considered as landscape? In 1948 the West Midland Group gave, in *Conurbation*, an excellent survey of Birmingham and the Black Country, a very clear picture of the landscape problems and underlined the essential need from the start for a constructive landscape policy for the area *treated as a whole* to prevent its complete coagulation by sprawl, 3.

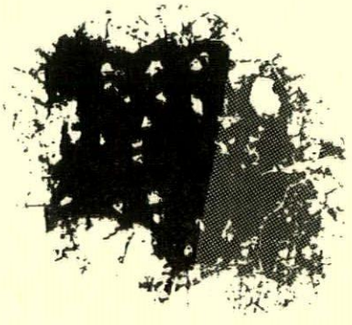
[*continued on page* 312



1



2



3

4

1, above, shows the crazy, haphazard pattern of the pre-war Black Country. Nearly all open space (white) between built-up areas (black) is derelict land. Everyone who can, buys a house outside the industrial morass and the area expands fast, despoiling the surrounding countryside, 4.

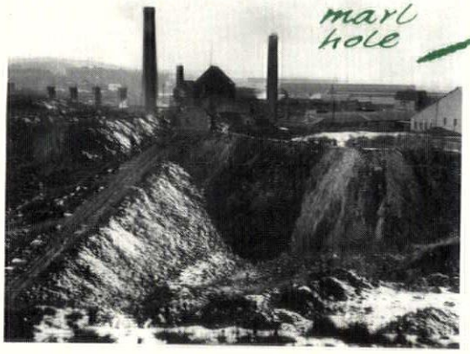
2 shows, diagrammatically, the pattern advocated in 'Conurbation': expansion checked and town boundaries contracted to give legible units separated by a green setting of reclaimed dereliction. Large existing green wedges, A and B, are safeguarded and enlarged.

3, the present danger: expansion checked but nearly all reclaimed derelict land built over and green wedges eaten away—result, complete consolidation.

Dereliction

The Black Country, unlike Lancashire, lacks the spectacular conical spoil heaps produced by the modern coalfield.

In the past, the vast quantities of slag and spoil produced were dumped by hand to form a landscape of small hills and hollows. This is further pock marked by huge marl pits 5. formed in the extraction of brick clay and hollowed out by subsidence flashes 6.

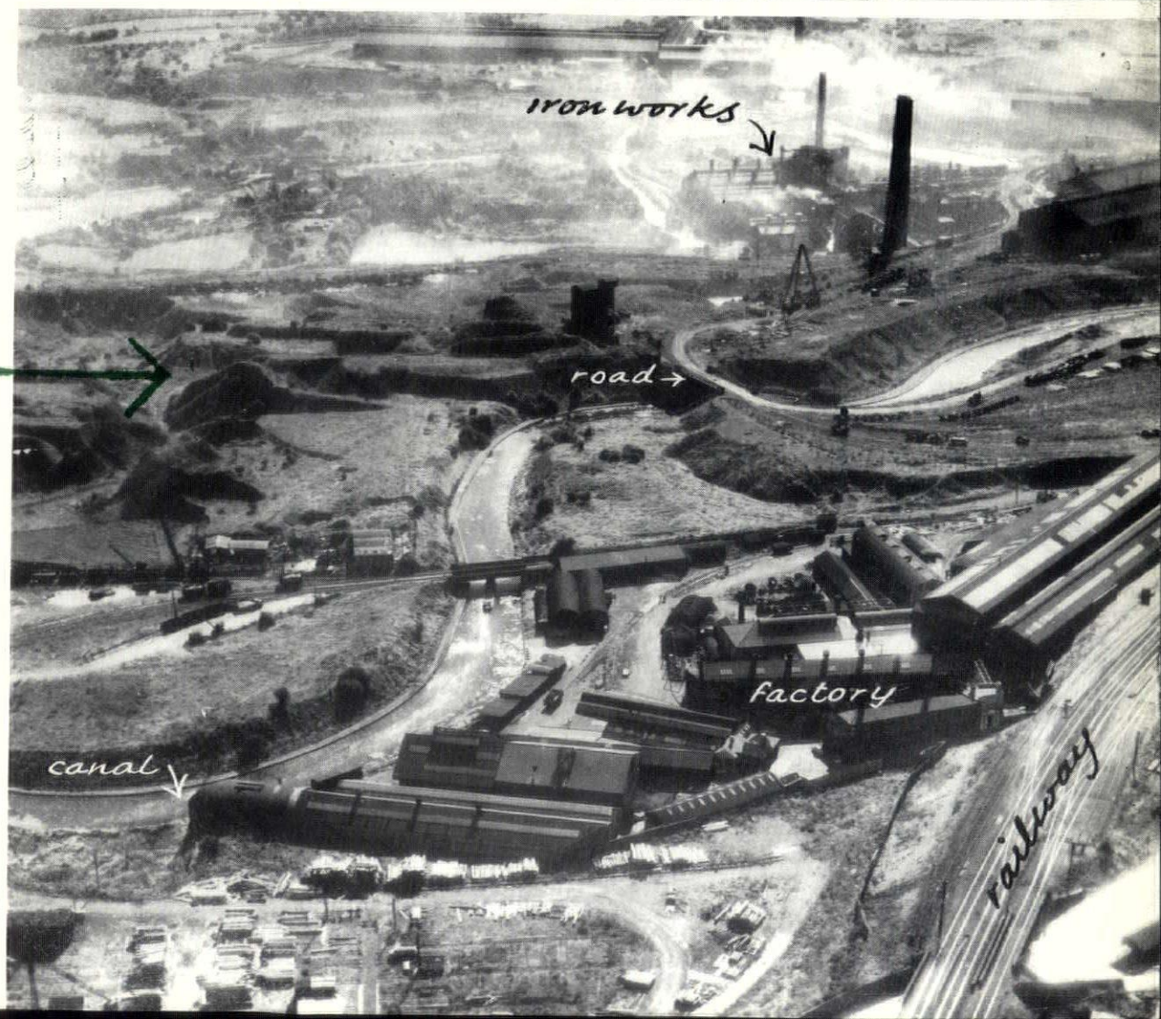


5

6

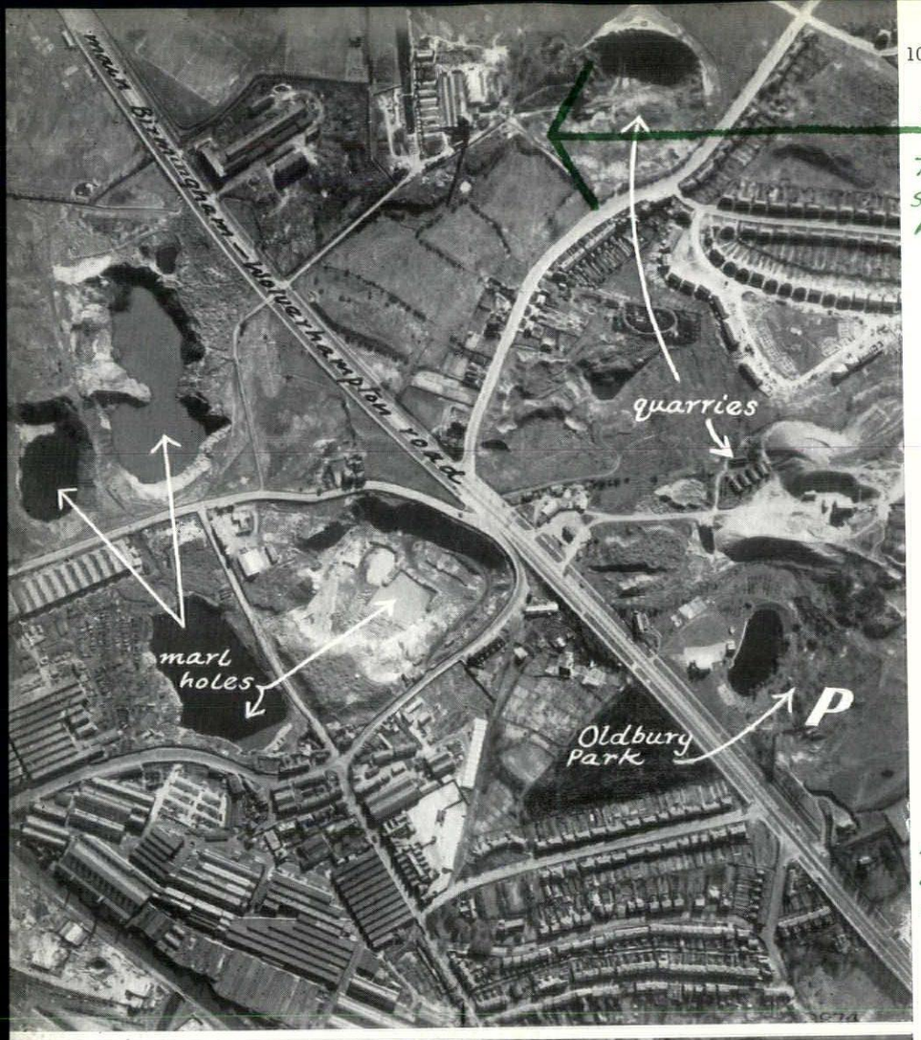
7

8



9

12→



BEFORE land reclamation

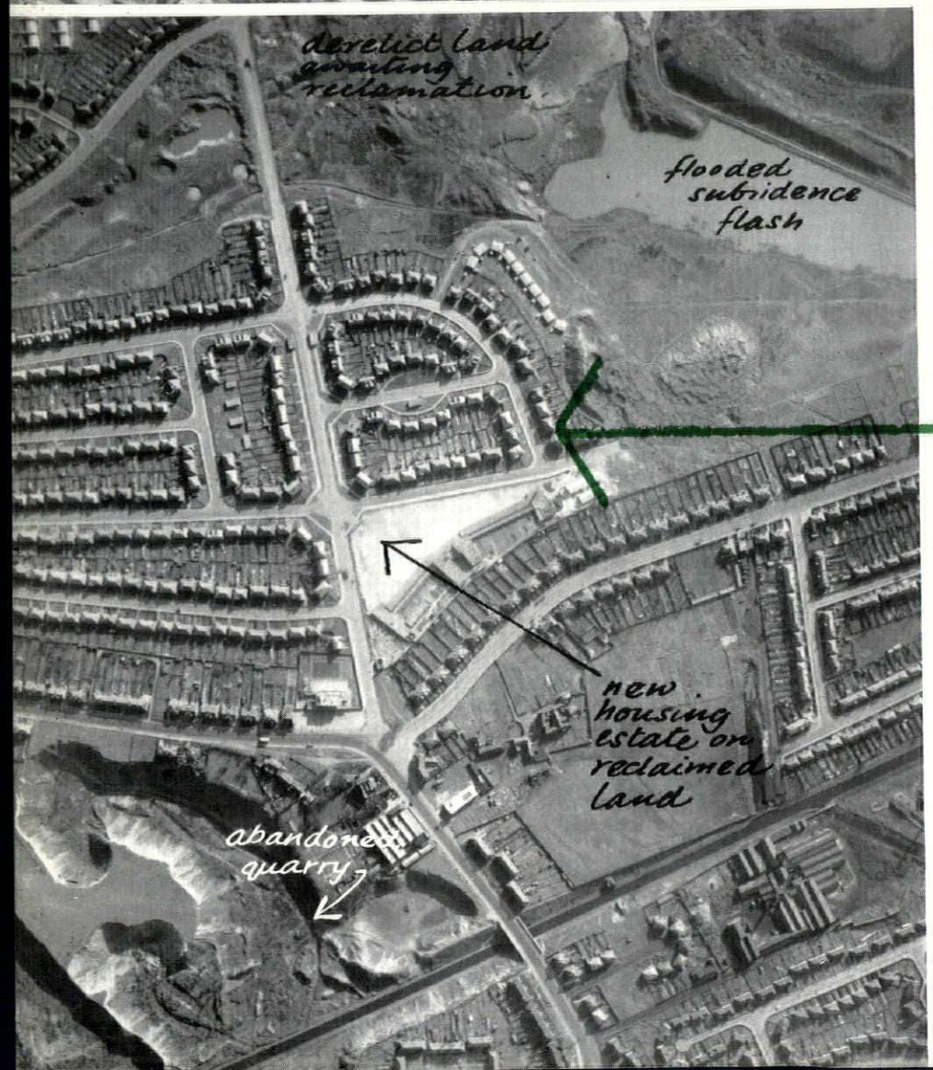
Typical scenes of dereliction – the landscape cratered like a battlefield and heaped with spoil and slag tips

In this, existing green wedges would be maintained and enlarged by taking advantage of the great stretches of dereliction. They showed that in fact, after reclamation, there would be space in the area to accommodate all the new building required whilst still increasing the amount of public open space. However, this could only happen if there were an *over-all*, plan and by ground view photographs and montages as well as plans they suggested ways of tackling the problem. This book did not set out to provide a final landscape plan, but by its research and presentation to clear the way for the official plan, which in fact was shortly issued by the Ministry of Town and Country Planning.† The official plan again emphasized the importance of a positive landscape scheme which would benefit the whole area and pointed out that the derelict land served a good, if 13→

DURING

Reclamation in progress with bulldozers and scrapers. Subsidence filled and spoil tips flattened

unintentional, purpose in that it was a barrier to all-over sprawl and helped to retain the individual character of the various towns; a character of which the inhabitants were proud. In addition, in an area dreadfully short of open space, it provided playgrounds and made the very necessary visual contrast to the tightly built-up areas. The plan recognized that there were great opportunities of converting large areas into a really attractive landscape which would act as a foil, not a mask, to industry. Also underlined was the need to make a 'new heart for the Black Country' by bringing first-class social and recreational facilities into the rotten core. The plan stressed the acute shortage of such facilities in the area and also the lack of open space. It proposed, on a site near Oldbury, a cultural and recreational



AFTER

The final effect. The land reclaimed and council semi-dets. jostle into position.

centre rather on the lines of the LCC Crystal Palace scheme which would make an attractive focal point for the whole Black Country.

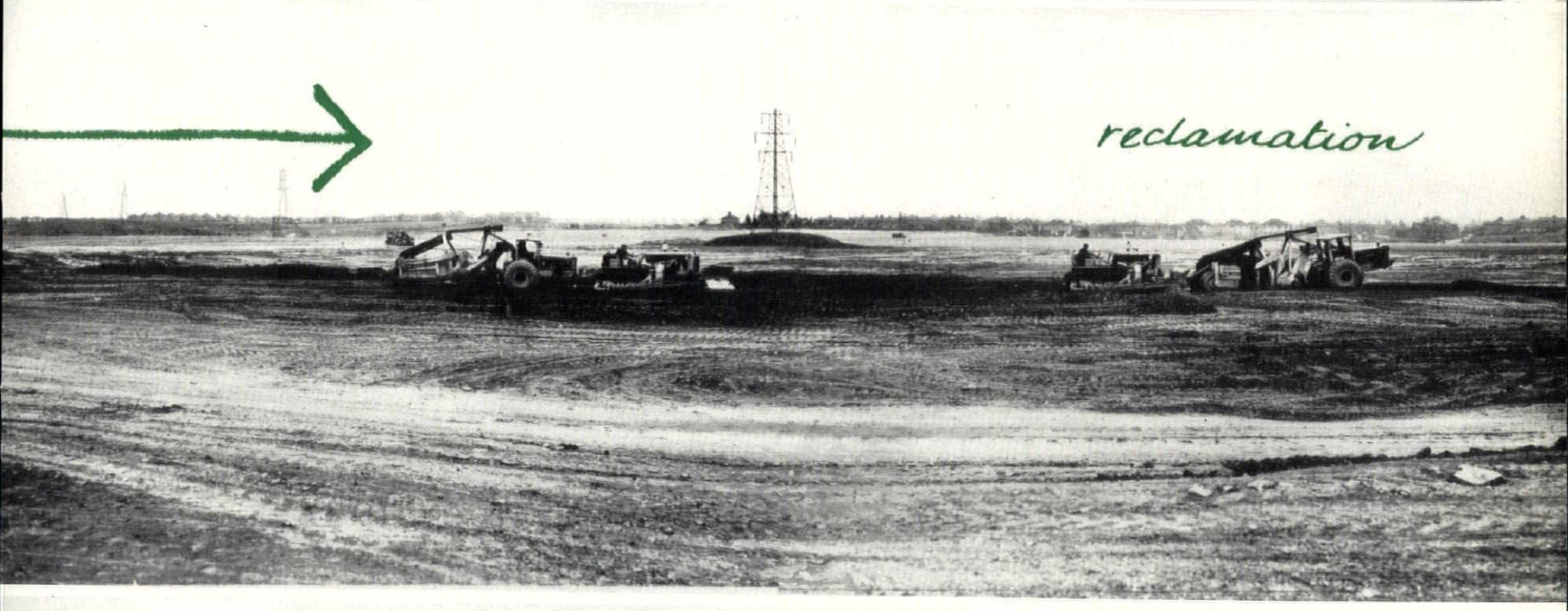
What in fact, eight years after, has been done? The idea of a 'new heart' did not catch on locally and was abandoned, and in spite of the past examples of successful reclamation for open space, such as the Wren's Nest, 16, once an eyesore, today a beauty spot, and in spite of the ideas put forward by the West Midland Group, there is little sign that this essential need has been grasped and every sign of the whole area being joined together by a sprawl of council

† *West Midland Plan* by Professor Sir Patrick Abercrombie and Herbert Jackson.

[*continued on page 315*

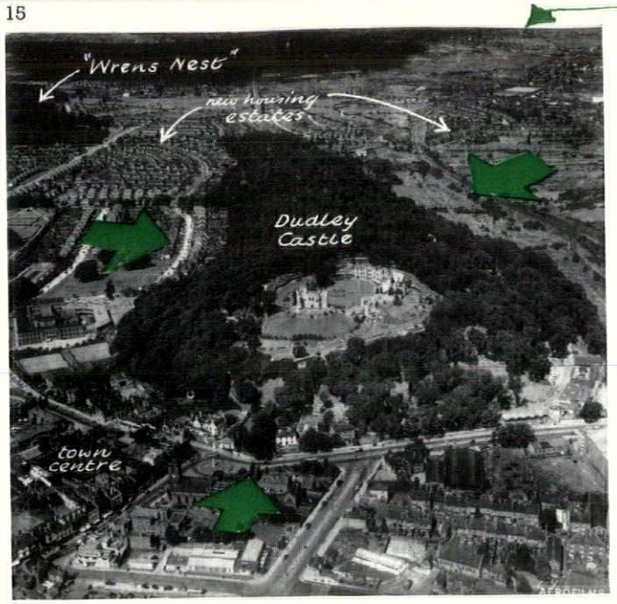
14→

dereliction

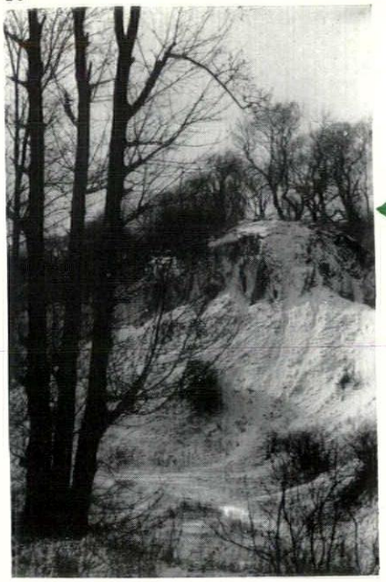

reclamation

occupation

15



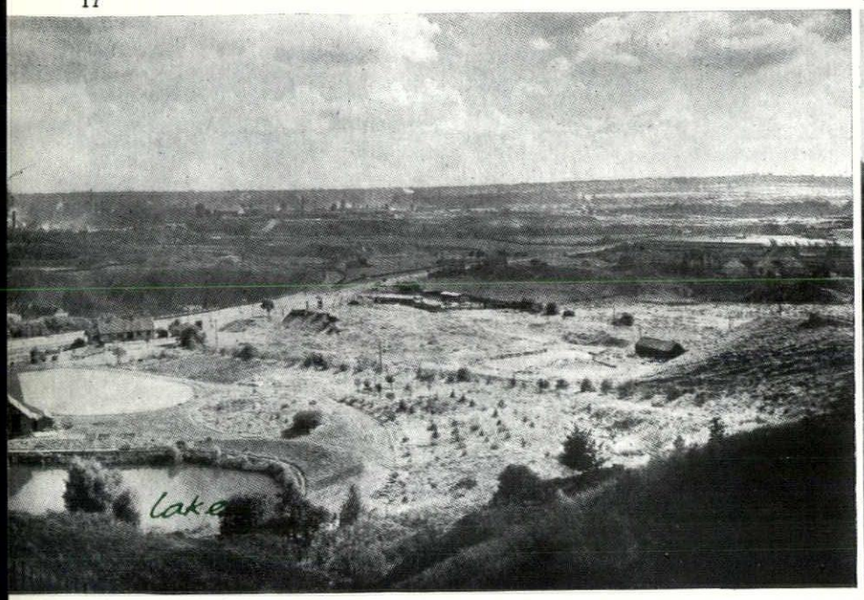
16



Reclamation for Open space 1.

The grounds of Dudley Castle and "The Wren's Nest", Dudley were, at one time, eyesores owing to extensive limestone quarrying for blast furnaces. Planted in 1815 by the Earl of Dudley, they are now local beauty spots and act as barriers to sprawl

17



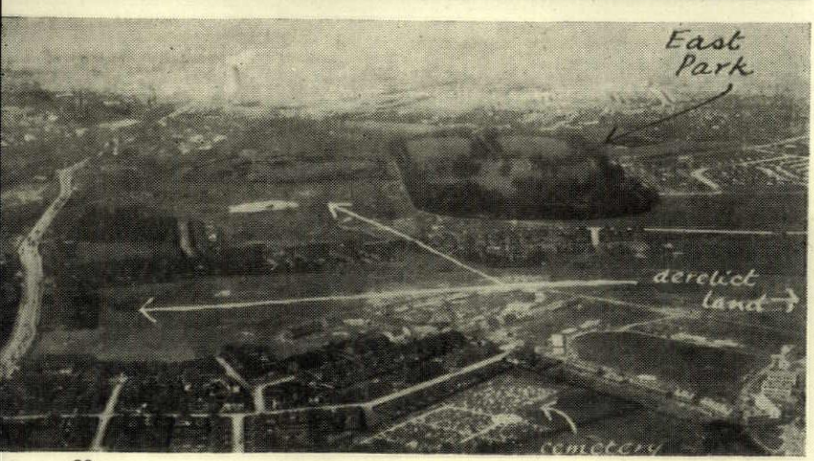
18

Reclamation for open space 2.

The sequence of pictures below, 17, 18, 19, *shows pre-war reclamation at Bury Hill, Oldbury, where a park (marked P in* 10*) was formed by grassing and tree planting pit mounds.* 17, *the view from the park towards the main Birmingham-Wolverhampton road, the lake in the foreground having been formed from an old excavation.* 18, *the opposite view, showing the landscape dominated by a derelict pit mound which in no way detracts from the scene.* 19, *however, shows the same view completely ruined by the invasion of a housing estate.*

At Wolverhampton (bottom sequence), the East Park, 20 *below, was once derelict land and, though proving that plants thrive in shale, is itself unrelated to the landscape and within its symmetrical perimeter, merely turns its back on the surrounding ugliness. Also at Wolverhampton, the West Park,* 21 *(facing page), was never in fact derelict land, but, save for the municipal ornamental garden, is a fair guide to what could be done to make a green setting out of the dereliction; even the lake could well have been formed from an abandoned marl hole.*

19



20
←21

continued from page 312]

housing estates, 14. Has everything but absolute utility gone to the wall, and if so why?

To begin with, the essential first step of having an *over-all* landscape plan, emphasized both in *Conurbation* and in the official plan, was not, through local jealousies, ever taken. In consequence the problems are tackled piecemeal without any over-all picture, and where, as is often the case, a green wedge runs through the territory of several authorities we have the ridiculous position of some trying hard to preserve it whilst others build on it as fast as they can. Secondly, the official five-volume West Midland Plan, issued to all local authorities but not published, fails as a guide to action. Whilst throwing cold water on most of the landscape ideas put forward in *Conurbation* it puts forward few concrete suggestions itself, and is so heavily overlaid with economic jargon as to confuse the issue. Also the dull official, roneoed presentation, the lack of clear directives and the absence of any photographs or drawings to show what things could be like (an essential for discussion), encourage the borough engineer to leave it on the shelf.

Added to this, open space is the one type of surface use which normally yields no financial return, whereas housing figures impress and add to status. Again, *Conurbation* visualized a contraction of existing town boundaries by rebuilding slum property, using up the odd left-over corners and building higher. In fact, the speed with which new housing was required led those responsible for providing it to ignore such suggestions and take the easiest way, which in this case was to master the art of reclaiming derelict land and lay out new estates on that. Yet another reason is that good landscape, something good to look at, cannot be created unless people trained to use their eyes are in *responsible* positions. The Black Country is particularly backward in this respect, and the landscape which is appearing in place of the dereliction is the landscape of the borough surveyor not the landscape architect. Earth-moving machinery which can transform the shape of the land is a power for good or evil visually. If here it is used to flatten the barrier of dereliction so that subtopia can take over, it is the latter. To excuse the great vistas of semi-dets. which so often replace dereliction we are told that this is the only form of building possible owing to the danger of subsidence. Surely it is unbelievable that architects, were they encouraged to do so, could not find a way round this.

When the visual approach is missing no amount of engineering ingenuity can make up for it. Siting things in the right place economically is planning of a kind, paper planning; but it does not go far enough—it does not and never will provide a humanized landscape. The derelict land presented the opportunity for such a landscape, an opportunity which it would appear is fast being dissipated.

BUILDINGS IN HONG KONG

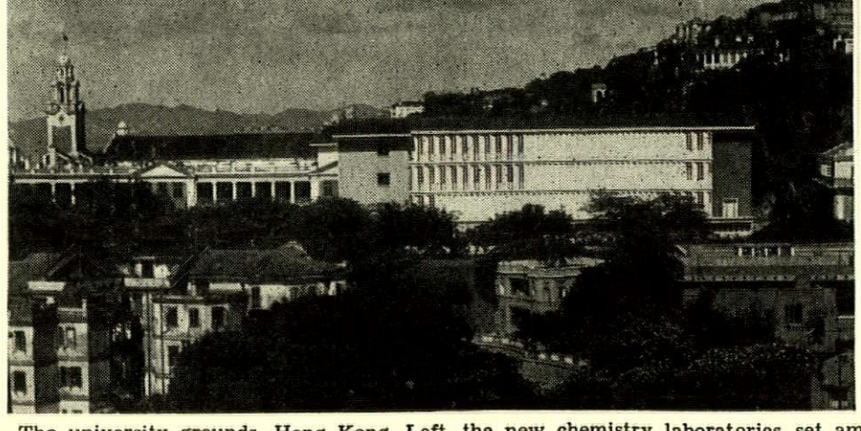
ARCHITECT	*R. GORDON BROWN*
Assistant Architect	*Lars Myrenberg*

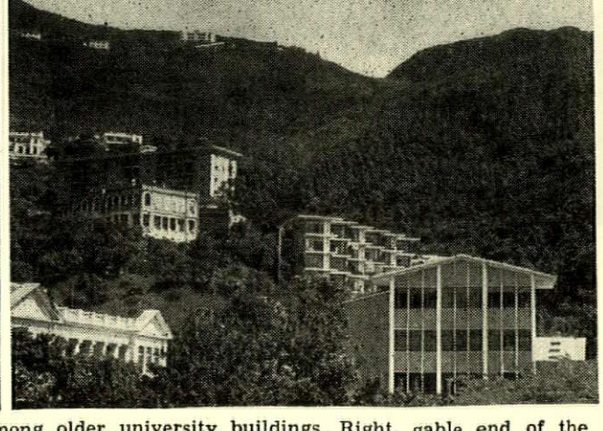
Hong Kong is about 20° north of the equator. It has a hot humid summer and a winter period lasting several months, during which the temperature never falls to freezing point but cold winds and clouded skies make it essential to have heating in buildings. It is in the typhoon area and winds of 134 miles an hour have been recorded. If louvres are used (as on some of these buildings) they must be heavy to stand the typhoons, and it is not normally an economic possibility to make them movable.

Hong Kong was a city of ¾ million people before the war; but its population has now risen to 2½ millions, largely owing to an influx of refugees. Water supply has not kept pace with the increase of population and it is normal for taps to be connected to water mains while water required for lavatories and other purposes is obtained by damming some of the many small nullahs which become torrents during the heavy rains. Water storage tanks are a major feature in many buildings, and gutters both on buildings and on sites are necessarily very large.

The local building industry is of a high standard and materials are good, though somewhat limited. Excellent well-seasoned teak is commonly used for floors and outdoor woodwork and for furniture. The Chinese carpenter uses the most primitive tools but is a sensitive and competent craftsman. Bricks and tiles were formerly imported from Canton. There exist locally manufactured bricks and tiles to take the place of these; but their range is more limited. Ceramic units are available in the form of grilles, and these are fairly widely used. There is a difficulty in obtaining interesting texture, and efforts are made to overcome this by the use of various types of concrete finishes, especially Shanghai plaster.* The majority of building materials, however, are imported; also equipment and fittings. While the Public Works Department uses a quantity surveyor and a specialist engineer in a consultant capacity, the normal job in Hong Kong has for many years been done without quantity surveyors.

*The specification for Shanghai plaster is: rough coat, 1 part cement to 3 parts sand (by volume), applied ½-inch thick and combed to form key before hardening has commenced; second coat, same as first coat, also ½-inch thick and combed. finishing coat, ¼-inch thick, consisting of 1 part of cement and 1 part (by volume) of stone and marble chips graded and proportioned to obtain the desired tint. This last coat is permitted to harden sufficiently to allow the surface to be washed and scrubbed with a stiff brush (usually with bamboo bristles) to remove the surface cement, leaving the stone chips exposed.



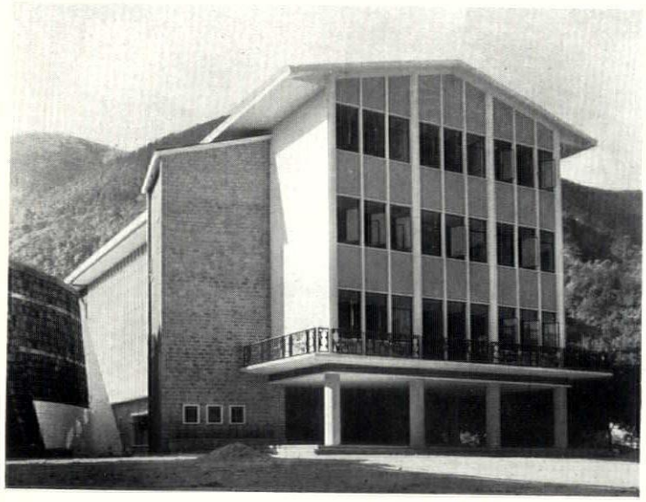


The university grounds, Hong Kong. Left, the new chemistry laboratories set among older university buildings. Right, gable end of the laboratories; immediately behind them the second block of staff flats; higher up the hill the first block of staff flats. See following pages.

1. CHEMISTRY LABORATORIES FOR THE UNIVERSITY

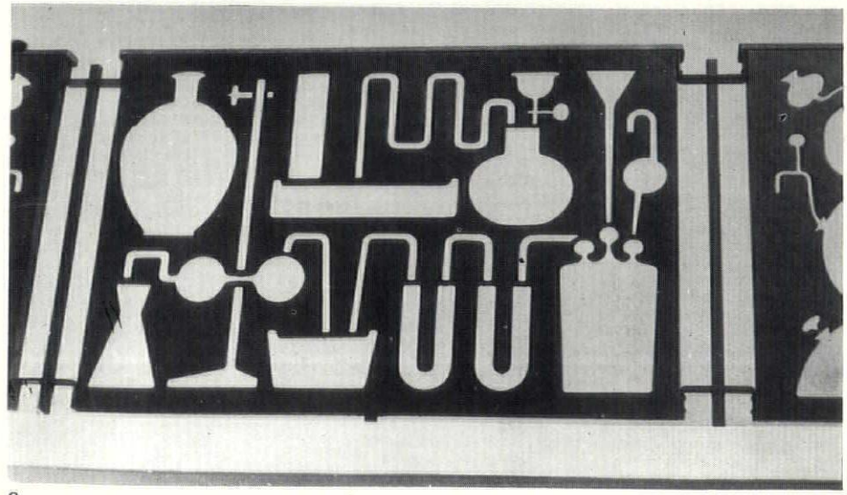
This building houses the whole Department of Chemistry and provides both teaching and research laboratories, two lecture halls and large storage accommodation. As sites in the University grounds are scarce and restricted, as well as being for the most part steeply sloping, it was not possible to orientate the building correctly. Its long sides face east and west, necessitating the extensive use of sun-shuttering. The building is partially air-conditioned.

It is of reinforced concrete frame construction, plastered externally and finished in strong colours (see captions to photographs). The roof is covered with black Chinese tiles. The consulting engineer was Mr. S. E. Faber.



1

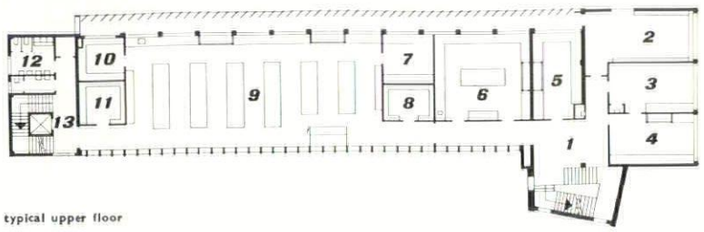
2



3

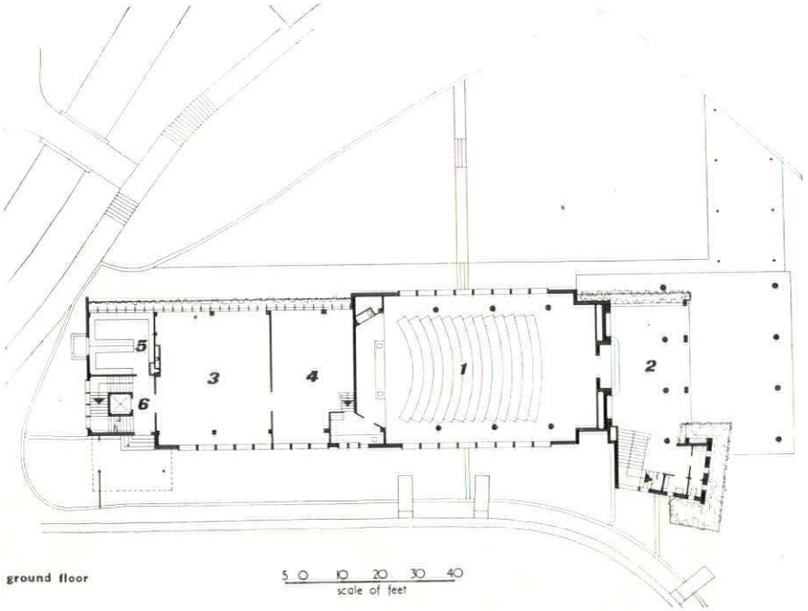
1, the entrance elevation. The vertical members are of concrete, with grey panels between of Shanghai plaster (see footnote on facing page). 2, the west side (see also distant views on facing page). The louvres, which act as sun-screens, are of concrete, plastered and coloured yellow with white edges. The ground - floor walls are of granite. 3, a detail of the design of the metal balustrade of the balcony over the entrance. It is painted dark blue.

CHEMISTRY LABORATORIES



typical upper floor

key
1, hall.
2, library.
3, professor's room.
4, professor's laboratory.
5, special laboratory.
6, organic research.
7, lecturer.
8, glass store.
9, 2nd year laboratory.
10, balance room.
11, store.
12, w. c.'s.
13, lift and stairs.

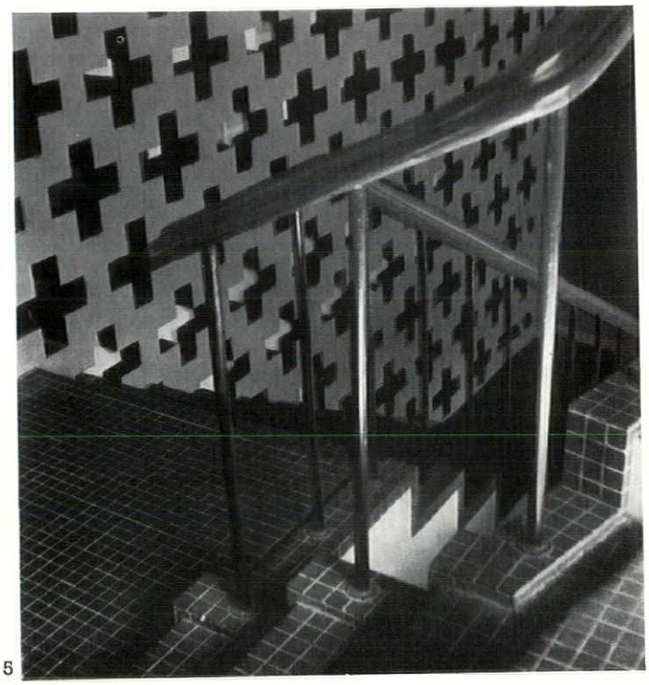


ground floor

5 0 10 20 30 40
scale of feet

key
1, lecture room.
2, lobby and entrance.
3, chemical store.
4, glass store.
5, stores.
6, lift and stairs.

4

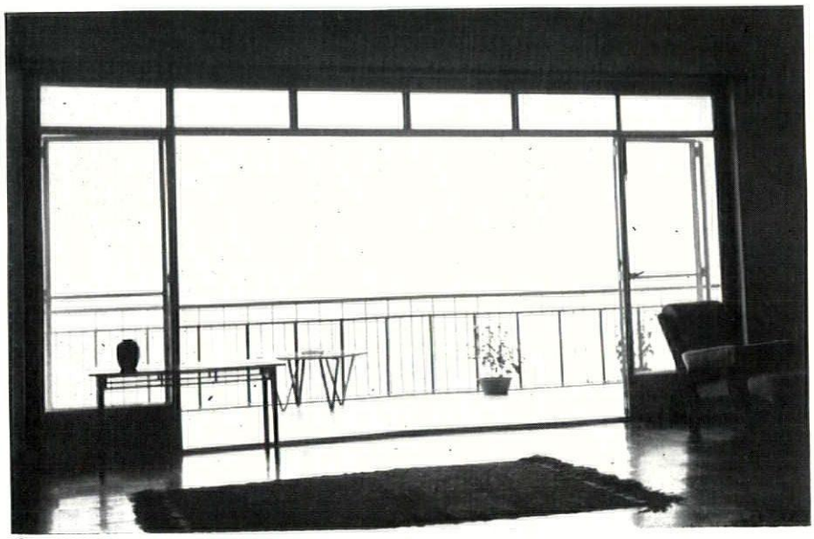


5

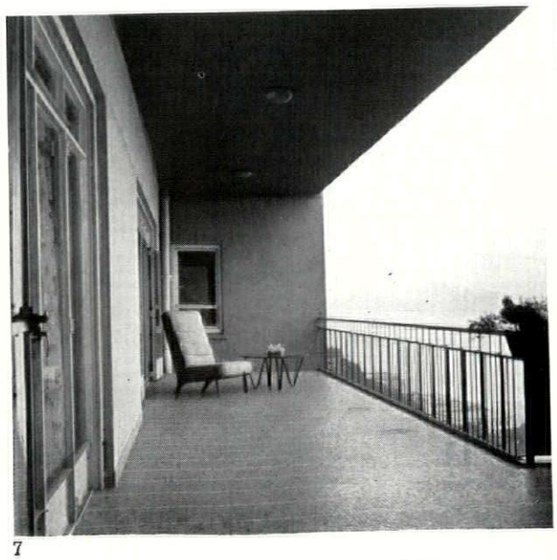
4, a detail of the main entrance on the south side, looking beneath the portico. 5, the main staircase, with pierced wall of ceramic blocks.

2. UNIVERSITY STAFF FLATS: FIRST BLOCK

6, the balcony outside the main living-room of a typical flat. It has a wide view over Hong Kong harbour. 7, on the balcony. The floor is grey mosaic with strips of white. The balustrade is metal, painted blue, with a teak handrail. The ceiling, also, is painted blue.

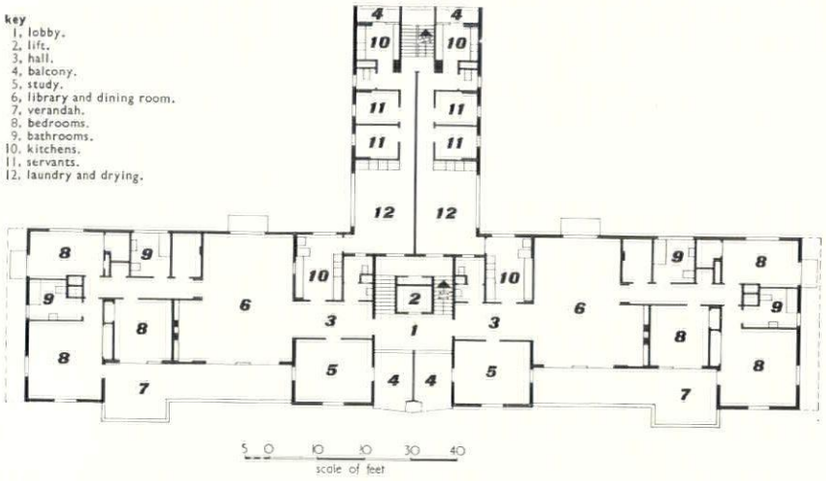


6



7

This building only was carried out in association with a Hong Kong architectural firm, Messrs. Chow and Lee. It occupies a steeply sloping site on the higher part of the University grounds, with views looking northwards over the harbour. It is a reinforced concrete frame structure, finished externally in the local granite (which is of good quality and light grey in colour) and plaster. The wood used externally (for balconies) and internally is teak.



typical floor plan

8, the north façade of the flats facing the harbour (see also distant view at foot of page 316). The walls are deep chrome in colour with the soffits of the balconies blue and their edges white. Ground-floor walls are granite, and the columns are encased in Shanghai plaster (see footnote on page 316), with an oyster-shell content giving a light-grey finish.

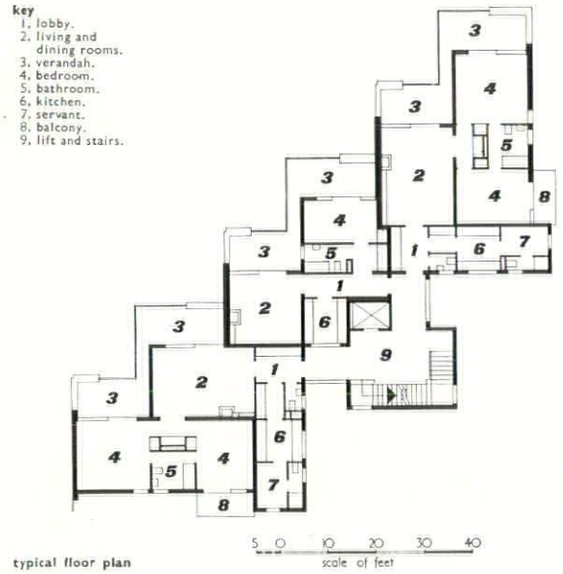
8

3. UNIVERSITY STAFF FLATS: SECOND BLOCK

9, the west elevation. The main wall surfaces are granite and the others concrete, not plastered. It was a constricted site, owing to the precipitous nature of the university grounds, making an almost due west orientation unavoidable; hence the staggered plan, illustrated in this photograph, turning

FLATS: SECOND BLOCK

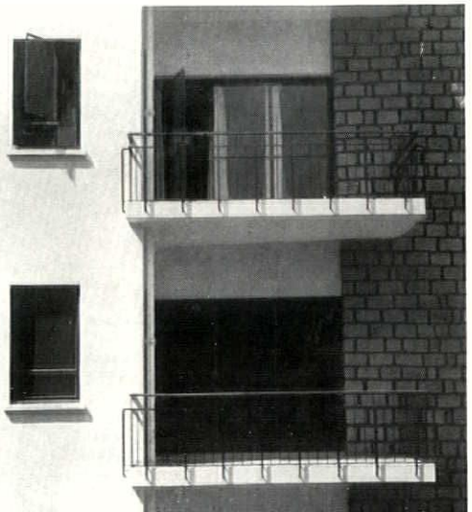
This block provides twelve flats for members of the staff of Hong Kong University: eight two-bedroom flats and four one-bedroom, arranged three to the floor. The site is in the University grounds, a little way further up the hill than the chemical laboratories illustrated above, but below the first block of flats (see general view on page 316). Construction and finishing materials are the same as in the first block (see above), except for the wooden balconies. The entrance porch is finished in teak and brass with a black marble step. Mosaic is used on the entrance-hall floor and balconies. Furniture is of teak. The consulting engineer for the two blocks of staff flats was Mr. S. E. Faber.

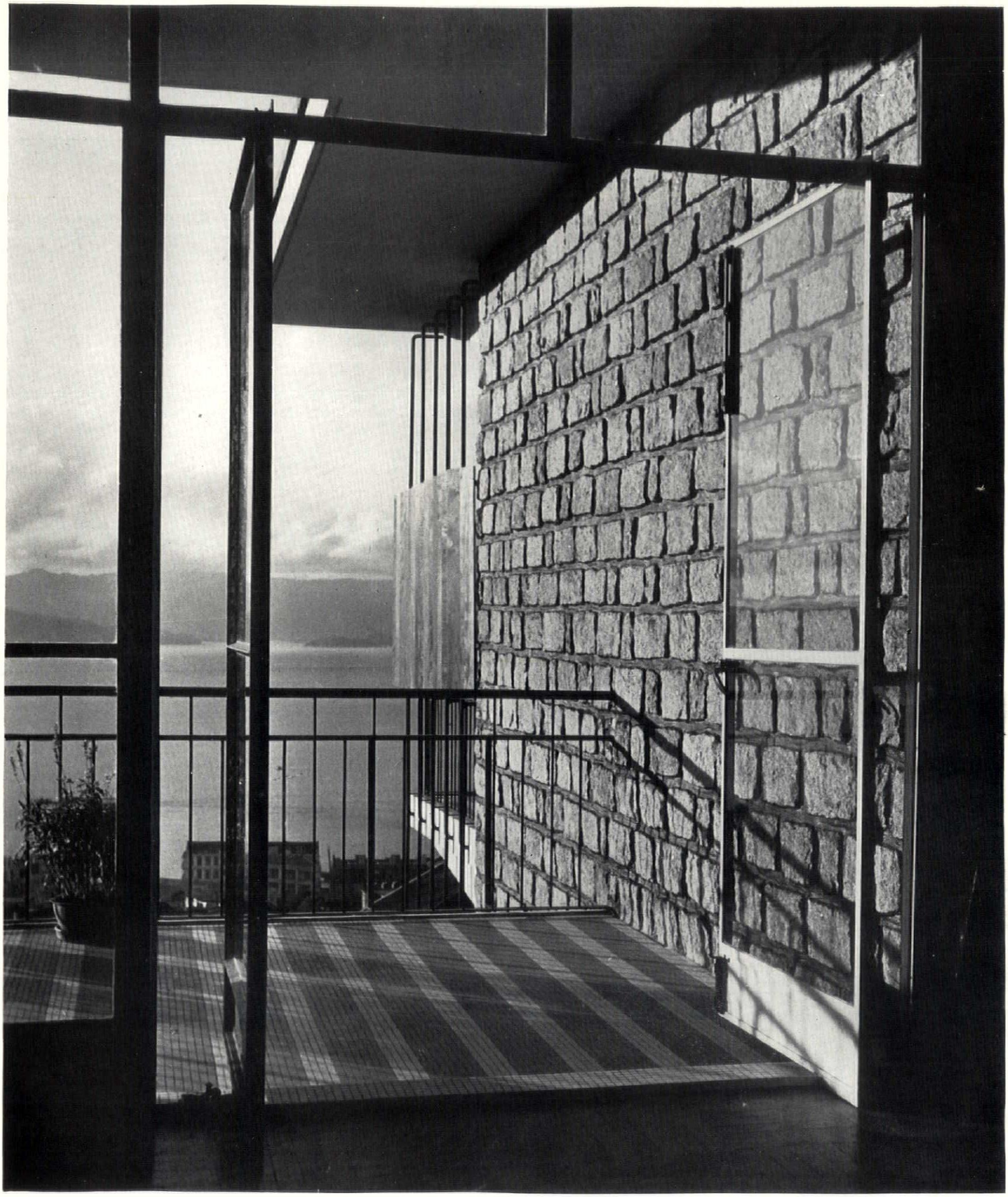


typical floor plan

10

10, oblique view of the western side, showing the distant view southwards over the harbour. 11, a typical living-room. The furniture is of teak. 12, a corner of the living-room looking out on to the balcony. Floors and furniture are teak. The balcony chair is a locally produced article costing only about 25s. 13, close-up of the small balconies, adjoining the kitchen windows, on the side elevation.





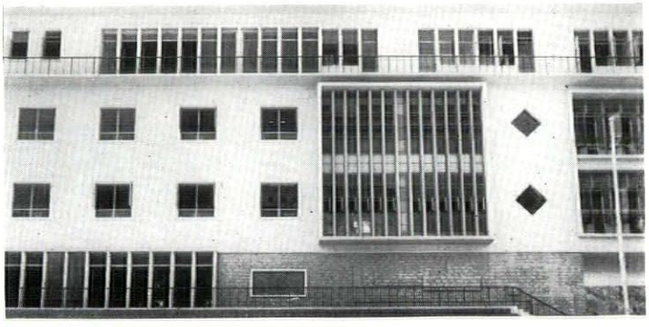
14

14. a detail of one of the balconies taken from immediately inside the living-room, showing the harbour view and the contrast in texture between the granite walls and the smooth concrete surfaces. The floor is of mosaic and the balustrade of metal with a teak handrail.

4. COLLEGE AT KOWLOON

Wah Yan College, Kowloon, is across the harbour from Hong Kong proper. The college, in Waterloo Road, has been built for the Jesuit Order and provides accommodation for 900 boys and for the Fathers engaged in teaching.

The buildings consist of three groups, linked by covered ways serving as cloisters. The first group to be

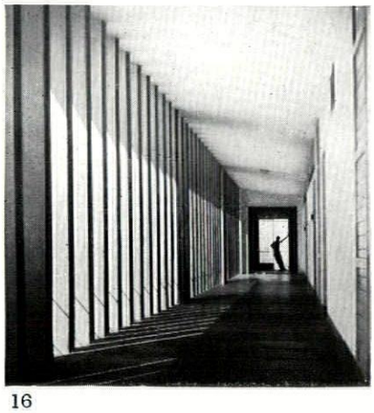


15

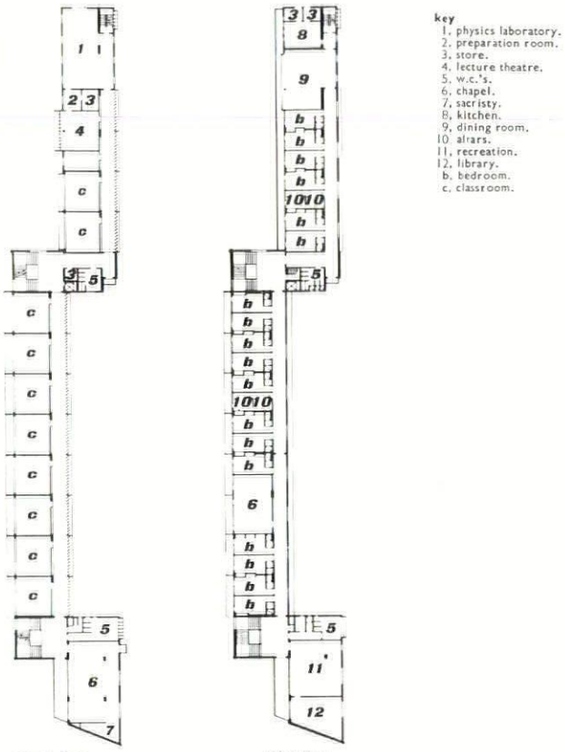
completed is illustrated here. This consists of classrooms, science laboratories, lecture rooms, administrative offices, common rooms, Fathers' rooms and private chapels for the Fathers, and is terminated at its eastern end by a dining-room. The second group contains an auditorium, with green rooms and other ancillary rooms, and the third a chapel, as shown on the ground-floor plan.

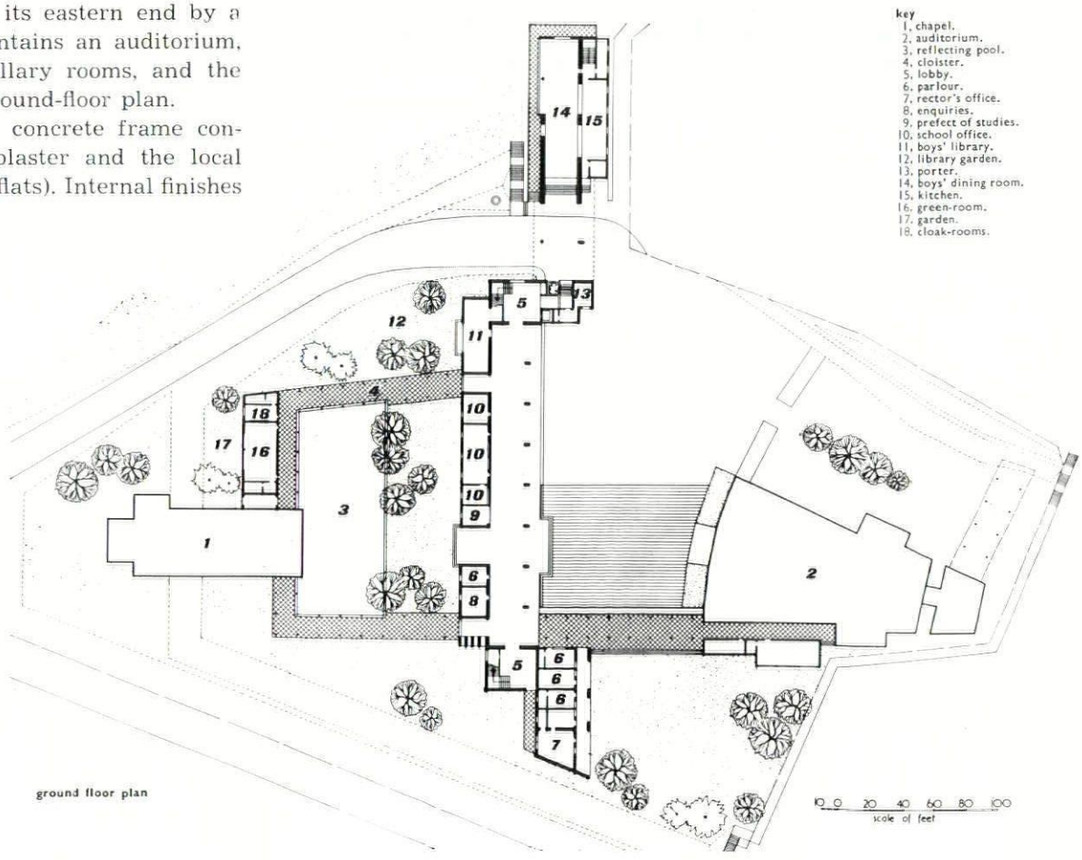
The buildings are of reinforced concrete frame construction, finished externally in plaster and the local granite (see under University staff flats). Internal finishes are simple and include much teak, used for doors and grilles. The consulting engineer was Mr. Hugh Braga.

15 (above), part of the west elevation. 16, a classroom corridor. The concrete louvres are plastered and painted white and pale green. The floor is yellow and grey.

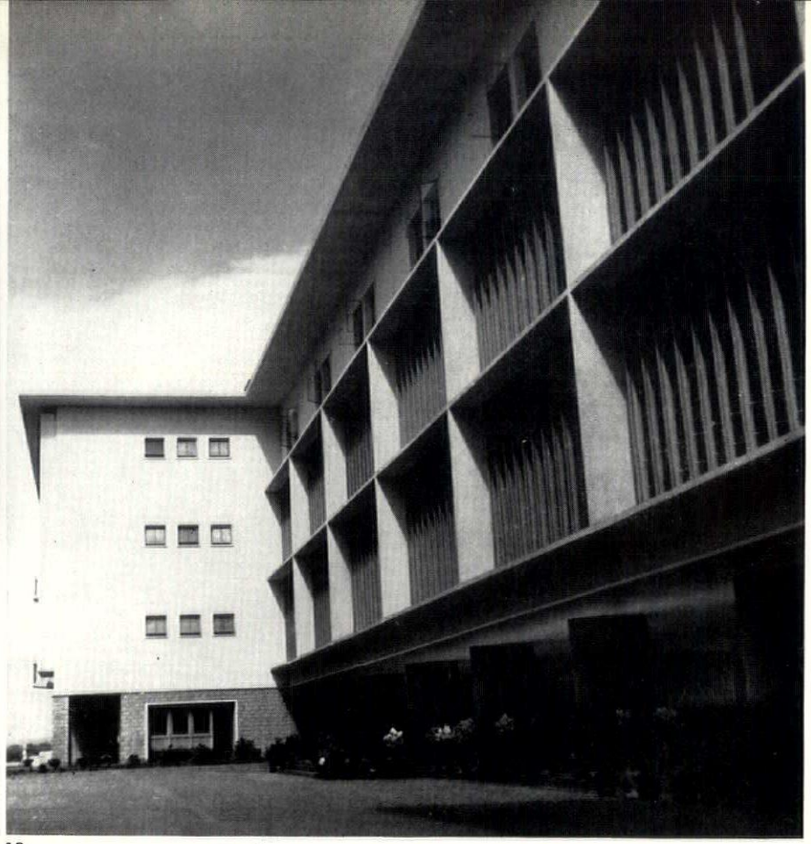


16





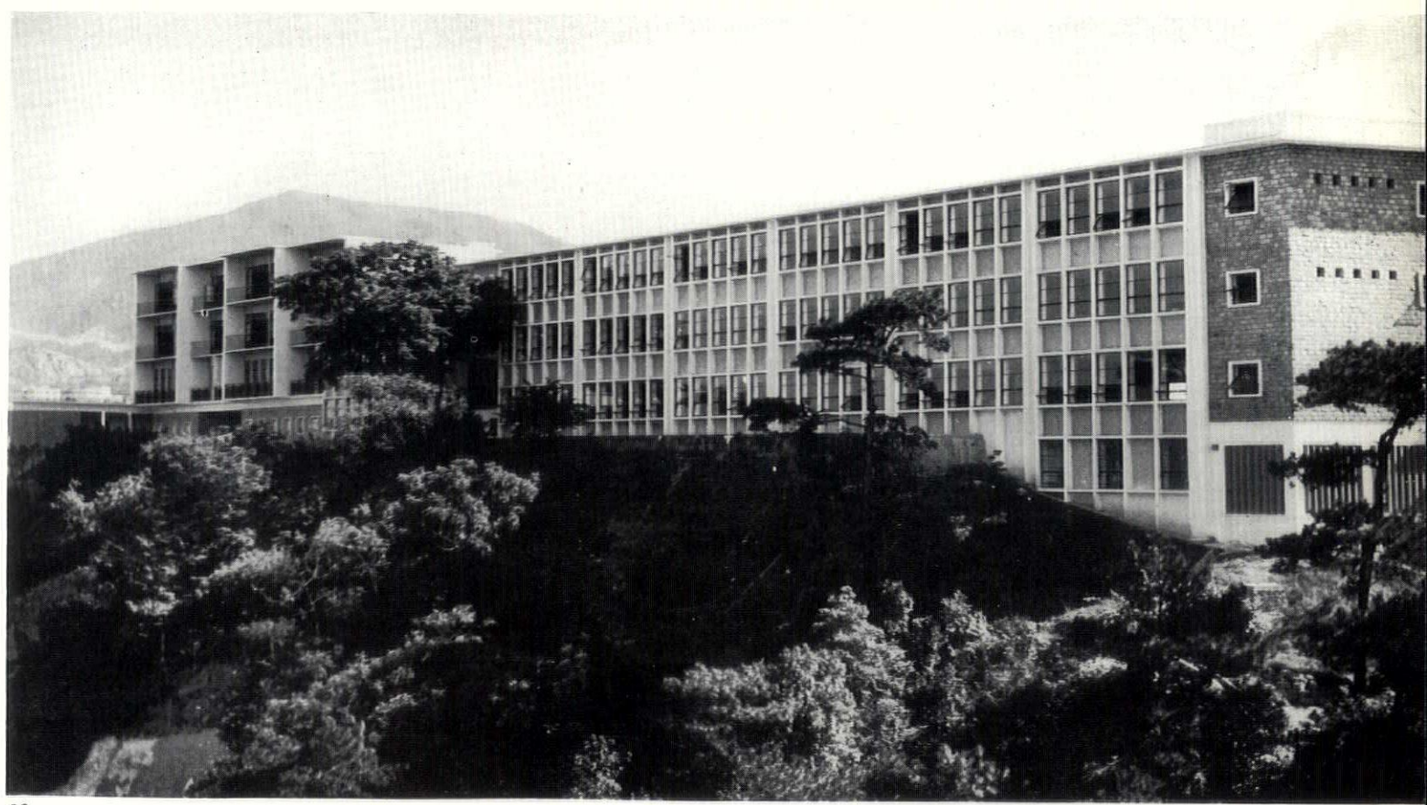
17



18

17, close-up of the west front of the college at Kowloon. The balcony is reached from the windows of the cafeteria The large window above lights a lecture hall. Materials are plastered concrete and local granite. 18, the entrance façade. Concrete louvres are green and the framing members white. The columns beneath are dark blue.

5. COLLEGE AT MOUNT PARISH



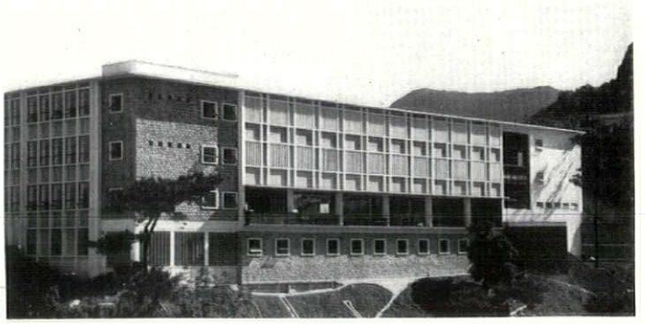
19

19, from the south-west showing the precipitous nature of the site. The classrooms are in the foreground, and in the background on the left are the Fathers' quarters and the administrative offices.

COLLEGE AT MOUNT PARISH

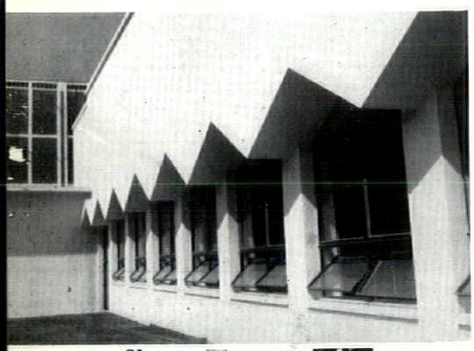
This also is known as Wah Yan College and (like that just illustrated) is for the Jesuit Order, but it is situated in the island of Hong Kong itself. It accommodates 1,000 boys and is placed high up on a rocky, well-wooded hill. The teaching and administrative accommodation is in an L-shaped block, the main area running east and west. The shorter area is open on the ground floor to provide a covered playground. Covered ways also surround a courtyard on the south side, joined by the auditorium and chapel. This is overlooked by access galleries linking the classrooms on the upper storeys. In construction and materials it is similar to the other Wah Yan College.

In addition to Lars Myrenberg, the following architects were associated with Professor Gordon Brown in the design of the buildings illustrated on these pages: Kell Astrom ; Folke Bjorck ; M. Hugo-Brunt ; J. Da Silva.



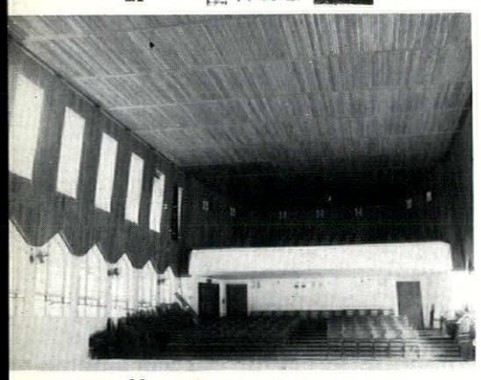
20

20. the south side of the building, with laboratory windows screened by louvres set in concrete frames.

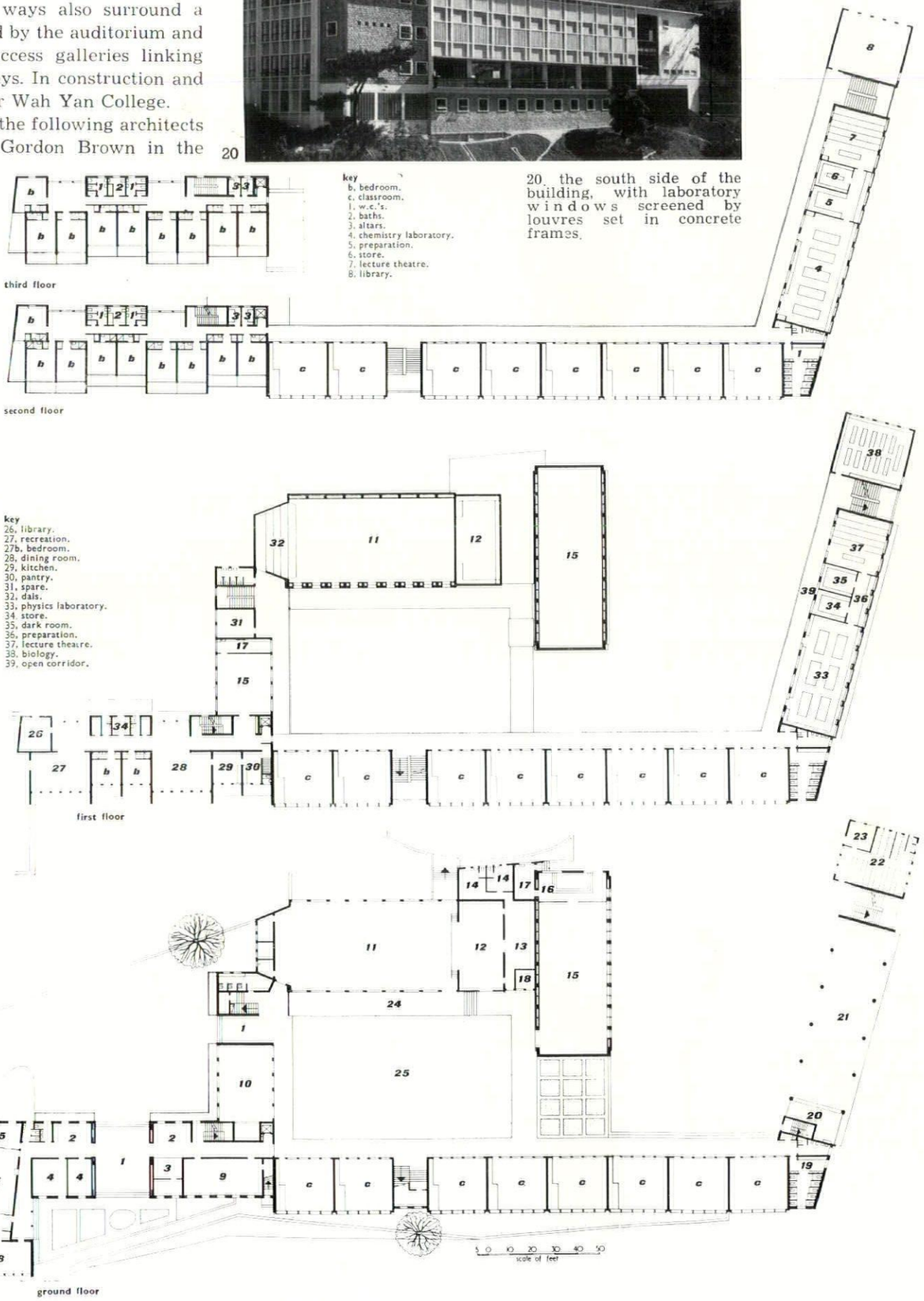


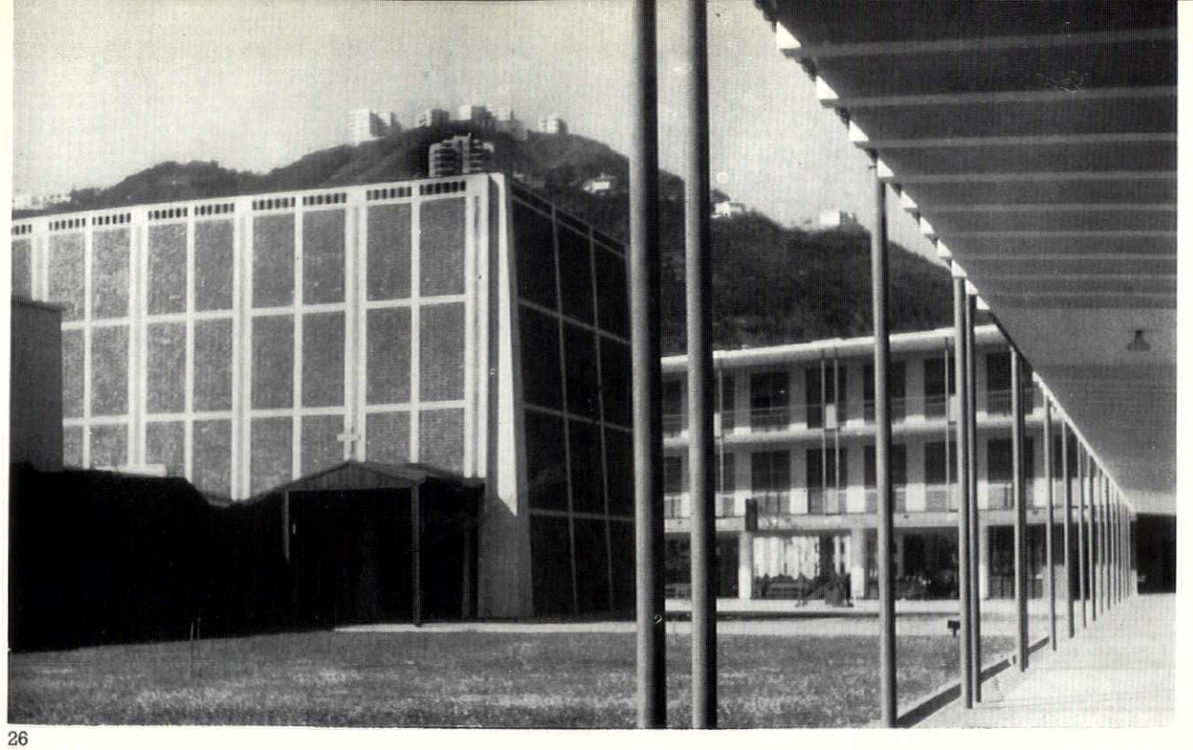
21

21, the wall of the assembly hall. The chapel is beyond on the left. 22, inside the assembly hall, which has ceiling and upper wall surfaces of wood strips.



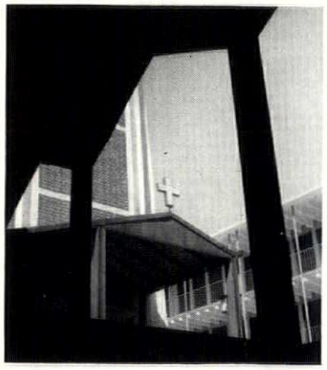
22





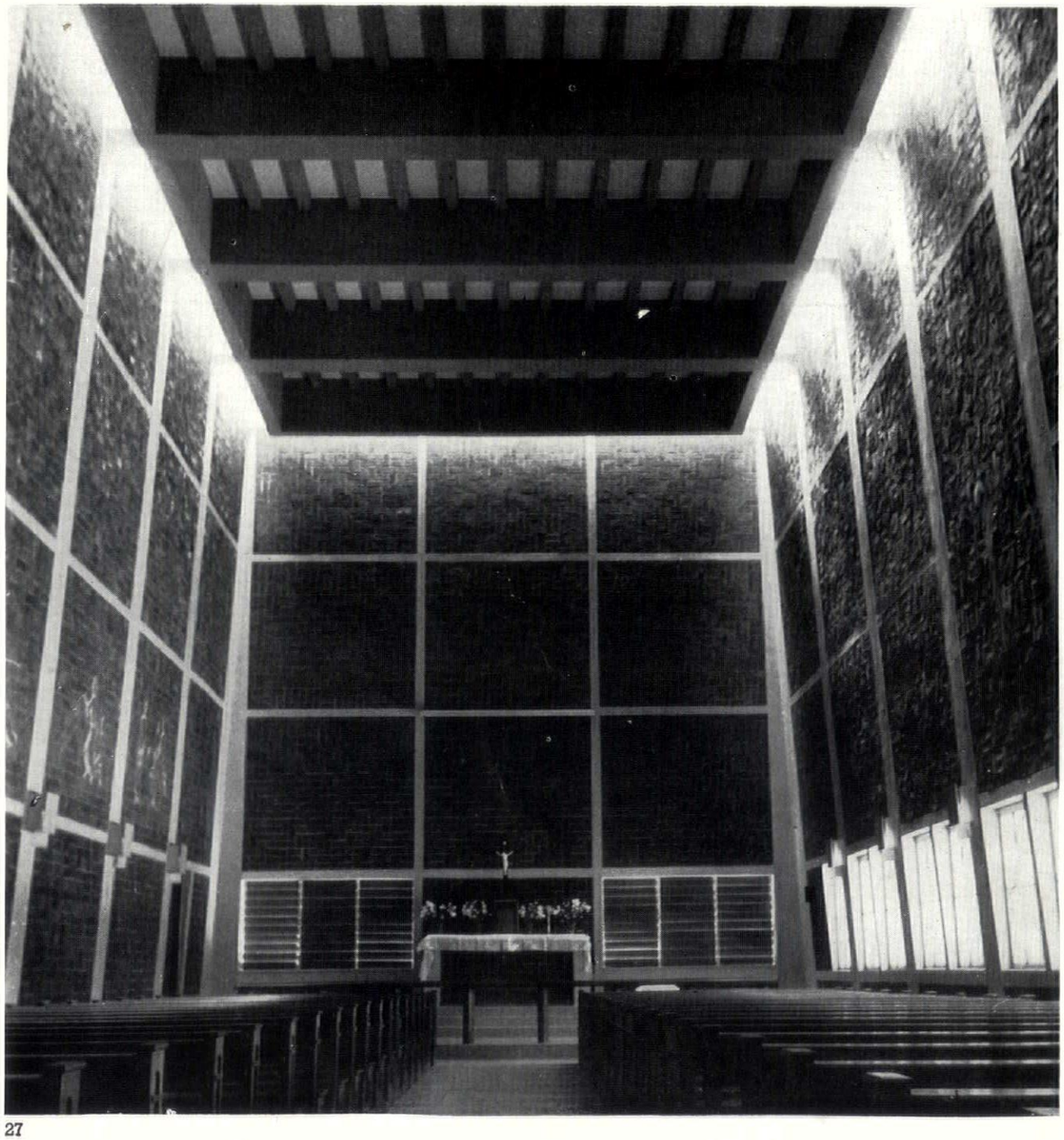
26

23



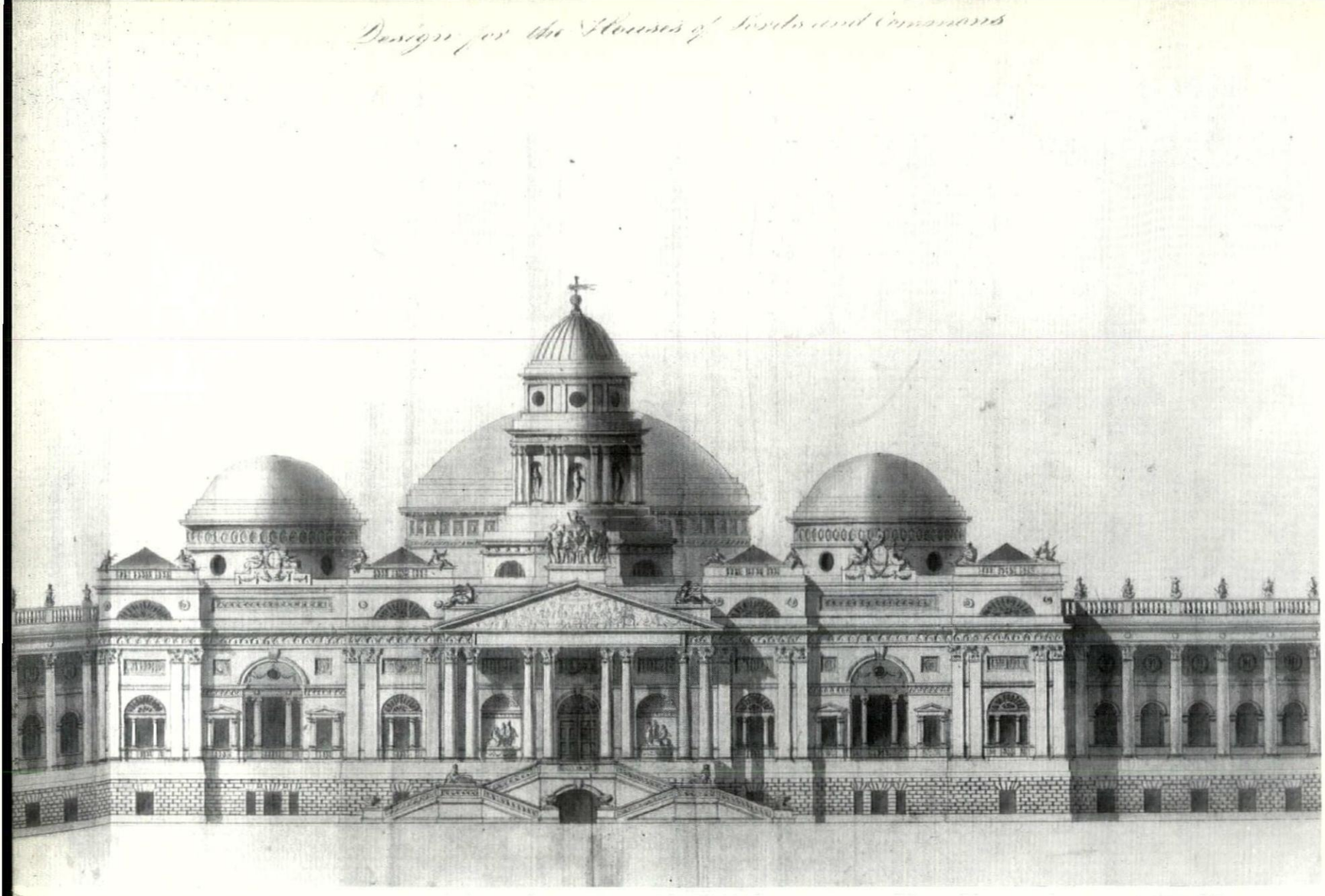
24

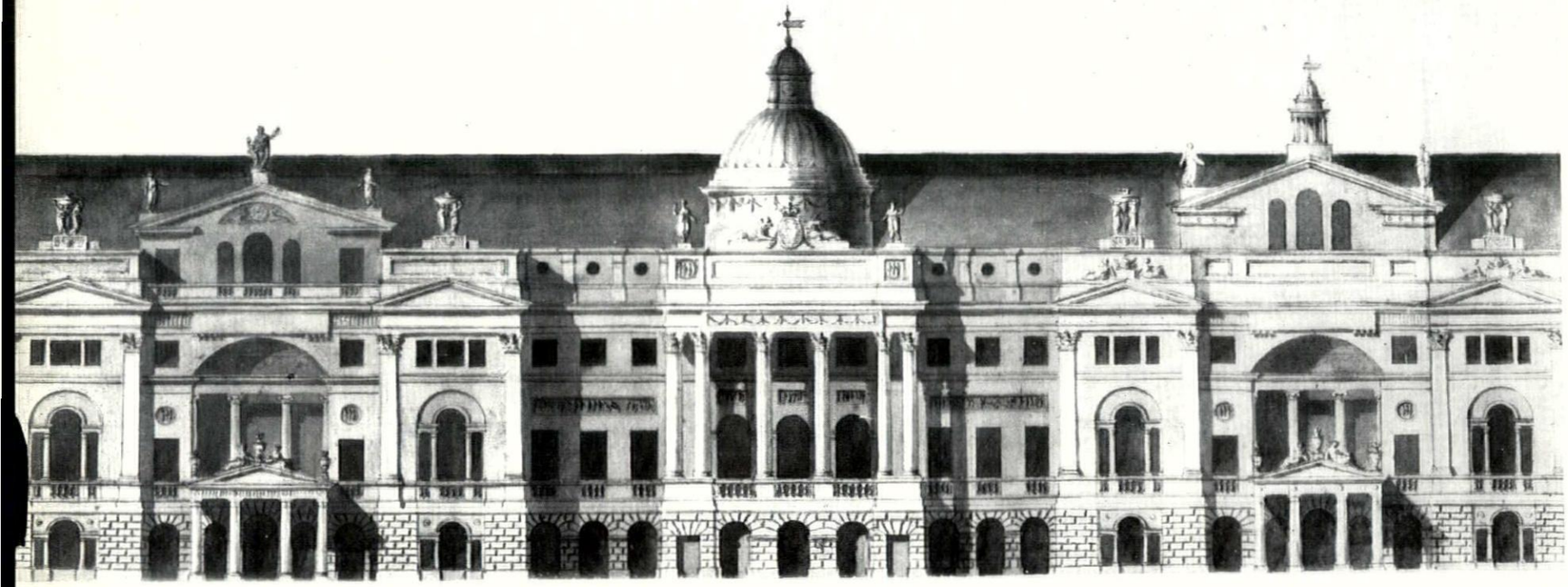
25



27

23, the courtyard separating the classroom block from the assembly hall and chapel, showing open access galleries to the classrooms The chapel wall is on the right. 24, the entrance to the chapel from the courtyard. 25, the only decorations in the chapel are the Stations of the Cross in mosaic, set in the exposed brick walls and designed and executed by Julia Barron: the fourteenth Station: the placing of Christ in the tomb. 26, the chapel seen across the courtyard. The verticals in the foreground are rain-water pipes. On the right of the chapel is the covered playground and beyond it the high ground above Hong Kong, crowned with recent blocks of flats. 27, inside the chapel looking towards the altar. The walls are of local brick. There will eventually be a large cross over the altar.

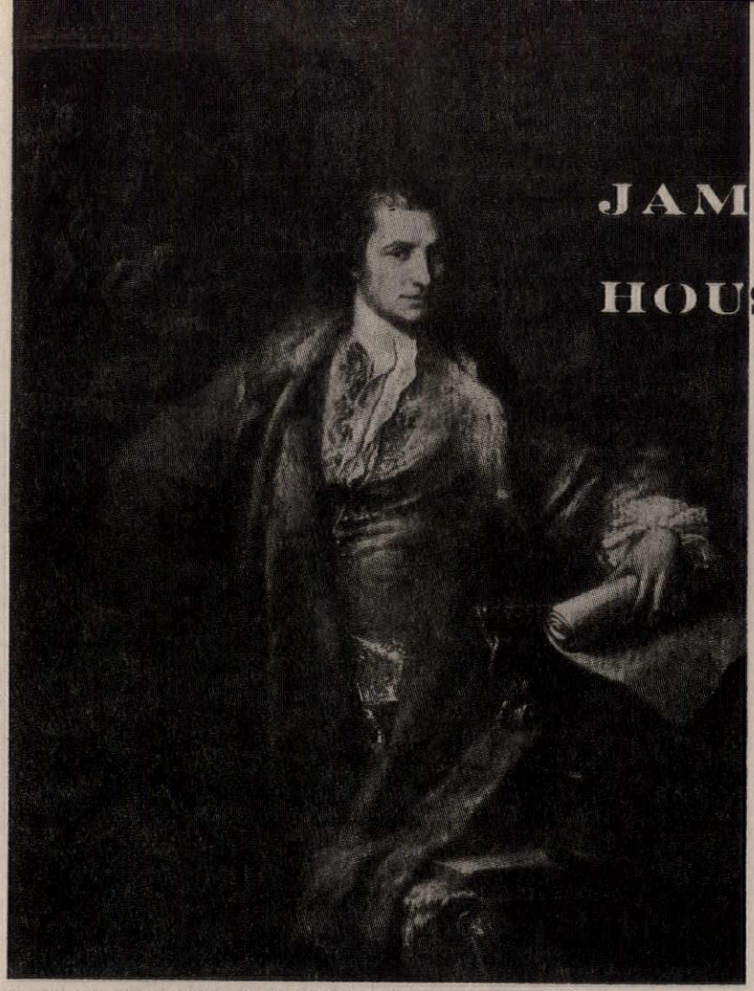




James Adam's design for a new Parliament House, above, 1, *was a young architect's dream of the greatest commission his country might offer him, conceived, as John Fleming describes, under the eyes of the Roman pioneers of neo-classicism. Though the dream, and the sense of adventure in which it was born, did not survive Adam's return to England, something of his Roman manner continues in the design for an Opera House, lower picture,* 2.

John Fleming

JAMES ADAM AND THE HOUSES OF PARLIAMENT



3, *portrait by Batoni, hitherto thought to be of Robert Adam, but now identifiable as James by the capital under the sitter's elbow* (*see* 6).

The Restoration of 1660 was welcomed in architectural circles as the harbinger of new and lavish programmes of Royal patronage. The exiled Court had, it was fondly hoped, been infected by Louis XIV's building mania; and when the new sovereign emulated the French King by dining in public at the Banqueting Hall, what could be more natural than to assume that he would wish to see completed the great designs by Inigo Jones for a new Palace of Westminster. For the next fifty years every ambitious architect nursed the hope that he would be commanded to carry out Jones's designs and even, perhaps, be allowed to add something of his own to that monumental scheme. Many such projects were prepared, not only by professional architects but also by spirited amateurs such as William Emmett, who collected some of the original drawings for the Inigo Jones palace and whose own preposterous design, made between 1710 and 1714, may be inspected at the British Museum.[1] In 1710 John Talman, the dilettante son of William Talman, still hoped that he might have the honour to see Whitehall built after Jones's designs,[2] and that his Italian studies might be of use should that ever come about. Even as late as the 1730s William Kent[3] designed a Royal palace; but hope in Royal patronage was by then on the wane, and in 1732 Kent produced his first designs for a parliament house—a new project which, from this date onwards, took the place of the Royal palace in the minds and hopes of all British architects who sought an opportunity to express themselves on the grand scale enjoyed by their masters of antiquity.

That James Adam prepared designs for a new Parliament House has always been known, but it is now possible to watch, in several of his letters from Italy which have recently come to light,[4] how he approached this grand object of English architecture. His designs were made between 1760 and 1762, while he was studying in Rome under Charles Louis Clérisseau, the neo-classical architect who had been Robert Adam's friend and artistic mentor in Rome. It must be remembered that before James went abroad he had no theoretical training in architecture though he had gained some practical experience of the building trade by working under Colonel Skinner of the Board of Ordnance at Fort George near Inverness.

'A modern work I have long had my eye on,' wrote James Adam on July 9, 1760, from Venice, two months after leaving England, 'but neglected it shamefully in England because some difficulty arose in the Execution; what I mean is the procuring some Intelligence what is requisite for a Parliament house & its attendants. I'm affraid if this appear'd a matter of difficulty to me who had little business, it must be much more so to Bob, who has his hands full; yet as things of that kind are made more easy by ranging them methodically I'm resolv'd to make out a note of Quaeries on that subject for Bob, which he can answer at his Leisure by enquiring at Elliot some things, at Wedderburn about others & at Oswald about the remainder. Or perhaps Ld. Littleton cou'd give him a good deall of Information.'[5] James sent off his list of queries some six weeks later and it is now gummed into the front of Volume VII of the Adam drawings in the Sir John Soane Museum. He wanted dimensions of the various apartments as they stood with notes on their uses and whether they were generally considered large enough. The list is practical even to small details—'What Committee rooms are necessary, Is a Coffee house necessary, or any other rooms for the house of Commons?'—but the eight principal questions he asked could hardly have taken him far towards a practical design.[6] Robert certainly took him at his word about answering at leisure, for the next reference to the scheme in James's correspondence comes more than a year later when he wrote rather plaintively from Naples, on October 20, 1761, that 'This winter at Rome I had dedicated to the forming & making the Designs of a great project such as a parliament house, which I wrote of formerly to Bob, & shou'd now be vastly glad to have his answers to my questions without which I shall proceed with great uncertainty.' It may be surmised from these remarks that James Adam's main purpose in setting himself this grandiose project was to gather together the fruits of his first year's study in Italy and to work out on paper those neo-classical principles of design which Clérisseau was teaching him. His parliament house should, therefore, be regarded as a first year student's exhibition project rather than as a mature and fully considered design, though James Adam himself certainly hoped that it might be used, should the commission, that architectural plum of the century, fall into his or his brother's lap. He was at pains to ensure that his designs should provide for all the specialized needs of the members of Parliament; and he told his sister Peggy, who had been attending a debate in the House, that she had not 'thought more of that Honble. house than I have done of late, (of) its outgoings & incomings of its benches & tables the number of its members, their being well heard &ca.'

By the end of January, 1762, 'that lofty project' had so far advanced that he began 'to think of beginning my finish'd Copy's' but decided to wait until Robert had taken his seat on the Board of Works and could answer all his queries in detail. On February 4 Robert confessed that William Robinson, Secretary of the Board for Westminster, 'has disappointed me terribly, but he swears it is not his fault as a Gentlemen is in the Country who has some of the memorandumes concerning both Houses of parliament, where ever I can git them you shall have them without delay and I am sorry you have not got them long ago.' He must have sent the information almost immediately after writing this; for James in a letter of February 20, to his sister Peggy, remarks that 'with Bob's plans & critique. . . . You will find I shall make you a clever parliamt. house,' and goes on to say that he will soon be 'one of the ablest of my profession & deserving the late Character given of Inigo Jones. You'll think it very vain this sentence, & Bob I know will alledge that this is the conceitiest time of my Life, but I will promise faithfully to drop my assertion if you & the world don't support me in it, at my return home.' No doubt he had in mind Inigo Jones's Palace of Whitehall, and it is interesting to note how long that great project dominated the imaginations of English architects.

As the Roman spring advanced, his great design began to take shape—though a somewhat peculiar one, so far as one may judge from his provokingly vague descriptions, 'I never was of opinion that one cou'd contrive rooms to make people laugh or Cry,' he told his sister Jenny on April 10, 'but am more persuaded than ever, that Arch(itecture) is capable of receiving every sort of Character one pleases to give it, that some body wou'd be at a lose to say to what purpose such a building was put,' not of course that he shared any crude notions akin to 'functionalism' in the modern sense, for he goes on to say, 'but I do not mean that anything of this kind shou'd be done without the aid of sculpture, & painting but with their Assistance Architecture will do anything. The Ancients in this, as well as in every thing else, have had Just Ideas. One is never at a loss to judge from a small remain, if a Temple was dedicated to Mars to Juno Apollo or Venus. One can see the solemn in the pantheon the grave & majestick in their Thermes & the gay in their Arabesques of Titus &ca. I only mention these few examples to

The drawings illustrated in this article are reproduced by courtesy of the Curator of Sir John Soane's Museum.

[1] Department of Prints and Drawings, 1848, 8, 5, 1-4.

[2] Letter-book in the Bodleian Library: MS Eng. letters: c 34.

[3] H. M. Colvin: *Dictionary of English Architects*, p. 342.

[4] The letters are among the Penicuik papers and are quoted by kind permission of Sir John Clerk, Bt.

[5] Sir Gilbert Elliot (1722-77), M.P. for Selkirkshire 1762-5. Alexander Wedderburn (1733-1805), later 1st Earl of Rosslyn, a lawyer and favourite of Lord Bute. James Oswald (1715-69), M.P. for Fife 1754-68, Lord of the Treasury 1759-63. George, 1st Lord Lyttleton of Frankley was Chancellor of the Exchequer in 1756.

[6] The list of queries sent by James Adam from Venice on August 24, 1760, reads as follows:—

1. What is the use of a Court of requests, dimentions of the present one?
2. Westminster Hall, if us'd on any other occasion than the tryals of Peers; is the King crown'd there; do. Dimentions.
3. The Courts of Justice in Westminster Hall how many; their dimentions are they thought large enough. Are not the Courts of Chancery of King's Bench, of Common Pleas, of Doctor's commons held in this Hall? Is there any more?
4. House of Commons its present size, is it thought large enough, is there any additional conveniency wanted to the present one. What are they?
5. What Committee rooms are necessary. Is a Coffee house necessary, or any other rooms for the house of Commons?
6. Dimentions of the present house of Peers, what rooms are necessary for them, is a Committee room or a Coffee room wanted?
7. Is it not necessary to have an apartment adjoining the house of Peers, for the King to put on his Crown and Robes, before he takes his seat in the house. Is there likewise apartments for this purpose wanted for the Prince of Wales, or the rest of the Royal family?
8. Are there any clerks rooms wanted for the Houses of peers or Commons, or Rooms for Records for either house, or for the Courts of Justice?

show that the Art can attain to something of characteristic. This is what I strongly Aim at in my Parliamt house. That making the improbable supposition of its being built, ruin'd & no mention made of it in history or Records, that notwithstanding Posterity who have ever read of Great Britain or its constitution shou'd not be a loss to say, 2000 years hence, this has been for the great Parliamt of the Peers & Commons, this is the Hall for Coronations this is the house of Commons & that the ho. of peers, here are the Cts. of Justice & there the Committee rooms &ca. Nor wou'd there be any risk that it be suspected to be rais'd by any other people but the British, nor at any period before the Union. As I have taken care N. Bn. shall take its share in all Decoration, so that I will venture to say that Posterity wou'd even guess at the Archt's being from beyond Tweed.' His precise means of suggesting what he wanted is explained in another letter: 'I have personify'd the Thames & Forth transforming them into Fountains at the foot of my great stairs. The former leans on a Lion with a crown of Roses the Anchor lies by him & the Oak & mistletoe grow up by his side. The unicorn supports the Forth with a garland of Thistles & Rue, from a rock by his side spring the fir & the Birch. As I have a great deal of sculpture I have recourse to a good deall of this sort of Invention. I don't know if this kind of fancy will be popular or not.' Can it be for this sort of symbolic decoration that he sent to London for a herbal and a book on heraldry?

This enthusiastic account evidently caused some misgivings among the Adams at Grosvenor Street, where a very hard-headed Scottish attitude to architecture prevailed. A sharp note was immediately dispatched to bring the starry-eyed young architect down to earth. 'I am extremely sensible,' James replied, 'of the justness of your observation about the studys of a palace as that & indeed all such works, is very far from being the produce of genius alone, but of an immense course of study and reflection.' The result of his further reflections can hardly have been reassuring, for he next reported, with great zest, 'a Capital of my own Invention' with which he was so pleased that he showed it to Natoire, the Director of the French Academy in Rome, 'who said he wou'd have taken it for Antique.' It is difficult to believe, when one has read the description of this wondrous capital, that Natoire was doing more than humouring the enthusiastic James, who had no doubts about the merit of his confection and reproached himself for his stupidity in showing it to 'a french man & an Artist who was capable of borrowing the thoughts & calling the invention his own.' For this reason he immediately sent home an account of it so that 'shou'd the Invention be stole, I had this letter to show that the Invention was originally mine.' A drawing would take some time to prepare and for the meantime a description must suffice. 'It is however form'd in this way Lions & Unicorns alternately support the angles of the Abbacus, sustaining themselves on the Acanthus leaves, their hinder parts converted into Chimera form twenty stalks that produce roses & thistles, the middle of the Capital is adorn'd with a scepter bearing the Dove the emblem of peace, over it the Crown of Britain instead of the corinthian rose and on the under part or moulding of the Abbacus is the collar of the order of the Garter. This Capital is modell'd in wax & Bronz'd & has altogether the air Antique, & has surpris'd every body that has seen it, who indeed are few beside Natoire, my two English friends Messrs. Crispin & Richardson. This same Celebrated Capital is for the great portico of my project, as I suppose you may guess.' One may indeed, and the description of it may well give our learned 'art-historians' some food for thought when analysing the influence of Classical antiquity on British architecture. The model itself has disappeared but the drawing is in the Soane Museum[7] and not difficult to recognize, 6. James evidently intended to have this engraved and published with a dedication to the King.[8]

This design for a capital is of some importance to the historian of art as it enables the sitter in the Batoni portrait, 3, to be identified as James Adam.[9] This portrait has always gone under the title 'Robert Adam,'[10] though it has recently been suggested by Mr. John Steegman[11] and Mr. Alastair Smart[12] that the sitter might be James Adam. Their suggestion is now proved to have been correct, for the capital on which the sitter rests his left arm corresponds to that described in the above-quoted letter, and to the drawing, 6.

By October, 1762, James reported home that his 'parliamentary labours grow pretty voluminous at present,' though it seems doubtful, in view of the disclosures about his skill in architectural draughtsmanship contained in his next letter, whether he had put his ideas into any sort of order, or indeed was capable of doing so. For in a letter to Robert on December 4 he confesses incompetence 'both as to Perspective as to figures & Ornament' and pleads for another five months in Rome in order to gain some skill in them. 'As to the first' (perspective), he says, 'I have no practice in, & consequently am not at all assur'd of my rules & shou'd be apt to forget them very soon: the second (figures) wou'd be an immense advantage to us in the composition of our Ceilings & other decoration & the third (ornament), you know, there is no such thing as doing without.' As for the great project on which he had been working for more than a year, it was 'realy not in a condition to show in England, as I have not an Elevation yet finish'd & my great section is also but little advanc'd, so that you see that I have realy no more than my plan complete. Now to hasten it I have put two hands upon it, at a vast rate, so that in five months I shou'd be in fine order & realy in condition to surprise both the K(ing) & his M(ake)r.'

A fair number of drawings for the parliament house project have survived and are to be found among the Adam drawings in the Sir John Soane Museum. A rough wash drawing;[13] two plans which seem, from the arrangement of circular courts which coincide with the disposition of the domes, to go with it; and a slightly modified, highly finished drawing of the whole façade, 1,—these four drawings are all that survive of the complete project. The other drawings which may be associated with the scheme are for details and decoration. From what James says in his letter it seems almost certain that the finished drawing is not from his hand. In Rome he employed, for so young a man, a considerable team of draughtsmen headed by his instructor and cicerone, Clérisseau. The drawing office seems to have consisted of Antonio Zucchi whom he had planned to take to Greece and Asia Minor as figure draughtsman, Domenico Cunego the engraver, George Richardson a draughtsman he had brought out from Scotland, Giuseppe Veronese and Agostino Fiorentino,[14] two other architectural draughtsmen. In addition to this retinue it must be remembered that he would not have been above engaging extra hands for work he needed quickly. Moreover, two neat little drawings, one for the Lord Chancellor's ceremonial purse, 7, the other for a mace, 8, appear to have been made in London by Robert Adam's draughtsman, Brunias.[15]

Of the drawings for the complete parliament house scheme it seems likely that James Adam is personally responsible for the rough general design which is clearly drawn by an unskilled hand; neither Clérisseau nor any of the other draughtsmen would have allowed so rough a piece of work to leave his desk. The finished drawing[16] appears to be the work of the office and it was probably done by the draughtsmen James called Giuseppe Veronese and Agostino Fiorentino. The conception can be attributed to James (under the supervision of Clérisseau). The shallow domes and the somewhat flat neo-classical appearance of the front foreshadow the Adam style in a way that makes Clérisseau's contribution to its formation obvious. One cannot believe that James would have been capable of anything so original entirely on his own. The drawing of a baldachino for a throne[17], 9, with a little lion and unicorn seated on either side can certainly be attributed to James Adam in conception, though it appears to be the work of the professional draughtsmen. There is a very neat drawing, coloured in wash, of a quarter of a circular pavement[18] with the royal arms in the centre which might appear to be connected with the Parliament scheme though it is so unlike everything else in the series that it may well be a later design for some other project.

When James wrote to his brother about the famous capital he said he would send a 'sketch of it which I have not been able to get ready for this post,' and it may be surmised that the neat drawing in brown ink and wash, heightened with white, was done for him in the office. The only other drawings which can, with any confidence, be associated with the parliament house scheme are a series of thirty-nine sketches[19] in pen and brown ink and wash, heightened with white, which appear to be for painted or low relief decoration, 5. They represent such subjects as scenes from British history, British Victories, Peace, War, Pastoral Life. These drawings are not without technical ability, but they can hardly be the work of Antonio Zucchi who was employed as a figure draughtsman. It seems most probable that these are the work of James Adam who executed them under the tutelage of Zucchi, who was presumably acting as his master in figure drawing as Pécheux had acted for Robert Adam. But this is all, of course, a matter of conjecture; none of the drawings is signed, and what little we know of James Adam's draughtsmanship is based largely on the scratchy little pen and ink sketches he executed before he left Scotland.[20] Neither Robert nor James Adam was inclined to give their assistant artists public credit for what they had been paid to do, and although Clérisseau made all of the perspective drawings for *The Ruins of the Palace of the Emperor Diocletian*, his name is mentioned only in the introduction, as a companion on the expedition, and in the list of subscribers. With the parliament house scheme one is bound to give James credit, if any credit is due, for the original idea of the ambitious project; Clérisseau seems responsible for the stylistic part and the team of draughtsmen for the actual drawings. The interest of these designs today is largely historical for they illustrate the degree of accomplishment attained by James Adam in 1763 and confirm, what has always been supposed, that he made a very small contribution, if any contribution at all, to the development of the *Adam style*. This had already reached its full flower in 1763, by which year Robert had made his best designs—for Kedleston, Osterley and Syon. To what extent Robert Adam was indebted to his professional assistants, and in particular to Clérisseau, is of course another question and one which may never be answered. That he owed more to Clérisseau than he cared to admit is, however, evident from his letters.[21]

When James Adam returned to England in 1763 he at once became involved in work with his brother, and vanishes from the scene as an independent figure. As for the parliament house project, one may surmise that it was forgotten while there was more immediate and obviously remunerative work to do. But the Adams did not cease to hope for some great national commission. In his dedication of the Spalato book to George III, Robert Adam expressed what one can only describe as the pious hope that his reign would fix an 'Aera no less remarkable than that of PERICLES, AUGUSTUS or the MEDICIS.' Among the drawings in the Soane Museum there are designs for law-courts[22], 4, and a national opera house[23], 2, which must have been executed some time after James Adam had returned from Italy.

[7] Adam drawings, Vol. VII, no. 69.

[8] Two drafts for the dedication may be found in one of James Adam's notebooks preserved among the Penicuik Papers. The first draft runs: 'Descriptions of my Capital 1762. This British Order invented at Rome by J. A. Archt. & intended for the principal portico of a parliamt. house Design'd by him at Rome in 1762 most humbly presented to HM the King by his devoted subject & servt. the Author.' There follows the description. The second draft for the dedication differs only slightly in wording from the first.

[9] It was unfortunately published as a portrait of Robert Adam in my article 'Robert Adam the Grand Tourist' (*Cornhill Magazine*, No. 1004). I did not see the photograph of the painting until the magazine was in the press, and I had not read James Adam's letters when I saw the original painting in Scotland.

[10] J. Swarbrick: *Robert Adam and his Brothers* (1915) Fig. 101.

[11] John Steegman: *Burl. Mag. LXXXVIII* (March, 1946), 55 ff.

[12] Alastair Smart: *Burl. Mag. XCVI* (April, 1854), p. 102.

[13] Vol. I., no. 28.

[14] James Adam styles the two draughtsmen thus in a list of his retinue. They were no doubt natives of Verona and Florence, and it need not be assumed that their surnames were Veronese and Fiorentino.

[15] Brunias had been engaged in Italy by Robert Adam and taken back to London where he was paid about £60 a year. On January 30, 1762, James asked his sister Betty to obtain from Brunias a sketch of the maces used in the House of Lords and the Commons.

[16] Vol. XXVIII, no. 2.

[17] Vol. VII, no. 70.

[18] Vol. VII, no. 8.

[19] Vol. VII, nos. 21-44, 47-59, 60-67 and 114-119.

[20] A volume of these is among the Penicuik Papers and there are a few similar inscribed drawings in the Soane Museum.

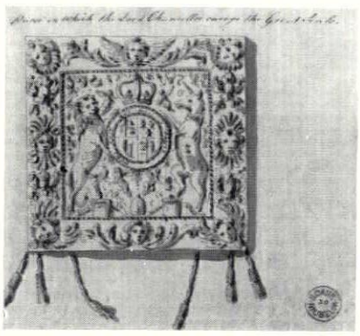
[21] For a brief account of Robert Adam's relations with Clérisseau see my article: 'Robert Adam the Grand Tourist' (*Cornhill Magazine*, No. 1004).

[22] Vol. XXVIII, nos. 10-15.

[23] Vol. XXVIII, nos. 16-18.

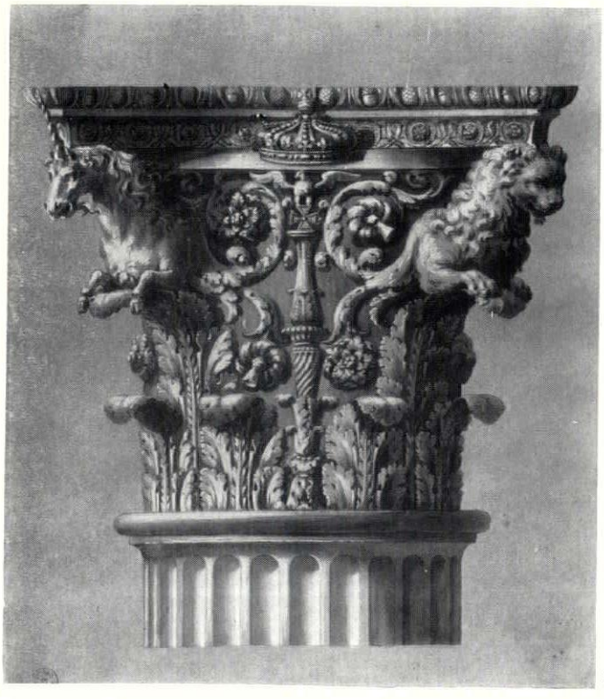
4

5

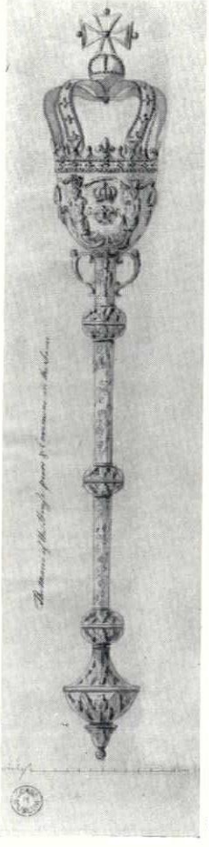


7

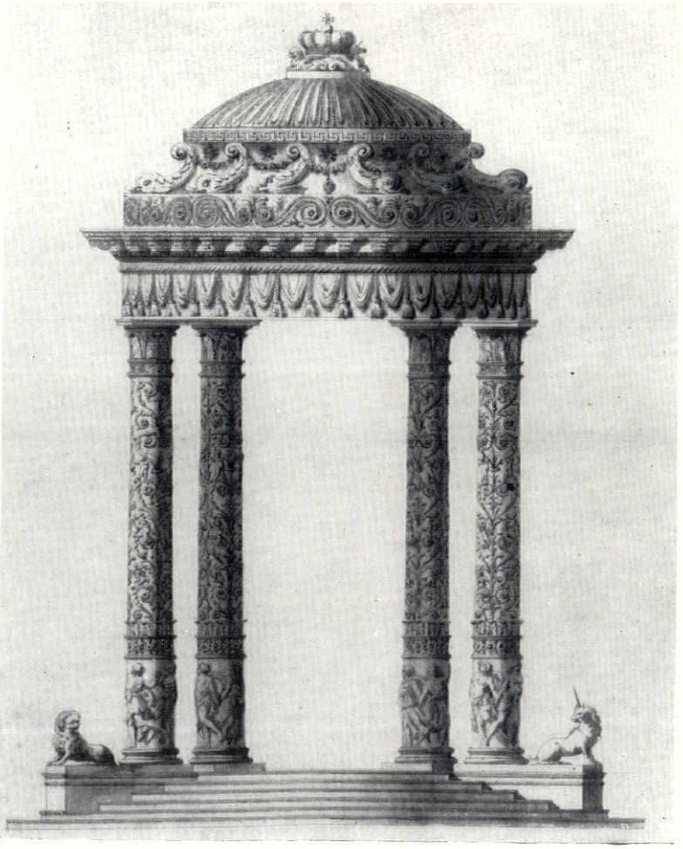
4, the Chancery Lane front of the projected law-courts, which James Adam designed after his return from Italy; like the designs shown in 1 *and* 2 (*page* 326), *it still breathes the influence of Rome and Clérisseau, and was his last work produced independently of his brother Robert. James's drawing of the capital,* 6, *identifies Batoni's sitter* (3, *page* 327) *as James.* 5 *is a design for a relief,* 7 *for the Lord Chancellor's purse,* 8 *for a parliamentary mace, and* 9 *for a baldachino.*



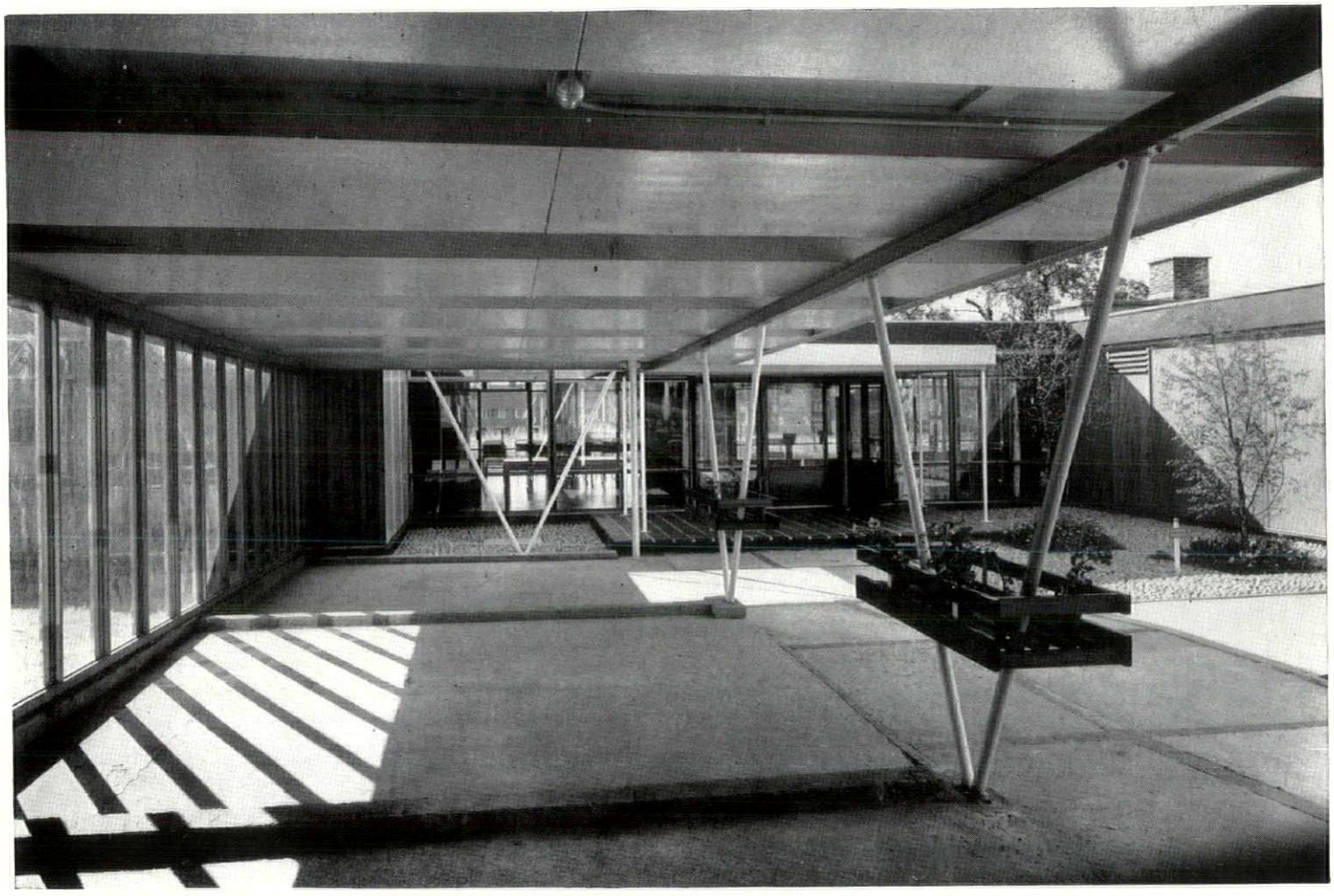
6



8



9



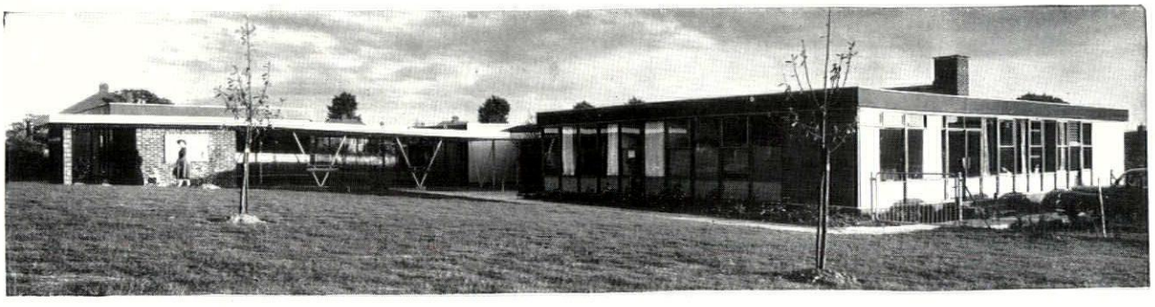
1, *pram shelter between blocks, with central waiting area beyond. The V-struts provide wind-bracing.*

HEALTH CENTRE AT WELWYN GARDEN CITY

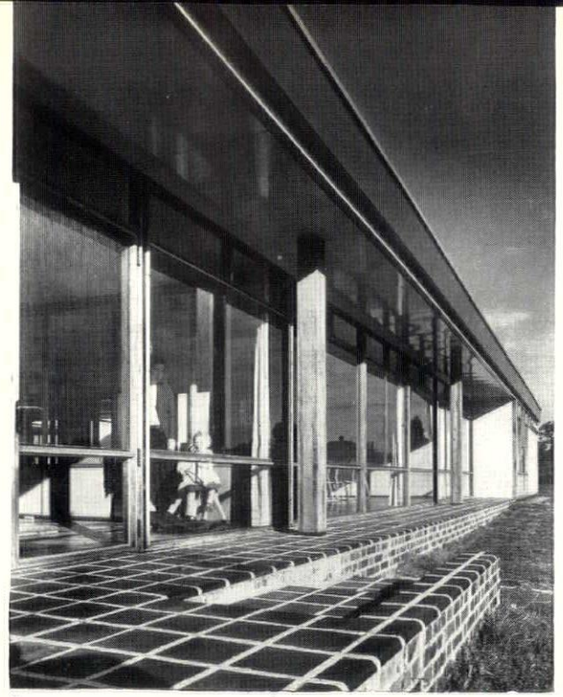
HERTFORDSHIRE COUNTY ARCHITECT: C. H. ASLIN

ARCHITECT-IN-CHARGE: PATRICIA A. TOWNSEND

The Gooseacre Health Centre, Cole Green Lane, Welwyn Garden City, provides for a local population of 15,000, and houses a schools dental unit and the divisional health office, which serve the total population of the town. The site was a treeless open space with a slight slope; a hedge and some groups of shrubs and trees are now being planted. The Centre is constructed of prefabricated light-weight timber components on a 40-in. grid. The roof punts are light plywood boxes spanning a maximum of 23 ft. 4 ins. and incorporating a ceiling finish. In the waiting hall, these are supported on 3-in.-thick prefabricated timber framed wall panels

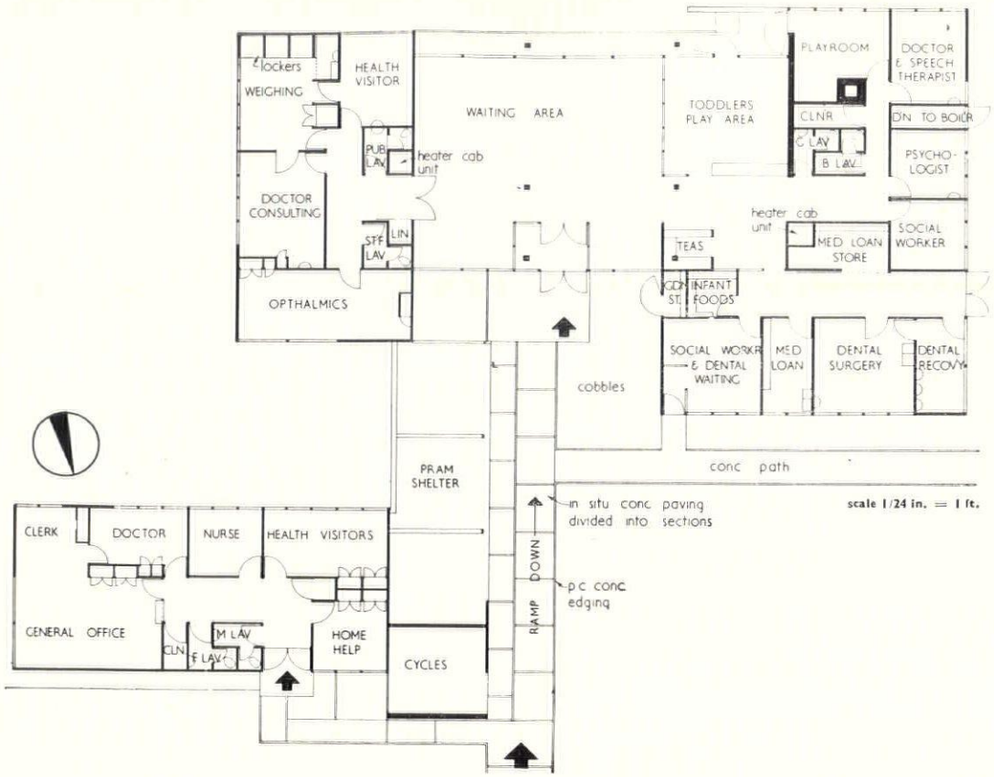


2, *the dental and medical loan departments from the north-west.*



3

4



3, terrace on the south side, paved with purple-blue quarry tiles.
4, main waiting area, with health visitor's desk and toddlers' play area beyond.

and laminated timber beams in the depth of the ceiling are supported on columns. External walls consist throughout of prefabricated floor-to-ceiling insulated pitch pine framed panels, with internal facing of $\frac{1}{8}$-in. hardboard and external finish of either vertical cedar boarding or resin impregnated plywood sheets, both backed with building paper. 40-in.-square rooflights, aluminium framed with plywood egg-crate diffusers, have been inserted in circulation areas, stores, waiting hall and lavatories.

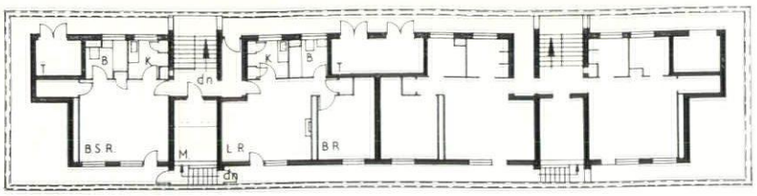
FLATS IN OSNABURGH STREET, LONDON, N.W.1.

ARCHITECTS: DAVIES AND ARNOLD

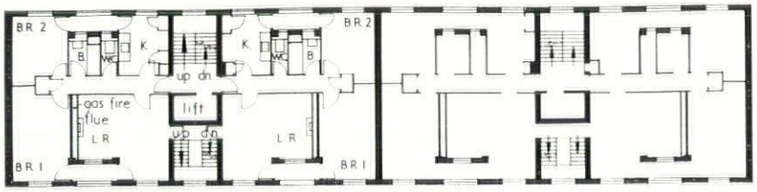
ASSISTANT-IN-CHARGE: R. TUCKER

This 11-storey block is the first to be completed in Area 'C' of the 32-acre redevelopment area to the east of Regent's Park, between Albany Street and Hampstead Road, in the Borough of St. Pancras. It is steel-framed with brick and clinker block cavity external walls. The facing bricks are pale yellow and the balcony recesses painted terra-cotta colour. The balconies and square vertically pivoted staircase windows have thin projecting cast-stone frames. The inset panels under the balcony openings consist of single courses of pale blue glazed tiles. Dark purple bricks with black cement joints are used on the ground floor, to separate the upper floors visually from the ground. The roof is concrete hollow pot, finished with cellular screed and asphalte. The main entrance to the block from Robert Street is flanked by 2-ft. by 2-ft. by $2\frac{1}{2}$-in. precast concrete facing slabs, with a brown and black marble chipping surface. Entrance doors are oiled teak with panels of wired glass. Internal partitions between dwellings, and round lift shafts where adjacent to dwellings, are $4\frac{1}{2}$-in. brick and 4-in. block with $3\frac{1}{2}$-in. cavity, especially suitable for sound insulation; and between rooms 3-in. clinker block. Living-rooms have gas fires with individual precast concrete flues concealed in the living-room/bathroom partition. Lift motor and tank rooms are in the penthouse floor, the lift stopping at the 10th floor.

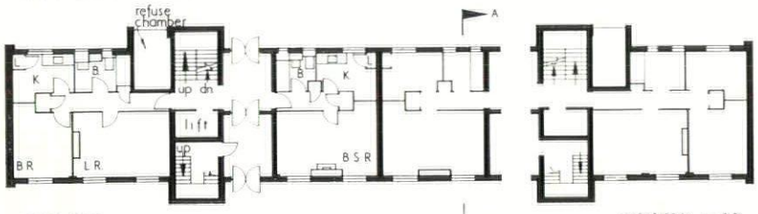
5, the flats from the south-east. Robert Street runs across left foreground.



tenth floor

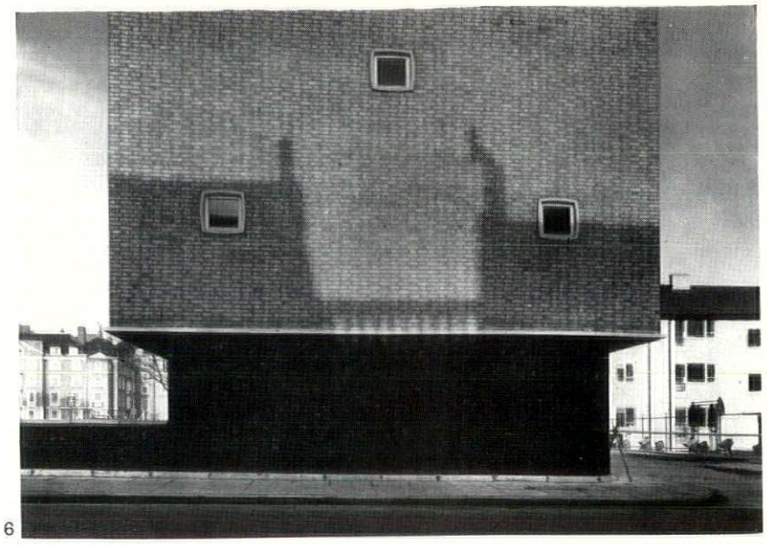


typical first to ninth floor

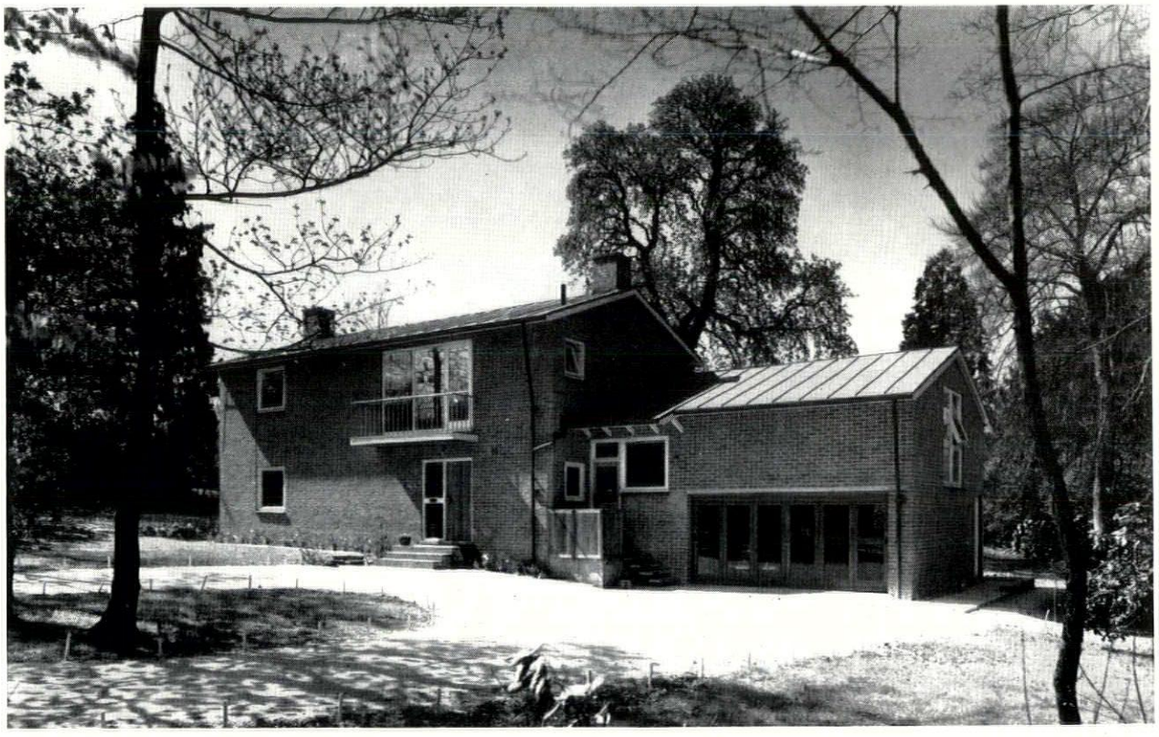


ground floor

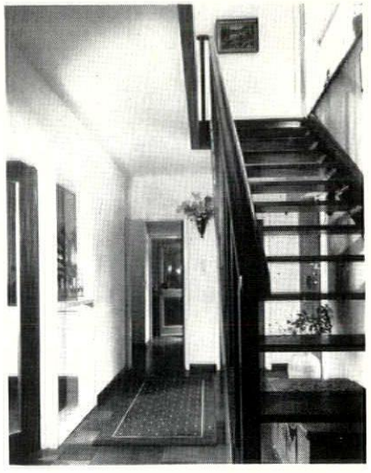
scale 1/32 in. = 1 ft.



6, *above, south end of block, with 3-storey block, forming part of the scheme, on right.*



7, *main entrance front from the north-east.*

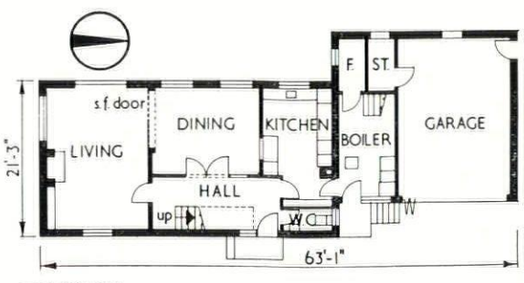


8, *hall and main staircase, with polished mahogany treads and handrail.*

HOUSE AT MOOR PARK, HERTFORDSHIRE

ARCHITECT: JUNE PARK

This house is in Temple Gardens, Moor Park, off the golf course. External walls are 10½-in. cavity construction with an inner skin of clinker blocks. Internal partitions are mainly brick; those between two pairs of bedrooms are 2½-in. breeze blocks and 2-in. compressed straw blocks respectively. The ground floor has 1-in.-thick hardwood faced tile flooring with a sand and plastic base on screed and 6-in. concrete. The roof is of compressed straw slabs and timber trusses, with copper finish. All windows are double glazed. Heating is by hot-water floor panels under the whole ground floor, and radiators on the first floor. Total cost was £6,800.



ground floor plan

BOOKS

ENGLISH PERPENDICULAR

SAINT STEPHEN'S CHAPEL AND ITS PLACE IN THE DEVELOPMENT OF PERPENDICULAR STYLE IN ENGLAND. *By J. M. Hastings, Cambridge University Press, 1955, 42s.*

Dr. Maurice Hastings has given us here a work of considerable importance, and in spite of the criticism we shall have to express it is only fair to say that it is an inspiring book, by a gifted scholar, and one which alters decisively the current views on the stylistic developments which took place in England between 1290 and 1340. St. Stephen's Chapel is the centre of interest and it is already a great advance to know precisely what this magnificent building was like at the various stages of its construction and destruction. But Dr. Hastings has done more than reconstruct the aspect and chronology of a vanished structure: the whole activity of the London milieu over a period of fifty years comes to life again, with all its many stylistic trends, and the picture reaches as far as Ely and Gloucester, where London masons were called at some stage, as far even as Cologne, Carcassonne and Avignon, where other versions of the international Court Art of the time were not without bearing on London practice. It is fascinating to follow the analysis of the London style, to see how its early adoption of the ogee curve heralds the outburst of the Decorated proper, but how it was checked from the start, in the Court circles, by a more restrained and regular method of design which soon developed into the Perpendicular style.

Why then formulate any reservations and criticisms? Simply because one feels that, with a little more precision and vigour on some decisive points, the picture could easily have been made even more complete and the demonstration more convincing.

One of the most disturbing facts is the absence of the original documents. Surely the references to the building of St. Stephen's in the Public Record Office could have been checked up since the end of the war, and they ought to have been published in an appendix. As long as this is not done, some doubt will remain as to the dating of certain parts at least of St. Stephen's Chapel. The nature of the work carried out under Edward III seems to be firmly established: the stone structure of the chapel was practically complete by 1328 and the roof was being prepared, but after 1330 the building was heightened by the addition of a clerestory, and it took another fifteen years before the roof was actually put on. Although Dr. Hastings does not state it definitely, it seems fairly obvious that no clerestory was meant when the upper cornice was built in the 1320s, and that two different schemes were followed one after the other. Originally the chapel must have been planned as a much lower building, with two rows of windows only (one for the crypt, one for the upper chapel), instead of the four storeys shown on Van der Wyngaerde's drawing. It is also safe to say that the design of the upper cornice belongs stylistically to the first years of the century: the comparison with Prior Eastry's work at Canterbury is here decisive. But the panelling in the spandrels is likely to be a new feature of the 1320s. Anyhow one would have been happy to be sure that nothing more could be extracted from the rolls.

This ultimate lack of precision can be felt in other parts of the book as well. The term curtain-wall is used rather loosely and made to cover a number of different things, some of which were new, and some very much older. The long discussion on the clerestory stage is far from convincing and the drawing reproduced as frontispiece is contradicted both by the text and by the evidence on Plate 24. The comparisons with French works are very interesting, but could also have been more conclusive. It is unfortunate that Dr. Hastings has chosen the wrong document on the Sainte-Chapelle: the lithograph of 1839 shows how the lower part of the windows had been blocked up with plaster in the early nineteenth century; but earlier engravings show that the glass went originally right down to the sills. This disposes of one of Dr. Hastings' most impressive rapprochements. On the other hand a more complete picture of the pre-Perpendicular tendencies in France could have been outlined if the classic work of L. Schürenberg had been consulted. More important perhaps than St. Nazaire de Carcassonne is the choir of Sées, completed between 1280 and 1285, on the evidence of the stained glass, and certainly the choir of St. Thibault in the Côte d'Or, which is not later than 1320, would have afforded the best example for a comparison of the English and French methods of panelling.

If a close parallel were drawn between the systems of forms used in that period by the more advanced Gothic builders on both sides of the Channel, the originality of the English developments would become even more striking. It is remarkable that the battlemented cornice, the stylistic importance of which has rightly been stressed by Dr. Hastings, was eventually derived from wooden screens, such as those of Old Saint Paul's. Nearly all the features analysed by Dr. Hastings appear to have been transferred from wood into stone and to have come to the masons' yard through the intermediacy of church furnishings. The fashion for wooden vaults and its reaction on stone vaulting is no less typical of the English approach to architecture in that period. Gothic forms in England were being revised in terms of carpentry and woodwork, and this is what could not have happened in France, where stone enjoyed an undisputed moral primacy over every other material.

At any rate Decorated and Perpendicular must now be viewed as two parallel lines of development, and it is noteworthy that England was able to produce almost simultaneously two such different reinterpretations of the vocabulary of the Rayonnant which had been accepted as the lingua franca of Western architecture for about a generation. There is no doubt that the proto-Perpendicular of London and Canterbury was more advanced than the heavier decorated style of the provinces, but the difference cannot be expressed only in terms of surface decoration, not even of superimposed planes: the whole treatment of depth has to be analysed in all its aspects, including the constructional changes which alter its range, which flatten or hollow out its cavities. The flatness of the Perpendicular is inseparable from its thinness, and this is an aspect of the problem which may still have to be more closely considered.

Jean Bony

DESIGN IN GERMANY

NORMEN UND FORMEN. *Edited by Dr. Wilhelm Braun-Feldweg. Published by Otto Maier Verlag, Ravensburg.*

SCHÖNHEIT DER TECHNIK. *Published by Verlag Gerd Hatje, Stuttgart.*

Two more lavish German picture books on industrial design; two more collections of excellent photographs of familiar objects; two more prolix texts, full of philosophical analysis and earnest exhortation. One is left wondering who reads this spate, and what are the economics of German publishing that make possible so many similar productions.

To an English eye and ear these stunning photographs and sententious commentaries come dangerously near to building mountains from molehills. I say dangerously advisedly, since no one can be sure today that German competition will not overnight shatter our own security. Perhaps we should take these current manifestations of German *Gründlichkeit* more seriously than our natural distaste for the high falutin' would dictate.

There is no doubt that the Germans are in earnest about industrial design, particularly in their light engineering industries. Both these books concentrate on engineered products, with only passing reference to the craft-based industries and to handwork as they affect or inspire appearance in engineering. Both draw generously on foreign examples to point the lesson for German manufacturers. Both, of course, dwell lovingly on Olivetti. But behind it all is an admirable determination not to be caught napping in the post-war world.

Dr. Braun-Feldweg's book is the more serious study. He examines design from function, through production, to the market itself. He has an excellent section on case histories of design development, showing in one example at least the dangers of over-designing and the wisdom of leaving well alone in the middle stages—a situation that can be paralleled in this country too.

But, compared with similar American publications, these pages contain few examples of idle styling. They suggest that the old

Werkbund principles are still powerful disciplines and that German designers and critics are still more concerned with logic and economy in solving a problem than with the superficial glamour that intrudes wherever the impetus for design comes from the market rather than the factory.

The second book is a permanent record of an exhibition organized in 1953 by the Baden - Württemberg Landesgewerbeamt, which wisely put industrial design in the context of general reconstruction. It acknowledges the close connection between architecture and industrial design by opening with a section on new building techniques. Dr. Braun-Feldweg seems to have missed a point in not stressing this important link, for in Germany more than anywhere it is the architects who set the pace, not only through their own profession but as spare-time industrial designers. **Paul Reilly**

THE VANISHING LANDSCAPE

THE MAKING OF THE ENGLISH LANDSCAPE. *By W. G. Hoskins. Hodder & Stoughton, 25s.*

Few professors are true countrymen: fewer countrymen are professors; but Dr. Hoskins, fortunately, is both, and so combines scholarship with physical energy and a most observant eye. He is thus particularly equipped to interpret for us the hidden language of the English landscape. The field is new, and it is his own: there are in the bookshops too many sentimental effusions on 'our lovely land,' too few guides to a real understanding of its structure and detail. Dr. Hoskins demonstrates (with a number of telling illustrations) how much its present aspect derives from the cumulative activities of its human inhabitants from pre-Roman times to the present day.

Man never ceases to write himself upon his surroundings. Some of that writing is faint now and difficult to decipher, but Dr. Hoskins provides the clues, and stimulates us to go out and discover its meaning for ourselves. Most of us at some time or another have puzzled over mysterious earth banks, apparently unrelated to hilltop fort or lowland causeway; inexplicable outcrops of worked masonry in grassy fields; roads that take a sudden right-angled turn for no discernible cause; villages without churches, and churches without villages; old towns built to a 'modern' plan, and much younger towns built without any plan at all. It is well worth paying twenty-five shillings to be given the key to all these mysteries—and many others—in keen and evocative prose ('New churches, new chapels, new bridges, new quays: the fifteenth century saw the sparkle or the golden warmth of new-cut stone almost everywhere up and down the country': here fifteenth-century England is given back to us out of the darkness of the past in one brilliant flash).

The book is also a forthright warning, for Dr. Hoskins, because he knows his England, knows too well what her inhabitants are doing to her now. Since the year 1914, he says, every single change in the English landscape has either uglified it or destroyed its meaning, or both. Man, once the minister and husbandman of the land by which he lived, has lost his respect for it, and treats it now with a greedy and thoughtless contempt; no longer caring to chisel the record of his life upon it with loving regard for the material of which it is made, but choosing instead to proclaim his own puissance by blasting the story of his cleverness across its face with bulldozer and pneumatic drill. His contempt extends to the works of his forefathers, and so Bronze Age barrows are deep-ploughed out of existence, mediaeval lynchets flattened to give space for mechanised farming, rows of ancient and comely buildings destroyed to make room for concrete speedways. These things are condoned by our political rulers in the frantic illusion that all change is progress. Money talks: and the land is silent, biding its ultimate and terrible revenge. 'Barbaric England of the scientists, the military men, and the politicians,' says Dr. Hoskins bitterly: 'Let us turn away and contemplate the past before all is lost to the vandals.' It is the one mistaken note in this otherwise deeply perceptive book. We must not turn away, but must turn and fight, not only for our landscape but for our very lives. **Sylvia Sayer**

Books Received

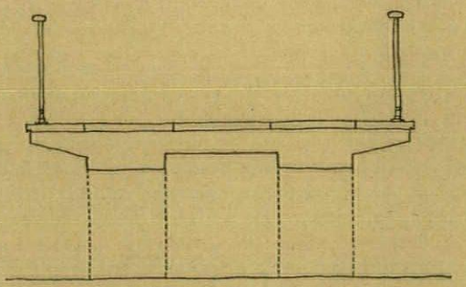
MAILLART. Max Bill. Girsberger, Zurich.
BUILDING SURVEYS. F. R. Huggins. Batsford. 30s.
SIMPLE PERSPECTIVE DRAWING. Arthur R. Brown. Crosby Lockwood. 6s.
DOCTORS' OFFICES AND CLINICS. Kirk & Steinberg. Reinhold. 96s.
VERSAILLES. Ian Dunlop. Batsford. 30s.
BOURNVILLE VILLAGE TRUST, 1900-55. 12s. 6d.
EGET HUS. Jens Mollerup. Arkitektens Forlag, Copenhagen. 19,50 krs.
THE EARTH IS MY CANVAS. Percy S. Cane. Methuen. 42s.

OBITUARY

DIGBY WYATT BRIDGE

It is sad to have to bid farewell to the bridge in St. James's Park. The future bridge, 1, facing page, may be unexceptionable—in fact it is not quite; for the three narrow arches so close to the water will block the view extending beneath it which is now a delight. It is strange that 140 ft. could be spanned a hundred years ago in one leap, whereas now it needs three. The future bridge will, however, no doubt be less costly to keep under repair than an iron bridge nearly a hundred years old. The date when the present bridge was built is indeed 1857, and it looks as if the centenary will be commemorated by doing away with the centenarian.

The present bridge, 2-5, has three qualities which might have recommended it for loving and respectful preservation. It is the only early suspension bridge in London, it is an ideal piece of furnishing for the finest picturesque park of London, and it is the work of two distinguished men. Its engineer was James Meadows Rendel (1799–1856), famous designer of bridges, harbours (e.g., Holyhead) and docks (e.g., Grimsby). The St. James's Bridge was his last work. The architectural or rather

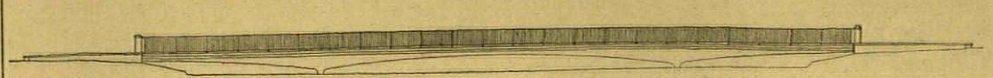


cross section of new bridge

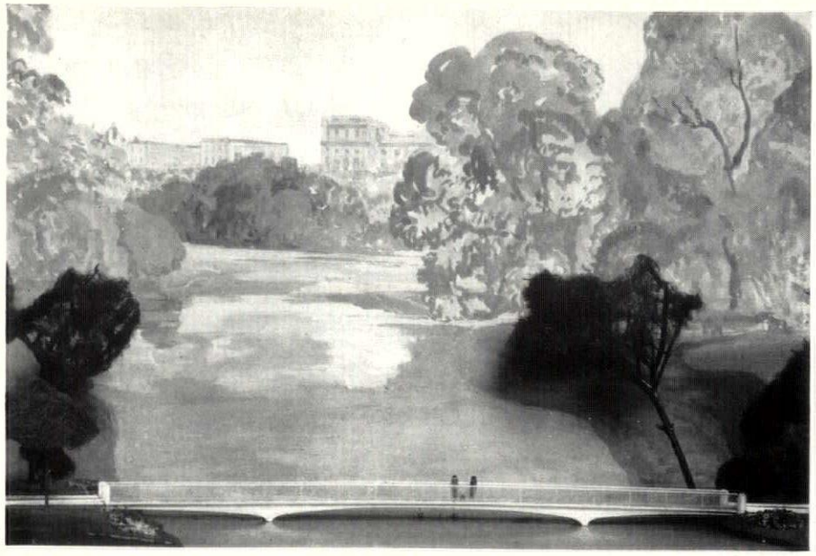
ornamental enrichment was designed by Sir Matthew Digby Wyatt. He needs no introduction. He was responsible for the peculiar decoration inside Brunel's Paddington Station and for a number of unattractive buildings from Cambridge to Dublin and Calcutta. His chief title to fame is his share in the Great Exhibition of 1851 and his brilliantly clear-sighted exposition of the principles which ought to govern industrial architecture and industrial design. It is in connection with these that he explained what ornament in cast-iron ought to be and what it ought not to be. He described the disaster which occurs when 'the graceful honeysuckle of the Erechthcion' is applied to cast-iron and recommended 'never to imitate in iron ornament peculiarly identified with stone.'* And . . . 'It is a great mistake to imagine that a so-called "rich" cast-railing, a thing all spike, flower, standard, scroll and dog-rail, will make a poor building, or one destitute of ornament, look handsomer.'†

How he wished to see ornament applied to cast-iron instead is not made so explicit in his writings, though he refers once to 'the conventionalities to be observed in the treatment of cast-iron' [Lectures on the Results of the Great Exhibition of 1851, Second Series, 1853, p. 243], but the St. James's Bridge is a paradigm of the use of cast-iron 'in the nature of the material'. Every stalk, tendril, leaf and flower is broadened and flattened. Ornament is confined to the spandrels of the pylons. The parapet is given but the simplest bolted trellis, flat and light as compared with the chains. Is it hoping too much that the Victoria and Albert Museum will secure for its Department of Ironwork one of the spandrels? **N.P.**

* Specimens of Ornamental Art Workmanship in Gold, Silver, Ivory, Brass and Bronze, 1852, pp. XIV-XV.
† *The Journal of Design and Manufactures.* Vol. IV, 1850/51, p. 74.

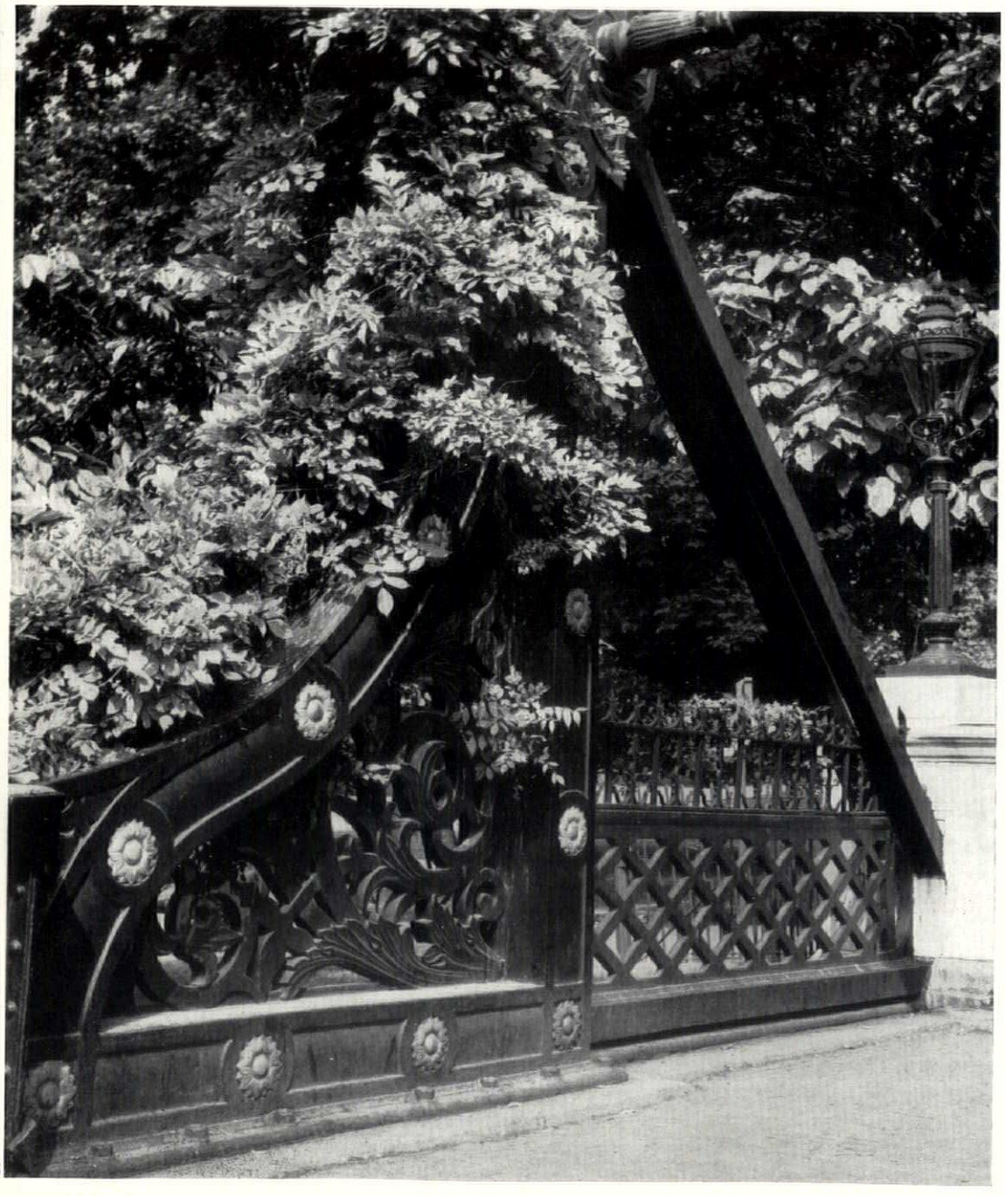


elevation of new bridge, designed in the Ministry of Works

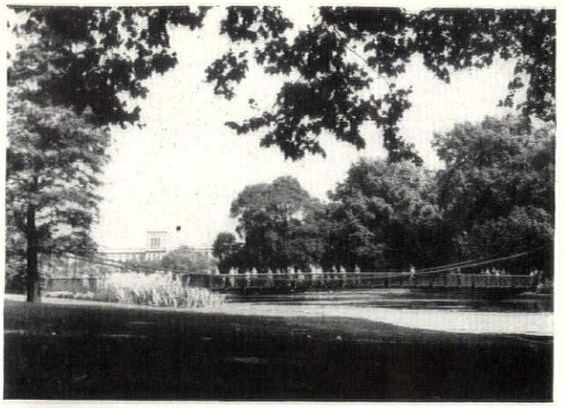


1

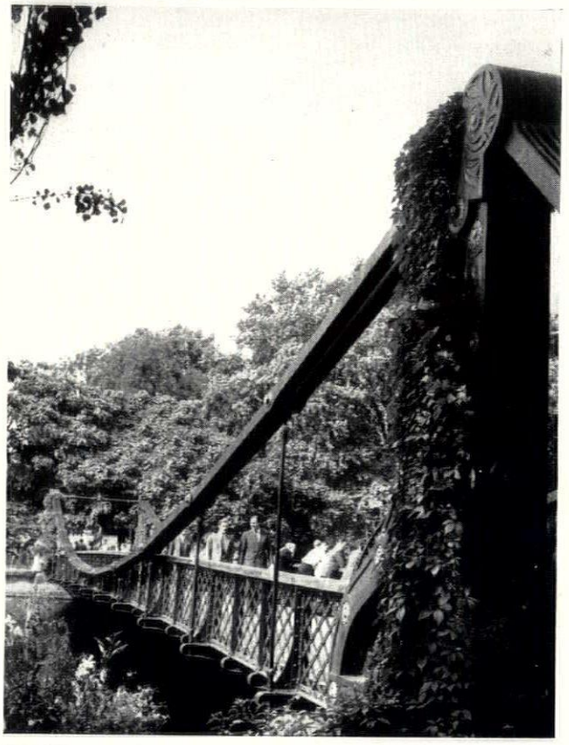
Above, model of the Ministry of Works design for a new reinforced concrete footbridge to be built across the lake in St. James's Park, replacing the present iron suspension bridge, which is the subject of an obituary notice on the facing page. Facing also are an elevation and section of the new bridge.



2



3



4

5

The present St. James's Park footbridge, built in 1857 to the designs of Matthew Digby Wyatt. It is being replaced because it has become expensive to maintain and so weak that it has to be shored up underneath on every occasion when large crowds are expected in the park. Left, a detail showing the cast iron ornament referred to by Dr. Pevsner (see also the cover of this issue). Above, the bridge from across the water showing the uninterrupted view beneath it; from the lake shore; and from the pathway approaching it.

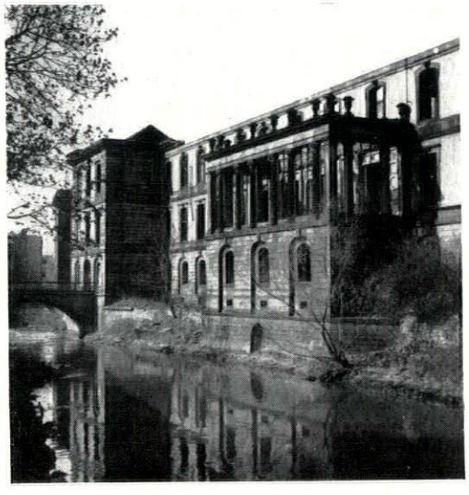
HISTORY

THE LEINE SCHLOSS IN HANOVER

The problem of the town planner is more acute in Germany than in this country, since the extent of destruction due to the last war is more general and—a doubtful advantage—drastic replanning and rebuilding is a necessity. This raises controversies between those who wish to preserve ancient monuments for æsthetic or sentimental reasons, and those who look forward to building contemporary towns without much regard for historical tradition. The Leine Schloss (the palace on the river Leine) in Hanover is the focus of such a controversy.

Erected on the site of a Franciscan monastery, the palace was largely built in the seventeenth century. Plans for the enlargement and the restoration of the structure were commissioned from the chief architect and town planner of Hanover, G. L. F. Laves, in 1816. Further designs were added and the erection of new buildings continued until 1856. It is a token of the close links, cultural as well as political, between Hanover and this country, that Laves was made an Honorary Corresponding Member of the RIBA in 1837, the year when its Royal Charter was granted.

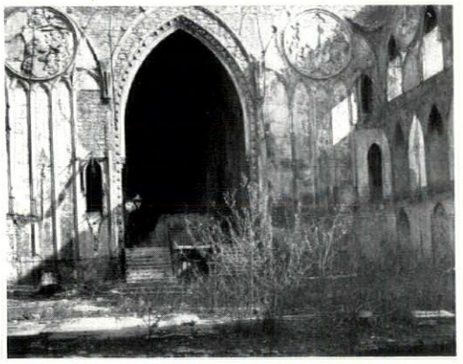
Although the style of Laves' architecture is unthinkable without French prototypes, his classicism has many Georgian features and the neo-Gothic form of the Leine Schloss Church, based though it is on medieval remains, clearly reveals an



1

English influence, especially in the vaults. The inclusion of richly ornamented stucco capitals and the roundels by Bandel, representing the life of Christ, are, however, typical of their German origin. They illustrate the transition towards a Romantic interpretation of architecture.

2



3

1, *the ruined Leine Schloss.* 2, *the church as restored and redecorated by Laves,* 1835-39. 3, *the church as it is now.*

The building has been gutted and stands in ruins although the walls appear sound. It would therefore be possible to incorporate part of the historic structure in an uncompromisingly contemporary work, as has been so successfully done in the past.

In fact, a competition for the erection of the Houses of Parliament of Lower Saxony was held in 1954, the projected site being that of the Leine Schloss. It was won by Professor Dieter Osterlen; his design preserves the external walls, whilst the interior is to be rebuilt. Two new courtyards and a new hall for the Landtag will be added in contemporary style.

H. Rosenau

Note: A good summary of the history of the Leine Schloss will be found in A. Nöldeke: Die Kunstdenkmäler der Provinz Hannover, Stadt Hannover, 1932.

I wish to thank Dr. H. Wolff for his assistance in providing photographs.

SOANE BARN

Warwick Road, Solihull, is one of those long thoroughfares where the numbers of the flanking houses mount up to four figures. The village itself has a nucleus of ancient buildings, but as you leave it and strike SSE in the direction of Warwick, the residences on either side fall into the category which estate agents call 'desirable,' and which were for the most part put up between the two World Wars. It is, then, with some surprise that one eventually arrives at No. 936 and discovers it to be neither a house nor a shop, nor even a garage. It is, in fact, a sturdy 'barn,' what is more a barn in the Doric

order, and what is yet more a barn built from a design of Sir John Soane.

The ground on which this unusual building stands once formed part of the estate of Henry Greswold Lewis for whom Soane had in the 1780's made considerable additions to Malvern Hall, on the outskirts of Solihull. In his accounts for this work Soane added a note that in 1790 he supplied his client with a design for 'a

barn à la Paestum.' There is no clue as to why Mr. Lewis should have wished for a Greek Doric barn. His house was a rather uninspired example of late seventeenth century building, enlarged by Soane in a prosaic manner. Perhaps the suggestion came from the architect, recalling his memorable excursion to Paestum in 1779 when he measured the remains of the three famous temples and made sketches of them in a notebook which survives. Under the influence of this visit, a number of his student designs underwent a sudden metamorphosis from Roman to Greek Doric, for which, as we know from his Royal Academy Lectures, he had an unbounded admiration.

Translated into red brick, with a timber entablature, the Solihull barn reflects Paestum in spirit rather than in fact, but certainly there could have been no more appropriate inspiration than the Temple of Ceres for this small building designed as a store for grain and hay, and constituting the first of Soane's essays in Greek Doric to be executed. No longer required for its original purpose, it now serves as a craftsman's studio for an appreciative occupant.

Dorothy Stroud

EXHIBITIONS

The artists whose work will be exhibited in the British pavilion at this year's Venice Biennale are the painters Ivon Hitchens, John Bratby, Edward Middleditch and Jack Smith, and the sculptor Lynn Chadwick. Hitchens and Middleditch have had London shows this season; the others contributed to the Contemporary Art Society's exhibition, 'The Seasons,' held at the Tate Gallery. The Hitchens exhibition was held at Gimpel Fils. There were only seven paintings, ranging in date from 1945 to 1955, but they were all of the finest quality, and gave off so much sweetness and light that I found myself hoping that a few of the confused and unsuccessful works would creep into the Biennale selection to give it an edge. At his best, Hitchens paints such pictures as 'Summer Sky and Fields,' 1, in which he translates landscape into a flat pattern of colour that reads as space. It is the same marvellous paradox that informs the greatest works of Matisse and Picasso, and even after noting that Hitchens sometimes cheats a little and allows linear perspective to determine the shapes of his paint patches, it would still be possible to call the Gimpel selection a group of master-

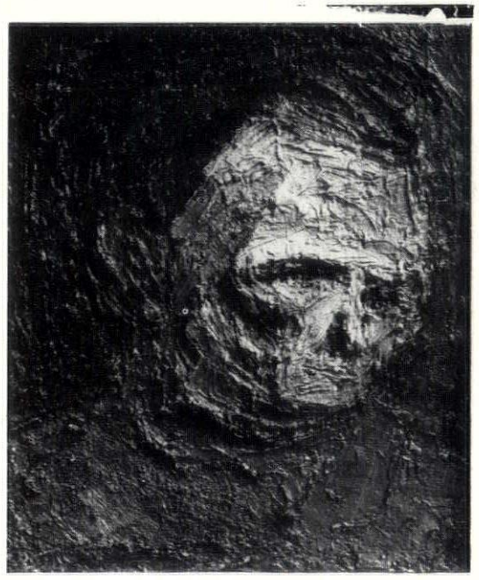
1

pieces if it were not for the fact that his colour patterns have to be almost sugarily harmonious before they become spatially lucid.

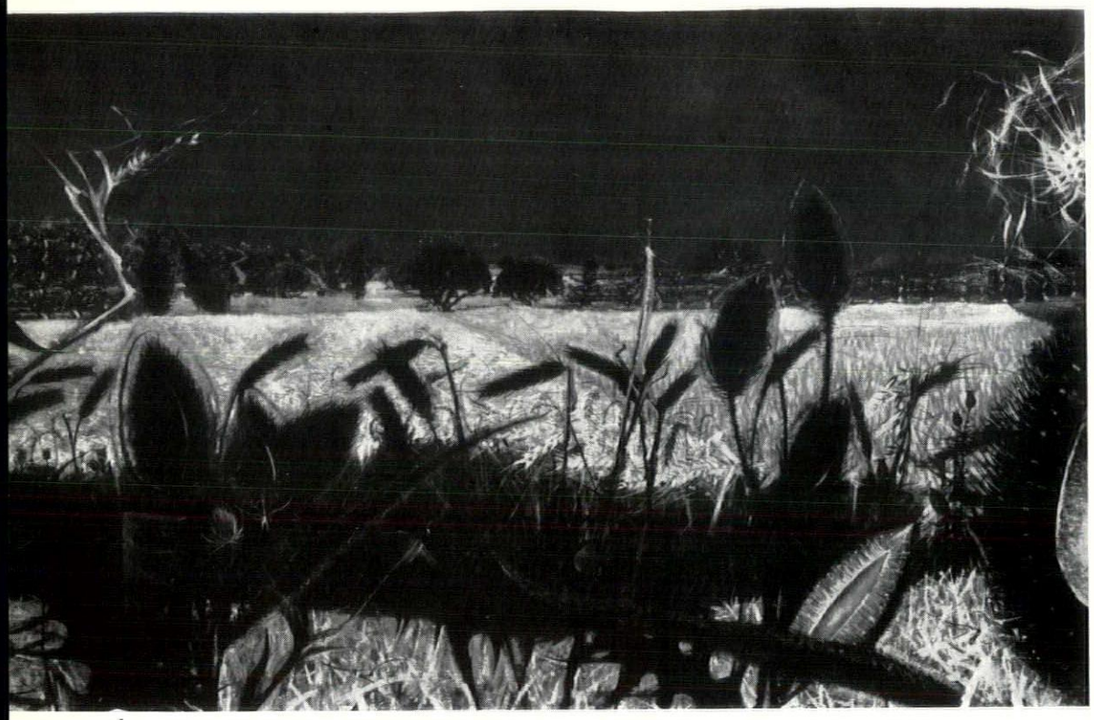
A number of the still life arrangements in the recent Middleditch show at the Beaux Arts Gallery (particularly those in which flowers were used as a lyrical fuzz in a mundane setting) seemed to me to be calculated effusions on the level of the moister pop tunes, but the huge picture called 'Summer Landscape,' 2, a deadpan view of a field of cow parsley, is a much more compulsive work, and, apart from the timidly conventional addition of a strip of sky, its intransigence sets it apart from the course-grained, sentimental picture-making in which Middleditch specializes. This picture is a brilliantly successful vulgarization of Francis Bacon's ironical demonstrations of 'a feeling for landscape' and Jean Dubuffet's dadaistic 'bits of ground.' It is hypnotic and enveloping, and if Middleditch has any of the intellectual curiosity of the innovator, he should be able to push this kind of painting to a point where it commands audience-participation almost as effectively as the cinema.

2

The painter Frank Auerbach, another exhibitor at the Beaux Arts, is making contributions of a different order to the 'bits of ground' school. Unhappy human faces and desolate building sites are adumbrated in the substantial oblongs of paint which for want of a better word have to be called pictures, 3. But the images are only faint reflections of the misery exhaled by the paint itself—a thick funereal sludge which has sullenly settled after being subjected to much kneading and stirring. It is as if the artist had been groping through this fearsome substance for something precious that he didn't expect to find. It is action painting brought to a standstill, play-therapy considered as the last illness; a frightening expression of estrangement. I cannot imagine where Auerbach goes from here.



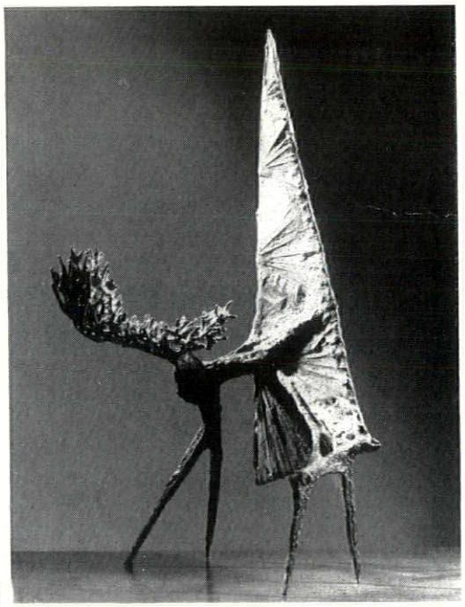
3



4

If 'Summer Field' by Middleditch and the splendid evocation of summer, 4, by Alan Reynolds, exhibited at the Redfern Gallery had been available for the CAS exhibition dedicated to the seasons, they would have stolen the show from the abstracts. As it was, some cool and handsome abstracts bearing wintery titles, especially those by William Scott and Paul Feiler, were outstanding in a not very distinguished miscellany.

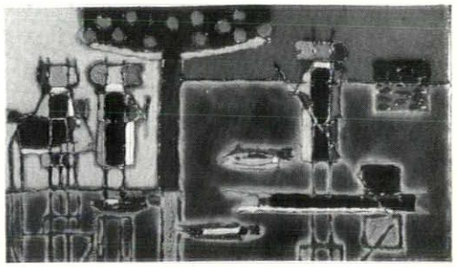
Bratby and Jack Smith, like Middleditch, paint remarkably well when they are in the grip of a compulsion to shove a bit of the world under our noses, but their self-conscious attempts to tackle the theme of winter in the CAS show resulted in very poor works. Jack Smith sent in a kind of solemn pastiche of Victorian narrative painting, with people under umbrellas hurrying past a mountain range in a snowstorm. Bratby painted a picture of people warming themselves at a stove which was like a cover for an American family journal except that the faces had gone sour and that the colour made everything look as sore as the behind of a mandrill. Victor Willing's 'Winter Machine' was another essay in melodrama, depicting a blood-red tractor in a snowfield, with a man-shaped plume of smoke in the driver's seat. I am wondering if it was intended to be an up-to-date version of one of the four horsemen of the Apocalypse. Patrick Heron, on the other hand, tried hard to turn a pretty view of a Cornish harbour into a 'tachist' abstract, but it remained obstinately picturesque. Some of the sculpture was notable. I particularly liked a torso by Reg Butler, an enchantingly comical group of three clamorous figures by Kenneth Armitage, impertinently labelled 'The Seasons,' and a small bronze by Lynn Chadwick, 5, which even succeeded in being pertinent. In the photograph, it looks as if a member of some formalist Ku Klux Klan were throttling a natural



5

object, but the work itself is an interesting sculptural variation on the theme of one of Graham Sutherland's most famous pictures, 'Gorse on Seawall.'

Stefan Knapp is one of the oddest cases in contemporary art. His symbolic designs report the blessed uneventfulness of an earthly paradise where men, animals, fish, birds and trees are practically equal, and the only noticeable difference between humans and the others is that men have the initiative to go on short journeys for the pleasure of being welcomed on their return. The artist's subject matter and eccentric figurative system have not changed for several years, and one pre-



6

sumes that he considers the expressive aspect of his task to be completed, leaving him free to become the artisan-follower of his own pictorial formula. He is now wholly concerned with the task of finding more luminous and more durable ways of repeating himself, and the pictures in enamels, 6, which he recently exhibited at the Hanover Gallery, some of them fantastically large for so exacting a medium, are remarkable examples of technical virtuosity. **Robert Melville**

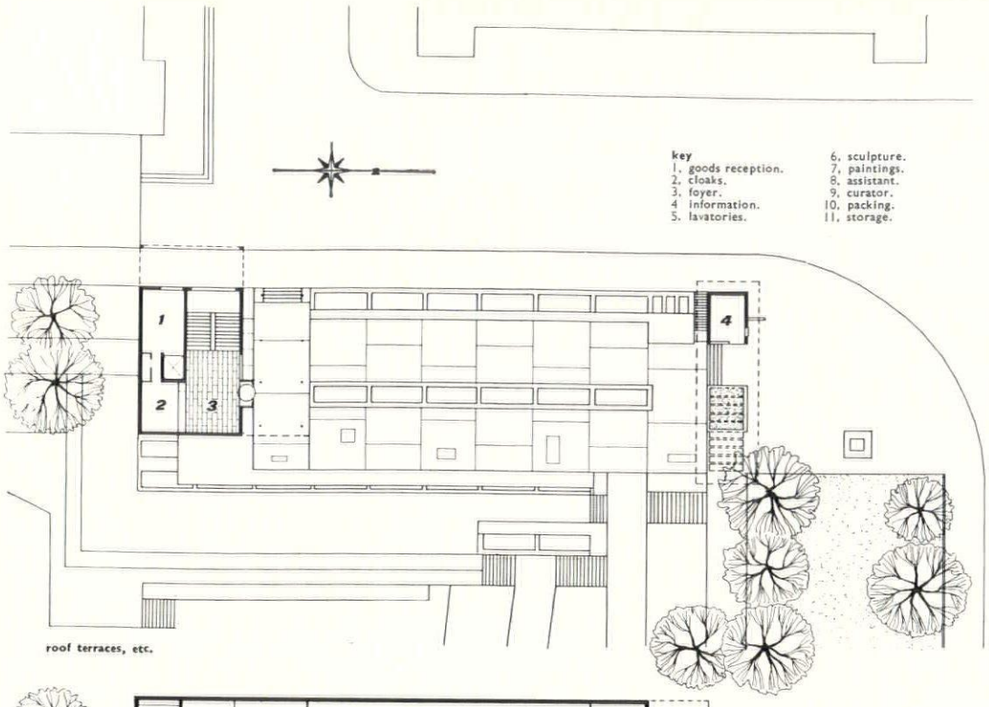
PROJECT

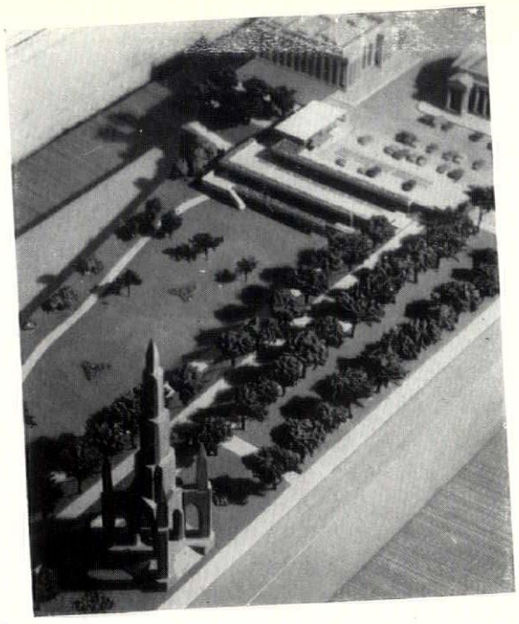
A GALLERY FOR EDINBURGH

London is not the only city in which the shortage of galleries where temporary art exhibitions can be held is becoming more and more serious. In Edinburgh the same shortage is being felt, especially during the period of the Festival, and proposals are being put forward for such a gallery in Princes Street Gardens. It would perform much the same role in Edinburgh as the gallery that is one day to form part of the annexe to the Royal Festival Hall in London.

It is desirable that any new gallery should be closely linked with the National Gallery of Scotland and the Royal Scottish Academy and the architect of this scheme, Mr. Alan Reiach, has planned his building so that it would be part of the group already formed by these two splendid examples of the Greek Revival, but has taken care, 1, to avoid disturbing one of the most famous views of the Castle, which has these two buildings as its foreground.

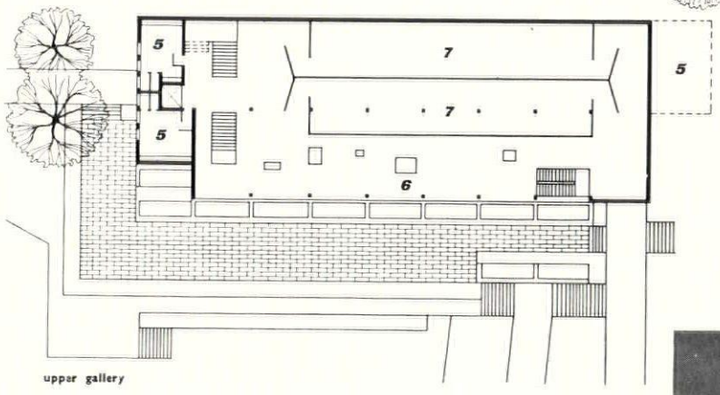
He has sunk his gallery below road level, 2, so that its part in the landscape is simply that of a series of stepped garden terraces. Access would be from the present roadway between the National and RSA

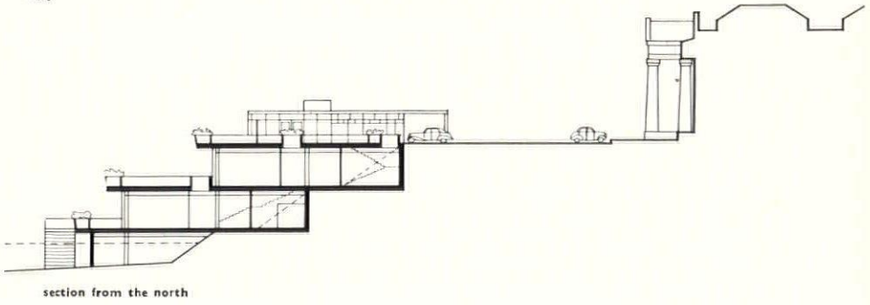


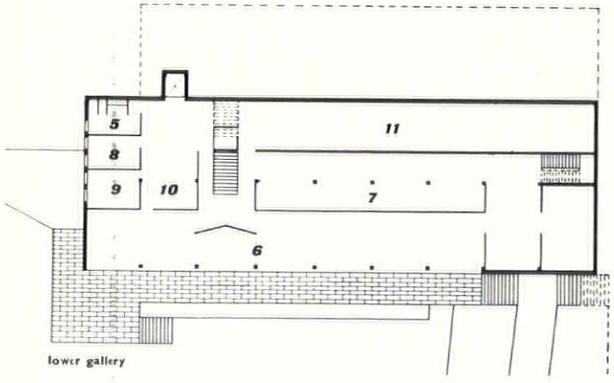


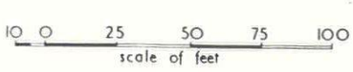
1

1, *model of the proposed gallery from Princes Street.*
2, *looking down on the roof, which extends the roadway in front of the National Gallery of Scotland.*

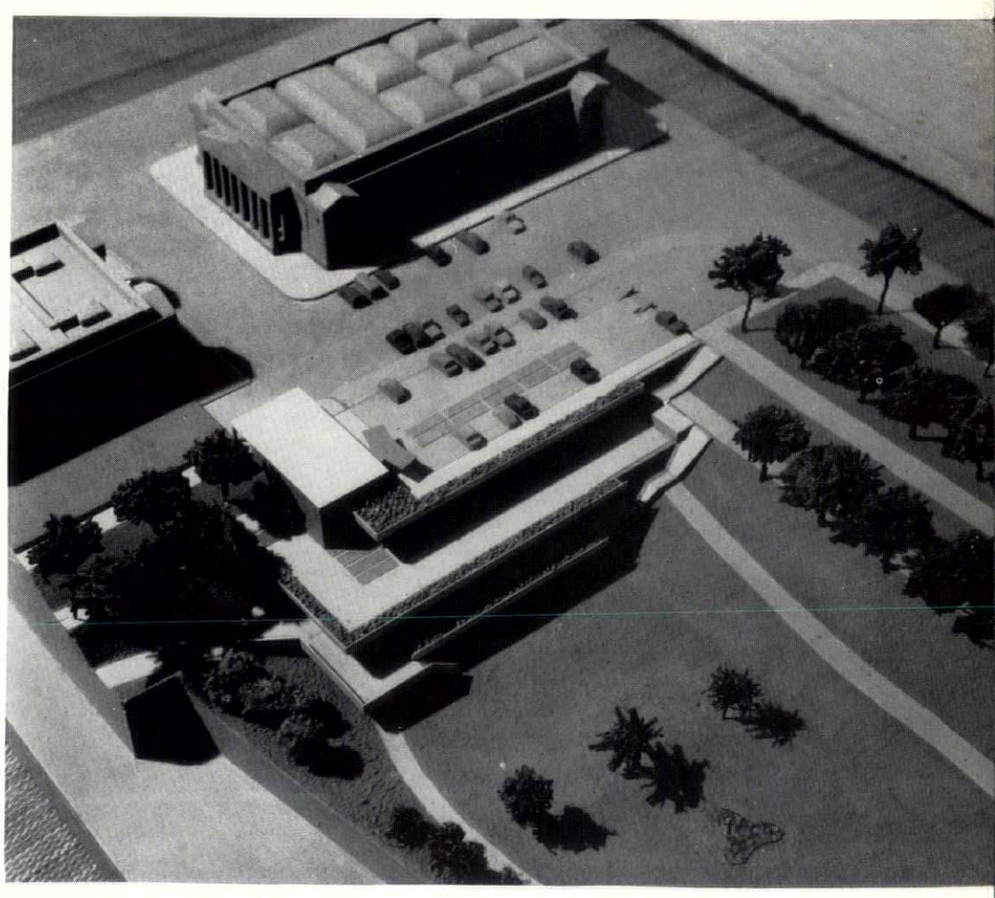








Galleries or from Princes Street across the roof terraces, which might be used for displaying sculpture. The public galleries (which have an area of 15,500 sq. ft.) are planned at two levels, with their main windows facing east across the gardens, avoiding direct sun for most of the day. The total cost is estimated at £160,000.



2

OUTRAGE

RECULVER IMPAIR'D AND RESTOR'D

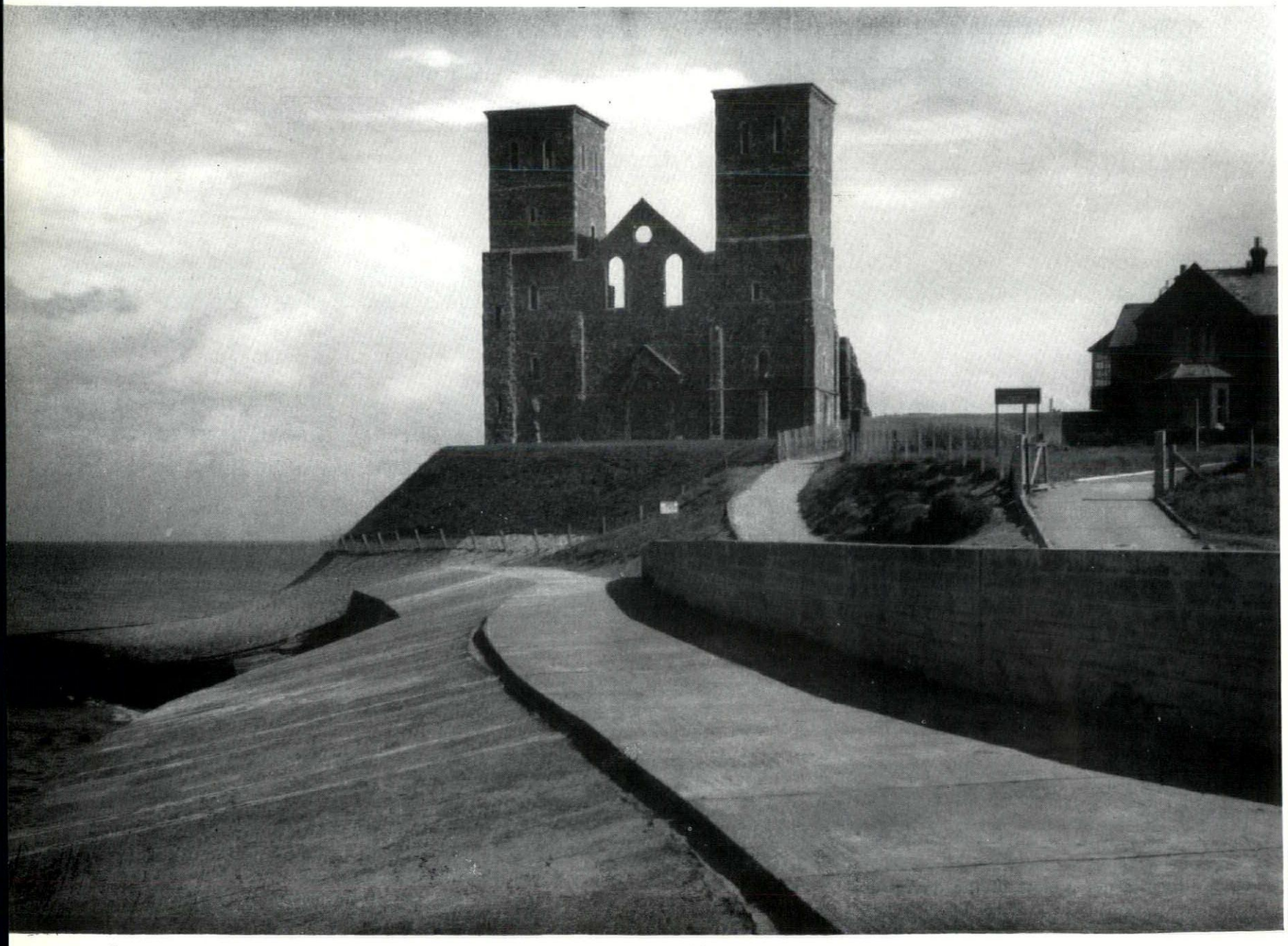
Subtopia is at its cruellest when it gets to work on somewhere which had character of its own, and at its most frightening when it acts, not through a series of disconnected objects dumped down at different times by different bodies, but all at once through one mass-produced sub-human flood. The combination of these two makes the journey to Reculver an ugly experience. You see it from the main Margate road apparently alone in the green wedge between Whitstable and Herne Bay—long may it stay green. You go down the only road to it into a faintly disturbing landscape that is both intricate and large

1

scale at the same time, the perfect overture to the pair of enigmatic Thanet-Early English towers. And then you turn the corner and see the towers themselves—and the sea of caravans in front of them, 1. They have no more reality than if they were painted on the walls of a caravan showroom to advertise Olde Englande; and one can't even try to turn a blind eye, because this is the only way into Reculver. To make matters worse, most of this is municipally owned—that is, there isn't even the understandable if not justifiable impulse of private profit to account for the vandalism. In fact, Herne Bay UDC could have better put the caravans anywhere else along their stretch of messed-up Thanet coastline than in the one place which had character of its own.

That is Reculver Impair'd all right; but it isn't everywhere that contains the evil and its remedy simultaneously. If you come to it along the sea wall (wearing a comprehensive set of blinkers for the landward side) you find Reculver Restor'd, or all the character put back again, 2. The towers are liberated and answer the clean angular sea wall, no longer a backcloth but the main component. The parts of the landscape start to speak to one another instead of sitting it out in silence; Reculver waiting for the grisly farce to end and the caravans and their inhabitants never knowing that there is anything wrong at all.

The irony is that the sea wall, built after the 1953 floods, is probably newer than some of the caravans; the moral is that the landscape has far more to fear



2

from the misplaced too-human herd instinct than from inhuman technology, as Kenneth Browne is demonstrating on page 309 of this issue. But where is the man in the planning chain who can survey the area in a topographical, not administrative, sense and say 'this would do less harm at X, not Y'?: and where is the research team behind him at the Ministry to find out, by a close and affectionate study of present causes and effects, what sort of thing will fit into which landscape? They don't exist, at the moment, and they ought to. They need only be advisory, because there are enough executants in the planning system already, and because most committees will listen to reason, even on visual matters, if it is put over in a common-sense way. It may help to prevent England being ruined by the *amour propre* of local government: at the moment we can literally move mountains, if we want to, but we can't shift the UDC boundary.

Ian Nairn

1

DECORATION

GOTHENBURG MURAL

Outdoor murals are usually thought of as more suited to the brilliant light of the south than to the grey light of northern countries, but here is a very successful example from Gothenburg, Sweden, executed in coloured marbles on an outside wall of a building forming the south side of a square at Hogsbotorp, one of the new neighbourhoods on the fringe of the city.

The building is the Medborgarhuset (citizens' house), and contains a library, meeting rooms and shops. The architects for the scheme are Brolid and Wallind.

The mural itself is the work of the painter Endre Nemes. It is 30 ft. high and 25 ft. wide. About 50 different types of marble are used, ranging in colour from white to yellow, green and red, but with a wide variety of greys predominating. The cost was about 50,000 Swedish Kroner. The original design was made to a scale of 1 : 10, and the final design worked out in sections to full size. The sections were used as templates for cutting the marble, which is fixed to a light-weight concrete wall surfaced with a steel fabric. The marble pieces are held by bronze cramps hooked to the steel fabric, and the cavity grouted in with waterproof cement. The joints of the marble are tight-ground. It took two men four months to fix the mural.

Endre Nemes was born in Hungary in 1909 and has worked in Scandinavia since 1938. He has been principal of the

2

Valand School of Art in Gothenburg since 1947. During the last few years he has been working mainly on large scale murals in stucco lustro, enamel and marble. S.S.T.

CRITICISM

BUILDINGS FOR THE FOREIGN SERVICE

The buildings that one country puts up for the use of its officials in another can be regarded as advertisements of its architectural taste and enterprise and must therefore be of the highest possible standard. In the REVIEW for October, 1955, some of the latest American buildings of this kind—embassy offices and residences—were illustrated, and the enterprising character of their architecture was remarked upon and contrasted with the lack of enterprise generally shown by the British.

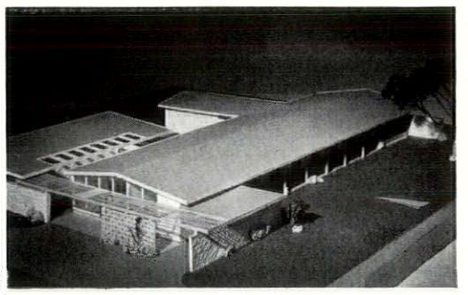
Since then the policy of the State Department has gone from strength to strength; witness the intelligent selection of competitors (and assessors) in the limited competition for a U.S. embassy in Grosvenor Square, London, resulting in a dignified but uncompromisingly modern winning design by Eero Saarinen, and the news that a new U.S. embassy in Athens is to be designed by Walter Gropius.

How do the latest British developments compare with these? Certainly it can be said that the British Foreign Office has improved its outlook considerably since the time (only ten years ago) when it thought a neo-Palladian building suitable for Rio de Janeiro. Its policy is less bold than that of the Americans, who seem to be commissioning a building from each of the most progressive American architects in turn (how stimulating it would be, both to our self-confidence at home and our prestige abroad, if new British foreign service buildings were to be commissioned from, say, Lubetkin, Powell and Moya, the Architects' Co-Partnership, Basil Spence and Farmer and Dark); while the British buildings are designed by the Ministry of Works. But whereas a few years ago this would have been a depressing statement, an encouraging quantity of worthy and conscientious architecture has lately come out of the Ministry's architects' department. At the risk of sounding patronizing these are the two adjectives one must choose to apply to the Ministry's two latest designs for the foreign service: a group of buildings, just completed, at Bahrein and a larger group, still in the project stage, at New Delhi.

They are both in the tropics, where the Ministry's efforts to give the buildings an architectural character based on regional traditions have the best chance of succeeding: for small windows punctuating expanses of white walls, screen-walls patterned with openwork grilles and widely projecting eaves and porches themselves constitute an idiom which, handled with reasonable sensitivity, seldom fails to achieve interest and even charm. The office building in the Residency compound at Bahrein, 1, has considerable charm. The staff flats nearby, 2, have not; the architect has been able to rely less on regional traditions, or regional ways of using materials, and has been confronted with the problems of proportion and articulation common to building everywhere. These have been solved somewhat clumsily, and the effect is not helped by overemphatic detailing in a country of strong sunlight, where the most delicate of modelling is sufficient to tell; indeed wall texture is often detail enough by itself, but texture is a quality these Bahrein flats seem to lack altogether.

2

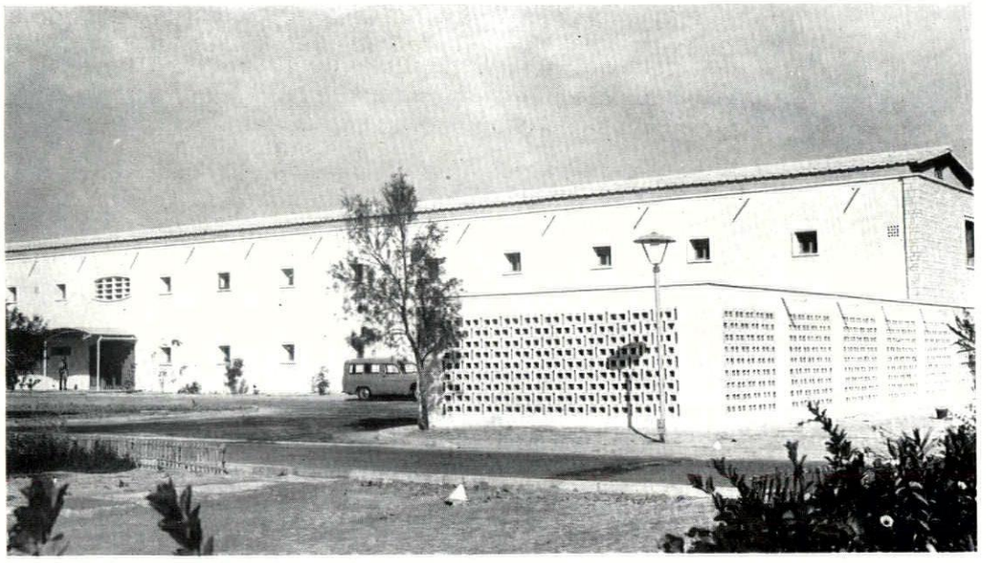
The British diplomatic compound at New Delhi contains, besides offices and several blocks of flats, a High Commissioner's residence, a community centre and a sick-bay. The layout, in a park-like landscape, has been well devised to give a degree of formality and seclusion to the residential parts, and of the individual buildings, again, the most successful are those which rely most on traditional tropical building practice. For example, the sick-bay, 3, with its low-pitched overhanging roofs, shares the simple but satisfying character of the ubiquitous verandahed tropical bungalow, and the openwork screen-wall and pergola treatment promise to serve as a pleasant foil to the deeply shadowed areas behind them.



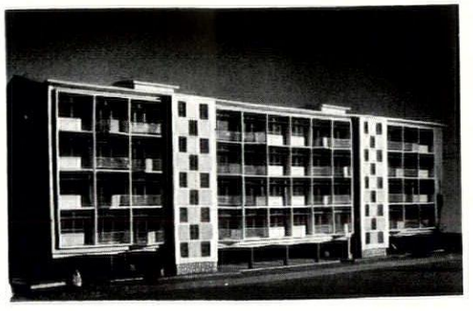
3

The New Delhi compound will be dominated, however, by four multi-storey blocks of flats, 4. Displayed, as they are here, in model form, they appear little less heavy handed than those at Bahrein; but models are an unfair test; the proportions are not disagreeable, and if the detail is handled, and the proposed variety of facing materials chosen with restraint, the flats (which, it must be remembered, are conceived as a relatively impersonal element in a complex, elaborately landscaped scheme), could be a worthy contribution to modern architecture abroad.

J. M. Richards



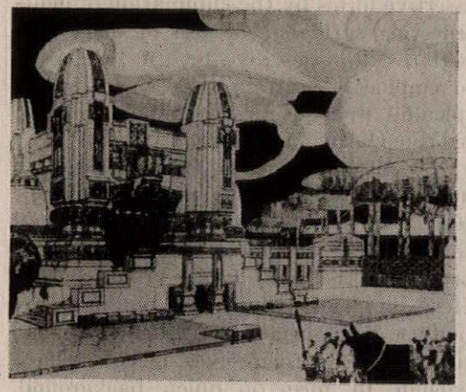
1



4

FOOTNOTES TO SANT'ELIA

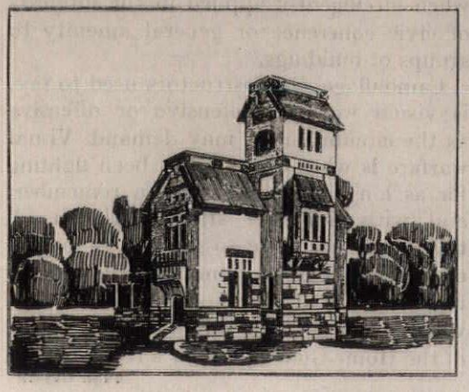
The article on Sant'Elia which appeared in the Architectural Review for May, 1955, proved to be the first swallow of a Santelian summer, in the course of which large and valuable contributions were made to the published material both on the architect himself and on Futurist architecture in general. Thus, in the July-August issue of *Casabella*, Ernesto Rogers devoted much of his customary philosophical opening essay to a consideration of Sant'Elia's place in the tradition of Italian modern architecture,



1

and supported his reflections with a magnificent reproduction of a Sant'Elia drawing in colour.

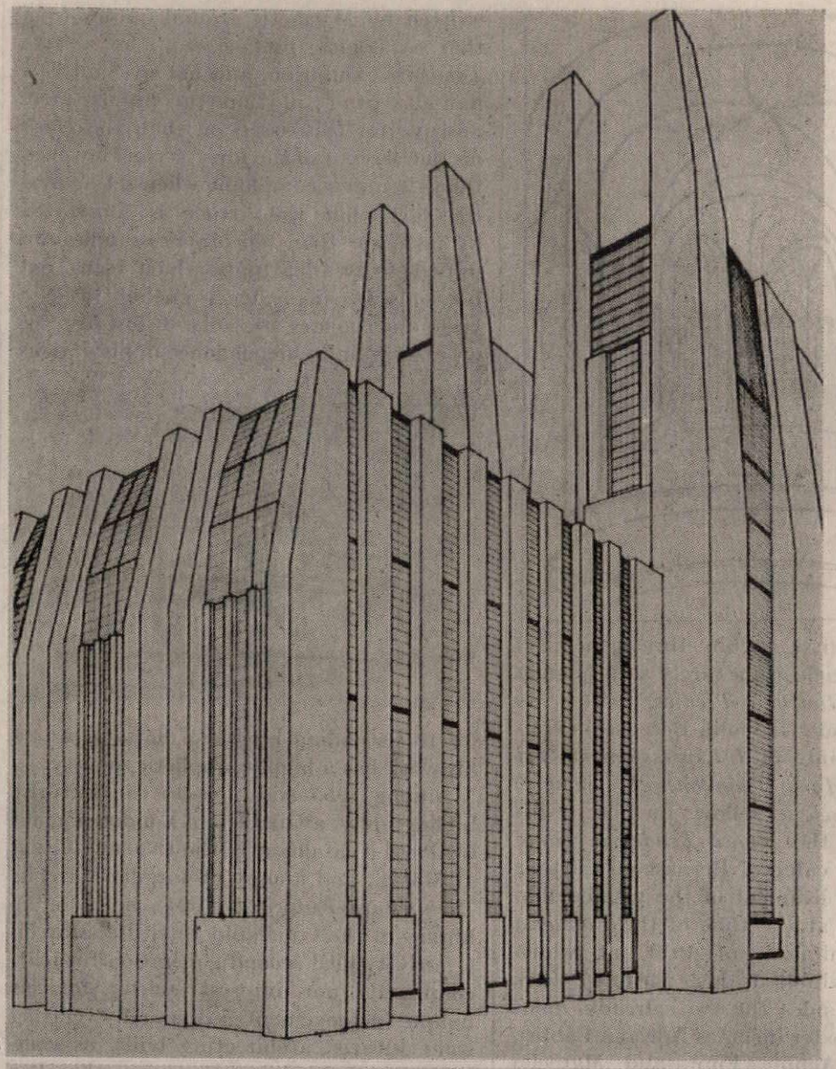
In the equivalent issue of *L'Architettura*, Francesco Tentori published and discussed two early projects by the architect from his pre-Futurist phase, a villa of 1911, and a competition design for the cemetery at Monza, of 1912. Of these, the cemetery project, 1, offers the first conclusive evidence of a debt to Wiener Werkstätte *Art Nouveau*, while the villa, 2, seems to suggest a hitherto unsuspected debt to French suburban domestic design of the eighties and nineties. In the same issue Leonardo Mariani undertook the heroic



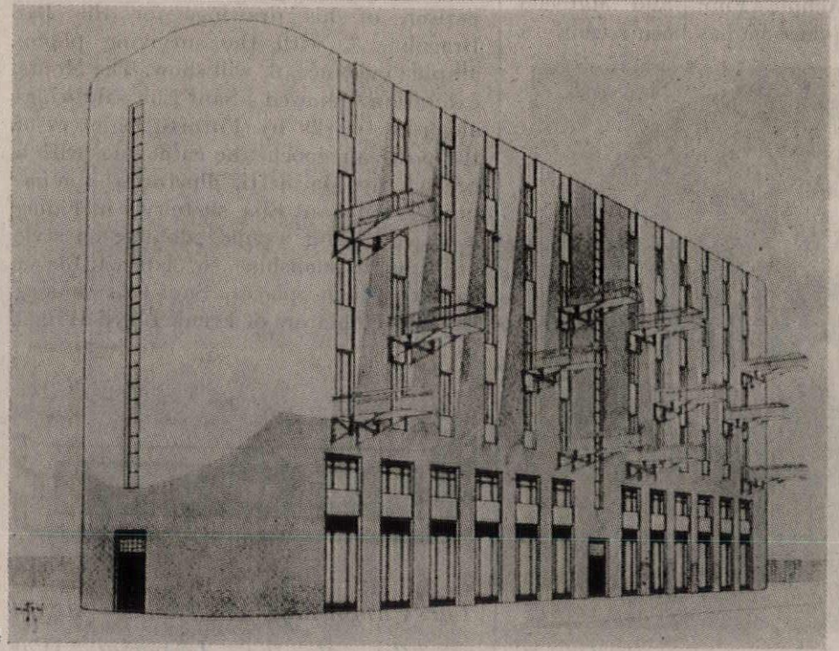
2

but valuable labour of publishing every Sant'Elia drawing that could be found, and the result, though it seems to contain some inaccuracies of cataloguing, nevertheless contributes a fundamental corpus of published material to further Sant'Elia studies. And in a later issue still (No. 5) Mariani has produced something conspicuously missing from the Sant'Elia corpus—plans.

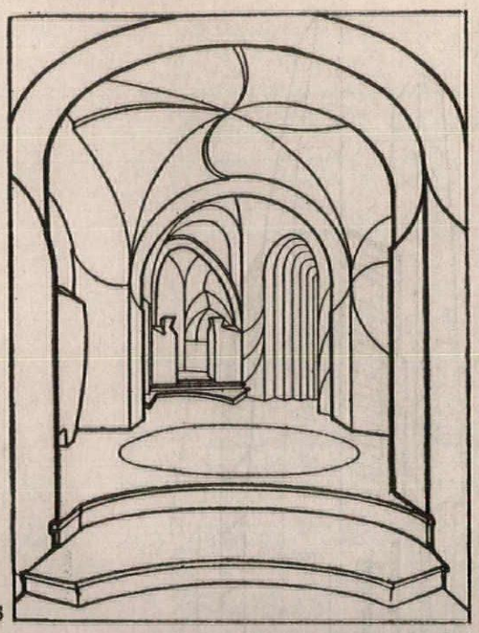
But the most interesting contributions to an increasing knowledge of Sant'Elia



3

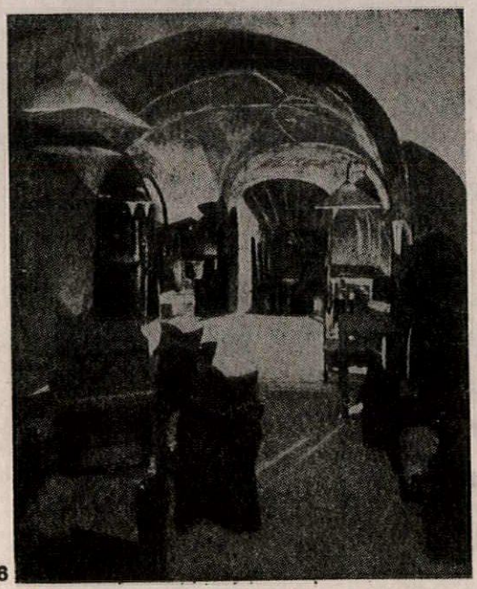


4



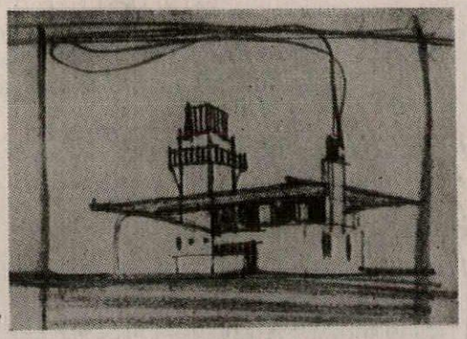
5

(and of futurist architecture generally) came in an article in the rarely seen Lugano magazine *Rivista Tecnica*. To its September issue Giovanni Bernasconi contributed a study of *L'Espressionismo nei Disegni di Mario Chiattone*. A Ticinese, Chiattone was a fellow member with Sant'Elia of the *Nuove Tendenze* group, and the first value of Bernasconi's article is in its establishment of the membership of the group at the time of the *Famiglia Artistica* exhibition of 1914, at which Sant'Elia exhibited his Futurist City drawings. Besides the two already mentioned, the roster includes Adriana Fabbri, Dudreville, Achille Funi—and Marcello Nizzoli, who (since he has been recently a



6

collaborator of Bernasconi on the Olivetti building in Milan) is the presumable source, apart from Chiattone himself, of an eye-witness quality in Bernasconi's writing. For this reason it is disappointing that he, who reiterates the story that the Manifesto of Futurist Architecture was written by Marinetti around quotes from the catalogue preface to the *Nuove Tendenze* exhibition, and not by Sant'Elia himself, can still find no proofs more positive for this assertion than the Marinettian flavour of the prose style. However, this is a minor complaint when set against the fact that the article is illustrated by no fewer than ten otherwise unknown drawings by Chiattone, which bring out not only his dependence on Sant'Elia in large or visionary projects, 8, but also his originality and independence in his designs



7

for free-standing blocks of flats, 4, where his work has a highly prophetic quality.

Among 1955 additions to the Futurist bibliography available in London should be noted a catalogue of the 1930 exhibition at Monza, and a copy of Virgilio Marchi's *Architettura Futurista* (1924), both in the library of the Courtauld Institute. Marchi, a fairly typical second-generation futurist, commands our interest chiefly for his unique achievement in actually getting some futurist architecture built, as comparison of his drawings for the Bar Bragalia, 5, with the surviving photographic evidence, 6, will show. The Monza exhibition showed Sant'Elia drawings alongside works by Futurist painters of the post-war epoch; the catalogue, with a preface by Marinetti, illustrates a number of the Sant'Elia sketches, including a project, 7, for a villa—datable on style of draughtsmanship to late 1913 or earlier—which places Sant'Elia among the first emulators of Frank Lloyd Wright in Europe.

Reyner Banham

EDITORS ONLY

The Camouflage Exhibition staged recently at the Imperial War Museum must have prompted some at least of the many visitors who wander through these muddled, and at times almost unbearably touching, galleries to regret the peacetime disappearance of this bizarre yet useful activity. Like the barrage balloon, camouflage was a certain war casualty. Few industrialists really liked to see their factories dressed in multi-coloured modesty-vests, and no government department, alas, seems willing, once the need for security has ceased, to spend money on protective colouring. Thus when peace came the aerodromes and camps, the factories, quarries and dumps emerged as eagerly as demobilized soldiers into their red, pink and grey 'civvies.' What an opportunity missed.

We all know, of course, that camouflage is not magic. Strange and violently contrasted patterns confer no mantle of invisibility upon the objects upon which they are applied. But the principles of camouflage, intelligent and carefully considered siting, the playing down of over-assertive forms by the elimination of light-reflecting surfaces, the use of disrupting patterns to destroy—or, if preferred, to emphasize—certain shapes, are surely splendid weapons in the hands of those fighting Outrage in our countryside.

Nor need its use be entirely negative in effect. In imaginative hands camouflage could also come to the active rescue of some of the most difficult areas of subtopia, or even in the more boring urban centres. Here, in places where the buildings are neither distinguished enough individually to stand up for themselves, nor disciplined enough to form a quiet background, camouflage used to create accents or to emphasize different materials, planes or changes of direction is full of the most promising possibilities . . . familiar enough in interior design or in individual buildings, but never yet explored upon a wider scale in the street or landscape.

It would not of course be popular with architects—notoriously touchy about their own monuments—yet even they, if they were honest, would probably admit that in designing any building they use without shame the devices of concealment, disguise, displays of false strength or disrupted surfaces, and logically they should not resist the same devices when intelligently applied in the interests of civic coherence or general amenity to groups of buildings.

Camouflage, the instructors used to say, is visual warfare, defensive or offensive as the circumstances may demand. Visual warfare is what the AR has been fighting for as long as its readers can remember, and with Subtopia still on the march this is not the time to get out of battle-dress. Nor is it the time to lay aside or reject so useful a weapon as camouflage when wielded, as Churchill used to say of the Home Guard pike, by a resolute man.

Hugh Casson

SKILL

A MONTHLY REVIEW
OF BUILDING TECHNIQUES & INDUSTRIAL DESIGN

1 *interiors*
2 *design review*
3 *techniques*
4 *the industry*

1

1, *looking outwards over the quay and Southampton Water, through the double-glazed doors of the passenger hall.*

1 INTERIORS

PASSENGER WAITING HALL, SOUTHAMPTON

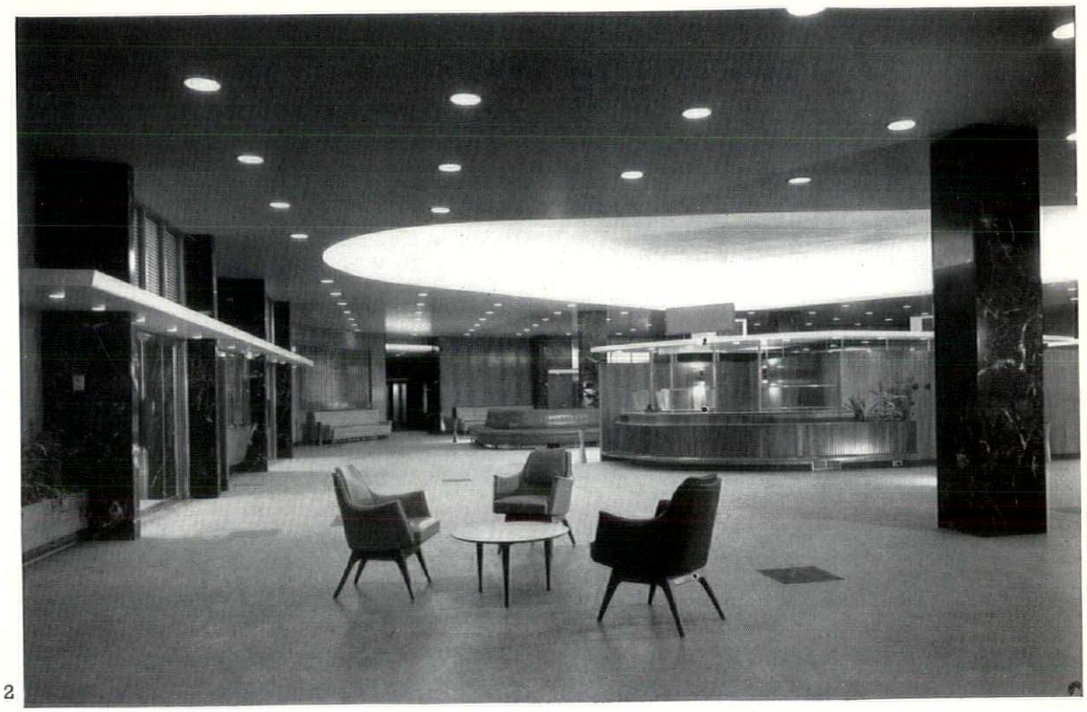
Designers: Heal's Contracts
Designer-in-charge: A. W. Skeels

The new passenger and cargo building is on the site of an old transit shed at 102 Berth in the New Docks, Southampton, which was destroyed by enemy action during the last war, and is primarily for use by inward passenger and cargo traffic carried on the mail liners of the Union Castle Line on the South African service. It comprises two floors: the upper of which is entirely a working area for the handling of cargo, the ground floor being occupied by the waiting hall and its ancillaries.

The main hall is panelled throughout in

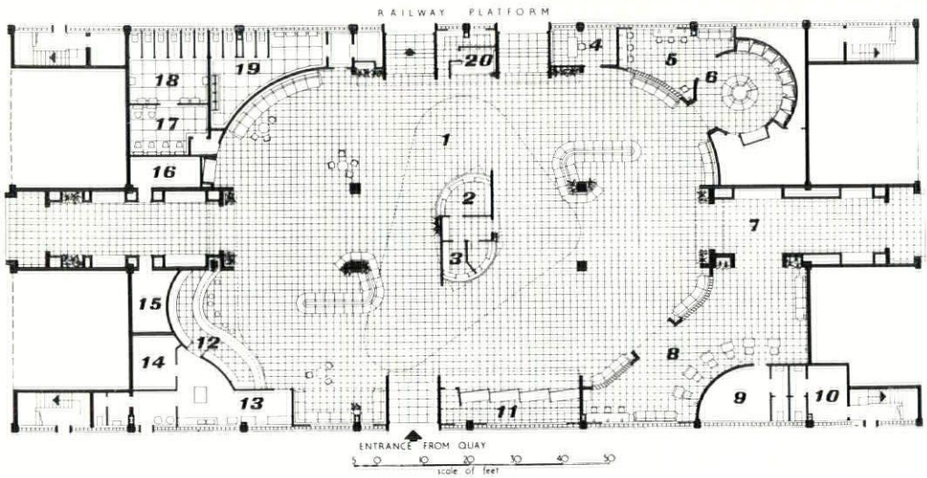
natural Honduras mahogany, relieved by flanking columns of Genoa marble. The four main free-standing columns to the hall are also clad in Genoa marble. The recesses are panelled in Kevasinga wood veneer, and on the buffet, ticket and agencies' stands and bookstall, natural straight grained elm and teak have been used. Flooring throughout is of $\frac{3}{4}$-in.-thick grey linoleum tiles, relieved with random tiles in the same colours as the furnishing fabrics. Seating around the walls and round the columns is covered in hide. The lighting is provided by flush louvred fittings in the lower level ceiling and by concealed cold cathode trough to the higher level centre section.

The panelling in the east and west vestibules is in natural straight grained elm, with display boxes of mahogany and grey warerite inset into the walls. Lighting is from concealed tubes behind the panelling and floating canopies carrying tungsten and cathode lighting. In the entrances to the quay and railway platforms the walls are clad from floor to ceiling in Genoa marble and the floors are in dove-grey terrazzo. The panelling of the immigration hall is entirely of Honduras mahogany. The ceiling colour is pale lime, and the flooring is of $\frac{1}{4}$ in. dove grey linoleum. The deep texture curtains are pale turquoise blue. Console desks and stools for use of the customs authorities are of limed oak; the wall seating is covered in dark blue hide. The telephone hall is panelled throughout in slatted teak, and telephone boxes are in teak and sheet laminated plastic. The circular seat has a red hide covering. The writing room is panelled in weathered sycamore; the writing tables, which are of weathered sycamore with inset black hide tops, are cantilevered from the wall on metal brackets. All doors



2

3

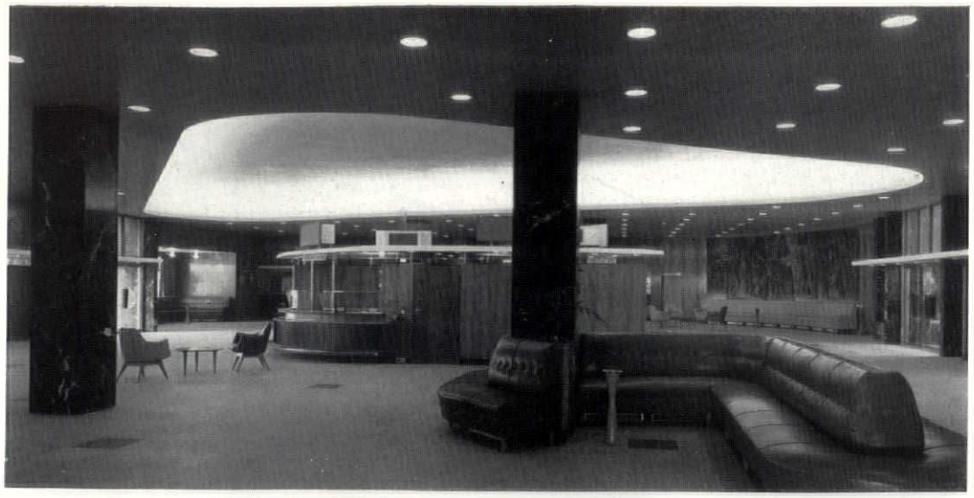


2, the passenger waiting hall with bureau-de-change in the centre and, on left, the entrance from the quay shown in 1 overleaf. 3, one of the hide-covered seats in the centre of the hall, with the screened writing-room and the telephone room beyond. The columns are faced with Genoa marble.

key
1, waiting hall.
2, rail tickets.
3, bureau-de-change.
4, control room.
5, writing room.
6, telephone room.
7, vestibule.
8, immigration room.
9, office.
10, search and interview.
11, Union Castle Line tickets.
12, buffet.
13, kitchen.
14, stock and cellar.
15, switch gear.
16, store.
17, ladies' room.
18, ladies' w.c.
19, gents' w.c.
20, bookstall.

are of armour plated glass, hung in stainless steel and mahogany frames, with handles of Bombay rosewood. Thermostatically controlled pyrotechnic cables in the floor provide the heating, which is augmented by a re-circulating air trunking system under the seating. The mural on the north-west wall was painted by John Hutton on 12 plywood panels, with a total area of 24 ft. by 8 ft. 6 ins., and represents scenes from 'The Lusiads.'

Heal's Contracts, Ltd., in designing this interior, worked to the general requirements of the Docks Engineer, J. H. Jellett, while the architect to the British Transport Commission, Dr. F. F. C. Curtis, acted as consultant.



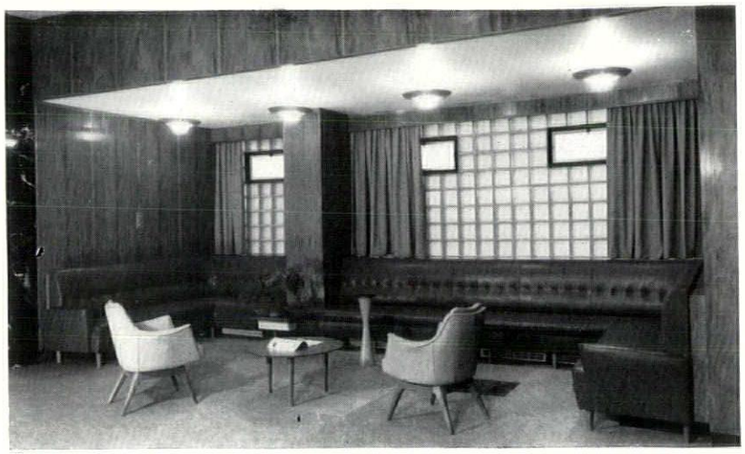
4

5

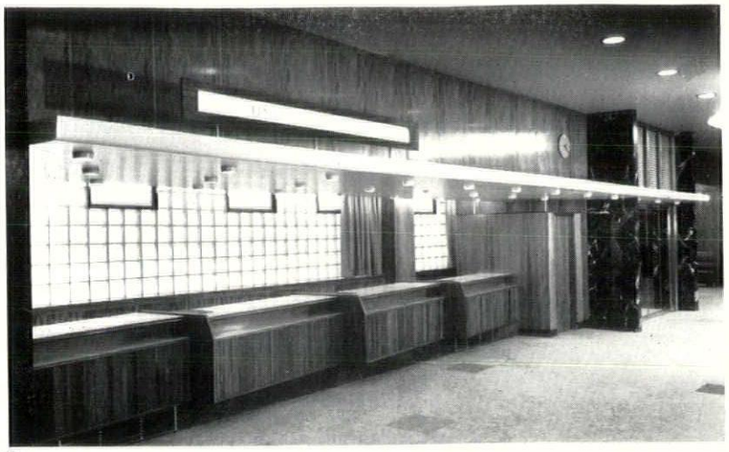
PASSENGER WAITING HALL, SOUTHAMPTON

4, looking into the hall from the eastern vestibule. 5, inside the vestibule, looking towards the hall. The panelling is elm. 6, the writing room (5 on plan opposite), reached from the hall through the telephone room. The panelling and tables are of weathered sycamore, the latter being cantilevered from the wall on metal brackets. Table-tops are of black hide.

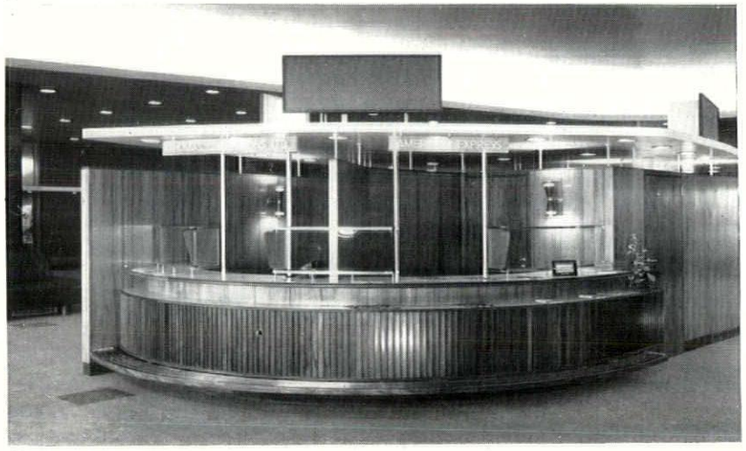
6



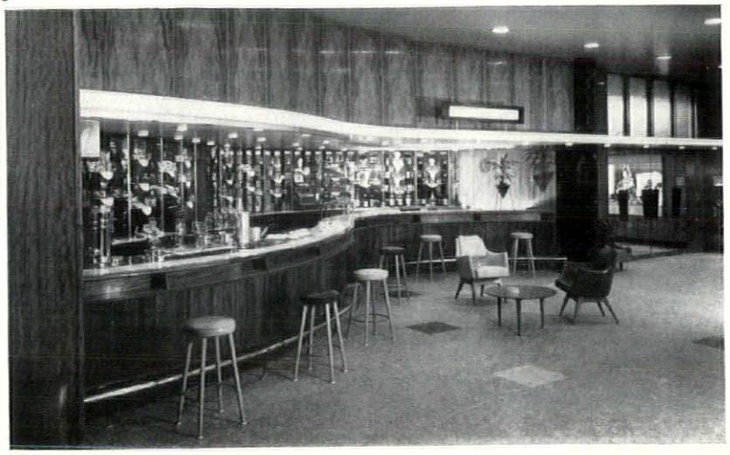
7



9



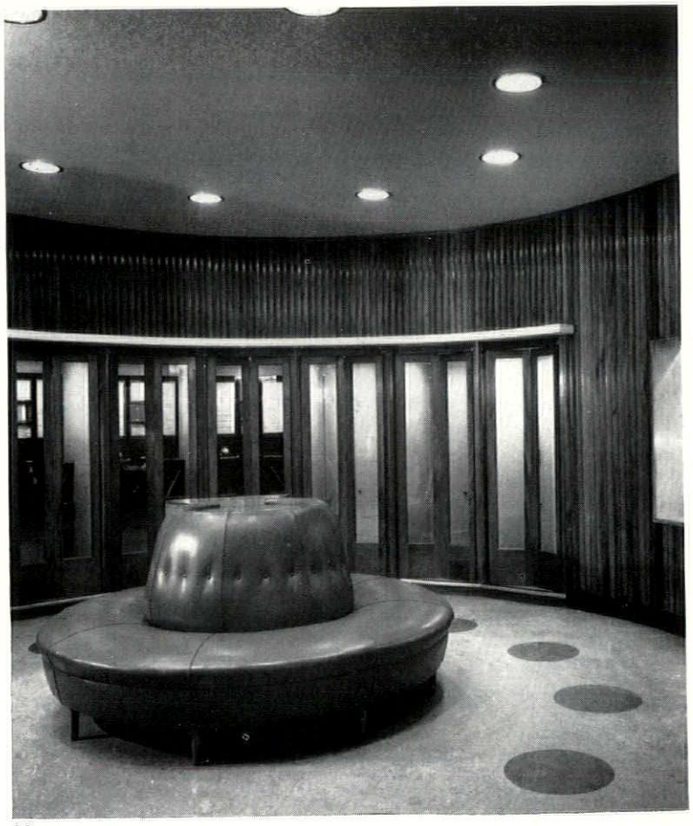
8



10

7, a corner of the hall adjoining the entrance from the quay, with fixed seats covered in hide. 8, *the ticket office and bureau-de-change in the centre of the hall, faced with elm and teak.* 9, *the steamship ticket counter on the south side* (11 *on the plan*), *also faced with elm and teak. On the right is the entrance from the quay, framed in Genoa marble.* 10, *the buffet in the south-west corner* (12 *on the plan*). 11 (*below*), *inside the immigration room, which opens off the hall in the south-east corner. The desks and stools are of limed oak; the wall behind them is faced with slats of Honduras mahogany.* 12, *inside the telephone room. The walls are faced with slatted teak; the seat is covered with red hide.*

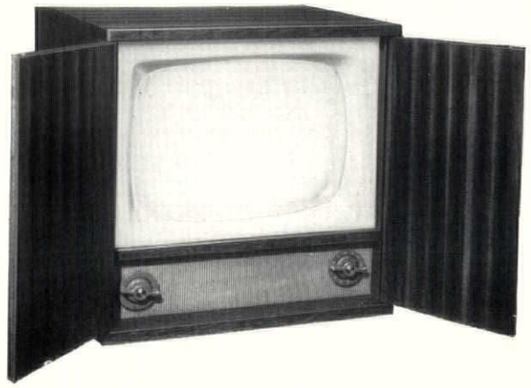
11



12

2 DESIGN REVIEW

These seven television sets are illustrated as representing typical fashions in design prevailing at present throughout the British television industry. They are criticized alongside as being too sedate and unadventurous.



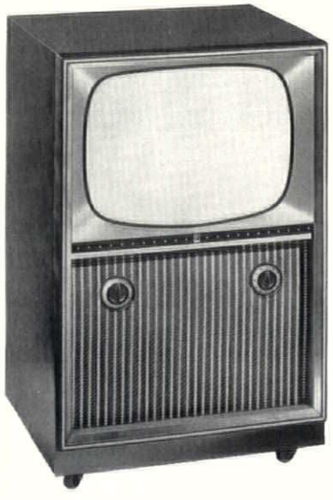
The Appearance of TV Sets

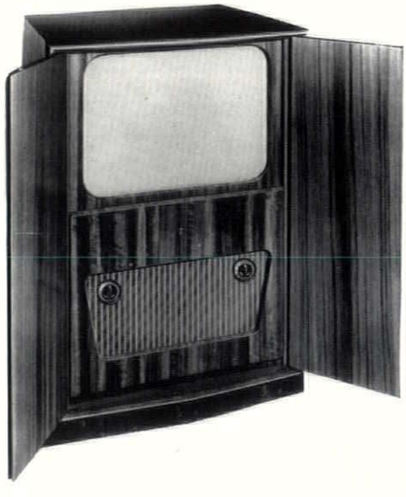
Television is a new art form, so it is not surprising if we find its productions childish or uneven. The design of television receivers, however, is hardly a new art form. One assumes from studying the available models that a set needs a container that is roughly cubic, or for a floor model a cube and a half. The existing techniques of the furniture industry should be able to manage this. Certainly no challenge can have been met with more unanimity. In looking round a television showroom it is necessary to have a training in design to spot the differences. Are all the producers copying each other? Or is the newly constituted television public so articulate that it literally demands sets in dark veneer and, to use Mr. Betjeman's well-worn phrase, ghastly good taste.

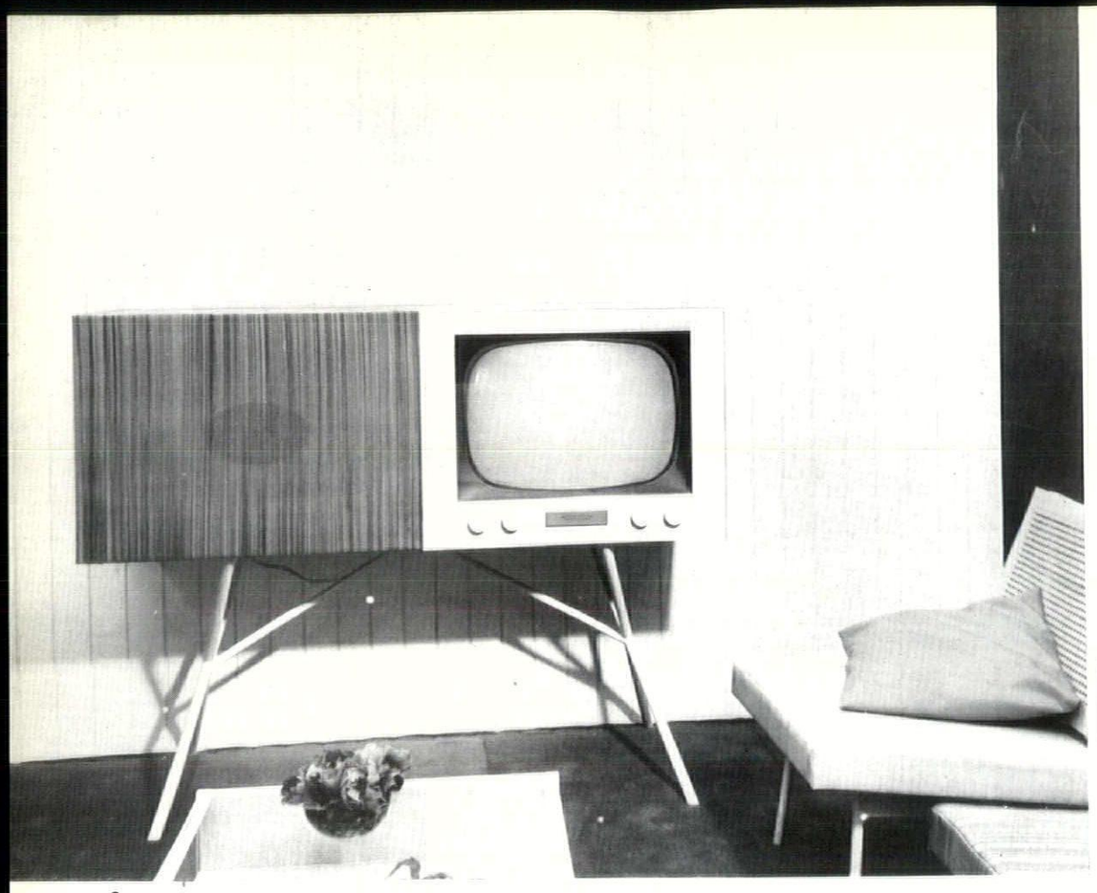
The TV set is the successor to the open fire as the focus of the living room. Curiously this potentially more intelligent focus has exactly the same drawback as the fire—one which central heating was to have freed us from—when it is not on it is actively boring. Many people feel restive under the hypnotic stare of that vacant rectangle. To have as the centre of the family circle a box the size of a refrigerator, and about as interesting, is a depressing situation. Surely the focus of our leisure hours had better not take that form. The caption advertising the Murphy V230, 1, is 'What! no box?' And what a relief it is. Some of the boxes

1

offered are detailed with care, but always inside the same formula. The same situation has arisen as in motor-car design. As soon as one firm hits upon a new formula the other firms race to produce near modifications of it. Then at the next successful breakaway the cycle starts over again. In the more restricted volume of the TV set distinctions are exceedingly nice. One feels nevertheless that the customer is at the mercy of a design







2

2 and 3, combined model for TV and sound designed by Pierre Paulin as the focal point of a 'coin de musique-spectacle.' *A lighter and altogether more domesticated piece of furniture than anything we have in Britain. Where are the Days, Conrans and Races of radio design? Where are all those designers from the schools of engineering design at the RCA and the Central School?*

3

ring. Imagine future generations buying up antique TV consoles and converting them to modern uses for their sheer beauty, as we do square pianos and Victorian washstands. Yet the design of something whose sole purpose is to be looked at should be worth some thought.

One solution to the problem is to build the TV set into a general storage scheme. This requires money and enterprise. A second is to use a projector and focus the room around a screen. There is a projector on the market made by Ferranti, but this is designed to be indistinguishable from any other set with doors. It is a decent cabinet, but like all the others of such formidable respectability as to strike a note of reproach in any room where gaiety or relaxation is the keynote. The designers of Flat 56 were forced to imagine a model of their own.

The client who can afford to build up fitments for his living room can, of course, put any face he chooses on his tele. How long will the more modest viewer in our democracy have to go on staring at this prim satire on free enterprise?

Diana Rowntree.

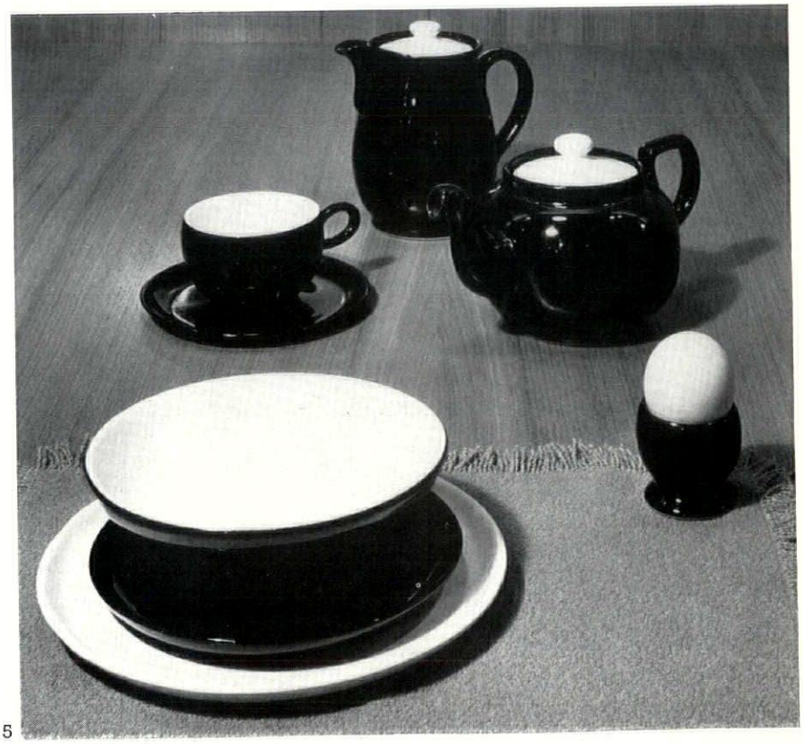
Denby Pottery

The exhibition of Denby Pottery held in March at the Tea Centre calls forth two comments of general significance to the design of ceramics.

Firstly the promise of the gaily shaped pots on the poster, 4, was not fulfilled by the pottery on show. It is true that this promise was not intended literally. The firm's policy in commissioning the poster was to avoid giving particular publicity to any one of their varied wares. The artist, Sheila Stratton, was asked to suggest the basic idea of the Denby shapes. Her suggestion has in fact given the traditional coffee-pot and dish forms that added excitement which is the proper contribution of art to industrial design. One cannot help imagining the stimulus an artist's mind could bring to the shapes of the pots themselves. The traditional shapes of domestic utensils tend to weaken and soften with the years. A first-class designer or artist could reaffirm them in such a way that we should have a vernacular pottery capable of competing with the Italian. Of the many ranges of Denby ware the 'Eclipse', in black and white, 5 and 6, is nearest to the vigour of the best casserole shapes. But black and white was a disappointment after the poster's glimpse of black, red and green used so boldly. If one

4

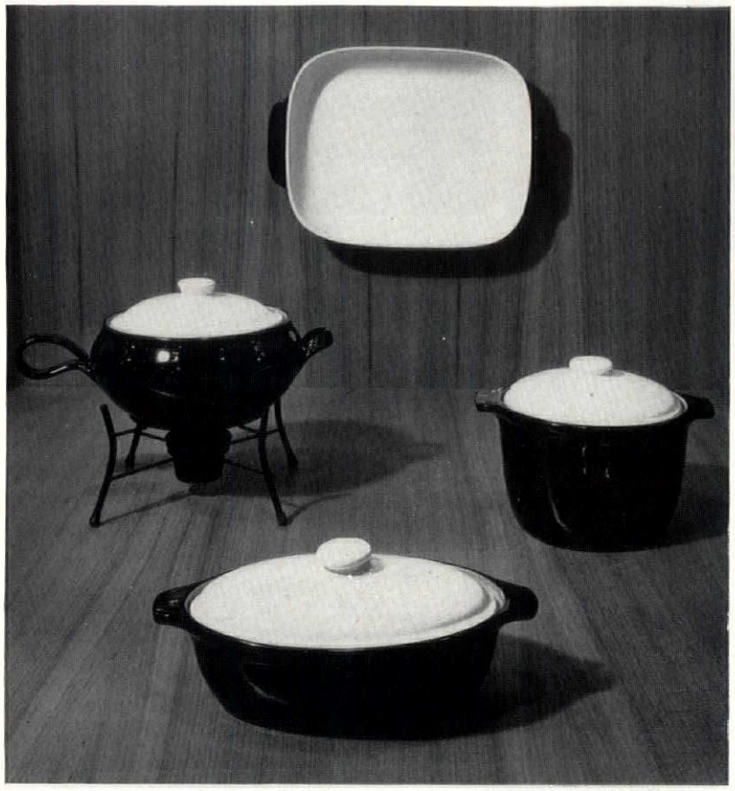
4, the shapes used on the poster and invitation card to the exhibition. They have an elegance and a broad colour treatment not found in modern British pottery. 5, '*Eclipse*' *breakfast ware. Compare with the coffee-pot in the poster.*



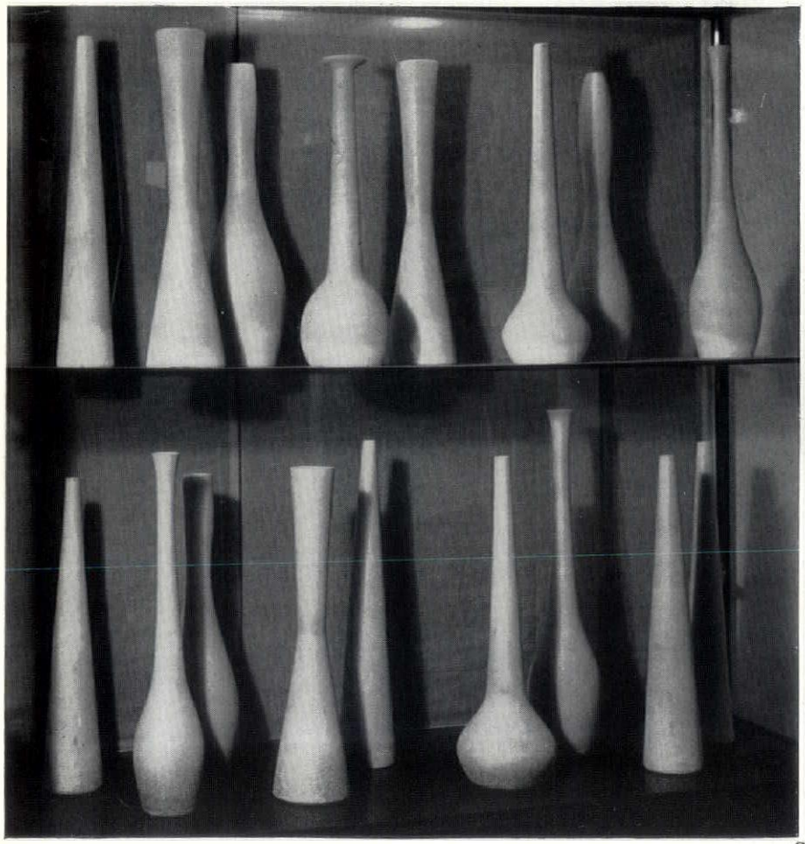
5

wanted strong colour in the kitchen one would not be satisfied with the gentle, and often genteel, decorations offered.

The second arresting contrast was part of the exhibition technique. Outside the entrance was a case of undecorated pots, 7, the functional and original shapes forming a dramatic group with which the decorated products, 8, could not compete successfully. It is not easy to enhance the dignity of these slender silhouettes. Is there any need to try? Be that as it may the potentialities of industrial design, or just plain art, for this purpose have not here been exploited. Denby Pottery has a fine living tradition, and when it comes to mounting an exhibition they can pick an exhibition designer and a poster artist with skill. We hope they will not be deterred from the task, which is today immeasurably more difficult, of finding artists who can bring the surface decoration of their pots up to the same level. **D.R.**



6



7

8

6, casseroles in 'Eclipse' ware from Denby Pottery. 7, case of unfired vases. 8, the same shapes finished and decorated.

Edinburgh Weavers

The Edinburgh Weavers' new showrooms in Mount Street houses a remarkable range of ideas over and above the good quality of the weaves.

The scale of the weaves ranges from that of the yarn itself to the enormous scale of 'Pastoralle' and 'Temerity' with its 5-in. stripe. One weave of distinction not here illustrated is 'Cadenza'. This shiny cotton-rayon material is in black, white, brilliant red, purple and green with a hair-fine stripe in black, or in the case of the black a white.

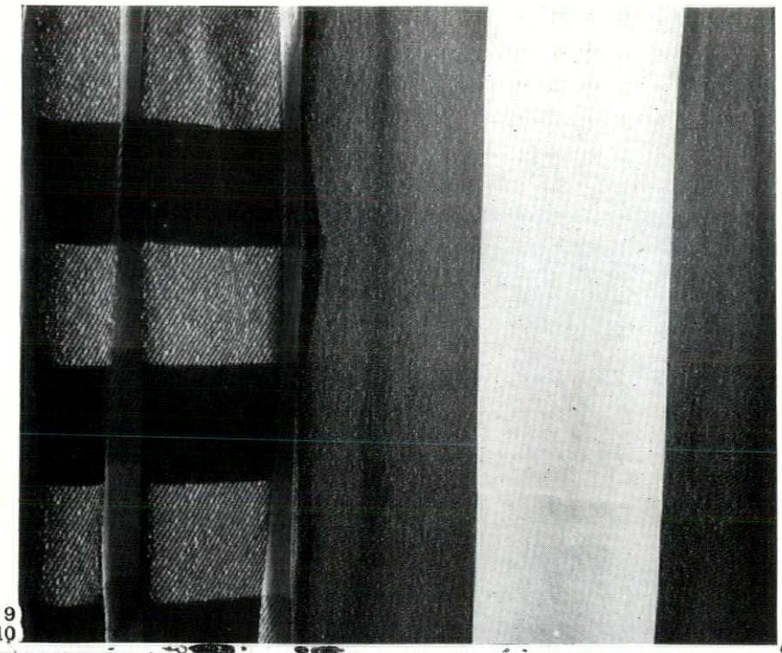
This firm's admirably catholic attitude to artists and designers results in the greatest variety of prints. At one end of the scale is Keith Vaughan's enormous figure drawing, at the other Humphrey Spender's highly disciplined design for a chintz, 'Flurry.' This expresses perhaps for the first time the lightness, and light-reflecting qualities of this material. Mid-way between these extremes is Geoffrey Clark's 'Grape.' Here the combination of

largeness of scale with sensitive draughtsmanship, of rich colours used with semi-abstract simplicity produces an impersonal unemphatic quality which is as rare in textile design as it is, to my mind, essential.

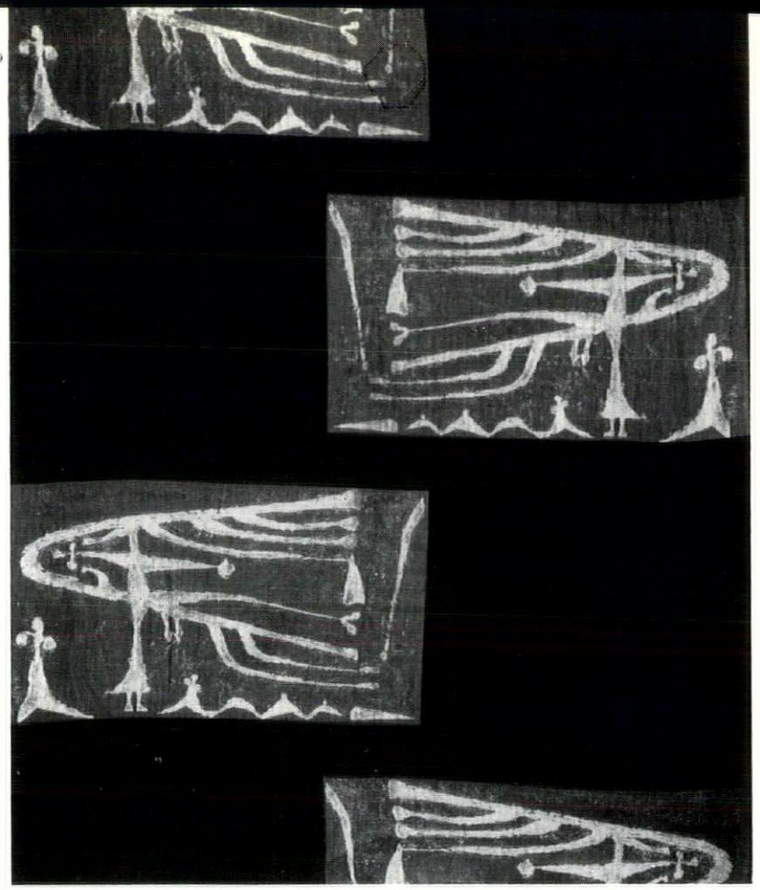
The range of chintzes here is in a truly contemporary spirit. There is a bold well-designed stripe, 'Flurry' an informal stripe, and informal designs that get right away from the traditional primness. Contessa Colbertaldo's 'Tuscany' gives an impression of a third dimension that has an effect of remarkable softness.

D.R.

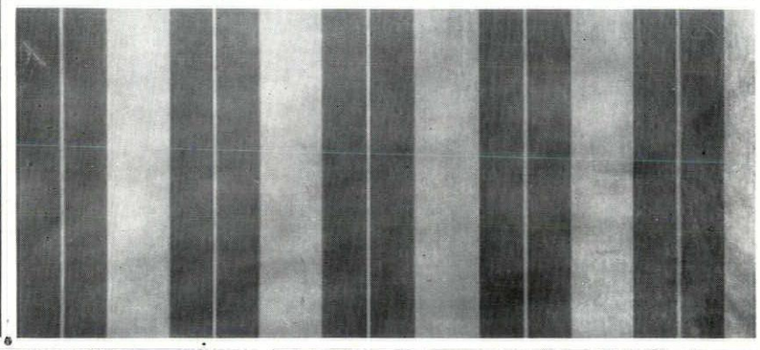
New textiles from Edinburgh Weavers: 9, heavy weaves in cotton and rayon. Left 'Pastoralle' in grey-black or red and white. Approximately 44s. per yard. Right 'Temerity' in grey or black and white. Approximately 30s. per yard. 10, *examples of well designed small scale weavers from the large variety stocked.* 11, *'Grape,' Geoffrey Clark's screen print on linen. Extremely successful with a very dark brown ground, the motifs printed in greenish grey and copper on white. This sets up a shimmer that shows the design with its full subtlety. Approximately 25s. per yard.* 12, *striped chintz in a range of 12 colours from charcoal to pastel shades. Approximately 14s. per yard.* 13, *chintz 'Tuscany' by Contessa Colbertaldo. In a range from black to pastel shades. The technique of the drawing here gives the fabric a recessive quality very useful where hangings are required to break down shapes rather than emphasize them.*



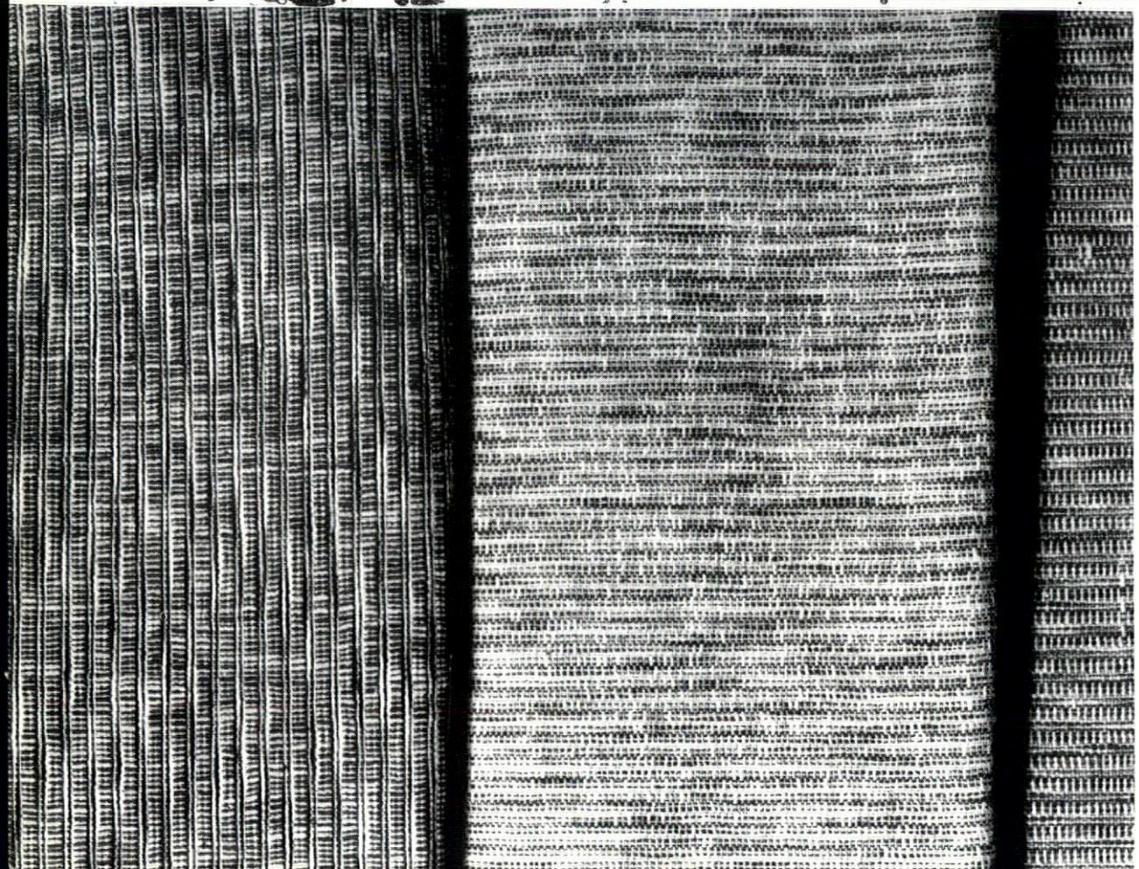
9
10

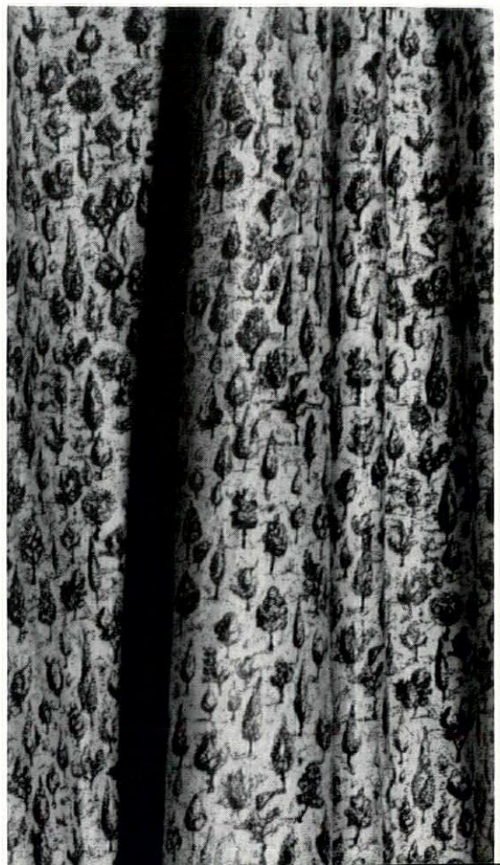


11



12





13

3 TECHNIQUES

DAYLIGHT AND VENTILATION THROUGH THE ROOF

by Robert Maguire

Occasionally the functional principles behind the design of a commonplace building element are taken for granted and not subjected to the analytical scrutiny which is characteristic of the modern movement. When this happens, the architect is likely to find himself at the mercy of the manufacturer, and in the case of rooflighting this has certainly been so. However the recent advent of new materials, such as resin-bonded glass fibre, and new techniques, such as the economical casting of large glass areas, has encouraged a reconsideration of form and, through it, of function—a reversal of the logical procedure. The result is a separation, at last, of lighting and ventilation.

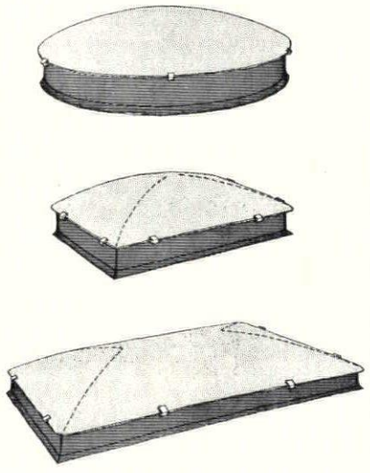
Remembering that glass roofs were so fruitful a source of inspiration in the engineering structures of the nineteenth century, it is surprising that the technical development of rooflighting should subsequently have remained static. This may be due to some extent to the concentration of emphasis on the development of the troublesome glazing bar to the neglect of the structural possibilities of glass; or again to a proneness to regard the function of the rooflight as similar to that of the ordinary window.

From the functional point of view the chief difference between a window and a rooflight is that there is a strong case for making a window openable. For though a fixed pane and an adjustable louvred ventilator may together produce some of the physical effects of an opened window they are no real substitute: the physical experience of an opened window cannot be simulated. But provided there is ventilation to hand, there is no comparable motive for opening a rooflight. Yet it is this provision of a means of opening which complicates the design of a light, whether in a window or in a roof, and which has perhaps inhibited the design of rooflights. Now, at long last, we are coming to realise that their glazed parts need no longer open, and that as a consequence their design can be rationalized and most of the associated gadgetry eliminated. In addition the great amount of research carried out on ventilation has resulted in its becoming a highly specialized matter, and equipment of great efficiency is now available. It is therefore often of advantage to separate lighting from ventilation entirely.

This article is concerned with types of rooflighting recently introduced which recognize these distinctions. In some, ventilation has been differentiated but remains part of the same unit, while in others it has been entirely omitted, reliance being placed on specialized natural ventilation equipment. Some of the latter are also described, but the selection is not intended to be comprehensive.

Domelights

Glass. One-piece dome rooflights in rough cast glass are available in circular, square and rectangular shapes, 1. The range of sizes is large: circular domes may be obtained from 18 in. to 72 in. in increments of 2 in., while for square and rectangular domes there are a number of standard sizes up to 72 in. by 48 in. The 72 in. maximum size is considered to be the limit to which a piece of glass, even if doubly curved, can safely support itself. The domes are normally unreinforced, but can be supplied in wired glass if required. Owing to the method of manufacture wired glass domes may develop cracks, but the manufacturers claim that these remain watertight and the dome will still be perfectly safe.

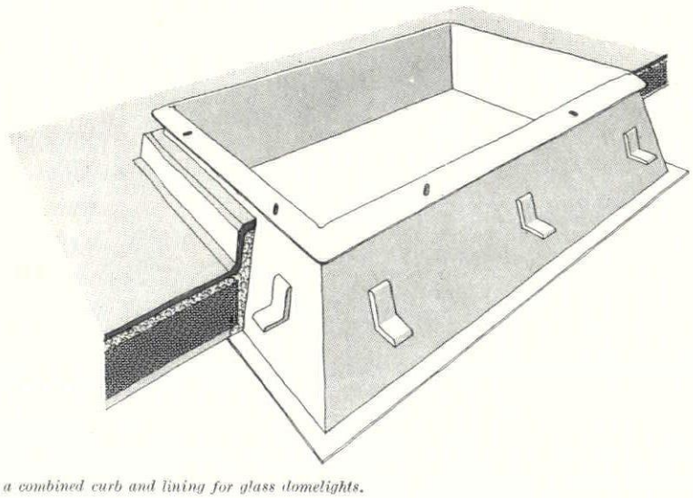


1, *circular, square and rectangular glass domelights. Sizes: Circular 18 in. diameter to 72 in. diameter in 2 in. increments. Square, 36 in., 42 in., 48 in. Rectangular, 48 in. by 36 in., 60 in. by 42 in., 72 in. by 48 in.*

Square and rectangular domelights are slightly more expensive area for area than the circular type, but this may be offset by the cost of trimming the simpler opening in the roof.

The operation of forming accurately shaped openings and the curbs on which the domelights rest can be simplified by using prefabricated combined curbs and linings, 2. These are made of mild steel or aluminium, and have the added advantage of reducing the width of the curb, a matter of some importance since a loss of only 2 in. around the outside of a 36-in. circular dome will cut out 25 per cent of the light. To increase the effective lighting further, the prefabricated linings are splayed.

Whether supported on linings or curbs formed by the builder, the domelights are bedded on asbestos pads and secured with metal clips at intervals. The combined action of the clip and asbestos allows the dome to find its own bed while at the same time preventing lifting by wind.



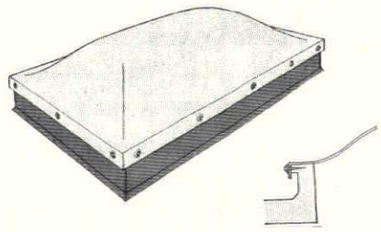
2, *a combined curb and lining for glass domelights.*

Acrylic Sheet. Domelights in 'Perspex' acrylic sheet are now made, and standard types are available similar in shape to those of glass. For use with lightweight constructions acrylic sheet has the advantage of weighing only half as much as glass, so cutting down dead load.

The method of manufacture is appreciably different from that of glass domelights, and can be modified without difficulty to enable special shapes to be made at no great increase in cost, even for small numbers. The size of special domes is limited to 66 in. by 42 in.

Fixing of the standard domelights is usually carried out with metal clips in a similar way to that already described for glass, but the manufacturers have suggested that this could be simplified by moulding the material of the domelight itself to form a flange which can be fixed with screws and washers direct to the curb, 3.

The acrylic sheet can be produced clear (giving 92 per cent light transmission), in white opal, or in transparent or translucent colours. It can be drilled with ordinary tools and is shatterproof.

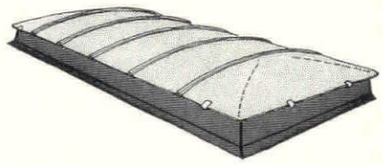


3, *a domelight in 'Perspex' acrylic sheet, suitable for fixing direct to the curb.*

Continuous Strip Rooflights for Flat Roofs

Glass. The makers of glass domelights have developed the principle of increasing the spanning strength of glass by curving it, to provide a simple solution to the problem of continuous strip glazing for flat roofs. Owing to the limitation in size of glass units, the system still requires transverse glazing bars, but since these can be of the simplest form and arrangement, an extremely neat appearance is possible.

The rooflight consists of 2-ft. wide curved sheets of rough cast glass forming a continuous barrel-vault of 4-ft. or 6-ft. span which may be stopped at the ends with half-domes, 4.

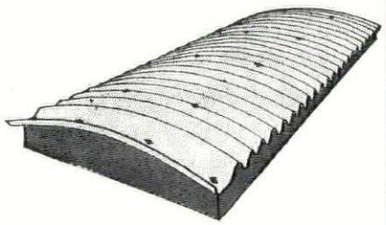


4, *a continuous strip rooflight in curved glass with half-dome ends. Available to any length (multiples of 2 ft.) and in widths up to 7 ft.*

Only the glazing bars and the half-domes are fixed to the prefabricated curb, which is combined with the lining and composed of unit lengths.

Acrylic sheet. By using acrylic sheet in corrugated form, continuous strip rooflights can be constructed without glazing bars, 5. The sheet is fixed to the in-situ concrete or pressed metal curb by means of bolts in the bottom of the corru-

gations; a special washer has been developed to avoid the leakage of rainwater. The internal width of the rooflight may be up to 8 ft. without



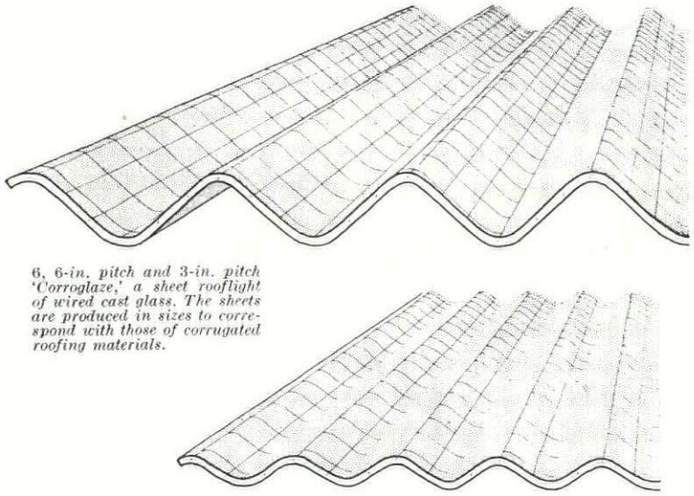
5, a continuous strip rooflight in corrugated 'Perspex.' Widths up to 8 ft. without extra support are possible.

requiring extra supporting structure, while the length is unlimited.

Glass fibre laminate. The corrugated sheets of resin-bonded glass fibre, which will be described more fully later, are also available curved to a minimum radius of 13 ft. These may be used for continuous rooflights in a similar way to acrylic sheet.

Translucent Corrugated Sheetings for Pitched Roofs

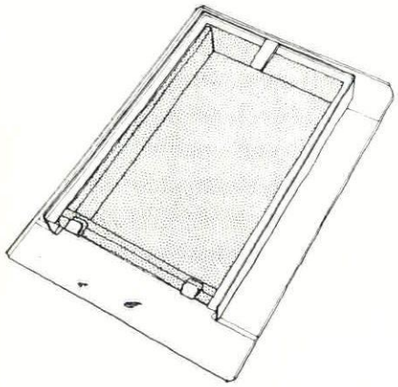
Glass. Recent developments in glass production have enabled sheets of corrugated and wire-reinforced plate glass to be produced. These are now available in two profiles, 6-in. and 3-in. pitch, 6, which conform



6, 6-in. pitch and 3-in. pitch 'Corroglaze,' a sheet rooflight of wired cast glass. The sheets are produced in sizes to correspond with those of corrugated roofing materials.

with the more common profiles of sheet roofing materials. Being completely interchangeable with the normal roof sheeting, the corrugated glass can be arranged to form 'sheetlights' of any shape or size.

Fixing is by simple hook-bolts which are designed to avoid drilling of the glass.



7, the 'Skyvent,' a small single-pane skylight incorporating permanent ventilation. Maximum size 24 in. by 36 in.

Acrylic sheet. The ease with which acrylic sheet can be moulded to any form has allowed the manufacturers to produce a sheetlight to suit every type of corrugated roofing. The material can be drilled, so that fixing may be similar to that used for the asbestos, aluminium, or corrugated iron sheets of the roof covering.

Glass fibre laminates. Resin-bonded glass fibre is a very recently introduced material which is finding applications in many fields. It consists of a core of glass fibre which acts as reinforcement to the tough, lightweight synthetic resin, forming a sheet with nearly three times the weight-for-weight strength of steel. The material may be opaque or translucent, clear or coloured, and in its clear translucent form has a light transmission of over 90 per cent and good diffusing properties, making it an ideal material for sheetlights. The method of manufacture enables it to be moulded to any profile, and a wide range is available to suit most corrugated sheetings.

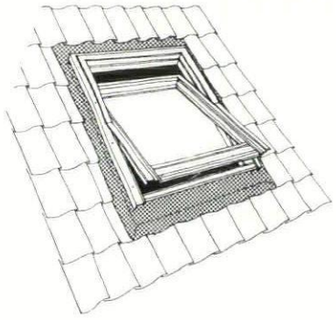
Fire resistance tests have shown the material to have a good performance, due mainly to the indestructible nature of the glass fibre core. It is also shatterproof.

Single Pane Skylights for Pitched Roofs

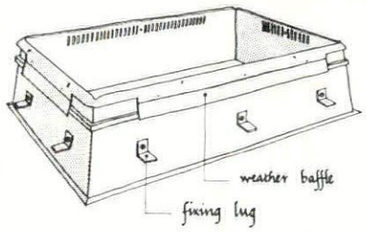
Glass. Small skylights consisting of a single pane of glass set in a flashed upstand are no new feature, and in the past have usually been detailed specially by the architect for the individual job. The relative complexity of the flashings, curb and lining necessary for so simple a requirement as fixing a single pane justifies the development of a prefabricated unit incorporating all these elements. The Skyvent, 7, is a very neat solution to this problem. It is made in galvanized steel or copper, and is available in a range of sizes from 12 in. by 15 in. to 24 in. by 36 in. Permanent ventilation is arranged close to the undersurface of the glass; this also eliminates condensation.

Fixed glass skylights for use with various types of corrugated aluminium roofings are supplied by the manufacturers of the roofings (see *Aluminium Roof Coverings*, AR, March, 1956), and are designed to be interchangeable with their standard sheets.

The Velux domestic skylight, 8, does not truly come within the scope of this article, since it is a development of the Velux window and is intended for use as a low-level window in attic rooms, but is mentioned because it is an interesting solution to the problem of flashing and weathering a complex prefabricated unit while retaining a tidy appearance. It is double-glazed and centre-pivoted, and gives better light distribution in the room than a dormer window of the same area.



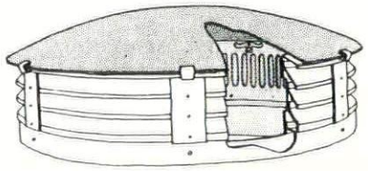
8, the 'Velux' skylight, a double-glazed horizontally-pivoted window for attic rooms.



9, a combined curb and lining for glass domelights with hit-and-miss ventilators.

Ventilating Curbs

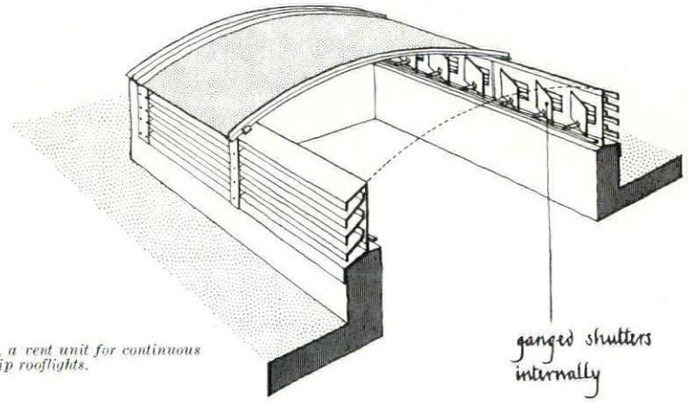
Domelights. The metal combined curbs and linings made for use with glass domelights have been developed further to provide controllable natural ventilation. One type, 9,



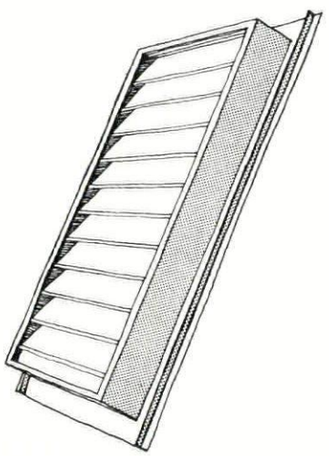
10, a vent unit for domelights, available with or without the internal hit-and-miss grille.

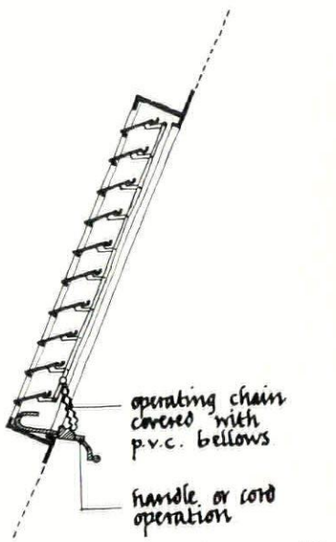
has a simple hit-and-miss grille which is protected on the outside by a metal weather baffle. If more ventilation is required, a higher-standing unit can be used which contains three continuous rows of louvre blades, 10. This is available with or without hit-and-miss grilles on the inside face.

Continuous rooflights. Ventilated upstands for continuous glass rooflights are made in unit lengths to correspond with the spacing of the glazing bars, 11. They consist of metal louvres with an internal lining of ganged shutters which may be remote controlled.



11, a vent unit for continuous strip rooflights.





12, a ventilator with adjustable horizontal louvre blades for use in pitched roofs.

[continued on page 356

Produced in quantity

to a high standard

at a new low cost

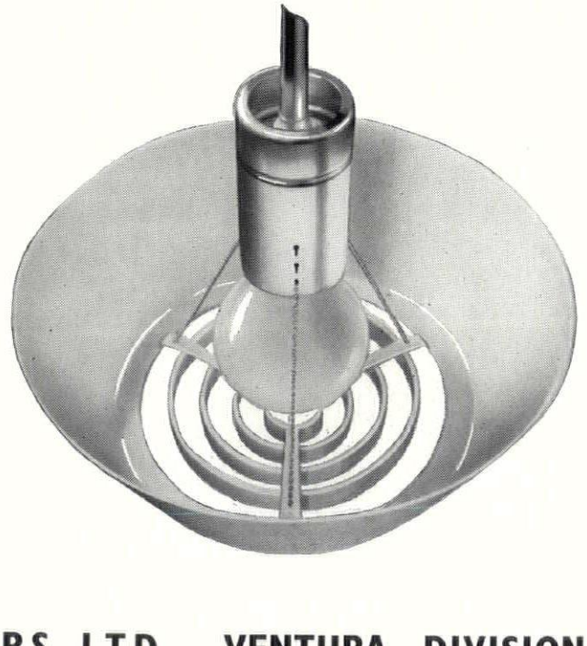
VENTURA 80

for full details ask for

publication V.80.

SPECIFICATION. The 12"⅞ diameter louvred diffuser is moulded in a white translucent non-static high temperature plastic, and its position is adjustable for use with a 200w., 150w. or 100w. lamp.
Direct downward lighting is obtained through the louvred aperture, the top is open giving shadowless ceiling illumination. Diffused general lighting with low brightness is obtained through the translucent sides.
Metalwork is in anodised aluminium, finished satin silver.

	V.80. Basic Type. for attachments to existing suspensions	**22/8** + 5/2 P.T.
	V.82. Ceiling Type	**26/8** + 6/0 P.T.
	V.84. Flex Suspension Type	**28/0** + 6/4 P.T.
	V.86. Tubular Suspension Type	**30/8** + 6/11 P.T.



LIGHTING MA FITTINGS

MERCHANT ADVENTURERS LTD. **VENTURA DIVISION**

43, PORTLAND ROAD, LONDON W.11. TELEPHONE PARK 5617/8/9 'GRAMS MERCHADVEN LONDON

continued from page 354]

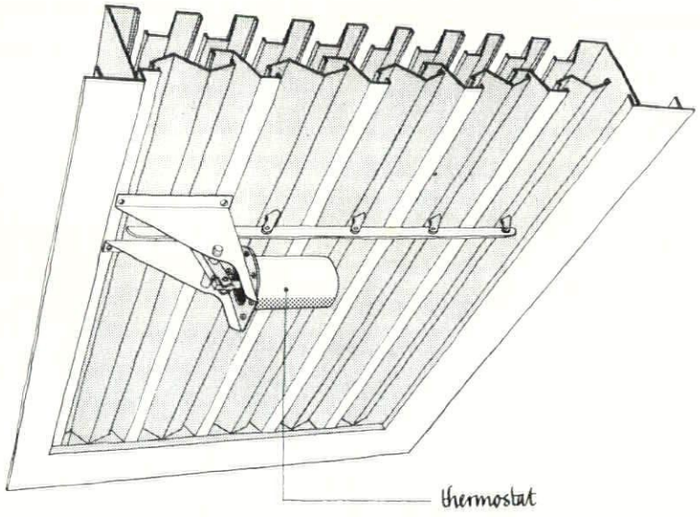
Natural Extract Ventilators

Roof ventilators which do not rely on fan-powered extraction are of two types: flush-mounted, which are usually louvred and controllable, and those which protrude from the roof in order to take greater advantage of wind for aerodynamic extraction.

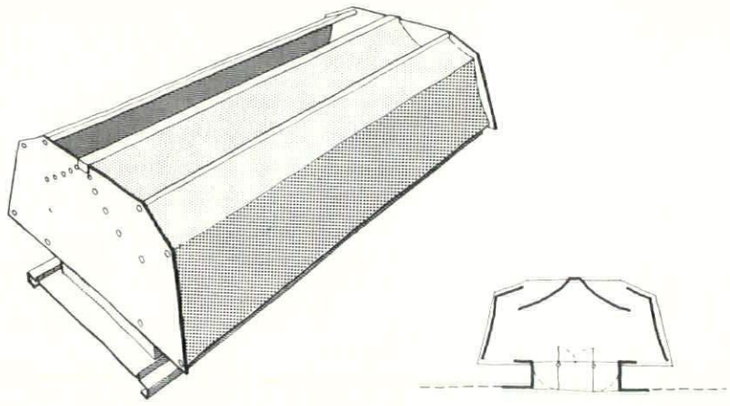
Flush-mounted ventilators. To remain weatherproof this type should not be fixed at too low a pitch: 30 deg. is considered to be the minimum. Two kinds are available, with horizontal or vertical louvre blades, 12 and 13. The horizontal type gives 100 per cent clear aperture when fully opened, and it operates by a worm gear and chain of the type used for car windscreens; the chain is covered by a p.v.c. bellows. The vertical-louvred units contain two layers of blades, the top layer being fixed for weatherproofing, and the bottom layer having alternate blades pivoted. The pivoted blades are gang-operated either manually or by a non-electrical thermostat.

Protruding ventilators. A great number of different shapes of roof-mounted ventilators are available, of many shapes and sizes. Because of their conspicuous position, it is unfortunate that so many of them are of nondescript appearance; the aerodynamic principle, one feels, should produce inevitable good looks in this field as in others. Two are illustrated here which are both efficient and neat in appearance, 14 and 15. A third, which is intended for mounting on the ridge of a double-pitched roof, 16, appears flush with the roof covering on the outside, but is in effect a modified version of a protruding type. It can be adjusted to fit roofs of any pitch.

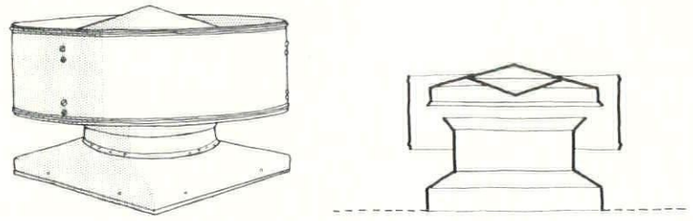
[Illustration 16 to this article, and the Acknowledgments, appear on page 358.]



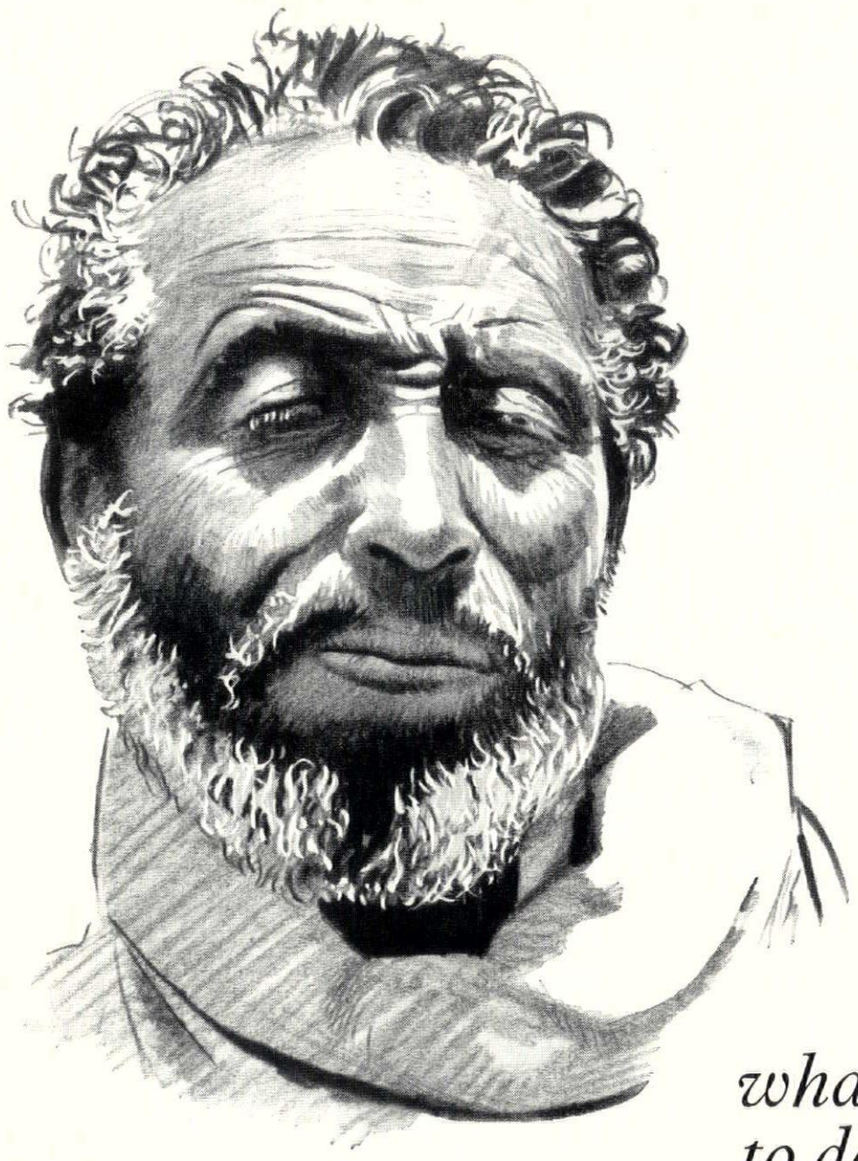
13. *a roof ventilator with verticle louvres which will remain weatherproof even on low-pitched roofs. Alternate blades of the inner louvre rotate to control ventilation; these may be operated either manually or by a thermostat, as shown here.*



14. *a natural extraction ventilator for industrial buildings.*



15. *a circular natural extraction ventilator.*



Abyssinian tribesman—an illustration from the story of the Lake Tana expedition, "Into the Blue" (published by Collins).

what can he have to do with PAINT?

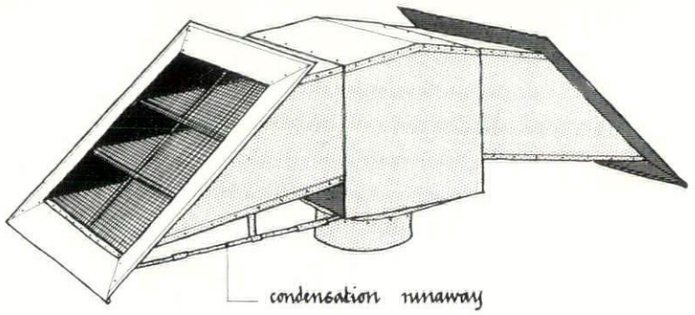
Just this. He has encountered one of the most rigorous tests a paint has ever had — an ordeal by travel on the *Lake Tana expedition. Manderlac enamel protected the expedition car on the four-month journey to the source of the Blue Nile. 12,000 miles of scorching sun, salt-laden humidity, torrential monsoon rains and the paint was as good as new. Mander's quality has NO superior.

MANDER'S *have the answer*

Mander's Architectural Advisory Service will be glad to supply details, specifications and colour cards of their complete range. *Send for the interesting leaflet on the expedition.

MANDER BROTHERS LTD., WOLVERHAMPTON

continued from page 356]



16, *an extractor ventilator for concealed ridge mounting.*

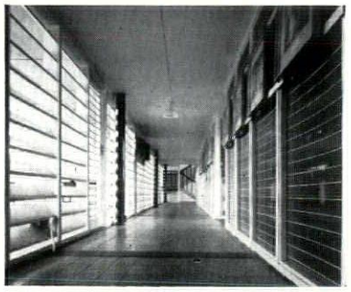
acknowledgments
T. & W. Ide Ltd.: 1, 2, 4, 9, 11. Greenwood's & Airvac Ventilating Co. Ltd.: 7, 10, 15. Colt Ventilation Ltd.: 12, 13, 14. Imperial Chemical Industries Ltd.: 3, 5. Corroglaze Ltd.: 6. The Velux Company Ltd.: 8. G. A. Harvey & Co. (London) Ltd.: 16.

4 THE INDUSTRY

Tropical Openwork Screen

We illustrate (right) an interesting use of steel wire mesh at the Kumasi College of Technology in the Gold Coast (which was described in the May issue of the ARCHITECTURAL REVIEW). The problem was to find a material which would be strong enough to serve as a protecting screen to stores, but would give free passage to air and would stand up to a very humid atmosphere. The choice was BRC Weldmesh Ref. No. 31, which is a 3 in. by 1 in. mesh manufactured with 5 s.w.g. main wires and 10 s.w.g. cross wires. The panels are 6 ft. 8 in. high and 2 ft. 11 in. wide. The mesh was coated with anti-rust primer and painted three coats, and is secured with wood beads to a wood frame.

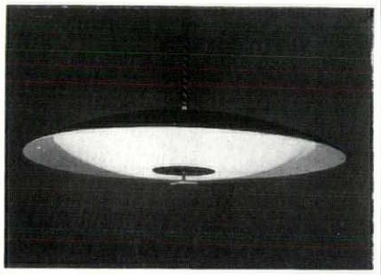
B. R. C. Engineering Co. Ltd., Stafford.



Lighting Fitting

By general standards of design prevalent in Italy the Milan Triennale must be one of the world's arbiters of fashion, and to receive an award at this show is probably one of the highest compliments obtainable. The FM.7012 lamp (below) received a silver medal at the recent tenth Triennale and is yet another of the prize-winning designs by John Reid for George Forrest & Son Ltd. It consists of a stove-enamelled black spun-aluminium reflector, 2 ft. in diameter, with a convex opal glass shade. The fitting is designed for four 40-watt bulbs which are easily replaced via the satin-silver-plated screw release catch in the centre of the glass shade. A special ceiling rose is supplied and the lamp is marketed at £17 16s. 9d. (including purchase tax).

George Forrest and Son Ltd., Osborne Road, London, W.3.



Waist-High Oven

After nearly two decades of persistence there is at last a waist-high oven back on the market with the very original innovation of a grill set in the top of the oven. This composite cooker is manufactured by English Electric and is available in white or cream at a cost of £70, there being no purchase tax at the

The new English Electric cooker with raised oven.

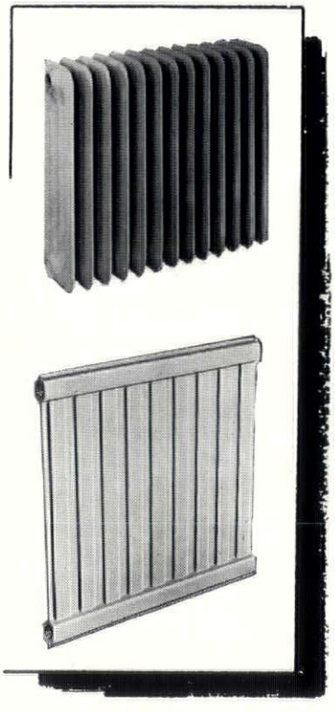
[continued on page 360

THE LIMMER & TRINIDAD LAKE ASPHALT CO. LTD.
TRINIDAD LAKE HOUSE, 232-242 VAUXHALL BRIDGE ROAD, S.W.1.
TELEPHONE: TATE GALLERY 4388

"Golly!..the Architect's given us Stelrads"

Radiators in steel are the ideal heating medium, and Stelrads are the best of all. The steel columns, which are oxy-acetylene welded by a patented process, conduct heat quickly, and when required respond rapidly to changes in temperature. Maximum heating surface is, of course, desirable, and equally important is accessibility for cleaning. In Stelrad column radiators both are happily combined, their smooth steel surface taking paint very well with less tendency to harbour dust.

Panel radiators are also a Stelrad feature, and our recent four angle bay window model is of special interest. Our catalogue will give you all the information you are likely to require, and a copy will gladly be sent you on request.



STEEL RADIATORS LIMITED

Top illustration shows a three column Stelrad, and below a wall radiator.

BRIDGE ROAD SOUTHALL MIDDLESEX TELEPHONE: SOUTHALL 2603

continued from page 358]

moment on cookers. As can be seen from the illustration, the lower half of the cooker contains a storage cupboard and three hot plates, and above this hob is the oven. The very individual occupation of cooking is regrettably reduced to mathematical accuracy by the adaptation of such things as a pre-selected time switch, but the old-type three-position switch (high, medium and low) is improved upon by the inclusion of simmerstat switches which give a wider range of temperatures. The whole unit measures 25½ in. wide, 26 in. deep and 61 in. high, weighs 238 lb. and should be fitted to a 30 amp. cooker circuit.

The English Electric Co. Ltd., Marconi House, Strand, London, W.C.2.

CONTRACTORS etc

Bank of England Printing Works. *Architects:* Easton & Robertson. *Quantity surveyors:* Gardiner & Theobald. *Consultants: Structure:* Ove Arup & Partners. *Mechanical services and electrical installations:* Edward A. Pearce & Partners. *Drainage:* Daniel Longden. *Acoustics:* Hope Bagenal. *General contractors:* Sir Robert McAlpine & Sons. *Sub-contractors: Mechanical and ventilating installations:* G. N. Haden & Sons. *Electrical installations:* Electrical Installations Ltd. *Windows and north lights:* Crittall Manufacturing Co. *Patent glazing:* British Challenge Glazing Co. *Lifts:* Waygood Otis Ltd. *Wood block and Strip flooring:* Stevens & Adams Ltd. *Asphalt paving and roofing:* Val de Travers Asphalte Paving Co. *Felt roofing:* Ruberoid Co. *Monorails:* Matterson Ltd. *Roller shutters:* Dennison Kett & Co. *Folding sliding doors:* Bolton Gate Co. *Floor and wall tiling:* Carter & Co. (London). *Kitchen equipment:* Benham & Sons. *Terrazzo:* Diespeker & Co. *Pneumatic tube system:* Lamson Engineering Co. *Metal steps and platforms:* Lionweld Ltd. *Balustrading and fencing:* Grundy Arnatt Ltd. *Fibrous plaster:* E. J. & A. T. Bradford Ltd. *Arch linings:* Tentest Fibreboard Co. *Ceiling boarding:* Anderson Construction Co. *Linoleum tiles:* Korkoid Decorative Floors. *Cork tiles:* G. Stephenson & Co. *Doors and panelling:* George Parnell & Co. *Metal partitions:* Rowe Brothers. *Demountable partitions:* Holoplast Ltd. *Paint:* I.C.I. Ltd.; Vitretex Ltd. *Cement glaze:* Robbs Cement Enamel Finishes Ltd. *Acoustic lining:* Turners Asbestos Cement Co. *Facing bricks and flint bricks:* Henry J. Greenham (1929) Ltd. *Sanitary fittings:* Shanks & Co.; John Bolding & Sons. *W.C. partitions:* Venesta Ltd. *Ironmongery:* Chubb & Sons Lock & Safe Co. *Lettering:* The Lettering Centre. *Landscape architect:* Miss Mary Braendle.

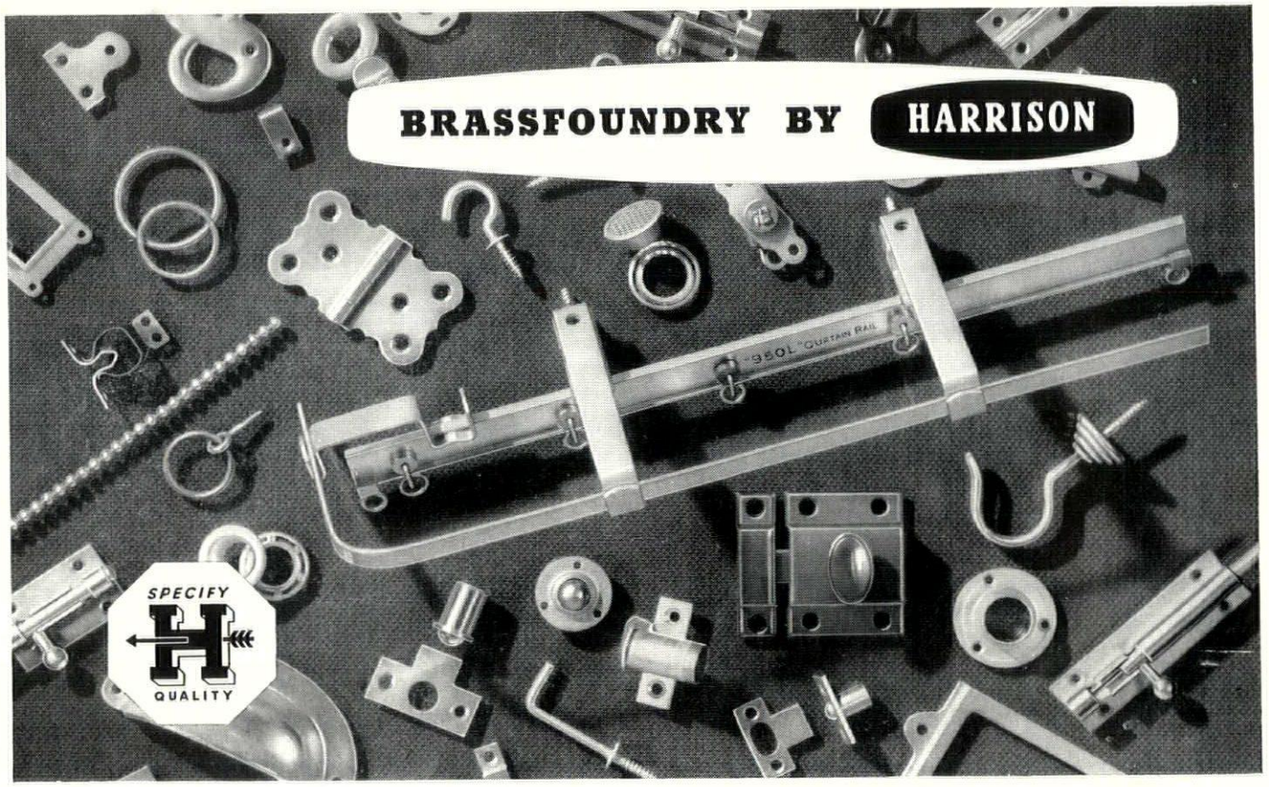
Buildings in Hong Kong. *Architect:* Prof. R. Gordon Brown. *Steel windows:* Crittall Mfg. Co.; Henry Hope & Sons. *Door furniture:* James Gibbons Ltd.; Union Locks Ltd.; Josiah Parkes & Co. *Laboratories equipment:* Baird & Tatlock (London) Ltd. *Light fittings:* General Electric Co. *Lifts:* Waygood-Otis Ltd. *Sanitary fittings:* Shanks & Co.; Twyfords Ltd. *Air-conditioning:* Gilman & Co. *Glass:* Pilkington Brothers Ltd. *Floor tiles:* Semtex Ltd.; The Marley Tile Co.

Health Centre at Welwyn Garden City. *Architects:* C. H. Aslin, County Architect, and Patricia A. Townsend. *Consultants: structural,* Ove Arup & Partners; *electrical,* T. Bottomley, County Architects' Department. *Quantity surveyor:* E. F. Martin, County Architects' Department. 'Punt' system of roof units and wall panels designed by Ove Arup & Partners, in conjunction with the County Architects' Department and C.D. Productions Ltd. *Clerk of Works:* F. L. Green. *General contractors for site slab, site works, boiler house and drainage:* Crook Bros.; *superstructure, installation and finishes:* C. D. Productions Ltd. *Sub-contractors: roofing felt:* Permanite Ltd. *Glass:* James Clark & Eaton Ltd. *Thermo-plastic flooring:* Hollis Bros. *Composition block flooring:* Granwood Flooring Co. *Waterproofing material:* Tretol Ltd. *Central heating, hot water and boilers:* Weatherfoil Heating Systems Ltd. *Electric light fixtures:* Falk Stadelman & Co.; Hume Atkins & Co.; Nettle Accessories Ltd. *Coatpegs:* A. J. Binns Ltd. *Slate sills:* Bow Slate & Enamel Co. *Paint:* Joseph Freeman, Sons & Co.

Flats in Osnaburgh Street, London, N.W.1. *Architects:* Davies & Arnold. *Assistant-in-charge:* R. Tucker. *Consulting engineers:* G. A. Dodd & Partners. *Quantity surveyors:* C. E. Ball & Partners. *General contractors:* John Laing & Son. *Sub-contractors:* (structure) *demolition:* Lea Bridge Demolition Co. *Asphalt:* General Asphalte Ltd. *Reinforced concrete:* Caxton Floors Ltd., and John Laing & Son. *Slates:* London Slate & Tile Roofing Co. *Glass:* Faulkner Greene & Co. *Artificial stone:* The Atlas Stone Co. *Structural steel:* Redpath Brown & Co. *Patent flooring:* Marley Tile Co. (Equipment) *Gas fixtures:* Radiation Group Sales Ltd. *Gas fitting:* North Thames Gas Board. *Electric wiring:* David Thompson Ltd. *Plumbing:* Ellis (Kensington) Ltd. *Door furniture:* W. N. Froy & Sons. *Window casements:* Crittall Manufacturing Co. *Sanitary fittings:* John Knowles & Co. (London). *Plaster:* Pollock Bros. (London). *Joinery:* The Rothervale Trading Co.; Gliksten Doors Ltd. *Tiling:* S. A. Forbes & Son. *Lifts:* Marryat & Scott Ltd. *Paint:* Leyland Paint & Varnish Co.

House in Temple Gardens, Moor Park, Hertfordshire. *Architect:* June Park. *General contractors:* Goodyer & Co. (Builders). *Sub-contractors: Copper roof:* F. Braby & Co. *Heating:* G. N. Haden & Sons. *Strawboard:* Stramit Boards Ltd. *Doors, windows and joinery:* Linden Doors Ltd. *Ironmongery:* A. G. Roberts and Tomo Trading Co. *Floor tiles:* Aero Research Ltd. *Electricity:* A. E. Birk & Sons. *Sanitary fittings:* Stitsons Sanitary Fittings Ltd. *Boards:* Masters and Andren Ltd. *Balcony rail:* Clark Hunt & Co.

New Passenger and Cargo Building at Southampton. *General contractors:* Heal's Contracts Ltd. *Sub-contractors: Rubber flooring:* Semtex Ltd. *Lighting:* Troughton & Young Ltd. *Lighting:* Falks Ltd. *Hide:* Connolly Brothers. *Bar stools:* Ernest Race Ltd. *Metal letters:* J. D. Beardmore & Co. *Luminous signs:* Kenfields Ltd. *Mural:* John Hutton. *Ashtrays:* Bernard Schottlander. *Glass doors:* James Clark & Eaton, Ltd. *Perspex grills:* Wessex Guild Ltd. *Furnishings:* Heal's Contracts Ltd.



HARRISON (BIRMINGHAM) LIMITED, P.O. BOX 223,
BRADFORD STREET WORKS, BIRMINGHAM, 12.

VOLUME ONE HUNDRED AND NINETEEN JANUARY-JUNE 1956

PAGE

ARTICLES AND ILLUSTRATIONS

Accra, Gold Coast, Housing. *Architects*: James Cubitt and Partners. Exterior and interior views and plans 238–239

Accra, Gold Coast, Memorial Hall. *Architects*: James Cubitt and Partners. Exterior and interior views and plans 237–238

Accra, Gold Coast, Offices. *Architects*: James Cubitt and Partners. Exterior and interior views and plans 236

Adam, James, and the Houses of Parliament. *Illustrated article by* John Fleming 326–329

Adam and Mylne. *Illustrated article by* Christopher Gotch 121–123

Alexandria, Dumbartonshire, Hospital. *Architect*: G. L. Gleave. Exterior views and plan 176–177

Aluminium Roof Coverings (Techniques). *Illustrated article by* Robert Maguire 212–216

Art Gallery for Edinburgh (Project). *Architect*: Alan Reiach. Illustrated note 338–339

Aveley, Essex, Factory for Ford Motors. *Architects*: E. R. Collister and Associates. Exterior views, models, drawings and plans 84, 258–261

Bahrein, U.K. Residency Compound. *Architects*: Ministry of Works. Exterior views 342

Bank of England Printing Works, Debden, Essex. *Architects*: Easton and Robertson. Exterior and interior views and plans 299–307

Barn, Soane. (History.) *Illustrated note by* Dorothy Stroud 336

Basildon, Factory for Ford Motor-Cars. *Architects*: E. R. Collister and Associates. Drawings and plans 261–262

Basildon Town Centre. *Architect*: Noel Tweddell (Chief Architect, Basildon Development Corporation). Drawings and plan 8–9

Beauty Salon, London, Bond Street, W.1. *Architects*: Gordon and Ursula Bowyer. Interior views and plans 205–207

Beckton, Essex, Power House, Northern Outfall Sewage Disposal Works. *Architects*: London County Council. Models, drawings and plans 25–27

Beighton, Derbyshire, Grammar School. *Architects*: Architects' Co-Partnership. Drawing and plans 68

Belper, Derbyshire, School. *Architects*: MOE Development Group. Exterior views and plans 263–264

Birmingham, Offices for Paper Factory. *Architect*: Ernö Goldfinger. Drawing and plans 50–53

Birmingham, Police Station. *Architect*: A. G. Sheppard Fidler (City Architect). Drawing and plans 16–17

Book Reviews

Braun-Feldweg, Dr. Wilhelm (Ed.). Normen und Formen. *Reviewed by* Paul Reilly 333

Hastings, J. M. Saint Stephen's Chapel and its Place in the Development of Perpendicular Style in England. *Reviewed by* Jean Bony 333

Hoskins, W. G. The Making of the English Landscape. *Reviewed by* Sylvia Sayer 334

Jones, Barbara. English Furniture at a Glance. *Reviewed by* R. W. Symonds 132

Leask, Dr. H. G. Irish Churches and Monastic Buildings, Vol. I. *Reviewed by* Ian Nairn 273

Müller, E., H. Küas, K. Steinmüller, H. Füssler, H. Bethe, A. Franke and P. M. Zahn. Leipziger Bautradition. *Reviewed by* Nikolaus Pevsner 132

Pagani, Carlo. Architettura Italiana Oggi: Italy's Architecture Today. *Reviewed by* R. Furneaux Jordan 131

Tadashi, Nishimura. Japanese Gardens. *Reviewed by* K. B. Gardner 128

Voyce, Arthur. The Moscow Kremlin, Its History, Architecture and Art Treasures. *Reviewed by* Sir William Hayter 132

Books Reviewed

Architettura Italiana Oggi: Italy's Architecture Today. *By* Carlo Pagani 131

Dartmoor: Building in the National Park 273

English Furniture at a Glance. *By* Barbara Jones 132

Irish Churches and Monastic Buildings, Vol. I. *By* Dr. H. G. Leask 273

Japanese Gardens. *By* Nishimura Tadashi 128

Leipziger Bautradition. *By* E. Müller, H. Küas, K. Steinmüller, H. Füssler, H. Bethe, A. Franke and P. M. Zahn 132

Making of the English Landscape, The. *By* W. G. Hoskins 334

Moscow Kremlin, The: Its History, Architecture and Art Treasures. *By* Sir William Hayter 132

Normen und Formen. *Edited by* Dr. Wilhelm Braun-Feldweg 333

Saint Stephen's Chapel and its Place in the Development of Perpendicular Style in England. *By* J. M. Hastings 333

Schön heit der Technik 333

Bournemouth, The Russell Coates Museum (An Edwardian Bequest). *Illustrated article by* William Gaunt 170–174

Bournemouth, Showroom for Wedgwood China. *Designer*: Alec Heath. Interior view and plan 275

Boys' Club, London, Stepney, E.1. *Architects*: Yorke, Rosenberg and Mardall. Exterior and interior views and plans 117–118

Bridge, Digby Wyatt (St. James's Park). Illustrated note 334–335

Bromsgrove, College of Further Education. *Architects*: Yorke, Rosenberg and Mardall. Drawing and plans 70–71

Cabinet, The Storemaster (The Industry). Illustrated note 148

Canberra University. *Architect*: Brian B. Lewis. Exterior and interior views and plans 104–109

Caracas, Venezuela, Museum of Modern Art (Project). *Architect*: Oscar Niemeyer. *Illustrated note by* M. Santiago 273

Car Park, Liverpool, Multi-storey. *Architect*: Ronald Bradbury (City Architect). Drawing and plans 11

Carpets, Designed in Combination with Tibor Textiles, Stockwell (Design Review). Illustrated note 280–281

Chandeliers, Waterford Glass (Design Review). Illustrated note 211

Chapel, Ronchamp. *Architect*: Le Corbusier. Exterior and interior views. *Illustrated article by* James Stirling 155–161

Cheltenham, The Promenade (Townscape). *Illustrated note by* Gordon Cullen 126–127

Church, Leicester. *Architects*: Basil Spence and Partners. Drawing and plan 21

Church Hall, Surbiton. *Architect*: Kenneth Wood. Sketch and plan 11

Civic Offices, Leeds. *Architect*: R. A. H. Livett (City Architect). Model and plan 42–43

Cloth, Durlon Waterproof (The Industry). Note 148

College, Grays, Essex, Technical. *Architect*: H. Conolly. Exterior and interior views and plans 118–119

College, Hong Kong, Kowloon. *Architect*: R. Gordon Brown. Exterior and interior views and plans 322–323

College, Hong Kong, Mount Parish. *Architect*: R. Gordon Brown. Exterior and interior views and plans 323–325

College, Redcar, Yorkshire, Technical. *Architects*: Gollins, Melvin, Ward and Partners. Model and plans 63–65

College of Further Education, Bromsgrove. *Architects*: Yorke, Rosenberg and Mardall. Drawing and plans 70–71

College of Further Education, Harlow. *Architect*: Frederick Gibberd. Models and plan 64–67

College of Further Education, Harrow. *Architect*: C. G. Stillman. Models and plans 62–63

College of Technology, Kumasi, Gold Coast. *Architects*: James Cubitt and Partners. Exterior and interior views and plans 231–235

Colour, Standardized (Techniques). *Illustrated article by* Lance Wright 283–284

Correspondence:
Bicknell, Nigel (Bomarzo) 152
Brockman, H. A. N. (John Rodker) 222
Brown, G. A. (The New Brutalism) 152

Index

PAGE

"Chartered Surveyor" (Outrage in the West) 152
Harris, John (The Bryant Index) 82
Harvey, John H. (English Mediaeval Architects) 2
Mitchell, Elizabeth B. (Glasgow's Overspill Problem) 222
Pleydell-Bouverie, David (Obnoxious Matter) 82
Rumbold, Frances (Church Art) 2
Sharpe, Richard (Gobbledigook) 222
Coventry, Offices. *Architects*: W. S. Hattrell and Partners. Exterior and interior views and plans 255–256

Covers
January: Model of Block of Maisonettes at Picton Street, Camberwell
February: Composite Picture of a Pharmacy in Rome and Guardsmen's Accoutrements
March: Street-side Sculpture by Naum Gabo to flank the Walls of the new De Bijenkorf Store in Rotterdam
May: Sphynx in Gilt Gesso on Wood
June: Foliate Ironwork of the Suspension Bridge in St. James's Park
Crawley New Town, Factory. *Architects*: J. M. Austin-Smith and Partners. Exterior views and plans 264–265
Crawley New Town, Hospital. *Architects*: Yorke, Rosenberg and Mardall. Drawing and plans 22
Criticism: Buildings for the Foreign Service. *Illustrated note by* J. M. Richards 342
Criticism: Lumps on the Skyline. *Illustrated note by* J. M. Richards 270–272

Daylight and Ventilation Through the Roof (Techniques). *Illustrated article by* Robert Maguire 353–358
Debden, Essex, Bank of England Printing Works. *Architects*: Easton and Robertson. Exterior and interior views and plans 299–307
Decoration: Gothenburg Mural. Illustrated note 341
Denby Pottery (Design Review). Illustrated note 350–351
Derby, Offices for Rolls-Royce Factory. *Architect*: Basil Ward. Models and plans 50–51
Dereliction: 2 (Townscape). *Illustrated article by* Kenneth Browne 308–315
Design Review:
Denby Pottery. Illustrated note 350–351
Drawing Office Furniture. Illustrated note 141
Edinburgh Weavers. Illustrated note 351–352
Italian Contemporary Furniture. Illustrated note 141–142
Prefabricated Murals. Illustrated note 211
Storage Units II. Illustrated note 281–282
Tibor Textiles Designed in Combination with Stockwell Carpets. Illustrated note 280–281
TV Sets, The Appearance of. *Illustrated note by* Diana Rowntree 349–350
Waterford Glass Chandeliers. Illustrated note 211
Woven Wall and Floor Coverings. Illustrated note 282–283
Drawing Office Furniture (Design Review). Illustrated note 141

PAGE

Durlon Waterproof Cloth. (The Industry). Note 148

Eastleigh, Hampshire, Factory for Cosmetic Manufacturers. *Architect*: Edward D. Mills. Models and plans 52–54
Edinburgh, Art Gallery for (Project). *Architect*: Alan Reiach. Illustrated note 338–339
Edinburgh Weavers (Design Review). Illustrated note 351–352
Edwardian Bequest, An (The Russell Cotes Museum, Bournemouth. *Illustrated article by* William Gaunt 170–174
Egyptian Revival, The. *Illustrated article by* Nikolaus Pevsner *and* S. Lang 242–254
Electric Cooker, Waist-High Oven for (The Industry). Illustrated note 358
Electric Fire, The Radisil (The Industry). Illustrated note 286
Electric Installation, Getting the Best Out of an (The Industry). Note 218
Elland, Yorkshire, Power Station. *Architects*: Kitson, Parish, Ledgard and Pyman. Drawing and plans 23–24
Ellesmere Port, Cheshire, Factory for Bowater Paper Corporation. *Architects*: Farmer and Dark. Drawing and plans 59–60
Enamelled Rainwater Goods (The Industry). Illustrated note 286
Enfield, Television Laboratories. *Architects*: G. A. Jellicoe and Partners. Models and plans 54–57
Exhibitions. *Illustrated note by* Robert Melville 127, 267, 337

Factories:
Aveley, Motor-Car Parts Depot. *Architects*: E. R. Collister and Associates. Exterior view, drawings and plans 84, 258–261
Basildon, Motor-car Manufacturing Plant. *Architects*: E. R. Collister and Associates. Drawings and plan 261–262
Crawley New Town. *Architects*: J. M. Austin-Smith and Partners. Exterior views and plans 264–265
Eastleigh, Hampshire for Cosmetic Manufacturers. *Architect*: Edward D. Mills. Models and plans 52–54
Ellesmere Port, Cheshire, for Bowaters Paper Corporation. *Architects*: Farmer and Dark. Drawing and plans 59–60
Slough for Aspro Group of Companies. *Architects*: J. Douglass Mathews and Partners. Model and plans 52–53
Solihull, Warwickshire, for Rover Motor Company. *Architects*: Hasker and Hall. Exterior views and plans 266
Swindon for Pressed Steel Company. *Architect*: Bertram Carter. Model and plans 56–59
Welwyn Garden City for Ardath Tobacco Company. *Architects*: Louis de Soissons, Peacock, Hodges and Robertson. Drawing and plans 59
Wigan for H. J. Heinz Company. *Architects*: J. Douglass Mathews and Partners. Models and plans 56–58

Flats:
Hong Kong, for University Staff. *Architect*: R. Gordon Brown. Exterior and interior views and plans 318–321

PAGE

Hove. *Architect*: Eric Lyons. Drawing and plans 30–31
London, Golden Lane. *Architects*: Chamberlin, Powell and Bon. Models and plans 34–37
London, Highgate. *Architect*: Eric Lyons. Drawings and plans 38
London, Osnaburgh Street, N.W.1. *Architects*: Davies and Arnold. Exterior views and plans 331–332
Floor Coverings, Woven Wall and (Design Review). Illustrated note 282–283
Floors, Precast Prestressed (Techniques). *Illustrated article by* Robert Maguire 142–146
Fluorescent Lamps, Reflector (The Industry). Note 218
Foreign Service, Buildings for the (Criticism). *Illustrated note by* J. M. Richards 342
Functional Neurosis, The. *Article by* Robin Boyd 85–88
Furniture, Drawing Office (Design Review). Illustrated note 141
Furniture, Italian Contemporary (Design Review). Illustrated note 141–142
Furniture: Storage Units II (Design Review). Illustrated note 281–282

Gabo in Rotterdam (Sculpture). Illustrated note 270
Gas Fire, The Miser (The Industry). Illustrated note 218
Gold Coast, Recent Buildings in the 230–241
Gothenburg, Sweden, Outdoor Mural. Illustrated note 341
Grays, Essex, Technical College. *Architect*: H. Conolly. Exterior and interior views and plans 118–119

Hall, Accra, Gold Coast, Memorial. *Architects*: James Cubitt and Partners. Exterior and interior views and plan 237–238
Hanover, The Leine Schloss in (History). *Illustrated note by* H. Rosenau 336
Harlow, College of Further Education. *Architect*: Frederick Gibberd. Models and plan 64–67
Harlow New Town, Police Station and Court. *Architect*: Frederick Gibberd. Models and plans 15–16
Harold Wood, Essex, Branch Library. *Architect*: H. Conolly. Drawing and plans 10
Harrogate, Yorkshire, Showroom for ICI Terylene. *Designer*: Hulme Chadwick. Interior views and plan 210–211
Harrow, College of Further Education. *Architect*: C. G. Stillman. Models and plans 62–63
Health Centre, Welwyn Garden City. *Architect*: C. H. Aslin. Exterior and interior views and plan 330–331
Heat Pump, Mk II (The Industry). Illustrated note 286
Hemel Hempstead, Chemist's Shop. *Architect*: Maurice Hardstaff. Exterior and interior views and plan 208–209
Herne Bay, Kent, Secondary School. *Architects*: Lyons, Israel and Ellis. Exterior view and plan 178
History:
Leine Schloss in Hanover, The. *Illustrated note by* H. Rosenau 336
Oriel Chambers (Liverpool). *Illustrated note by* Geoffrey Woodward 268–270
Soane Barn (Warwick Road, Solihull). *Illustrated note by* Dorothy Stroud 336

index

PAGE

Hong Kong, Buildings in. *Architect*: R. Gordon Brown. Exterior and interior views and plans 316–325
Hospital, Alexandria, Dumbartonshire. *Architect*: J. L. Gleave. Exterior views and plan 176–177
Hospital, Crawley. *Architects*: Yorke, Rosenberg and Mardall. Drawing and plans 22
House, Moor Park, Hertfordshire. *Architect*: June Park. Exterior and interior views and plan 332
House, Welwyn Garden City. *Architects*: Architects' Co-Partnership. Exterior views and plans 120
Houses of Parliament, James Adam and the. *Illustrated article by* John Fleming 326–329
Housing, Accra, Gold Coast. *Architects*: James Cubitt and Partners. Exterior and interior views and plans 238–239
Housing, London, Regent's Park. *Architects*: Armstrong and MacManus. Drawings and plans 32–34
Housing, London, Stepney, St. Anne's Neighbourhood. *Architects*: London County Council. Model, drawings and plans 28–30
Hove, Flats. *Architect*: Eric Lyons. Drawing and plans 30–31

Industry, The:
- Durlon Waterproof Cloth. Note 148
- Electric Installation, Getting the Best Out of an. Note 218
- Enamelled Rainwater Goods. Illustrated note 286
- Gas Miser Fire, The. Illustrated note 218
- Heat Pump, MK II. Illustrated note 286
- Lighting Fitting. Illustrated note 358
- Oil-Fired Domestic Storage Water Heater, The Oilmaster. Illustrated note 216
- Paper-Backed Veneers. Note 216
- Radisil Electric Fire. Illustrated note 286
- Reflector Fluorescent Lamps. Note 218
- Screwed Waste Connector, A. Illustrated note 148
- Storemaster Cabinet, The. Illustrated note 148
- Swatch-book, A New. Note 286
- Tropical Openwork Screen. Illustrated note 358
- Waist-High Oven (Electric Cooker). Illustrated note 358

Interiors:
- Beauty Salon, off Bond Street, W.1. *Architects*: Gordon and Ursula Bowyer. Interior views and plans 205–207
- Chemist's Shop, Hemel Hempstead. *Architect*: Maurice Hardstaff. Exterior and interior views and plan 208–209
- Offices in Berkeley Square, W.1. *Architects*: James Cubitt and Partners. Interior views and plans 277–280
- Passenger Waiting Hall, Southampton. *Designers*: Heal's Contracts. Interior views and plan 345–348
- Ships. *Illustrated article by* Ian McCallum 133–140
- Showroom, Harrogate, Yorkshire. *Designer*: Hulme Chadwick. Interior views and plan 210–211
- Showroom, in Park Lane, W.1. *Designer*: Hulme Chadwick. Interior views and plan 209–210

PAGE

- Showrooms for Wedgwood China. *Designer*: Alec Heath. Interior views and plans 275–277

Italian Contemporary Furniture (Design Review). Illustrated note 141–142

Japanese Gardens, An Introduction to (Landscape). *Illustrated note by* K. B. Gardner 128–131

Killin, Perthshire, Power Station. *Architect*: Robert H. Matthew. Drawings and plans 24–25
Kumasi, Gold Coast, College of Technology. *Architects*: James Cubitt and Partners. Exterior and interior views and plans 231–235

Laboratories, Enfield, Television. *Architects*: G. A. Jellicoe and Partners. Models and plans 54–57
Laboratories, Hong Kong University, Chemistry. *Architect*: R. Gordon Brown. Exterior and interior views and plans 316–318
Landscape: Dereliction: 2. *Illustrated article by* Kenneth Browne 308–315
Landscape: Introduction to Japanese Gardens. *Illustrated note by* K. B. Gardner 128–130
Leeds, Civic Offices. *Architects*: R. A. H. Livett. Model and plan 42–43
Leicester, Church. *Architects*: Basil Spence and Partners. Drawing and plan 21
Leine Schloss in Hanover, The (History). *Illustrated note by* H. Rosenau 336
Library, Harold Wood, Essex, Branch. *Architect*: H. Conolly. Drawing and plans 10
Library, Sekondi, Gold Coast. *Architects*: James Cubitt and Partners. Exterior views and plan 241
Lighting Fitting (The Industry). Illustrated note 358
Lighting: Waterford Glass Chandeliers. (Design Review). Illustrated note 211
Liverpool, Maisonettes. *Architect*: Ronald Bradbury. Drawing and plans 31–32
Liverpool, Multi-storey Car Park. *Architect*: Ronald Bradbury. Drawing and plans 11
Liverpool, Oriel Chambers (History). *Illustrated note by* Geoffrey Woodward 268–270

London:
- Albert Embankment, Offices. *Architects*: T. P. Bennett and Son. Exterior views 4
- Albert Embankment, Offices. *Architect*: Frederick Gibberd. Exterior views 4
- Albemarle Street, Offices and Shops. *Architect*: Ernö Goldfinger. Drawing and plans 39
- Arthur Street, Offices, Minster House. *Architects*: Trehearne and Norman, Preston and Partners. Models and plans 42–43
- Berkeley Square, W.1. Offices. *Architects*: James Cubitt and Partners. Interior views and plans 277–280
- Bond Street, W.1. Beauty Salon. *Architects*: Gordon and Ursula Bowyer. Interior views and plans 205–207
- Camberwell, Picton Street, Maisonettes. *Architects*: London County Council. Models and plans 36–38

PAGE

- Dulwich, Comprehensive School. *Architects*: London County Council. Drawing and plan 71
- Ealing, Questors Theatre. *Architects*: W. S. Hattrell and Partners. Models, sketch and plans 17–19
- East Ham, Industrial Offices, North Thames Gas Board. *Architect*: Elie Mayorcas. Models and plans 49–51
- Fetter Lane, Offices. *Architect*: Edward D. Mills. Drawing and plans 46–47
- Fore Street, E.C.2. Telephone Exchange. *Architects*: Ministry of Works. Model and plans 14–15
- Golden Lane, Flats. *Architects*: Chamberlin, Powell and Bon. Models and plans 34–37
- Gresham Street, Offices. *Architects*: Easton and Robertson. Drawing and plans 44
- Gresham Street, Offices, Clements House. *Architects*: Trehearne and Norman, Preston and Partners. Drawing and plans 40
- Highgate, Flats. *Architect*: Eric Lyons. Drawings and plans 38
- Kensington, Showrooms for Wedgwood China. *Designer*: Alec Heath. Interior view 276–277
- Lewisham, Secondary School. *Architects*: Archard and Hardy. Drawing and plans 72
- New Cavendish Street, Offices. *Architects*: Gollins, Melvin, Ward and Partners. Models and plans 40–41
- Osnaburgh Street, N.W.1. Flats. *Architects*: Davies and Arnold. Exterior views and plans 331–332
- Oxford Street. Showroom for Wedgwood China. *Designer*: Alec Heath. Interior view 277
- Park Lane, W.1. Showroom for ICI Terylene. *Designer*: Hulme Chadwick. Interior views and plan 209–210
- Putney, Mayfield Comprehensive School. *Architects*: Powell and Moya. Exterior and interior views and plans 162–169
- Regent's Park, Housing and Redevelopment Scheme. *Architects*: Armstrong and MacManus. Drawings and plan 32–34
- St. Martin's Lane. Offices and Shops. *Architects*: Basil Spence and Partners. Drawings and plans 47–48
- St. Paul's, Sir William Holford's Plan for the Precincts of. *Illustrated article by* the Editors 294–298
- Shaftesbury Avenue, Offices and Shops, Wingate House. *Architects*: Sir John Burnet, Tait and Partners. Drawing and plans 44–45
- Stephen Street, W.1. Office and Warehouse, Ofrex House. *Architects*: Douglas and J. D. Wood. Drawing and plans 45–46
- Stepney Boys' Club. *Architects*: Yorke, Rosenberg and Mardall. Exterior and interior views and plan 117–118
- Stepney, Housing, St. Anne's Neighbourhood. *Architects*: London County Council. Model, drawings and plans 28–30

index

PAGE

Lumps on the Skyline (Criticism). *Illustrated note by* J. M. Richards 270–272

Magistrates' Court House and Police Station, Harlow New Town. *Architect*: Frederick Gibberd. Models and plans 15–16
Maisonettes, Liverpool. *Architect*: Ronald Bradbury. Drawing and plans 31–32
Maisonettes, London, Camberwell, Picton Street. *Architects*: London County Council. Models and plans 36–38
Memorial Hall, Accra, Gold Coast. *Architects*: James Cubitt and Partners. Exterior and interior views and plan 237–238
Middlesbrough, The Little Theatre. *Architects*: Elder and De Piero. Models, sketch and plans 18–21
Moor Park, Hertfordshire, House. *Architect*: June Park. Exterior and interior views and plan 332
Motels. *Illustrated article by* Diana Rowntree 110–116
Mural, Outdoor, Gothenburg, Sweden. Illustrated note 341
Murals, Prefabricated (Design Review). Illustrated note 211
Museum, Bournemouth, The Russell Cotes (An Edwardian Bequest). *Illustrated article by* William Gaunt 170–174
Museum of Modern Art, Caracas, Venezuela (Project). *Architect*: Oscar Niemeyer. *Illustrated note by* M. Santiago 273
Mylne and Adam. *Illustrated article by* Christopher Gotch 121–123

Newcastle-on-Tyne, Showroom for Wedgwood China. *Designer*: Alec Heath. Interior view and plans 276
New Delhi, UK Diplomatic Compound. *Architects*: Ministry of Works. Models 342
Nottingham, University Layout. *Architects*: G. A. Jellicoe and Partners. Model and plans 61, 67–68

Office Organization in the US. *Illustrated article by* Martin Pilch, Paffard Keatinge Clay, John Penn and R. Desmond Henly 99–103
Office and Warehouse, London, Stephen Street, W.1. Ofrex House. *Architects*: Douglas and J. D. Wood. Drawing and plans 45–46
Offices:
- Accra, Gold Coast. *Architects*: James Cubitt and Partners. Exterior and interior views and plans 236
- Birmingham, for Paper Factory. *Architect*: Ernö Goldfinger. Drawing and plans 50, 53
- Coventry, Banner Lane. *Architects*: W. S. Hattrell and Partners. Exterior and interior views and plans 255–256
- Derby, for Rolls-Royce Factory. *Architect*: Basil Ward. Models and plans 50–51
- London, Albert Embankment. *Architects*: T. P. Bennett and Son. Exterior views 4
- London, Albert Embankment. *Architect*: Frederick Gibberd. Exterior views 4
- London, Arthur Street, Minster House. *Architects*: Trehearne and Norman, Preston and Partners. Models and plans 42–43

PAGE

- London, East Ham, North Thames Gas Board. *Architect*: Elie Mayorcas. Models and plans 49–51
- London, Fetter Lane. *Architect*: Edward D. Mills. Drawing and plans 46–47
- London, Gresham Street. *Architects*: Easton and Robertson. Drawing and plans 44
- London, Gresham Street, Clements House. *Architects*: Trehearne and Norman, Preston and Partners. Drawing and plans 40
- London, New Cavendish Street. *Architects*: Gollins, Melvin, Ward and Partners. Models and plans 40–41
- Watford. *Architects*: W. S. Hattrell and Partners. Exterior views and plans 257

Offices and Shops:
- London, Albemarle Street. *Architect*: Ernö Goldfinger. Drawing and plans 39
- London, St. Martin's Lane. *Architects*: Basil Spence and Partners. Drawings and plans 47–48
- London, Shaftesbury Avenue. *Architects*: Sir John Burnet, Tait and Partners. Drawing and plans 44–45

Oil-Fired Domestic Storage Water Heater, The Oilmaster (The Industry). Illustrated note 216
Oriel Chambers, Liverpool (History). *Illustrated note by* Geoffrey Woodward 268–270
Oswestry, Secondary School. *Architects*: Richard Sheppard and Partners. Models and plans 64–65
Outrage: Reculver Impair'd and Restor'd. *Illustrated note by* Ian Nairn 340
Oxford Relieved (Traffic Plan). *Illustrated article by* the Editors 224–229
Oxford, Showroom for Wedgwood China. *Designer*: Alec Heath. Interior view 277

Passenger Waiting Hall, Southampton. *Designers*: Heal's Contracts. Interior views and plan 345–348
Pharmacy, Rococo (Popular Art). *Illustrated note by* Georgina Masson 124–126
Pioneers: Footnotes to Sant' Elia. *Illustrated note by* Reyner Banham 343–344
Police Station, Birmingham. *Architect*: A. G. Sheppard Fidler. Drawing and plans 16–17
Police Station and Court, Harlow New Town. *Architect*: Frederick Gibberd. Models and plans 15–16
Popular Art: Rococo Pharmacy. *Illustrated note by* Georgina Masson 124–126
Portraits:
- Adam, James 327
- Armstrong and MacManus 74
- Bill, Max 221
- Brown, R. Gordon 292
- Collister, E. R. 222
- Geller, Abraham W. 103
- Gollins, Melvin and Ward 73
- Gruen, Victor 102
- Kitson, Parish, Ledgard and Pyman 74
- Lewis, Brian 82
- Livett, R. A. H. 74
- Lyons, Eric 74
- Mills, Edward D. 74
- Neutra, Richard J. 102
- Skidmore, Owings and Merrill 99

PAGE

Potters Bar, Middlesex, Station. *Architect*: H. H. Powell (Chief Architect, B.R. Eastern Region). Exterior views and plans 175–176
Pottery, Denby (Design Review). Illustrated note 350–351
Power House, Beckton, Essex, for Northern Outfall Sewage Disposal Works. *Architects*: London County Council. Models, drawings and plans 25–27
Power Station, Elland, Yorkshire. *Architects*: Kitson, Parish, Ledgard and Pyman. Drawing and plans 23–24
Power Station, Killin, Perthshire. *Architect*: Robert H. Matthew. Drawings and plans 24–25
Precast Prestressed Floors (Techniques). *Illustrated article by* Robert Maguire 142–146
Prefabricated Murals (Design Review). Illustrated note 211
Preview: Special Issue 4–80
Printing Works, Debden, Essex, for Bank of England. *Architects*: Easton and Robertson 299–307
Promenade, Cheltenham, The (Townscape). *Illustrated note by* Gordon Cullen 126–127

Reculver Impair'd and Restor'd (Outrage). *Illustrated note by* Ian Nairn 340
Redcar, Yorkshire, Technical College. *Architects*: Gollins, Melvin, Ward and Partners. Model and plans 63–65
Rococo Pharmacy (Popular Art). *Illustrated note by* Georgina Masson 124–126
Ronchamp: Le Corbusier's Chapel and the Crisis of Rationalism. *Illustrated article by* James Stirling 155–161
Roof Coverings, Aluminium (Techniques). *Illustrated article by* Robert Maguire 212–216
Rotterdam, Gabo in (Sculpture for the De Bijenkorf Store). Illustrated note 270

St. Paul's, Sir William Holford's Plan for the Precincts of. *Illustrated article by* the Editors 294–298
Sant'Elia, Footnotes to. *Illustrated note by* Reyner Banham 343–344
Schools:
- Beighton, Derbyshire, Grammar. *Architects*: Architects' Co-Partnership. Drawing and plans 68
- Belper, Derbyshire. *Architects*: MOE Development Group. Exterior views and plans 263–264
- Herne Bay, Kent, Secondary. *Architects*: Lyons, Israel and Ellis. Exterior view and plan 178
- London, Dulwich, Comprehensive. *Architects*: London County Council. Drawing and plan 71
- London, Lewisham, Secondary. *Architects*: Archard and Hardy. Drawing and plans 72
- London, Putney, Mayfield Comprehensive. *Architects*: Powell and Moya. Exterior and interior views and plans 162–169
- Oswestry, Secondary. *Architects*: Richard Sheppard and Partners. Models and plans 64–65
- Sekondi, Gold Coast. *Architects*: James Cubitt and Partners. Exterior views and plan 240–241
- Sowerby Bridge, Yorkshire, Secondary. *Architects*: James Cubitt and Partners. Drawing and plans 69

Index

PAGE

Swinton, Yorkshire, Secondary. *Architect*: Robert H. Matthew. Drawing and plans 69–70
Screen, Tropical Openwork (The Industry). Illustrated note 358
Sculpture: Gabo in Rotterdam (Vertical Sculpture for the De Bijenkorf Store). Illustrated note 270
Sekondi, Gold Coast, Library. *Architects*: James Cubitt and Partners. Exterior views and plan 241
Sekondi, Gold Coast, School. *Architects*: James Cubitt and Partners. Exterior views and plan 240–241
Ship Interiors. *Illustrated article by* Ian McCallum 133–140
Shop, Hemel Hempstead, Chemist's. *Architect*: Maurice Hardstaff. Exterior and interior views and plan 208–209
Shops and Offices:
London, Albemarle Street. *Architect*: Ernö Goldfinger. Drawing and plans 39
London, St. Martin's Lane. *Architects*: Basil Spence and Partners. Drawings and plans 47–48
London, Shaftesbury Avenue. *Architects*: Sir John Burnet, Tait and Partners. Drawing and plans 44–45
Showrooms:
Harrogate, Yorkshire, for ICI Terylene. *Designer*: Hulme Chadwick. Interior views and plan 210–211
London, Park Lane, W.1, for ICI Terylene. *Designer*: Hulme Chadwick. Interior views and plan 209–210
Wedgwood China. *Designer*: Alec Heath. Interior views and plans 275–277
Skill: Review of Building Techniques and Industrial Design 133–148, 205–218, 275–288, 345–360
Slough, Factory for Aspro Group of Companies. *Architects*: J. Douglass Mathews and Partners. Model and plans 52–53
Soane Barn, Solihull (History). *Illustrated note by* Dorothy Stroud 336
Solihull, Warwickshire, Factory for Rover Motor Company. *Architects*: Hasker and Hall. Exterior views and plan 266
Southampton, Passenger Waiting Hall. *Designers*: Heal's Contracts. Interior views and plan 345–348
Sowerby Bridge, Yorkshire, Secondary School. *Architects*: James Cubitt and Partners. Drawing and plans 69
Standardized Colour (Techniques). *Illustrated article by* Lance Wright 283–284
Station, Potters Bar, Middlesex. *Architect*: H. H. Powell. Exterior views and plans 175–176
Storage Units II (Design Review). Illustrated note 281–282
Surbiton, Church Hall. *Architect*: Kenneth Wood. Sketch and plan 11
Swatch-Book, A New (The Industry). Note 286
Swimming Bath, Wythenshawe. *Architect*: Leonard C. Howitt. Models and plans 12–13
Swindon, Factory for Pressed Steel Company. *Architect*: Bertram Carter. Model and plans 56–59
Swinton, Yorkshire, Secondary School. *Architect*: Robert H. Matthew. Drawing and plans 69–70

PAGE

Technical College, Grays, Essex. *Architect*: H. Conolly. Exterior and interior views and plans 118–119
Technical College, Redcar, Yorkshire. *Architects*: Gollins, Melvin, Ward and Partners. Model and plans 63–65
Techniques:
Aluminium Roof Coverings. *Illustrated article by* Robert Maguire 212–216
Daylight and Ventilation Through the Roof. *Illustrated article by* Robert Maguire 353–358
Precast Prestressed Floors. *Illustrated article by* Robert Maguire 142–146
Standardized Colour. *Illustrated article by* Lance Wright 283–284
Telephone Exchange, London, Fore Street, E.C.2. *Architects*: Ministry of Works. Model and plans 14–15
Television Laboratories, Enfield. *Architects*: G. A. Jellicoe and Partners. Models and plans 54–57
Textiles Designed in Combination with Stockwell Carpets, Tibor (Design Review). Illustrated note 280–281
Textiles, Edinburgh Weavers' (Design Review). Illustrated note 351–352
Theatre, London, Ealing, Questors. *Architects*: W. S. Hattrell and Partners. Models, sketch and plans 17–19
Theatre, Middlesbrough, The Little. *Architects*: Elder and De Piero. Models, sketch and plans 18–21
Town Centre, Basildon. *Architect*: Noel Tweddell. Drawings and plan 8–9
Townscape: The Promenade, Cheltenham. *Illustrated note by* Gordon Cullen 126–127
Tropical Openwork Screen (The Industry). Illustrated note 358
TV Sets, The Appearance of (Design Review). *Illustrated note by* Diana Rowntree 349–350

University, Canberra. *Architect*: Brian B. Lewis. Exterior and interior views and plans 104–109
University, Hong Kong, Chemistry Laboratories. *Architect*: R. Gordon Brown. Exterior and interior views and plan 316–318
University, Hong Kong, Staff Flats. *Architect*: R. Gordon Brown. Exterior and interior views and plans 318–321
University Layout, Nottingham. *Architects*: G. A. Jellicoe and Partners. Model and plans 61, 67–68
US Office, Inside the. *Illustrated article by* Martin Pilch, Paffard Keatinge Clay, John Penn and R. Desmond Henly 99–103

Veneers, Paper-Backed (The Industry). Note 216

Wall and Floor Coverings, Woven (Design Review). Illustrated note 282–283
Warehouse, Aveley, Essex, for Ford Motor Company Spares. *Architects*: E. R. Collister and Partners. Exterior view, drawings and plans 84, 258–261
Warehouse, Witham, Essex, Seed. *Architects*: Chamberlin, Powell and Bon. Exterior and interior views and plans 89–98
Warehouse and Office, London, Stephen Street, W.1. *Architects*: Douglas and J. D. Wood. Drawing and plans 45–46

PAGE

Waste Connector, A Screwed (The Industry). Illustrated note 148
Waterford Glass Chandeliers (Design Review). Illustrated note 211
Water Heater, Oilmaster Oil-Fired Domestic Storage (The Industry). Illustrated note 216
Watford, Offices. *Architects*: W. S. Hattrell and Partners. Exterior views and plans 257
Wedgwood China, Showrooms for. *Designer*: Alec Heath. Interior views and plans 275–277
Welwyn Garden City, Factory for Ardath Tobacco Company. *Architects*: Louis de Soissons, Peacock, Hodges and Robertson. Drawing and plans 59
Welwyn Garden City, Health Centre. *Architect*: C. H. Aslin. Exterior and interior views and plan 330–331
Welwyn Garden City, House. *Architects*: Architects' Co-Partnership. Exterior views and plans 120
Wigan, Factory for H. J. Heinz Company. *Architects*: J. Douglass Mathews and Partners. Models and plans 56–58
Witham, Essex, Seed Warehouse. *Architects*: Chamberlin, Powell and Bon. Exterior and interior views and plans 89–98
Woven Wall and Floor Coverings (Design Review). Illustrated note 282–283
Wythenshawe, Swimming Bath. *Architect*: Leonard C. Howitt. Models and plans 12–13

ARCHITECTS AND ARTISTS

Adam, James 326–329
Applegarth, George 291
Archard and Hardy 72
Architects' Co-Partnership 68, 120
Armstrong and MacManus 32–34
Aslin, C. H. (Hertfordshire County Architect) 330–331
Auerbach, Frank 337
Austin-Smith, J. M. and Partners 264–265
Bennett, T. P. and Son 4
Berghinz, Carlo 81
Bernard, Henry 1
Bernardes, Sergio 151
Bernasconi, G.-A., Annibale Fiocchi and Marcello Nizzoli 81
Bill, Max 221
Bowyer, Gordon and Ursula 205–207
Bradbury, Ronald (Liverpool City Architect) 11, 31–32
Brown, R. Gordon 316–325
Burnet, Sir John, Tait and Partners 44–45
Candela, Felix 1
Carter, Bertram 56–59
Chadwick, Hulme 209–211
Chadwick, Lynn 338
Chamberlin, Powell and Bon 34–37, 89–98
Collister, E. R., and Associates 84, 261–262
Conolly, H. (Essex County Architect) 10, 118–119
Corsell, Madga 267
Cubitt, James and Partners 69, 230–241, 277–280
Danzeisen and Voser 291
Davies and Arnold 331–332
de Soissons, Louis, Peacock, Hodges and Robertson 59
Easton and Robertson 44, 299–307
Ellis, Peter 268–270
Erdi, Louis 110, 114
Farmer and Dark 59–60
Fidler, A. G. Sheppard (Birmingham City Architect) 16–17

Index

PAGE

Filson, James and James McKeown 1
Fiocchi, Annibale, G.-A. Bernasconi and Marcello Nizzoli 81
Frost, W. E. 172
Fuad, Ahmed and Elias Shaghoury 1
Fuller, Buckminster 221
Gabo, Naum 270
Gibberd, Frederick 4, 15–16, 64–67
Gleave, J. L. 176–177
Goldfinger, Ernö 39, 50, 53
Gollins, Melvin, Ward and Partners 40–41, 63–65
Grounds, Romberg and Boyd 82
Hale, E. Matthew 173
Hardstaff, Maurice 208–209
Hasker and Hall 266
Hattrell, W. S. and Partners 17–19, 255–257
Heal's Contracts 345–348
Heath, Alec 275–277
Hentrich, Helmut 151
Hitchens, Ivon 337
Holford, Sir William 294
Howitt, Leonard C. (Manchester City Architect) 12–13
Jellicoe, G. A. and Partners 54–57, 61, 67–68
Kaye, Margaret 291
Kitson, Parish, Ledgard and Pyman 23–24
Knapp, Stefan 338
Landelle, Charles 173
Le Corbusier 1, 155–161
Lewis, Brian B. 104–109
Livett, R. A. H. (Leeds City Architect) 42–43
London County Council 25–30, 36–38, 71
Long, Edwin 171, 173
Lustig, Alvin 81–82
Lyons, Eric 30–31, 38
Lyons, Israel and Ellis 178
McKeown, James and James Filson 1
Maillart, R. 81
Mathews, J. Douglass and Partners 52–53, 56–58
Matthew, Robert H. 24–25, 69–70
Mayorcas, Elie 49–51
Mence and Moore 291

PAGE

Middleditch, Edward 337
Mills, Edward D. 46–47, 52–54
Ministry of Works 14–15, 342
MOE Development Group 263–264
Moore, Henry 128, 151
Mylne, Robert 121–123
Nemes, Endre 341
Nervi, Pier Luigi and Gio Ponti 81
Niemeyer, Oscar 154, 273
Nizzoli, Marcello, G.-A. Bernasconi and Annibale Fiocchi 81
Parkin, John B. and Associates 151
Pei, I. M. 1
Pollock, Jackson 267
Ponti, Gio and Pier Luigi Nervi 81
Powell and Moya 162–169
Powell, H. H. (Chief Architect, British Railways, Eastern Region) 175–176
Reiach, Alan 292, 338–339
Reynolds, Alan 338
Rivière, Briton 173
Rothenstein, Michael 211
Sant'Elia, Antonio 343–344
Schwarz, B. 84
Shaghoury, Elias and Ahmed Fuad 1
Shahn, Ben 267
Shaw, Byam 173
Sheppard, Richard and Partners 64–65
Skidmore, Owings and Merrill 221
Spence, Basil 8
Spence, Basil and Partners 21, 47–48
Spencer, Stanley 127, 128
Stillman, C. G. (Middlesex County Architect) 62–63
Tobey, Mark 267
Tomlin, Bradley 267
Trehearne and Norman, Preston and Partners 40, 42–43
Tweddell, Noel (Chief Architect, Basildon Development Corporation) 8–9
Van den Broek and Bakema 160
Ward, Basil 50–51
Werner, Michael 128
Wogensky, André 160

PAGE

Wood, Douglas and J. D. 45–46
Wood, Kenneth 11
Wyatt, Sir Matthew Digby 335
Wyeth, Andrew 267
Yorke, Rosenberg and Mardall 22, 70–71, 117–118

AUTHORS AND CONTRIBUTORS

Banham, Reyner 343–344
Bony, Jean 333
Boyd, Robin 85–88
Browne, Kenneth 308–315
Casson, Hugh 344
Clay, Paffard Keatinge 101
Cullen, Gordon 126–127
Editors, The 224–229, 294–298
Fleming, John 326–329
Gardner, K. B. 128–131
Gaunt, William 170–174
Gotch, Christopher 121–123
Hayter, Sir William 132
Henly, R. Desmond 102–103
Jordan, R. Furneaux 131
Lang, S. and Nikolaus Pevsner 242–254
McCallum, Ian 133–140
Maguire, Robert 142–146, 212–216, 353–358
Masson, Georgina 124–126
Melville, Robert 127, 267, 337
Nairn, Ian 273, 340
Penn, John 101–102
Pevsner, Nikolaus 132
Pevsner, Nikolaus and S. Lang 242–254
Pilch, Martin 99–100
Reilly, Paul 333
Richards, J. M. 270–272, 342
Rosenau, H. 336
Rowntree, Diana 110–116, 349–350
Santiago, M. 273
Sayer, Sylvia 334
Stirling, James 155–161
Stroud, Dorothy 336
Symonds, R. W. 132
Woodward, Geoffrey 268–270
Wright, Lance 283–284