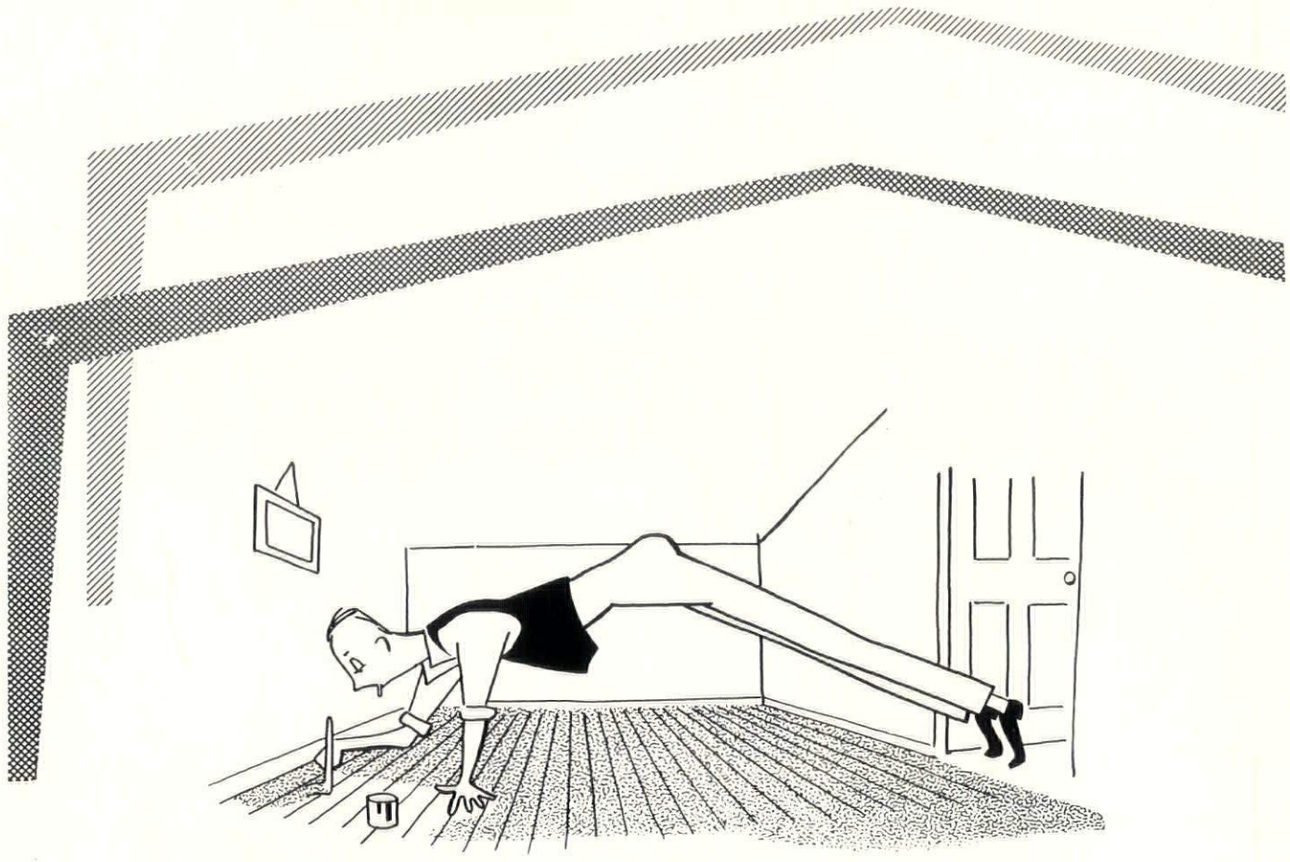

Wide Spans — unobstructed floor space

Not an ideal way to paint a room we think, unless the phlegmatic, extended gentleman happens to be your neighbour doing the job for you. Nor do we put this forward as the original inspiration for a portal frame.

What we do say, however, is that when wide spans and unobstructed floor space are the primary requirements, then there is no more reliable, no happier medium than steelwork—preferably BOOTH steelwork.

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arc

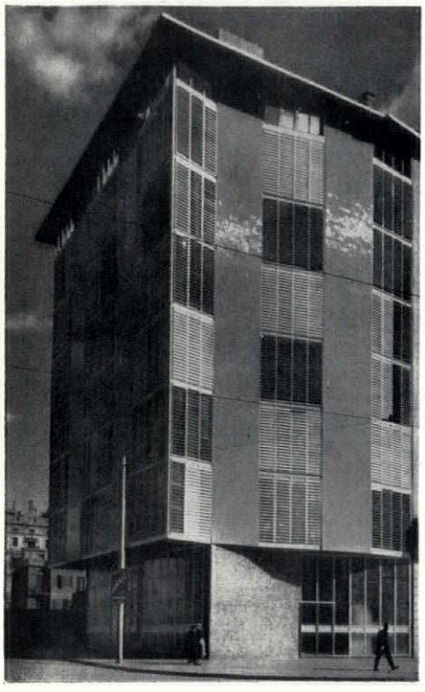
preview

THE ARCHITECTURAL REVIEW VOLUME CXXI NUMBER 720 JANUARY 1957 FIVE SHILLINGS

MARGINALIA

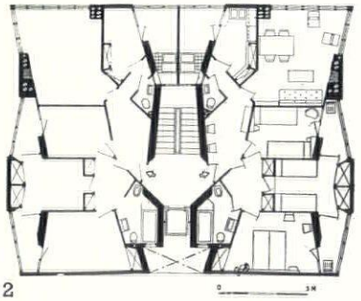
Staff Apartments in Barcelona

All signs of adventure in the arts in Spain are of interest today, and particularly in architecture. A recently completed block of flats in Barcelona, 1, for employees and officers of the Spanish Merchant Marine, suggests that the native town of Antoni Gaudi has not lost his architectural radicalism and nonconformity. Designed by Coderch de Sentmenat and Manuel Valls, it



1

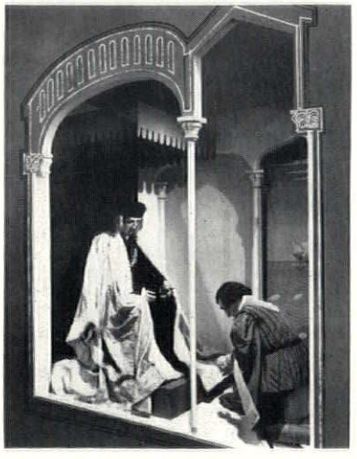
presents externally an uninformative cladding of ceramic tiles and permanent, but adjustable, panels of sunbreakers. The polygonal form of the block might be taken for a close relation of Italian so-called Northern Romanticism, but the plans show that, in contradistinction to much modish architecture in Italy, the external departures from the rectangular do not conceal a conventionally squared-up interior, but express a polygony that informs the whole layout, 2.



2

Jamestown Festival

The British contribution to the festival at Jamestown, Virginia, which celebrates the establishment in 1607 of the first permanent British settlement in North America, will take the form of a long pavilion setting out a narrative theme. The first section (3 is a tableau showing Cabot before Henry VII) sets out the social, psychological, political and technical background to the original settlement, and is the work of John and Sylvia Reid, working—like all the other designers—under the general direction of Harold Midgley of the Central Office of Information. The second section, designer Robert Nicholson, deals with such invisible exports from Britain to the New World as Law,



3

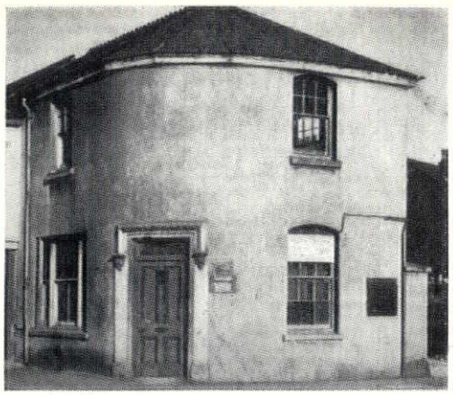
Learning, Religion, etc., and the third, designed by Charles Munro, deals with the new look in British Imperialism after the loss of the American colonies. All the designers are faced with the tricky problem of selling tradition in an untraditional way to a tradition-thirsty audience, and the success or otherwise of the result will be of considerable interest.

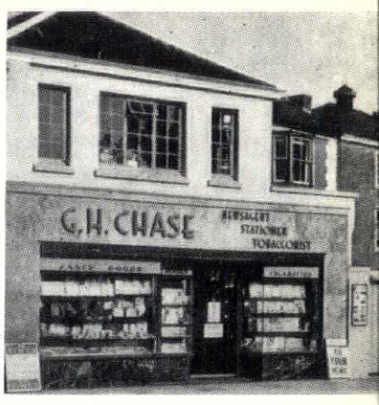
London's Royal Parks

The Ministry of Works has just produced a guide to London's Royal Parks, written by Richard Church and illustrated by Victor Cooley.* It is a good half-crown's worth, and is packed with odd information—there were bungalows on the site of the lake in St. James's Park in the Great War; there's 1¼ acres of grass on the *roof* of the Admiralty citadel. The character of each park is nicely defined too; but the book seems blighted by the musty equivocation of the 1950's attitude to the Royal family—and hence to their possessions; uncertain whether to treat them as national symbols or human beings. So the private lives of the Parks are glossed over, as it were, and though there is a polite reference to bag-snatching in Hyde Park, the lurid night-life, which is the most interesting thing about the Park today, is never mentioned. For the author on page 9 to call *Love in a Wood* 'one of those facetious stage pieces . . . too tedious to read now' is both to misunderstand Wycherley and misjudge the temper of the times; in fact, perhaps the whole book misjudges the temper of the times.

In the end, the eight maps by the unknown J.E. steal the book from both text and illustrations by their extraordinary clarity and vitality; they are printed on inserts of nut-brown paper, identical to that used in the REVIEW.

* HMSO, 2s. 6d.





4 and 5, the same building in Kingsbridge, Devon, before and after reconstruction as a shop. See under 'No Comment' below.

No Comment

The following appears in the August, 1956, number of Efficient Retailing, *under the heading 'Shop-front Miracle':—*

'You can create a smart, modern shop out of the most unpromising looking premises. Take, for example, that queer old building that stood in the pleasant South Devonshire town of Kingsbridge.

'Its oddly shaped stone frontage was remindful of the bull-nosed bonnet of one of the earlier Morris cars. Or perhaps one would have thought the building was once the local lock-up. But now . . .

'That grim, rounded front has been swept away. In its place is a building that stands in friendly line with its neighbours and a shop fascia that will stand comparison with the best in any big city.'

Reconstruction without Demolition

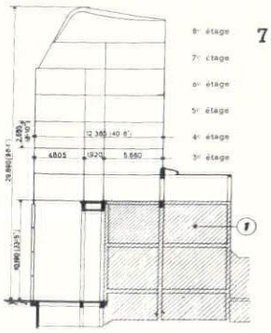
The ingenuity required to erect rational and economical buildings within the area covered by the Paris building regulations is part of the legendary history of Modern Architecture, and called forth some of the most original designs of Auguste Perret and Le Corbusier. A recent example of this type of battle of wits is afforded by the rebuilding of an office building belonging to the *Epargne de France* (Savings Bank), but with the added complication that the client could not afford to interrupt the use of the existing property on the site. This last condition alone would seem more than enough to cope with, but the architect, Edouard Albert, and the engineer, Jean Sarf, took it in their stride, and contrived to provide a total of nine floors as against the expected eight, without breaking the required height line. This last was achieved by a relatively old trick—that of measuring ceiling heights to the undersides of floor-slabs, not to the undersides of beams that carry them—but this possibility was a natural consequence of the structural solution evolved to deal with the problem of not disturbing the existing building. Effectively, this was done by dropping a cage of tubular steel stanchions and rolled steel joists clear over the old structure and its forecourt, so that the latter becomes a sort of vast enclosed hall, within the main block of the building, 6. The structure is of considerable interest in its own right, if only for the novelty of the use of tubular stanchions in a multi-storey building. All the added floor-space is, of course, above the old building, and this fact appears clearly on the façade, since the stanchions are twinned up to the datum at which the new work begins, and the interstices of the cage above that point are glazed. The weight of the upper structure (which is remarkably low) is carried in part by these twinned stanchions, in part by a concrete box-beam at the level of the cornice of the old building, 7, carrying the stanchions that flank the central corridor on each floor, and partly by concrete beams inserted in the old structure.



6

Red Lacquer Days

The Lion and Unicorn Press—the Royal College of Art's private press, run in conjunction with the College's Department of Graphic Design—has been given a rare opportunity with Sir Hugh Casson's diary of his trip to China in 1955. Chinese script and rubber-stamped visas, Sir Hugh's charming pen sketches printed on grey paper with red titles, scarlet, black and yellow end-papers with an inner leaf of unbelievably beautiful transparent paper of Chinese character (beautiful to the touch as well as to the eye) add up to a piece of book making impeccable in taste and lively enough



7

6, left, a rebuilt Paris savings bank. The shaded part of the section above, 1, indicates the existing building.

to match Sir Hugh's text.

Which is saying a great deal. He has a wonderful flair for conveying visual impressions in words. The text is based on articles that have already appeared in *The Observer* and THE ARCHITECTURAL REVIEW. The book—entitled *Red Lacquer Days*—is limited to 200 copies and is for private distribution.

The Galliari

Italian stage design in the eighteenth century was largely dispensed by families of designers the best known of which are the Galli Bibiena, who exported their art over most of Europe. Another family as prolific, and whose influence was equally far-reaching, the Galliari of Andorno, is practically unknown and hardly mentioned in the literature. The Museo Civico of Turin recently devoted an exhibition to them, and in a compendious catalogue gave details of their life and work. The head of the family, Giovanni (1680–c. 1720), was a straightforward painter; his eldest son, Bernardino, was a painter of frescoes as well as of theatrical and festival decoration, and he is considered as the founder of Piedmontese stage designing. In 1748 Bernardino and his brother Fabrizio came to Turin to work for the Royal Theatre and their sons and nephews remained connected with that theatre for fifty years; they also worked for the Scala in Milan and for other theatres, in Milan and elsewhere. Bernardino had worked in Berlin and with Fabrizio designed the scenery for *La Finta Giardiniera* at its first performance in Paris in 1778.

Fabrizio worked as a stage designer and painter of scenery pure and simple. He was obviously influenced by his Piedmontese predecessor Juvara and designed, like him, many a *luogo magnifico* or *atrio regio* in the grand manner, but his touch was lighter, his scenes more airy and more illusionistic; he also introduced exotic architecture and landscape (cf. 9). The scene for *Gengis-Kan*, an opera by Anfossi, was set in China and so was *Arsinoe* by Crampi (as early as 1785, the year Chambers published his Chinese Buildings); but another by Pugnani called *Tamas-Kouli Kan* was set in a 'Gothic' ambiente (cf. 8). Giovannino Galliari designed a hall in an 'Indian' style in 1785–90 for an unidentified opera. Giovanni, a son of Fabrizio, gave the opera *Idalida* by Rispoli an exotic setting which was a mixture of Indian and Turkish.

Gaspare, a nephew of Fabrizio (1761–1823), lived into the full neoclassical period and his *Camera Civile*, 10, an ordinary bourgeois room to be used whenever applicable, indicates the beginning of a new era. A commendable feature of the exhibition was the 'live' sceneries in miniature built from drawings by Juvara and Fabrizio Galliari; those after Juvara displaying grandeur and complexity, that after Fabrizio the wonderful illusion he could create.

CORRESPONDENCE

The Chinese Dome

To the Editors,

SIRS,—There are still architectural historians, professional and amateur, who regard the evolution of European architecture as a Greco-Roman-European integrity and this attitude is prominent in British texts and teaching. On the continent, however, many people have long ago discarded this conceit. The extreme views of Strzygowsky and Rivoira have their adherents, but both are inconclusive. Most of their arguments involve the development of the dome, the round arch, and the vault. In 1955 the Chinese published a monograph on a tomb excavation that is of interest to archæologists and art historians.* The real *raison d'être* of this book is the wall paintings which are the earliest known in China. They date from the Han Dynasty and can be no later than A.D. 200. They were shown in photographs to European specialists at the International Conference in Paris last September who agreed that the script confirmed the style in its dating. The Chinese, however, may have been unaware of its value to architectural historians; for the tomb has two large pointed domes set on the square and using the squinch, (more usually known to us in Persian architecture) barrel vaults, round, elliptical, and pointed arches with keystones, all in a highly sophisticated technique of stone and brick construction. Other tomb architecture of this period and contemporary with the Roman period in the Mediterranean is constantly coming to light, but I have not yet had the opportunity of verifying their dates; communication between China and Persia had already been established during this period. The Persian domes using the squinch at Serbistan (third century) and Feruzabad (fifth century) are known to oriental art historians. Whether curvilinear architectonics originated in the Far East or the Middle East is as yet to be established. Certainly the technique was taken over by the Hellenistic and Byzantine Greeks as well as by the rest of the Near East. The pointed arch of the European Gothic and 'Romanesque' now goes back through Cluny and Citeaux to Islamic Spain and the Near East where it was in use at the Mosque of Ibn Tulun in A.D. 700, and at Ctesiphon in the fifth century and now appears to have been in use in China, in Roman times. The Chinese dome is not the Roman concrete type, but fitted brick and stone. Could not the 'Eurasian' evolution of architecture be investigated a little more thoroughly in this country and with less parochialism?

Yours, etc.,
R. D. G. FAUDREE
New College, Oxford.

* *Wang-Tou Han Dynasty Wall Paintings*, 1955, and available at Collett's Chinese Bookshop, Great Russell Street.

Predigested Planning?

To the Editors,

SIRS,—Having just read Gordon Cullen's note on Chandigarh, I cannot agree with him that 'the necessity for roads has been used to conquer the site visually and so create the predigestion which precludes the real art of town design.'

If roads are to conquer a site they must be seen, not as an abstract pattern on a master plan in the architect's office, but on the site itself. At Chandigarh the site is practically flat except for a one per cent fall to the south-west. The sectors which are bounded by roads are about three-quarters of a mile deep and half a mile wide. Nowhere on the site is one conscious of a specific gridiron layout of roads.

But why are they planned in the first place? I would suggest their complete suitability for Chandigarh: (1) The importance of orientation. Anyone who has lived in a similar climate must know that driving on some roads in early morning or late afternoon is almost impossible. At Chandigarh every road is correctly orientated. (2) The flatness gives a real opportunity for the gridiron. History is full of the failure of a grid on hilly sites. The grid also gives quick communication between any sector.

It is interesting to note that the roads across the site are all curved slightly. The road across to the railway station is especially wide and so is the main road up the middle of the site to the Capital Buildings.

There can be no doubt 'that the plan has the genuine complexity resulting from the imagination of personal vision in the unborn town.' The well designed flowing shapes of parkland and open space will be a perfect foil to the more formal layout of the architecture.

Surely we should not fear the grid or think of it as an escape from the exacting task of organic design—it can be instrumental to real town design, if only in the hands of a master. Yours, etc.,
Victoria, Australia. BILL NANKIVELL.

[Gordon Cullen writes: *An urban road system not only communicates but should be seen to communicate, i.e. join one object to another. This does not mean that the traffic routes should paralyse the town but that the buildings, monuments, parks and water which go to make a town should be laid out with some thought to the dramatic relationships possible as seen by those moving through the town, and one way of moving through a town is by using its roads. A gridiron plan does not achieve this since wherever you go you remain aware only of the means of communication. Even if you are not particularly conscious of that, neither are you conscious of much else.*]

Correction

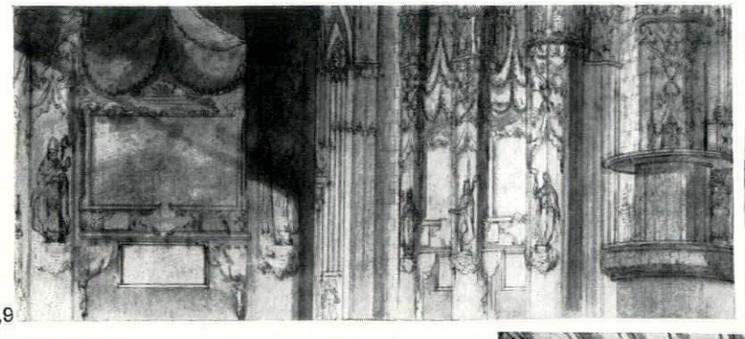
In the November issue, the plans of the House at Hampstead by Stanley Amis and William and Gillian Howell, and the House at Carlisle by Ryder and Yates were wrongly orientated, north and south being reversed in both cases. We much regret this error.

Intelligence

Reynolds Metals Company, Richmond, Va., USA, has established an annual award of $25,000, to an architect who has made the most significant contribution to the use of aluminium in building. The award is international and may be divided between two or more recipients.

ACKNOWLEDGMENTS

COVER: Galwey, Arphot. MARGINALIA, pp. 1-2: Jamestown, Sam Lambert, Galliari, upper left, V. & A. Museum. PREVIEW: p. 10 Coventry Corporation (Granville Berry). p. 11: top, Galwey; bottom, Jas. Russell & Sons. p. 12: top, Elsam, Mann & Cooper; bottom, Galwey. p. 15: Galwey. p. 16: top, Galwey; bottom, LCC. p. 21: top, Philipson; bottom, J. R. Pantlin. p. 22: top, P. W. & C. Thompson; bottom, Galwey. p. 25: top left, S. W. Newbery; rest, Galwey. p. 26: top, Fisons; centre right, Pantlin; bottom, Galwey. p. 31: Galwey. p. 32: top, A. Cracknell; bottom, Pantlin. p. 35: top, Cracknell; bottom, Toomey, Arphot. p. 36: Galwey. p. 41, Pantlin. p. 42: bottom, P. Pitt. p. 45: top, Galwey; bottom left, Wm. Spencer. p. 46: top, Pantlin; bottom, Wainwright. p. 48: bottom, Pantlin. p. 51: top, LCC; centre top, Universal Lens-Craft; centre lower, Pantlin. pp. 52, 55, 56: all Galwey. p. 58: P. Pitt. p. 61: top, Cracknell; bottom, St. James's Hospital. p. 62: top, Crown Copyright. p. 65: top, Pantlin; bottom, Galwey. p. 66: top, Philipson; centre, LCC; bottom, Galwey. POST-VIEW, pp. 73-75: 1, 8, 9, Toomey; 3, 5, 10, Galwey; 4, Pantlin; 6, M. Sharratt.



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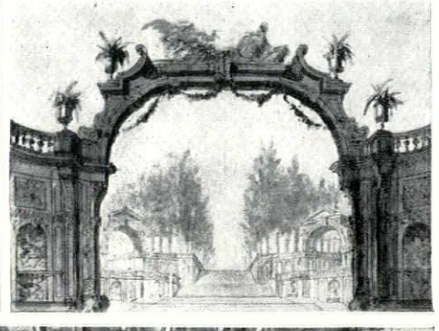
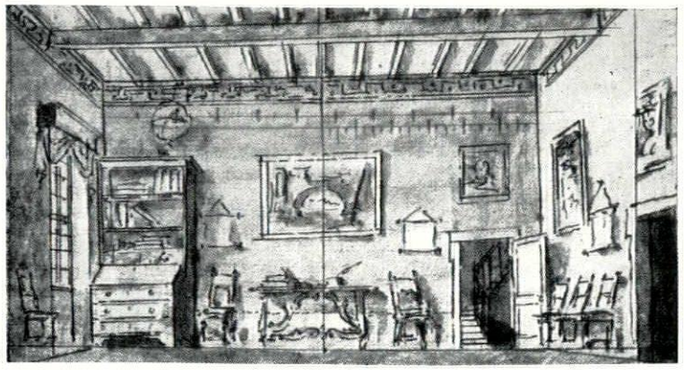


the Galliari 8, *'Gothic' stage-set in an album at the Victoria and Albert Museum by the Brothers Galliari.* 9, *royal garden set by Fabrizio Galliari for* Tigrane, 1761. 10, *set of a bourgeois interior by Gaspare Galliari*, 1787.



10

THE ARCHITECTURAL REVIEW

Volume 121 Number 720 January 1957

SPECIAL PREVIEW ISSUE



At last designs for office buildings of a high enough standard to merit inclusion in these preview issues are becoming available. Hitherto they have been the buildings of which British architects had least reason to be proud. The improvement has, in part, been due to the sensible use made of standard building components like curtain walling—a method to which the cellular nature of the office building lends itself. The cover shows part of a vast office building now under construction in Birmingham which uses curtain walling extensively—see pages 24-25. Architects, Cotton, Ballard and Blow.

1 **Marginalia**

4 **Frontispiece**

5 **Foreword**

1 **Public Buildings**

8 Swimming Baths: Coventry *Arthur Ling* (*City Architect*)
10 Fire Station: Twickenham *C. G. Stillman* (*Middx. County Architect*)
10 Crematorium: Manchester *Leonard Howitt* (*City Architect*)
13 Public House: Leicester Square, London *T. P. Bennett and Son*
13 Community Hall: Cleethorpes *Stillman and Eastwick-Field*

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14 District Centre: Coventry *Arthur Ling* (*City Architect*)
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17 Neighbourhood Unit: East London *J. L. Martin* (*L.C.C. Architect*)
18 Shopping Centre: Birmingham *A. G. Sheppard Fidler* (*City Architect*)

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27 Bank and Offices: City of London *Playne and Lacey*
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29 Arts Building: Cambridge *Hugh Casson and Neville Conder*
30 Arts Building: Exeter *William Holford and Partners*
30 Pharmacology Building: Oxford *Gollins, Melvin, Ward and Partners*
33 Archaeology, etc., Building: London *Booth, Ledeboer and Pinkheard*
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38 College of Further Education: Windsor *Bridgewater and Shepheard*
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44 Secondary School: Stourbridge *Yorke, Rosenberg and Mardall*
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47 Secondary School: Upton-upon-Severn *Frederick Gibberd*
48 Special School: Basildon *H. Conolly* (*Essex County Architect*)
48 Secondary School: Hackney *Armstrong and Macmanus*
49 Secondary School: Sheffield *Architects' Co-Partnership*
49 Special School: Hampstead *J. L. Martin* (*L.C.C. Architect*)
50 Infants' School: Basildon *Poulton and Freeman*
50 Secondary School: Richmond, Yorks. *Denis Clarke Hall*

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53 Women's Hall: Southampton *Basil Spence*
53 Old People's Home: Kirby-in-Ashfield *D. E. E. Gibson* (*Notts County Architect*)
54 Police Section House: Clapham *J. Innes Elliott* (*Chief Architect, New Scotland Yard*)
54 Agricultural Students' Hostel: Writtle *H. Conolly* (*Essex County Architect*)
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57 Boys' House: Eton *William Holford and Partners*

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64 Research Laboratories: Chesterfield *Westwood, Sons and Harrison*
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68 Radio Factory: Welwyn *Louis de Soissons and Partners*
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69 Chemical Factory: Berkhamsted *Architects' Co-Partnership*
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THE ARCHITECTURAL REVIEW

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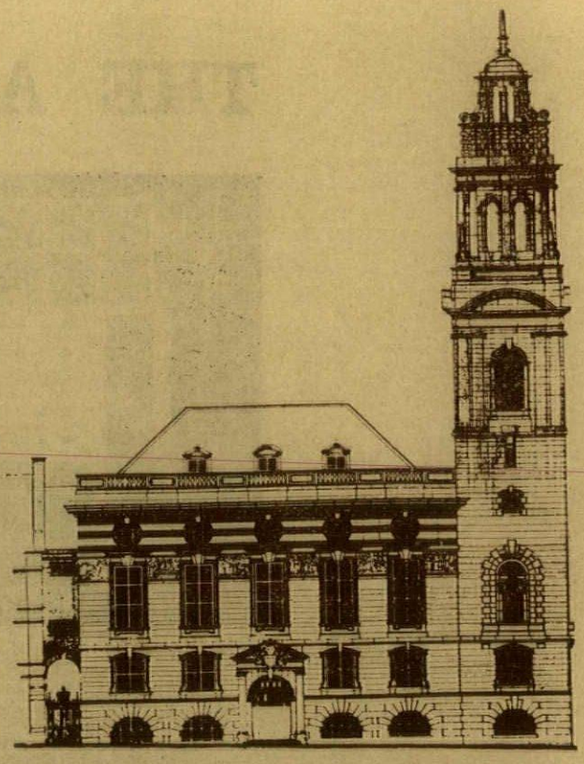
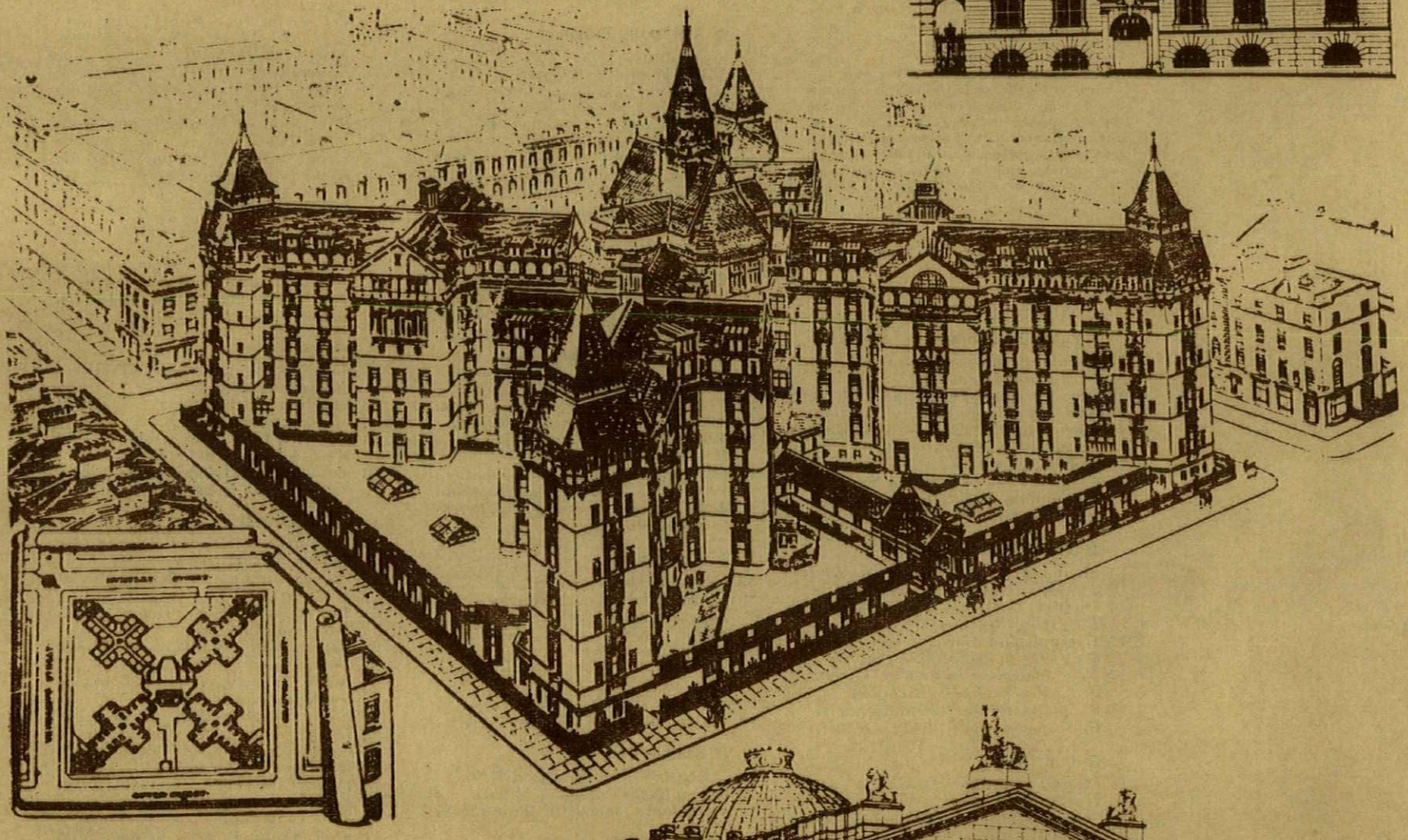
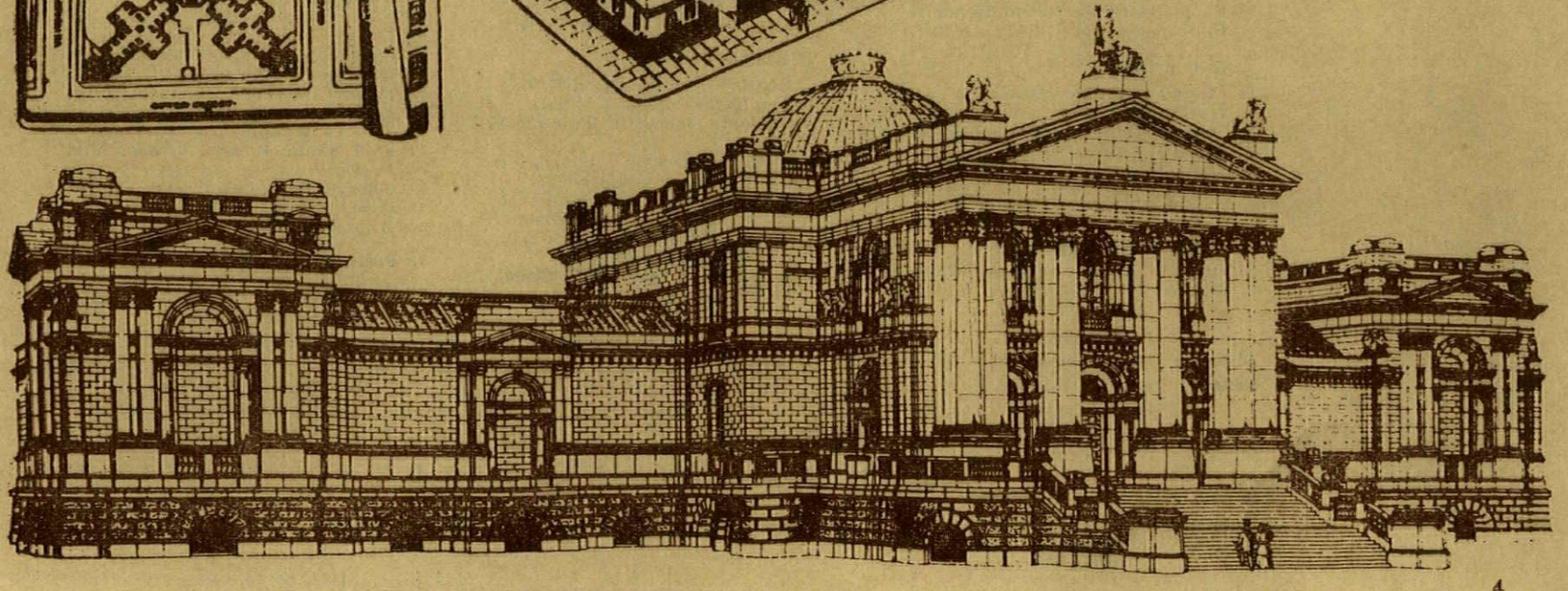
FIVE SHILLINGS

PREVIEW 1897 *If the* REVIEW'S *first January issue, published exactly sixty years ago, had taken the form of a Preview issue on the same lines as this and its immediate predecessors, a rich variety of projects would have been available for the editors to choose from, as these three drawings, which appeared at the time in* Academy Architecture, *indicate. All three show buildings designed in* 1896 *and erected during the years immediately following: right, Colchester Town Hall, by John Belcher; below, University College Hospital, London, by Alfred Waterhouse; bottom of page, the Tate Gallery, Millbank, by S. R. Smith.*







FOREWORD

This is the fourth successive year in which the January issue of the *Review* has been devoted to a preview of buildings under construction in Britain or due to be constructed shortly. This year's issue follows the pattern of previous years, but it appears at a moment of special significance: it coincides with the *Review's* diamond jubilee. The *Review* was founded at the end of 1896, and the first complete year of publication began with the January issue, 1897.

It may be instructive to consider what that issue would have contained if the editors of the time had decided to make it a preview issue on the same lines as the present series. What new buildings were under construction in January, 1897, or about to begin? And what can be learnt by comparing them with the buildings illustrated in the following pages—their equivalent sixty years later?

English architecture was at a moment of transition. Perhaps it always is, but in the late 1890s present and impending change was clearly reflected both in the styles of some of the buildings being constructed and in the astonishing variety of style presented by the others, which indicated a total breakdown of the earlier disciplines, opening the door to other disciplines and the consequent emergence of a twentieth-century style.

In 1897 the latter was still far away, but Mackintosh's Glasgow Art School was only just round the corner and the work of other architects whom we now regard as among the pioneers who made modern architecture possible bore evidence of a significant discontent with text-book styles and antiquarian ornament. The editors of an 1897 preview issue would, for example, certainly have given prominence to Smith and Brewer's Mary Ward Settlement, in Bloomsbury, and to Harrison Townsend's Whitechapel Art Gallery, both designed in 1896, though they could hardly have seen beyond these buildings' individualistic freshness of style to a time when their revolt from routine eclecticism should have led to the abandonment of eclecticism as such.

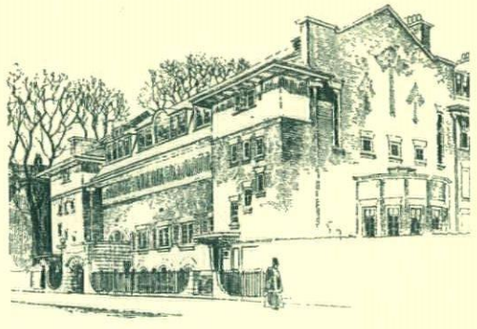
Most of the projects available for the editors to choose from would have been eclectic in the most unbridled sense. The time had passed when period-revival architecture gave its principal allegiance to one period or country—Venetian gothic, Roman renaissance, English middle pointed or the like. Not only did all styles come as grist to the architect's mill—and the more picturesque the better—but in any one building the architect felt free to draw on the productions of many countries and periods. The result was some

of the structures that still make the sharpest impression on London's skyline: the preview issue, 1897, would have included C. FitzRoy Doll's romantically elaborate Russell Hotel, Russell Square, and Alfred Waterhouse's four-square turreted fortress for University College Hospital. Outside London a prime example of the exuberantly picturesque, complete with elaborate baroque roof-line, would have been John Belcher's Colchester town hall.

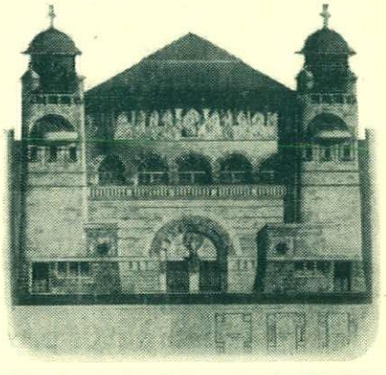
But if picturesqueness was the general aim, there were also examples of period styles employed in a more sober, conservative way. The editors would have welcomed the chance of including a building as charming and consistent as Thomas Hare's Westminster College, Cambridge, and they would probably have felt obliged to include a building as important as S. R. Smith's Tate Gallery, Millbank, in spite of its evident dullness. They would also have felt obliged, no doubt, to look not only for monuments of national importance but for leading examples of necessary types of building like schools, offices, housing and industrial buildings even if these did not dominate the architectural scene as they do in our more utilitarian day.

There was plenty of activity in school building—H. P. Burke-Downing's multi-gabled board school at Merton Abbey, illustrated here, might have been chosen to represent many similar designs—and what we now call Further Education was as new and important a development then as it is today. This class of building would have been aptly represented by Maurice Adams's Camberwell School of Art and Gibson and Russell's West Ham Technical College. In housing, since private houses are excluded from these preview issues, there is no such parallel between the 1890s and today. The work of organizations like the Peabody Trust would not perhaps have been taken seriously as architecture, and the local authorities' contribution to the rehousing of the overcrowded working classes was only in its infancy—though there were some L.C.C. flats at Bethnal Green that would have been a candidate for inclusion. The ingenuity of architects was chiefly being exercised in the multi-storey, middle-class flats that were going up in some of the big cities; a type of building then not more than a dozen years old. There would have been several of these to choose from, most of them as abrupt and angular regarded as townscape, and as replete with Flemish or Jacobean detail executed in the newly fashionable terracotta, as the flats in Green Street, Mayfair, illustrated here, by Henry Legg and Son.

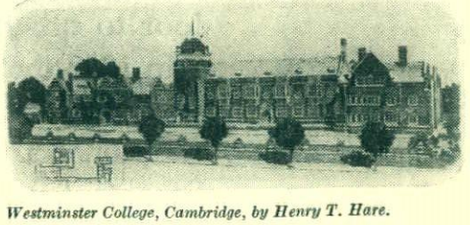
Office buildings, too, were a relatively new type—indeed the number of new types of building with which architects of the 1890s were confronted is something those days and our day have in common—and offices were only beginning to evolve an idiom suited to their needs; but some of the leading architects of the time were applying themselves to the problem—notably Norman Shaw; and a new Shaw office building in Liverpool, in his familiar striped, chimneyed and turreted neo-renaissance style, would have been available for the 1897 preview issue. As to industrial buildings, that was a field that



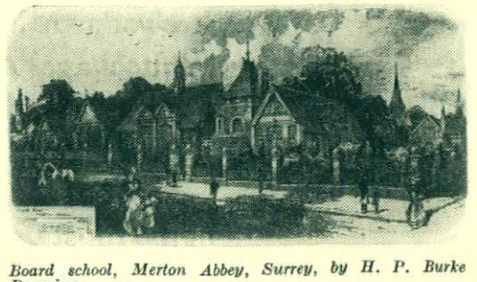
The Mary Ward Settlement, Tavistock Place, Bloomsbury by Dunbar Smith and Brewer.



Whitechapel Art Gallery, by C. Harrison Townsend.



Westminster College, Cambridge, by Henry T. Hare.



Board school, Merton Abbey, Surrey, by H. P. Burke Downing.

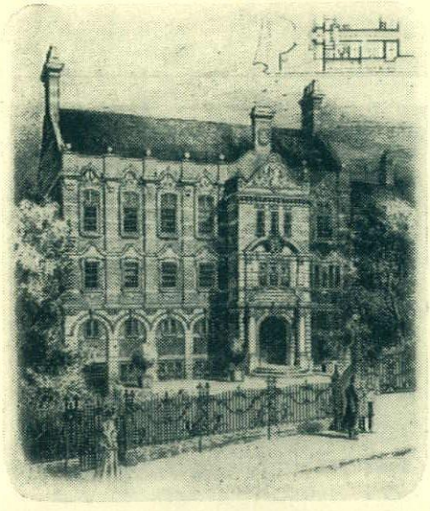
preview 1897. *Above and on the facing page: buildings designed in* 1896 *and started soon afterwards, which would therefore have been available for inclusion in an* AR *Preview issue published in January,* 1897. *The illustrations are contemporary—taken either from* The British Architect, The Builder *or* Academy Architecture.

architects had hardly broken into, though the editors would have received, perhaps rather to their surprise, from the office of Aston Webb (due to be the next PRIBA but one) a design for a grain silo at Greenwich adorned with a consoled cornice, a diaper wall-pattern, a corner turret and other features drawn from an impressive number of different styles and periods.

A direct comparison between the buildings previewed in 1897 and those previewed today is impossible, not so much for lack of any philosophy common to both as because of the difficulty of discovering a single philosophy in the output of 1897. The common ground the buildings of 1957 stand on is that they represent an architectural epoch that has spent much thought searching for a philosophy. This has partly, of necessity, been a negative process. When the reader of the *Review* compares the buildings of 1897 with those of 1957 the things he is most aware of are the things our buildings no longer have—the fancies and fripperies that have been discarded. The perfectly sound arguments for discarding them—indeed the historical necessity of doing so—need no recapitulation here. We know that we are building a modern architecture on sound foundations.

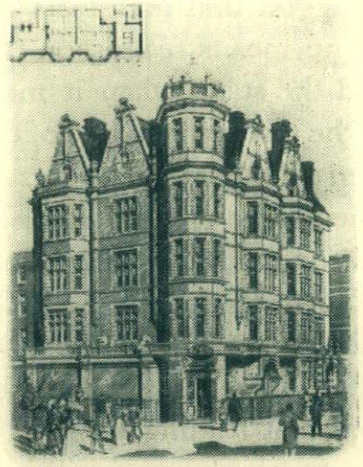


West Ham Technical College, by Gibson and Russell.

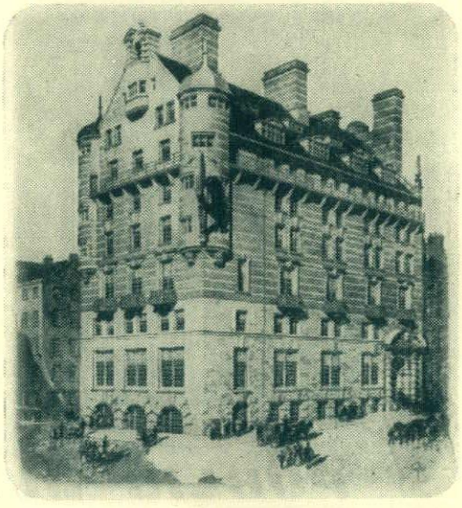


Camberwell School of Art, by Maurice B. Adams.

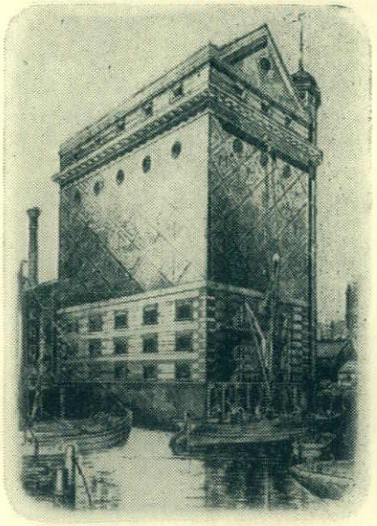
But we are also getting to know that modernism is not enough, and as we win the battle against eclecticism we find ourselves in the middle of a new battle, the battle for *quality*, and the lessons that can be learnt from the architecture of 1897, in spite of its wholly eclectic nature, are concerned with quality in architecture, especially quality of craftsmanship. Craftsmanship has, of course, changed its meaning with the sixty years that have passed. Hand workmanship has given place to machine production and the process of building has increasingly become the assembly of factory-made parts. But, nevertheless, the basic attributes that make the difference between good quality architecture and routine building remain: the right use of the right materials, with an eye for proportion and scale; a sense of the relationship of the part to the whole; craftsmanlike detailing, ensuring not only fine finish but durability of finish.



Flats in Green Street, Mayfair, by Henry S. Legg and Son.



Offices, Liverpool, by R. Norman Shaw and J. Francis Doyle.



Grain silo, Greenwich, by Aston Webb.

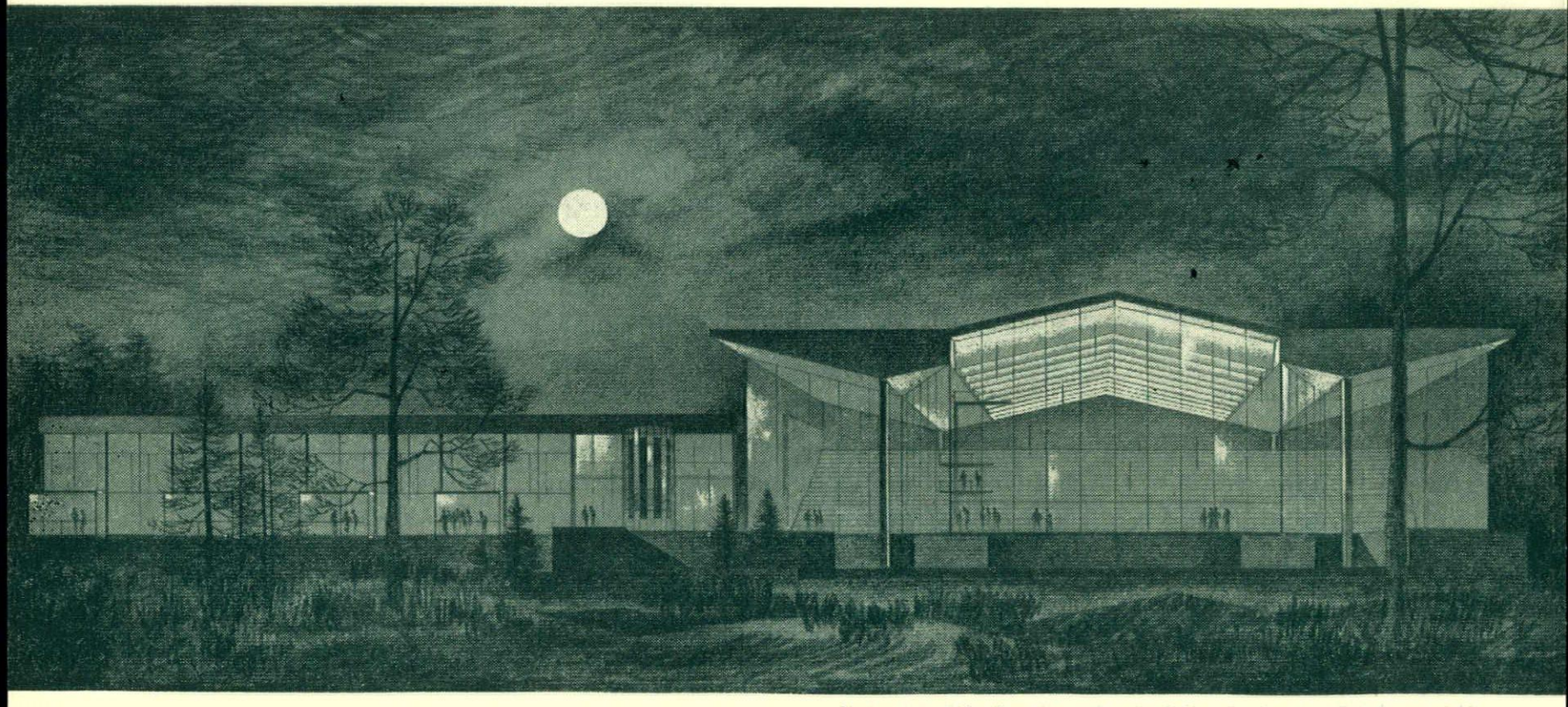
The best buildings of 1897 had endless care lavished on their detailing, which was considered—albeit with aesthetic objectives that we do not take seriously now—from all the foregoing points of view. And by and large the buildings have improved with age. The true aims of a twentieth-century architecture will only have been achieved when the same can be said of the buildings of today. The projects illustrated in this

issue suggest that architects are aware of the distance they still have to progress and are by no means resting on the laurels modern architecture has so far won. But it has reached the stage when it must accept a direct comparison with the buildings of the past—the test being made, of course, in relation to each period's aims and circumstances.

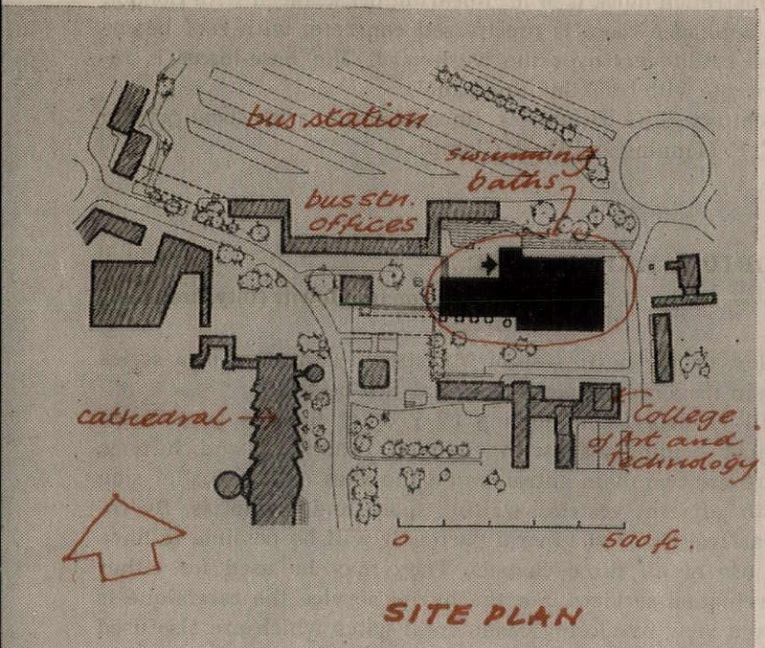
When another sixty years have gone by and another board of editors is preparing a preview issue of the *Review* for publication in January, 2017, they too may be tempted to look back and examine the sort of architecture their predecessors published in 1957. They will realize that the 1950s were an age of transition—perhaps they will observe that all ages are—but they will see in the projects of 1957 not only a less confusing picture than we see when we look back to 1897, but evidence of a clear line of development leading towards the mature, craftsmanlike architectural idiom that, it is not too much to hope, will in their day have become a commonplace.

the editors

1 PUBLIC BUILDINGS



Night view of the Coventry swimming-baths, showing the effect from outside of the all-glass walls of the main and the smaller pools. The stepped seating of the public gallery can be seen on the far side of the main bath.



SITE PLAN

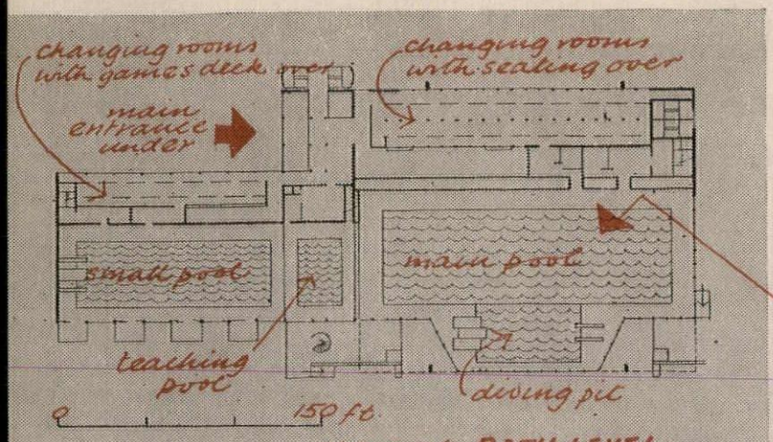
SWIMMING BATHS: COVENTRY

Arthur Ling (City Architect)

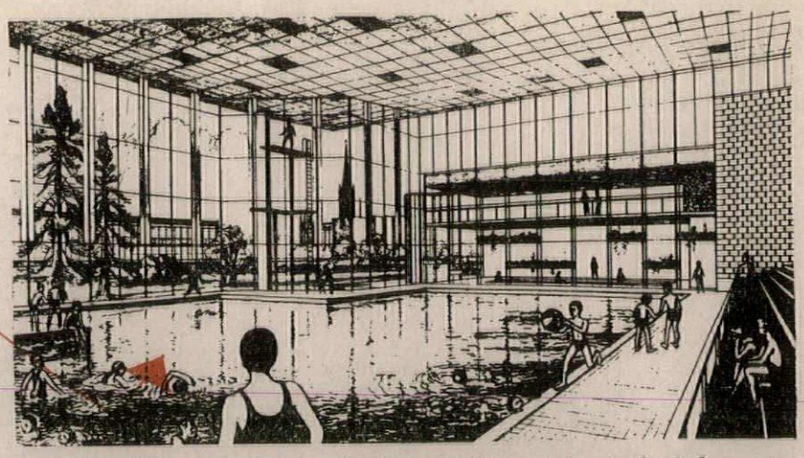
Part of the comprehensive redevelopment of the city centre, and sited in Cope Street, opposite the new College of Art and Technology. Building is expected to start early in 1958.

There are two swimming pools, both with fully glazed walls facing south on to sun-bathing terraces and gardens, which are accessible from the pool-sides. The main pool is 165 ft. by 56 ft. (50-metre length), and T-shaped, the leg of the T forming the diving-pit so that swimming and diving are segregated. A gallery for 1,500 spectators is reached from the entrance hall on the north side, which contains the central desk where staff can supervise public circulation to all parts of the building. The small pool is 110 ft. by 40 ft., and will be allocated to swimming clubs and school classes when required. Changing cubicles have separate approach corridors to and from the street and the pools, with the cubicle acting as a barrier between the two, to prevent dirt being carried on to the poolside. Clothes are hung on a patent metal hanger which is then handed in at a central counter. There is also a small teaching bath, a restaurant at high level overlooking both pools, a games deck and club-rooms (which can be used as a dance hall in conjunction with the restaurant) and slipper baths for men and women on the lower ground floor.

Construction is reinforced concrete. Roofs are steel lattice trusses with lightweight decking. The entire roof to the main pool is sup-

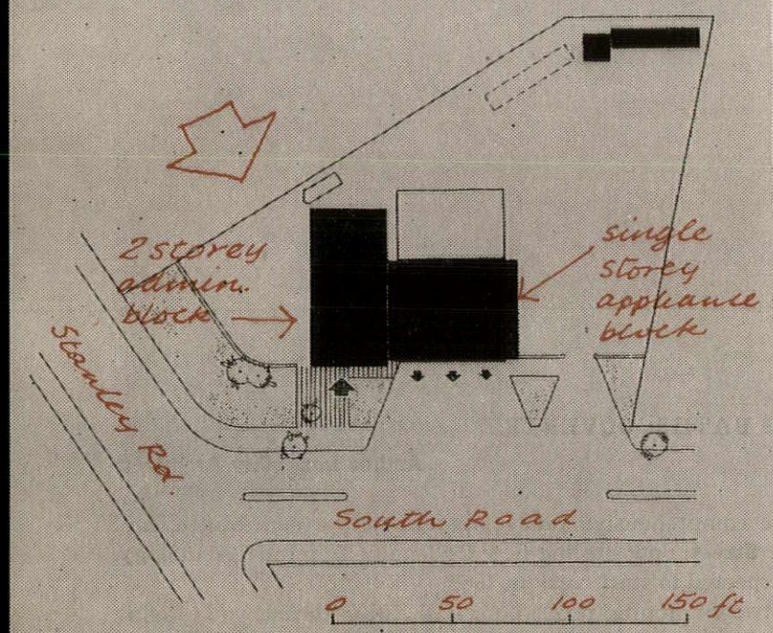


plan at BATH LEVEL
Swimming Baths: Coventry



ported on four stanchions, which carry two main steel girders running north and south, and secondary steel girders at right angles, with a cantilever of 42 ft. on both sides. The building is air-conditioned.

Principal architect, Douglas Beaton. Architect in charge, Michael McLellan.



SITE PLAN
Fire Station: Twickenham

FIRE STATION: TWICKENHAM

C. G. Stillman (Middlesex County Architect)

At the junction of South Road and Stanley Road. The starting date is uncertain because of the credit squeeze.

The plan is L-shaped, consisting of a 2-storey administration block and a single-storey appliance room. At the corner of the site is a free-standing hose-drying tower. On the ground floor of the administration block are offices, stores, drying room, cloakrooms and the muster bay and watch-room. On the first floor are a dormitory with ten beds, a locker room, kitchen and mess and recreation room and two pole houses. The appliance room has three bays, each 15 ft. by 42 ft., with sliding-folding metal doors, hand operated, and access to a covered wash-yard at the back.

The administration block is of load-bearing brick, faced with London stocks. The appliance room is prestressed concrete, with roof beams continued as cantilevers over the wash-yard. The hose-tower is reinforced concrete with brick infilling panels.

Group architect, S. G. Brightling (in association with local private architects T. F. Manning and Hugh Clamp).

CREMATORIUM: MANCHESTER

Leonard Howitt (City Architect)

At Blackley, on the north side of Manchester ; the first of a series of buildings in the new cemetery. Work has just begun.

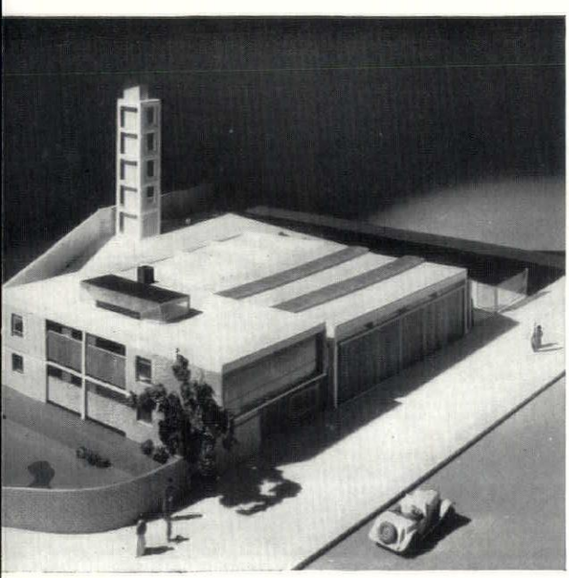
Two small chapels (each holding 60 people) flank a large main central chapel holding 200, with common committal and furnace rooms. There are two main entrances on the axes of the smaller side chapels, with adjacent vestries, waiting space and lavatories. By coordinating arrival times of funeral parties it will be possible to have continuous use of all three chapels. They may be used for either burial or cremation services. For the burial service the catafalque is screened from view by closing ornamental gates which are also used at the termination of cremation services.

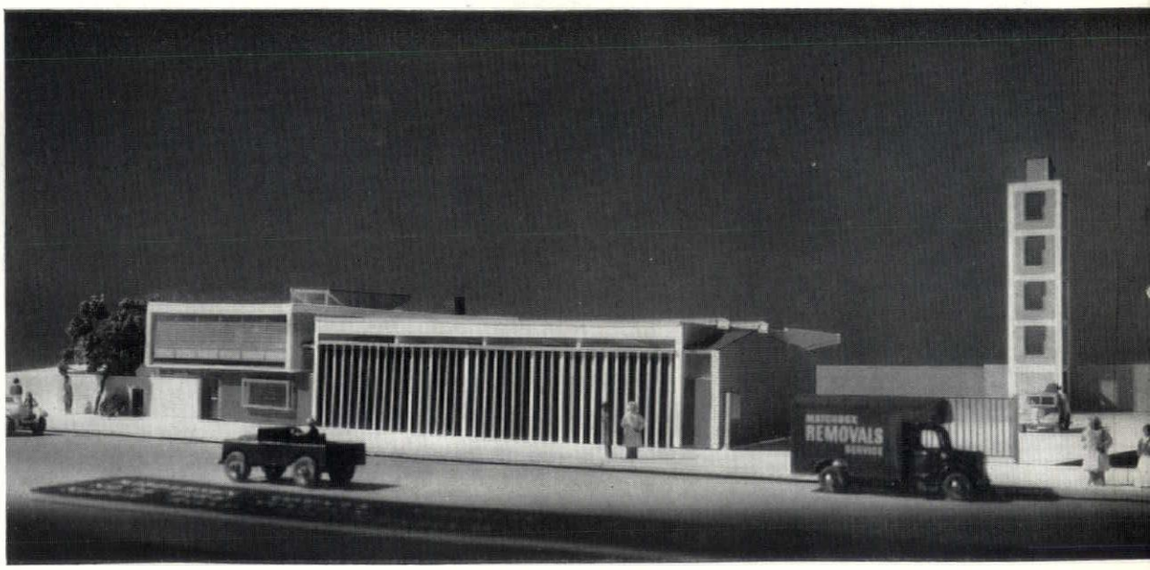
Construction of the two small chapels is load-bearing brickwork with reinforced concrete flat roofs. The main chapel has a reinforced concrete framed roof, structurally separated from other parts of the building and insulated against sound transmission. Chapels and adjacent public areas have panel floor heating. Music is provided by record

[*continued on page* 13

Swimming-bath at Coventry, by Arthur Ling, City Architect: model with the roof removed, showing in the foreground the small pool and beyond it the main pool with the diving-pit on one side and the public gallery on the other.

Fire-station at Twickenham: from above and from the street. In each picture the administration block is on the left and the appliance room on the right.

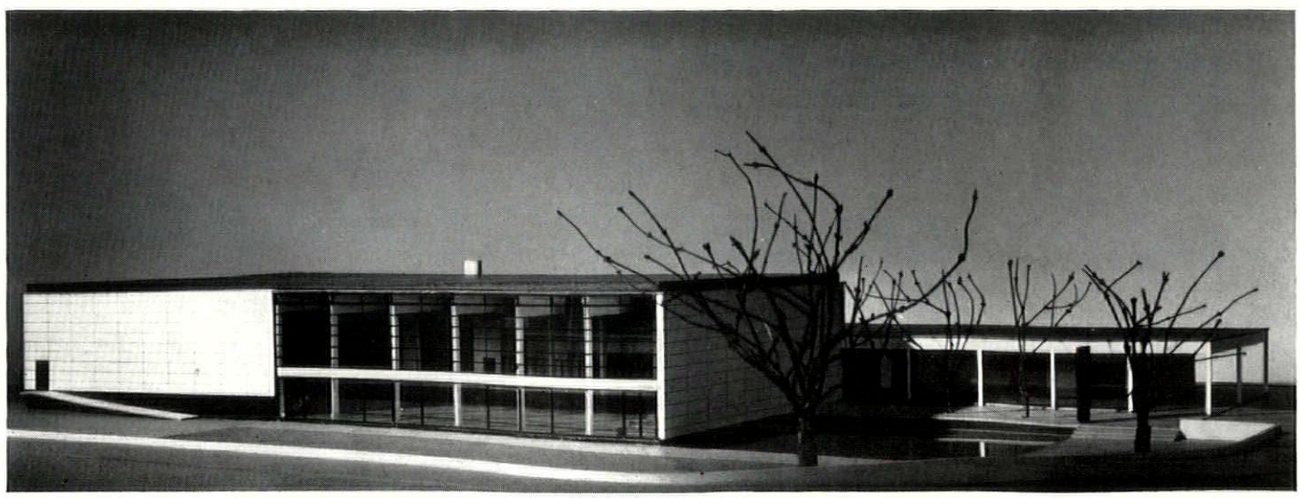




Crematorium at Blackley, Manchester, by Leonard Howitt, City Architect, showing the curved front of the main chapel which is entered through the foyers it shares with the two side chapels.

1. PUBLIC BUILDINGS

Community Hall, Cleethorpes: on the left the gymnasium and the glass-walled main hall; on the right, beyond the pool, the clubroom wing.



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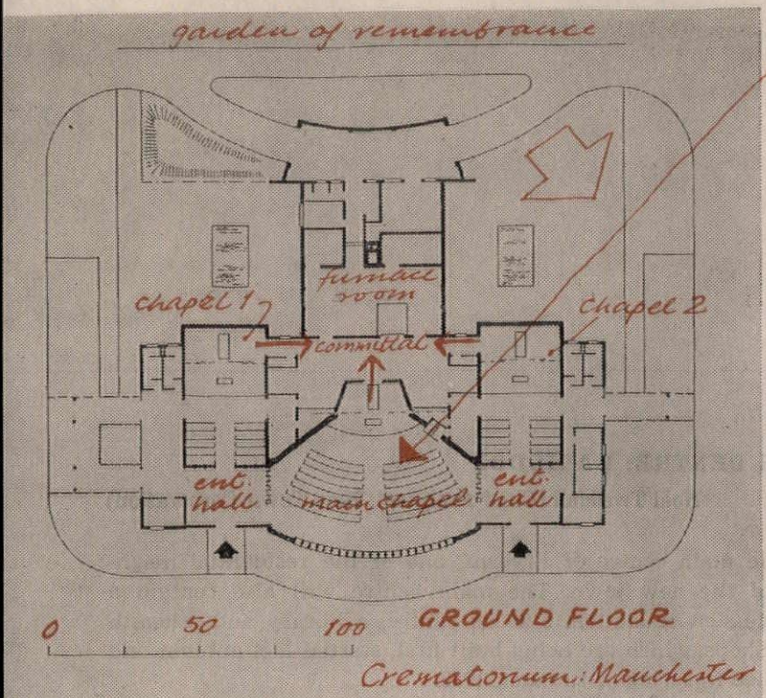
players in the smaller chapels and an electric organ in the main chapel. Deaf aid equipment is provided in all chapels. Cremators are of the latest gas-fired type.

Consultant structural engineers, Trussed Concrete Steel Co. Quantity surveyor, Frank Hyams.



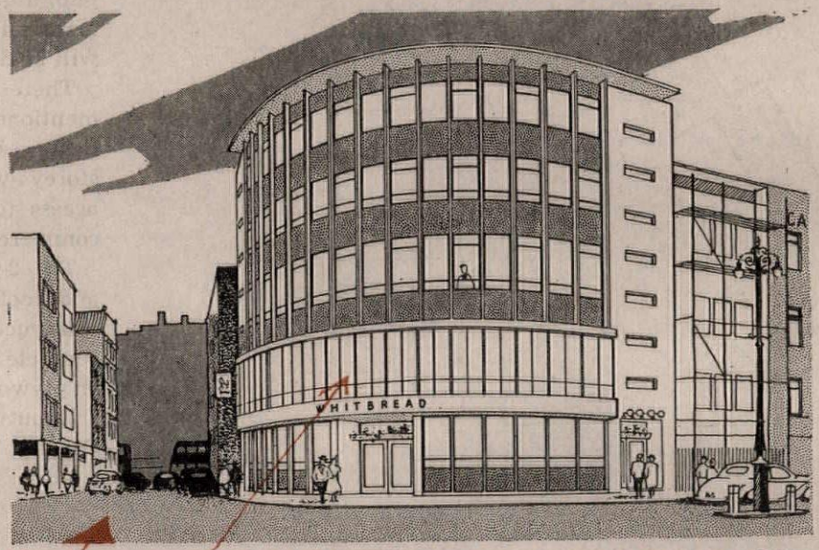
PUBLIC HOUSE: LEICESTER SQUARE, LONDON

T P. Bennett and Son

At the corner of Coventry Street, for Messrs. Whitbread and to be called 'The Samuel Whitbread.' Construction began last July.

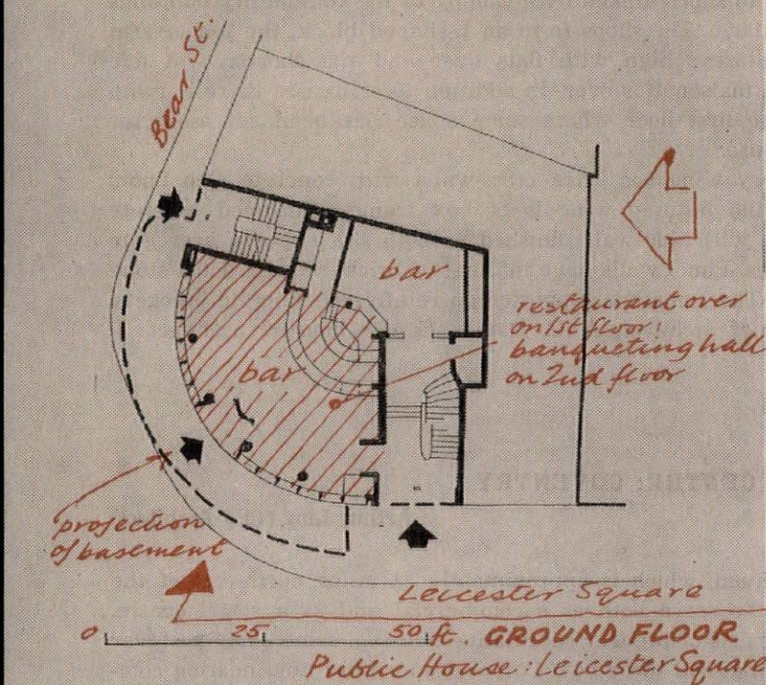
Accommodation comprises cellars in a sub-basement, bars occupying the basement (which projects under the pavement) and ground floor, a restaurant on the first floor, a banqueting hall on the second floor (both served by kitchens on the third floor) and a manager's residence on the fourth floor.

Construction is reinforced concrete with hollow-tile floors spanning from the centre to columns set back from the frontage. The side wings are faced with Portland stone with slate window surrounds.



The curved front is divided vertically by pressed metal ribs and has coloured glass panels between each strip of windows. The projecting first floor has sliding-folding metal windows with Portland stone above and below. The building is air conditioned and oil heated.

Quantity surveyors, Gardiner and Theobald.



COMMUNITY HALL: CLEETHORPES

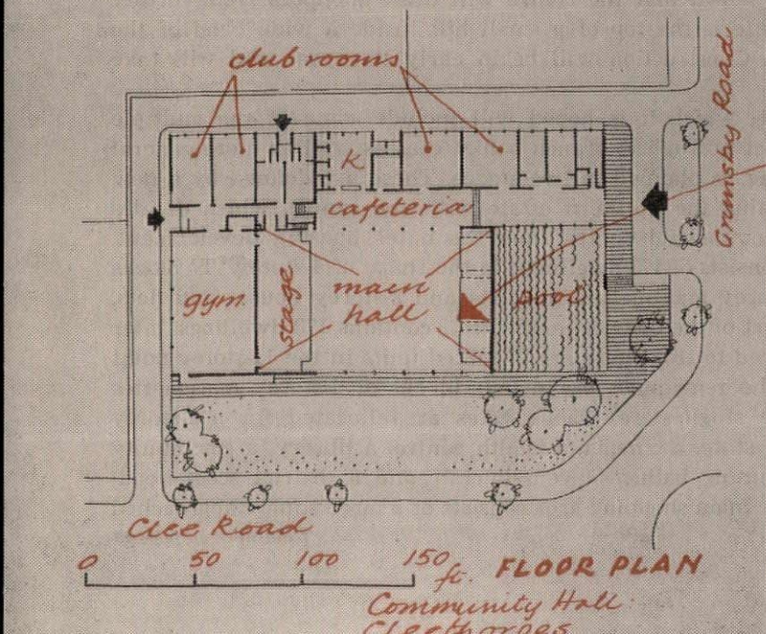
Stillman and Eastwick-Field

A war memorial hall on a flat site of nine acres, near the centre of the town but with playing fields adjoining. Construction will begin early this year.

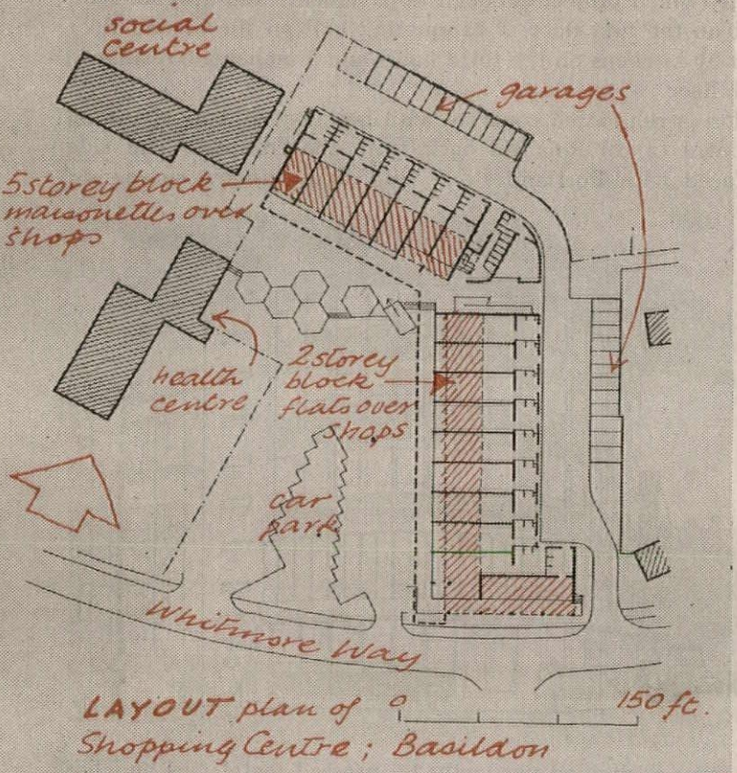
Accommodation includes a large hall seating 850, with stage, four club-rooms, a gymnasium, changing-rooms and cloakrooms (which can also be used in connection with the playing-fields and as dressing-rooms for the stage), and a warden's office. The building is planned for multiple uses; adjoining the hall is a foyer-cafeteria (with kitchen) that can also be used with the club-rooms.

The hall and gymnasium are steel framed with steel truss roofs and cavity walls. The external skin is of concrete slabs with exposed aggregate; the internal skin of brickwork. The club-rooms, etc., are load-bearing brickwork with timber roofs, some external walls being fully glazed between cased steel columns.

Associate architect in charge, Anthony Baynes. Quantity surveyors, Harry Trinich and Partners.



2 PLANNING SCHEMES



LAYOUT plan of Shopping Centre; Basildon

SHOPPING CENTRE: BASILDON

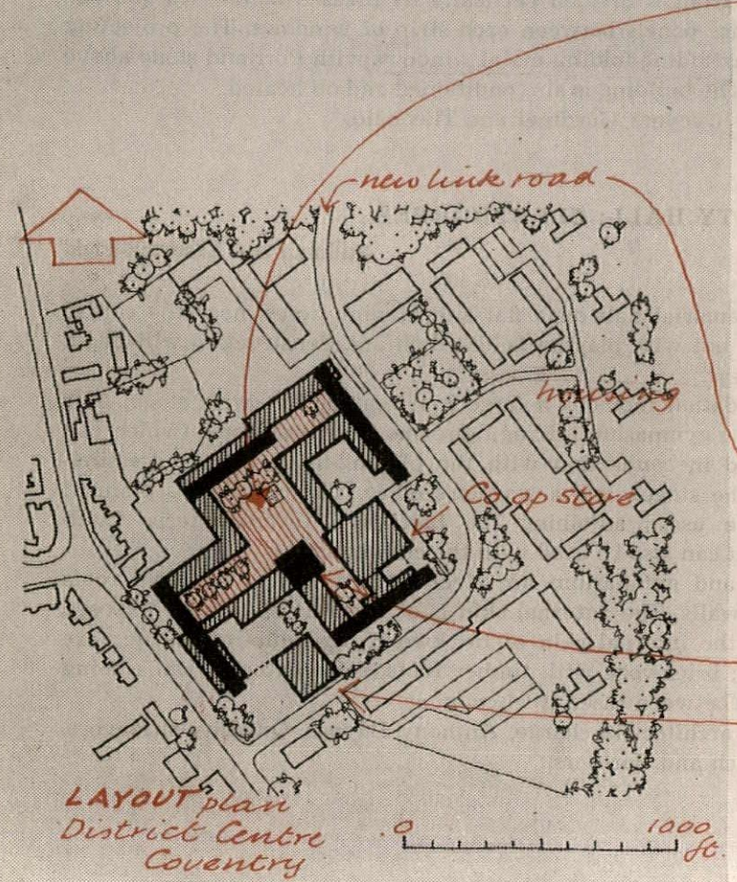
Noël Tweddell (Chief Architect, New Town Corporation)

Part of the main centre of Fryerns, one of the residential neighbourhoods of the new town. The main centre will also contain a pub, a garage service station, a social centre, a library and a health centre. The shops, which are being built first, started last autumn and will be finished in spring or summer, 1958.

There are 18 shops, linked by a canopy to the community buildings mentioned above. The shops form an L-shaped block, the longer arm being two storeys high with flats over and the shorter arm five storeys with maisonettes over. In addition to staircases there is ramp access to the first floor where some space has been set aside for commercial use.

The 2-storey wing has brick cross-walls with concrete slab floors and roofs; the 5-storey wing is of box frame reinforced concrete construction, with side walls finished with *in situ* exposed aggregate concrete slabs. Panel walls have infilling of brick, reconstructed stone or plywood. The canopy is supported on reinforced concrete brackets.

Deputy chief architect, A. B. Davies. Senior housing architect, J. Farber.



LAYOUT plan District Centre Coventry

DISTRICT CENTRE: COVENTRY

Arthur Ling (City Architect)

At Bell Green, which is approximately 3½ miles north-east of the city centre. To serve both as a commercial and as a social centre. The area consists of pre-war speculative housing, some early post-war council housing, and three new Corporation estates now nearing completion. The eventual population of the area is estimated at 27,000, though it is hoped that the centre will draw shoppers from further afield. The site is the top of a small hill inside a wide bend of the River Sowe. Construction will begin early this year and will take two years.

The centre, which it is hoped will include some of the multiple stores, district post office, branch banks, etc., as well as more general type shopping, is planned in two stages. These are defined by a new road connecting the northern estate with the centre, which divides the actual commercial centre from the outer housing development. The latter consists of 173 dwellings, in the shape of 4-storey 'T' blocks of flats, 3-storey maisonettes and flats and 2-storey houses and flats. The main part of the district centre itself contains 173 dwellings, later to be increased to 185. There are 77 mixed units in the 11-storey point block, and the remainder are in four blocks of 4-storey maisonettes raised above single-storey shops. Sites are allocated for a 2-storey Co-operative store, a cinema, a health centre, a library, a community centre, swimming baths, a licensed club, and a district scout headquarters. The main shopping area consists of a large square approached

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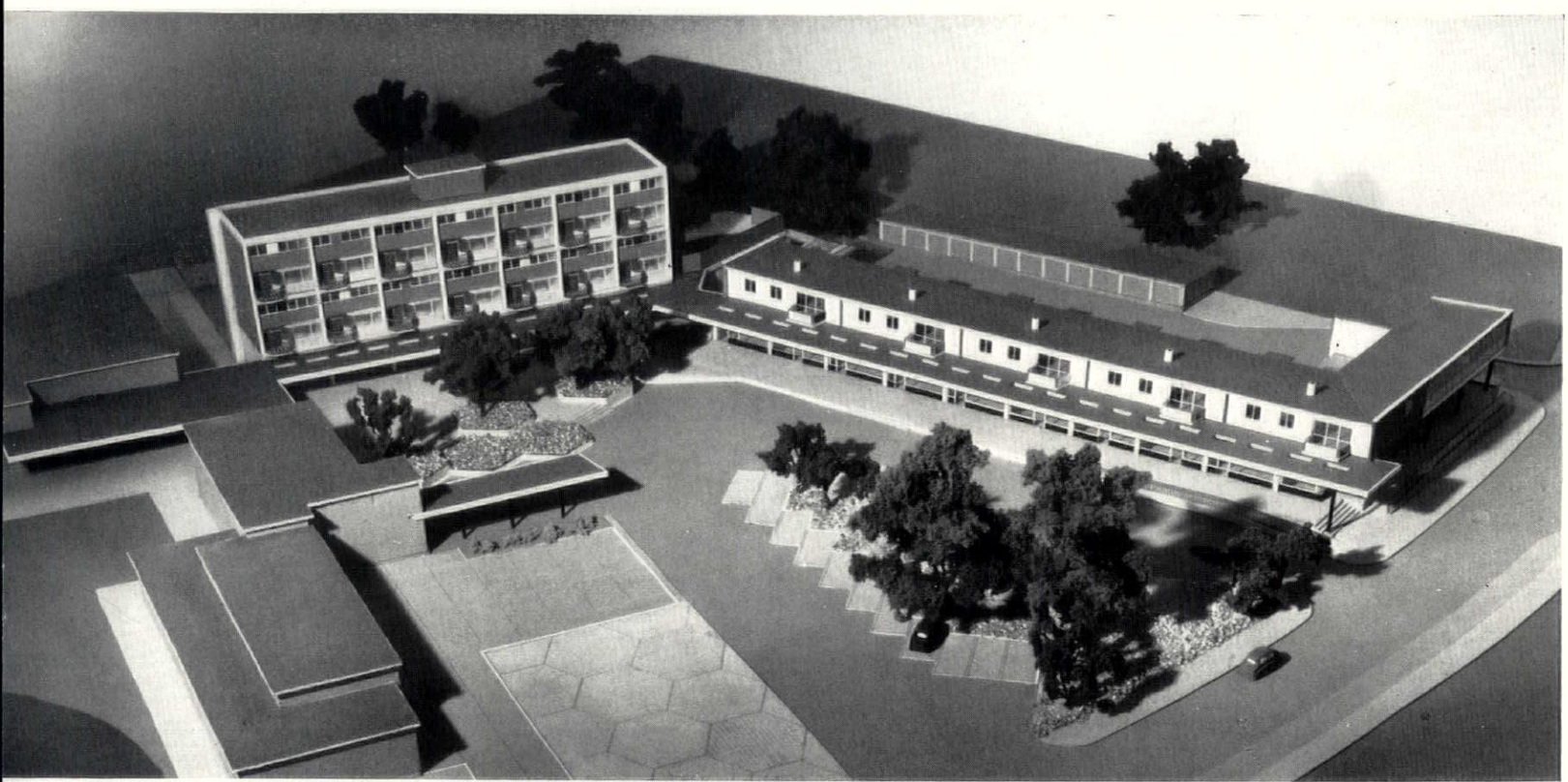
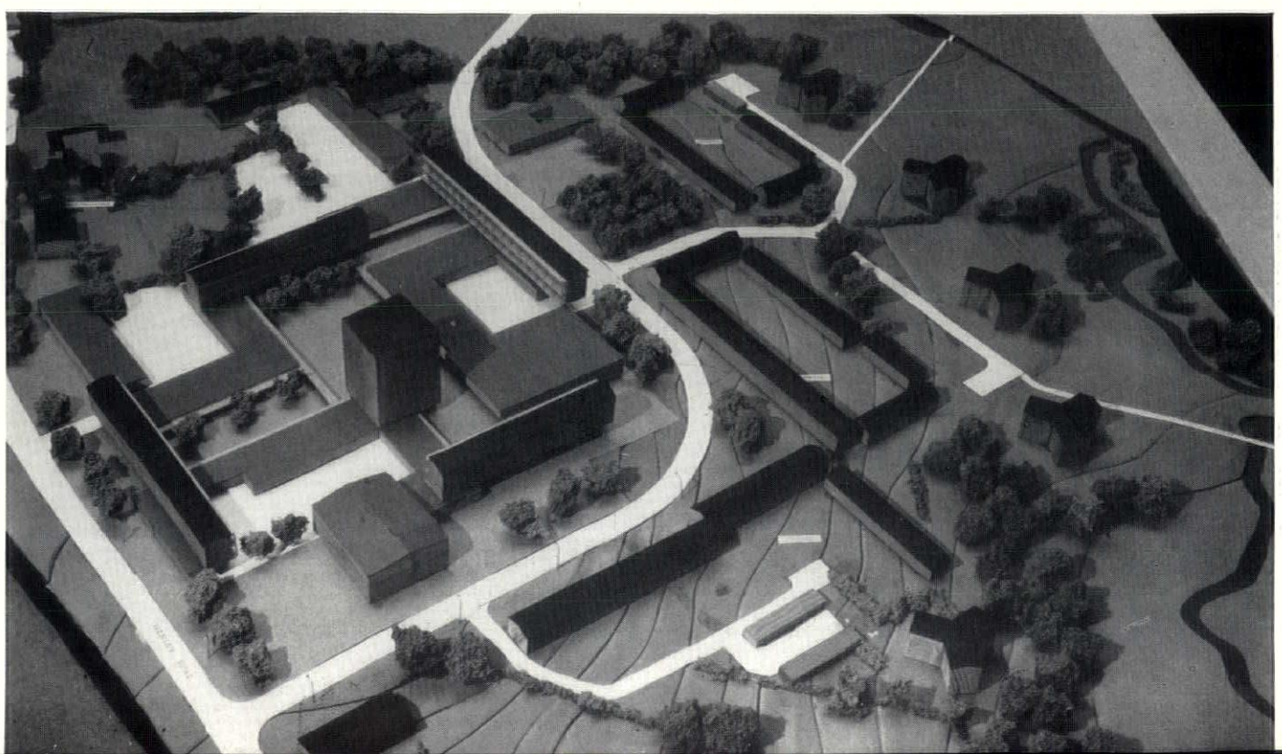
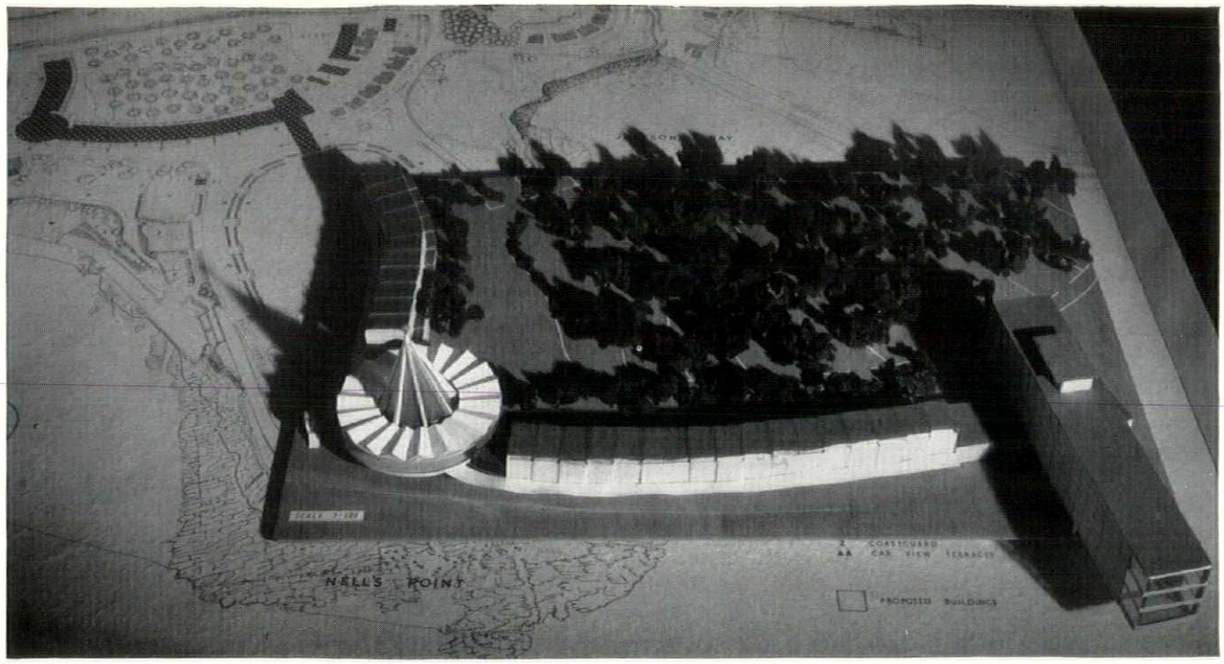


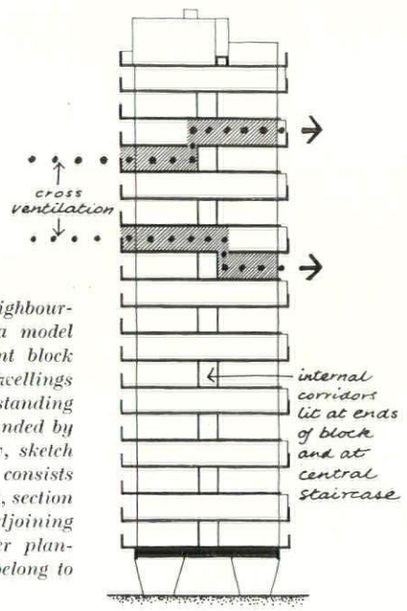
Shopping centre at Basildon new town. The two rows of shops (one with flats over them and one with four floors of maisonettes) are linked by a canopy which also links the taller block to the proposed community buildings on the left.

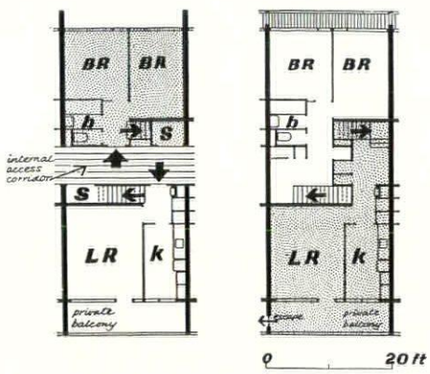
Bell Green district centre, Coventry. To the right of the curved road are flats and maisonettes; to the left are shops with maisonettes over and various community buildings surrounding an 11-storey point block.



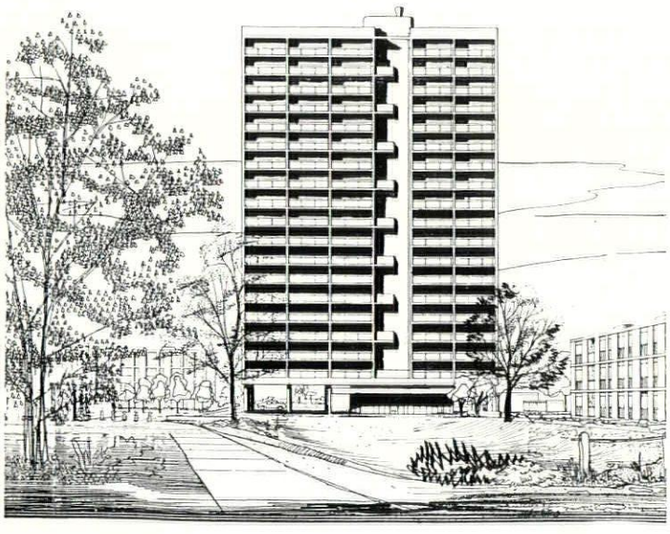


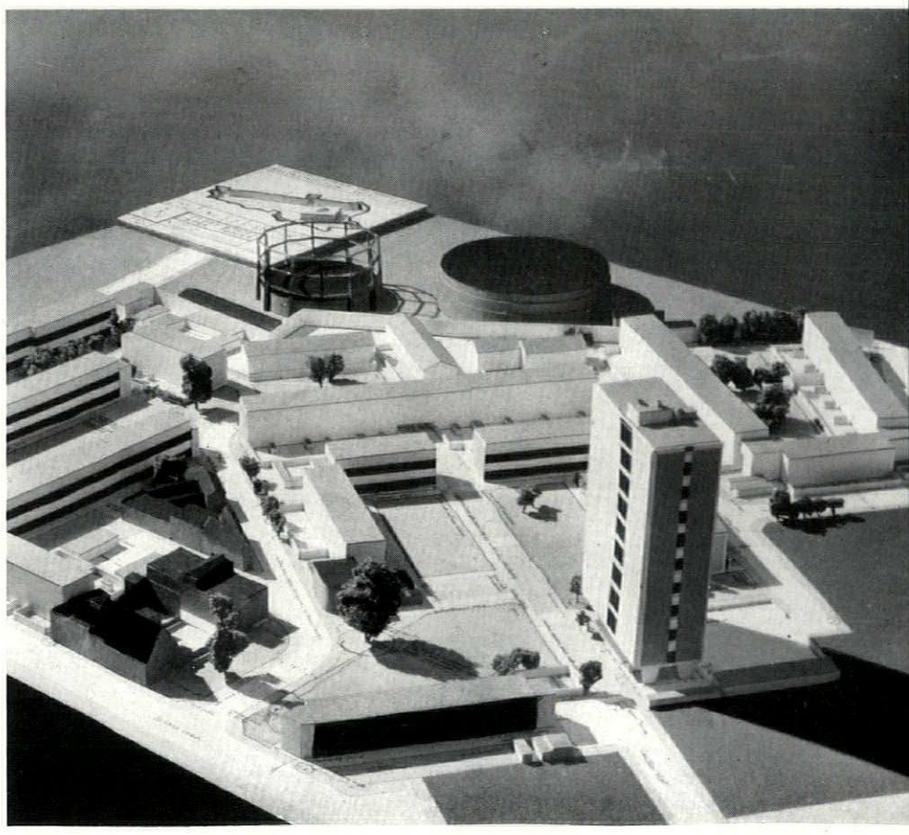
Model of the proposed buildings on Barry Island, superimposed on a map of the site showing (left) the buildings in black. The circular structure in the model is the kursaal, *adjoining it are shops with lodging houses over and on the extreme right the hotel.*





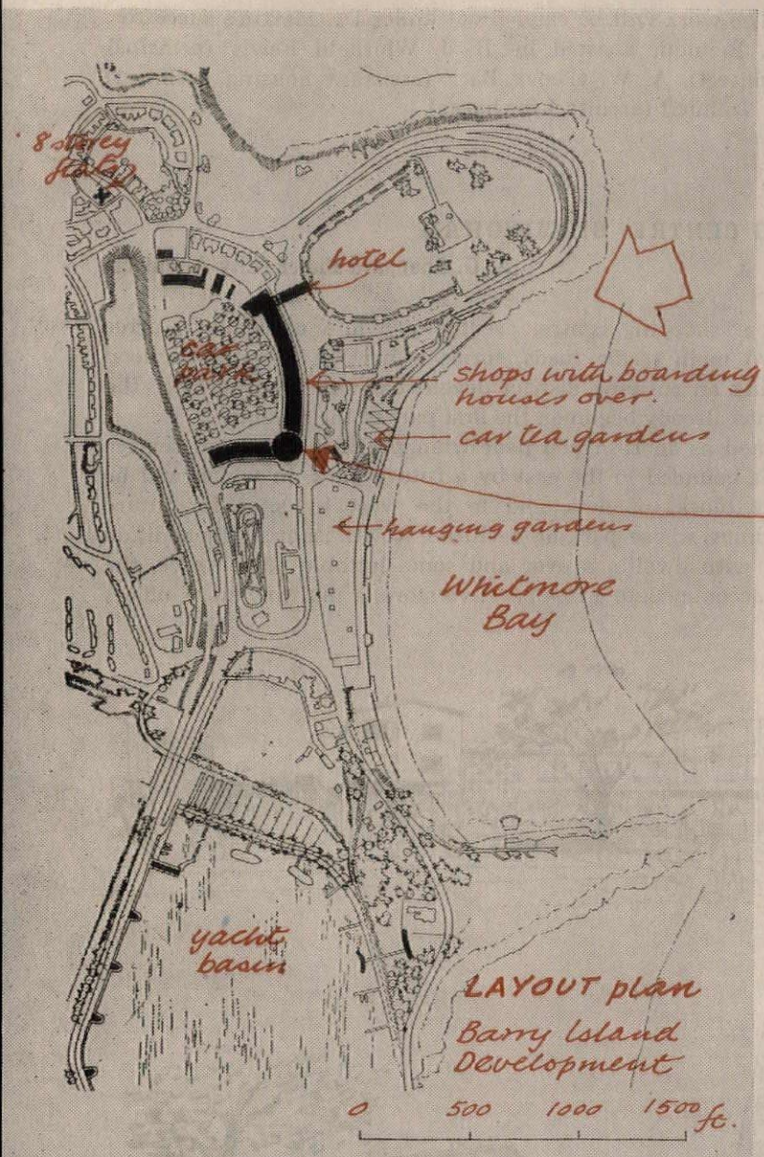
The LCC's Tidey Street neighbourhood unit. Below, right, a model showing the 19*-storey point block (London's tallest block of dwellings to date) seen from the east, standing in open ground and surrounded by lower housing units. Below, sketch of the point block, which consists wholly of maisonettes. Right, section through it and plans at adjoining levels showing the crossover planning (the shaded portions belong to the same maisonette).*





continued from page 14]

from three smaller precinct shopping areas. Car parking and service access is provided at the rear of these areas. It may be possible later to establish an open-air market in the square, which is intended to be a focus for the neighbourhood. The square is dominated by the 11-storey point block, which is set on pilotis to allow freedom of movement at ground level.

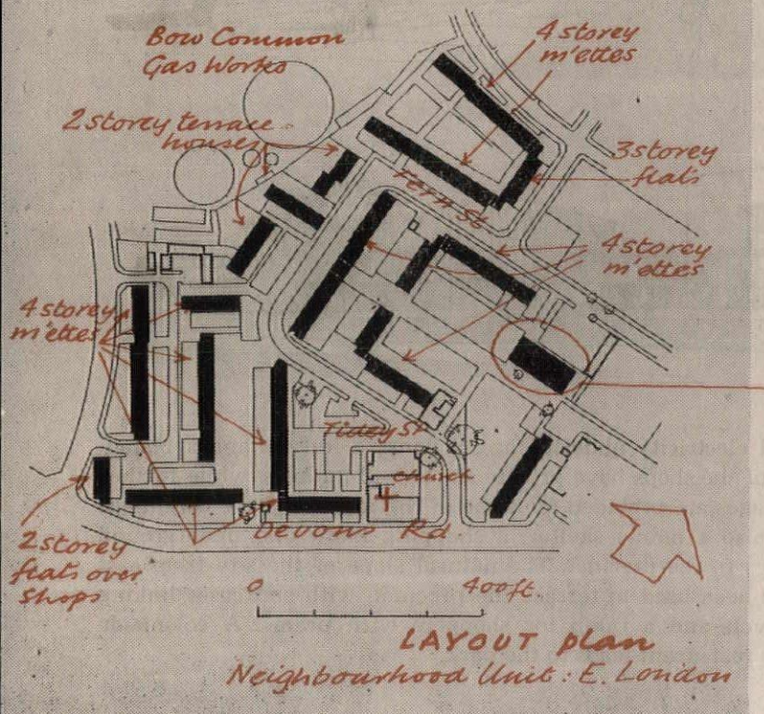


BARRY ISLAND DEVELOPMENT: SOUTH WALES

G. A. Jellicoe and Partners

Part of a major landscape design for the whole of the foreshore between the docks entrance and Porthkerry, prepared for the Corporation of Barry. The land is leased by the Corporation to a private developer, and but for the credit squeeze work would have commenced early this year. The first stage comprises a *kursaal*, with shopping arcades adjoining. Above the shops are family-run boarding houses. Behind lies a car park for 1,000 cars with garage and car-valeting services. In front will lie car tea-gardens, where visitors can be brought refreshment while remaining in their cars. Sometimes as many as 6,000 vehicles and 75,000 people visit Barry Island in a single day. On the higher ground, and embracing magnificent views up and down the Bristol Channel, a first-class hotel spanning the main road, suitable for conferences in the winter, will be built later.

Assistant architect, J. A. Murphy. The scheme has been prepared in association with John Proctor, Borough Engineer and Surveyor.



NEIGHBOURHOOD UNIT: EAST LONDON

J. L. Martin (Architect to the London County Council)

In Tidey Street, in the eastern part of Neighbourhood 7 of the LCC's Stepney-Poplar Reconstruction Area. It lies immediately north of Lansbury and is bounded by a canal, railway lines and a gasworks. Construction will begin this spring.

The whole neighbourhood will accommodate 5,500 people. The housing is grouped round three public open spaces which will be linked by smaller spaces within the housing sites to form a continuous park system, itself linked with those in adjoining neighbourhoods. Besides housing, there is a school, a nursery school, shops (the existing shopping centre in Devons Road replanned) and a church (a bombed church already rebuilt). The housing consists of tall blocks in the centre, standing among open spaces, and low blocks, arranged in the form of square and closes, round the edge. The latter face away from the gasworks and other industrial buildings towards the centre. The density is 136 people per acre, to achieve which two blocks of 19 storeys have been planned in the centre, one of which will be built in the first stage, illustrated here. Besides this there are ten 4-storey blocks of maisonettes, two 3-storey blocks of flats, one 2-storey block of flats and shops and three 2-storey blocks of terrace houses. There are also stores, garages and workshops, and an existing mission settlement and public house have been retained. Nearly half the dwellings have private gardens.

The 19-storey block, in which all living rooms face south, away from the gasworks and railways, is composed of crossover three-room maisonettes, reached from internal corridors, served by lifts. No noisy rooms are over quiet rooms nor do living or bedrooms adjoin the corridor. The ground floor is open. The structure is reinforced concrete.

The project is the result of close collaboration between the LCC planners and architects. The neighbourhood plan was done by Dr. Martin, assisted by L. W. Lane (Senior Planning Officer), P. Johnson-Marshall (Group Planning Officer), G. C. Logie and Mrs. A. M.

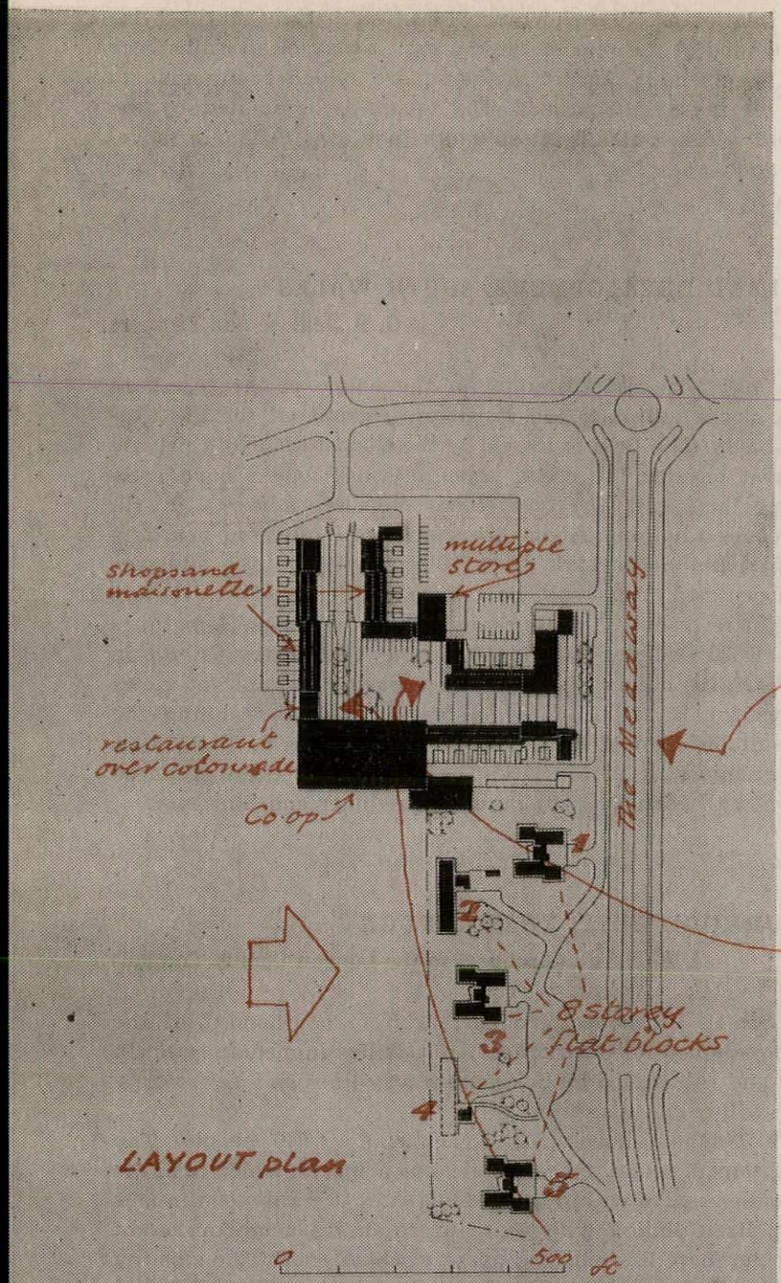
MacEwen. The work will be carried out under Dr. Martin's successor, Mr. Hubert Bennett, assisted by H. J. Whitfield Lewis (principal housing architect), A. W. Cleeve Barr (assistant housing architect) and A. J. M. Tolhurst (architect in charge).

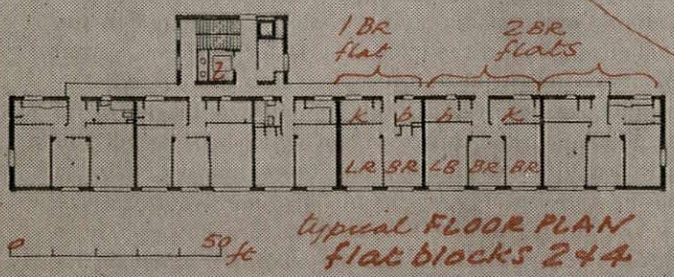
SHOPPING CENTRE: BIRMINGHAM

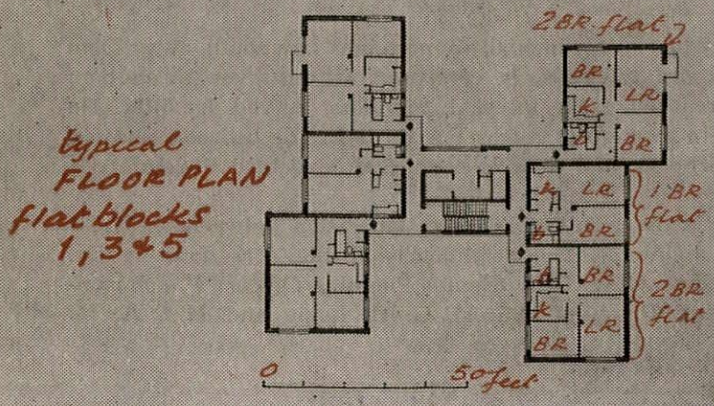
A. G. Sheppard Fidler (City Architect)

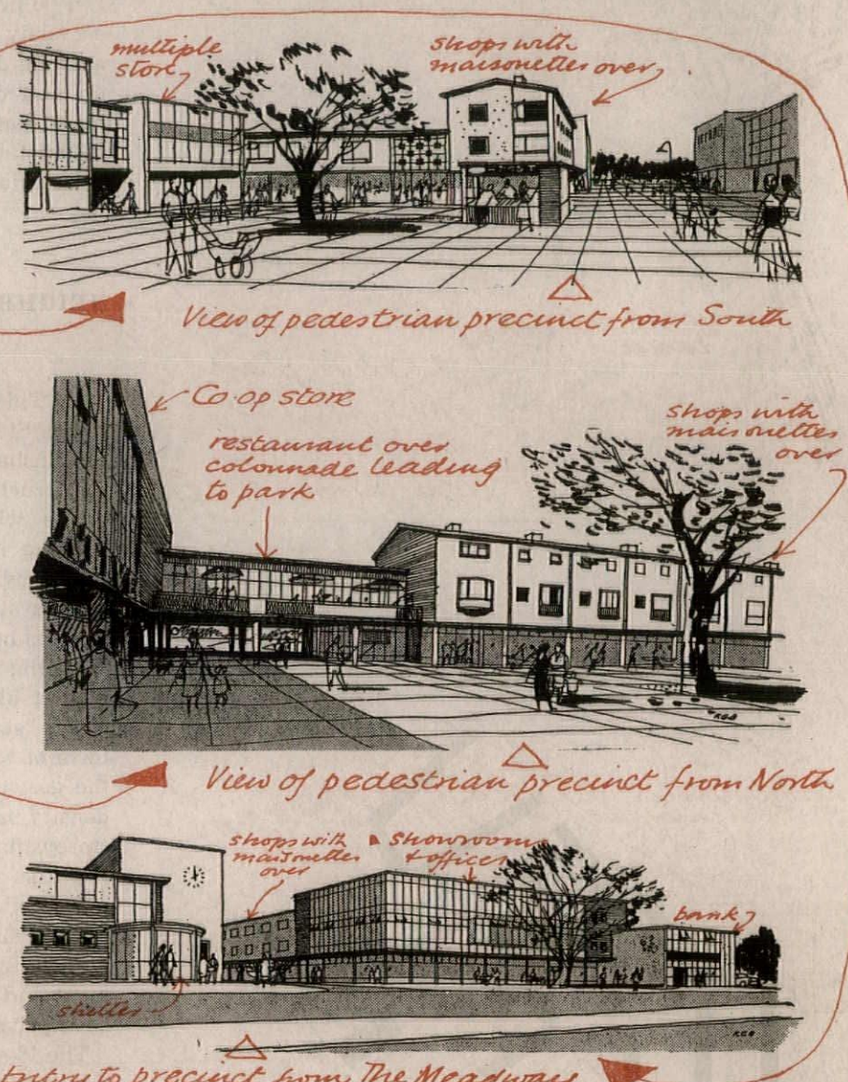
Kents Moat shopping centre, occupying a site of some 5½ acres between two main traffic roads, forms a part of a neighbourhood centre serving an outlying district developed with housing since the war. Work has already begun on the first part of the scheme.

It is planned as an L-shaped pedestrian precinct with rear service roads, and is bounded to the east by a future park, in which will be five 8-storey blocks of flats, and to the west by sites for future public buildings whose parking facilities it will share. In addition to 48 shops with dwellings over and some lettable office space, the centre will accommodate a Co-operative store, a multiple store, offices



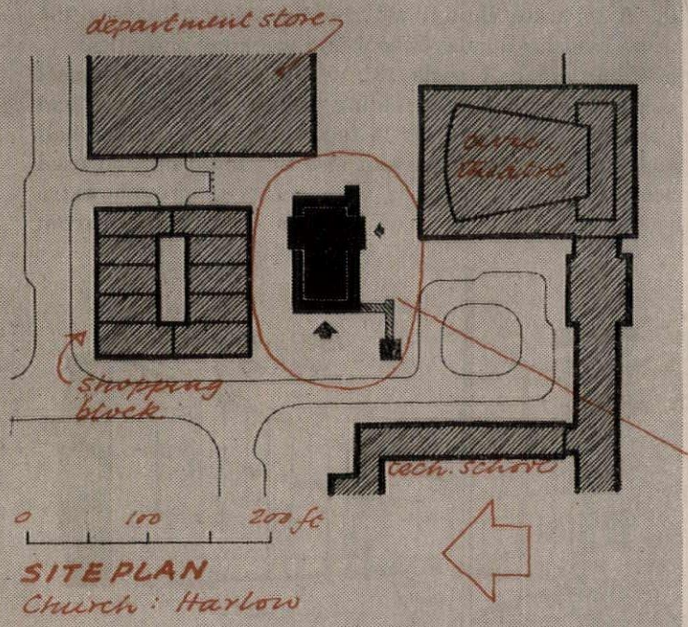






for gas and electricity undertakings, a bank, a library and a restaurant. Most of the shops have private stores and garages, while further lock-up garages are provided for some of the tenants of the dwellings. There are also a public shelter, a shopping kiosk and underground conveniences in the precinct. The natural slope of the site from east to west has been used to terrace the precinct, with staircases linking the two levels and a ramp for shoppers with prams. A colonnade beneath the restaurant leads to the park.

3 CHURCHES

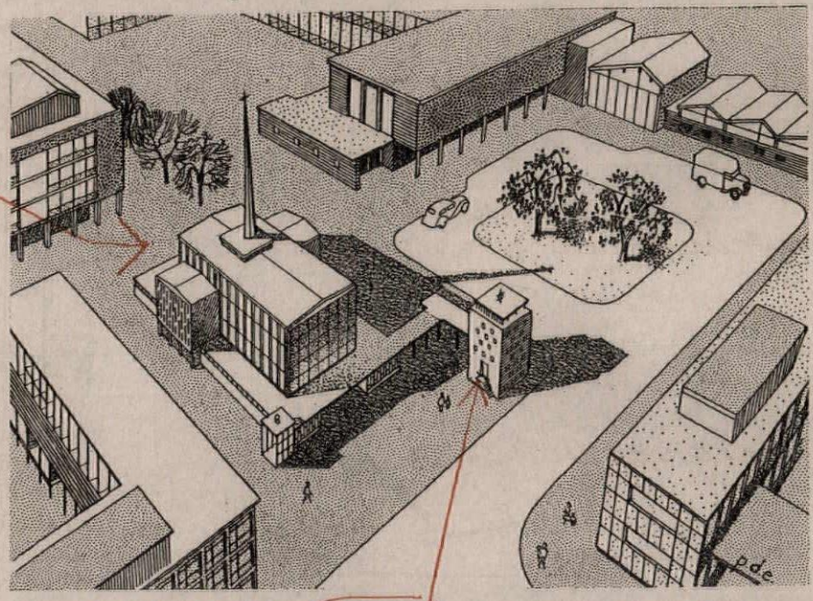


CHURCH: HARLOW

Humphrys and Hurst

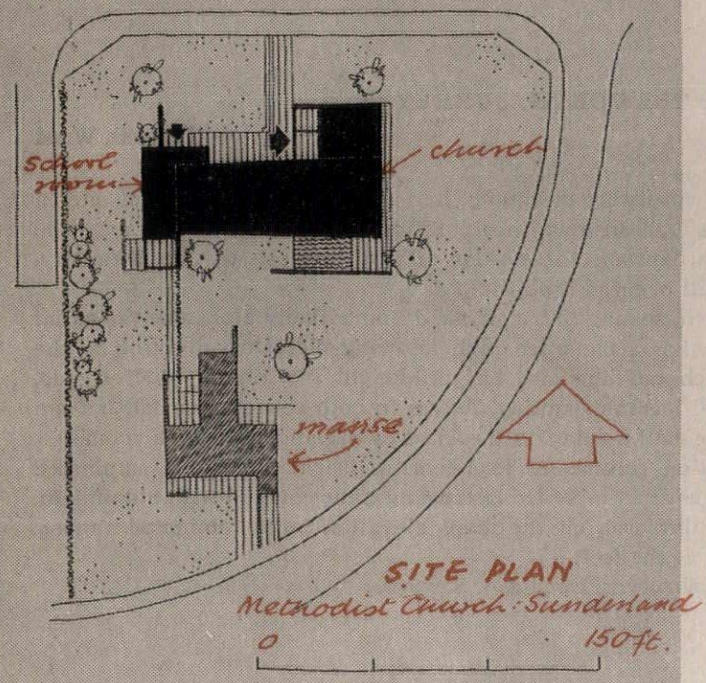
In the town centre at Harlow new town, occupying one side of a formal square of urban character, adjoining the municipal buildings, the shopping centre and the college of further education. Work will be started in the autumn of this year.

As some of the adjoining buildings will be high, no attempt has been made to compete in scale with them. The church seats 450.



There is a low, detached bell tower in which will be hung a peal of bells from a destroyed church. A slender flêche will mark the position of the church from a distance.

Construction is mainly of very dark grey facing bricks, with reinforced concrete flat roofs and nave columns. A reinforced concrete ring beam at eaves level ties the tops of the brick piers. Windows have precast concrete tracery. Internally the church will be white and brightly lit, having a coloured ceiling and a painting on the east wall.

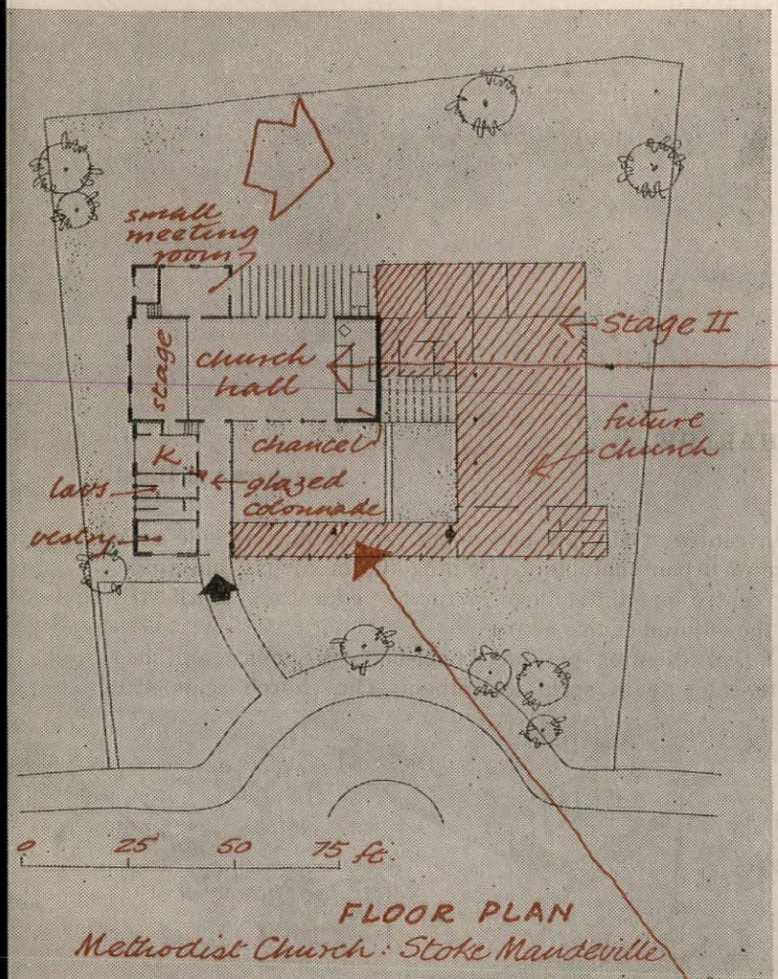


METHODIST CHURCH: SUNDERLAND

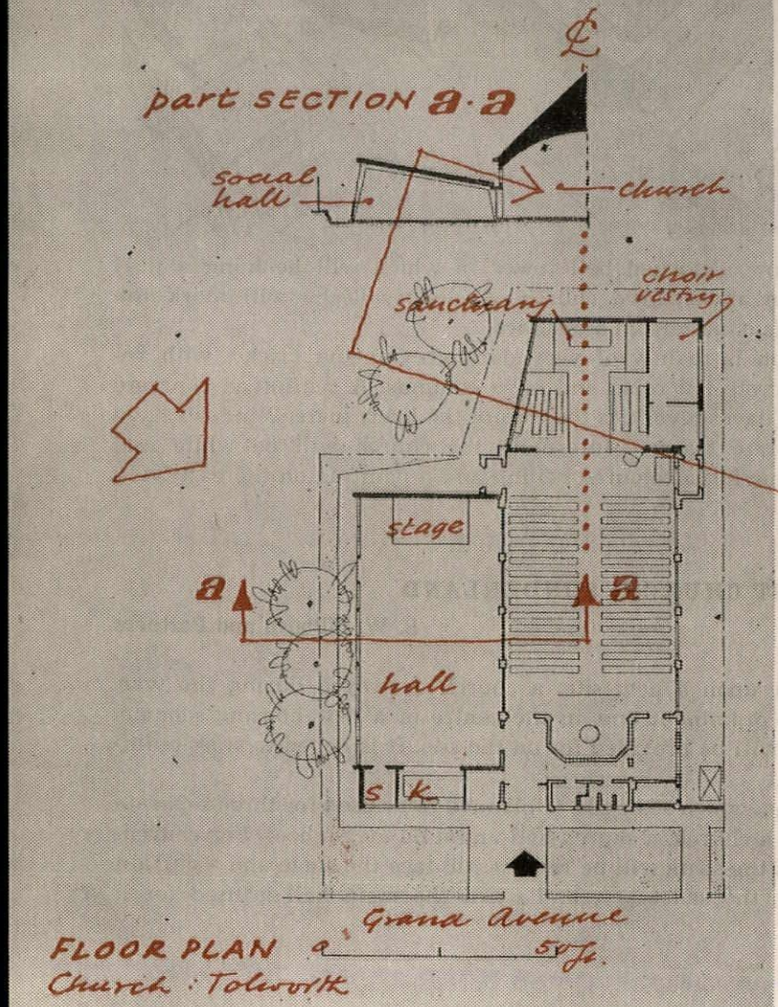
S. W. Milburn and Partners

To replace, upon a new site, a church destroyed during the war. The site is a prominent one, in the centre of a new housing scheme. Car parking will be provided for on the site. It is hoped to start building this year.

The building, which seats 200, is planned to be used for three separate purposes: as a church, a church-hall and a Sunday-school. For church-hall purposes the seats will be reversed to face the stage and a curtain drawn across the sanctuary, and when the main hall is used for a



FLOOR PLAN
Methodist Church : Stoke Mandeville



FLOOR PLAN
Church : Tolworth

Sunday-school it will be divided into two almost equal parts by a folding partition. The structure consists of a reinforced concrete frame with brick infilling panels and glazed curtain walling.

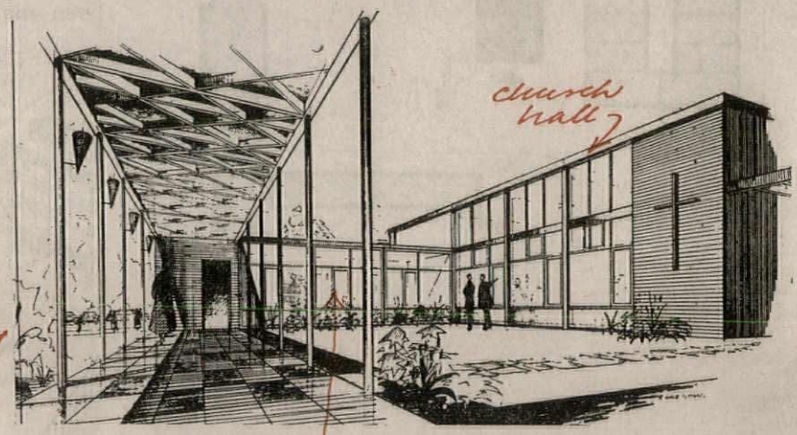
Assistant architect for design, Geoffrey Hutchinson. Model maker, Denis Wilkinson.

METHODIST CHURCH: STOKE MANDEVILLE, BUCKS

Edward D. Mills and Partners

On a level site in a small local authority housing estate near Aylesbury. The first stage, which will begin forthwith and should be completed by September, is a building for use both for worship and for social purposes. A separate church will be built later, leaving the first building to be used for Sunday-school and weekday activities.

The first multi-purpose hall seats 130 people and has a chancel recess which can be closed off by a folding screen. At the other end is a stage, and the chairs are reversed to face this way when the hall is used for social purposes. The stage can also be closed off and used as a small meeting-room, or furnished with chairs to provide extra seating for the church. Alongside it is another small meeting-room



which can also be used as a dressing-room. The entrance takes the form of a glazed colonnade, which can be used as a refreshment room. Adjoining it are cloakrooms, a kitchen and a minister's vestry which can also be used as a classroom.

Construction consists of load-bearing brick cavity walls and a flat timber roof finished internally with acoustic tiles. The large span beams are of glued laminated timber.

Quantity surveyor, Leslie W. Clark.

CHURCH: TOLWORTH, SURREY

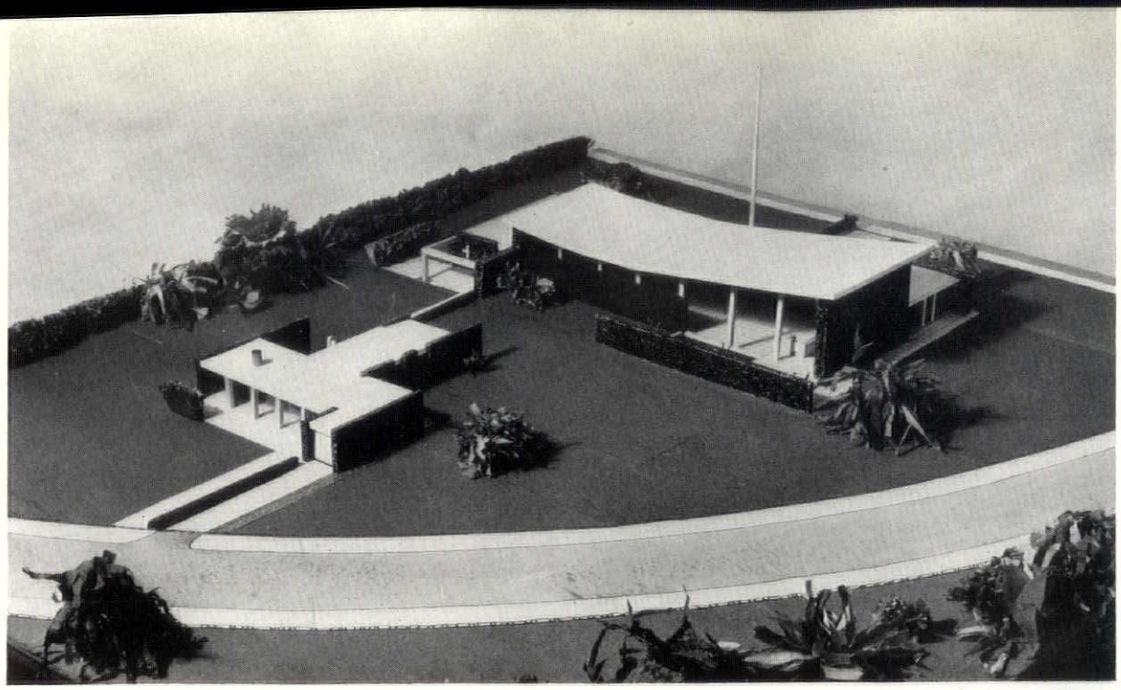
Kenneth Wood

A group, consisting of church, hall and vestries on a small site in a built-up suburban area, incorporating some existing buildings. The site has gardens on three sides and trees close to one boundary. Building will begin in the spring.

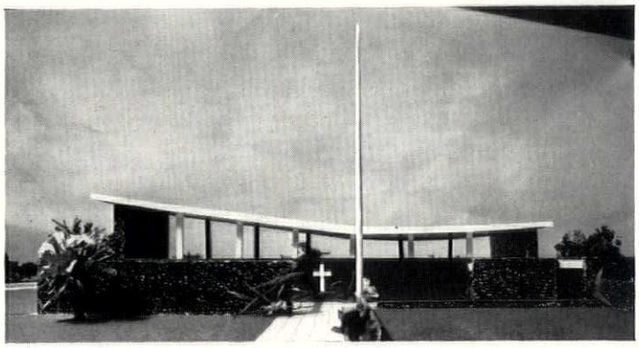
The church, seating 250, is planned immediately alongside the social hall, which has a one-pitch roof, allowing clerestory lighting to the church. Each building also has full-height glazing on its free side, and the hall has roof lighting. Access to both church and hall is from an entrance hall leading to the cloakrooms and minister's room.

Construction consists of load-bearing brick end walls, laminated portal frames and timber trough roofing units covered with aluminium. The triangular arch on the main elevation is of laminated timber, pin-jointed at the feet.

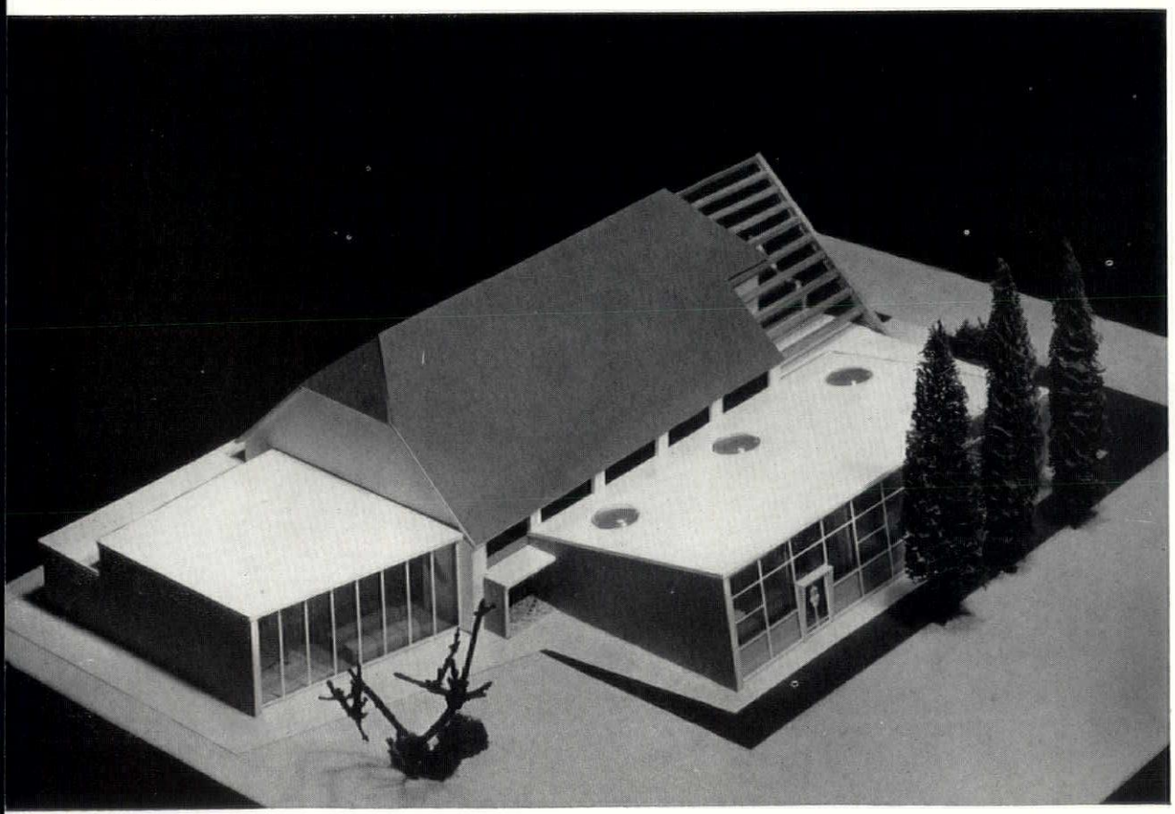
Quantity surveyor, Donald A. Sawyer.



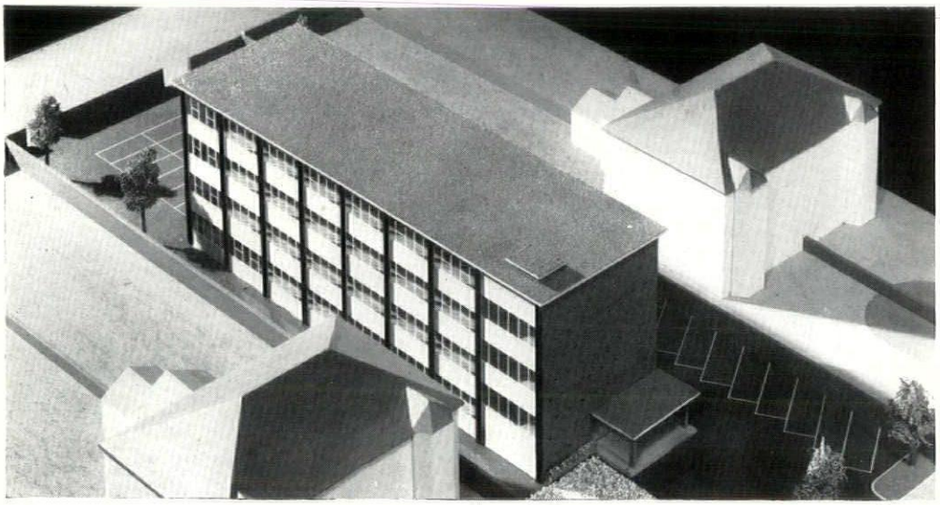
Methodist church at Sunderland by S. W. Milburn & Partners: above, the group formed by the church and (on the left) the manse. Right, the church from the far side.



Below, church at Tolworth, with social hall—the right-hand building in the picture—alongside it.

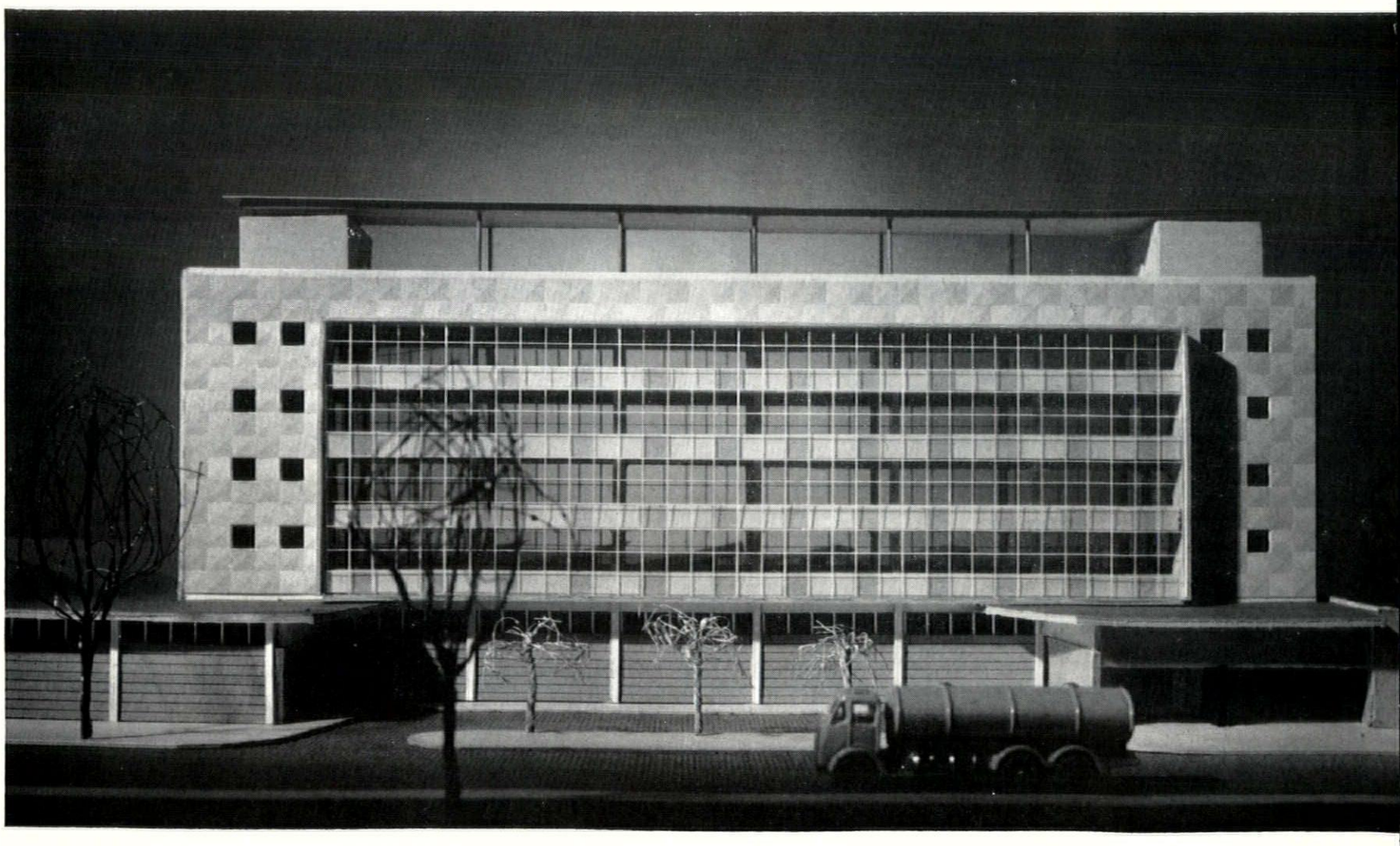


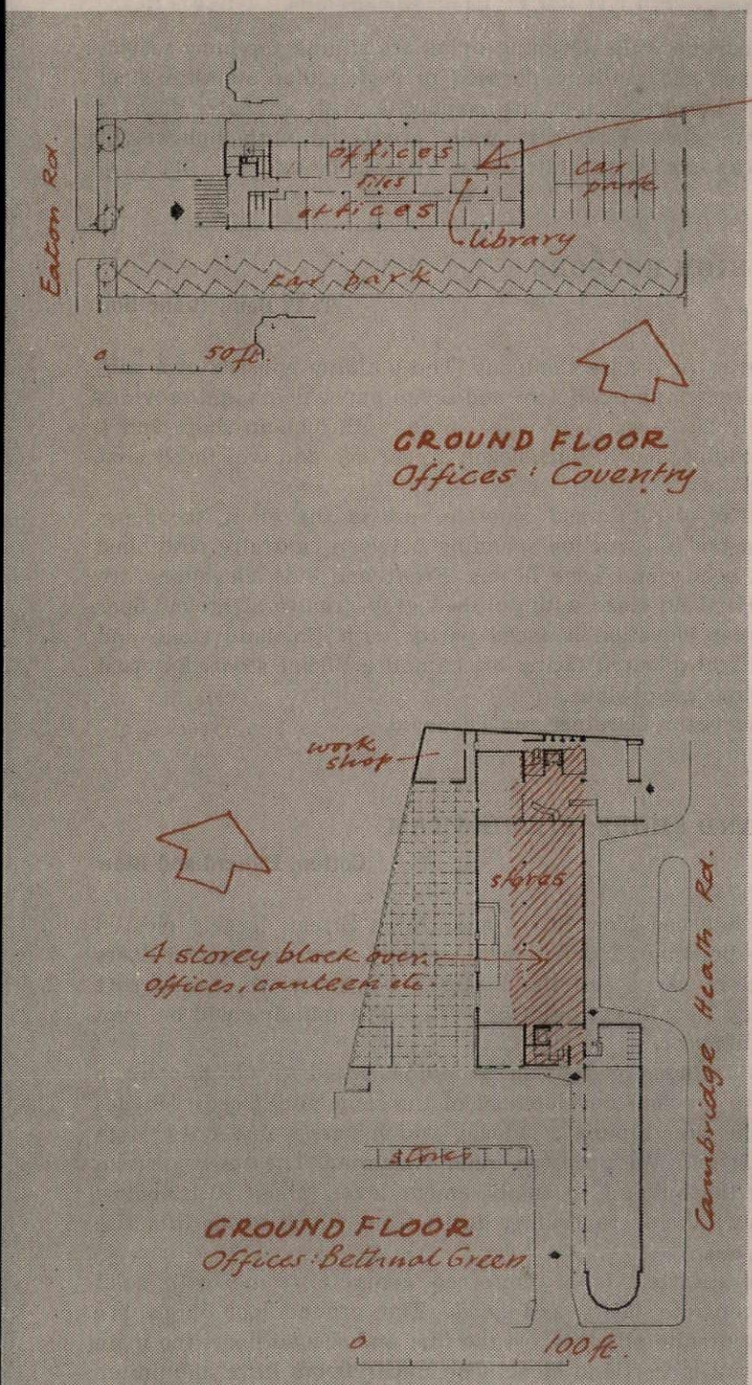
4 OFFICE BUILDINGS



Offices at Coventry, set between existing buildings and reached from a road at either end.

Below, Electricity Board offices at Bethnal Green. The ground floor is extended on the left to provide stores and workshops.





OFFICES: COVENTRY

W. S. Hattrell and Partners

A four-storey office building for professional firms, in Eaton Road, adjoining the new station development on one of its approach roads. Work is expected to start shortly.

There is a rear access road to the east, and generous car-parking space on the site. Each floor will comprise a self-contained suite with lavatory accommodation. The building is designed on a 3-ft. module so that, with over-all ceiling heating and demountable partitions, office layouts are easily interchangeable.

The building is of *in-situ* reinforced concrete frame construction. Reinforced concrete upstand beams, treated with cement paint, form the wall panels below cill level on each floor. The two end walls are of facing bricks. Internal partitioning is of timber framing, the panels being plywood faced with reed infilling, giving high sound insulation. Heating is by perforated acoustic ceiling panels.

OFFICES: BETHNAL GREEN

L. K. Watson and H. J. Coates

For the London Electricity Board whose staff, since the Board took over, from different undertakings, the responsibility of distributing electricity in the London area, are still dispersed in the old buildings. This building will concentrate many of them into one office and also provide stores and workshops. Building is ready to start but the work has been held up by the credit squeeze.

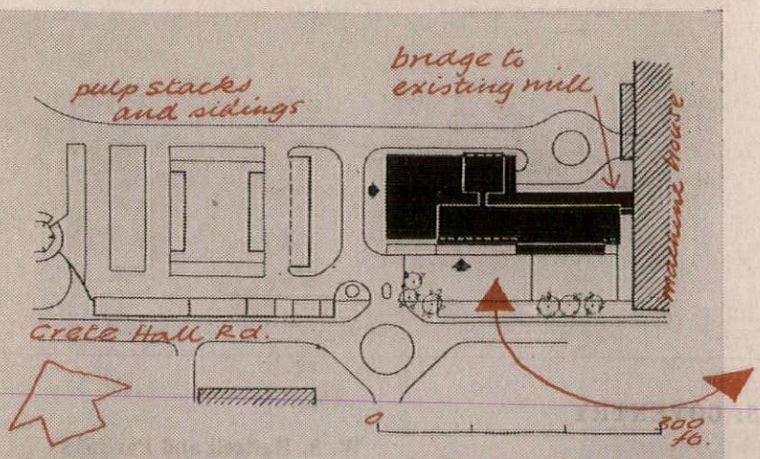
The building is planned on a 40-in. module, a subdivision of the 20-ft. spacing of the structural columns. The module is reflected in the window glazing and the cladding of the elevations, which consists of square concrete slabs cast into a flat diamond shape, coloured alternately pale green and silver-grey. The main elevation is largely taken up by a projecting window lighting three floors of offices, and a canteen and kitchen on the top floor. The window is aluminium and the panels between floors are filled with coloured reinforced glass, pale blue and pale green. The general structure is a precast concrete frame. There is electric floor-heating throughout.

OFFICES: NORTHFLEET

Farmer and Dark

For the Thames Division of the Bowater Pulp and Paper Corporation, adjoining the Corporation's new paper mill. Construction has just begun.

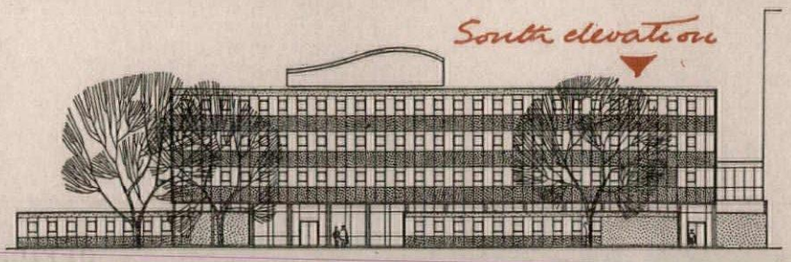
A rectangular three-storey block straddles a single-storey block of a larger ground area. The main block has a 40-in. planning module, offset by 10 in. from a 40-in. structural module. This allows internal partitions to be placed away from stanchions and provides



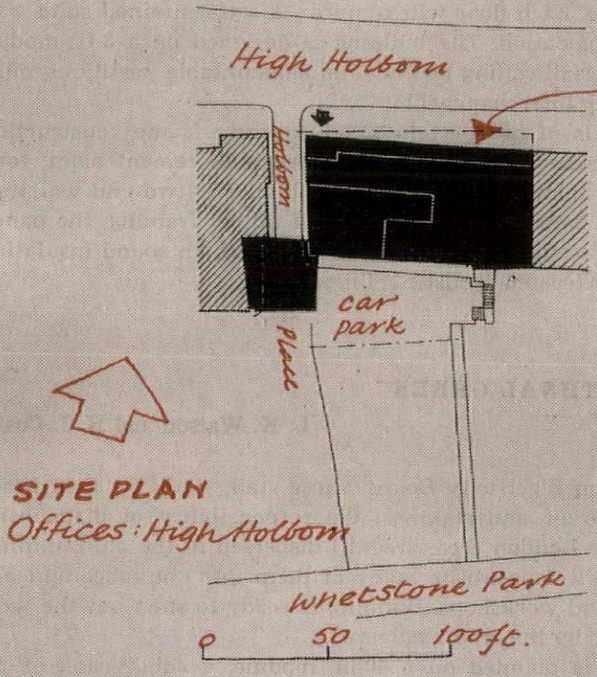
SITE PLAN

Offices: Northfleet

a clear 7½ in. space between the outer face of the stanchions and the inner face of the cladding, which is occupied by heating units up to cill level, service runs (which are made accessible for maintenance) and venetian blind or curtain boxes at ceiling level. The structure is steel framed with welded angle brackets to



support the curtain walls. Opening lights are sliding top-hung sashes, with transomes and mullions encased in rectangular stainless steel cover strips. Spandrel panels are composite with an outer face of coloured plate glass. Elsewhere walls are faced with lightweight cladding blocks faced with white Italian vitreous mosaic.



SITE PLAN

Offices: High Holborn

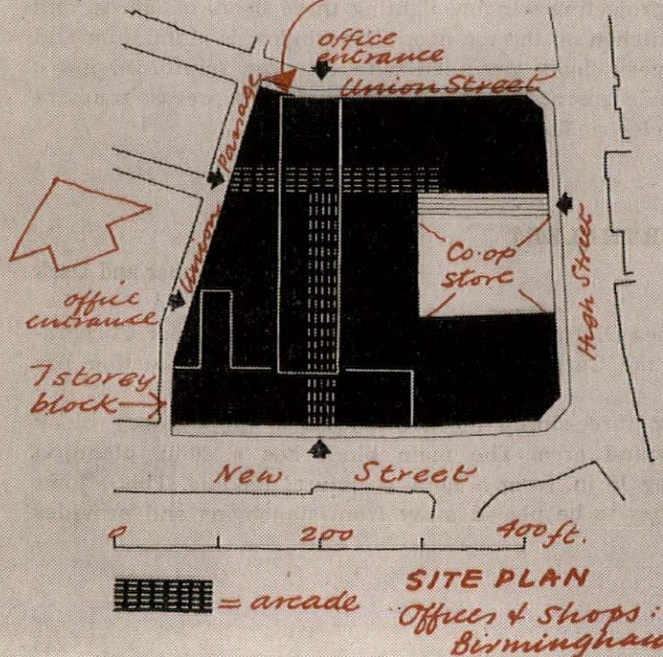
OFFICES: HIGH HOLBORN

T. P. Bennett and Son

For the Pearl Assurance Company. The building consists of a sub-basement, basement, ground floor and seven upper floors and provides approximately 20,900 sq. ft. of office space, with lock-up shops and a pub at ground-floor level. Work began a year ago and will finish next autumn.

The frame is of reinforced concrete and, in the main, the floors are of hollow-pot construction spanning between centrally positioned longitudinal beams and edge beams. Front and side elevations are faced with Portland stone with polished grey granite at ground-floor level. The rear elevation is faced partly with Portland stone and partly with light-coloured facing bricks and artificial stone. External cills and copings are of slate.

Quantity surveyor, Gardiner and Theobald.



SITE PLAN

Offices & Shops: Birmingham

OFFICES AND SHOPS: BIRMINGHAM

Cotton, Ballard and Blow

On a site between New Street and Union Street, largely cleared by war-time bombing. The basement, ground, first and second floors are occupied by shops and the 12-storey block and the upper part of the 7-storey New Street block by offices. The building will be completed late this year.

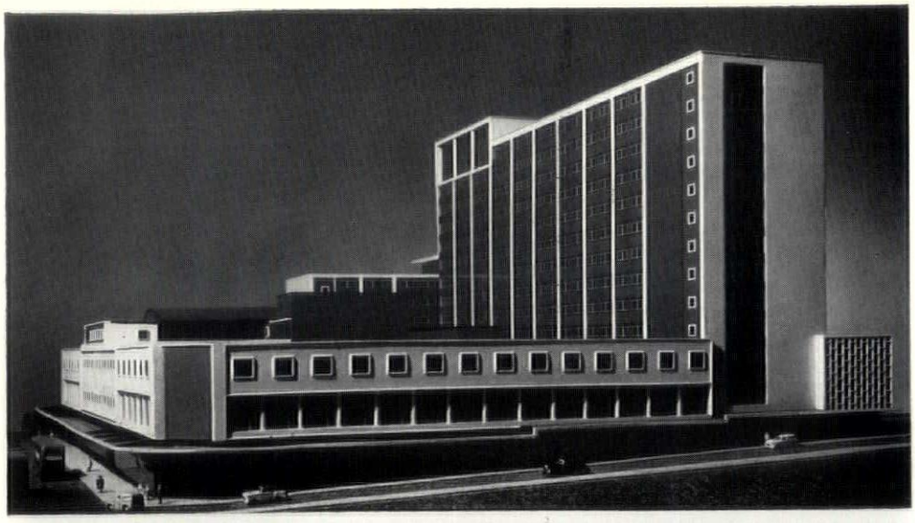
The plan includes pedestrian shopping arcades, which were a feature of the previous development of the same site. Goods vehicles will enter the site through a subway which passes under the High Street to link with the proposed inner ring road. The subway circulates within the building at sub-basement level (about 40 ft. below ground), where there are loading docks from which goods lifts rise to the shops, etc.

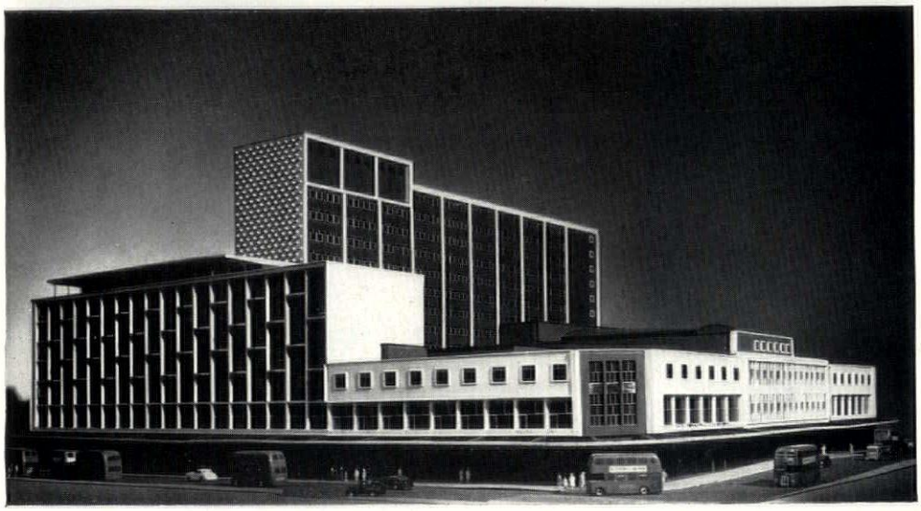
The main structure is a reinforced concrete frame with solid reinforced concrete floors and roofs. The ground-floor shops are separated by granite pilasters. On the first and second floors the main facing material is Portland stone. The upper floors have aluminium curtain-walling with infill of plastic panels.

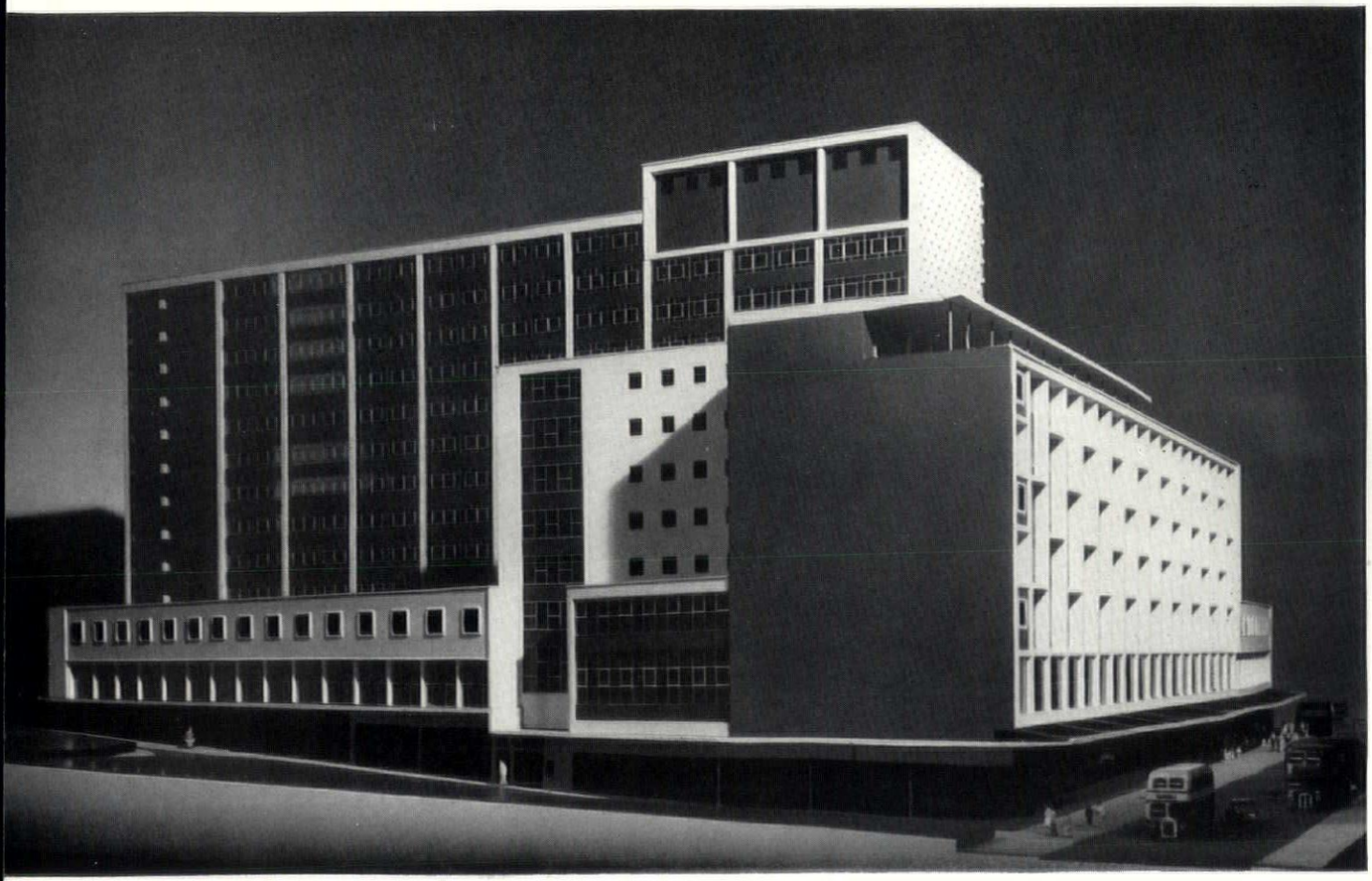
Architect in charge, C. A. Blow. Chief assistant architect, D. L. Field. Consulting architects, T. P. Bennett and Son. Structural engineer, W. V. Zinn. Heating, lighting and ventilating engineer, E. A. Couzens. Drainage consultants, Donald Rudd and Partners. Quantity surveyor, Oswald A. Wainwright.



Above, view from the street of the offices in High Holborn for the Pearl Assurance Co.

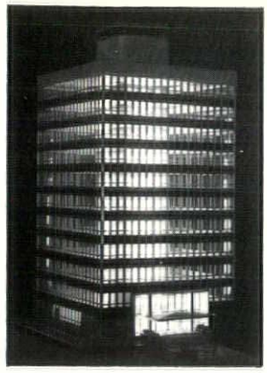




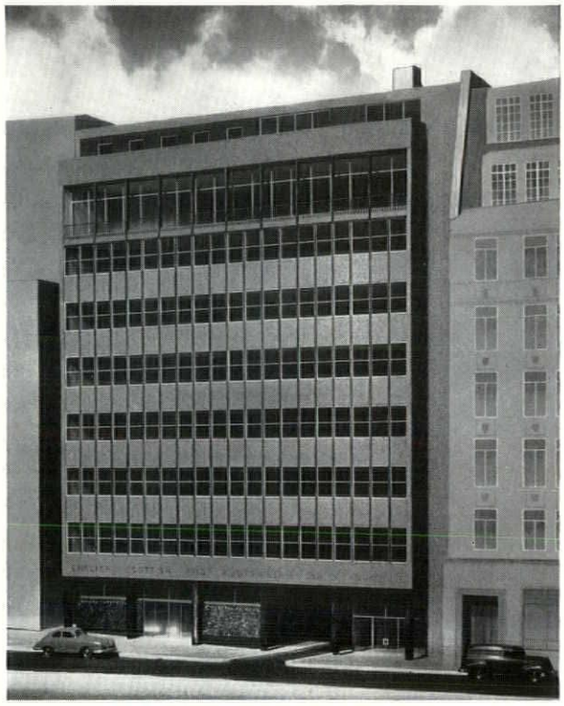


Three views of the Birmingham office building (with shops occupying the lower part) on a site known as the 'big top'—see also the cover of this issue. Top, the north side from Union Street with High Street on the left. Both streets are lined with shops. Above, the New Street side. The left-hand block and the high block behind contain offices. Left, the other side of the high block, seen from the west.

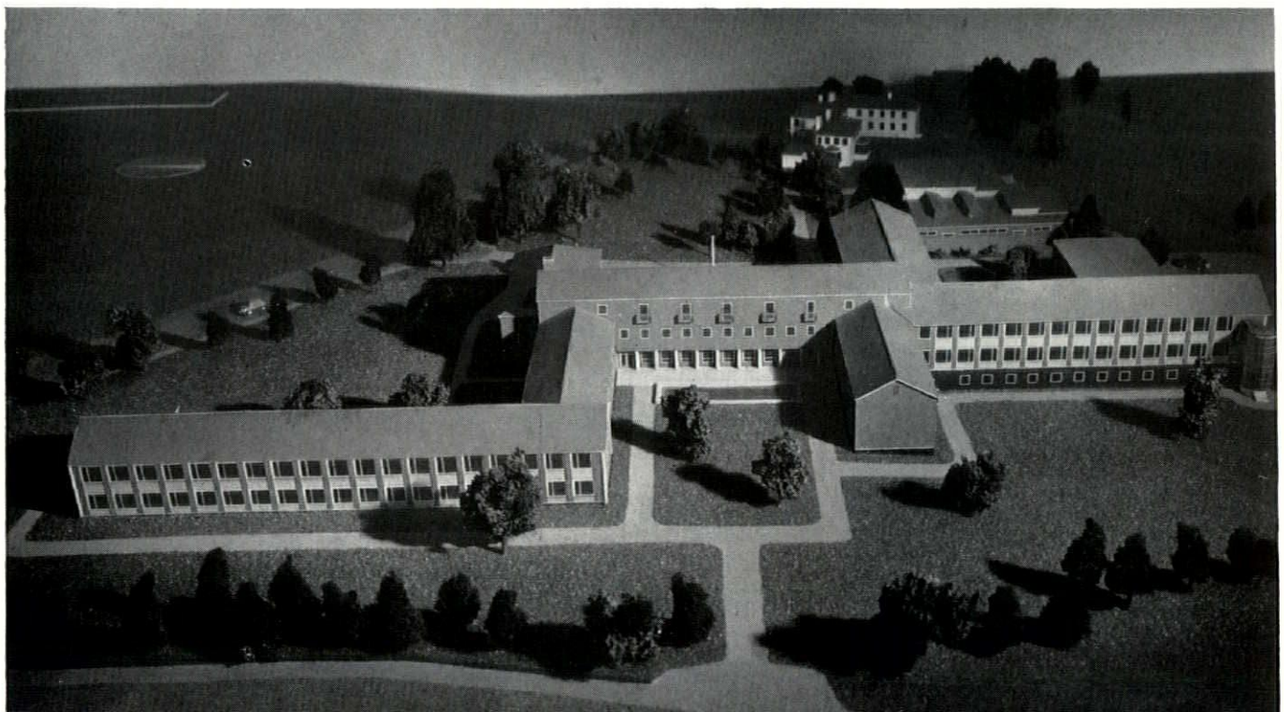




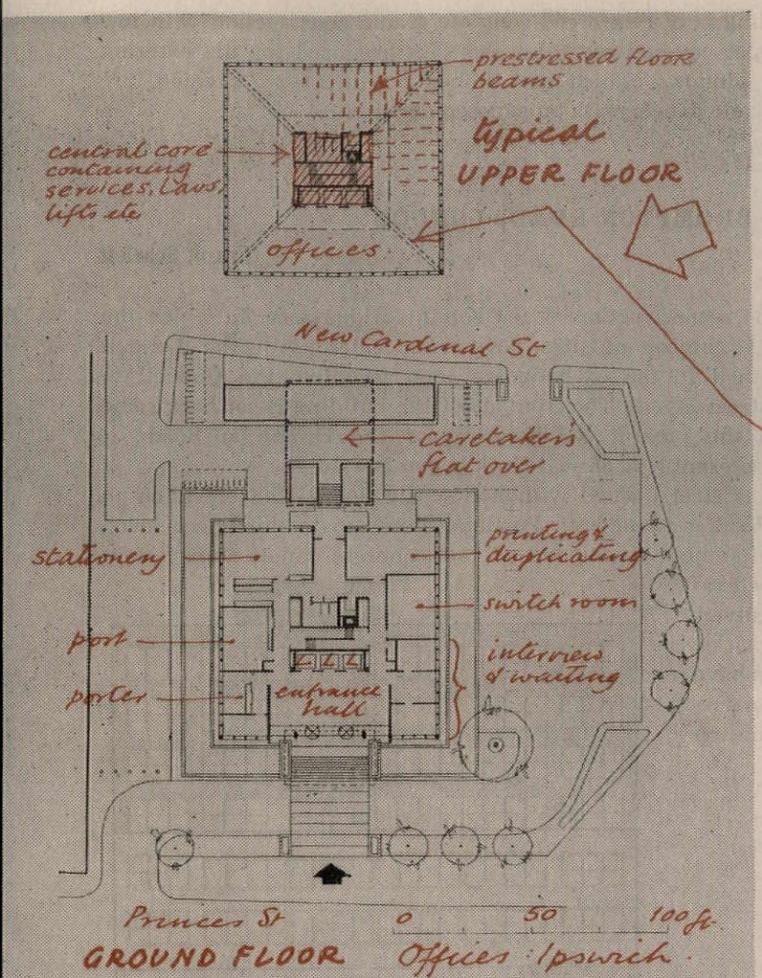
Left, 10-storey office building at Ipswich: day and night views, the latter taken from the entrance side.

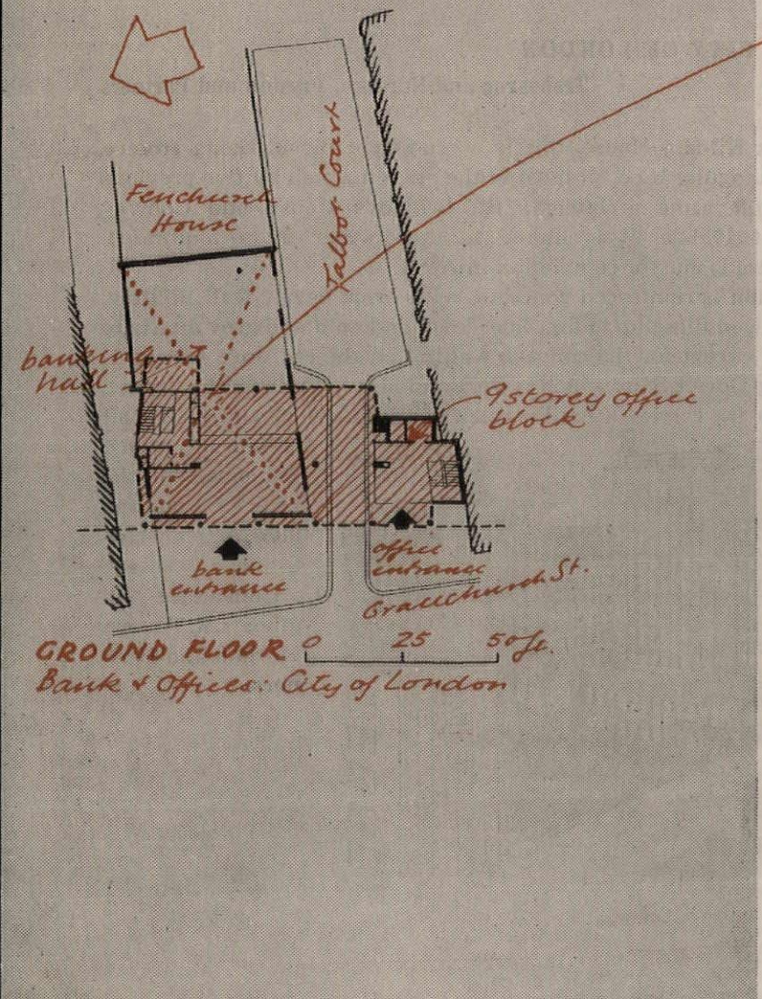


Street frontage of the English, Scottish and Australian Bank, Gracechurch Street, with offices above.



Left, offices at Dorking, seen from the west. Beyond the new buildings is the existing house in the grounds of which they stand.





OFFICES: IPSWICH

Johns, Slater and Haward

In Princes Street, in the lower part of the town close to the river—a ten-storey building for Messrs. Fisons, providing approximately 40,000 sq. ft. of office space. Construction was due to begin in April but has been postponed owing to the credit squeeze.

The building is 76 ft. square, with offices taking up the whole perimeter to give maximum daylight and view, circulation and services occupying the core. Canteens, kitchen, conference room and boardroom are on the top floor, and above that is a plant-house and observation platform.

There is an external wall-frame of precast concrete, on a 4-ft. module, and at each corner of the building a diagonal beam spans 34 ft. from this frame to the central core, which is of *in-situ* concrete and acts as a wind brace to the building. Prestressed floor beams span between the outer walls of the core and the external frame. Hardwood window units are set in the external frame and separated by glass panels. The vertical ribs are faced with reconstructed stone. The building is fully air-conditioned.

Structural engineer, F. J. Samuely. Mechanical and electrical engineers, A. H. Barker and Partners. Quantity surveyors, Caston and Porritt. Model maker, T. Hackett.

BANK AND OFFICES: CITY OF LONDON

Playne and Lacey

For the English, Scottish and Australian Bank, on a closely built-up site at the southern end of Gracechurch Street. Work will begin this summer.

The permitted plot ratio was 5:1, and a road-widening scheme necessitated setting back the frontage line by 15 ft. The form of building chosen was a rectangular tower of offices, rising to nine storeys, with the ground and first floors, used for banking, occupying a wider area. As some of the offices will be separately let, there are two entrances and two lifts at opposite ends of the building.

The structure is a reinforced concrete frame with grey granite facing and aluminium windows.

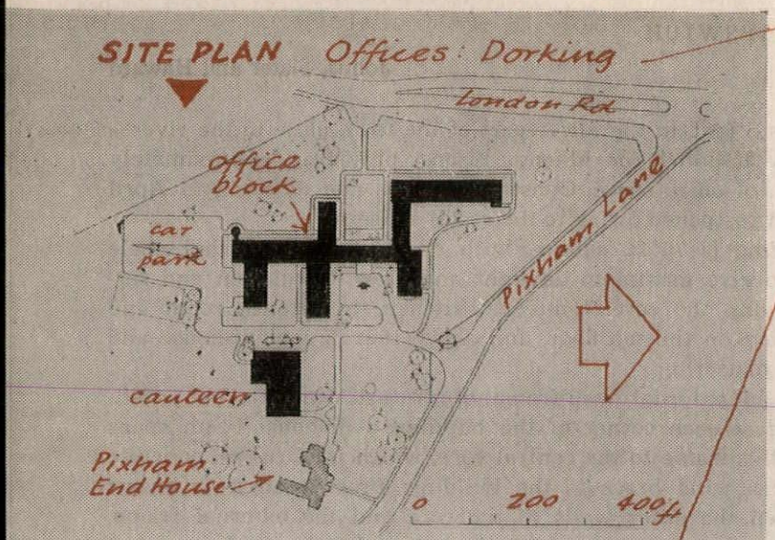
OFFICES: DORKING

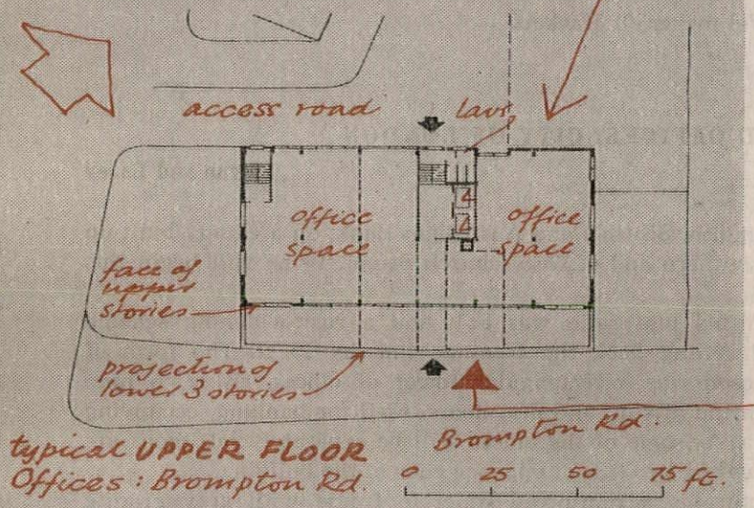
Easton and Robertson

For The Friends Provident and Century Life Office, to accommodate those departments which can function away from the head office in the City. The site is on the east side of the London Road near Dorking North station, and it is overlooked by Boxhill. Work has begun and is due for completion next August.

The plan consists of a series of open-plan offices, in the American manner, for the various departments, each in the form of a separate wing, 40 ft. wide, lit on both sides. Inside, each wing is divided by a row of eccentrically placed columns into a 'nave' 30 ft. wide, and an 'aisle' 10 ft. wide. The latter accommodates small semi-enclosed offices.

Each wing is two storeys in height, a maximum asked for by the planning authority. Owing to the fall of the ground, there are in some cases lower ground floors in addition, and the centre block has a second floor which houses the directors' room and some of the senior executives. A canteen block, capable of later extension, is placed separate from the office building, and related in its design to an existing house: Pixham End House. which has well laid out and planted gardens.





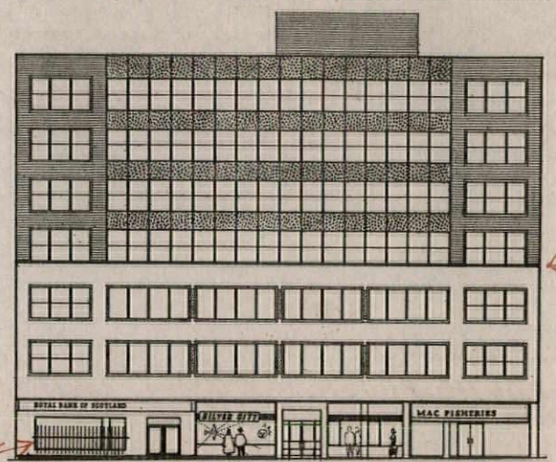
The building is of reinforced concrete frame construction with low pitched copper covered roofs. Local bricks are used for the exterior. Below the windows, which are timber Swedish-type, pivoted, are precast concrete panels, with an exposed aggregate.

OFFICES: BROMPTON ROAD, LONDON

Frank Scarlett

Part of the reconstruction of the Knightsbridge area, in which the owners of a number of sites have co-operated with the London County Council in the exchange of land to allow the Council to replan the street layout. The frontage of the building is set back some 18 ft. from the present building line of the Brompton Road; it replaces the present Nos. 58a-64. Work began last July.

Structure is steel framed with hollow-tile floors. The elevation to Brompton Road is faced with Portland stone up to third-floor level, and artificial stone mullions and precast concrete panels above. Main and flank elevations have silver-grey facing bricks. All windows have unpainted anodized aluminium frames.



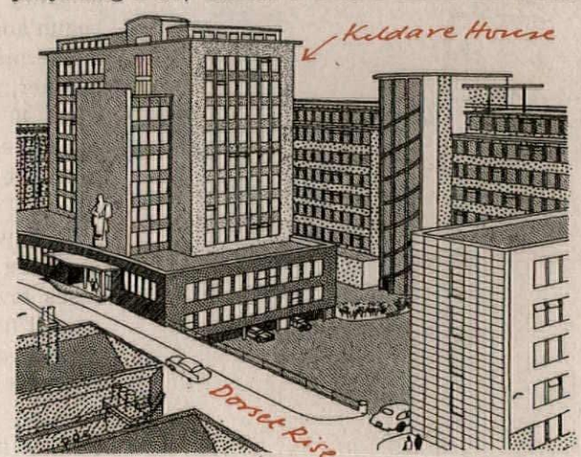
OFFICES: CITY OF LONDON

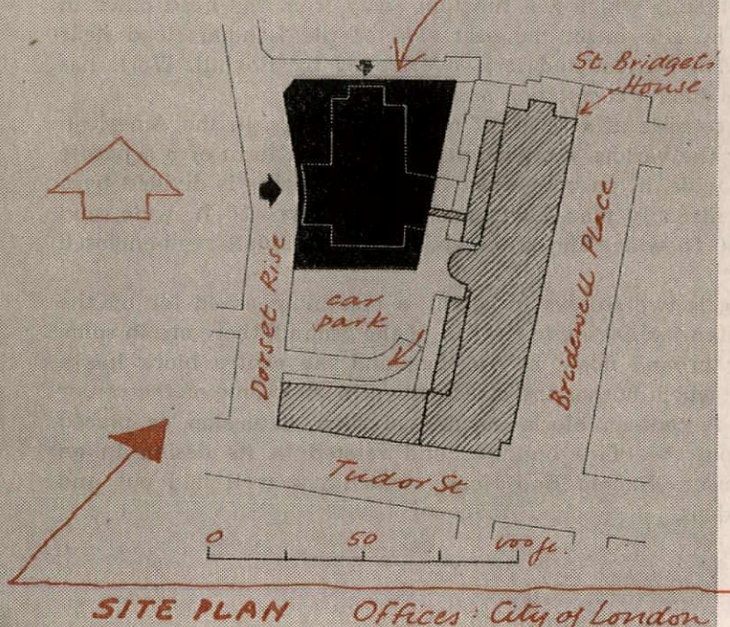
Trehearne and Norman, Preston and Partners

Known as Kildare House, this is a cruciform block, rising from a 2-storey rectangular base, situated in the angle formed by two previous blocks by the same architects: St. Bridget's House and Conway House, built 1951-55. It is linked to the former by a footbridge. Kildare House is due for completion in April.

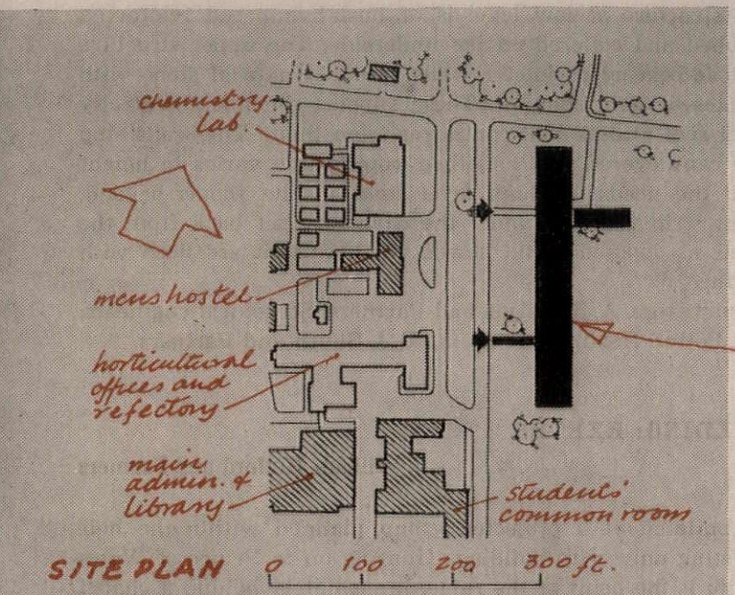
Construction is reinforced concrete, with brick cavity-wall infilling. Facing is glazed tiling up to first-floor level and gold and grey quartzite slabs above, except for the concave walling on the entrance (western) front, facing Dorset Rise, which is Portland stone. A concrete cornice, projecting 5 ft., carries a cradle track for window cleaning. A staff restaurant and kitchens, in the lower ground floor, are air-conditioned.

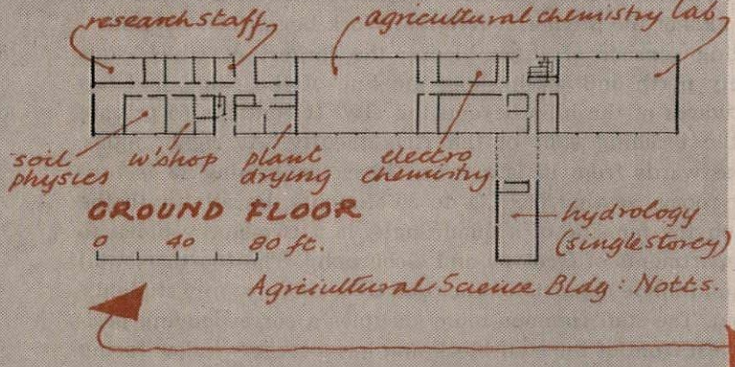
Consulting engineers, R. Travers Morgan and Partners.





5 UNIVERSITY BUILDINGS





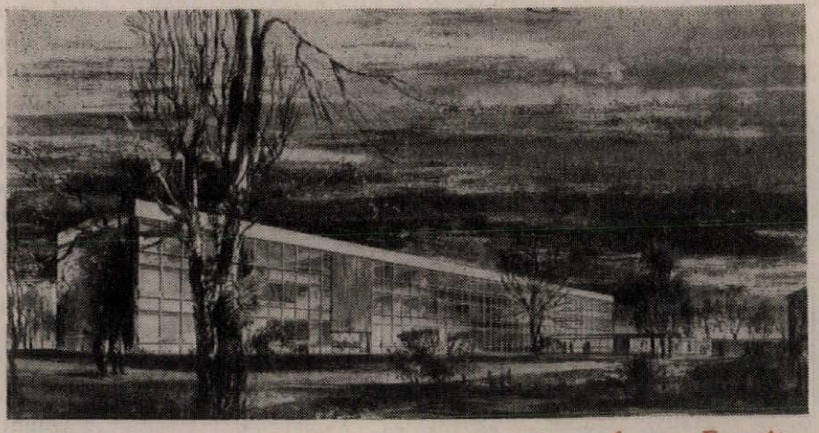
AGRICULTURAL SCIENCE BUILDING: NOTTINGHAM

Basil Spence and Partners

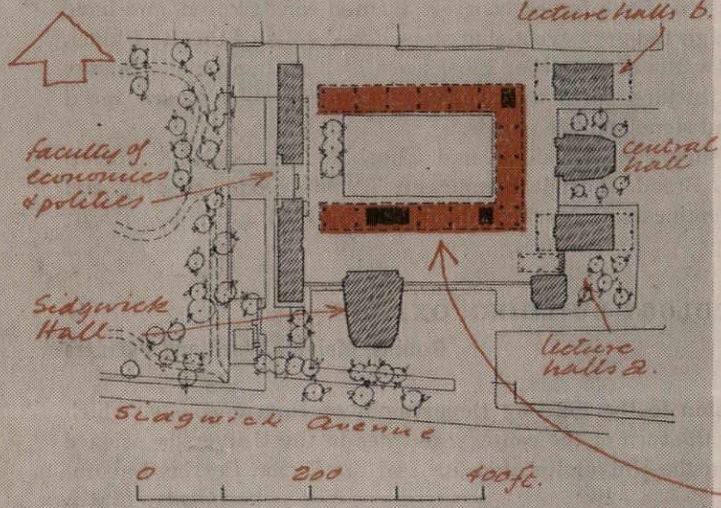
A rectangular three-storey block, housing the departments of Agricultural Chemistry (ground and first floors), Agricultural Botany and Zoology (second and third floors), Animal Physiology (south end of second floor) and Crop Husbandry (south end of ground floor), with a single-storey wing for the Hydrology department. Construction will begin in March.

The main block runs north to south, parallel to an existing road. A covered way leads to the research entrance on the south side. An asymmetrically placed corridor gives large rooms (mostly laboratories) on the north side and smaller rooms (such as professorial and staff rooms) on the south. The planning module is 5 ft. Animal houses are on the roof in the centre of the main block. There are two main side entrances, each with a staircase close by, and minor entrances direct from the farm to the plant- and soil-preparation and grinding rooms (designed to isolate dirty activities), and to the crop husbandry department (in the east end wall); also a service entrance.

The main structure is a reinforced concrete frame with central spine wall and precast, prestressed floor beams. End walls are concrete. Cladding is of standard steel window units with precast concrete panels with exposed aggregate between. The Hydrology block is of precast beam construction with brick side walls. Roof structures are of lightweight concrete blocks with timber facing.



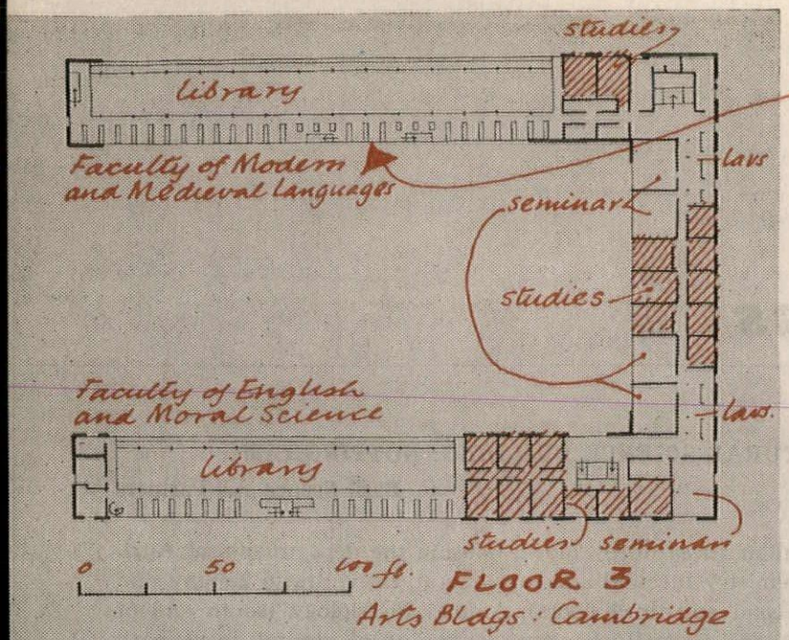
view from East



ARTS BUILDINGS: CAMBRIDGE

Hugh Casson and Neville Conder

On the Sidgwick Avenue site (see the AR Preview number, January, 1955, in which the development plan prepared for the University was illustrated). Construction of the first lecture hall building and the district heating station will begin this year. It is hoped to start the Faculty building (illustrated overleaf) in 1959.



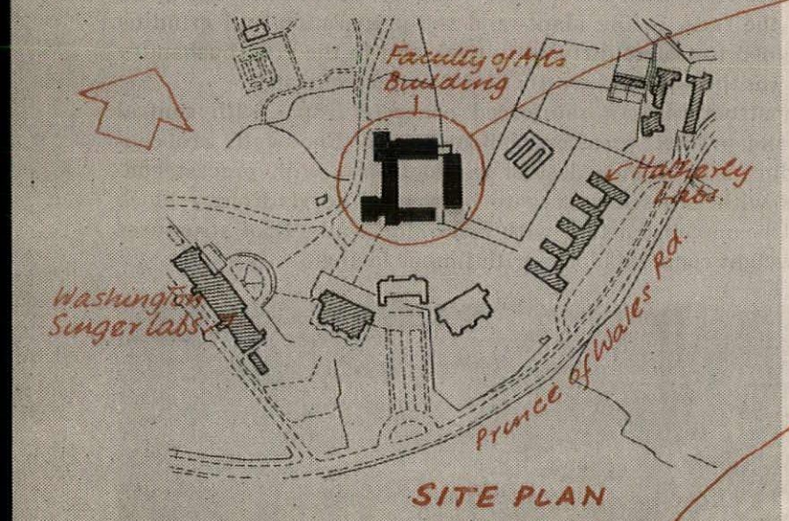
The Faculty building provides eleven seminar rooms, 40 study offices and a lecturers' common-room in addition to the requirements of the Faculty of Modern and Medieval Languages (in the north wing) and the Faculties of English and Moral Science (housed together in the south wing). To allow flexibility in use, floor levels are constant and some of the study offices have been placed around and within the libraries so that they can later be incorporated. The building is raised on columns to open up the rear of the site to the eye in the later stages of the plan. The structure comprises a raised deck supported on large columns 36 ft. apart, on which is a three-level superstructure. The upper three floors are frequently cut away to make double-height rooms, and all the libraries are designed to reveal the full height of the building, through three levels.

The main structure at low level is of bush-hammered reinforced concrete, ribbed and coffered on the underside. The upper structure consists of load-bearing perimeter walls faced in natural stone with internal ranges of steel columns. These support the floors centrally and the steel roof girders that cantilever from them. The walls stop short of the cantilevered roof and their coping line varies in height according to the needs for high level light in the rooms beyond. The resultant strip windows under the eaves are set back from the building face, as opposed to the lower windows that are flush with the wall surface.

Quantity surveyors, A. S. Wilson and Partners. Structural engineers, Jenkins and Potter. Heating engineers, A. J. Smith and Partners.

ARTS BUILDING: EXETER

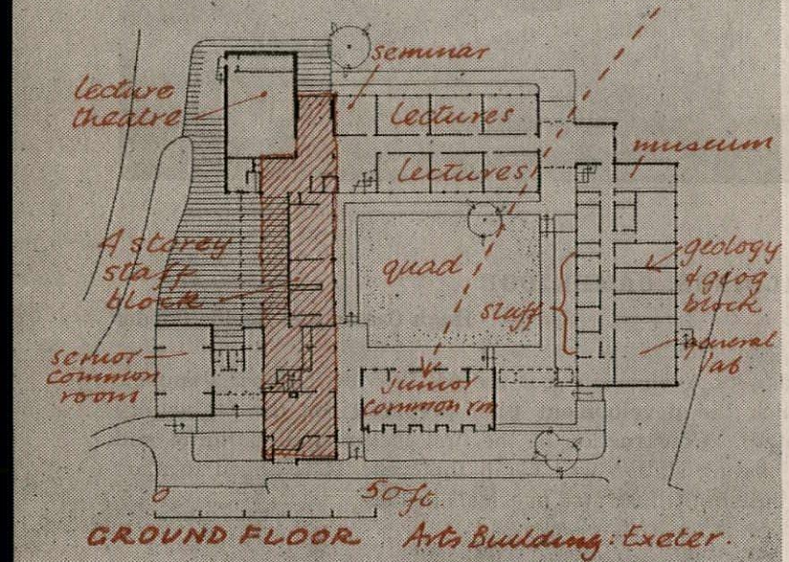
William Holford and Partners



SITE PLAN

The first building of a projected group planned within the half circle of existing university buildings fronting on to Prince of Wales Road. The site is the point of the ridge, immediately behind a chapel designed by Vincent Harris and now under construction, which terminates the axis of the Memorial Avenue. Work began last autumn.

The building consists of three blocks, the largest of which runs approximately north and south along the line of the ridge, and has a view westwards of the hills beyond the city. It contains 66 private rooms for the teaching staff of the Arts faculty. At right angles, extending eastwards from it, is a lower block containing 13 lecture and seminar rooms, seating from 20 to 50 students. Parallel with the staff block, on the far side of a quadrangle, is a two-storey block to house the departments of Geology and Geography. The fourth (south) side of the quadrangle is partially enclosed by a single-storey students' common-room. The staff common-room occupies a corresponding position on the west front of the staff block and has a large window facing the view. Between the staff common-room and the lecture theatre at the north end of the same block is a terrace, screened by a pergola, which forms the main entrance to the building.



All blocks are of reinforced concrete framed construction, and have a base of rough red-grey Westleigh stone. The walls of the staff block and the end walls of the other blocks are of 2-in. hand-made Sussex bricks. The lecture room and geology-geography blocks are faced with Portland stone and tile panels.

Quantity surveyors, Gardiner and Theobald. Structural engineer, Frederick J. Brand. Electrical engineer, T. Dunwoody. Heating and ventilating engineers, C. Mackechnie Jarvis and Partners.

PHARMACOLOGY BUILDING: OXFORD

Gollins, Melvin, Ward and Partners

An extension to the existing Department of Pharmacology, which was built at the turn of the century and lies in the University science area between the University Museum and the Dyson Perrins Labora-

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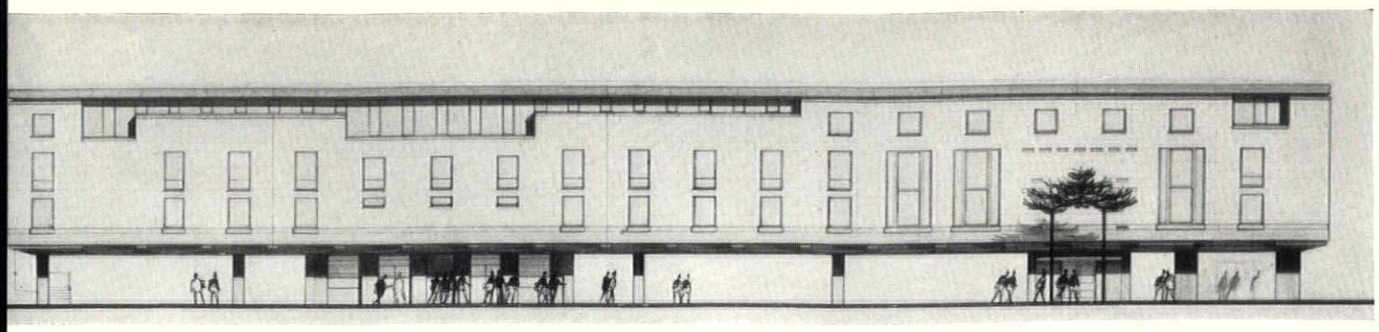
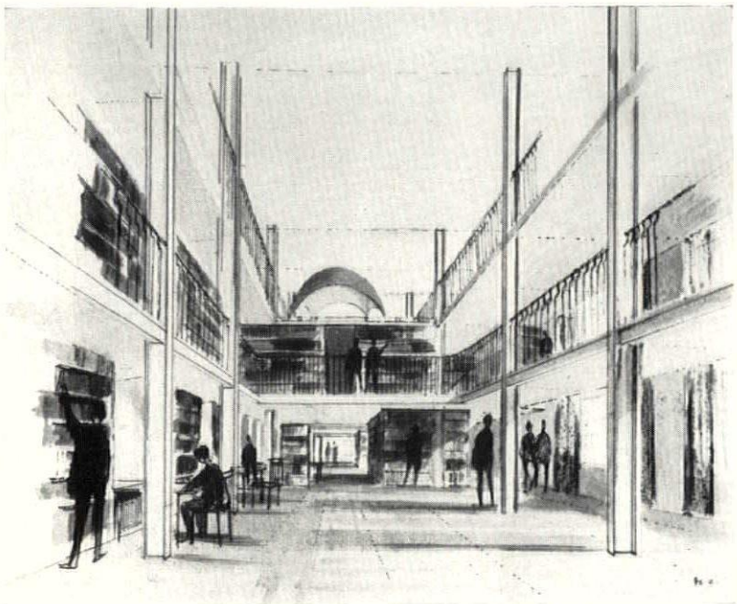
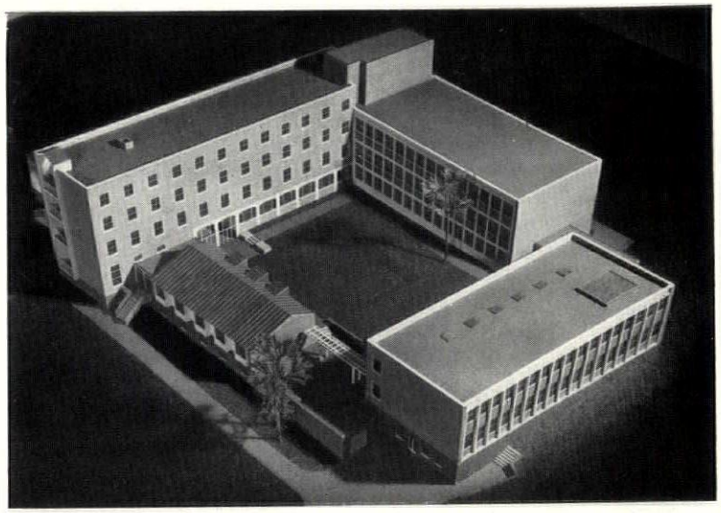
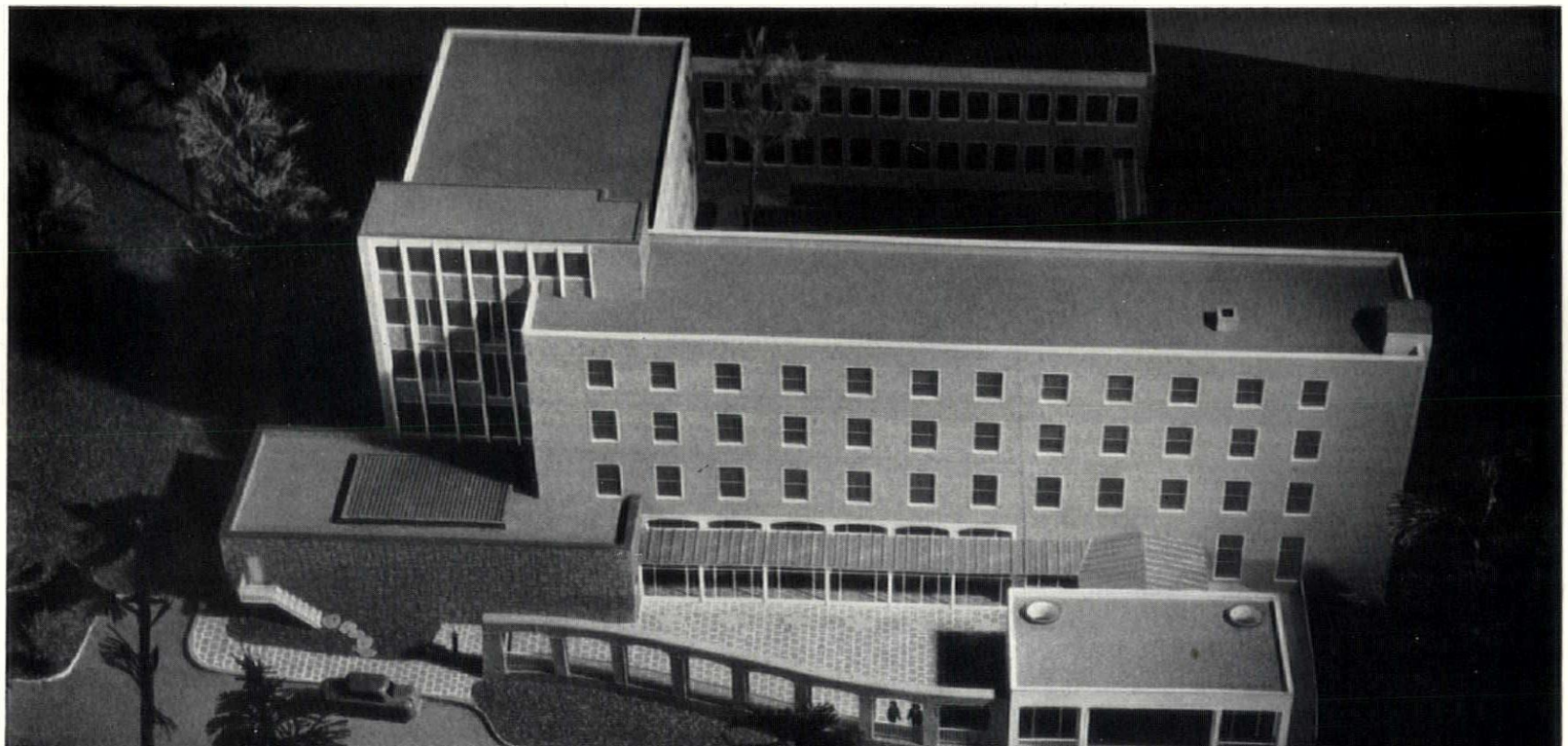


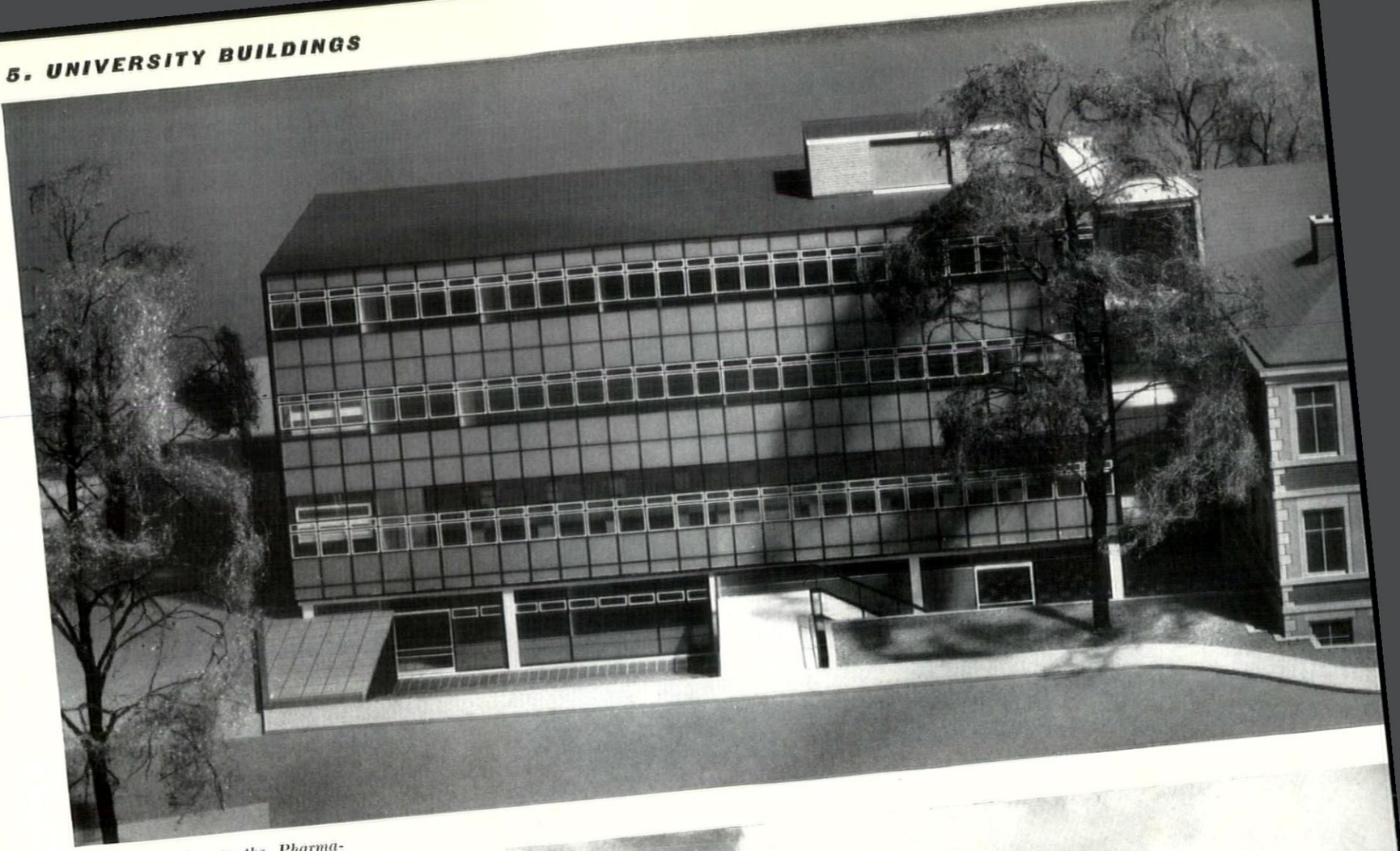
Faculty of Arts building on the Sidgwick Avenue site, Cambridge, by Hugh Casson and Neville Conder: above, elevation to Sidgwick Avenue; below, sketch of the interior of one of the libraries, which rise through three floors of the building.



Below, Arts building, Exeter: looking into the courtyard from the south-east and (bottom picture) from the west. The block in the foreground contains private rooms for the teaching staff.



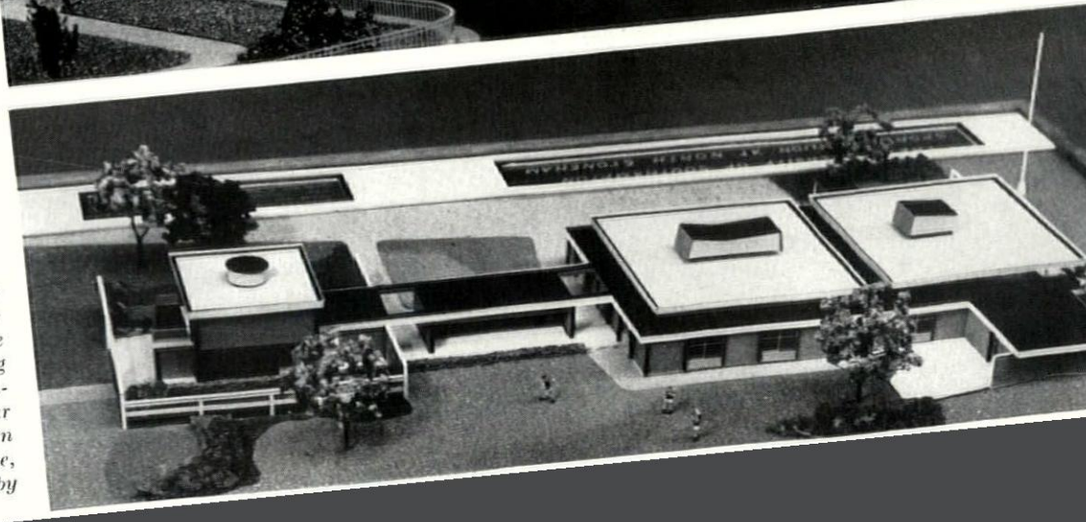




Above, extension to the Pharmacology Building in the university science area at Oxford, by Gollins, Melvin, Ward and Partners. Three floors of laboratories and study rooms are placed over a large ground-floor laboratory with workshops beneath.



Right, building for London University to house the Institutes of Archaeology and Classical Studies and examination halls (on the right of the model). It faces Gordon Square.



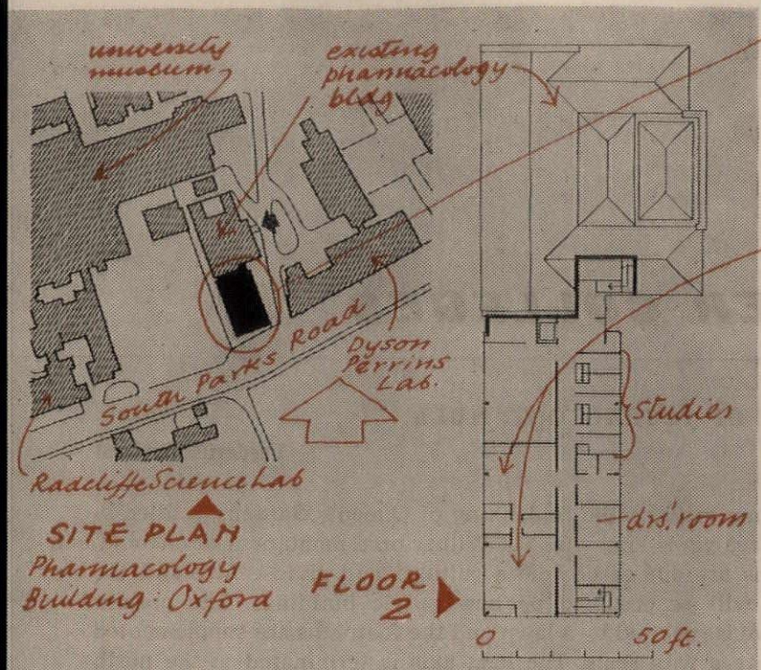
Right, sports pavilion for Southampton University: the twin buildings on the right contain the changing rooms, with the refreshment room on the far side. On the left is shown a future caretaker's house, linked to the pavilion by a bicycle park.

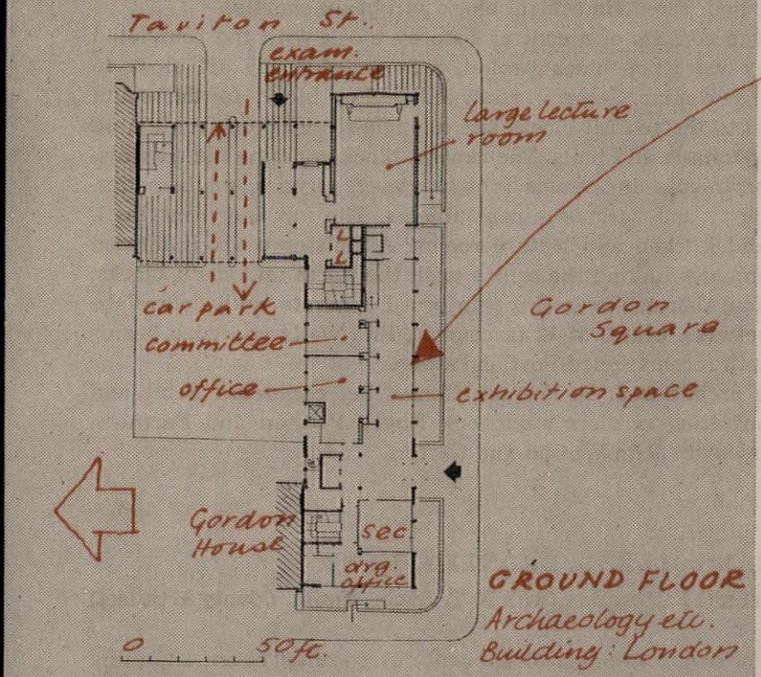
continued from page 30]

tory. The extension, which will approximately double the department's size, lies between the latter building and the new Inorganic Chemistry building, with its south boundary formed by South Parks Road. The starting date is not yet fixed but is expected to be soon.

The plan was dictated by the need to provide, on the ground floor, one large laboratory for 30 students with the necessary ancillary rooms. On the lower ground floor are workshops, where the apparatus used in the department is devised and made, and on the first and second floors are research laboratories and study rooms for staff and students. In the corner of the site between the existing and proposed buildings there is a fine copper beech, which is retained.

The building is steel framed with solid floors. The three upper floors are faced with curtain walling on a 3-ft. module, with the spandrel infill of a coloured vitreous material ; the external face of the lower floor is set back, exposing the main structural columns.





ARCHAEOLOGY, ETC., BUILDING: LONDON

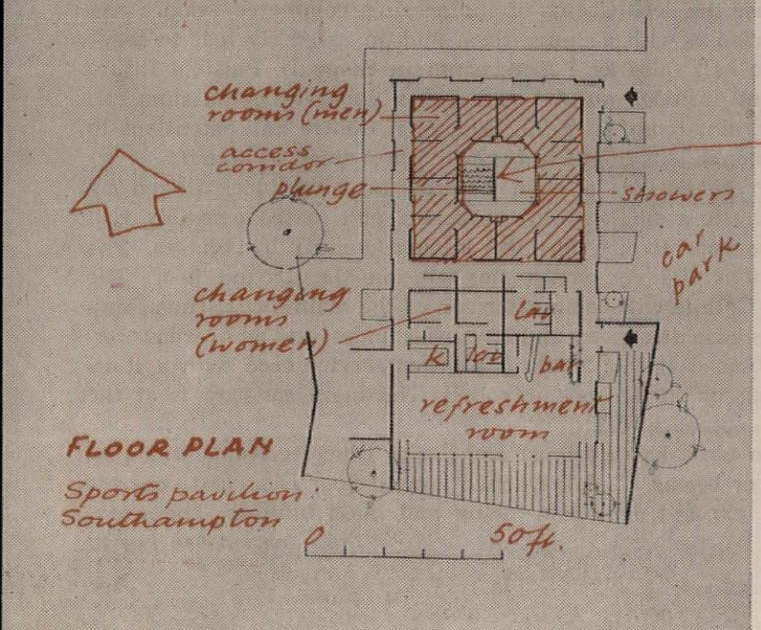
Booth, Ledeboer and Pinckheard

On the north side of Gordon Square, on a site formerly occupied by a terrace of seven early 19th century houses, three of which were destroyed by bombing. To house the Institute of Archæology and the newly formed Institute of Classical Studies and provide the University with new examination halls. Construction has already begun.

The main wing, which occupies the whole north side of the square, is seven storeys high. The subsidiary wing, fronting on to Taviton Street, is five storeys and maintains the general height of the existing terraces. It is devoted entirely to examinations halls and has an open ground floor to provide access to a car park at the rear and covered waiting space for examinees. The two Institutes share an entrance on the Gordon Square front. The treatment of this reflects the requirements of the users ; the Institutes require a large number of small rooms—offices, research rooms, laboratories, lecture rooms and libraries —whereas for examinations the need is for large, unobstructed, well-lighted floor space. The total floor space is about 70,000 sq. ft., of which one-third is given to examinations halls.

The steel framed structure is faced with brownish-yellow bricks, with Portland stone dressings and, at ground and sixth floor, green Westmorland slate panels.

Consulting engineers, Andrews, Kent and Stone. Heating and ventilating engineers, J. Roger Preston and Partners. Electrical engineer, W. S. Jordan. Quantity surveyors, Wakeman, Trower and Partners.



SPORTS PAVILION: SOUTHAMPTON

Frederic Lawrence and Partners

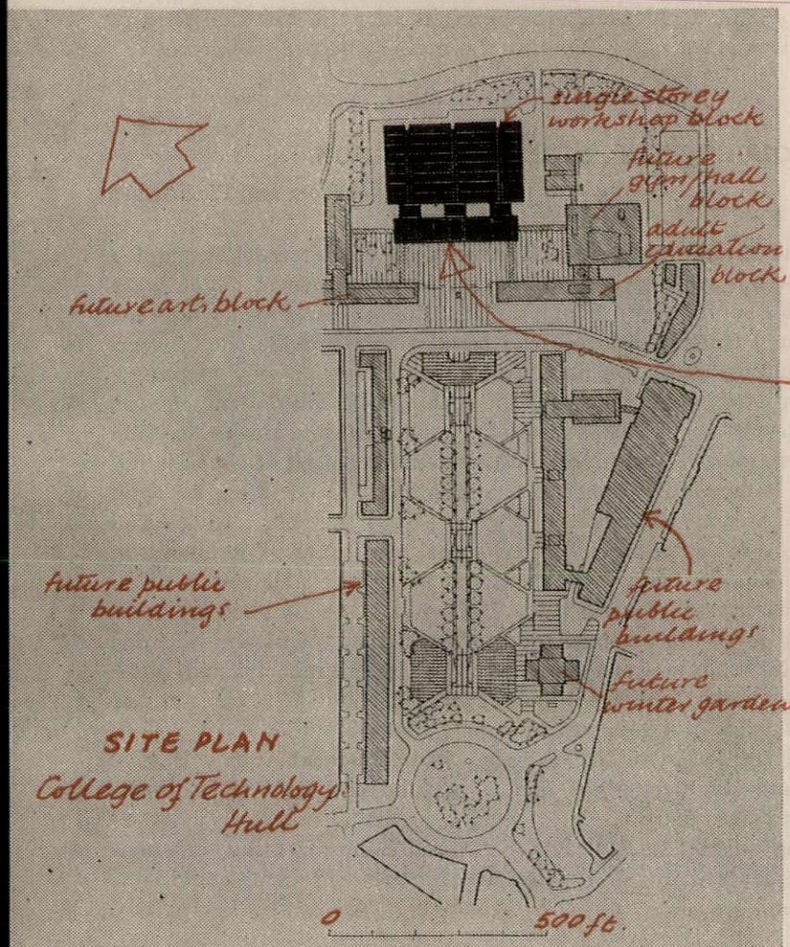
At Southampton University's playing fields at North Stoneham, Eastleigh. The building provides social and refreshment rooms as well as changing accommodation, etc. It is due to be finished in May.

A central bath-house, designed to simplify drainage and water supply, is surrounded by a series of changing-rooms, which are in turn surrounded by a peripheral access corridor. On the south side a refreshment room (with bar) replaces the corridor and extends across the width of the building. Changing-rooms have clerestory lighting and showers and lavatories top lighting.

Construction is in lightweight timber framing, of standard units based on a 4 ft. module. Wall units are of hardwood, fixed and glazed, alternating with 8-ft. square sliding wood panels. External walls are faced with Douglas Fir plywood with a grooved finish. Heating is by electricity.

Executive architects, Ronald Sims and Patrick Coles. Quantity surveyor, Kenneth Riley.

6 TECHNICAL AND OTHER COLLEGES



SITE PLAN
College of Technology
Hull

COLLEGE OF TECHNOLOGY: HULL

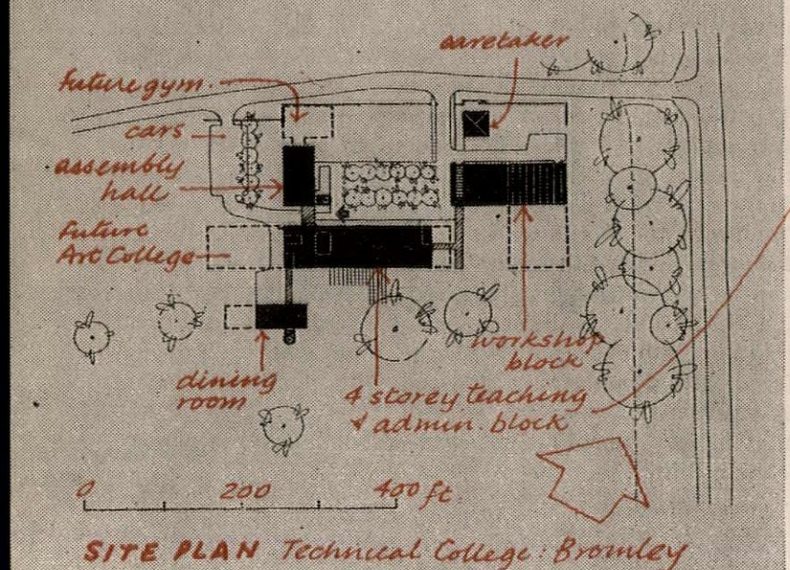
Frederick Gibberd

The scheme includes the replanning of Queen's Gardens, a filled-in dock some 500 yards long with the Wilberforce monument at one end. The gardens are due to become a cultural and civic centre and the long sides will be occupied by new public buildings. The present central drive is replaced by a lawn and the footpaths are supplemented by paved areas with seats. The long axis is terminated at the north end by the College of Technology, the workshop section of which is already finished. The main central block will begin shortly.

The College consists of a central 9-storey block with the completed single-storey workshop block behind, a 3- and 4-storey art block to the north, a similar 3-storey adult education block to the south (both linked to the central block) and a single-storey block containing refectory, gymnasia and halls. The central block contains the administrative departments and rooms for chemistry, physics, mathematics, food-technology and various minor subjects. The top floor contains a refectory and kitchen and lecture rooms. A cloister court is formed by the colonnades linking the centre with the north and south blocks.

The structural frame is *in-situ* reinforced concrete with floor slabs spanning between beams at 12 ft. centres. End walls and edge beams are faced with reconstructed Portland stone.

Associate architect, J. B. Forrest. Consulting engineers, Scott and Wilson. Consulting services engineers, Roger Preston and Partners. Quantity surveyor, John Watson and Carter.



SITE PLAN Technical College: Bromley

TECHNICAL COLLEGE: BROMLEY, KENT

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

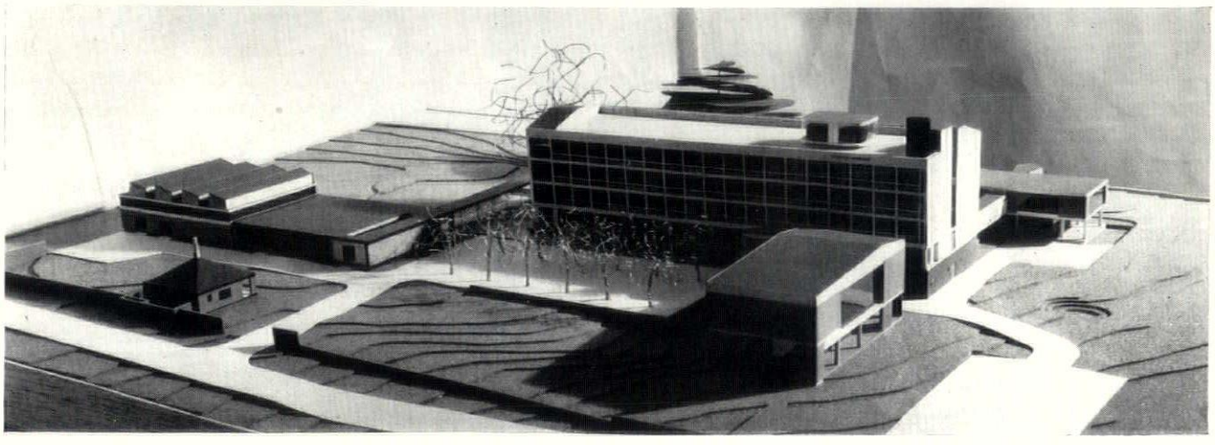
The site is in the grounds of a burnt-out country house adjoining the Bromley-Sevenoaks road. The College is to be built in stages, the first to house the departments of engineering, commerce, science and domestic science, with a dining-room and an assembly hall to serve as a public hall (also as a gymnasium in Stage I). Possible future development includes an Art College, a separate gymnasium, an increased dining-room, an Adult Education Centre and extensions to all departments. It is hoped to begin the first stage in March.

The plan consists of a main 4-storey teaching block linked by covered way to a single-storey workshop, and to the assembly hall and dining-room (which has the kitchen under) by bridges. The administration and common rooms are on the ground floor. The future Art College will be an extension of the main block. The assembly hall has changing-rooms and lavatories under, and an overflow car-park is provided at this level off a lower service road with a staircase leading up to the assembly hall. The main car-park is at the level of the approach road.

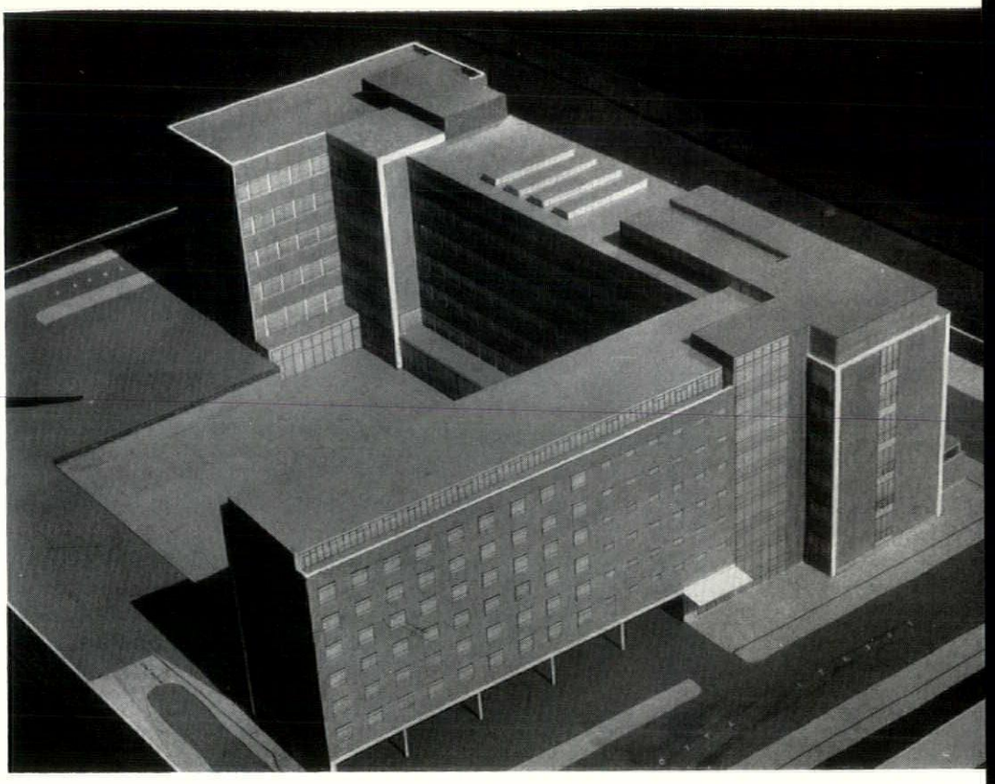
The main block has a precast and *in-situ* concrete frame with prestressed floor beams. Cladding above ground floor is precast concrete units with exposed aggregate facing and glass infilling. The work-

[*continued on page* 37

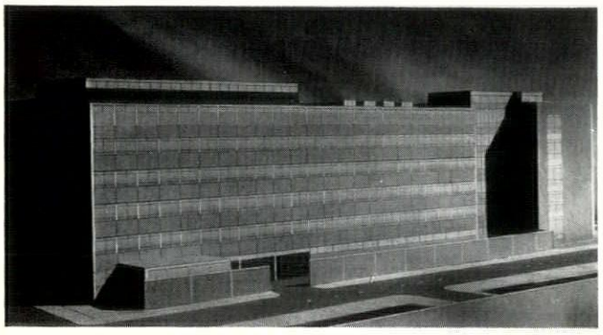
Above, Hull College of Technology, at the end of the long axis of Queen's Gardens, planned round a forecourt which provides a new setting for the existing Wilberforce monument.

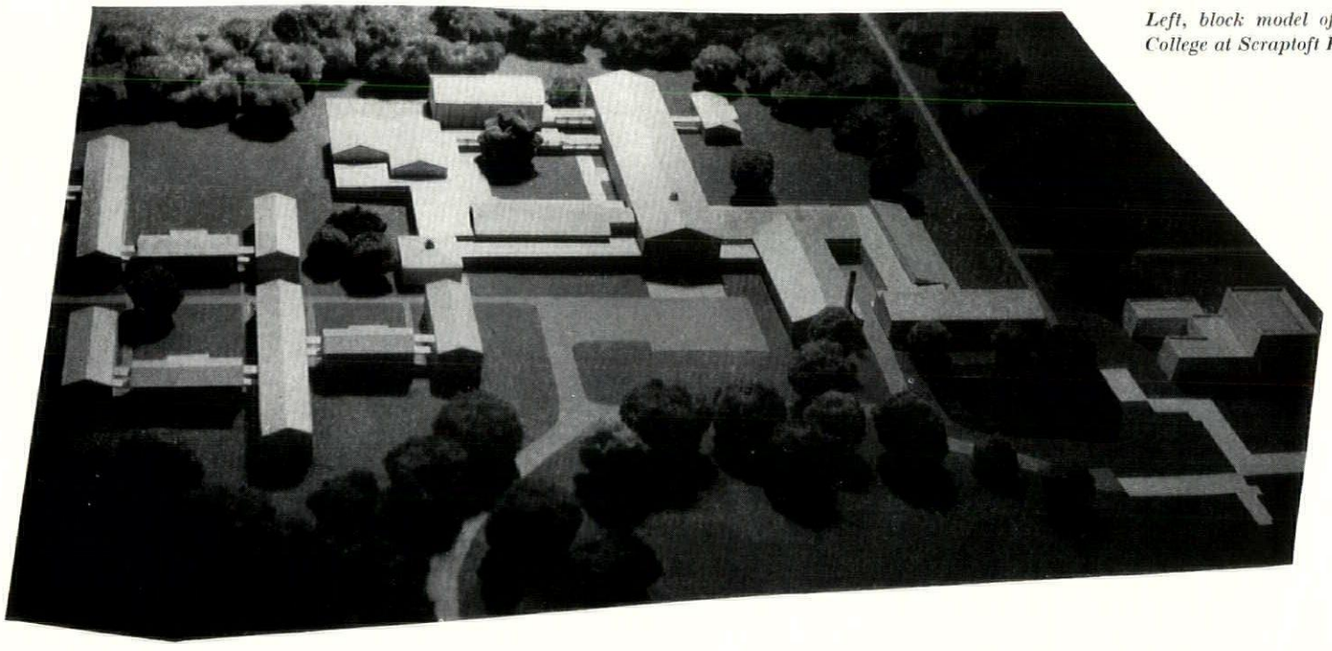


Right, Bromley Technical College, with a main teaching block, planned across the fall of the ground, linked to separate workshops (left of picture) and assembly hall and dining-room (right).



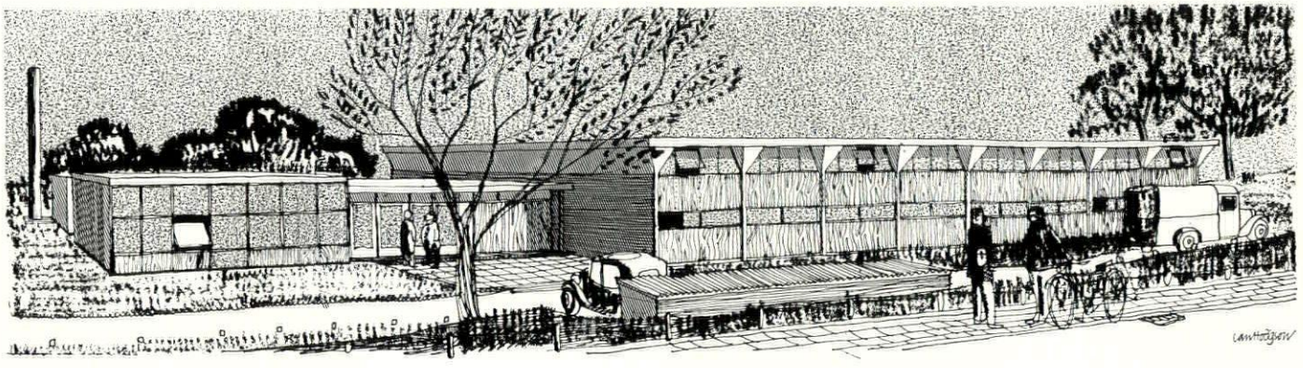
Medical school for Middlesex Hospital: below, the research block facing Howland Street; right, the three wings from the Charlotte Street side; the hostel block is in the foreground.





Left, block model of Teachers' Training College at Scraptoft Hall, Leicester.

Right, first stage (housing building trades department) of Tunbridge Wells Technical College.



continued from page 34]

shop block has a welded steel roof frame with patent glazing and brickwork below.

Structural engineers, Ove Arup and Partners. Mechanical services engineers, J. Stinton Jones and Partners. Plumbing consultants, Mumford, Bailey and Preston. Quantity surveyors, Arthur J. Willis and Thompson.

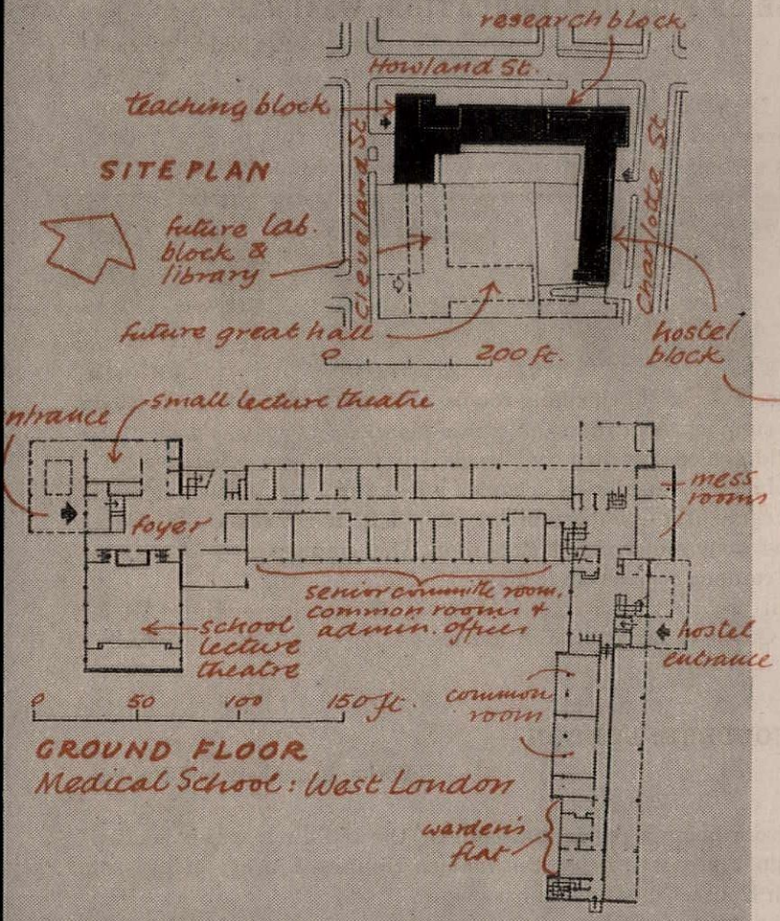
MEDICAL SCHOOL: WEST LONDON

Easton and Robertson

For the Middlesex Hospital. The site is north of the main hospital, immediately west of Charlotte Street. Work will start this summer.

The buildings contain three distinct elements: the school, with lecture theatre for 400, dining-room for 300, common rooms, recreation rooms and animal houses; teaching and laboratory space for six pre-clinical departments (Anatomy, Biology, Biochemistry, Pharmacology, Physiology and Physics); and a residential hostel for 150 students and 22 domestic staff. In the future a fourth element will be added, comprising further school departments, a library, and a great hall on the site of the present Outpatients' Department. These will all be south of the central courtyard. The 7-storey hostel faces east and west. The pre-clinical departments are split between a teaching block with large laboratories and a research block with smaller rooms, linked at mezzanine level by the main stairs.

The structure is a steel frame with reinforced concrete floors. Cladding is in brick with glass curtain walls to the staircase link. In the teaching and research blocks, the floor trusses give clear spans of 45 ft. across the width of the blocks, providing a flexible laboratory layout and space for services between floors.



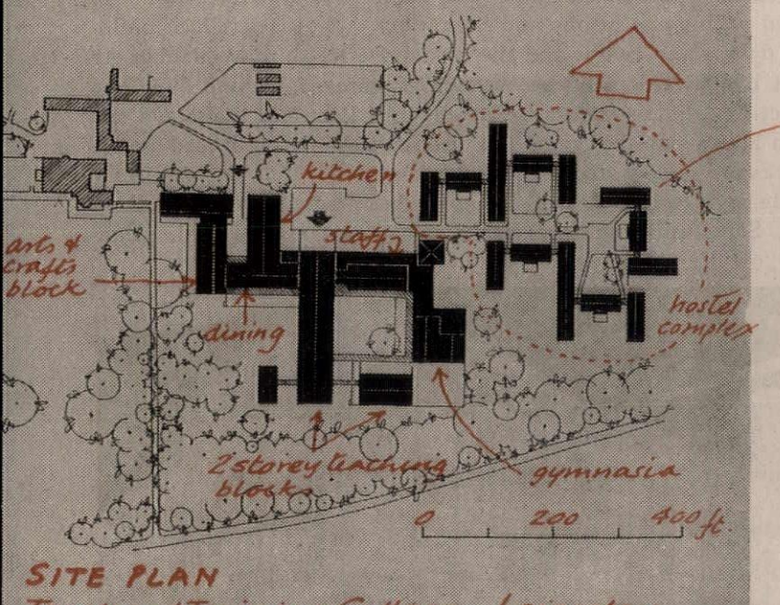
TEACHERS' TRAINING COLLEGE: LEICESTER

Bridgewater and Shepheard

The site of Scraptoft Hall lies a few miles east of Leicester and is partly wooded. Most of the woodland will be kept and renewed. The existing Hall, a Queen Anne building, will contain some staff living accommodation, sick bay, etc. Work on the first stage will start in early summer, 1957.

The College itself consists of a 2-storey teaching block and some single-storey parts forming enclosed and semi-enclosed spaces between them. Construction is brick piers and walls throughout, with a pre-stressed concrete floor in the 2-storey block. All roofs are timber, covered with sheet metal. Windows are wood. The hostels are east of the College and are laid out to form courts. They are all two storeys high and are built in brick with timber floors and roofs. Each hostel has 40 bed-sitting rooms and consists of three wings.

Assistant architect in charge, G. Epstein. Consulting engineer, F. J. Samuely. Quantity surveyor, J. A. Burrell.

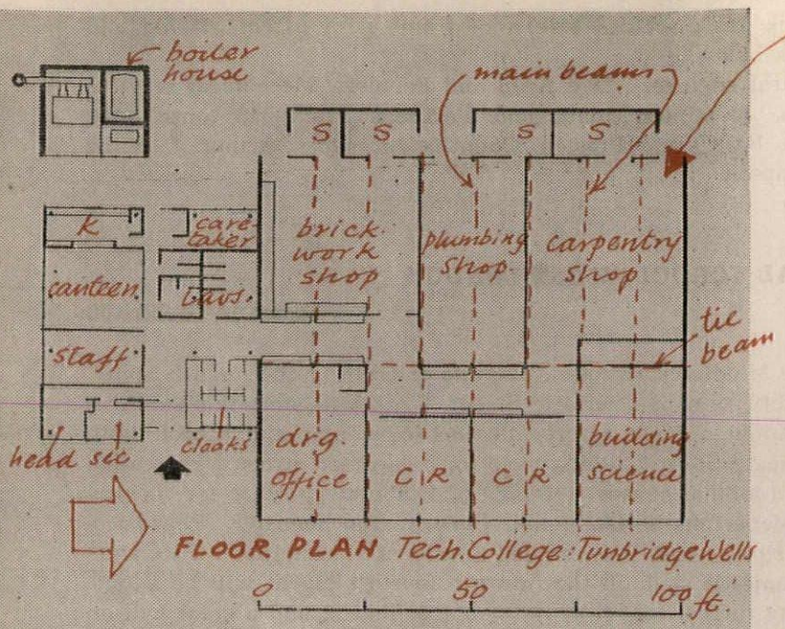


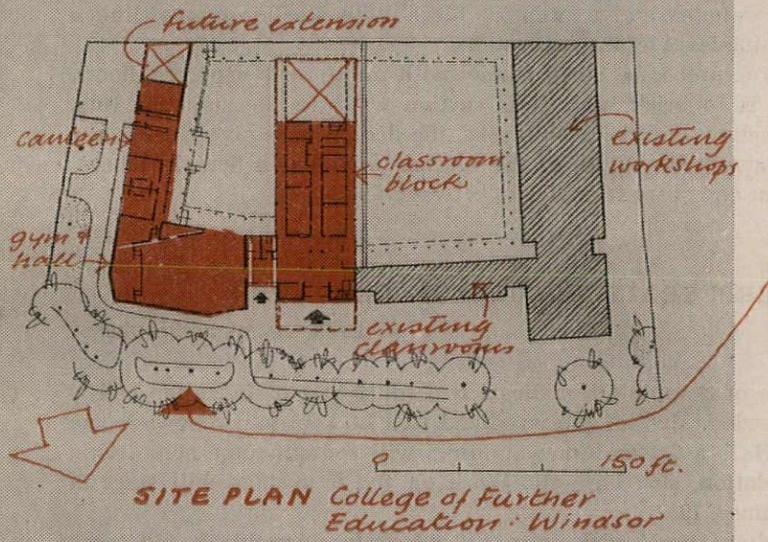
TECHNICAL COLLEGE: TUNBRIDGE WELLS

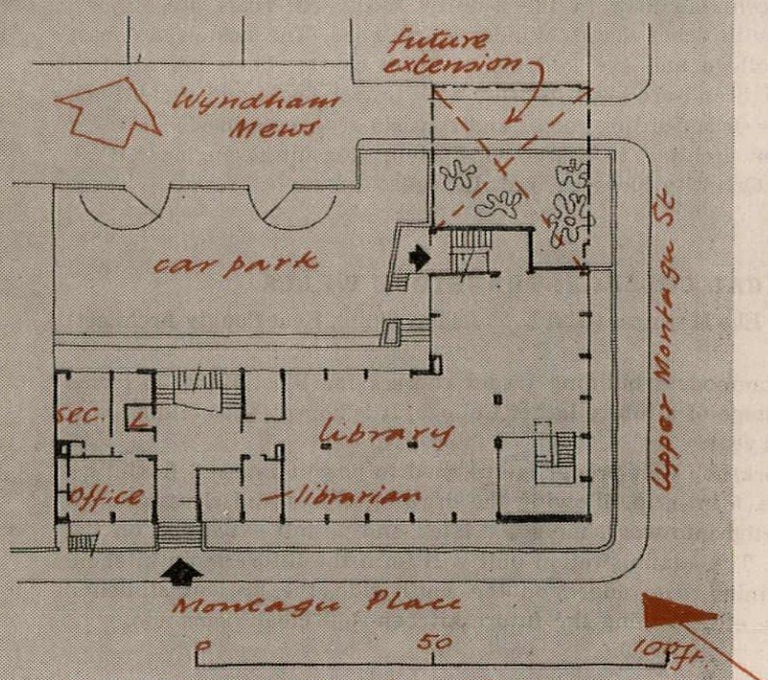
Elie Mayorcas (with E. T. Ashley Smith, Kent County Architect)

To accommodate building trades courses for West Kent. It forms the first stage of a future larger College. It is hoped that building will begin this year.

The workshop unit proper is designed to permit internal flexibility on a 12 ft. 6 in. grid, allowing the drawing offices and classrooms to be converted into workshop space later, and permit expansion on the west side. The administration unit will form the future main kitchen, with a dining-room added on the south side, the present students' lavatories, etc., forming the future kitchen-staff cloakrooms, etc.







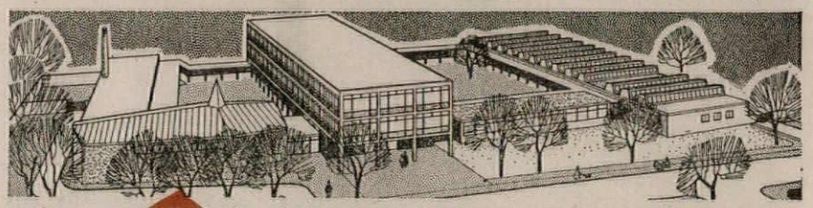
The workshops have a reinforced concrete frame and roof units, with infill panels of brick and glass. The administration block has a prefabricated timber frame.

Assistant architects, L. E. Tatum, A. Gough and D. Hatcher. Structural engineers, Kaylor and Pick. Services engineers, Hoare, Lea and Partners. Quantity surveyors, Thurgood, Son and Chidgey.

COLLEGE OF FURTHER EDUCATION: WINDSOR

Bridgewater and Shepheard

For the Berkshire Education Committee. A first instalment, consisting of workshops and three classrooms, was completed in September, 1955. This second instalment (more teaching accommodation, a gym-



nasium-assembly hall, changing-rooms and canteen) will be started early this summer. A third instalment is planned.

The buildings enclose two courtyards, surrounded by covered ways. The teaching accommodation occupies a 3-storey block with a precast concrete frame. The gymnasium-assembly hall has brick walls and a prestressed concrete inclined slab roof. The single-storey changing-room and canteen is concrete framed.

Assistant architect in charge, G. Epstein. Consulting engineer, F. J. Samuely. Quantity surveyor, J. A. Burrell.

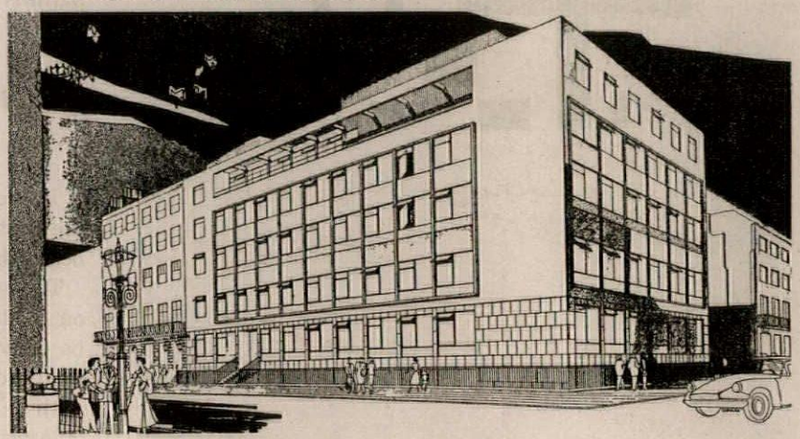
JEWS' COLLEGE: LONDON

Yorke, Rosenberg and Mardall

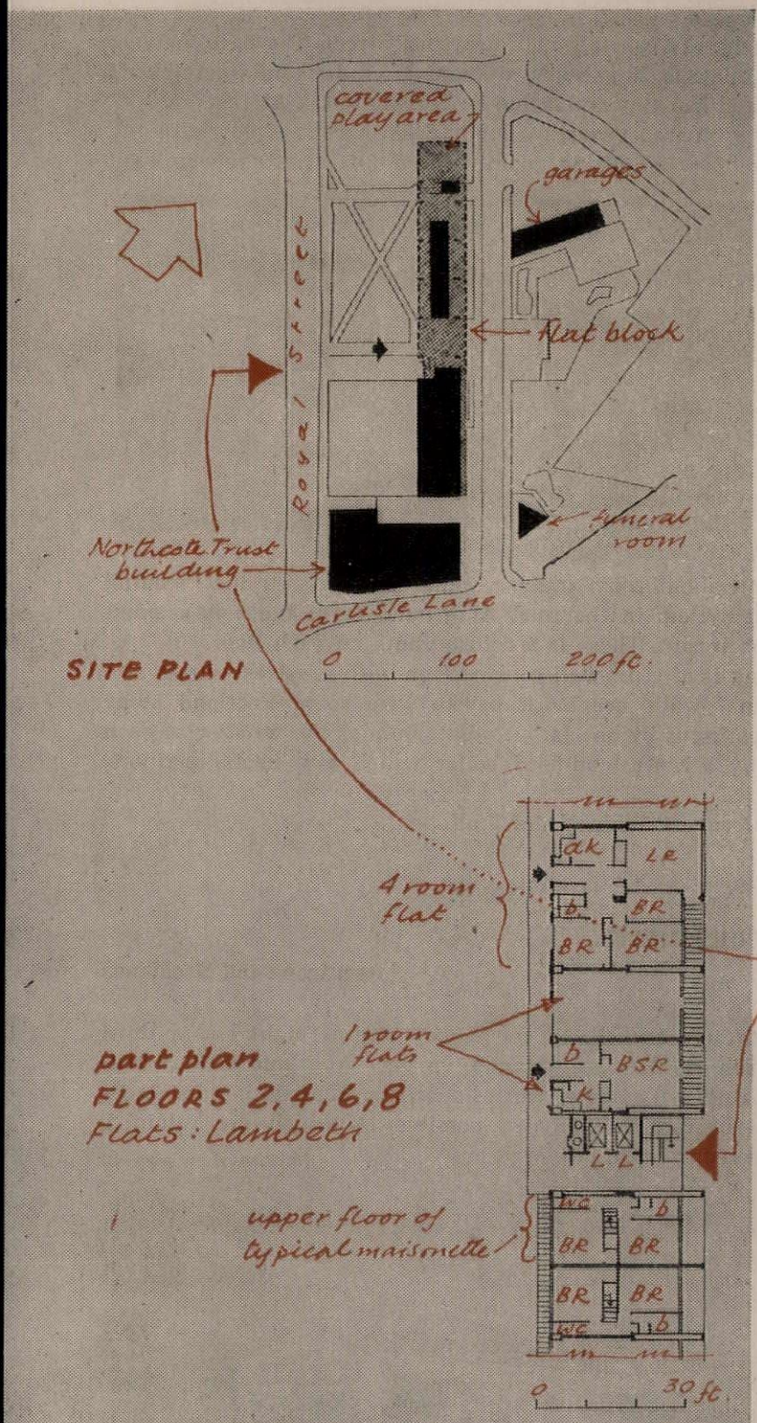
Apart from being a residential college, the building, which is sited in Montagu Place, will house the famous Hebrew Library at present in Woburn House. Construction has begun.

Accommodation includes seven classrooms, a prayer-room, singing-room and boardroom, the library, a squash court, 17 bed-sitting rooms and a warden's flat. The structure is a reinforced concrete frame on a 9 ft. grid with spine beams and hollow-pot floors. To reduce building time, downstand beams and the upstand 4 in. reinforced concrete walls that bye-laws demand are precast. Basement, ground floor and the projecting window-frame are faced with Portland stone. On the Wyndham Mews side the frame is a precast unit with exposed aggregate. Bricks are yellow stocks.

Associate architect, J. R. B. S-Penoyre. Architect in charge, J. S. P. Vulliamy. Structural engineers, Clarke, Nicholls and Marcel. Quantity surveyors, Veale and Sanders.



7 HOUSING



FLATS: LAMBETH

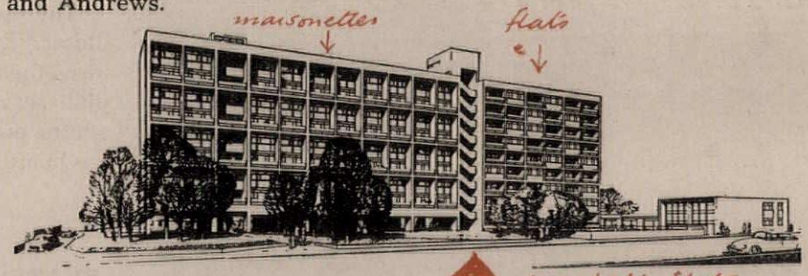
L. G. Creed

At Royal Street, between St. Thomas's Hospital and the railway viaduct, enabling the hospital to rehouse people at present living in the path of the proposed realignment of Lambeth Palace Road and the consequent extension of the hospital site. Construction has just begun and will finish in April, 1958.

The block of dwellings contains 40 two-bedroomed maisonettes, 20 bed-sitting-room flats and 17 three-bedroomed flats, and alongside is a social welfare centre for a trust associated with the hospital, carrying out welfare work in the area. The centre is to contain a hall, dining-room, demonstration-kitchen, canteen, rest-room, health visitor's room, etc. There are also garages, drying area, children's play space and funeral room.

The construction of the flats is of reinforced concrete, bush hammered to reveal the Cornish granite aggregate. Floors are of precast units, party walls of concrete blocks and external walls of prefabricated timber-framed panels. Vertical service ducts to each pair of maisonettes and flats accommodate all services.

Consulting engineer, Felix J. Samuely. Quantity surveyors, Franklin and Andrews.



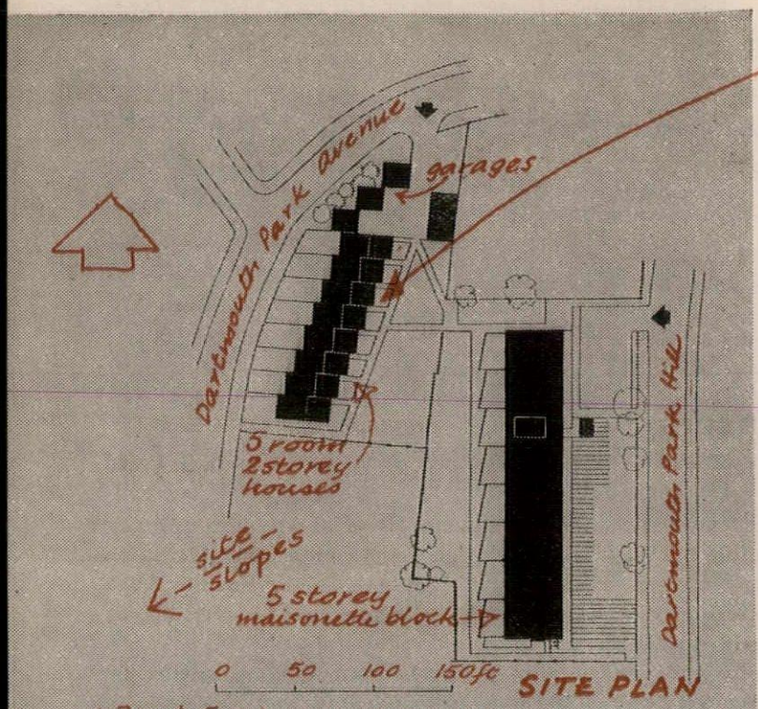
MAISONETTES AND HOUSES: ST. PANCRAS

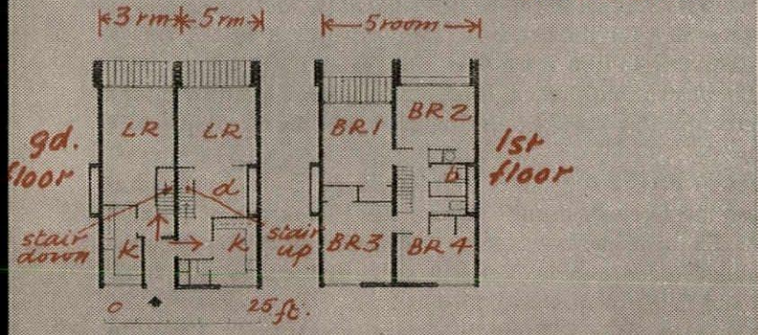
Denis Clarke Hall

For St. Pancras Borough Council, on a bomb-damaged site of under 1½ acres at Dartmouth Park, at present containing 16 prefabs and one pre-war villa. The steeply sloping site overlooks a reservoir to the east and has good views to the west and south-west. It is hoped to retain all existing trees. Work will start early this year.

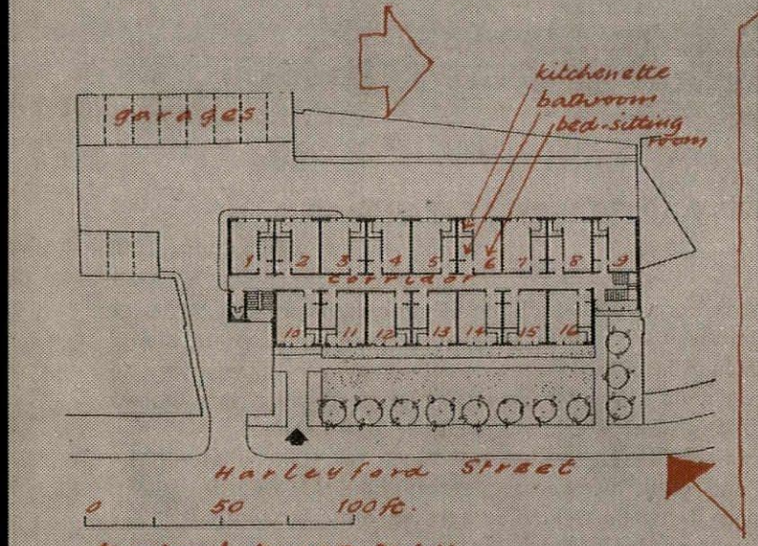
Thirty-two maisonettes in a 5-storey block are placed along the east frontage and eight five-room, 2-storey houses along the west, leaving the space between, which is crossed only by footpaths, for public and private gardens. There are also ten lock-up garages. The maisonette block has five-room and three-room dwellings below and two-room and four-room dwellings above, and although plan-forms and components have been standardized, the sizes of kitchens and living-rooms is increased in the larger maisonettes by the use of alternating bay widths of 12 ft. and 13 ft. 6 in. All bathrooms and w.c.s are internal, ventilated through the main service ducts.

The maisonettes have load-bearing brick cross-walls, reinforced con-





MAISONETTE PLANS St Pancras



typical FLOOR PLAN
Flats : Kennington

crete and hollow-pot floors (with slab edges exposed) and flat roofs. External walls are brick cavity faced with London stocks. Window panels are coloured polished asbestos. The terrace houses have brick cross-walls with reinforced concrete ground floors and timber upper floors and roofs. Front and back are timber framed with panels of coloured polished asbestos.

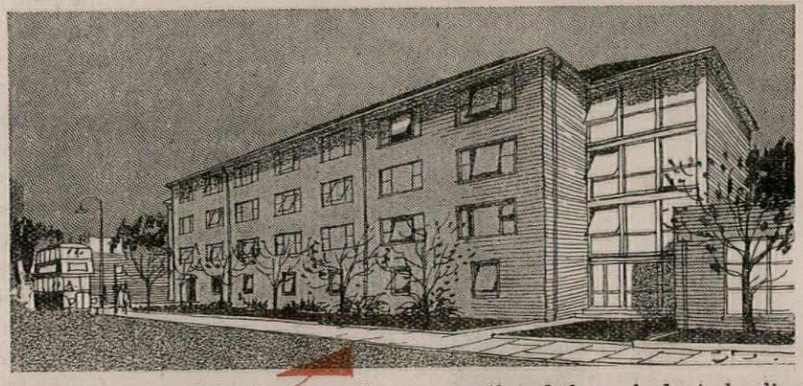
Assistant architect in charge, David J. Dupree. Structural engineering consultant, R. F. Galbraith. Quantity surveyors, Drower and Son.

FLATS: KENNINGTON

Louis de Soissons, Peacock, Hodges and Robertson

For the Duchy of Cornwall, in Harleyford Street. The building contains 48 small flatlets, 23 garages, a tenants' laundry and a caretaker's flat. Work began last May and is due for completion in August.

The flats are entered through a lobby from a central corridor, and each consists of a bed-sitting room with a kitchenette opening off



it and an internal bathroom and w.c., ventilated through ducts leading to an extract system in the roof. At ground level there is a small store for each tenant. There is a refuse chute on each floor.

The building is of cross-wall construction with prestressed concrete floors. External walls are stock bricks with some Portland stone dressings. Heating is by one large radiator under the window of each flat, served by a central oil-fired boiler which also heats corridors, stairs, etc.

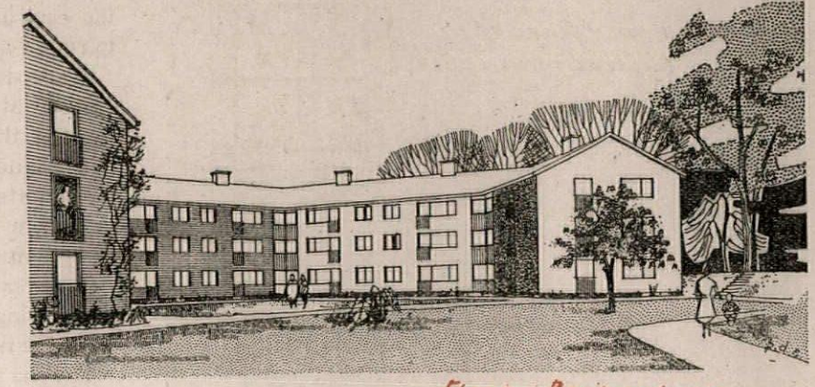
Quantity surveyors, Widnell and Trollope.

FLATS: BECKENHAM

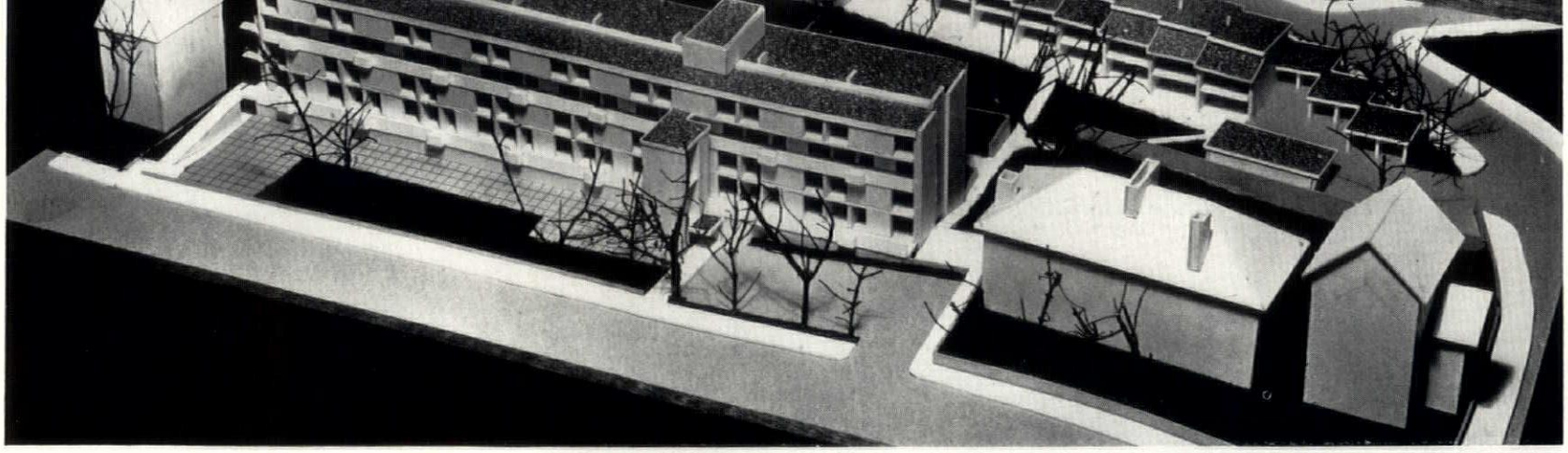
Armstrong and MacManus

For the borough council, on the Abbey site of eight and a third acres, on which 140 flats are planned, varying from one to four bedrooms but mainly with two or three bedrooms. The site has fine trees round its perimeter, as many as possible of which are retained. Work is expected to begin this year.

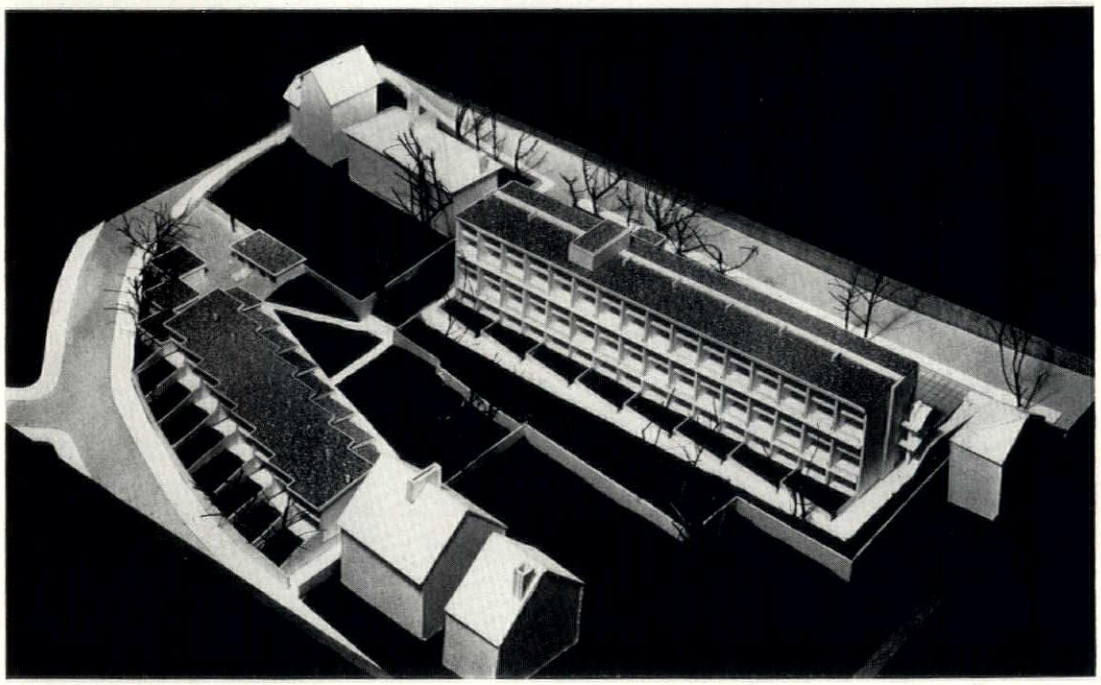
[*continued on page 43*

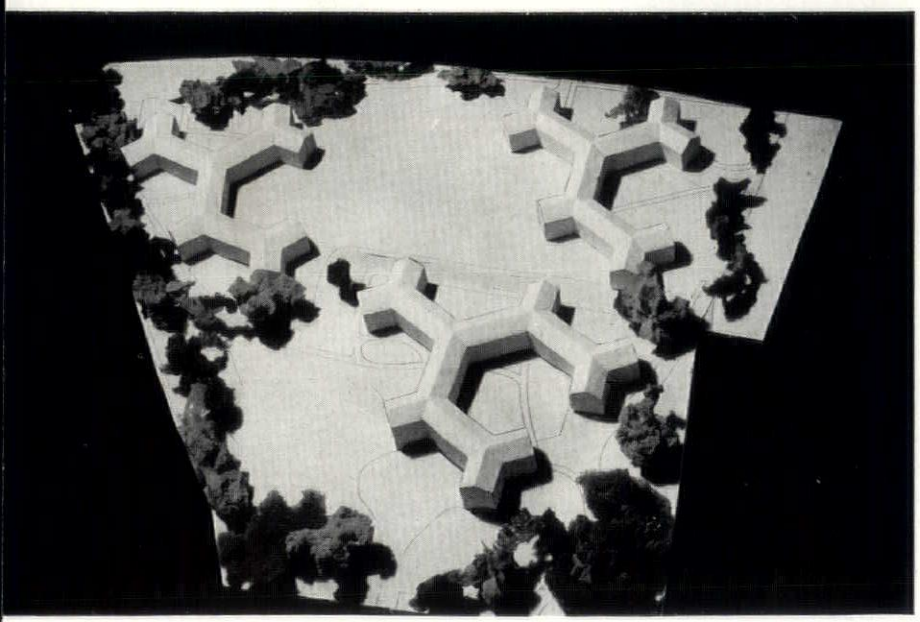


Flats : Beckenham

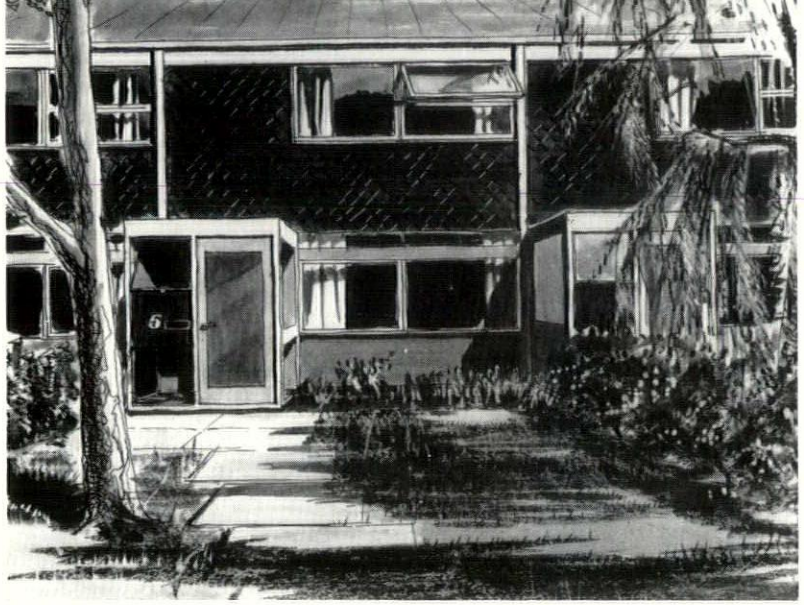


Housing at St. Pancras by Denis Clarke Hall: above, from the east, with 5-storey block of maisonettes in the foreground and 2-storey houses beyond; right, from the west.

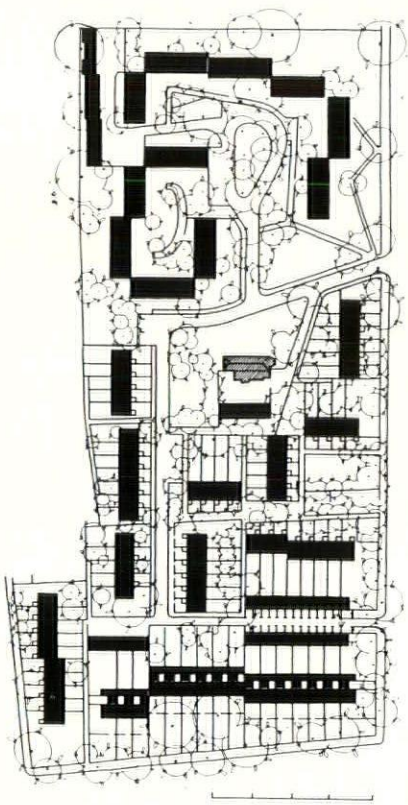




Left, block model of the Beckenham flats. The sketch opposite is taken looking into one of the open courtyards.

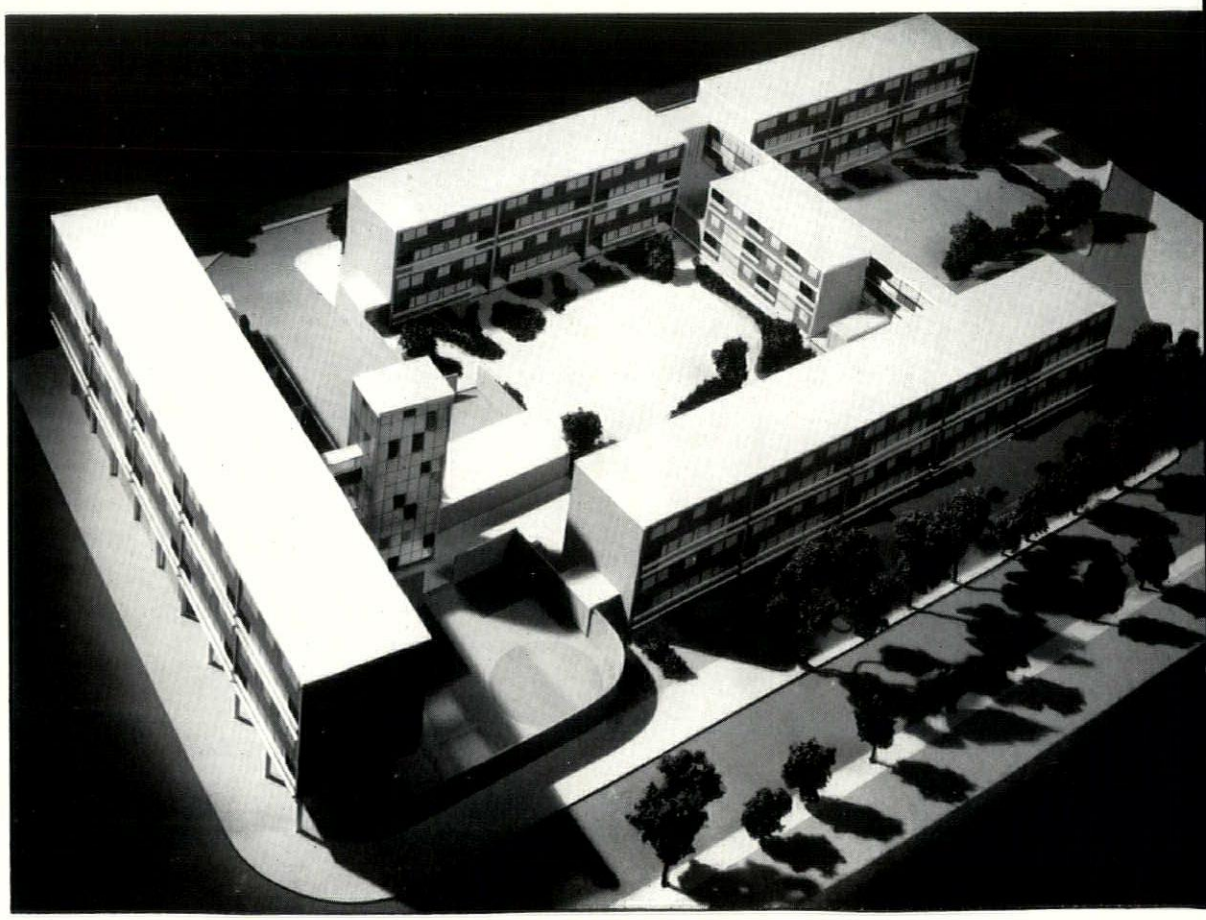






Housing at Blackheath. The plan, left, shows how the houses illustrated here are laid out in short terraces on the northern part of the site, the southern part of which is occupied by the nearly completed flats. The sketches above show: left, the 2-storey type of house; right, the 3-storey type.

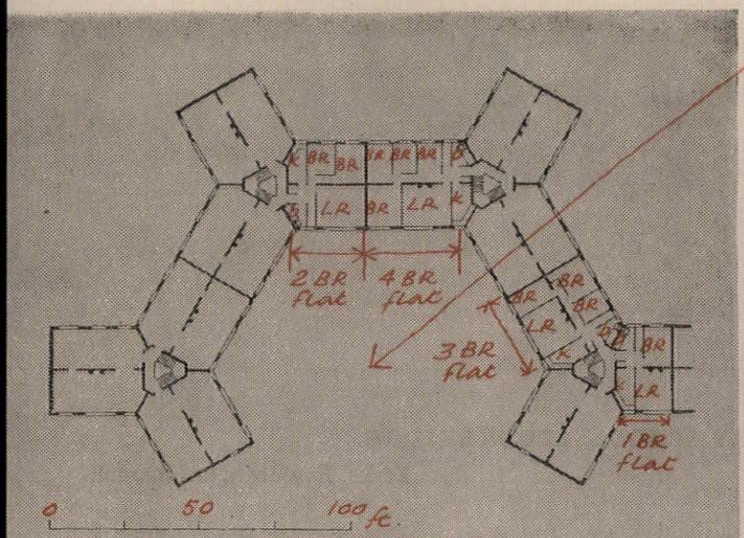
Below, maisonettes and flats at Hackney, planned round an open and a nearly enclosed courtyard.



continued from page 40]

The flats are arranged in a series of blocks, attached to one another to form three main groups and enclosing open courtyards designed in relation to the trees. They are all three storeys high. Informal paths link the groups of buildings within the site.

Construction is load-bearing brickwork with reinforced concrete floors and timber roofs covered with brown pantiles. Facing bricks are golden brown in colour. Windows are casement type, in wood.



plan showing FLAT TYPES
Flats: Beckenham

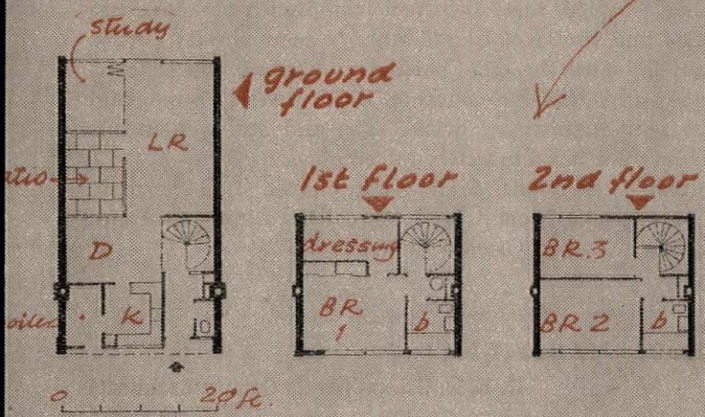
FLATS AND HOUSES: BLACKHEATH

Eric Lyons

At the corner of Blackheath Park and Brooklands Park. 2- and 3-storey houses and 3-storey flats (120 dwellings in all) are laid out in short terraces, enclosing squares, among the many trees existing in the grounds of two old houses: 'Bondicarr' and 'The Hall.' They are served by one internal road. The flats (in the grounds of 'The Hall') began last month and are nearly finished. Work on the houses (in the grounds of 'Bondicarr') has just begun and will be completed in 1958.

The houses are of two types: two-bedroom (60 in number) and three-bedroom (16 in number). The terrace facing Blackheath Park has garages behind, separated by a small mews from the garages behind a parallel terrace. The houses are of brick cross-wall construction, with timber floors and roofs. External walls are clinker block, faced with tile-hanging and coloured metal or asbestos panels in the case of the two-storey houses, and with horizontal timber boarding and coloured panels in the case of the three-storey houses. The flats (44 in number), grouped at one end of the site, are similarly constructed but with reinforced concrete floors, with tile-hanging and asbestos panels externally.

Assistant architects, Geoffrey Scoble and Ivor Cunningham.



TERRACE HOUSE PLANS (3 storey)
Flats + Houses: Blackheath

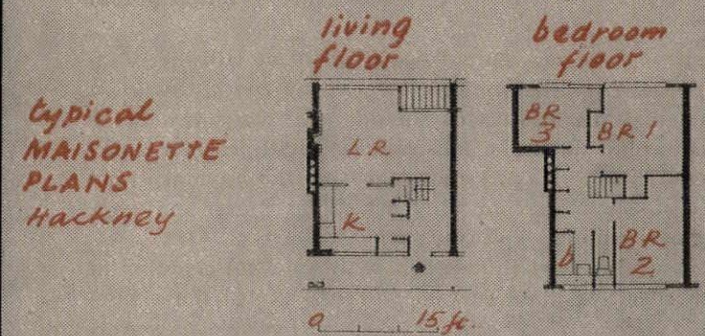
MAISONETTES AND FLATS: HACKNEY

Eric Lyons

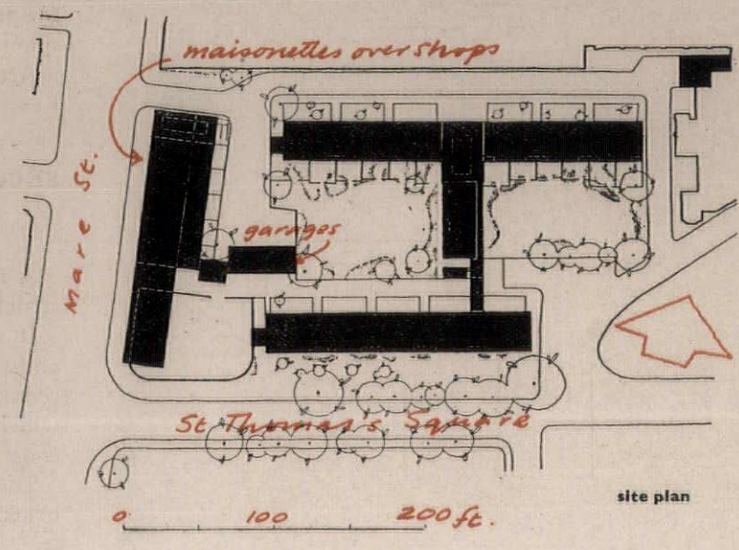
On the London County Council's Frampton Park estate. Five 3-storey blocks of various sizes surround two courtyards, one nearly enclosed and the other open. There are altogether 64 maisonettes, seven flats and five shops. Work began towards the end of last year and is due for completion early in 1958.

Construction consists of brick cross-walls with reinforced concrete floors and timber roofs. Cladding includes tile-hanging and coloured asbestos panels.

Assistant architect, Ron Jones. Consulting engineer, Z. Pick.

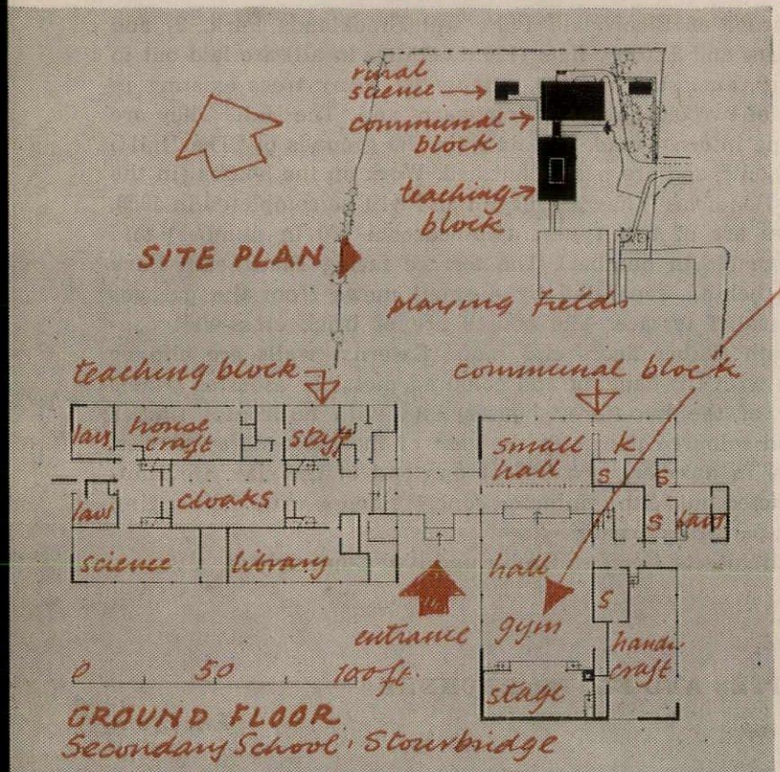


typical MAISONETTE PLANS
Hackney

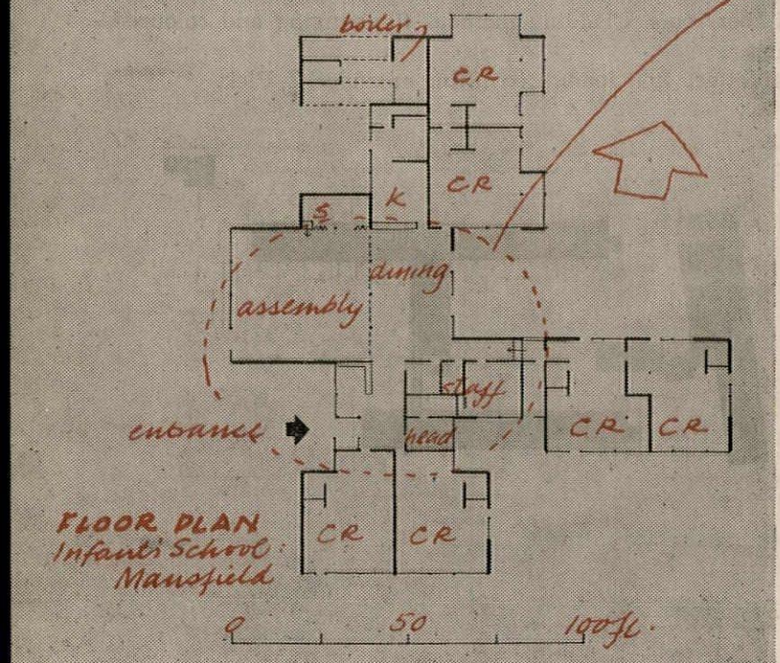


site plan

8 SCHOOLS



GROUND FLOOR
Secondary School: Stourbridge



FLOOR PLAN
Infants' School: Mansfield

SECONDARY SCHOOL: STOURBRIDGE

Yorke, Rosenberg and Mardall

A secondary modern school at West Stourbridge for Worcestershire County Council. Work will begin next April.

It consists of two 2-storey blocks linked by the entrance hall: a teaching block and a communal block. The latter contains hall-gymnasium, small hall, kitchen, handicraft room, art-room and changing-rooms. In the teaching block the practical rooms and library are on the ground floor, surrounding a top-lit cloakroom, and the classrooms are on the first floor.

The school has an exposed, rustproof steel frame with box columns, trussed roof beams and timber joists. Timber-framed windows have coloured glass panels below the cills, backed with compressed straw. The first-floor is *in situ* reinforced concrete. Brick panels on external walls are of blue semi-engineering bricks. The end and side panels of the classroom block are faced in pattern-fired glass.

Associate architect, T. R. Evans. Architect in charge, J. G. Fryman. Structural engineers, Clarke, Nicholls and Marcel. Heating consultant, A. J. Smith. Quantity surveyor, Oswald Wainwright.

INFANTS' SCHOOL: MANSFIELD

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

A two-form entry infants' school in Bancroft Lane. Building began in November and is due for completion next September.

The classrooms are grouped in pairs round a central area. The form of structure is designed to follow the movement of the ground when mining subsidence takes place. It consists of a pin-jointed light steel frame on a thin slab foundation, with external walls of horizontal timber boarding, concrete blocks or hanging tiles, chosen because they will not restrict movement. Timber windows are used for the same reason. The roof deck is of light timber construction spanning between the steel beams.

Architect in charge, A. B. Fuller. Quantity surveyor, W. R. J. Hill.

SECONDARY SCHOOL: FOLKESTONE

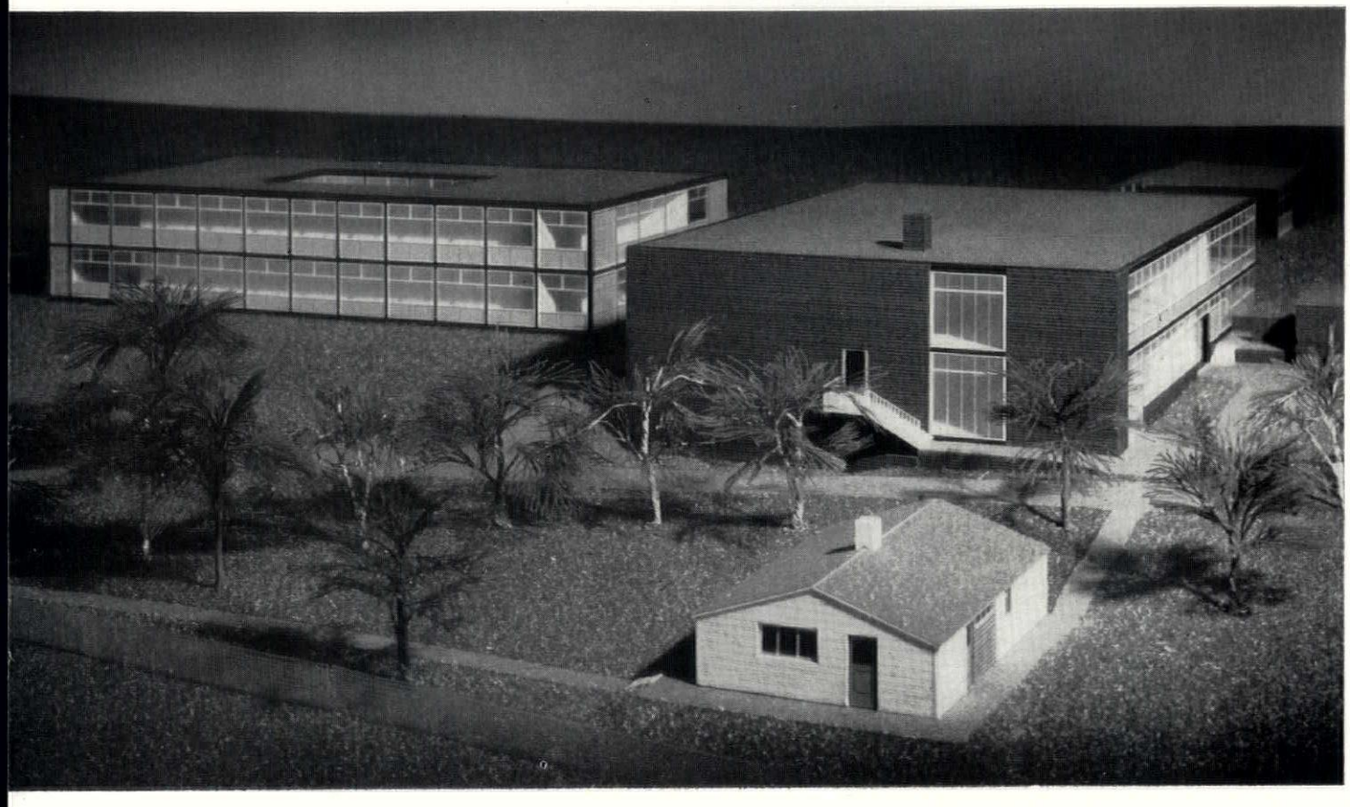
Elie Mayorcas

A four-form entry (five-year course) boys' school at Hillside. Construction has begun and will be finished towards the end of this year.

It was required that the classrooms should not exceed two floors and that each year-group should be self-contained with its own cloakrooms, storage, etc. The site is open and rises from the approach road which is on the east. The classroom wing, which faces east and west, is on a high ridge overlooking a golf course.

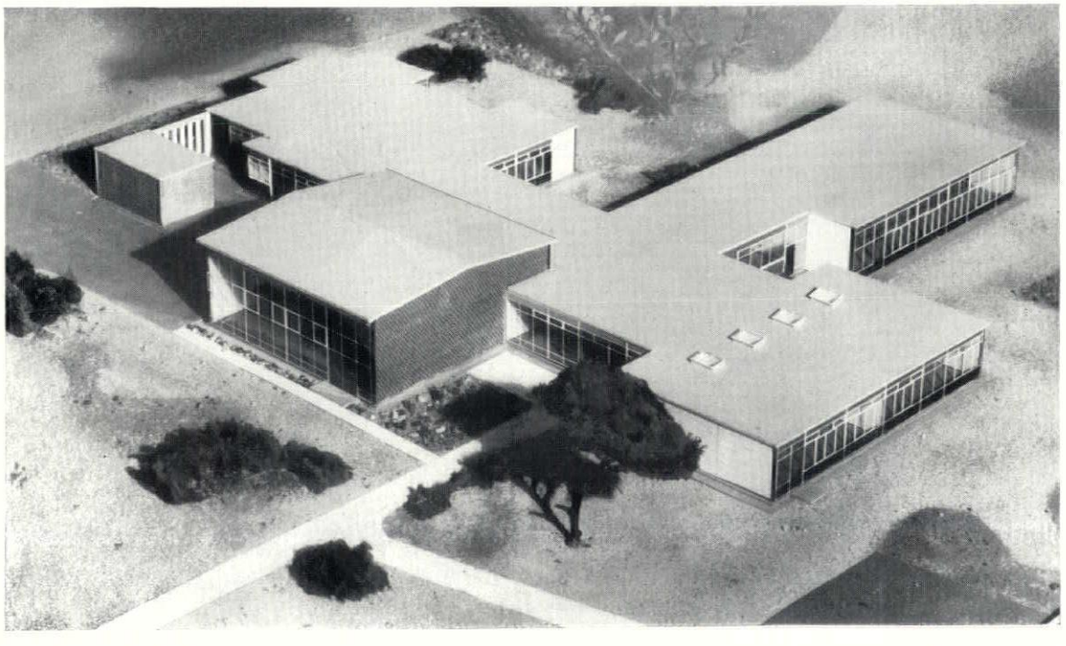
The structure is a light steel framework with external cladding of brick, aluminium sheet, or glass curtain walling, except the single-

[*continued on page 47*



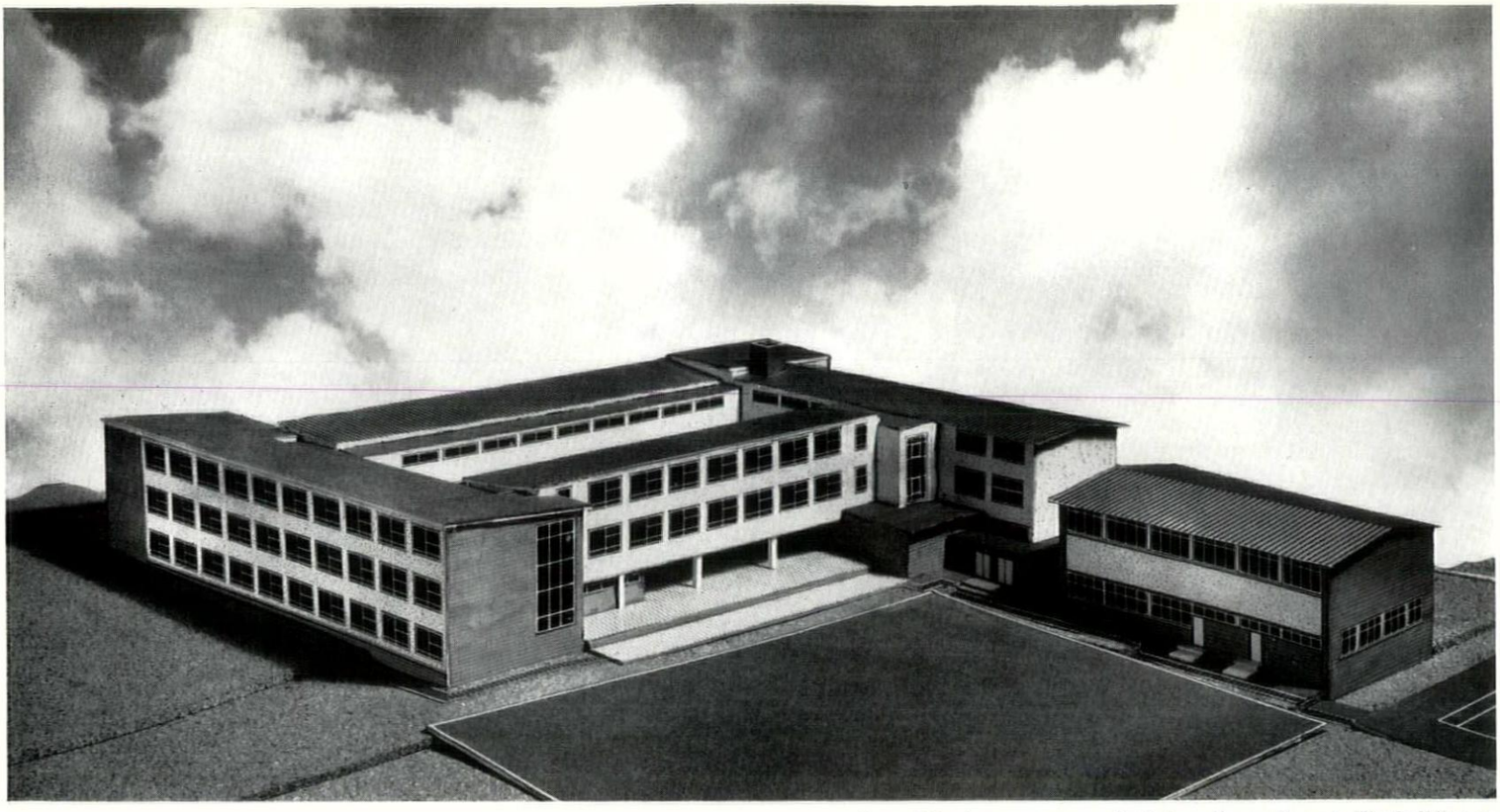
Left, school at Stourbridge: teaching block on the left of the picture and communal block on the right. In the foreground is the caretaker's house.

Below, school at Mansfield: model from above showing the pairs of classrooms and the assembly hall each occupying a separate wing.



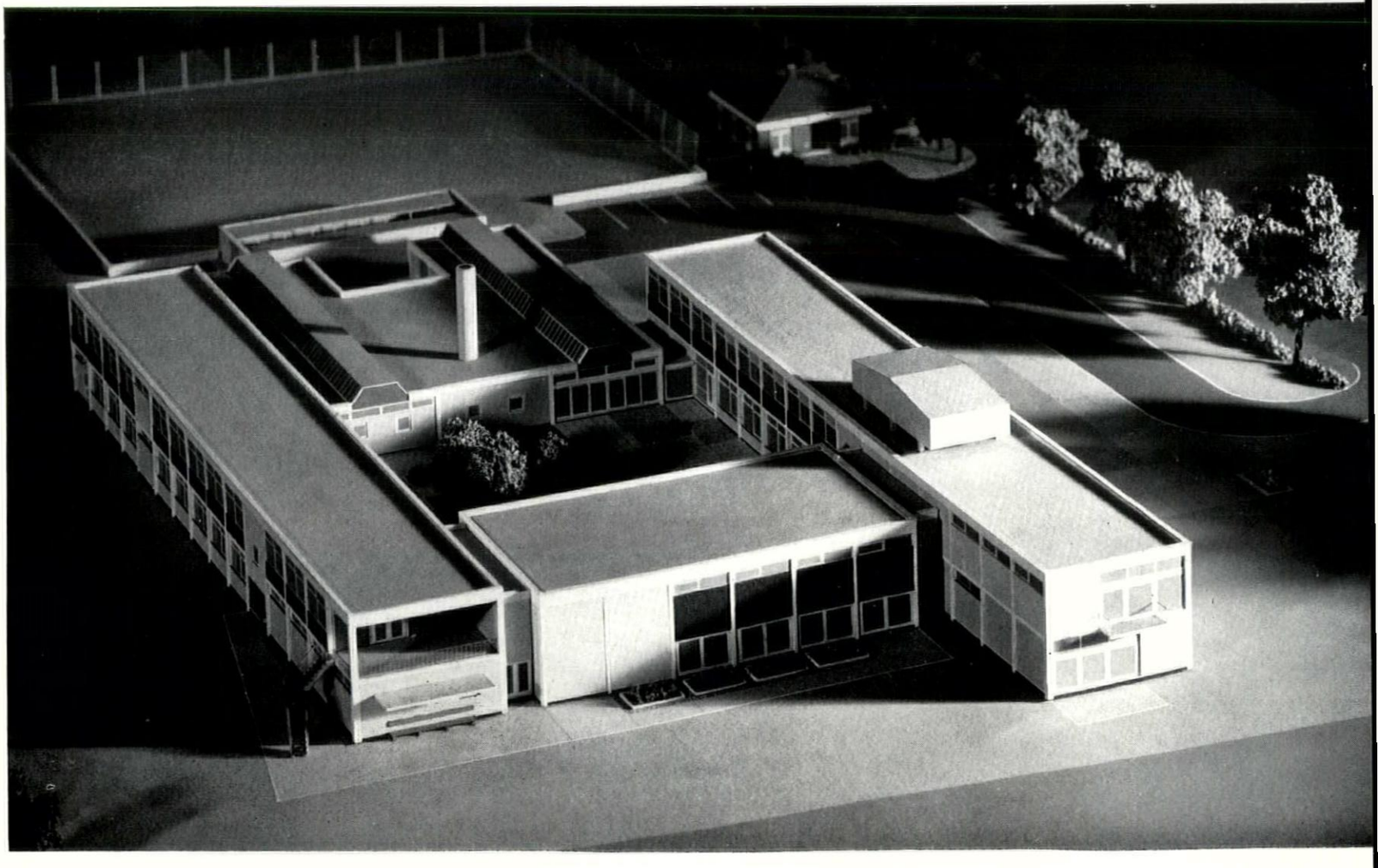


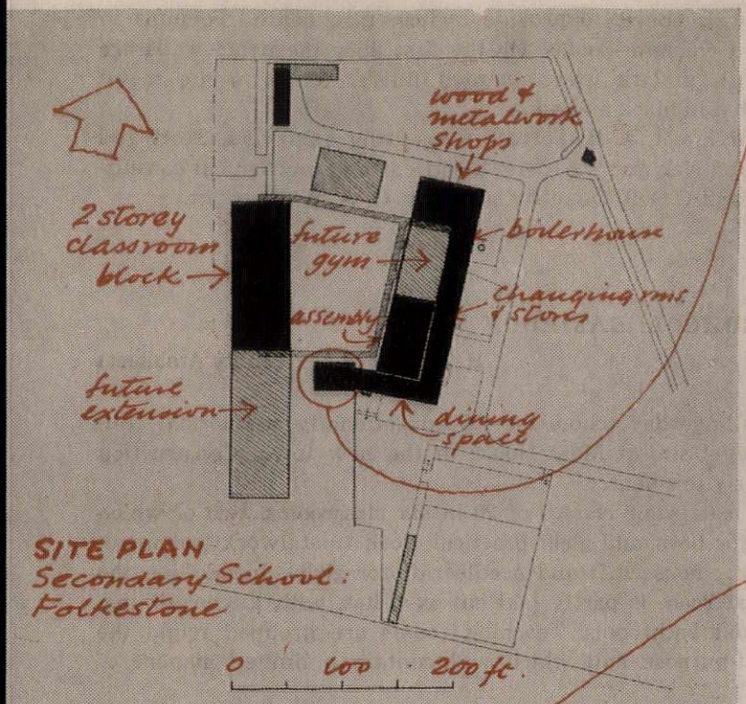
Above, school at Folkestone. The classroom wing is on the right on the highest part of the sloping site.

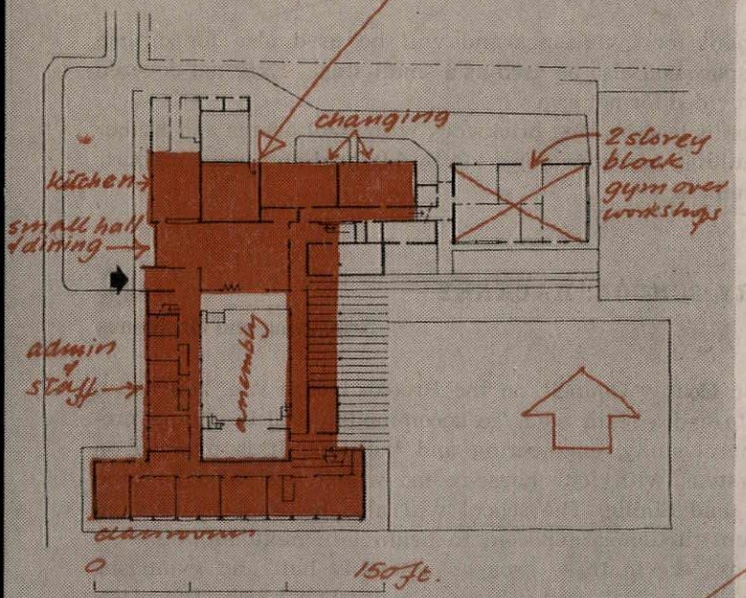


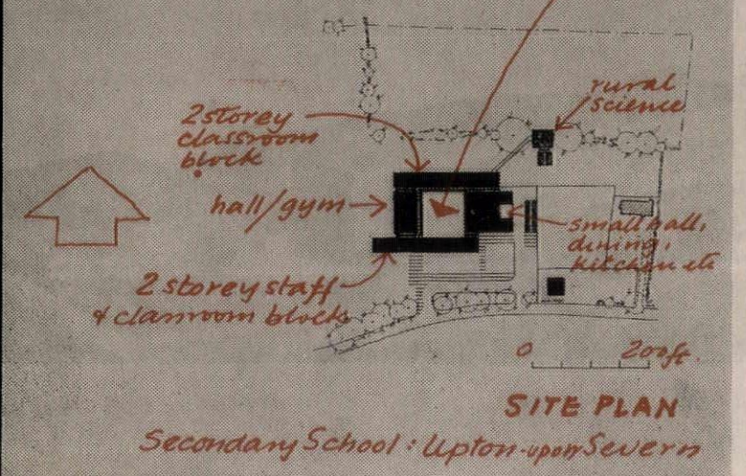
Above, Ickenham grammar school from the south-west. The building on the right has workshops on the ground floor and a gymnasium above.

Below, school at Upton-upon-Severn: showing the garden court round which the building is planned. The teaching blocks, on the north and south sides of it, are linked by a corridor along one side of the assembly hall.









continued from page 44]

storey administration wing which has a timber frame, clad externally with cedarwood boarding on aluminium foil for additional insulation. Upper floors are precast reinforced concrete, and roofs are strawboard slabs supported on steel purlins.

Designed in collaboration with E. J. Ashley Smith, Kent County Architect. Assistant architects, L. E. Tatum, J. Hoile, M. Pollard, J. Keable and C. H. V. Robinson. Quantity surveyors, C. John Mann and Son. Services engineers, J. Stinton Jones and Partners.

GRAMMAR SCHOOL: ICKENHAM

C. G. Stillman (Middlesex County Architect)

A mixed school with 720 places at Uxbridge, on a 12-acre site adjoining Western Avenue, from which the buildings have been removed as far as possible to minimize traffic noise. Construction will begin next June.

A 3-storey building, grouped round the central assembly hall, small hall and dining area, which are separated by sliding-folding doors. The kitchen can provide 550 meals, a larger proportion than usual in a school this size, since many children will come from long distances. The administrative rooms are on the ground floor, south of the main entrance. Gym changing rooms, on the north side of the assembly hall, are also accessible from the small hall and the playing fields. Under the first-floor gymnasium are two metalwork rooms and a foundry. On the first floor are four laboratories and housecraft and needlework rooms. On the second floor two laboratories, a technical drawing-office, art and craft rooms, a music room, two libraries and three sixth-form rooms. Eighteen classrooms are divided between the three floors.

The building is steel framed with lightweight precast vermiculite plaster casings, and suspended precast concrete floors. External walls are cavity brickwork, partly rendered.

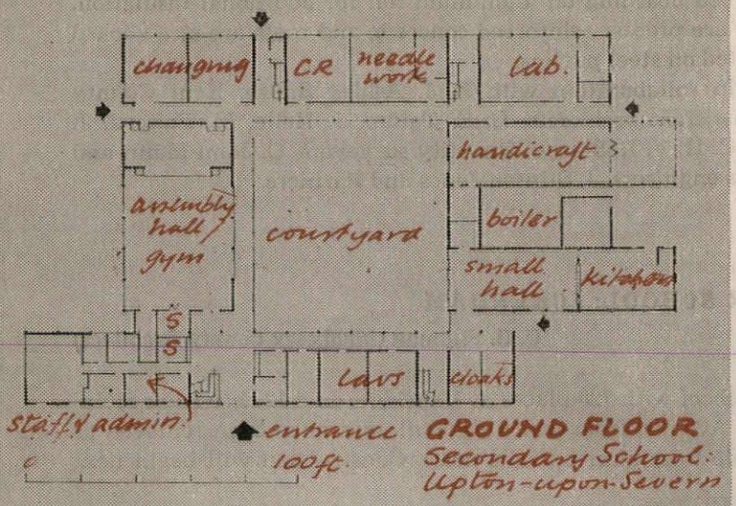
SECONDARY SCHOOL: UPTON-UPON-SEVERN

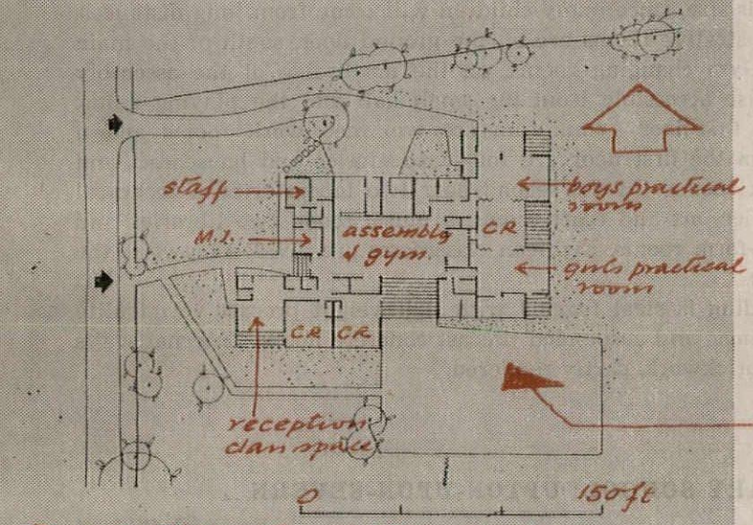
Frederick Gibberd

For the Worcestershire County Council, to accommodate 320 children, with the addition of two further classrooms later. Work began last April and will be completed in the spring of 1958.

The site, outside the town, is completely flat and forms a plateau, from which the land falls away on all sides. It has well established hedges with several large trees. Four blocks surround a paved garden court, designed to reduce corridor lengths and to free as much site as possible for playing fields. The main teaching rooms are on the first floor to give views over the surrounding countryside and provide a separation from the principal circulation areas and entrances. The 2-storey block on the south side has four classrooms on the first floor, with the library at the west end. The assembly hall and gymnasium form the second block, immediately beyond the main entrance. A corridor, designed as a side aisle for extra seating in the hall, provides a low-level link between the north and south blocks. The 2-storey block on the north contains most of the rooms for specialist study, with changing-rooms on the ground floor. The fourth block contains the handicraft room, small hall and dining-room, the kitchen and the boiler-house, thus grouping together all rooms requiring service access and those producing greatest noise.

The structural frame is steel with internal beams and stanchions exposed. Externally, each bay is framed by columns and a string course at floor level, which is faced with buff-coloured reconstructed stone. The panel walls between columns on the ground floor have an outer skin of silver-grey, stone-faced blocks and are set back





FLOOR PLAN, Special School · Basildon

beyond the wall above, to provide a flush face behind columns in lavatories and changing-rooms. On the first floor the panel walls are rendered, with a dark green painted finish. Windows are metal framed, painted in black and white.

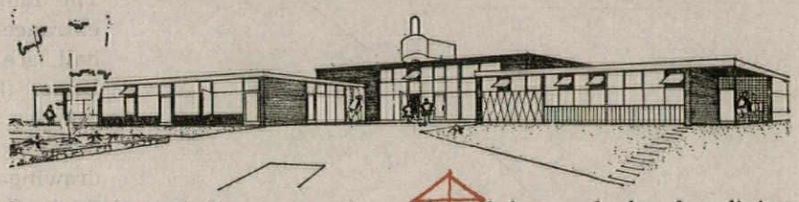
Associate architect, J. B. Forrest. Consulting engineers, Scott and Wilson ; Kirkpatrick and Partners. Electrical and mechanical consultants, Brandt and O'Dell. Quantity surveyor, O. A. Wainwright.

SPECIAL SCHOOL: BASILDON

H. Conolly (Essex County Architect)

A mixed all-age day school for 120 educationally sub-normal children, on a level site at Moat House in the new town. Construction will begin early this year.

The school caters for classes of 20 in six classrooms, two of which are laid out for boys' and girls' practical work (metalwork and woodwork for boys ; housecraft and needlecraft for girls). In addition the girls' practical room is partly laid out as a flat, with kitchen-dining, bed-sitting and bathrooms. Teaching rooms are grouped round the central multi-purpose hall which will contain a limited amount of



fixed equipment for gymnastics and will be used also for dining. The storage space can also be used as a small stage. External covered spaces are provided for pet cages.

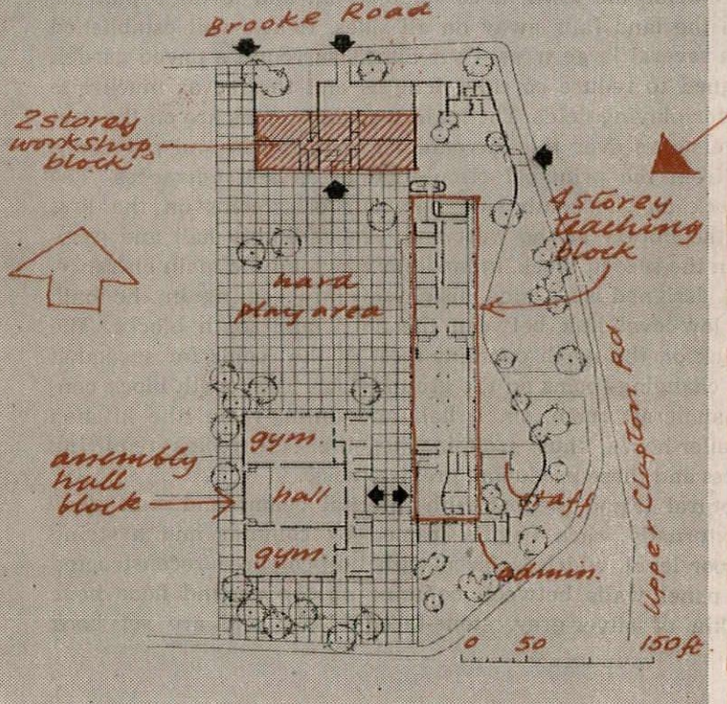
Construction is load-bearing brickwork with steel beams and timber joists. The building is planned on a 4 ft. by 4 ft. grid and main supports are at 12 ft. centres.

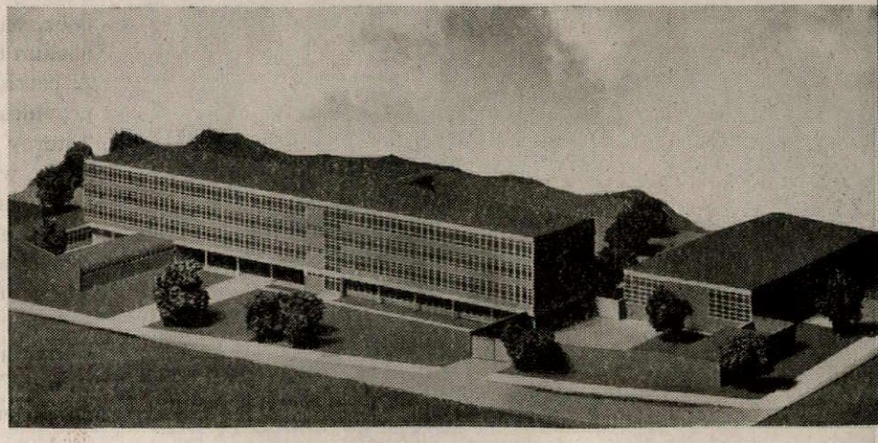
SECONDARY SCHOOL: HACKNEY

Armstrong and MacManus

For London County Council, on the Brooke House site, between a housing estate and a main road. To accommodate 960 boys, and provide for general study, engineering and building. It is planned on the house system, with four house-rooms which will also be used for teaching and dining. The school will also be used by evening institutes. Construction is expected to begin late next autumn.

The buildings are in three groups: assembly hall and gymnasia, a 4-storey teaching block and a 2-storey workshop block. The classrooms, which face east and west, are planned either side of a central corridor. Below them are the administrative and medical rooms. Two

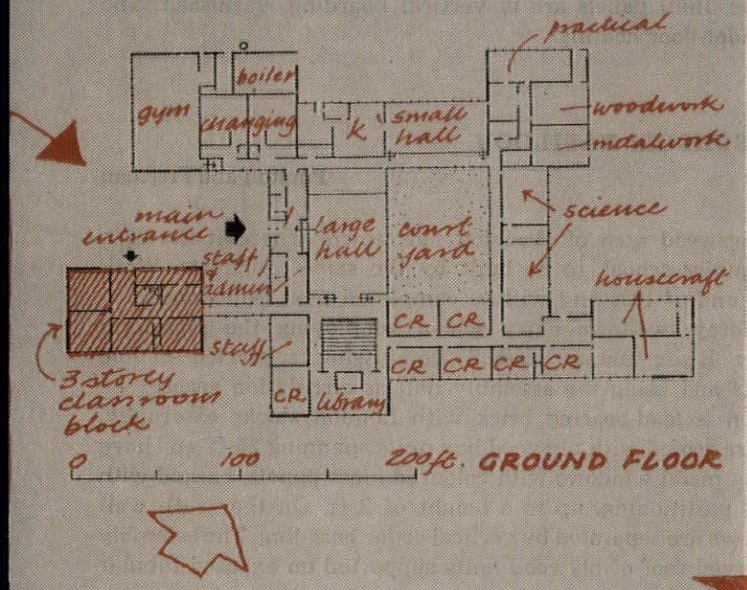




gymnasia are placed either side of the assembly hall. Changing-rooms serve as dressing-rooms when the hall is used for drama. A covered way links the hall with the teaching block.

Construction is reinforced concrete with cavity brick panel walls. External walls are framed with reinforced-concrete columns, and in the teaching block the floor and roof slabs span across to a flat concrete beam the width of the corridor, itself supported on columns. The workshop block has a similar system with a brick spine wall.

Associate architect in charge, Brian Smith. Structural engineers, Ove Arup and Partners. Heating engineers, J. Roger Preston and Partners. Quantity surveyors, William C. Inman and Partners.

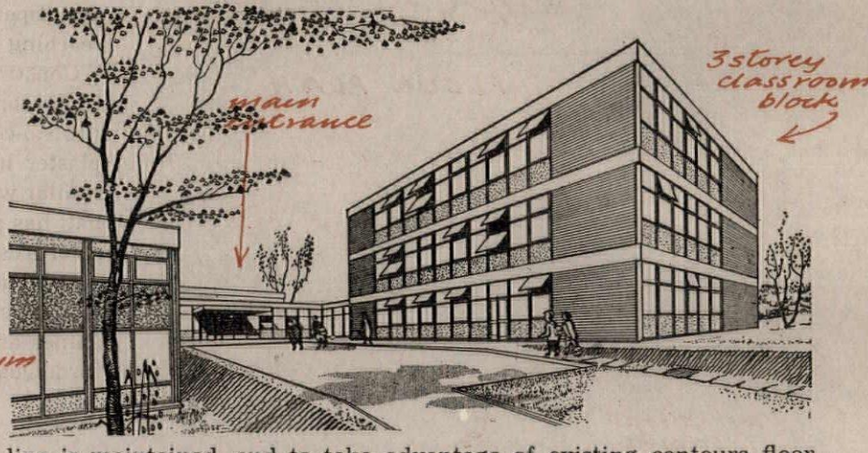


SECONDARY SCHOOL: SHEFFIELD

Architects Co-Partnership

A four-form entry mixed secondary modern school to accommodate 600 children. The site is east of Sheffield in a primarily residential neighbourhood. Construction will begin in October.

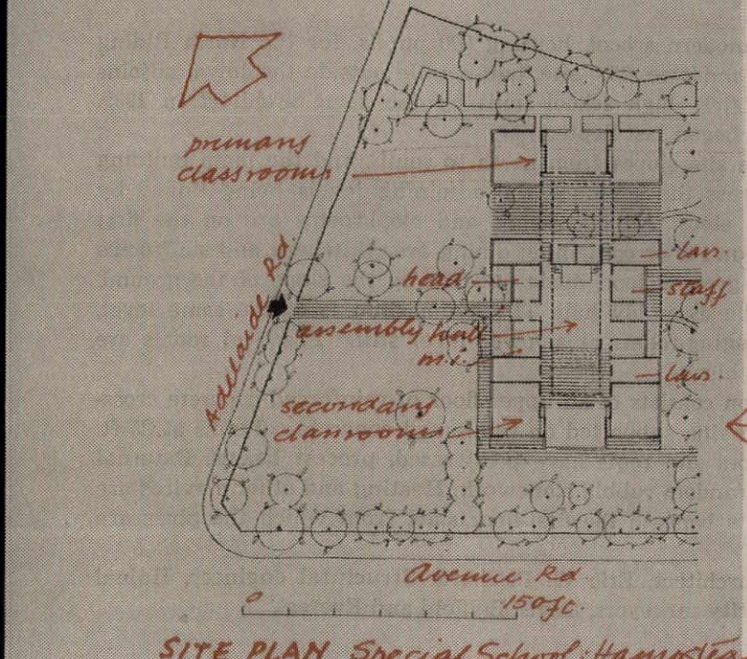
Planned in single-storey blocks round a courtyard, with one 3-storey block. The large hall, administrative area and library are centrally placed and a small paved court serves as an outdoor reading space adjacent to the library as well as a sound barrier between it and the remainder of the school. The workshop and practical rooms are in projecting wings. The changing-rooms can serve both the halls as well as the gymnasium. Except in the large hall a common eaves



line is maintained, and to take advantage of existing contours floor levels are dropped in rooms needing additional height.

Construction is of timber-framed glazed panels to fit a 5 ft. grid, with a timber roof and wood-wool slabs. Large span roofs have trussed timber beams at 10 ft. centres. Solid infilling to panels is asbestos of varied colours. Brickwork replaces panels where completely solid external walls are required. The 3-storey block has a reinforced concrete frame, supporting hollow-pot floors and roof. Cladding is timber panels of the same type as elsewhere, with some brick solid walls. The concrete structure is exposed and painted black.

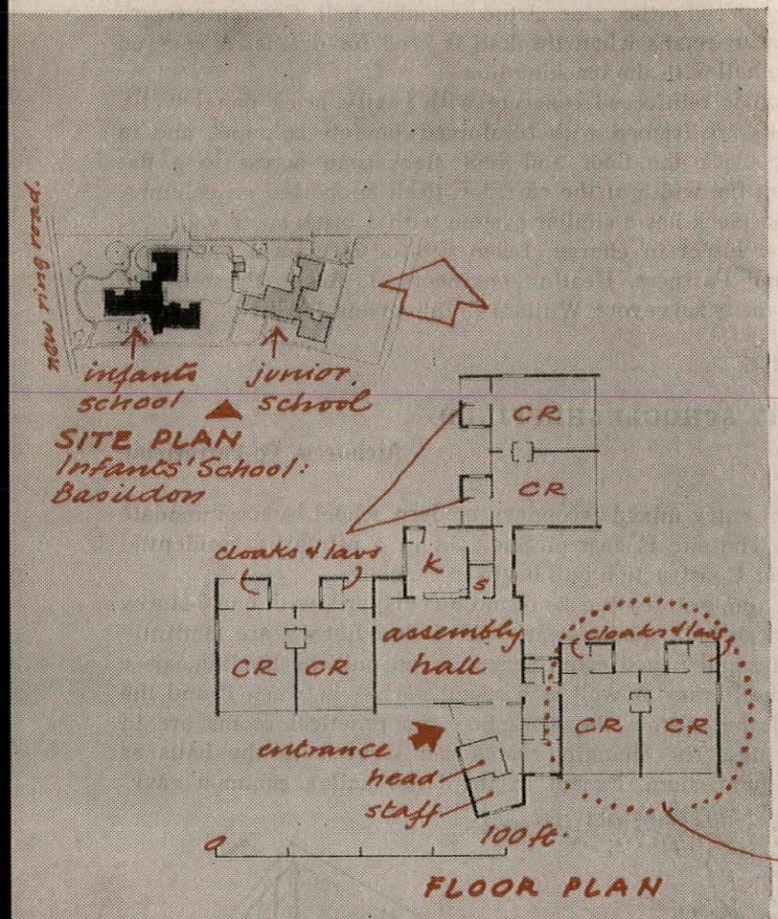
Designed in collaboration with the city architect, J. L. Womersley. Consulting engineers, Ove Arup and Partners. Heating and electrical engineer, H. J. Knox. Quantity surveyors, Davis, Belfield and Everest.

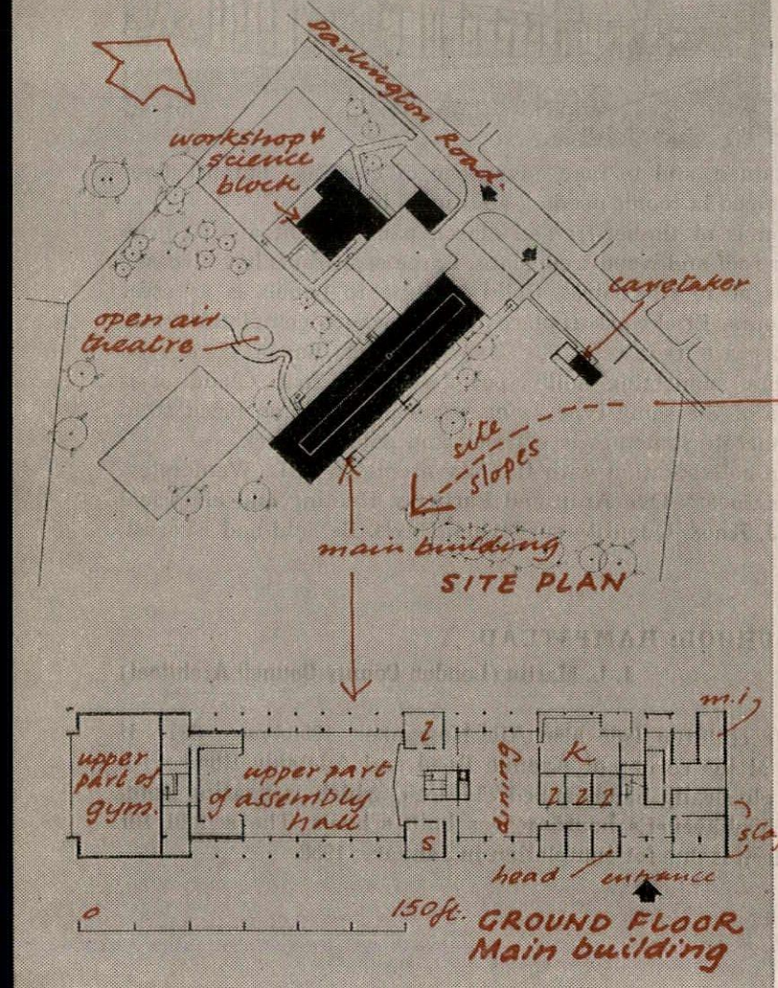


SPECIAL SCHOOL: HAMPSTEAD

J. L. Martin (London County Council Architect)

For delicate children (see also AR, November, 1956, page 321). It shares a site at the corner of Avenue Road and Adelaide Road with a school for physically handicapped children, which is nearing completion. A school-keeper's house serves both schools. The school for delicate children is due for completion in January, 1958.





It is planned as an open-air school, with three primary and three secondary classrooms and an assembly hall, accommodating altogether 180 children. The classrooms, which surround an open and an enclosed courtyard, and have continuous south windows, are reached by covered ways from a central building containing staff-rooms, a medical room and the assembly hall. Meals are taken in the assembly hall, the mid-day meal being brought across from the kitchen of the adjoining school for physically handicapped children and breakfast and tea prepared in a servery opening off the hall. Classrooms have special fitments and storage for beds and blankets. The enclosed courtyard is to be used for teaching.

Construction is of load-bearing brick cross-walls, faced with London stocks, and a reinforced concrete slab roof. The assembly hall is steel framed. Except on the south wall of the classrooms, which is fully glazed between steel mullions, windows are timber-framed with steel opening lights. Infill panels are of vertical boarding, varnished. The school has under-floor heating.

INFANTS' SCHOOL: BASILDON

Poulton and Freeman

In the Kingswood area of Basildon new town, where it shares a site with a junior school, to be built by the same architects. Work began at the end of 1955 and will be completed next September.

A single-storey two-form entry school, employing the plan-form developed by Essex county council, comprising separated double teaching units and using the assembly hall as circulation space.

Construction is load-bearing brick with London stocks externally. Classrooms are roofed with plywood box units spanning 26 ft. and have floor-to-ceiling metal windows with coloured glass panels, backed with plaster block partitioning, up to a height of 2 ft. On the south wall similar windows are separated by vertical cedar boarding. The assembly hall has a curved roof of plywood units supported on exposed tubular steel trusses and columns.

Designed in collaboration with H. Conolly, Essex County Architect. Assistant architect, R. A. Durrant. Structural engineers, R. T. James and Partners. Electrical and mechanical engineer, H. A. Sandford. Quantity surveyors, Thurgood, Son and Chidgey.

SECONDARY SCHOOL: RICHMOND, YORKS

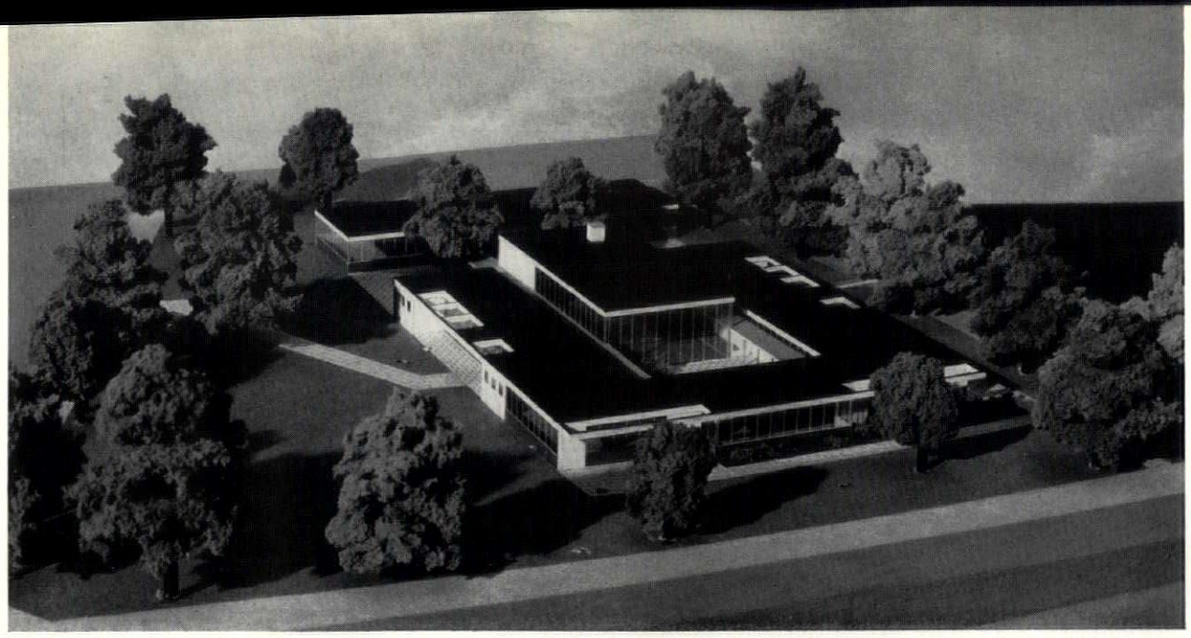
Denis Clarke Hall

A county modern school, housing 600 pupils, for the North Riding Education Committee. The site, half a mile outside the town, adjoins that of the girls' high school built by the same architect in 1939. Construction began last September.

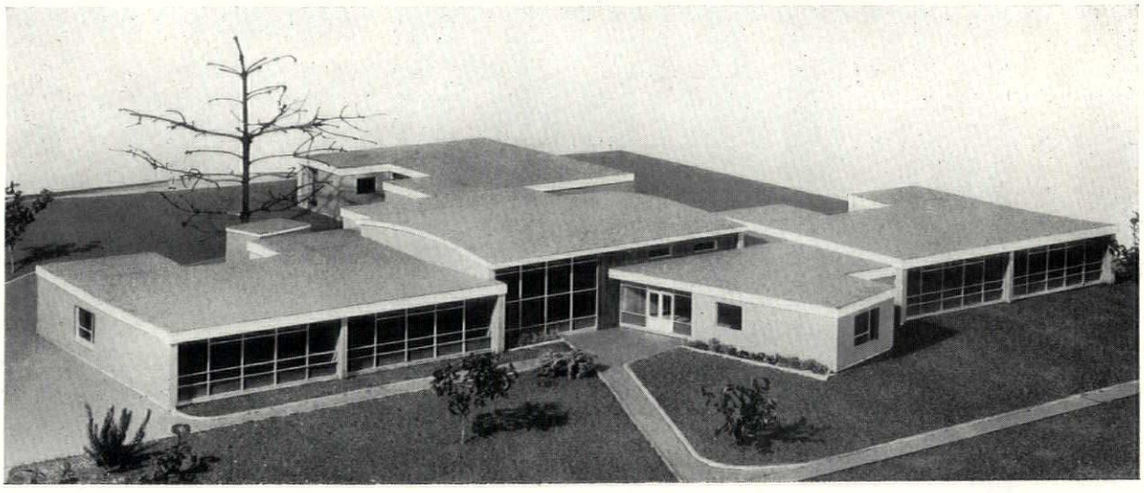
The 15-acre site slopes from north to south, and the main building is placed across the contours, the adjoining levels being linked by terraces and steps. All classrooms and cloakrooms are on the first floor, the ground floor containing dining area, kitchens and staffrooms and a lower ground floor, made possible by the slope of the ground, containing the assembly hall. The gymnasium is at the same level, with its changing-rooms at a lower level still. Practical rooms are in a separate block.

Construction consists of an upper floor of reinforced concrete cross-walls, cast *in situ*, supported on reinforced concrete columns at 25 ft. spacing. Floors and roofs have prestressed, precast beams. External walls are of random rubble stonework. Heating and other services are in large ducts beneath the first-floor slab, from which the pipes are suspended.

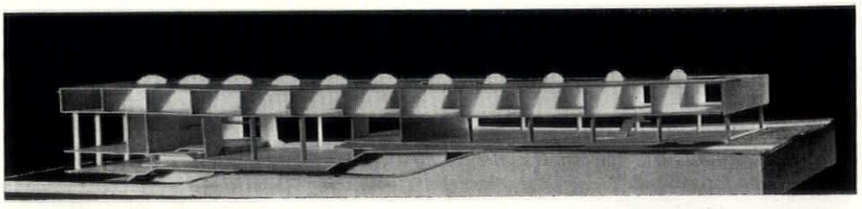
Assistant architect, Eric W. Prichard. Structural engineer, Hajnal Konyi. Quantity surveyors, Davis, Belfield and Everest.



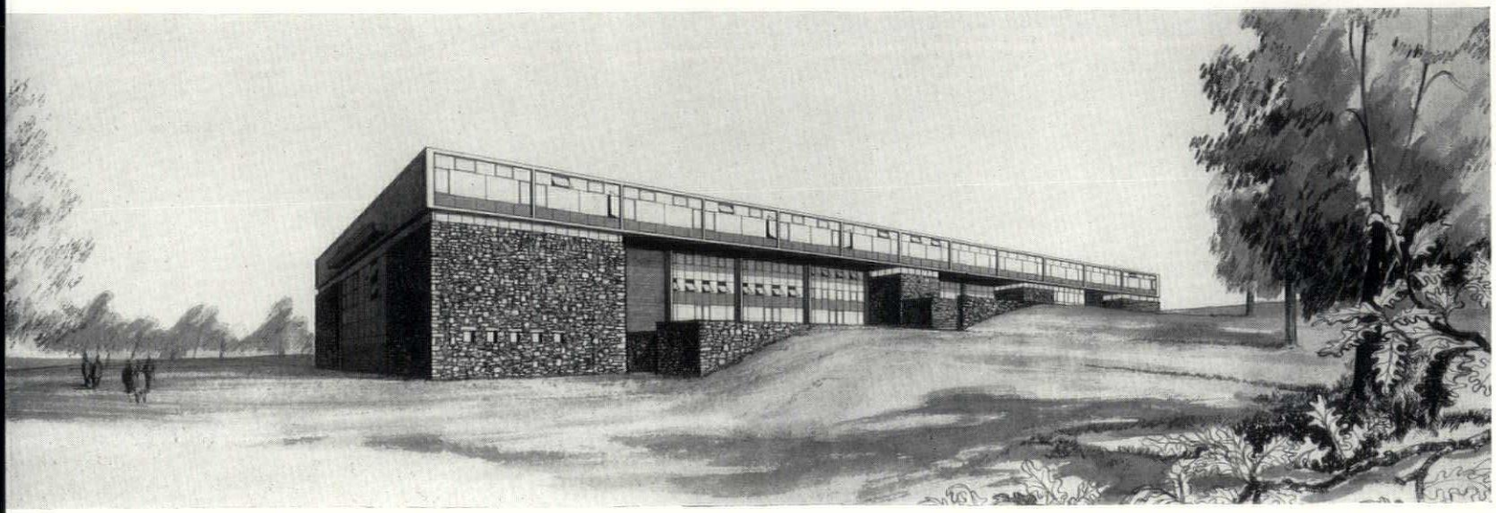
Left, special school for delicate children at Hampstead, by the architect to the London County Council: the assembly hall separates the two courtyards round which the single-storey classrooms are planned.



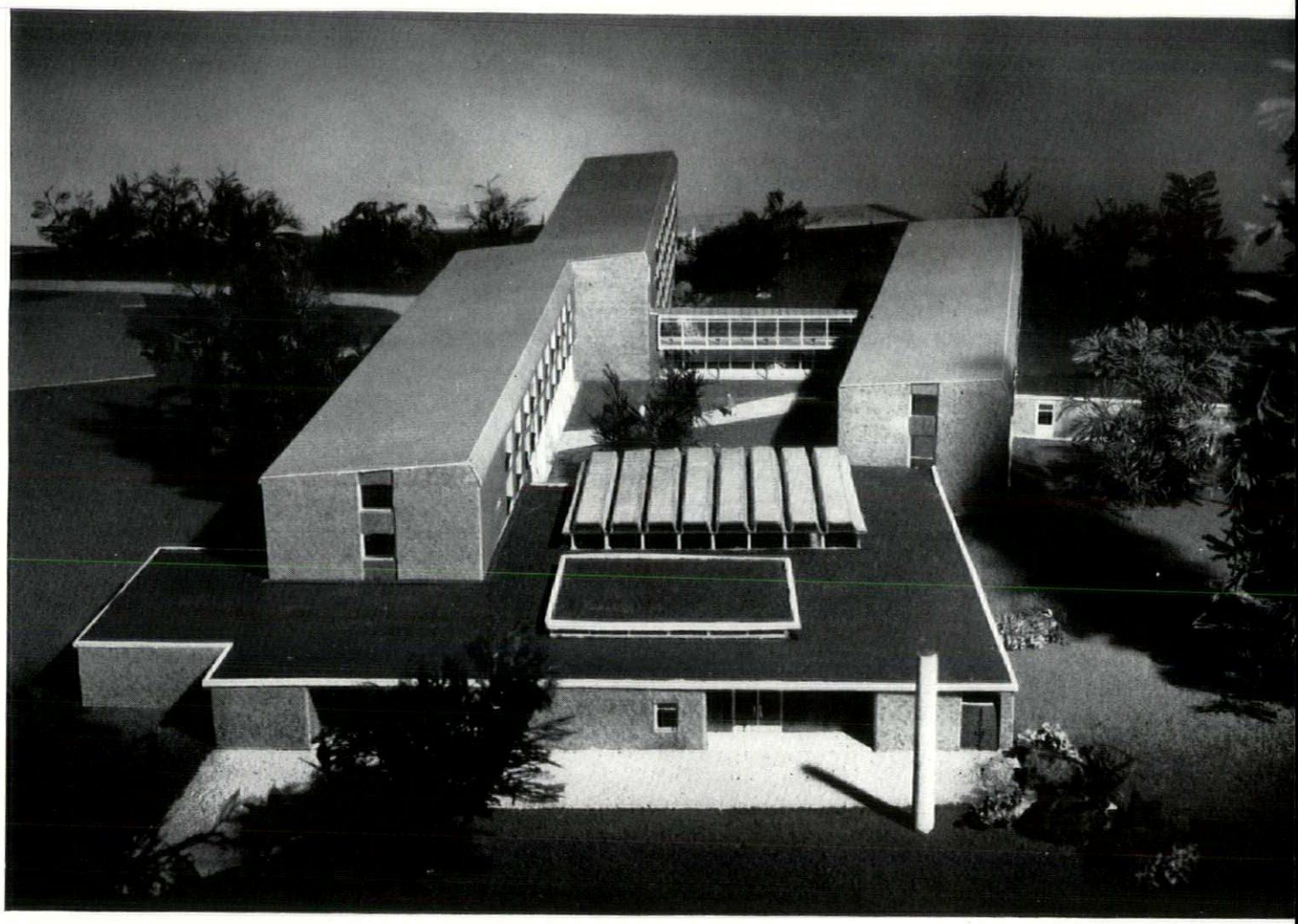
Right, infants' school at Basildon, a single-storey building in which the central assembly hall also serves for circulation.



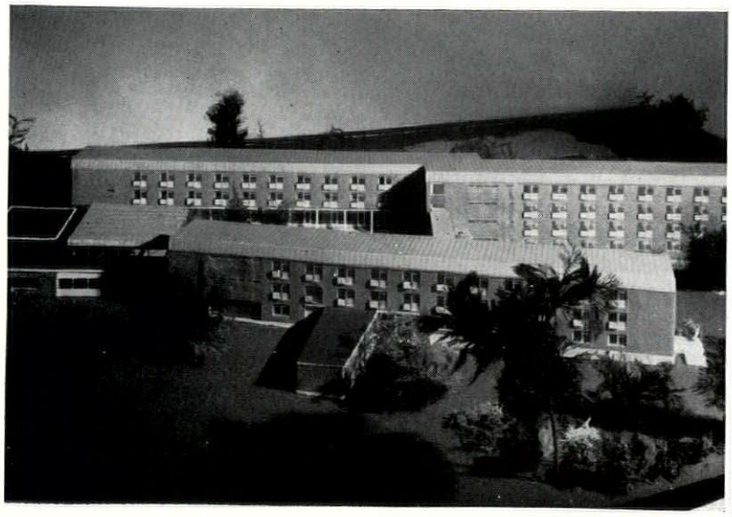
School at Richmond: right, skeleton model showing cross-wall construction; below, sketch from the south-east, showing how the building steps down the sloping site.

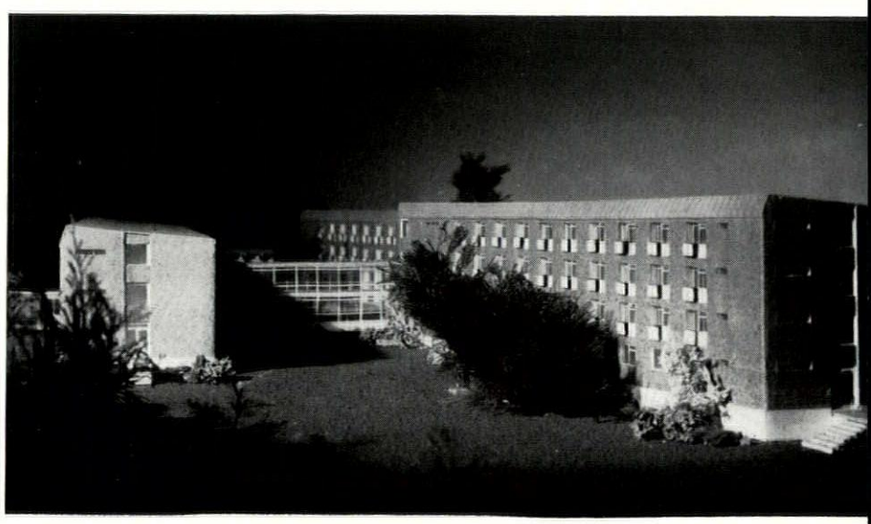


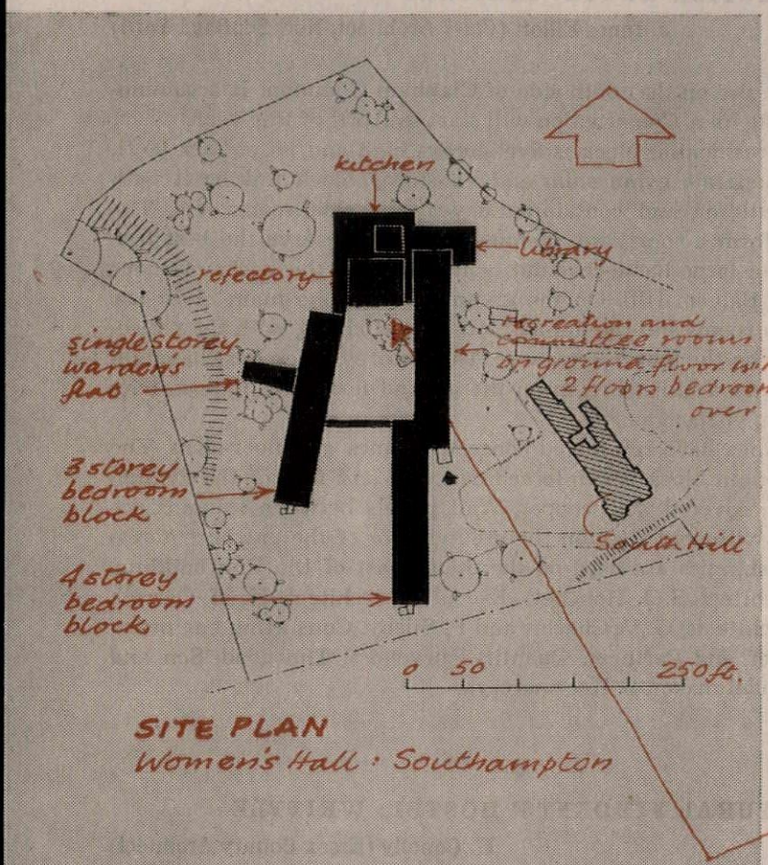
9 HOSTELS ETC.



Women's hall of residence at Southampton University: above, from the north, with the refectory, common-room and library in the foreground. Below, the parallel bedroom wings from the west and the south-west.







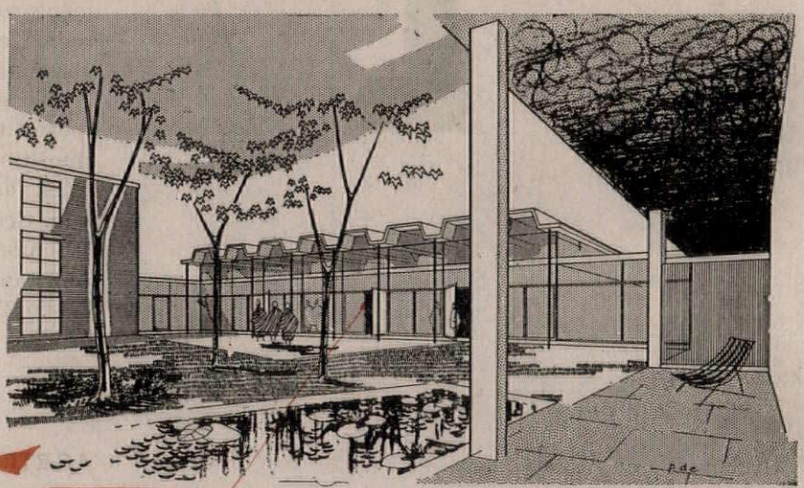
SITE PLAN
Women's Hall : Southampton

WOMEN'S HALL: SOUTHAMPTON

Basil Spence and Partners

A hall of residence for 150 women students at Southampton University. It is in the grounds of an existing hall at South Hill, housing 30 students. It is hoped to begin work in March.

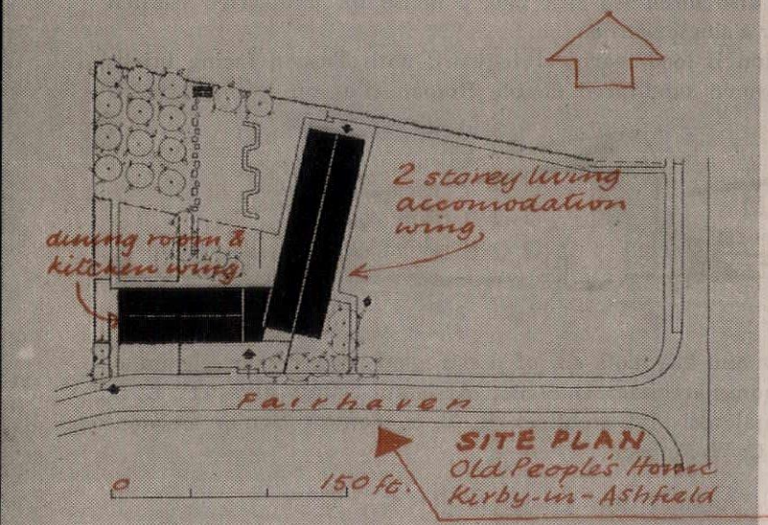
The parts of the building have been grouped round a courtyard so as to preserve existing trees. The maximum height is four floors. At the request of the university the bedrooms are planned on the corridor system. They occupy two wings, joined at an angle to a



single-storey block containing refectory, kitchen, common-room and library. On the ground floor of one wing, looking into the courtyard, are recreation and committee rooms.

The main construction is load-bearing brick walls with reinforced concrete floor slabs. The refectory is roofed wth prefabricated plywood troughs. Roofs are covered with copper.

Consulting engineers, Ove Arup and Partners.

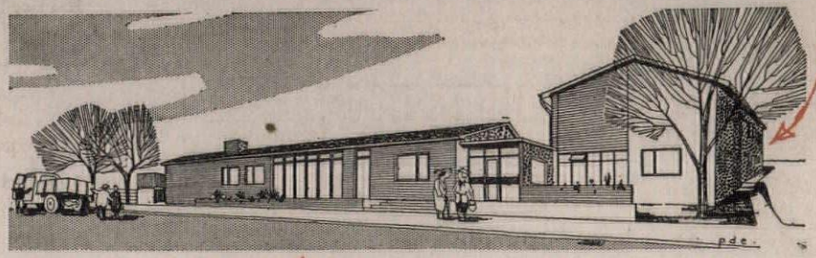


SITE PLAN
Old People's Home
Kirby-in-Ashfield

OLD PEOPLE'S HOME: KIRBY-IN-ASHFIELD

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

Due for completion in January, 1958. A two-storey wing contains 27 bedrooms for old people, staff bedrooms with two sitting-rooms on the ground floor and a large lounge, entered from either side of the



staircase on the first floor. A single-storey wing contains the dining-room and kitchen, and the entrance links the two.

Construction is load-bearing brickwork with solid concrete ground floor, prestressed concrete first floor and welded steel roof members. The dining and entrance halls are lined with facing bricks.

Deputy county architect, E. Frear. Assistant county architect (general projects division), H. S. Plumtree. Principal assistant architect, R. N. D. Iredale. Assistant architect, M. D. Procter. Quantity surveyor, J. C. Robinson.

POLICE SECTION HOUSE: CLAPHAM

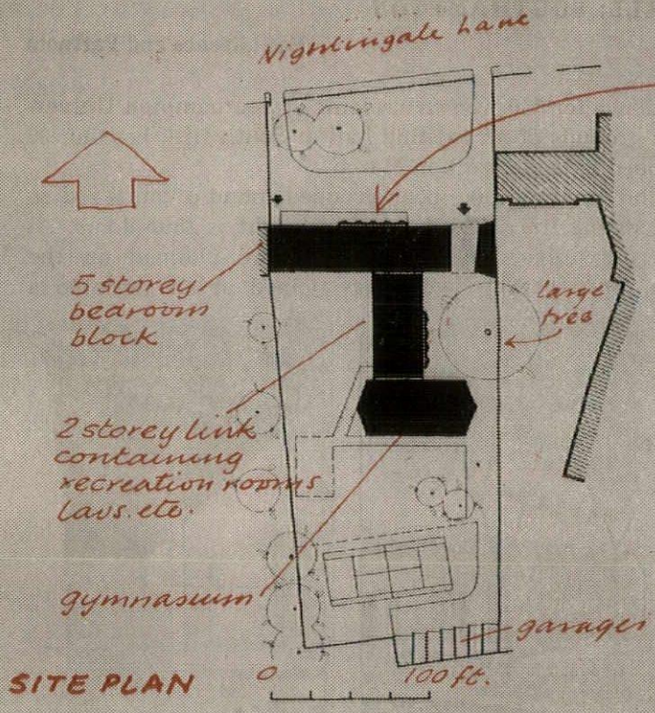
J. Innes Elliott (Chief Architect, New Scotland Yard)

On a level site on the south side of Clapham Common. It accommodates 76 single men. Construction will start in April of this year.

The main residential block is five storeys high and is set back 90 ft. There is a separate gymnasium and a 2-storey block linking it with the main building and containing day-rooms, cloakrooms, etc. The three units form a courtyard, planned so as to preserve the best tree on the site—a large horse-chestnut, which screens the backs of shops and flats on Balham Hill. On the ground floor of the main block are the warden's rooms and the dining-room and kitchens, with the policemen's rooms on the four floors above. The 2-storey block has changing-rooms, etc. and a billiard-room on the ground floor, and lounge, television and quiet-room above.

The buildings have reinforced concrete frames and floor-slabs. The roof of the main block is reinforced concrete and that of the gymnasium timber, covered with copper. Wall panels between columns are brick faced, with split slate on the ground floor of the entrance elevation. Cedar shingles are used on the upper part of the link building.

Senior architect, S. J. Hanchett. Executive architect, K. M. Carroll. Assistant architects, G. V. Charles and P. Silsby. Consulting engineers, Leslie Turner and Partners. Quantity surveyors, Thurgood, Son and Chidgey. Model maker, S. Kaczmarczyk.



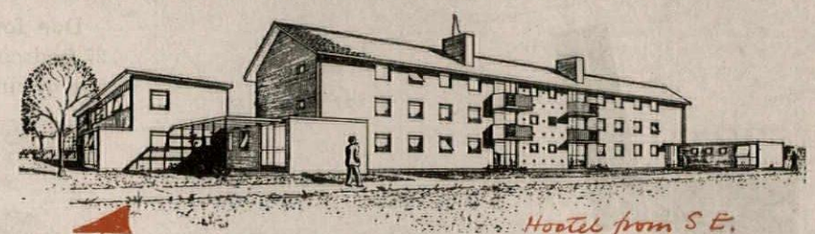
AGRICULTURAL STUDENTS' HOSTEL: WRITTLE

H. Conolly (Essex County Architect)

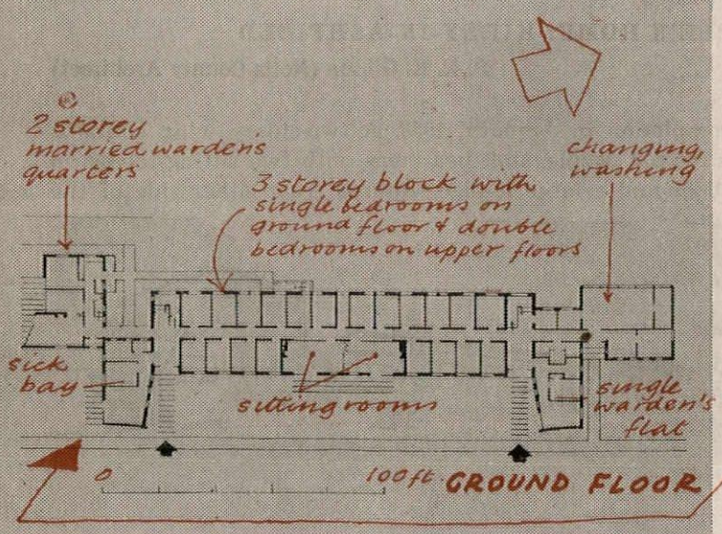
For Essex Institute of Agriculture: one of three new buildings extending the present residential accommodation. They are sited round a hockey pitch to preserve a quadrangular arrangement with existing buildings. To the west of the hostel are large orchards. Building has already begun, and is due to be completed next September.

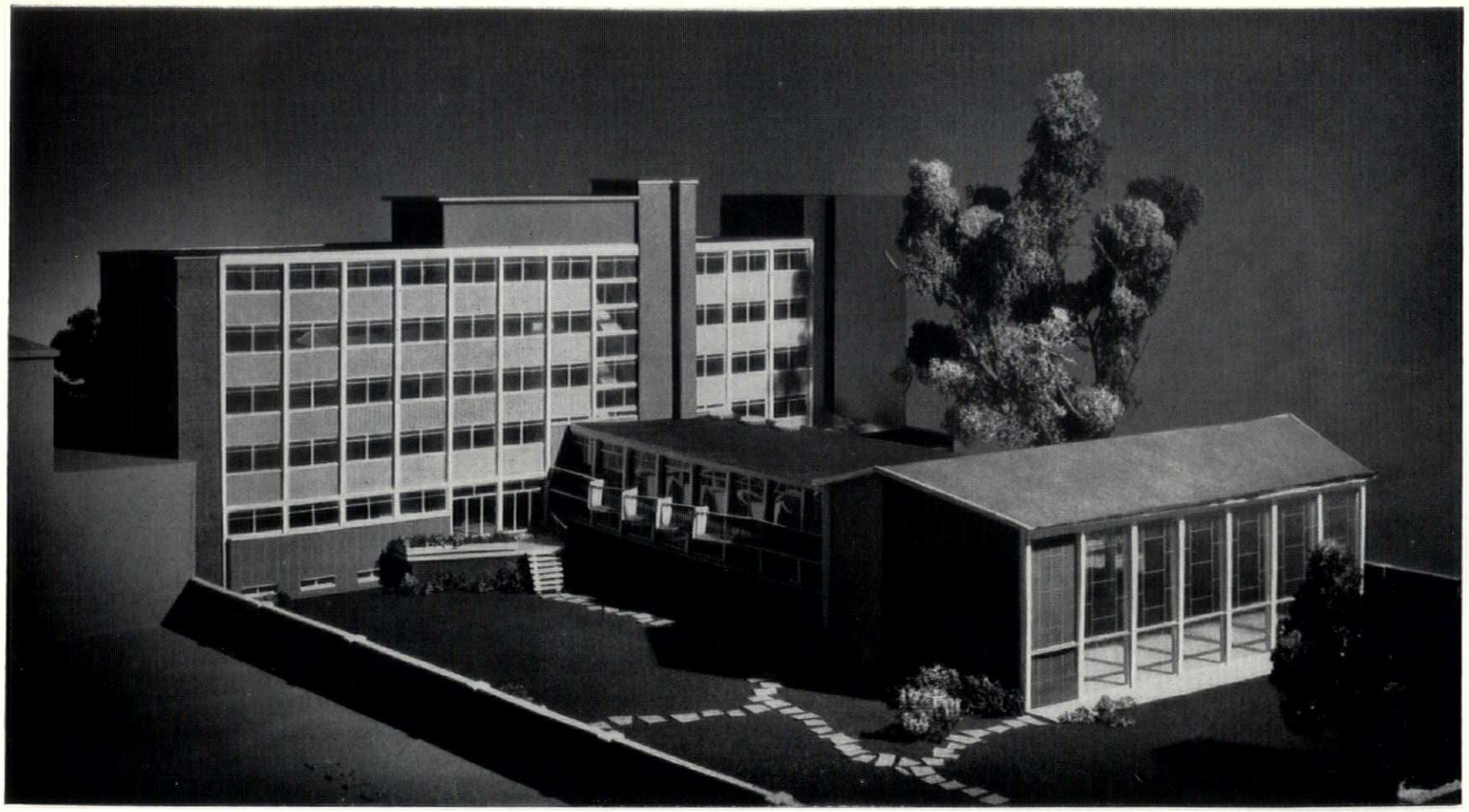
Accommodation includes single or double study bedrooms for 60 male students, with communal sitting-rooms, service rooms, changing-rooms, etc.; also three-bed sick bay, a house for a married warden and a flat for a single warden.

Construction is load-bearing brickwork with Tuscan facing bricks and dark brown sand-faced double Roman tiles on timber trussed roofs. Floors and flat roofs are of prestressed precast concrete units.


Hostel from S.E.

Deputy county architect, D. Senior. Assistant county architect, K. D. Box. Sectional assistant architect, R. F. S. Fenton. Senior assistant architect, J. C. W. Fulbeck.









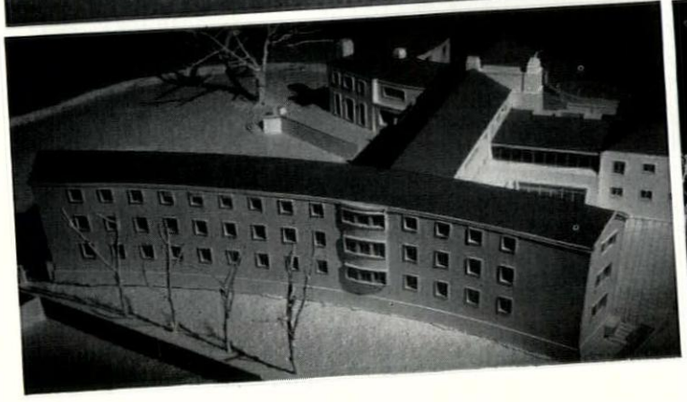
Police section house, Clapham Common: above, looking down on the model showing the main residential block linked by a lower block to the gymnasium; top of page, from the south-west; right, the linking block from the west.



Above, boy scouts' hostel in Kensington: the Queen's Gate side.

9. HOSTELS ETC.







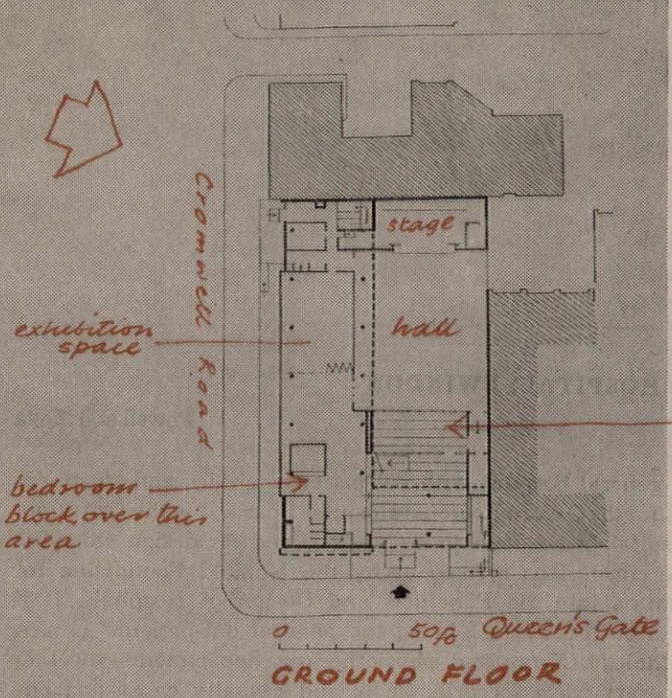
Boys' house at Eton: left, from the west, with the house-masters' private wing on the left and the boys' wing on the right; the large window in the centre lights the pupil room. Below left, the main boys' wing, facing south. Below right, from the south-east, with the boys' wing on the left and the staff quarters on the right.

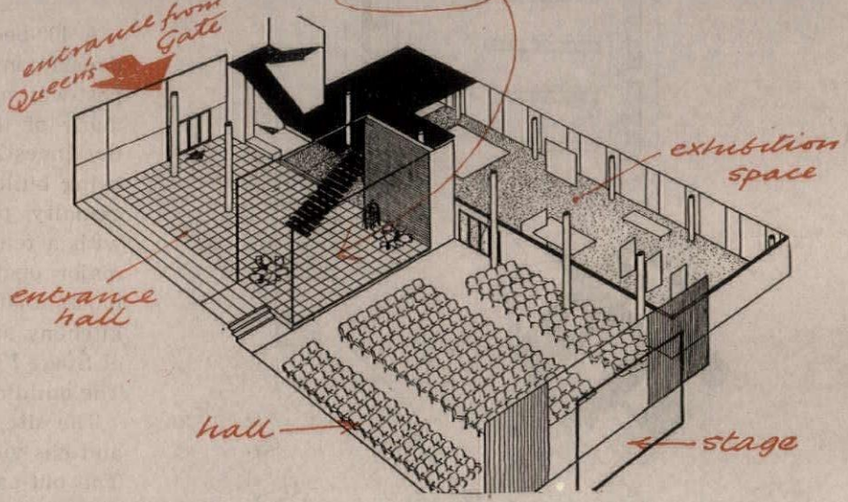
BOY SCOUTS' HOSTEL: KENSINGTON

Ralph Tubbs

To be erected by the Boy Scouts Association as a memorial to Lord Baden-Powell, whose centenary falls this year. It will provide accommodation for scout visitors and facilities for scouts to meet socially. The site is at the corner of Queens Gate and Cromwell Road. Construction will begin this summer.

There are dormitories holding approximately 100 scouts and bedrooms for 40 ; also a common-room, library, games room, large dining-room and hall with stage. Apart from the hall, the ground floor is planned as free space, subdivided only by glazed screens or sliding partitions, and will be used in part for a memorial exhibition to Lord Baden-Powell. The entrance portion rises through two storeys and is overlooked by a balcony. The glazed screen opposite the entrance gives a view into a small garden court. A car park in the basement





is entered from a mews at the back. The Queens Gate frontage is the higher, to preserve the scale of existing building, but the first floor of this wing is void, so that the games roof-terrace above the hall has a view into the gardens of the Natural History Museum.

Construction is reinforced concrete, the main wing facing Cromwell Road being supported on two rows of columns with cantilevered walls.

Assistant architect, Eric Corbey.

BOYS' HOUSE: ETON

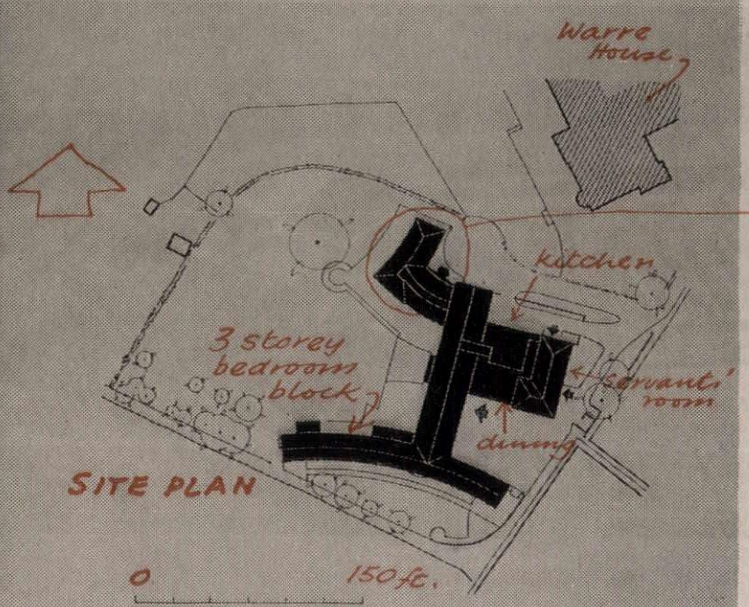
William Holford and Partners

To be called Farrer House, after the late Gaspard Farrer: a new house (housing 50 boys, the housemaster and his family, the Dame and domestic staff) planned in order that occupants of existing houses can be decanted in connection with the programme, drawn up in 1952, of modernizing and converting them in turn. The site adjoins Warre House. Work has just begun and will take two years.

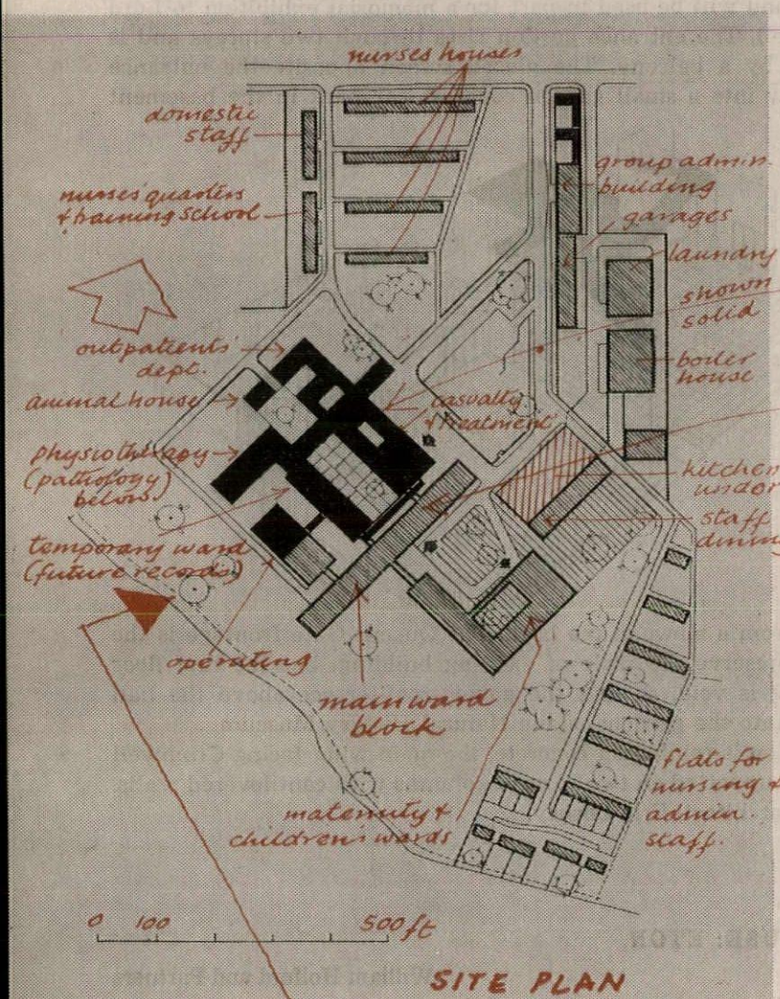
The focal point of an open plan is the pupil-room and dining-room and kitchen. The housemaster's accommodation occupies a 2-storey wing to the north-west. A 3-storey curved wing to the south contains the separate rooms for each boy. The link between this wing and the central block contains the entrance hall and cloakrooms. In the upper part of the central block are the Dame's rooms and staff quarters. There is an air-raid shelter in the basement.

The building has cavity brick walls, anchored to a reinforced concrete frame of precast units. Steel trusses carry a copper roof.

Executive architect, Edward Duley. Assistant architects, Neville Burren, Peter Harrison, Howard Mason and Ian Scott. Consulting engineers, Considere Constructions. Quantity surveyors, Grimwade and Ainsley.



10 HOSPITALS



SITE PLAN

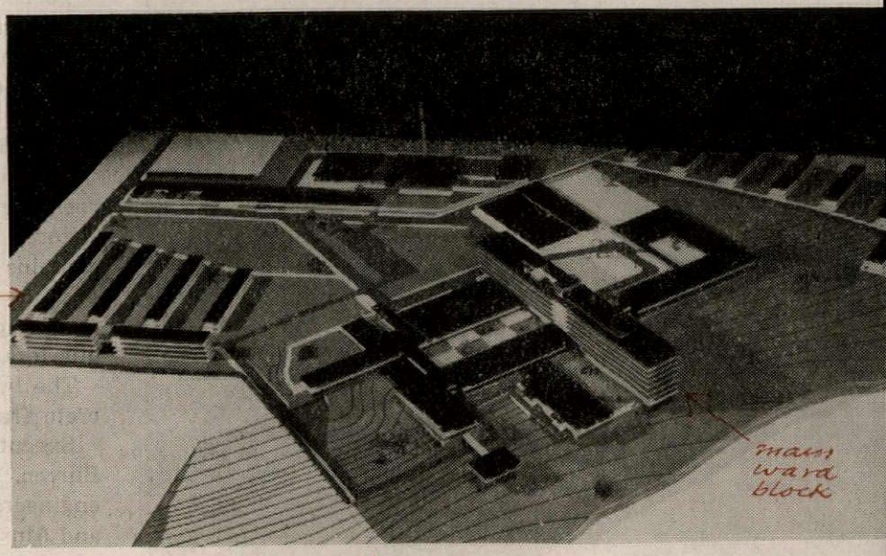
GENERAL HOSPITAL: SWINDON

Powell and Moya

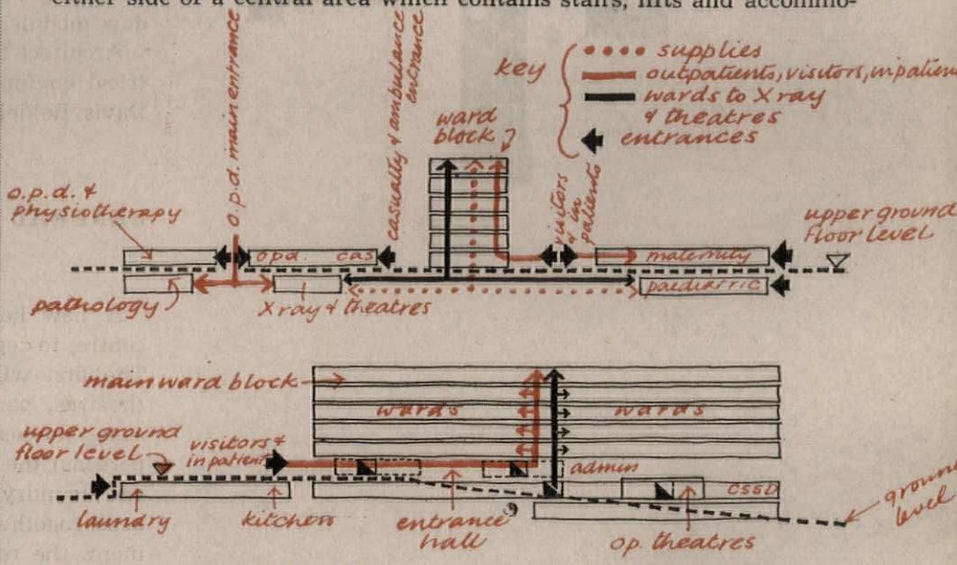
A 400-bed general hospital with out-patients' clinics and treatment departments, for the Oxford Regional Hospital Board. It is the first major post-war hospital in England to be started, and its design embodies many of the conclusions arrived at by the Nuffield Foundation for the Investigation into the Functions and Design of Hospitals. It is being built in stages, Stage I being the general out-patients' clinics, casualty, pathology, X-ray and physiotherapy departments, together with a temporary ward for orthopædic and casualty cases, and one major operating theatre. To complete the hospital, the main ward block, maternity and children's departments, three more theatres, kitchens and service buildings will be added, the temporary ward of Stage I becoming the administration wing and records department. The building of Stage I is just beginning.

The site, of 22 acres, is on a high ridge to the south of Swindon and has views to the south, east and west over the Wiltshire Downs. The out-patients' and treatment departments are in 1- and 2-storey blocks and are designed and sited so that expansions or alterations are simple to carry out. Most of the in-patient accommodation, however, consists of standard wards for which multi-storey construction is economical and more compact. The main hospital buildings consist therefore of a multi-storey ward block with extensive views and straddling, at right angles, the single and 2-storey out-patients' and treatment departments and also the maternity and children's wards. (These are not standard wards and can more pleasantly and efficiently be sited at ground level.)

The sloping site has enabled two ground levels to be planned to separate the two streams of hospital traffic, public and internal. The upper ground floor, which is reached from the main entrances, serves out-patients and visitors to the wards, and the lower ground floor is reserved for internal hospital circulation, distribution of supplies, food



and removal of bodies to the mortuary. On this level also are the major operating theatres, X-ray department, pathology laboratories and central sterilizing and supplies department, all of which serve both the ward block and the out-patients' and casualty departments. Service buildings such as kitchens, boiler-house, group laundry, workshops and general stores are on the north-east corner of the site, down wind from the main hospital buildings and out of view from the main wards. The kitchens are connected to the lower ground floor level of the main ward block by a short underground link from which heated trolleys are distributed vertically direct into the ward kitchens. On each floor of the main ward block the wards are grouped in pairs on either side of a central area which contains stairs, lifts and accommo-

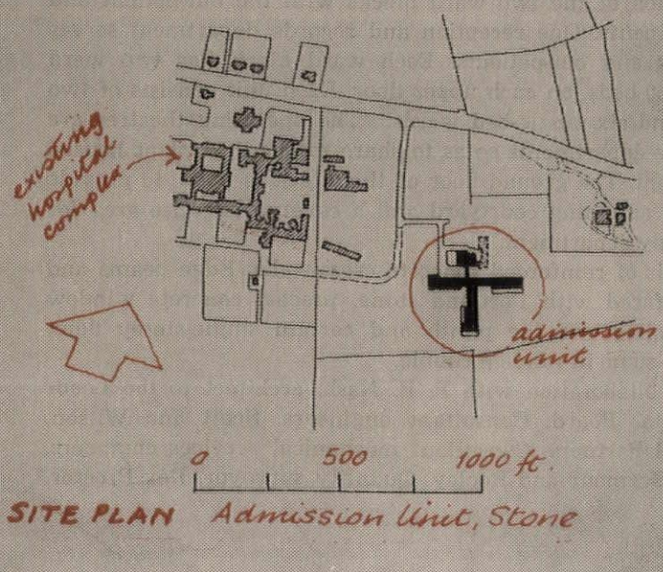


diagrammatic SECTIONS showing circulation and use of levels.

dation which can be shared. In the out-patients' department, the usual mammoth waiting hall has been rejected in favour of providing for each clinic a small waiting alcove off the corridor, looking out either on to the surrounding countryside or on to a small enclosed garden.

Construction is *in-situ* reinforced concrete with beamless floors and roof-slabs supported by columns. The external walling is of hardwood framed construction with glass-faced panel infilling below cill level and vertical sliding aluminium sashes, fixed lights or glass louvred vents above. The exposed edges of the floor slabs and columns are faced with slate and the podium at the lower end of the site with granite setts. Heating is by floor panels with the exception of the operating department in which ceiling panels are used in conjunction with mechanical ventilation.

Consulting architect, R. Llewelyn Davies.



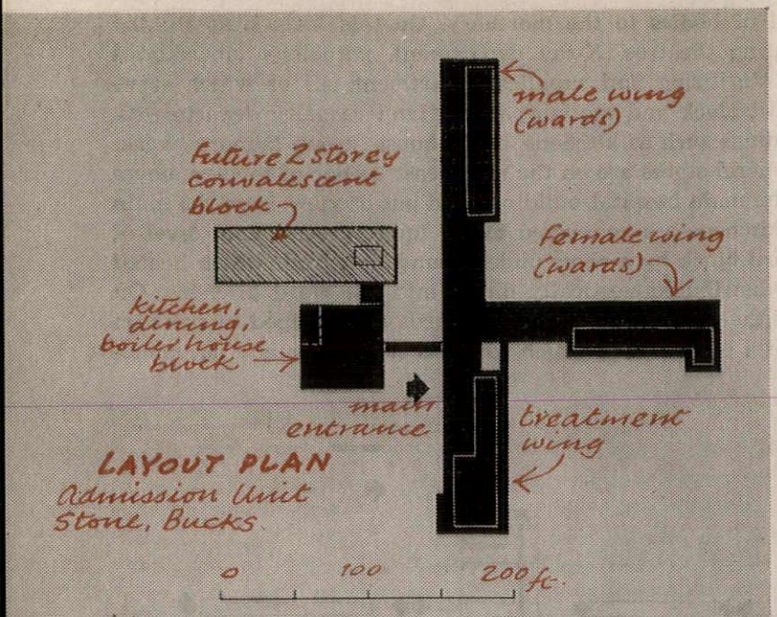
SITE PLAN Admission Unit, Stone

ADMISSION UNIT: STONE, BUCKS

Gollins, Melvin, Ward and Partners

At St. John's Hospital, near Aylesbury, for the Oxford Regional Hospital Board. The building is in the grounds of an existing mental hospital, and caters for patients in need of treatment best provided outside the main hospital, and the majority of whom are able, after treatment, to return to normal life. Later a 2-storey wing will be added; in this and in a number of convalescent villas patients will stay for a short period immediately prior to their return home. Work on the first stage has just begun.

The plan has three main elements: the male and female ward wings and the treatment wing accessible from both. The kitchen and dining-room are in a small block to the north, connected by link



LAYOUT PLAN
Admission Unit
Stone, Bucks.

corridors to the first and second stage buildings, which have each accommodation for 28 male and 32 female patients. Patients are encouraged to circulate freely and ease of access to the gardens adjoining each wing is one of the principal reasons for the planning of the first stage all on the ground floor.

The structure is generally load-bearing cross-walls. Roofs are timber joists and wood-wool slabs, except where spans exceed 20 ft., where plywood box units are used. External walls are either cavity brickwork (where there are high-level or no windows) or timber curtain wall. The statutory medical requirements regarding the maximum size of panes and the extent of their opening, and the necessity of providing barred windows to the guarded rooms, determined the window module.

Architect to the Hospital Board, W. J. Jobson. Mechanical and electrical engineers, J. Roger Preston and Partners. Quantity surveyors, Davis, Belfield and Everest.

GENERAL HOSPITAL: HUDDERSFIELD

Pite, Son and Fairweather

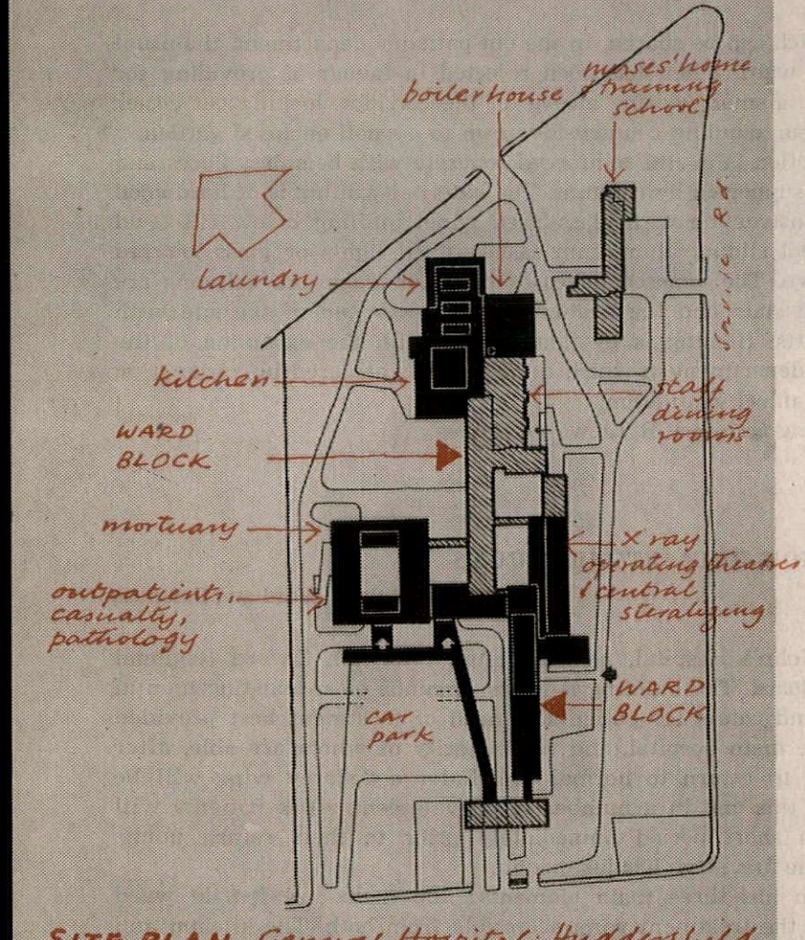
A new hospital for 585 beds on a site 1½ miles from the city centre, to replace the old General Hospital. To be built in two stages. The first will provide approximately half the beds, four operating theatres, part of the X-ray department, kitchen, boiler-house and some nurses' accommodation (in villas each accommodating 10-12 persons), the out-patients' department, pathology department, mortuary and laundry. The second stage will provide the remainder of the beds, together with four more operating theatres, the casualty department, the remainder of the X-ray department, doctors' and trained nurses' quarters, staff dining-rooms, nurses' training school and nurses' home for 50 nurses and 30 domestics. Site works will begin in 1957 and construction of Stage I early in 1958.

The shape, aspect, contours and subsoil dictated that the plan should be lineal rather than radial in form. The main elements consist of two ward blocks placed in echelon form, having a south-east and north-west aspect, the out-patients-casualty-pathology-mortuary block arranged centrally between them on the north side, the operating theatre-X-ray block forming a link between them on the south side and the kitchen-boiler-house-laundry-staff-dining-room block at the east end. The doctors' and trained nurses' quarters are in a wing at the west end.

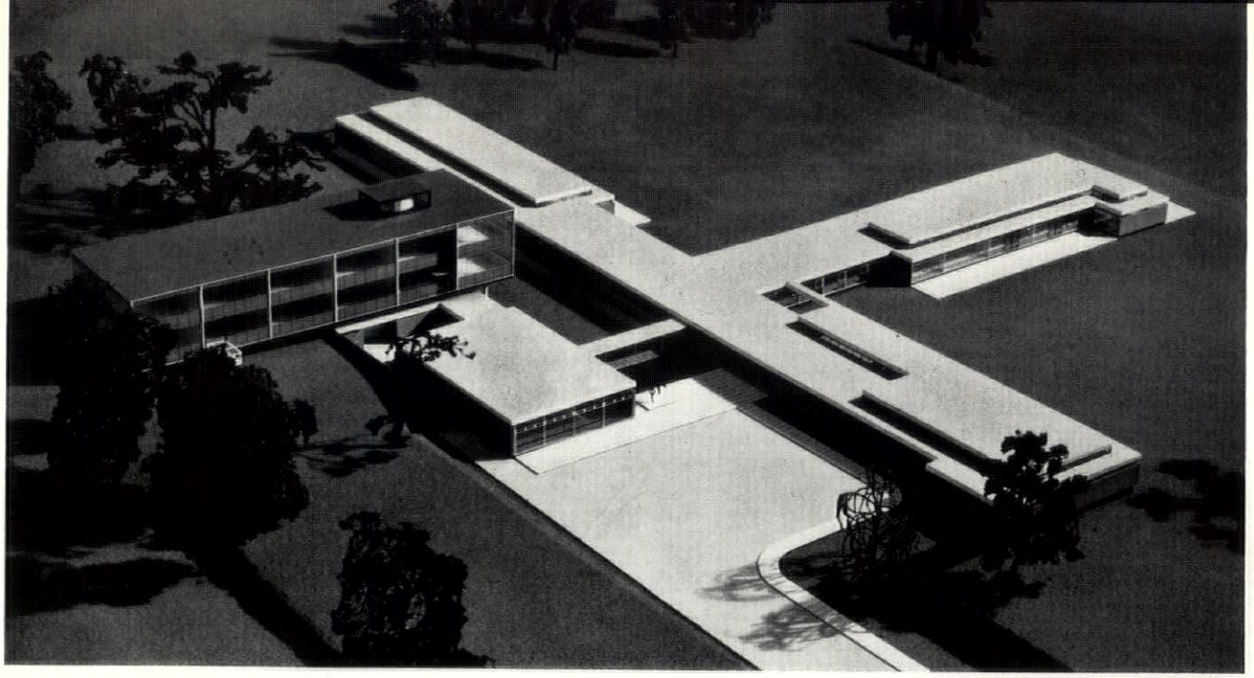
Advantage has been taken of a sloping site to segregate the various circulations, internal and external: patients, visitors, staff and services. The main ground floor level, which coincides with the road outside, carries all pedestrian traffic from outside; the lower ground floor level carries the main patient traffic, and the basement floors carry staff and service traffic. The main entrances are at two levels, at the intersection of the two ward blocks with the out-patient and casualty departments. One reception and records department serves both in-patients and out-patients. Each ward block has two ward units, of about 30 beds, on each upper floor. Each unit consists of two 12-bed wards and six single-bed wards. The operating theatres are above the X-ray departments so as to share mechanical plant housed in a sub-basement. The ground floor of this block is open, to provide a link with the adjoining courtyard and a covered exercise area for the physiotherapy department.

Construction is of reinforced concrete cross-walls. Edge beams and end walls are faced with Portland stone, precast concrete window mullions with slate and the plinth and certain single-storey flank walls with local stone in random rubble.

Designed in collaboration with P. B. Nash, architect to the Leeds Regional Hospital Board. Consultant engineers, Scott and Wilson, Kirkpatrick and Partners. Consultant mechanical services engineers, Donald Smith, Seymour and Rooley. Quantity surveyor, Rex Proctor.

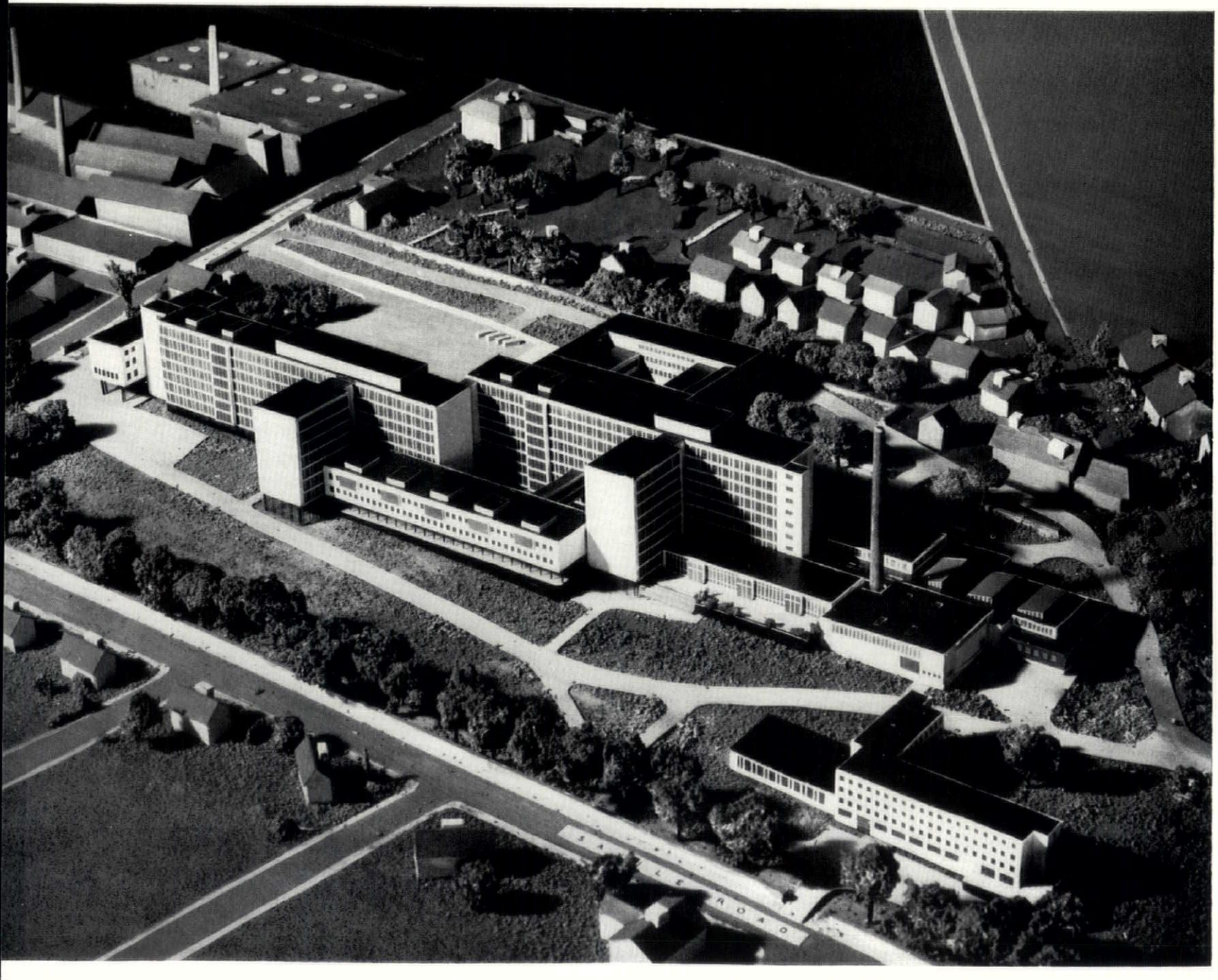


SITE PLAN General Hospital: Huddersfield

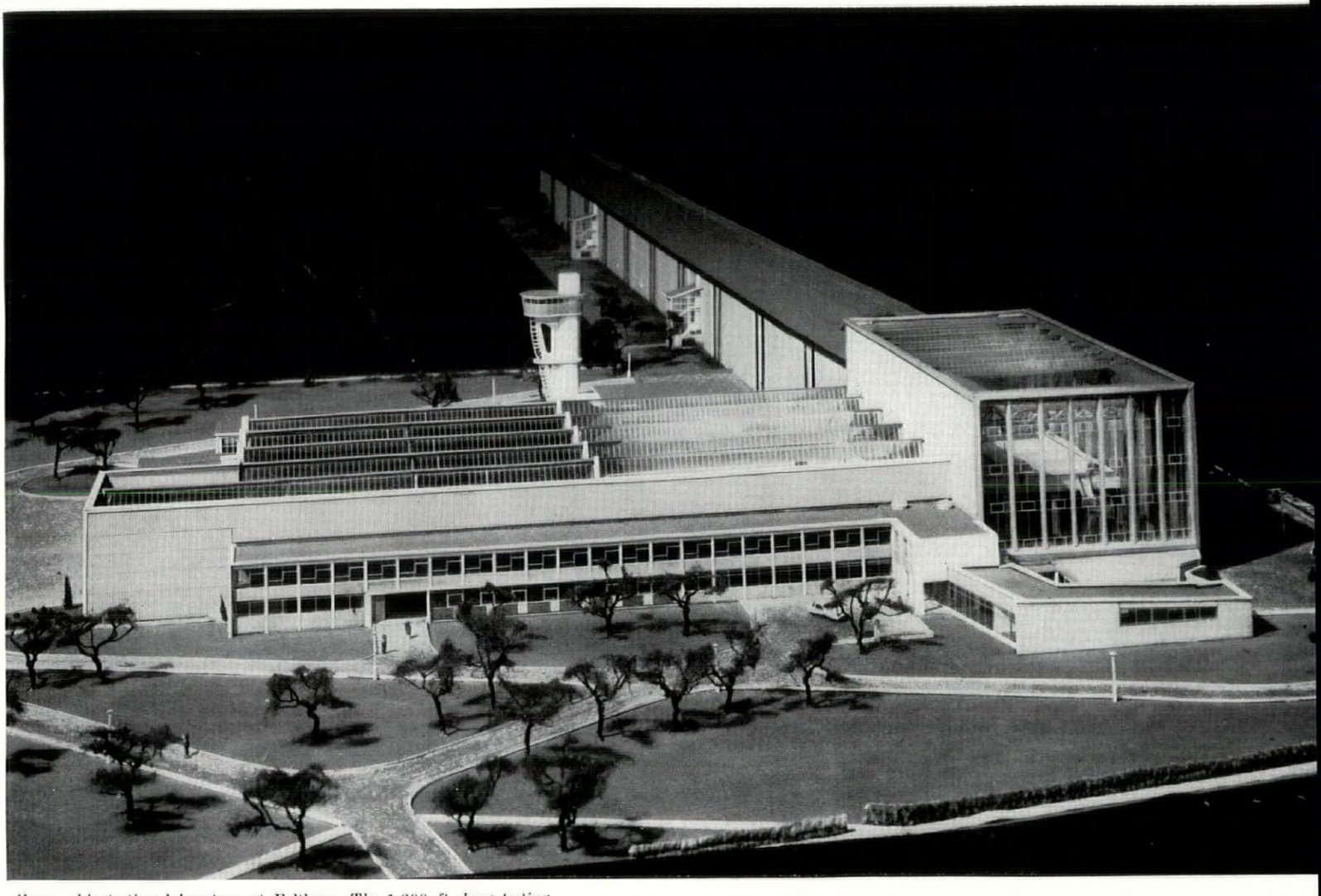


Left, admission unit at St. John's Hospital, Stone, near Aylesbury, by Gollins, Melvin, Ward and Partners: model showing male, female and treatment wings with, on the left, the 2-storey wing for short-term patients to be added later.

Below, Huddersfield general hospital: model from the east, showing completion of both stages.

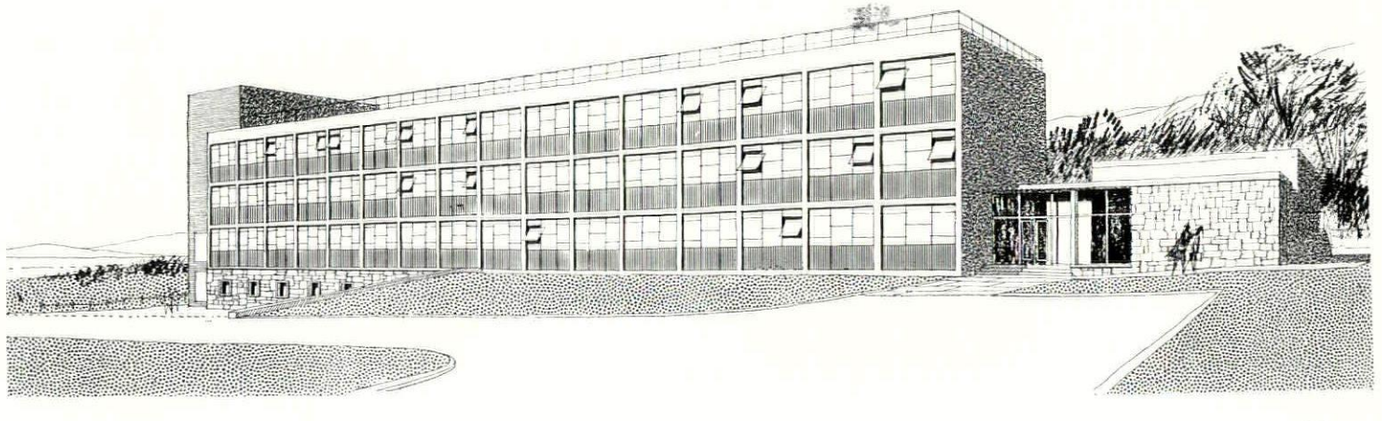


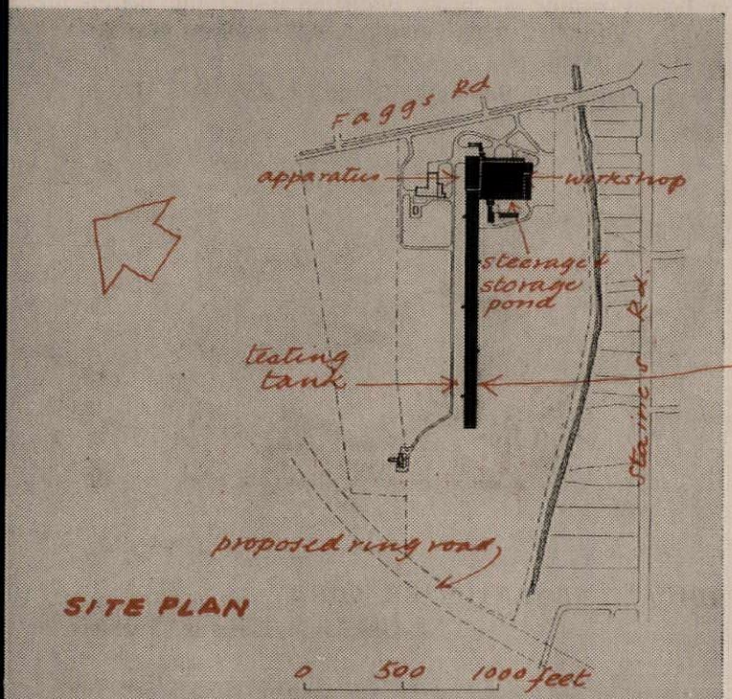
11 LABORATORIES



Above, ship-testing laboratory at Feltham. The 1,300 ft. long testing tank runs away to the back of the picture. The high block in front of it is the assembly area, with workshops on the left in front of which is the 2-storey office and library block.

Below, physics laboratory at Malvern: the main wing and entrance.





SHIP-TESTING LABORATORY: FELTHAM

Ministry of Works

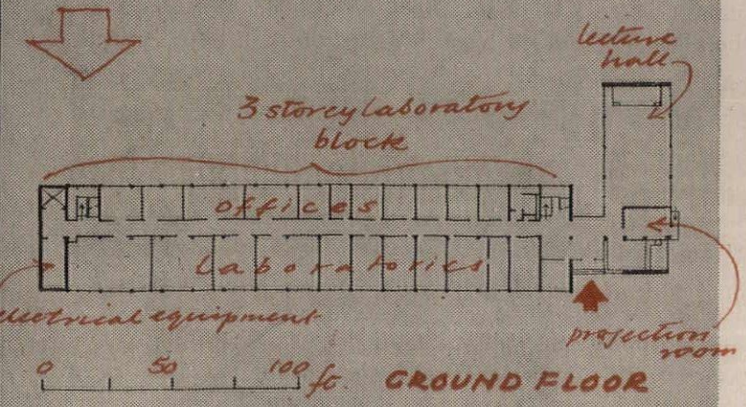
For the Department of Scientific and Industrial Research: an annexe of the National Physical Laboratory, Teddington. The structures include the longest ship-testing tank in the world, a steerage and storage pond, workshops and stores, offices and a water-tunnel building. Work began in 1955 and completion is due in spring, 1958.

The reinforced concrete ship-testing tank is 1,300 ft. long by 48 ft. wide and contains ten million gallons of water. It is housed in a steel and aluminium framed structure, clad with asbestos. The tank itself has three sets of under-water observation windows. At its east end is an assembly area, 60 ft. high with a large window wall, for the preparation and launching of ship models. Alongside the tank is the 160 ft. by 100 ft. pond, housed in a similar structure, divided into two sections by a reinforced concrete wall with a cantilever walkway on top. One section is for steering tests and the other for storing wax ship-models under water.

The workshops and stores comprise a wax-modelling and fitting shops, a mechanics' shop, carpenter's shop, propeller-cutting shop, foundry, moulding shop and stores, all in a steel-framed, asbestos-clad building alongside the steerage pond. To the east of the workshops is a 2-storey office block (of light steel framing with hollow-tile floors and roofs and cladding panels of cedar and coloured asbestos) containing also a library, dining-room and kitchen.

The water-tunnel building, intended primarily for research work on propellers, is also steel framed and asbestos clad. It is north of the main tank building and contains the tunnel chamber, plant-room and offices. The latter are brick. The plant-room houses the main equipment for both tank and tunnel buildings.

Superintendent architect, H. A. Snow. Senior architect, Morris Williams. Superintendent structural engineer, A. E. Hewitt. Senior structural engineer, H. W. Gray. Mechanical and electrical engineer, C. L. Champion. Quantity Surveyor, L. F. J. Stone.



PHYSICS LABORATORY: MALVERN

Ministry of Works

A Government research laboratory already under construction and due for completion early next year.

A 3-storey wing contains a range of laboratories with offices on the other side of an off-centre corridor. At right angles is a single-storey lecture hall. One-third of the laboratories are air-conditioned. Service runs are in the floor space along the corridor.

Construction consists of a reinforced concrete frame of precast units and *in-situ* concrete floors acting as diaphragms. Cladding is of hardwood frames with coloured infill panels and double glazing.

Superintending architect, J. C. Clavering. Senior architect, S. G. Page. Senior structural engineer, R. J. R. Hancock. Superintending mechanical and electrical engineer, K. J. Jarvis.

COKE RESEARCH LABORATORIES: CHESTERFIELD

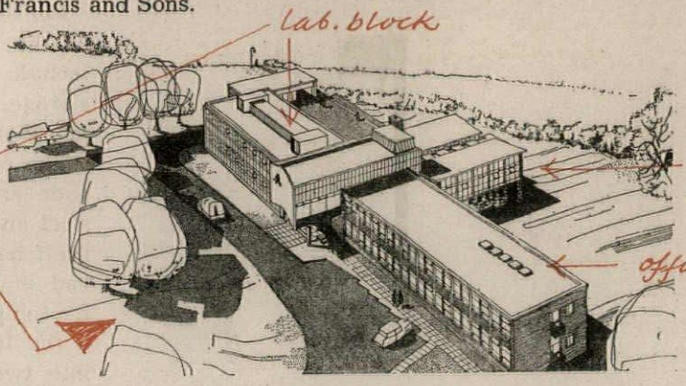
Westwood, Sons and Harrison

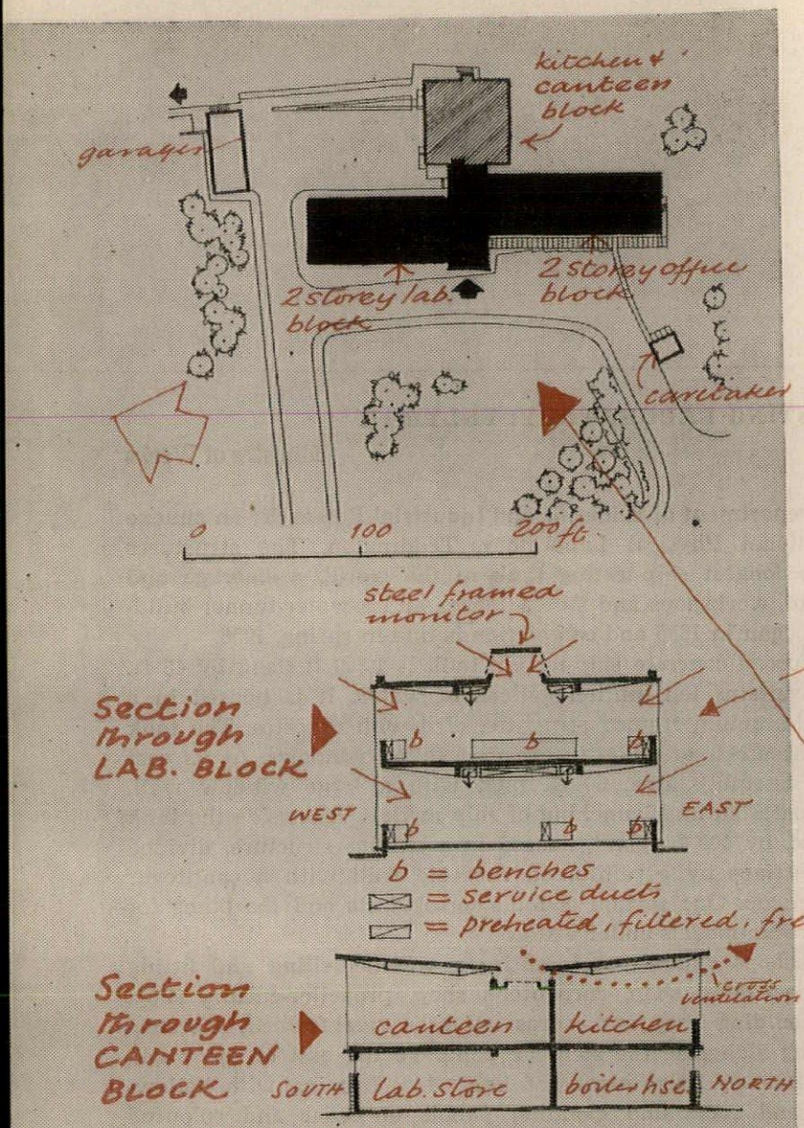
At Wingerworth, for the British Coke Research Association: to accommodate, close to a large coking plant, research workers and administrative staff now scattered over the country. Work has already begun and should be completed about the end of this year.

Three wings, each of two storeys, house laboratories, offices and a canteen, with a boiler-house on the lower floor of the last. A separate workshop laboratory is placed nearer the coking plant.

The laboratory and office wings have reinforced concrete frames and slab floors, and the canteen wing reinforced concrete stanchions and perimeter beams resting on brick walls enclosing the boiler-house. The laboratory wing has curtain walling and the others external walls of precast slabs with exposed aggregate.

Consulting engineers, F. J. Samuely. Quantity surveyors, L. A. Francis and Sons.





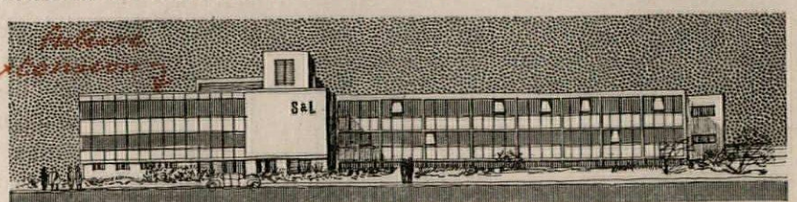
METALLURGICAL LABORATORIES: CORBY

J. Douglas Mathews and Partners

Near the entrance to Stewarts and Lloyds' Corby steel plant, for the company's research and technical development department. Site work has begun and building should be complete by March, 1958.

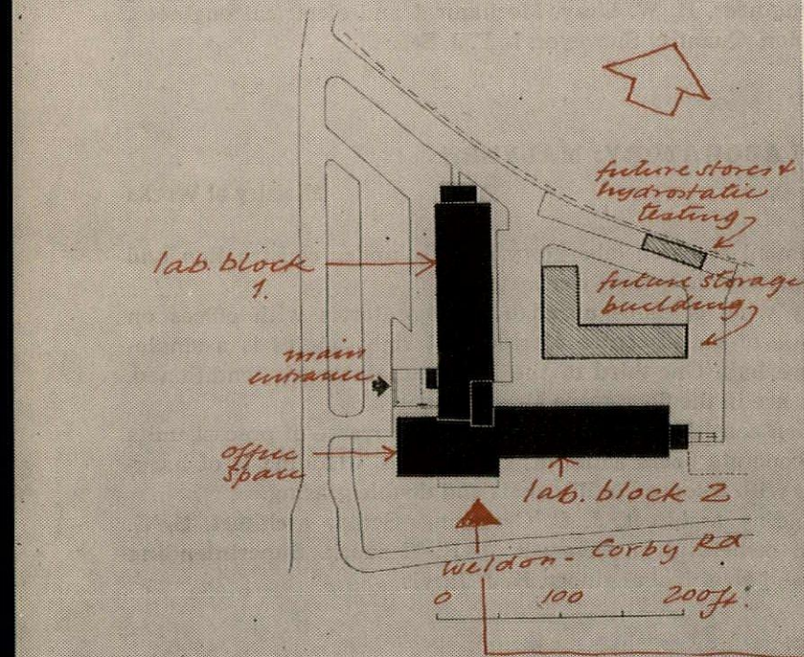
Two wings, one capable of extension, have their common services (offices, conference rooms, library, lavatories, boilers) at their junction. A special laboratory, containing heavy equipment using high temperatures for measuring creep of metals under stress and for making fatigue tests, occupies a partial basement under one wing. Each wing has an off-centre spine along which structural columns are placed, as well as fume-cupboards, balance-rooms, etc. Where office space is required in relation to laboratories it is placed on the side where the spine is nearer the outer wall; otherwise laboratories occupy the full width with freestanding columns. A service duct runs below the first floor along the line of the spine.

The structure consists of reinforced concrete floors spanning external perimeter frames and a spine frame. Cladding between the structural columns is precast terrazzo panels on the sides of wings and brick on the ends. The central block has curtain walling outside the

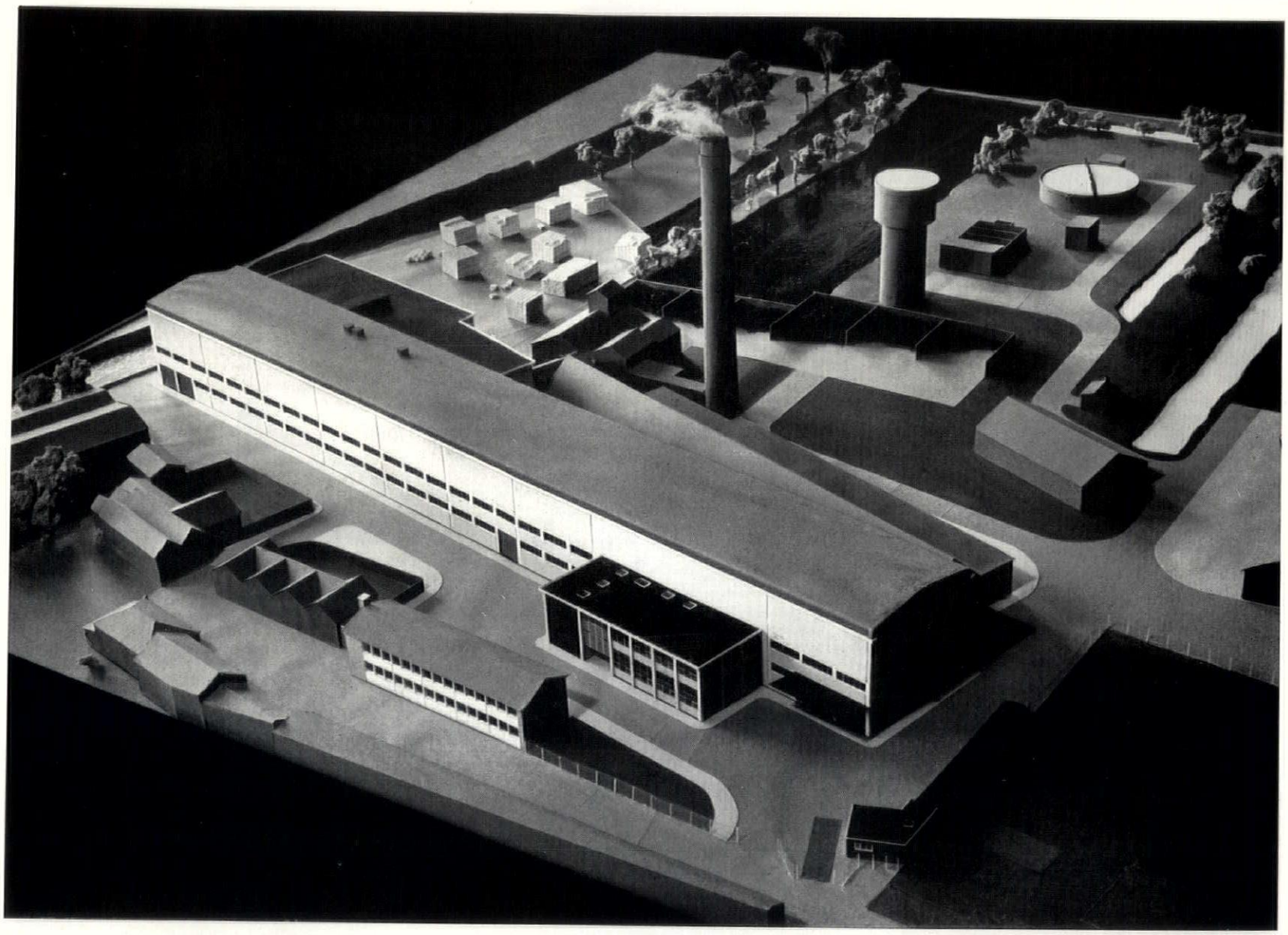


exposed concrete frame, which is finished with a white silicate aggregate rendering.

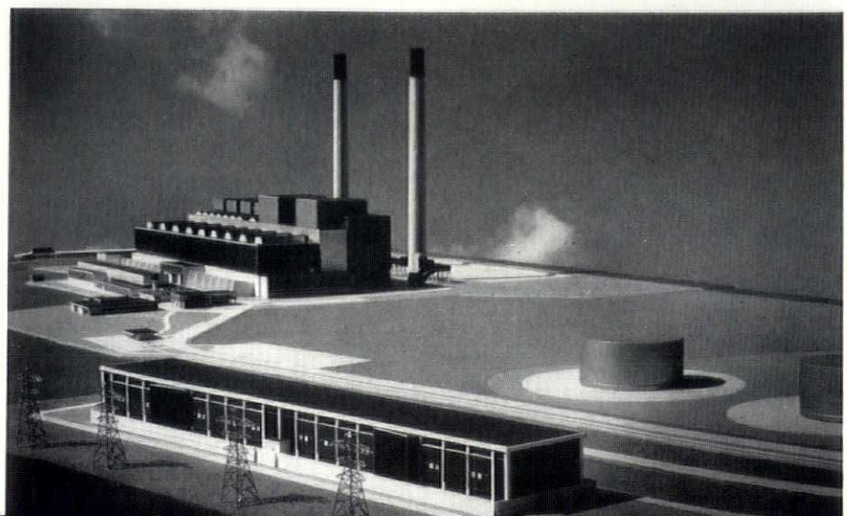
Partner in charge, E. D. Jefferiss Mathews. Associate partners in charge, J. A. Fisher and R. S. Poole. Consulting engineer, C. K. Blumfield. Quantity surveyors, Gardiner and Theobald.



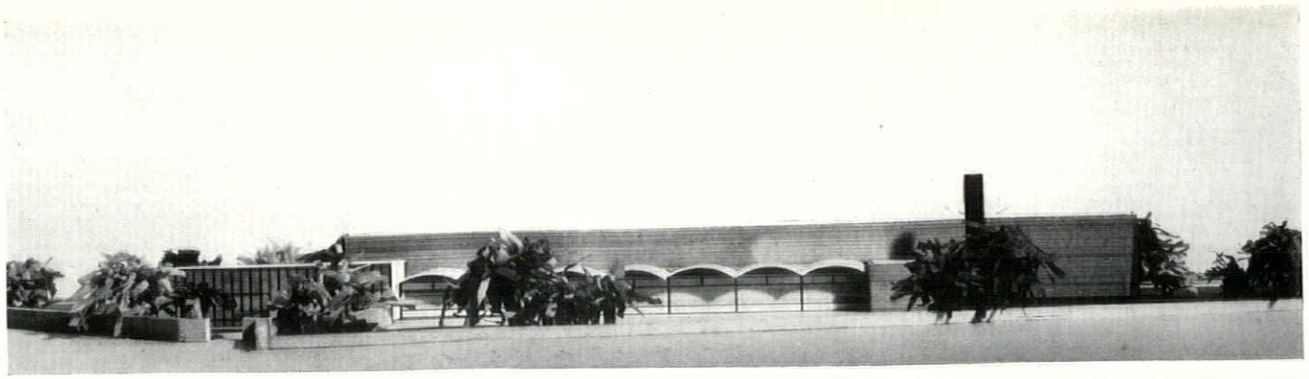
12 INDUSTRIAL BUILDINGS



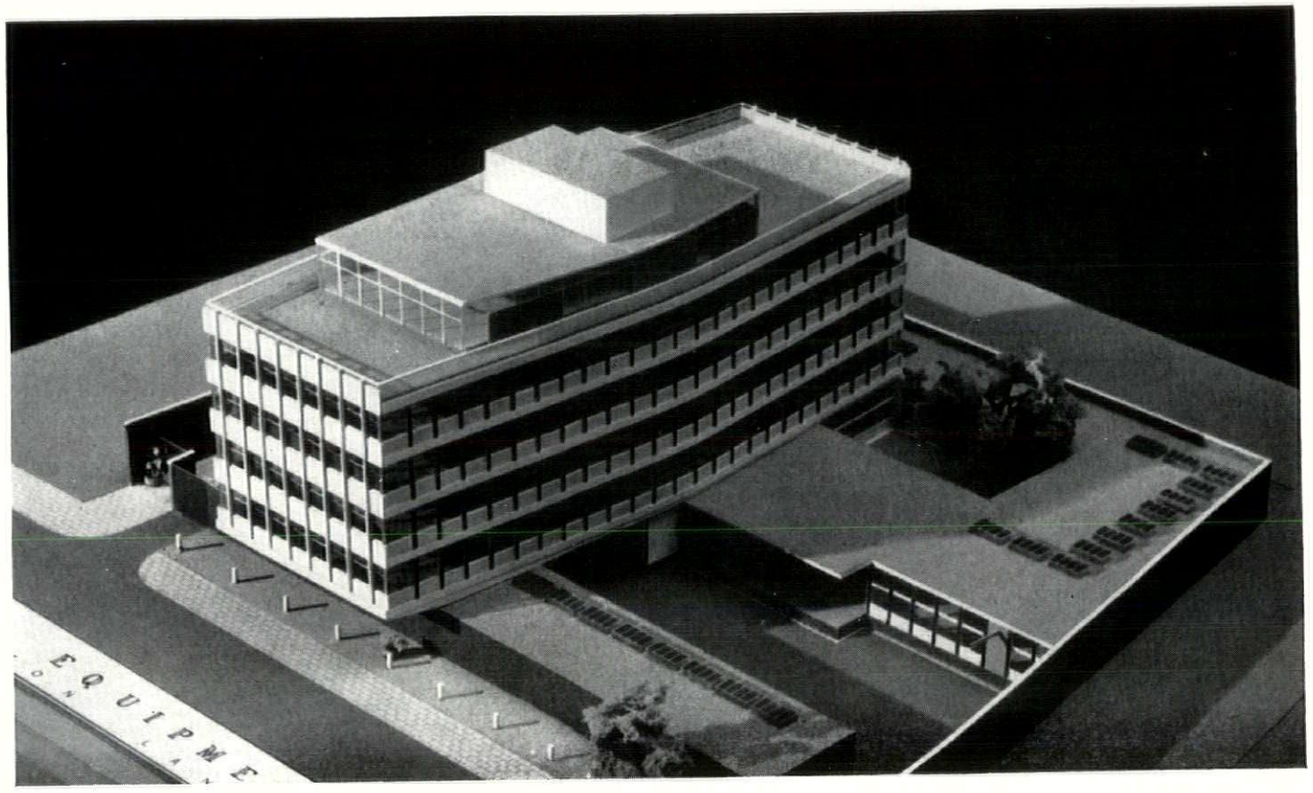
Above, paper mill at Wolvercote, by Booth, Ledeboer and Pinckheard (see page 68): model from the south-east showing the two-storey office building projecting from the flank of the main factory.



Right, power station at Erith, by Farmer and Dark (see page 69). In the foreground is the switch house connecting with the national grid. The main power building is behind.



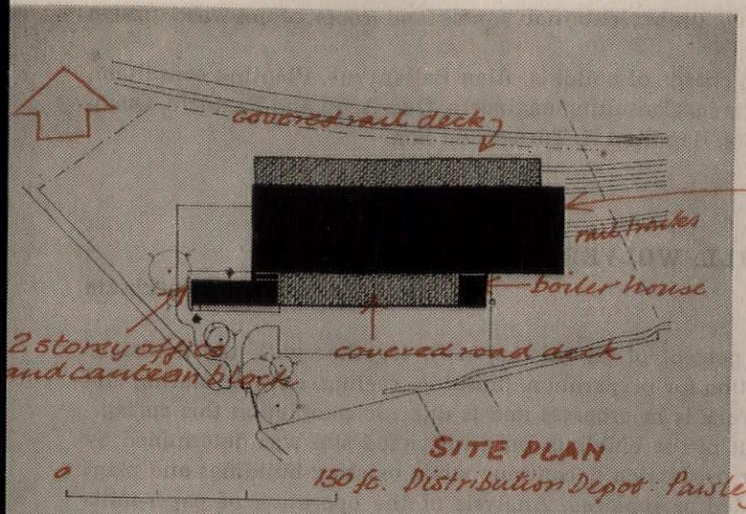
Right, distribution depot at Paisley, showing covered loading docks in front of the main building, and office block on the left.



Right, LCC school equipment centre seen from across the loading yard.

Below, sports pavilion at St. Helens. The changing-rooms are on the left and main club-room on the right.





DISTRIBUTION DEPOT: PAISLEY

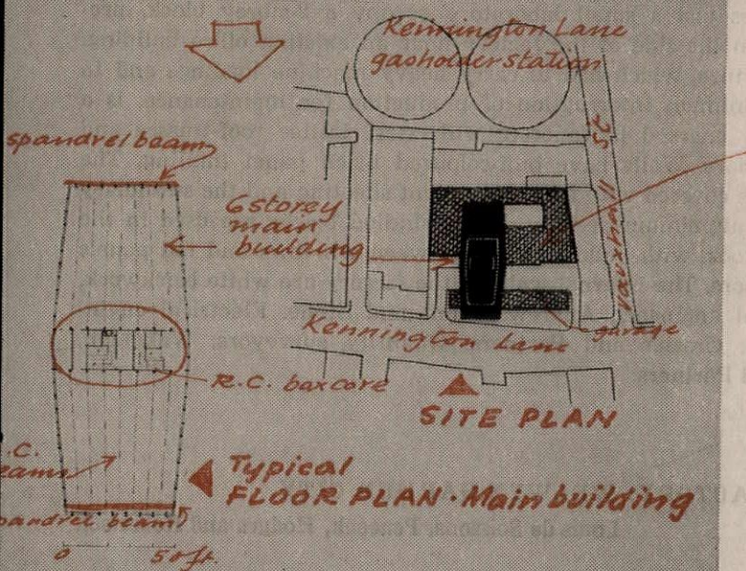
S. W. Milburn and Partners

For Cadbury Brothers: a modern distribution depot for a large area of Scotland, to replace the existing depot in Glasgow. It is hoped to start building this year.

The main structure, two storeys high, provides for the receipt and storage of large quantities of perishable goods in air-conditioned and dustproof stock-rooms, and for an extensive marshalling and distribution area together with administration offices, etc. Both the rail and road-van decks are covered.

A reinforced concrete mushroom column type of construction is used to avoid dust-collecting ledges, with brick wall panels. The office block is faced with glass curtain walling.

Assistant architect for design, Geoffrey Hutchinson. Model maker, Denis Wilkinson.



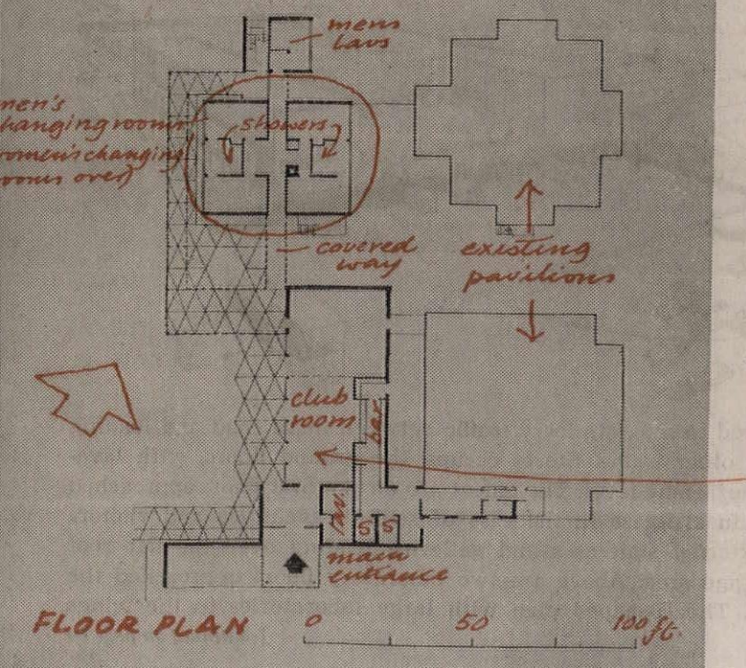
SCHOOL EQUIPMENT CENTRE: KENNINGTON

J. L. Martin (London County Council Architect)

In Kennington Lane, Lambeth (see also AR, November, 1956, p. 322). Work will start in April and finish in June, 1958.

There are three main elements: a single-storey building containing repair shops, kiln room and storage space for furniture, tools and spares; a block of garages for 18 vehicles, and a 6-storey main building containing sample and display rooms, committee rooms, offices and canteen. The garages form a screen between the street and a yard, which contains a loading bay and dispatch department adjoining the single-storey building.

The main building has a reinforced concrete box core containing lifts, staircases and service ducts, from which spring floor beams 67 ft. long, propped by a spandrel beam at each end of the building and supporting slab floors monolithic with the beams. Cladding is glass and brick panelling. The single-storey and garage blocks are of normal beam and slab construction.



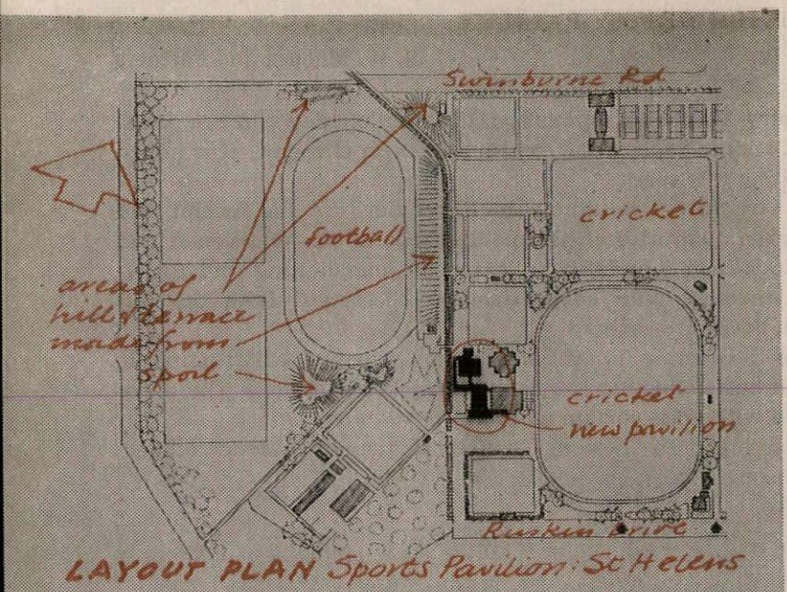
SPORTS PAVILION: ST. HELENS

G. A. Jellicoe and Partners

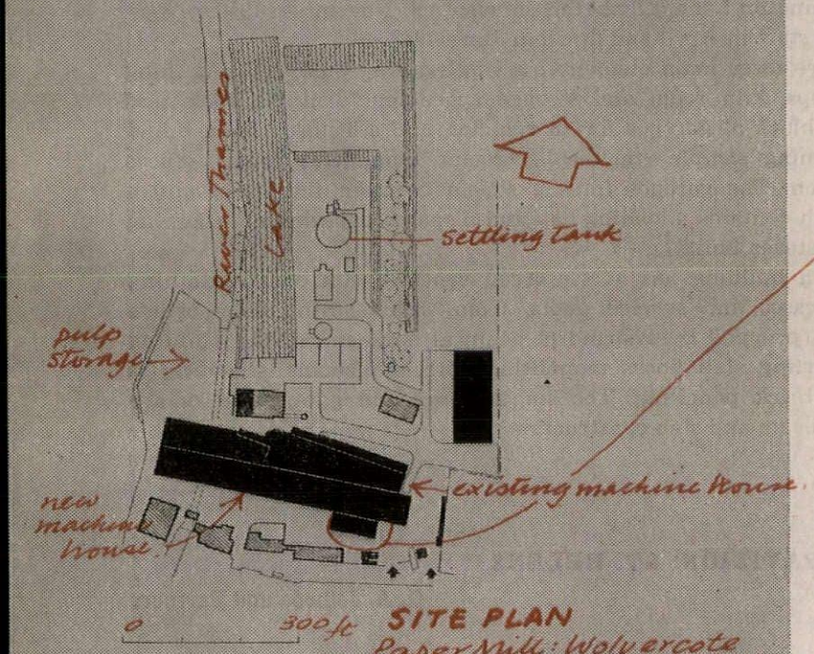
For Pilkington Brothers' recreation ground. The project includes the landscaping of the grounds and playing fields as well as the construction of a pavilion containing changing-rooms and club-rooms. Work began last autumn, and is planned to extend over five years.

The site is flat, and small hills and other ground modelling to continue the volumes of the central buildings will be made by planned dumping of waste by the firm. This waste normally adds to the chain of spoil heaps in and around the town, for which a comprehensive report has been prepared and upon which the work of afforestation to affect the skyline of St. Helens has already begun. The club and changing-rooms face south-west and mask two existing blocks facing towards the central cricket pitch. The changing-rooms are designed with separate accommodation for opposing teams, but with a common shower room. They are linked to a small staircase and lavatory block, separated from the changing-rooms so that the lavatories for men and women are accessible for use by the outside public. The main club room is linked to the changing-block by covered ways. Its windows, which are double-glazed, overlook the terrace and putting green.

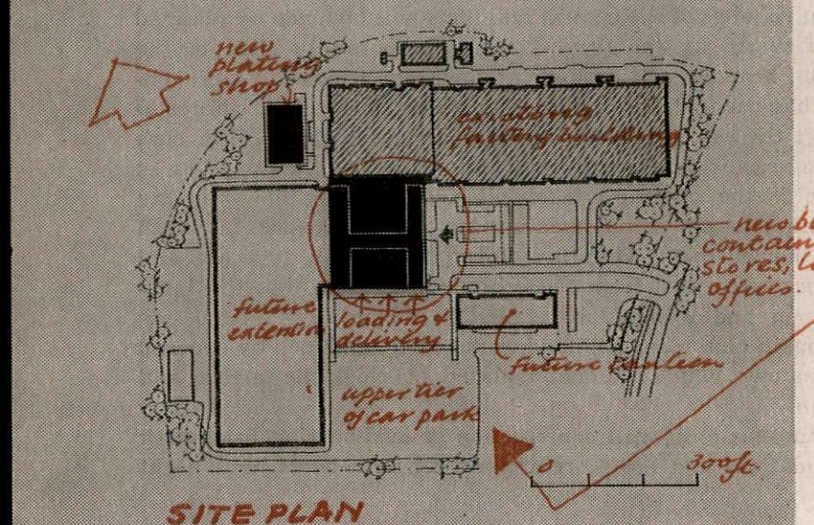
The building has cross-wall construction of load-bearing brickwork on pile foundations and *in-situ* reinforced concrete floors, with light



LAYOUT PLAN Sports Pavilion: St Helens



SITE PLAN Paper Mill: Wolvercote



SITE PLAN

plywood-faced timber external panels and roofs of plywood trough units.

Partner in charge of building, Alan Ballantyne. Planting consultant, G. P. Youngman. Consulting engineers, Ove Arup and Partners. Quantity surveyors, Hamilton H. Turner and Son.

PAPER MILL: WOLVERCOTE

Booth, Ledeboer and Pinckheard

The enlargement of an existing mill, together with the necessary accommodation for preparation, finishing, reeling, cutting, storing and despatch. Work is in progress and is due for completion this spring.

The layout of the buildings on a restricted site was determined by the need for production to continue while existing buildings and plant were extended or replaced. Analysis of the operation of paper-mills in continuous production produced a strong case for a windowless factory. The main building has a vision strip only, the operating floor being at first-floor level. Staff entrance, cloakrooms, canteen, sample room, offices and a small laboratory occupy a 2-storey block, projecting from the side of the factory near an existing office building.

The structure, which had to carry heavy machine loadings and to demand minimum interruption of production for maintenance, is a steel frame encased in concrete with steel lattice roof-trusses and concrete floors. Walls have buff-coloured brick panel infilling. The main roof is covered with asbestos-cement sheeting and the subsidiary roofs with aluminium decking. Blue brindled bricks are used in the entrance block, with yellow panels between windows and red panels over the doors. The internal walls of the factory are white brickwork.

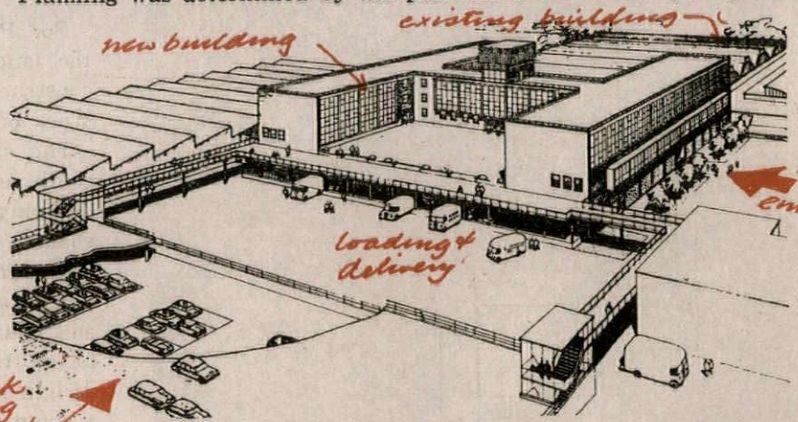
Structural engineers, Andrews, Kent and Stone. Electrical engineers, J. D. Crozier and Partners. Quantity surveyors, Wakeman, Trower and Partners.

RADIO FACTORY: WELWYN GARDEN CITY

Louis de Soissons, Peacock, Hodges and Robertson

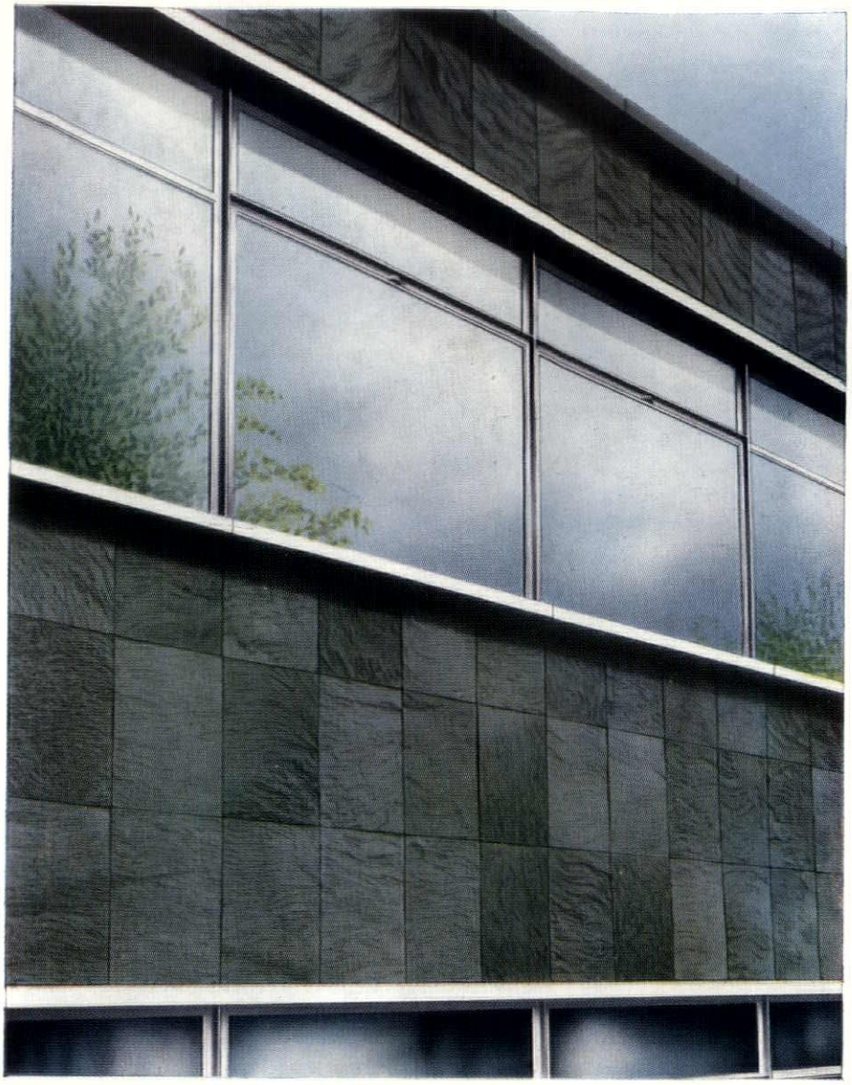
An addition to an existing factory belonging to Murphy Radio, Ltd., including stores, unloading, reception and despatch department, 20,000 sq. ft. of office space and 40,000 sq. ft. of laboratory space for radio, television and electronics. Work is due to start in the summer.

Planning was determined by the position of car and bicycle parks



and the need to separate lorry traffic between main road and loading bays from other traffic. Stores occupy the ground floors, with lavatories at mezzanine level. The offices are on the first floor, approached by the main staircase in the case of senior executives and visitors and by external staircases and galleries leading over the flat roof of the storage area. Above are two laboratory floors approached the same way. The H-shaped plan with large laboratories in the wings

[continued on page 69



BROUGHTON MOOR OLIVE GREEN (Naturally Riven) STONE

Broughton Moor Olive Green Naturally Riven Stone for external facing for the new Radiotherapeutic Institute, Western General Hospital, Edinburgh. Architect: J. Holt, Esq., F.R.I.B.A., A.M.T.P.I.

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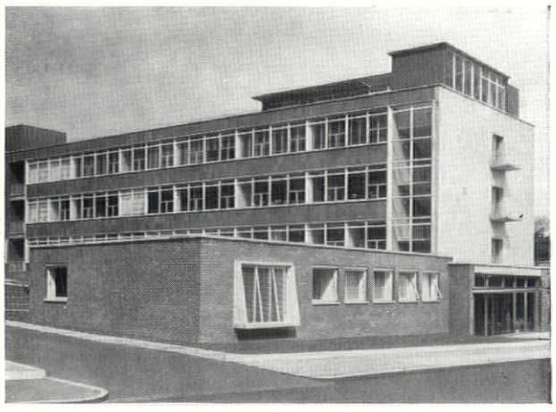

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PLAN FOR

LINOLEUM

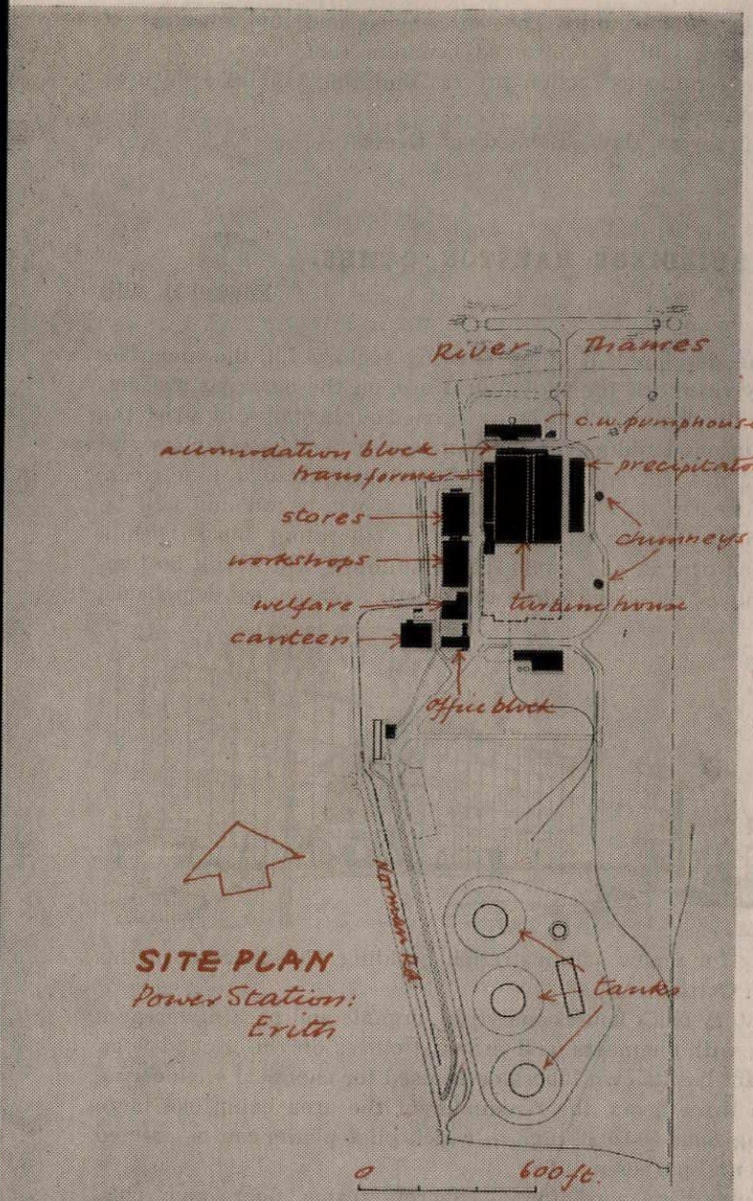
43

continued from page 68]

avoids the need for passage through them.

The structure is a reinforced concrete frame with brick infilling and curtain walling. The storage space is specially heated and ventilated to provide the right conditions for storing electrical equipment. The offices and laboratories have ceiling heating.

Quantity surveyors, C. E. Ball and Partners.



SITE PLAN
Power Station: Erith

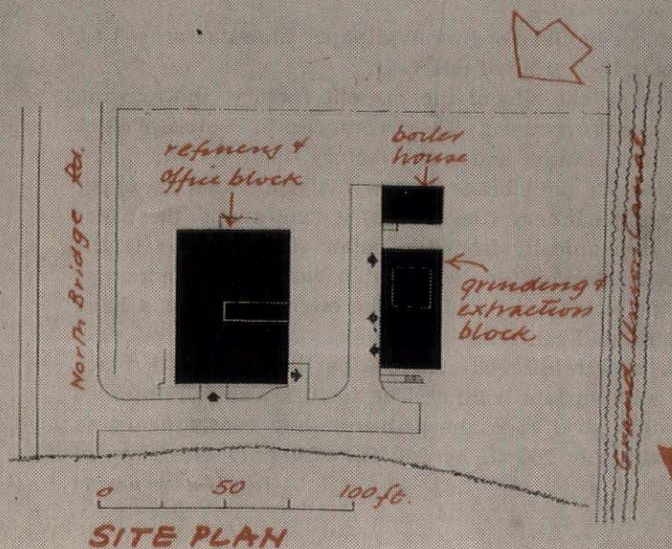
POWER STATION: ERITH

Farmer and Dark

On Belvedere Marshes on the south bank of the Thames. An oil-burning station for the Central Electricity Authority, designed for the installation of coal and ash-handling plant should a change of fuel become necessary. The first half, housing four 60,000 kW. units, is due to begin this month and should be completed, with all ancillary buildings, in 1960. The second half will contain two 120,000 kW. units.

The main power building is steel framed with aluminium deck roofs and sides of patent glazing and corrugated aluminium sheeting. Walling below the operating floor level is of buff and white sand-lime bricks. There are two reinforced concrete chimneys 420 ft. high. Other buildings include three shift-accommodation blocks alongside the main building, containing welfare and storage rooms, laboratories, workshops, etc. (these are steel framed with curtain-walling incorporating coloured enamelled steel panels), a workshop and stores building (concrete-framed with aluminium sheeting and patent glazing), a similarly constructed pump-house, a single-storey brick welfare block with a tubular steel roof, a steel-framed canteen block catering for 300 people, a general administration block two storeys high framed in reinforced concrete, and gatehouse, cycle store, etc. External finishes (which include anodized aluminium, enamelled steel sheet and hardwood doors) are designed to provide small areas of bright colour with minimum maintenance.

Civil, mechanical and electrical engineering is by the Central Electricity Authority, London Division.



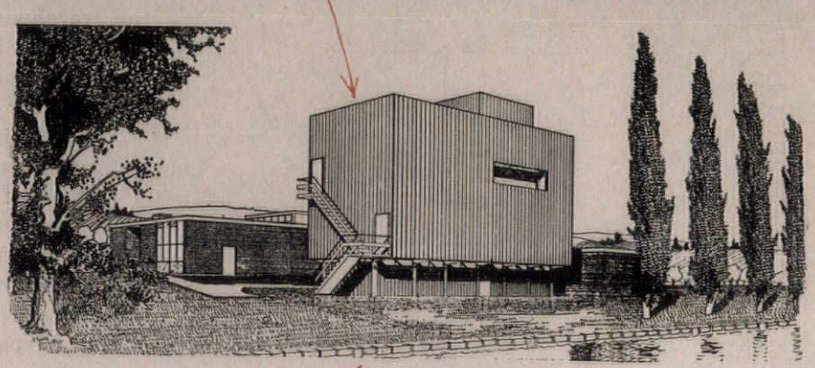
SITE PLAN

CHEMICAL FACTORY: BERKHAMSTED

Architects' Co-partnership

To house plant for the manufacture of fine chemicals by the solvent extraction process. The buildings also include offices and a laboratory. The site lies to the north-west of Berkhamsted on ground rising from the Grand Union Canal on the south to the main London railway on the north. Water from the canal will be used to cool the extraction plant. The office block has already begun. The remainder will begin this month and will be completed in June.

The extraction block has a precast reinforced concrete frame, with *in-situ* reinforced concrete floors. The wall cladding is aluminium patent glazing and asbestos sheeting. The roof is of hollow asbestos decking units. The offices and refinery are of cavity brickwork and



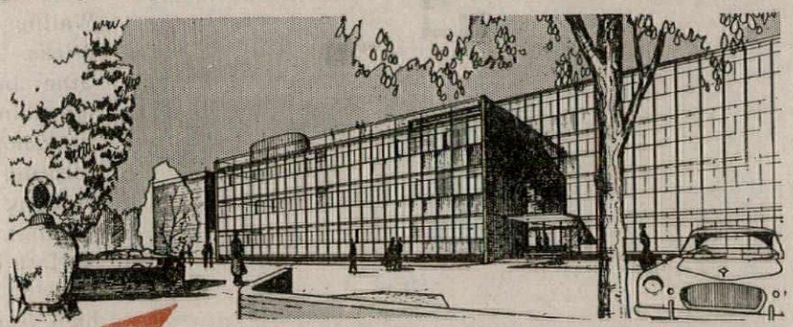
timber framed window units. The boiler-house and fuel store are of cavity brickwork with a reinforced concrete roof. The boiler will supply steam for the extraction process and this will also be used to heat the offices.

Quantity surveyors, Davis, Belfield and Everest.

FACTORY BUILDINGS: HARSTON, CAMBS.

Edward D. Mills

Part of the development of an existing factory for the manufacture of spray chemicals for agricultural use, on the outskirts of Cambridge on the London road. It is being carried out in stages, of which the first (an ablutions building for the factory workers) is complete and the second (a new entrance, with gatehouse, weighbridge, time clock, hall, etc.) is nearly so. The third stage has just begun and will be completed next October. It consists of a laboratory block with a works canteen over it, and a pilot plant building, which will be temporarily occupied as offices while the existing offices are demolished

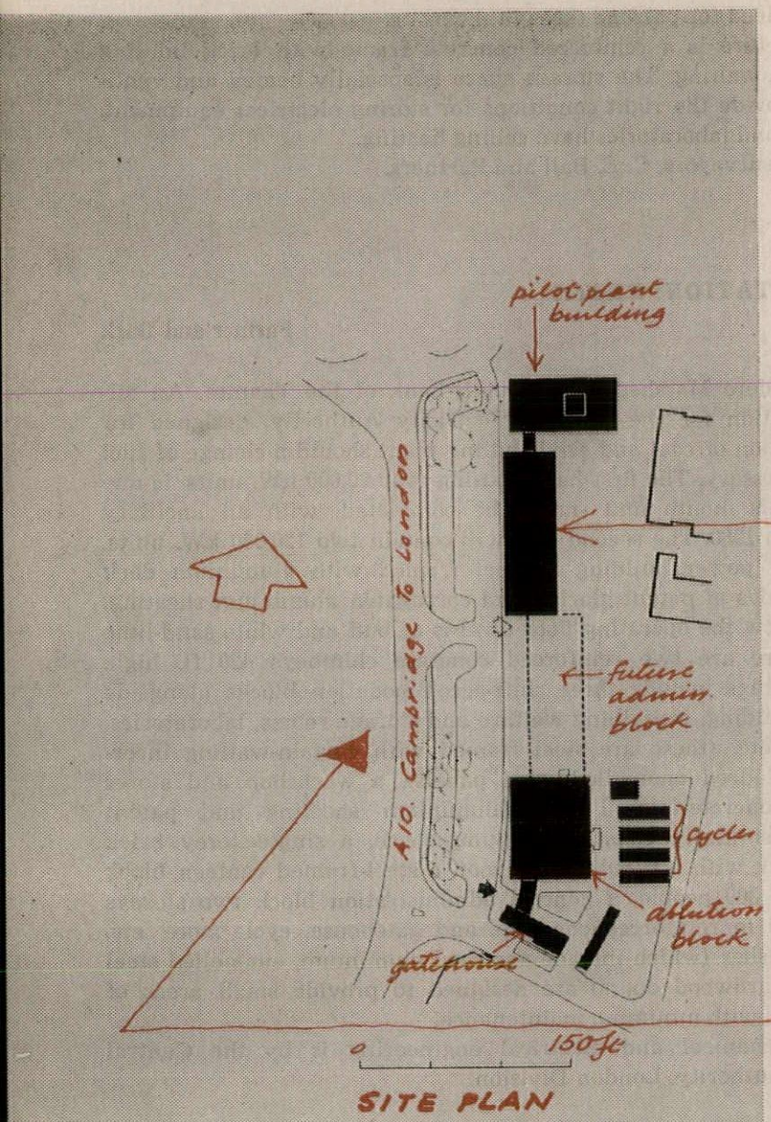


to make way for a new administration building. Construction of this will begin in October.

The laboratory block houses analytical, organic and packing research laboratories, with engineers' and drawing offices on the ground floor. The pilot plant has its own laboratories, used for chemical engineering research, on three floors, the remainder of the area being one large open building some 50-60 ft. high in which pilot plants can be erected for experimental purposes.

The buildings have a reinforced concrete frame, floors and roofs, with curtain walling on east and west façades and infilling panels of coloured metal, glass or asbestos. Floors are concrete. The flank walls are faced with precast slabs with exposed aggregate.

Quantity surveyor, Leslie W. Clark.



WALLPAPER FACTORY: EAST LONDON

Ralph Tubbs

A factory and offices in Old Ford for Wallpaper Manufacturers Ltd. Construction starts in the spring of this year.

The buildings are on the site of the present factory, the existing warehouse block being retained. They comprise a 5-storey office block with private car parking under, the factory itself, on two floors, the lower floor being for the storage of raw materials and the upper floor for the process machinery (the process is continuous, the paper reels being lifted mechanically from the paper store directly to the machines) and a separate unit for the despatch bays and main garage. The first floor of the latter wing contains the engraving shop, a hand printing shop and the staff canteen.

The office block is of reinforced concrete partly faced with black bricks and partly with curtain walling. The factory also is reinforced concrete, with a light steel roof, the printing shop consisting of an open space approximately 200 ft. by 260 ft. with only two rows of

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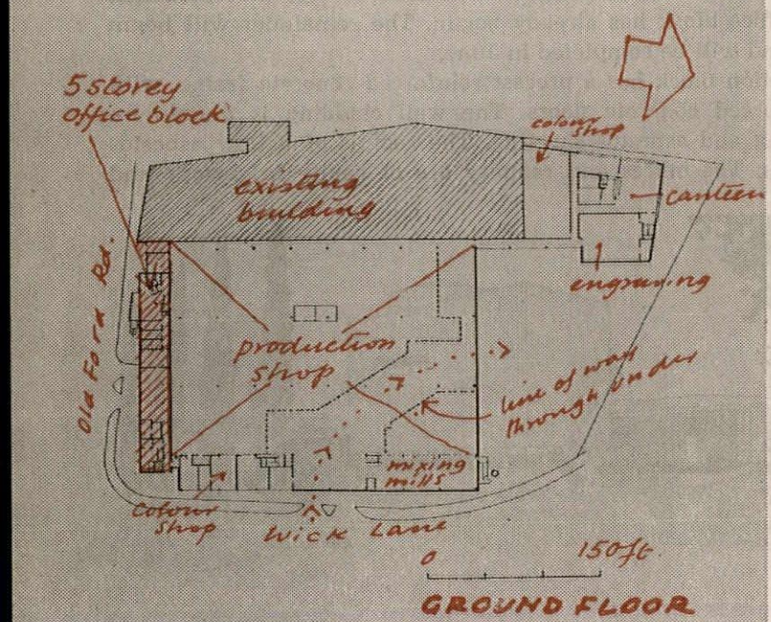

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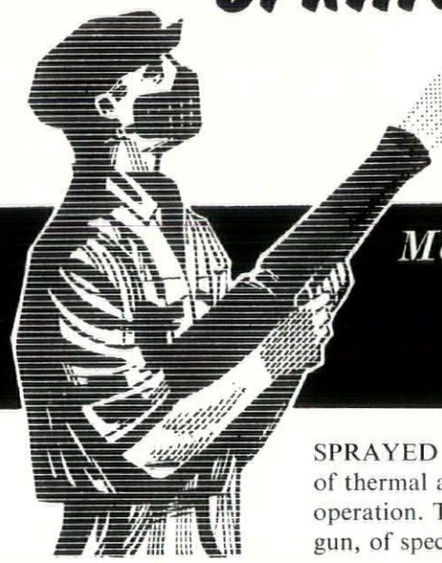
SPRAYED-ON INSULATION

SOLVES MANY PROBLEMS



Main Advantages are . . .

- Combines thermal insulation and sound absorption in one material
- Allows intimate surface contact irrespective of shape or protrusions
- Provides rot and vermin proof asbestos coating which will withstand vibration
- Prevents condensation and consequent corrosion on steel surfaces

SPRAYED 'LIMPET' (Regd.) ASBESTOS was created to provide a form of thermal and sound insulation with many desirable features in one single operation. The process itself consists of the application, by means of a spray gun, of specially prepared forms of asbestos fibre which are discharged from the main nozzle of the spray gun simultaneously with a spray of water. These thoroughly intermix on leaving the spray gun and firmly adhere to the surface being treated. Irrespective of the shape of the surface, Sprayed 'Limpet' Asbestos completely covers all joints, rivets, or protrusions in one continuous jointless coating, thus eliminating all air spaces with their accompanying disadvantages.

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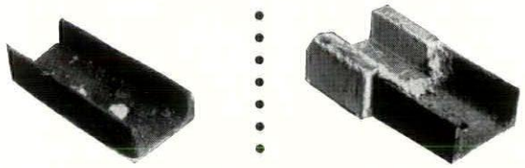
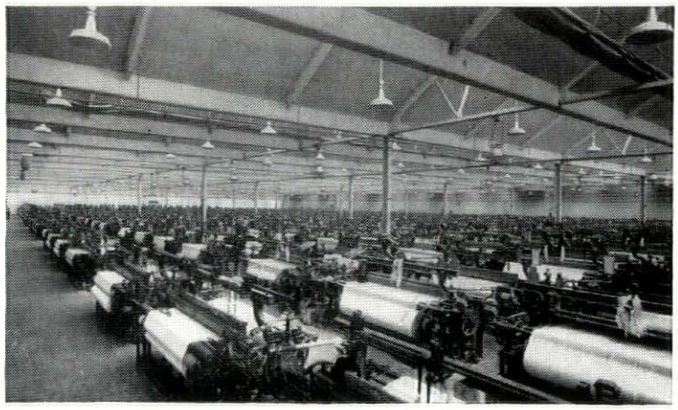
CORROSION TEST



The photograph on the right shows the complete protection offered by Sprayed 'Limpet' Asbestos against corrosion. Both channels were subjected to the same conditions, the test being carried out in a dyeworks.



BIG NOISE REDUCTION

Sprayed 'Limpet' Asbestos has been used in this modern cotton weaving shed to reduce noise and for anti-condensation purposes. Photograph by courtesy of Richard Haworth & Co. Ltd., Hindley Green.

SPRAYED "LIMPET"(Regd.) ASBESTOS BY Newalls

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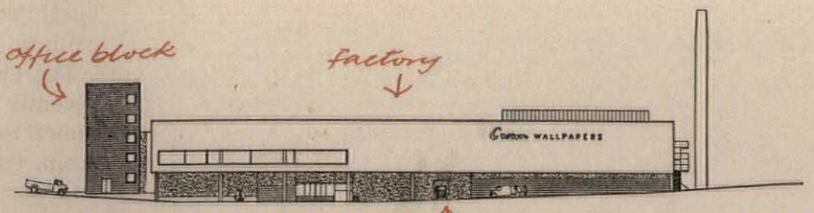


columns. Along the whole east front there is a reinforced concrete 'service unit' for the preparation of colour, etc. This has a mezzanine floor with the clay store at the highest level, so that the process in this portion follows a gravity sequence.

Chief assistant architect, Frank Tischler. Consulting engineers, Frederick Snow and Partners. Quantity surveyor, B. G. Coffin.

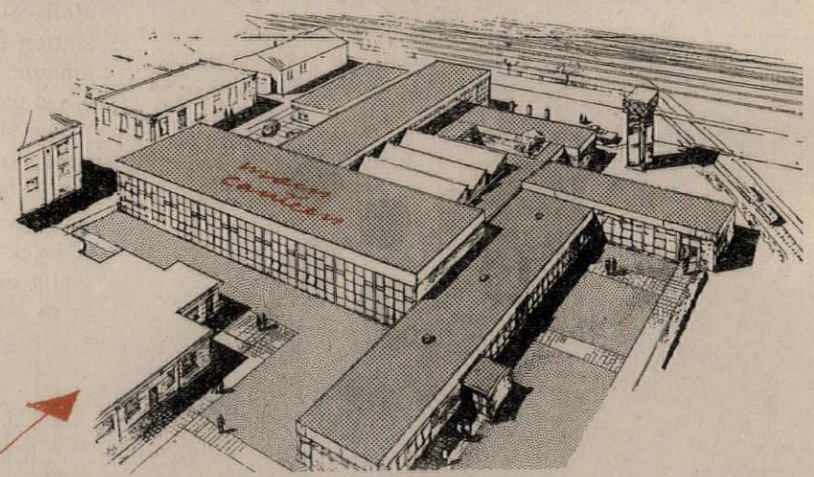
STAFF CLUB: CORBY

Norman and Dawbarn

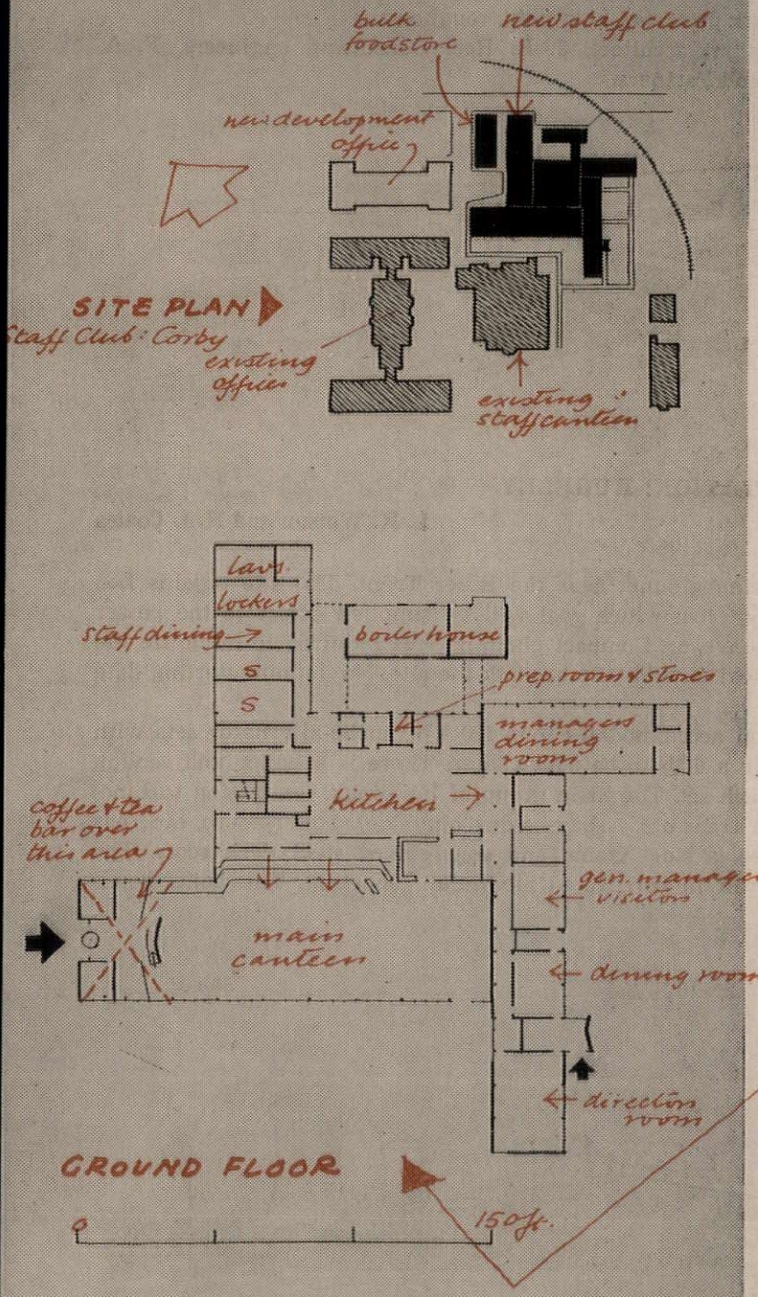
For Stewarts and Lloyds: a new office staff canteen and club serving up to 2,000 meals per day, to replace an existing building. The site is very restricted, being surrounded by buildings and railway sidings. Work began last November.

The main canteen and the ten smaller dining-rooms occupy separate wings arranged fanwise round a central kitchen. There is one servery for the main canteen and two subsidiary ones for the other dining-rooms. The visitors' and executives' dining-rooms have waitress-service; the main hall, seating 406, has self-service. A gallery over the entrance, with a separate coffee and tea-bar, is provided to encourage people to vacate tables quickly.

The structure is of tubular columns and trusses with solid brick end walls to give additional rigidity. The module for walls, infilling panels and partitions is 4 ft. while the structural module is 4 ft. 2 in., the difference allowing 6 in. per bay of three units and 8 in. per bay



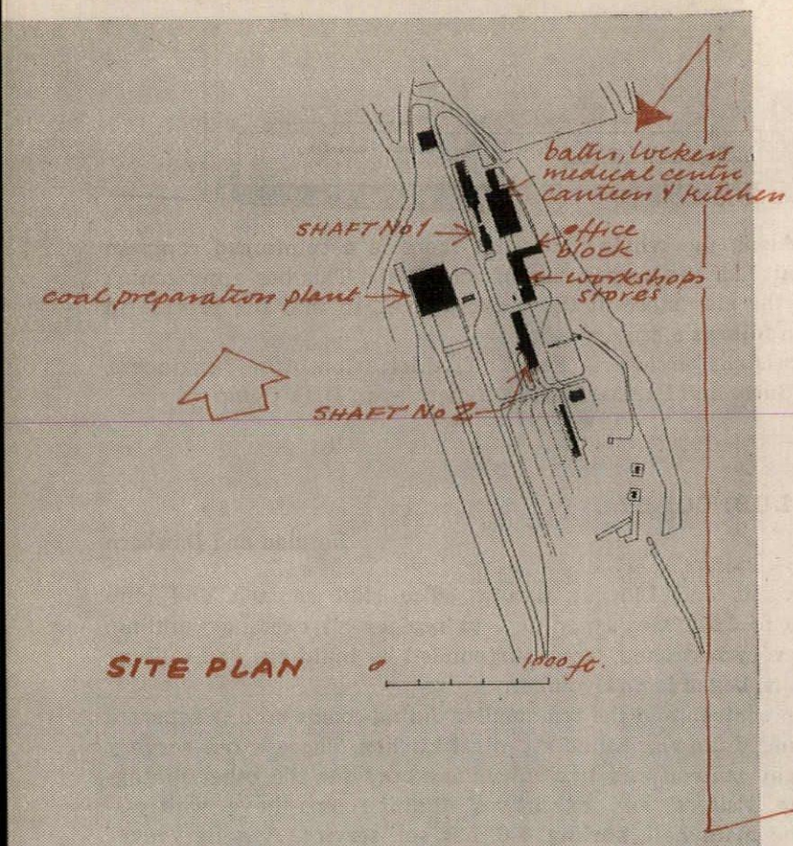
of four units for tolerances and mullions taking window opening gear, electric points, etc. Columns are placed inside, 3 in. clear of walls or cladding, to allow for cleaning and maintenance. The same timber sections are used for heads, sills, jambs, mullions and transomes, and only two sizes and types of opening lights occur throughout. Opaque infilling consists of double cavity panels of roughcast glass and asbestos cement.



COLLIERY: KIRKCALDY

E. Riss

For the Scottish Division of the National Coal Board. Between the Seafield site and Kirkcaldy Harbour, on the Fife coast of the Firth of Forth, close to the main railway and road leading north from Edin-

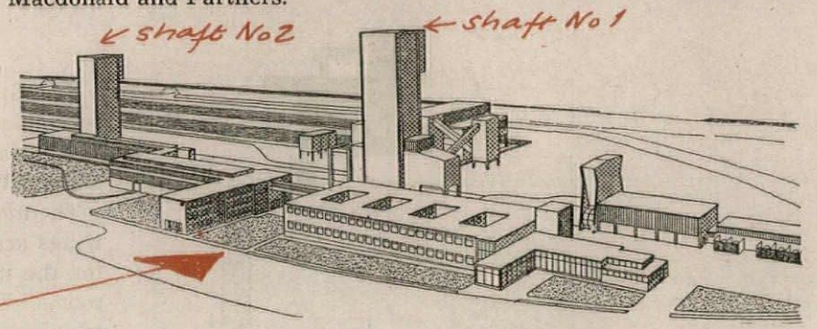


burgh and thus more exposed to the public eye than the ordinary colliery. Construction has already begun.

The general layout follows circulation principles which have been recently established in other new collieries in Scotland, allowing the miner to follow a logical progress from the bath, through clocking-room, lamp-cabin, stores-issuing room, etc., to the pit-head. The long and narrow site determined the positioning of the main structures and the railway layout.

A method new to Britain has been used for the construction of the towers. The main structure consists of precast densely vibrated concrete slabs which are poststressed with high tensile steel rods and wires after they have been placed in position. The materials, chosen to withstand the harsh weather which prevails so near the coast, include precast or *in-situ* concrete, patent glazing, engineering brick and brickwork protected by granite roughcast.

First assistant architect, J. R. Ree. Consulting engineers, F. A. Macdonald and Partners.

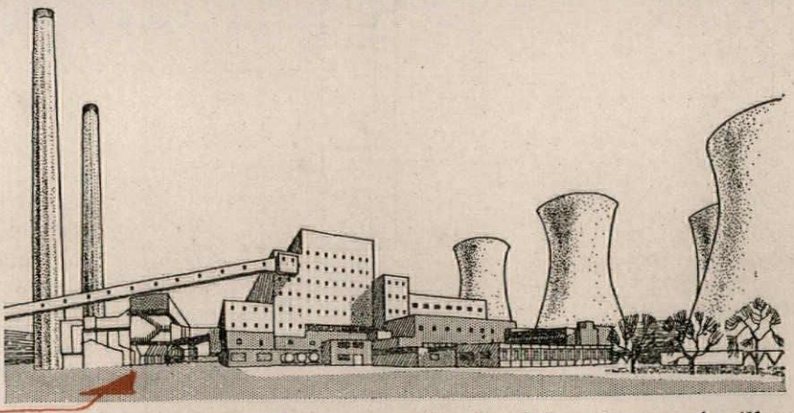


POWER STATION: RUGELEY

L. K. Watson and H. J. Coates

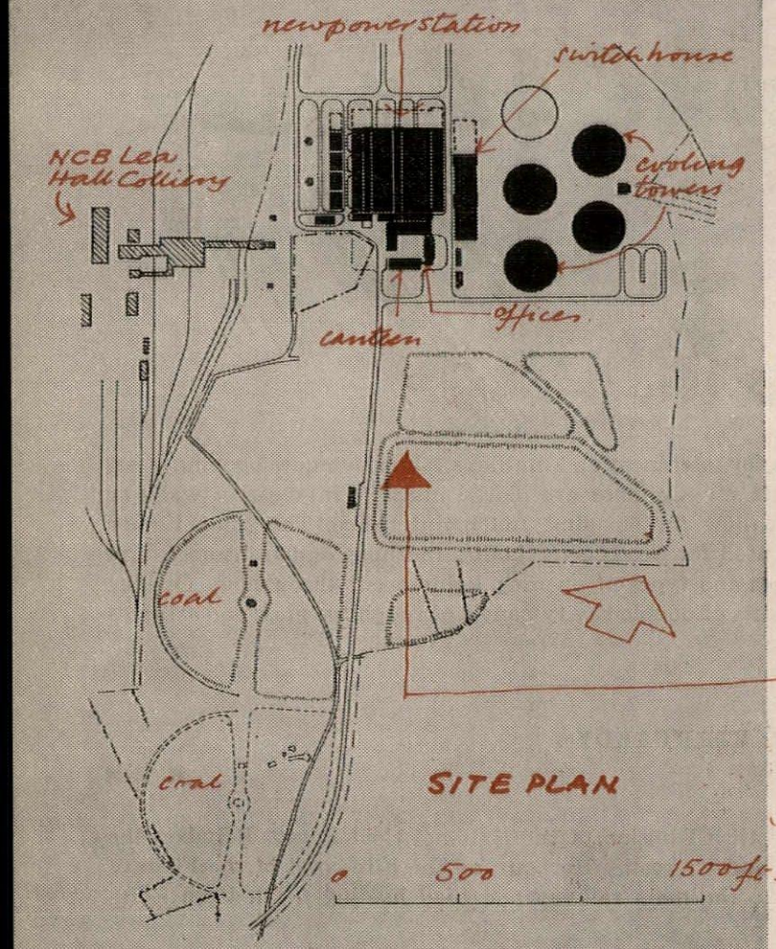
On low-lying ground, near the River Trent. The site adjoins Lea Hall colliery, from which coal will be supplied direct to the power station by conveyor. Compact planning was required to minimize the amount of coal unworkable beneath the site. No definite starting date is yet fixed.

The station accommodates four 120 kW. turbo-alternator sets with provision for a fifth to be added later. There is a boiler and cooling tower for each set. The main group of buildings, comprising turbine-house (with transformer bays along one side), boiler-house, etc., has a brick base, a steel frame and concrete or steel deck roofs. The walls are clad in corrugated aluminium sheeting. The boiler-house



windows are in corrugated perspex in aluminium frames. Ancillary buildings include a workshop and stores building, in the upper part of which is the control room. This adjoins the turbine-house, and a double glazed window in the dividing wall gives a direct view between. There is also a building containing canteen, kitchen and recreation room, overlooking the ash-lagoons which will later become playing fields. The switch-house is a detached brick building.

Civil engineers, Mott, Hay and Anderson.



POST-VIEW: a news round-up of Preview projects, 1954-6

The AR January Preview issues, of which this is the fourth, have contained only projects which it was definitely intended to carry out. Work on some had indeed begun when the designs were illustrated, and work on most of the others was due to start soon afterwards.

Some of the buildings are therefore now finished, and it may be of interest to note which these are and to examine the progress made by the rest. Very few seem to have fallen altogether by the wayside: only twenty out of a total of 149 projects illustrated in the three issues have not actually been started and eight of those were in the most recent of the three (January 1956) and thus may not have been due to start; the others have been delayed for one reason or another; only four projects have been shelved or abandoned.

Of the different types of building into which the Preview issues have been subdivided, schools, housing and industrial buildings, not ununnaturally, provided the largest number.

Schools

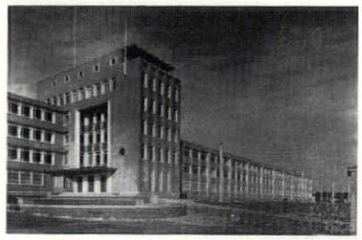
Designs for twenty-one schools were included. Eleven are already finished. Three of them—the Ministry of Education's own secondary schools at Worthing and Belper (both 1954) and the primary school in Kensington by Chamberlin, Powell and Bon (1955)—have already been illustrated as finished buildings (*Architects' Journal*, August 4, 1955, and December 15, 1955; AR September 1956); another, at West Bromwich by Richard Sheppard and Partners (1954) will be illustrated in the AR next month.

The other seven schools finished are those in Finchley Road, London, by Edward Mills (1954), in the West Riding of Yorkshire, by Yorke, Rosenberg and Mardall (1954), in Edinburgh, by Walls and Duncan (1954), in Maida Vale, London, by David Stokes (1955), at Great Baddow, Essex, by the county architect (1955), at Lewisham, by Clayton, Black and Daniel (1955), and at Sevenoaks, by Pite, Son and Fairweather (1955). The school at Hornsey by H. T. Cadbury Brown (1955) is on the point of completion. The remaining nine schools are all under construction and due for completion this year or next, the last two being the LCC comprehensive school at Holland Park (1955) and the school at Oswestry, by Richard Sheppard and Partners (1956), both of which will be completed at the end of 1958.

Housing

Under this heading twenty-five projects have been illustrated, and three of these are already finished—the flats at Hammersmith by Armstrong and MacManus (1954), the flats at Liverpool by the city architect (1955) and the police housing at Highgate by the chief architect to the Metropolitan Police (1955). In addition, the flats at Highgate for the Soviet Trade Delegation by Eric Lyons (1956) will be finished in a couple of months. Only one housing project has fallen by the wayside: the private-enterprise flats at Bournemouth by Yorke, Rosenberg and Mardall (1955).

All the other housing projects are under construction except the Regent's Park housing by Armstrong and MacManus (1956) and the Seamen's home at Erith by Gollins, Melvin, Ward and Partners (1955), on which, however, work will begin early this year. So will work on the second stage of the flats at Hampstead by Norman and Dawbarn (1954), the first stage being finished. Six of the remaining projects will be finished this year—the first stage of the flats at Bethnal Green by Fry, Drew, Drake and Lasdun (1954), the sailors' home in Dock Street, East London, by Brian O'Rorke (1954), the flats at Birmingham by the city architect (1954), the flats at Bath (one block) by Snailum, Huggins and Le Fevre (1955), the LCC flats at Bentham Road, Hackney (1955), and maisonettes at Picton Street, Camberwell (1956). The first group of the flats at Golden Lane, by Chamberlin, Powell and Bon (1954 and 1956) will be finished early this year. Of the group of thirteen houses at Guildford by G. A. Jellicoe (1954) twelve are finished and the thirteenth will be finished in a year's time.

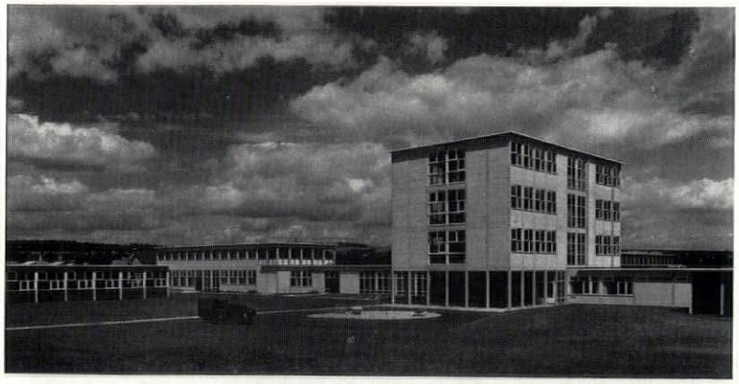


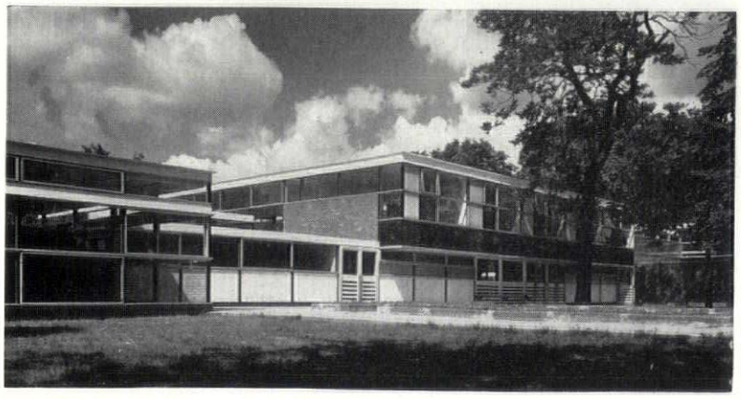
Administrative wing of the Bank of England printing works, Debden, Essex, by Easton and Robertson (previewed 1954).

Industrial

Industrial projects have numbered twenty-two, of which eight are finished: the printing works for the Bank of England at Debden by Easton & Robertson (1954; illustrated AR June 1956), the factory at Crawley by J. M. Austin Smith and Partner (1954; illustrated *AJ* October 6, 1955), the research laboratories at Cheltenham by Easton & Robertson (1955), the research laboratories at Salfords by Norman and Dawbarn (1955), the plastics development building for ICI at Welwyn by E. D. Jefferiss Mathews (1955; to be illustrated in the *AJ* next month), the television laboratories at Enfield by G. A. Jellicoe (1956; illustrated *AJ* November 15, 1956), the factory at Eastleigh by Edward D. Mills (1956) and the factory at Swindon by Bertram Carter (1956).

Eight other industrial projects will be finished this year: the two collieries at Kinneil and Glenochil by the architect of the Scottish Coal Board (1954), the welfare buildings at Barking power station by Farmer and Dark (1955), the warehouse at Nottingham by C. S. Oakes (1955), the factory offices at Derby (administration block only) by Basil Ward (1956), the factory offices at Birmingham by E. Goldfinger (1956) and the factories at Slough and Wigan by E. D. Jefferiss Mathews (1956). The remaining industrial projects have started except for the builder's offices at Crawley by Edward D. Mills (1955) and the warehouse and office project at Yeovil by Max Lock (1955) which has been abandoned.





Upper picture, school at Worthing by the architects of the Ministry of Education (previewed 1954). Lower, school in Kensington by Chamberlin, Powell and Bon (previewed 1955).

Technical Colleges, etc.

Other education buildings besides schools have been represented in the Preview issues in increasing numbers. There have been seven technical colleges and the like, of which that at Sheffield by Gollins, Melvin, Ward and Partners (1954) is just finishing. The workshop block only of the Harrow college of further education by the Middlesex county architect (1956) is also built, but the remainder will not be finished until 1959. The college at Keighley by the West Riding county architect (1955) will be finished early this summer; the others will be finished in 1958 or 1959 and have all started except that at Redcar, by Gollins, Melvin, Ward and Partners (1956), which is just about to start.

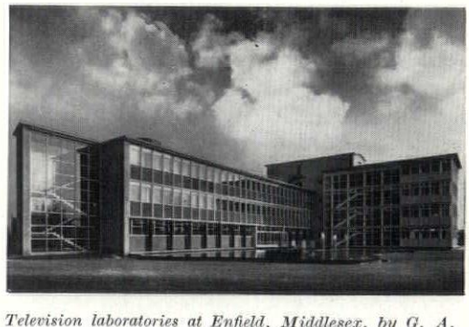
University Buildings

University buildings have been few until this year, though the 1954 issue illustrated the long-term plan for the Sidgwick Avenue site at Cambridge by Sir Hugh Casson and Neville Conder, the first two buildings of which are previewed in this issue, and the 1956 issue included the long-term landscape plan for Nottingham by G. A. Jellicoe and Partners. In the 1955 issue were two university buildings: the library at Sheffield by Gollins, Melvin, Ward and Partners, of which the two lowest floors are so far complete, and the engineering laboratories at Cambridge by Easton and Robertson of which the first stage is complete and which will be entirely finished in 1961.

Medical and Scientific

Five hospital buildings have been illustrated of which one, the extension to Hammersmith Hospital by Basil Ward (1954), is finished. Two others, at Crawley by Yorke, Rosenberg and Mardall (1956) and Lisburn, Northern Ireland, by S. W. Milburn (1954), have not yet begun, but the latter will start this year on a reduced scale. At Dundonald Hospital, also in Northern Ireland, by Frederick Gibberd (1955), site work has begun and the building itself will start this spring. Londonderry hospital, by Yorke, Rosenberg and Mardall (1954) is under construction and will be finished in 1958.

Other medical and scientific buildings have numbered four. Of these the Southampton health centre by the borough architect (1955) and the sanatorium at Regent's Park zoo by F. A. Stengelhofen (1955) are finished. The buildings at Hurstmonceux for the Royal Observatory by Brian O'Rorke (1954) are under construction and will be finished this summer. The College of Obstetricians and Gynaecologists, Regent's Park, by Louis de Soissons and Partners (1955) is due to begin in May.



Television laboratories at Enfield, Middlesex, by G. A. Jellicoe and Partners (previewed 1956).



Store at Southampton, by Yorke, Rosenberg and Mardall (previewed 1954).

Power-stations

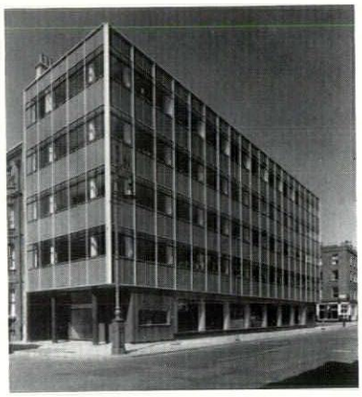
The three preview issues included eight power-stations of which three are finished: the Calder Hall atomic power-station in Cumberland by the Ministry of Works (1955; illustrated *AJ* October 11, 1956) and those at Kemsley and Northfleet both by Farmer and Dark (1954). The other five are all under construction, and that at Ferrybridge by Watson and Coates (1954) will be finished in a few months. At Killin (Robert Matthew, 1956) work on the superstructure is just beginning.

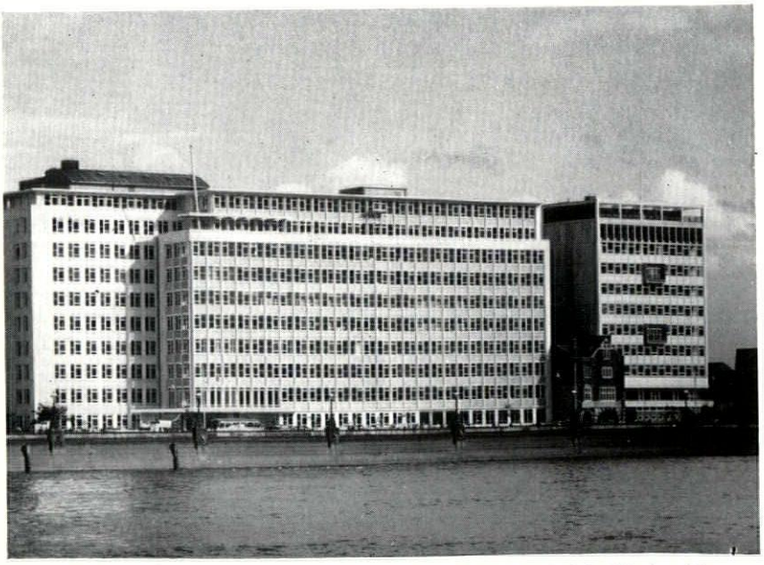
Shops and Stores

Three shops have been included, apart from those incorporated in housing and planning schemes or occupying the ground floors of office buildings (see below). One of these, the department store at Southampton by Yorke, Rosenberg and Mardall (1954) is finished and was illustrated in the AR October 1956; another, the furniture shop at Bromley by Bertram Carter (1955), will be finished within a month or two, and the third, the store at Maidstone by C. Worthington (1955), is under construction.

Office Buildings

Office buildings have numbered twenty-one. Three of these are finished—the National Dock Labour Board offices on Albert Embankment by Frederick Gibberd (1955; illustrated AR October 1956), the offices in Stephen Street, W.1, by Douglas and J. D. Wood (1956) and the offices in New Cavendish Street by Gollins, Melvin, Ward and Partners (1956; illustrated AR October 1956)—and two more are almost so: the offices and warehouse in the City of London (Barbican) by Frank Scarlett (1955) and the office building on Albert Embankment by T. P. Bennett and Son (1955; illustrated AR October 1956). Another ten are under construction and the rest have not yet started. The offices in St. Martin's Lane by Basil Spence (1956) will be started this year.





Upper picture, offices in New Cavendish Street, London, by Gollins, Melvin, Ward and Partners (previewed 1956). Lower, two office buildings on Albert Embankment: left, by T. P. Bennett and Son; right, by Frederick Gibberd (both previewed 1955).

Air Transport

Air transport has been responsible for three projects. London Airport by Frederick Gibberd was included in the 1954 preview issue and the first three buildings (all that are planned for the present) are finished. They were illustrated in the AR for July and November 1955 and the *AJ* for December 12, 1956. Turnhouse air terminal, Edinburgh, by Robert Matthew (1955) is also finished (illustrated *AJ* July 5, 1956; AR October, 1956) but the airport control tower at Southampton by Powell and Moya (1955) has not started as the project has been suspended by the Government.

Churches

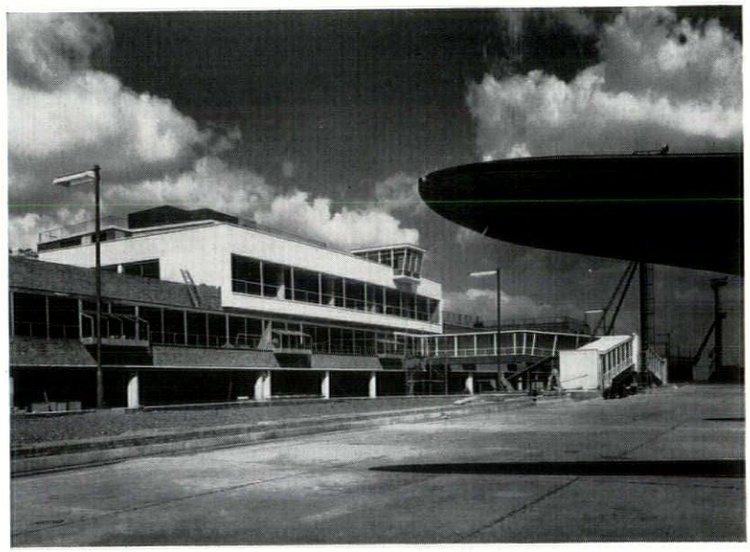
There remain churches, public buildings and three miscellaneous buildings. Churches and other religious buildings included the new Coventry cathedral by Basil Spence (1954), which is now under construction, and five other projects. Two of these are also by Basil Spence, a group of churches at Coventry (1955), the first of which will be finished in May, and a church at Leicester (1956) recently started and due to be finished in the spring of 1958. There were also a methodist church at Mitcham by Edward D. Mills (1955), which has not yet started, a seamen's mission at Rotherhithe by Yorke, Rosenberg and Mardall (1954), which has also not yet started, though it is hoped to do so soon, and a church hall at Surbiton by Kenneth Wood (1956), on the point of completion.

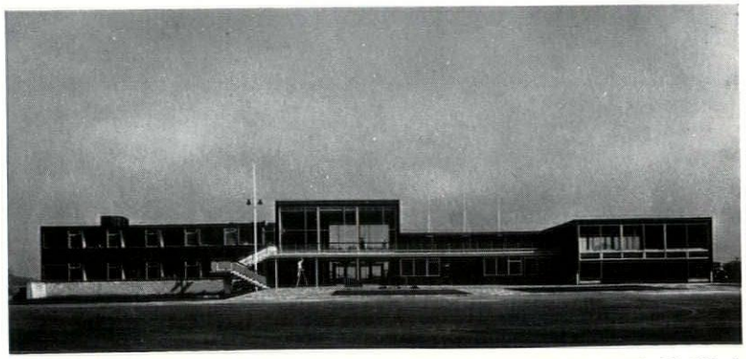
Public Buildings

Finally, public buildings: fifteen projects have been illustrated under this heading, including four post-offices or telephone exchanges by the Ministry of Works. Of these the post-office at Plymouth (1954) is under construction and will be finished this autumn, that at Luton (1955) is also under construction and will be finished next year. So will the telephone exchange at Watford (1954). That at Fore Street in the City (1956) has just begun. There were also four police stations. That at Maidstone by Richard Sheppard and Partners (1955) has just finished; that at Brixton by the chief architect to the Metropolitan Police (1955) has just started and will be completed by the autumn of 1958; that in the new town centre at Harlow by Frederick Gibberd (1956) is under construction and will be finished this year, and that at Birmingham by the city architect (1956) is also under construction.

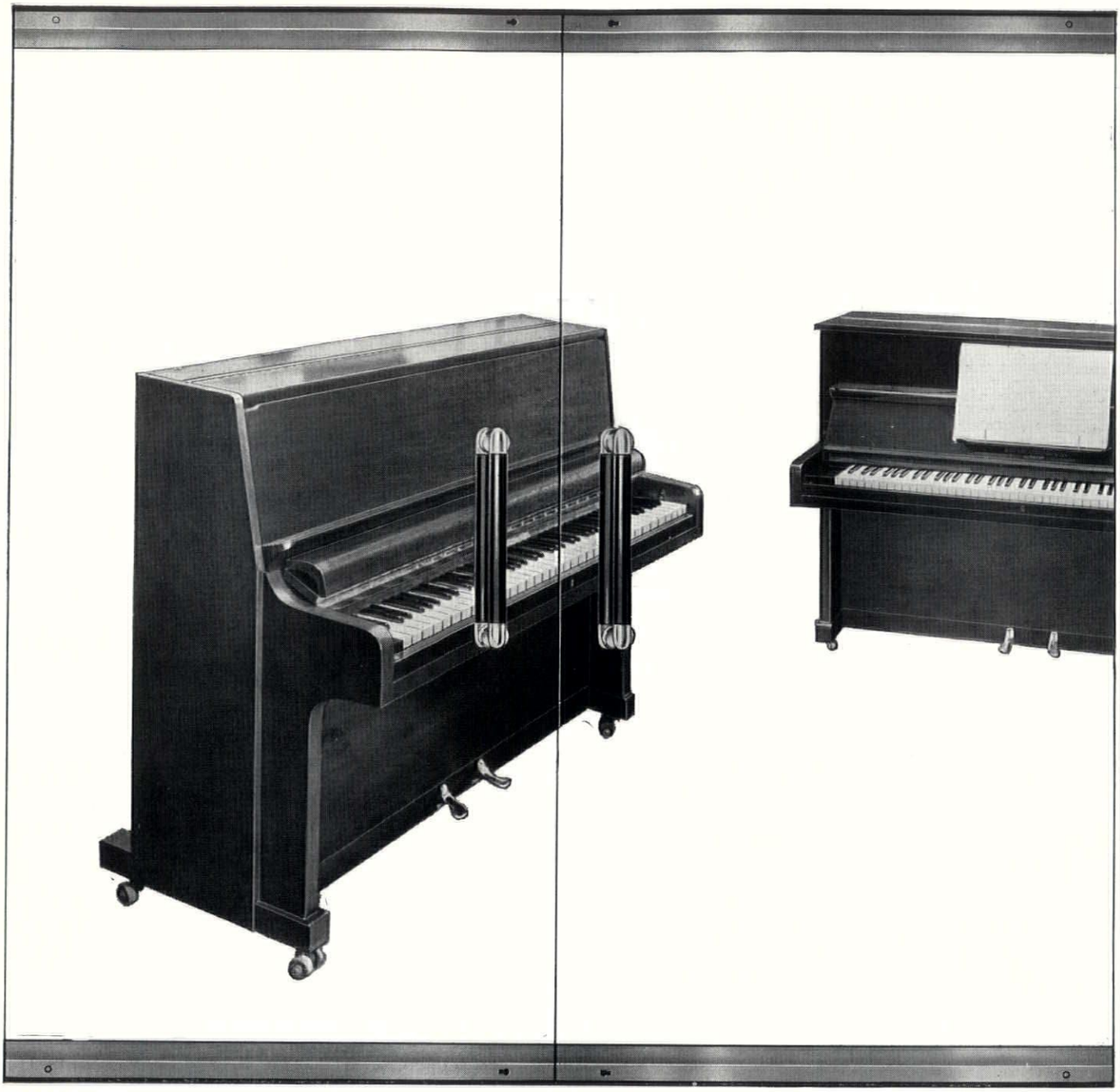
Under the same heading were three theatres. The civic theatre at Coventry by the city architect (1955) is under construction and should be finished in about a year. The Questors Theatre at Ealing by W. S. Hattrell and Partners (1956) is also under construction. The first stage (foyer and meeting room) is just complete and the main theatre block will be finished in the spring of 1958. The theatre at Middlesbrough by Elder and de Piero (1956) will be finished within a few months.

The other public buildings were a community building at Stevenage new town by the architect to the development corporation (1955), which is under construction, a branch library at Harold Wood, Essex, by the county architect (1956), which





Upper picture, runway side of passenger-handling building, London airport, by Frederick Gibberd (previewed 1954). Lower, Turnhouse airport, Edinburgh, by Robert Matthew (previewed 1955).



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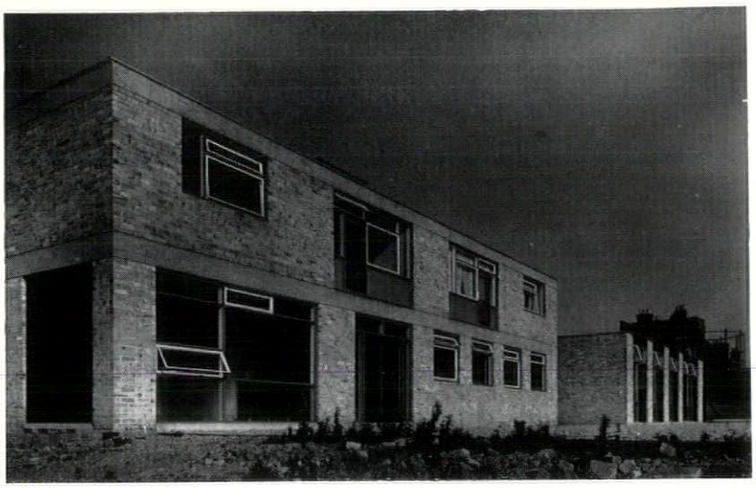


Above, boys' club, Stepney, by Yorke, Rosenberg and Mardall (previewed 1955).

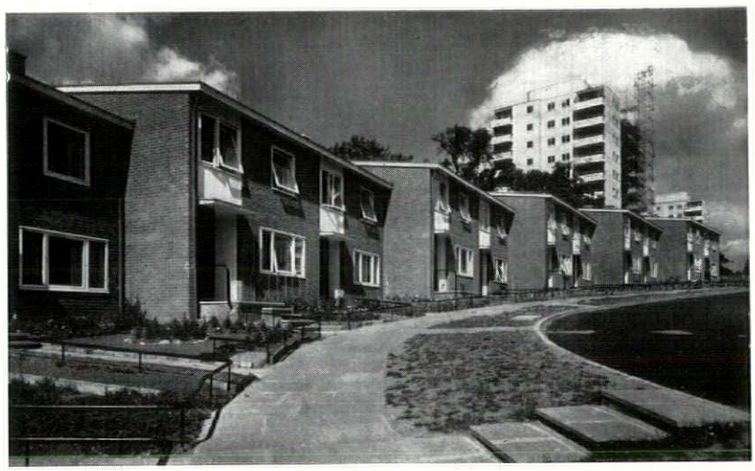
has not yet been started, a multi-storey car-park at Liverpool by the city architect (1956), which should have started but is held up by the credit-squeeze and a swimming bath at Wythenshawe, Manchester, also by the city architect (1956), which has also been held up by the credit-squeeze.

Miscellaneous Buildings

These consisted of the BBC television centre at Wood Lane by Norman and Dawbarn (1954), of which the scenery block is finished and in use (illustrated *AJ* October 6, 1955); a boys' club at Stepney by Yorke, Rosenberg and Mardall (1955), which is finished (illustrated AR February 1956), and an abattoir at Sunderland by the Ministry of Works, which has been abandoned.

There were also a few long-term planning schemes like the LCC development of St. Anne's, Stepney (1956), and the town centre at Basildon (1956), which have started but are in their early stages. The L.C.C. development, largely for housing, of the Wimbledon-Roehampton area is well under way and the Portsmouth Road section, illustrated in 1954, is nearly complete.

Summary of the above round-up: projects published, 149; buildings finished, 37; under construction, 92; waiting to start, 16; abandoned, 4.



Below, housing at Roehampton (Alton Estate), by the LCC architects' department (previewed 1954).

CONTRACTORS etc

Crematorium, Manchester. *Architect:* Leonard Howitt (Manchester City Architect). *General contractors:* G. & J. Seddon, Ltd.

Public House, Leicester Square. *Architects:* T. P. Bennett & Sons. *General contractors:* Henry Neal, Ltd.

Offices, High Holborn. *Architects:* T. P. Bennett & Sons. *General contractors:* Higgs & Hill Ltd. *Sub-contractors: Reinforced concrete engineers:* Twisteel Reinforcement Ltd. *Bored piles:* The Cementation Co. *Demolition contractor:* Willment Brothers Ltd. *Asphalters (roofing and tanking):* Highways Construction Ltd. *Metal Windows:* Williams & Williams Ltd. *Heating, H.W.S. and ventilation:* Rosser & Russell, Ltd. *Electrical installation:* Troughton & Young Ltd. *Portland stone:* South Western Stone Co. *Slate cills and copings:* The Bow Slate and Enamel Co. *Facing bricks:* Henry J. Greenham Ltd. *Lift installation:* Waygood-Otis Ltd.; *Terrazzo:* Art Pavements and Decorations. *Sanitary fittings:* Stitsons Sanitary Fittings Ltd. *Gas installation:* North Thames Gas Board. *Pavement lights:* Lenscrete Ltd.

Offices and Shops, Birmingham. *Architects:* Cotton, Ballard & Blow. *General contractors:* Sir Robt. McAlpine & Sons (Midlands). *Sub-contractors: Stonework:* The Bath & Portland Stone Firms, Ltd. *West-*



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Offices, Dorking. *Architects:* Easton & Robertson. *General contractors:* John Laing & Son. *Sub-contractors: Heating and hot water:* G. N. Haden & Sons; Frenger Ceilings Ltd. *Electrical:* Drake & Gorham Ltd. *Lifts:* Waygood-Otis Ltd. *Steelwork:* Dawnays Ltd. *Plumbing:* J. H. Shouksmith & Sons. *Kitchen equipment:* Falkirk Iron Co. *Patent glazing:* British Challenge Glazing Co. *Windows:* Velux Co.; Crittall Manufacturing Co. *Slate cills:* Bow Slate & Enamel Co. *Sanitary fittings:* Adamsez Ltd. *Copper roofing:* Fredk. Braby & Co. *Cork tile floor:* G. Stephenson & Co. *Window control gear:* Arens Controls Ltd. *Asphalte:* Val de Travers Asphalte Ltd. *Lightning conductors:* J. W. Gray & Sons.

Offices, Brompton Road. *Architect:* Frank Scarlett. *General contractors:* Harry Neal Ltd. *Sub-contractors: Steelwork:* Dawnays Ltd. *Reinforced concrete:* The Square Grip Reinforcement Co. *Stanchion and beam casings, floor slabs:* Caxton Floors Ltd. *Windows:* James Gibbons Ltd. *Natural Portland stone:* Frank Mortimer Ltd. *Heating and mechanical ventilation:* Ellis (Kensington) Ltd. *Pump:* Pulsometer Engineering Co.

Offices, City of London. *Architects:* Trehearne & Norman, Preston & Partners. *General contractors:* Trollope & Colls, Ltd. *Sub-contractors: Metal windows:* The Crittall Manufacturing Co. *External faience tiles:* Carter & Co. (London). *Quartzite and green slate:* John Stubbs (Marble & Quartzite) Ltd. *Staircase balustrades, main entrance doors and screen:* Kingsmill Metal Co. *Terrazzo:* Art Pavements & Decorations, Ltd. *Sanitary fittings:* John Bolding & Sons. *Marble work:* J. Whitehead & Sons. *Heating and hot water and ventilation:* Young, Austen & Young, Ltd. *Lifts:* Waygood Otis, Ltd. *Electrical installation:* Trollope & Colls, Ltd. *Entrance hall lighting:* Heffer & Co. *Dry rise installation:* Independent Sprinklers, Ltd. *Hoses, fire extinguishers:* Pyrene Co. *Cooking equipment, etc.:* Benham & Sons. *Clocks:* Gent & Co. *Steel shutters:* Shutter Contractors, Ltd. *Wood block flooring:* Stevens & Adams, Ltd. *Asphalte tanking:* General Asphalte Co. *Ironmongery:* G. & S. Allgood, Ltd. *Window cleaning rail:* P. C. Henderson, Ltd. *Revolving doors:* T. B. Colman & Sons. *Internal tiling:* W. B. Simpson & Son. *Portland stone:* The Wandsworth Stonemasonry Works. *Reconstructed stone:* Malcolm Macleod & Co. *Lightning conductors:* J. W. Gray & Son. *Acoustic ceilings:* John Dale, Ltd.; British Hermeseal, Ltd.

Arts Building, Exeter. *Architect:* Sir William Holford. *General contractors:* John Garrett & Sons, Ltd.

Archaeology, etc., Building, London. *Architects:* Booth, Ledeboer & Pinckheard. *General contractors:* Dove Bros. Ltd. *Sub-contractors: Structural steelwork:* Aston Construction Co. *Asphalte:* Faldo Asphalte Co. *Facing bricks:* Williamson, Cliff Ltd. *Portland stone:* J. Bysouth Ltd. *Cast stone:* Girlings Ferro Concrete Co. *Westmorland slate facings:* Setchell & Sons. *Drainage and plumbing:* W. H. Earley Ltd. *Sanitary fittings:* Stitson Sanitary Fittings Ltd. *Heating and ventilating:* Richard Crittall & Co. *Electrical installation:* G. W. Franklin & Son Ltd. *Lifts:* Waygood-Otis Ltd. *Fire protection equipment:* Merryweather Ltd. *Internal telephones:* Reliance Telephones Ltd.

Jews' College, London. *Architects:* Yorke, Rosenberg & Mardall. *General contractors:* Bovis, Ltd. *Sub-contractors: Plumbing, heating and hot water:* R. J. Audrey, Ltd. *Electrical installation:* B. French, Ltd. *Windows:* Aygee, Ltd. *Lift:* Keighley Lifts, Ltd. *Portland stone:* South Western Stone Co. *Metalwork:* Wessex Guild, Ltd. *Sanitary fittings:* Stitsons Sanitary Fittings, Ltd. *Trench covers:* Broads Manufacturing Co. *Funton facings:* Eastwoods Sales, Ltd. *Roller shutters:* Haskins Rolling Shutters.

Flats, Lambeth. *Architect:* Leslie Creed. *General contractors:* Wates Ltd.

Flats, Kennington. *Architects:* Louis de Soissons, Peacock, Hodges & Robertson. *General contractors:* Walter Llewellyn & Sons. *Sub-contractors: Heating, plumbing & ventilation:* Ellis (Kensington) Ltd. *Roof trusses, etc.:* Dawnays, Ltd. *Prestressed concrete floors:* Concrete, Ltd. *Metal windows:* James Couper & Co. *Electrical work:* G. W. Franklin, Ltd. *Brickwork and roof tiling:* Finnis, Ruault & Nicholls, Ltd. *Terrazzo:* St. James Terrazzo Co. *Flooring:* Marley Tile Co. *Prefabricated concrete garage:* Woolaway Construction, Ltd. *Garage doors:* Westland Engineering Co. *Sanitary fittings:* Broad & Co. *Ironmongery:* Alfred G. Roberts, Ltd.

Flats and Houses, Blackheath. *Architect:* Eric Lyons. *General contractors:* Wates, Ltd. *Sub-contractors: Fireplace surrounds and back boilers:* B. Finch & Co. *Tile hanging:* Manchester Slate Co. *EJMA window frames:* Builders' Supply Co. *Ironmongery:* A. G. Roberts, Ltd. *Kitchen and fireplace fitments:* E. & H. Grace, Ltd. *Electrical installation:* A. & V. Baxter, Ltd.

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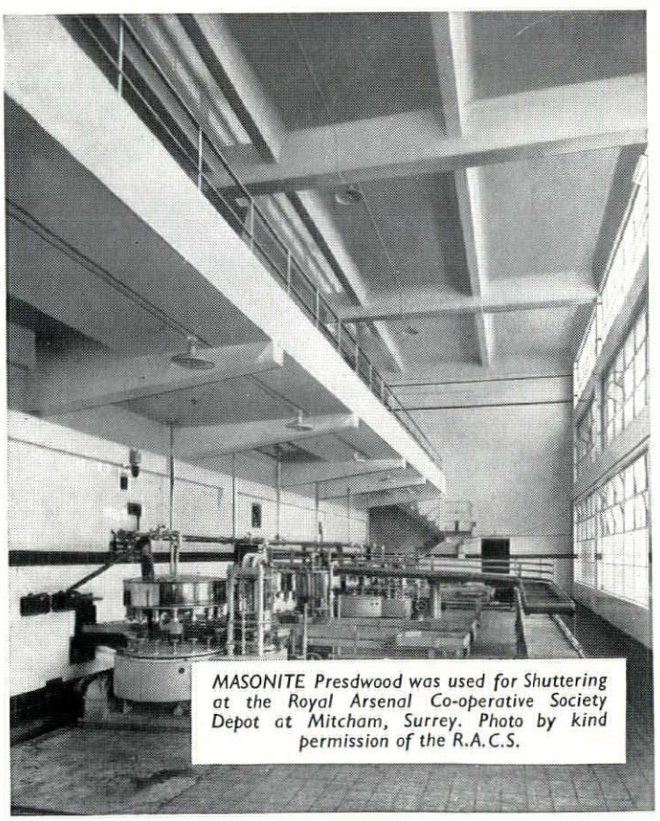

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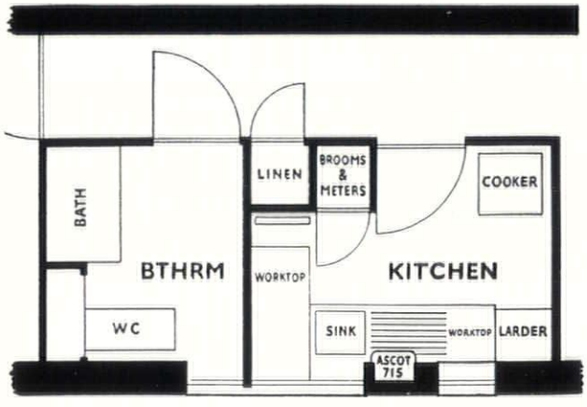

RESPONSIBLE AUTHORITIES

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Special School, Hampstead. *Architects:* LCC. *General contractors:* Howard & Co.

Infants' School, Basildon. *Architects:* Poulton & Freeman. *General contractors:* Warriner (Builders) Ltd. *Sub-contractors: 'Trofdek' roofing:* H. Newsum, Sons & Co. *'Stahlton' blocks and concrete kitchen roof:* Costain Concrete Co. *Felt roofing:* Mells Asphalt Co. *London stock bricks:* Eastwoods Sales, Ltd. *Special dark stocks:* Sidney A. Hunter, Ltd. *Sanitary fittings:* Adamsez, Ltd. *Metal windows:* Rustproof Metal Window Co. *Assembly Hall trusses:* Samuel Butler & Co. *Lavatory partitions:* Flexo Plywood Industries, Ltd.

Agricultural Students' Hostel, Writtle. *County Architect:* H. Conolly. *General contractors:* Arthur J. Arnold, Ltd. *Sub-contractors: Basement reinforcement:* Twisteel Reinforcement, Ltd. *Reinforced concrete floors, roofs and stairs:* Concrete, Ltd. *Metal windows and doors:* Crittall Manufacturing Co. *Brick facings:* London Brick Co. *Open web joists:* Metal Sections, Ltd. *Roof tiling:* Robert Adlard & Co. *Felt roofing:* Mells Asphalte Co. *Asphalt tanking:* Faldo Asphalte Co. *Perspex rooflights:* William J. Cox, Ltd. *Sanitary fittings:* John Bolding & Sons. *Suspended ceilings:* Thermal & Acoustic Installations Ltd. *Rubber flooring:* The Veitchi Co. *Thermoplastic flooring:* Rowan & Boden, Ltd. *Plastic wall finish:* Plastic Surfaces, Ltd. *Ceramic tiling:* Carter & Co. (London). *Mild steel balustrading:* S. W. Farmer & Son. *Cloakroom fittings:* B. Finch & Co. *Metal partitions:* Flexo Plywood Industries, Ltd.

Boys' House, Eton. *Architect:* Sir William Holford. *General contractors:* H. D. Bowyer.

Ship Testing Laboratory, Feltham. *Architects:* Ministry of Works. *General contractors:* Sir Robert McAlpine & Sons Co. *Sub-contractors: Bitumen felt membrane:* The Excel Asphalt Co. *Structural aluminium and steel:* Head Wrightson & Co. *Insulated roof decking:* D. Anderson & Son. *Metal windows and doors:* Aygee Ltd. *Observation windows (frames):* R. Smith (Horley) Ltd. (*glass lenses*) Pilkington Bros. *Aluminium surrounds:* A.P.V. Co. *Cradle track:* P. C. Henderson Ltd. *Sliding door gear:* The British Trolley Track Co. *Dock gates and guides:* R. H. Green & Silly Weir Ltd. *Patent east light glazing and roof lights:* S. Warner & Son. *Hollow tile floors:* The Kliene Co. *Concrete tunnel rings:* Kinnear & Moody Ltd. *Steel doors:* Henry Hope & Sons. *Asbestos cladding:* Brock Roofing Ltd. *Internal lining (erection):* Tentest Fibre Board Co. (*manufacture*) Flexo Plywood Ltd. *Main entrance door and frame surround:* The Ajax Architectural Products Ltd. *Balustrading:* The Culford Art Metal Co. *Joinery:* W. H. Gaze & Son. *Grille floors:* Grille Floors Ltd. *Bricks (Flettons):* Flettons, Ltd.; (*Wealdon Stocks*): Sussex & Dorking United Brick Co.; (*London Stocks*): Eastwoods Sales Ltd.; (*Flints, Internal facings*): Uxbridge Flint Brick Co.; (*Engineering*): Little Mill Co. *Glazing:* Aygee, Ltd. *Double glazing:* Pilkington Bros. *Reinforcing rod bar fixing:* Coble & Wells, Ltd. *Painting:* T. H. Kenyon & Son. *Plumbing:* J. H. Shouksmith & Sons. *Heating and ventilating:* J. Jeffreys & Co. *Road surfacing:* Home Counties Tarmacadam Contracting Co.

Physics Laboratory, Malvern. *Architects:* Ministry of Works. *Main contractors: Foundations:* Wilson Lovatt & Sons. *Superstructure:* Turiff Construction Co. Ltd.

Chemical Factory, Berkhamsted. *Architects:* Architects Co-Partnership. *General contractors:* J. L. Constantine & Co. *Sub-contractors: 'Trofdek' roofing:* H. Newsum Sons & Co. *Felt roofing:* William Briggs & Sons. *Sanitary fittings:* Adamsez Ltd. *R.C. frame:* The London Ferro-Concrete Co. *Patent glazing:* Williams & Williams Ltd. *Heating:* Weatherfoil Heating Systems Ltd.

Paper Mill, Wolvercote. *Architects:* Booth, Ledeboer & Pinckheard. *General contractors:* T. H. Kingerlee & Sons. *Sub-contractors: Structural steel:* Redpath Brown & Co. *Windows and canopies:* Henry Hope & Sons. *Asbestos roofing:* Turners Asbestos Cement Co.; The Midland Builders Supplies. *Flat roofing:* William Briggs & Sons. *Floors:* The Johnson Floor Co. *Ventilation and heating:* The Carrier Ross Engineering Co. *Goods lifts:* William Wadsworth & Sons. *Doors:* The Bolton Gate Co. *Facing bricks:* The London Brick Co.; (*internal*): Uxbridge Flint Brick Co.; (*blue brindles*): Stephenson & Co. *Sanitary fittings:* Shanks & Co. *Door furniture:* The Dryad Metal Works, Ltd. *Locks:* Josiah Parkes & Sons. *Locks (through):* G. R. Cooper & Co. *Paints:* Screeton Paintmaker, Ltd.

Factory Building, Harston, Cambs. *Architects:* Edward D. Mills & Partners. *General contractors:* W. & C. French Ltd. *Sub-contractors: Heating:* Wm. Freer Ltd. *Lockers:* Speedwell Gear Case Co. *Glass:* Pilkington Bros. *Glazing:* F. Bowman Glassworks Ltd. *Wood wool slabs:* Thermacoust Ltd. *Painting:* Kirby Maclean Ltd. *Paint:* International Paint Ltd. *Sanitary fittings:* Stitsons Sanitary Fittings Ltd. *Gault bricks:* Fisons Ltd. *Shower and W.C. partitions:* Venesta Ltd. *Railings:* Allen & Greaves Ltd. *Plumbing:* T. Simons & Sons. *Tiling:* Cope & Co. *Precast rooflights:* J. A. King & Co. *Metal windows:* James Couper & Co. *Ironmongery:* James Gibbons Ltd. *Coat hangers:* J. Sieber Equipment Co. *Electrical work:* Eastern Electricity Board. *Cat ladder:* Haywards, Ltd. *Terrazzo shower trays:* Jaconello, Ltd. *Mats:* Royal National Institute for the Blind. *Floor springs:* Yannedis & Co. *Asphalt roofing:* Val de Travers Ltd. *Facing bricks:* Henry J. Greenham (1929) Ltd. *Lighting fittings:* Hailwood & Ackroyd, Ltd.

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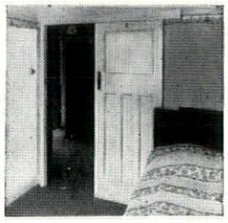

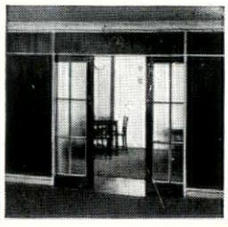



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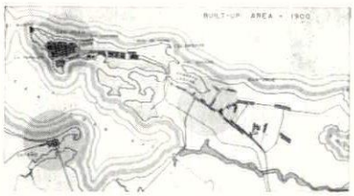
MARGINALIA

Plan for Puerto Rico

Prepared for the Fifth Inter-American Congress of Municipalities, Eduardo Barañano's report *A City is People* traces the urbanistic development of the San Juan area—which is now the metropolitan hub of Puerto Rico—from the time of Ponce de Leon's pioneer settlement to the present Master-plan, and onward to the anticipated planning pattern of the area in 1975. It is thus one of the most extended planning histories of any city in the new world, and not the least interesting fact that emerges is that it may truthfully be called a 'planning-history' as far back as 1521. In that year the pioneer settlement at Caparro was abandoned, and the colony was transferred to a new site on the island of San Juan, laid out with a regular grid plan and a central piazza. Even in 1800 this chess-board layout was only incompletely built up, and the development of the city did not begin to accelerate beyond a leisurely colonial pace until the end of the Nineteenth



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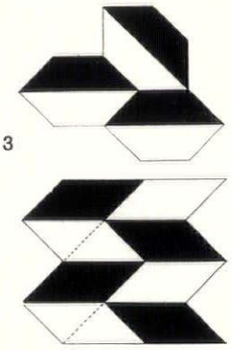
2

Century. From then on, the rate of growth has been spectacular and there is no more dramatic contrast in the book than between the maps for 1900 and 1920, in which the built-up area is nearly quadrupled, 1 and 2. Since then it has almost quadrupled again and the Puerto Rico planning board are faced with problems of a truly metropolitan scale.

Borromini Floorscapes

One of the oddities of architectural history that has received a certain amount of casual, conversational attention lately is the apparent irrelevance of Borromini's pavement patterns to the architectonic form of the space they floored. The subject has now been looked at systematically by Leonardo Benevolo (*Quaderno* 13 of the Rome University Institite of Architectural History) in a fascinating study that reveals, firstly, that most of the important Borrominian pavements depend from a single geometrical device, however various their forms, 3 and 4, and, secondly, that the irrelevance is probably deliberate. In an interior like Sant'Ivo, where plan and use of orders break away from Renaissance ideas of visual order such as supported central perspective, it is necessary to fix a view point ideally situated in the centre of the interior. This was intended, 5, and achieved (in spite of alterations, 6) by means of the paving pattern which runs in to a central focal figure, 7, which was more important to Borromini than the very untidy way the pattern butted against the foot of the walls.



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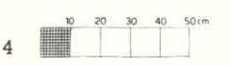

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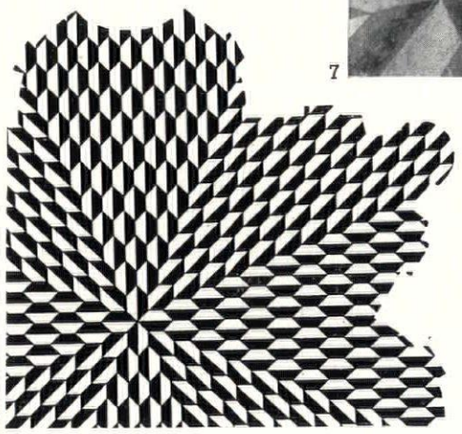

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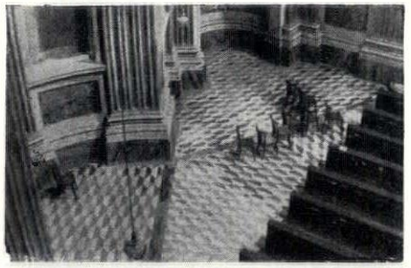

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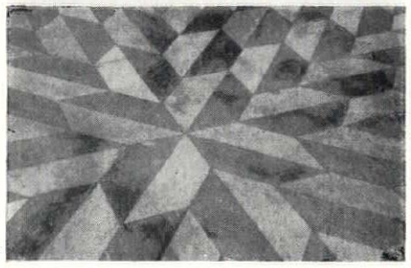

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Borromini floorscapes: *3 and 4, two Borromini floor motifs, from St. John Lateran and from St. Ivo, Rome. 5, the projected 'ideal floor' in St. Ivo. 6 and 7, the floor as built, showing how the centre stayed the same although the overall plan ceased to be radial.*

N.B.R.

The yearly National Buildings Record reports have come to mean one thing—a quick rush to the photographs with the anxious exclamation 'What's gone?' It really does seem as though the post-war toll of country houses is getting less—though, of course, there are progressively less and less country houses left to demolish. This year, the most ominous note is that four Chichester churches are going to be 'demolished or adapted to other uses.' Of the houses, the final decay of Belhus, Essex (Tudor and pre-Walpole Sanderson Miller) was a foregone conclusion—but why couldn't it have been unroofed and left as a ruin? The LCC estate nearby badly needs every foil it can get. Rushbrooke, Suffolk, is still intact, though doomed, with farm carts in the courtyard and dry rot in every timber—another clear case for leaving as a ruin, not demolishing altogether. The owners of these two houses were respectively the LCC and the Rothschild family: one would think that neither was depending on the demolition value of the bricks to balance their budget. Of the other houses, Bure Homage, near Christchurch, Hants, 8, should obviously not have gone; its prime fault was evidently that of being built far too near the dread date 1840 (actually 1835, by John Davies) after which nothing is likely to be preserved. We don't want a Society for Preserving Late-Herbert-Baker: but we do need some organization to look after the best buildings in every style.



8, *Bure Homage, Hants, demolished in* 1956. *15th Annual Report, N.B.R.*

CORRESPONDENCE

To the Editors,

SIRS,—Nairobi has in the past suffered not a little from the 'authoritative' views and advice of transient visitors: too many people stay a few weeks in Kenya and solve our problems in a best-seller. Now we have a new irritant in the form taken by Mr. Roger Johnson's exposé of our 'prairie planning'—the selection of out-of-date facts and photographs with which to demolish a planning scheme which exists only in Mr. Johnson's imagination.

The selection of flat, featureless plain for a new airport at Embakasi, some nine miles from the city, has provided your contributor with a photograph which lends credulity to his description of the 'unreclaimed wilderness without'—an unworthy term for the very many beautiful and well-developed farming and residential districts outside the city's boundaries.

We are still *building* a city: it is at present little more than half-developed, and in the areas of City Square depicted, it is only 25 per cent developed. The intimate character which Mr. Johnson desires for our City Square is taken care of in our plans, but cannot be shown by air photographs of an incomplete centre taken two years ago. Your readers should be reminded that £8 million worth of *private* building is being approved annually in the city: this excludes public (Government, High Commission and City Council) construction. Incidentally, Nairobi's population is given in your article as 100,000: it is in fact approximately 215,000.

As in cities throughout the world, Nairobi's town planning decisions are made by elected Councillors. It is incorrect to suggest that decisions of Council are not based on advice from technical experts.

The legislative pattern behind development of the central area of Nairobi, which is in Crown ownership, does not depend on watertight zoning. A detailed development plan has been prepared and approved by the Crown and the City Council. The basic pattern is not in the Beaux-Arts affectation; its aim is a compact urban setting contrasting with attractively planted open spaces. We inherited a legacy, despite the youth of the city, of patternless main streets conforming to the old routes of a township begun in the frontier spirit, but as vertical development takes place we shall achieve a well-proportioned urban setting. We envisage cafés overlooking secluded, shaded walks designed for shopping and leisure in close proximity to main streets, and this must be done with full regard for our car-parking and transport problems. We have an exceptionally high car population—the private car will be the most important mode of travel for Nairobi shoppers for many years to come.

The majority of car parks are planned on the fringe of the central area adjoining radial highways, thus preserving a more closely-knit centre and avoiding the necessity for the long-term car parker using the central area roads. These car parks will be planted with shade trees.

The core of the new area, not shown in your photographs, is planned as an open area, and a vista from the flat town centre to wooded slopes will be preserved. This open area will be developed with shade trees, walks, lakes and secluded picnic spots because many Nairobi office workers prefer to take a picnic lunch in the open air instead of joining the traffic stream to the out-

skirts of the city. This park-like centre will be readily accessible to pedestrians from all parts of the commercial area.

Present and past experience shows that to permit workshops for furniture makers, tinsmiths and shoe repairers as an integral part of the shopping centres would result in a deterioration in retail trade and would inevitably breed slums.

An acute shortage of staff during the last few years has prevented the preparation of desirable publicity material on plans for our city centre, and this lack of publicity perhaps accounts for the misconceptions on which your contributor has based an academic study. The City Planning Office is able to indicate by plans and models to anyone interested the form in which the city will develop.

Yours, etc.

JAMES SMART,
Public Relations Officer.
Town Hall, Nairobi.

To the Editors,

SIRS,—Mr. R. Johnson, in his article 'Prairie Planning of Nairobi,' suggests development schemes more valid for towns with an English history and background. This is all very well for Coventry, a concentrated, over congested town, but bears little relevance to a Central African town. Mr. Johnson does not attempt to understand the history of such a town. It is as if we attempted to replan the City of London without reference to its special history and the real facts of its present condition.

The feeling of spaciousness in Central African cities is mainly given by the wide streets, but these are the outcome of necessity, as street widths were governed by the turning circle of a waggon with full span of oxen—this being the transport of the pioneers. Business properties were set up on either side of the streets and these boundaries remain today.

Early properties were large and easily obtained and with development of the city itself, expansion naturally took horizontal rather than vertical lines. It must also be remembered that many-storied buildings were not necessary at this time and also impossible for these parts where materials were expensive and hard to come by.

I would have thought that a developing, spread-out city would offer far more possibilities for future planning than the existing congested city and of these there are many examples in England where replanning is being done with the sole intention of creating space. The wide streets of our Central African cities at least solve many a parking problem and also, with contemporary buildings reaching upwards to the sky, the daylight problem to the streets between is not as troublesome as it has been in Eastern cities. Given time, Nairobi will develop beyond recognition—at its present stage it is only a baby with its future life being planned by capable hands.

Comment on Mr. Johnson's sketch for an integrated townscape is difficult. What can and can't be done in the way of racial mixing is a very open question nowadays. But, if Mr. Johnson cares to re-read his pretty little description of the view of life that might go on in his new scheme, he will find it should be spoken in broad American as the sun sets at the end of the travelogue film.

Yours, etc.

ROY GARRATT.
Salisbury,
Southern Rhodesia.

[*Mr. Roger Johnson replies:*—Having lived in Kenya for 3 years I can understand Mr. Smart's irritation with 'authoritative' views of transient visitors. I can understand, too, that in his official position he must present Nairobi in its most favourable light. I would assure him that the object of the article was not to denigrate Nairobi: one only criticizes what one cares about, and in this case the criticism stemmed as much from the disappointment at seeing a place of definite character grow into a typical Afro-American city with so few redeeming features, as from the general points expressed in the article.

I wish the planning scheme did, as Mr. Smart asserts, exist only in my imagination. If this is so, a radically new plan must have emerged in the last 18 months. The population figures, 120,000 in the 1949 census and 215,000 today, and the suggestion that 2-year-old photographs are not valid, merely emphasize the rate of growth. Today, there are a few more large blocks in the City Square, but they are hardly likely to change its overall character. The idea of a pedestrian core of high density and with qualities of urbanity has been missed by Mr. Smart who mentions, as a core, an area which will, in effect, be a park.

The article attacked, amongst other things, the geometrical planning of wide-open layouts within cities, the lack of a humane townscape, and the domination of the motor-vehicle in the city centres. Mr. Smart's official defence sounds complacently plausible and will no doubt satisfy all those who believe that all is for the best in these developing new cities of Africa. I beg to remain amongst the unconvinced.

In reply to Mr. Garratt—The special plea of the Nairobi article was that we should try to create a sense of urbanity, rather than an agglomeration of buildings which can neither reflect the breadth of the African landscape, even if it were desirable, nor provide the urbane pleasures and convenience that a city should provide.

Like Mr. Garratt, I do not agree with the superimposing of the solution of one place or country indiscriminately on to another; this has been done in too many cities in Africa. I do believe that some of the methods of achieving this sense of urbanity can be applied to many parts of the world and be equally valid.]

Joseph Emberton, 1889-1956

Joseph Emberton, who died at the age of 66 last November, designed a number of buildings which are among the best in the style of the 1930's, notably Simpson's store in Piccadilly (1936) and the HMV shop in Oxford Street (1939). But if one tries to look at his work as future historians of the Modern Movement in England will, his two most important works are no doubt Olympia and the Royal Corinthian Yacht Club at Burnham-on-Crouch, the one designed in 1929 and illustrated in THE ARCHITECTURAL REVIEW in 1930 (vol. 67), the other built in 1931 and illustrated in 1932 (vol. 72). Their significance is not of the same kind. Olympia, blamed by Reilly for looking like the heaviest concrete while being of brick, represents aesthetically the climax of the influence on England of the style of the Dutch of Dudok's generation; massive walls, arbitrarily arranged windows in bands of excessive lowness; some angular ornament of a queer un-English type. The position of the building in Emberton's career is not without interest.

He had, after some training in his native Staffordshire and at the Royal College of Art, and after some work under Trehearne and Norman on their showy Kingsway buildings, met Thomas Tait and joined his firm, i.e., Sir John Burnet's firm. He worked on Adelaide House, one of the first unfussy, un-period office buildings of London. The reaction to this experience is the office building for Austin Reed's in Red Lion Square, designed by Emberton in 1925 in partnership with P. J. Westwood. Tait then, for a short time, went further than Emberton in compliance with the new ideas from the Continent. His houses for Crittall's at Silver End (AR vol. 64, 1928) are white cubes. But then, contemporaneously with Emberton, it seems, Tait also discovered the Dutch. Dudok became his guiding star (Masonic Hospital, Ravenscourt Park, AR vol. 74, 1933, Curzon Cinema, etc.). But whereas Emberton's first designs for the club at Burnham (AR vol. 67, 1930, p. 317) were purely Dutch, with the typical raked joints of the horizontal bands, he changed his mind and style immediately after, and the executed building is the first in England to register the change to a great lightness and transparency which had taken place with international consequences when Asplund designed the Stockholm Exhibition of 1930. Had Emberton seen it? In any case plenty of illustrations were available (AR vol. 68, Aug., 1930).

The club still makes a very good show today. It has not aged in its design at all, and, in spite of the disappointing quality of some of Emberton's more recent building, such as the high flats at Finsbury (1954), establish him as one of the dozen or so of English architects of his generation who will not sink into anonymity.

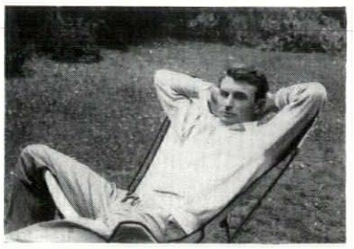
Architect of the School at High Wycombe (pages 93-97), **Denis Clarke Hall** was born in 1910 and started his own practice in 1937; since 1946 his contracts have amounted to £3,858,000.

Architects of the House at Cookham (pages 115-116), **Planning Design Team** (born 1951) whose partners are Malcolm Andrews, Alan Emmerson, Julian Keable, Harley Sherlock and Harry Spencer, offspring of the AA School of Architecture and the policy of Robert Jordan. Education: through group work and the rewriting of school programmes. First job (unbuilt):



£20,000, canteen and store for Messrs. Watliff (Commutators) Ltd.; second job (built): contract sum £20, 'sun window' for A. O. Hincheliffe, Esq. On leaving school, one partner was employed on the work brought in by the other four. The latter worked in a wide variety of jobs and types of office, the conscious policy being to gain experience in every possible field. Incomes were shared. A pair of houses large enough to provide a flat for each partner, and office space for group work were bought in Canonbury. In this way close touch was kept between members working 'in' and members working 'out.' In 1955 Harry Spencer left the group to start his own practice. Now all four remaining members are fully employed in the practice.

Architect of the House at Seal (pages 117-118), **Nevill Tufnell** was educated at Eton and Trinity, Cambridge (Architectural School) and entered the RA school in 1950. Was briefly with Prof. Richardson's firm but did not think much of London as a place to work in, and tried



designing sailboats with fancy sails but this was too expensive. Worked at times for Carter and Salaman of Petersfield and went to Cambridge in 1955 to work for Hughes and Bicknell. Hobbies are cars, painting, holidays abroad in the sun and do-it-yourself-ing.

ACKNOWLEDGMENTS

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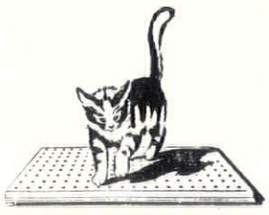

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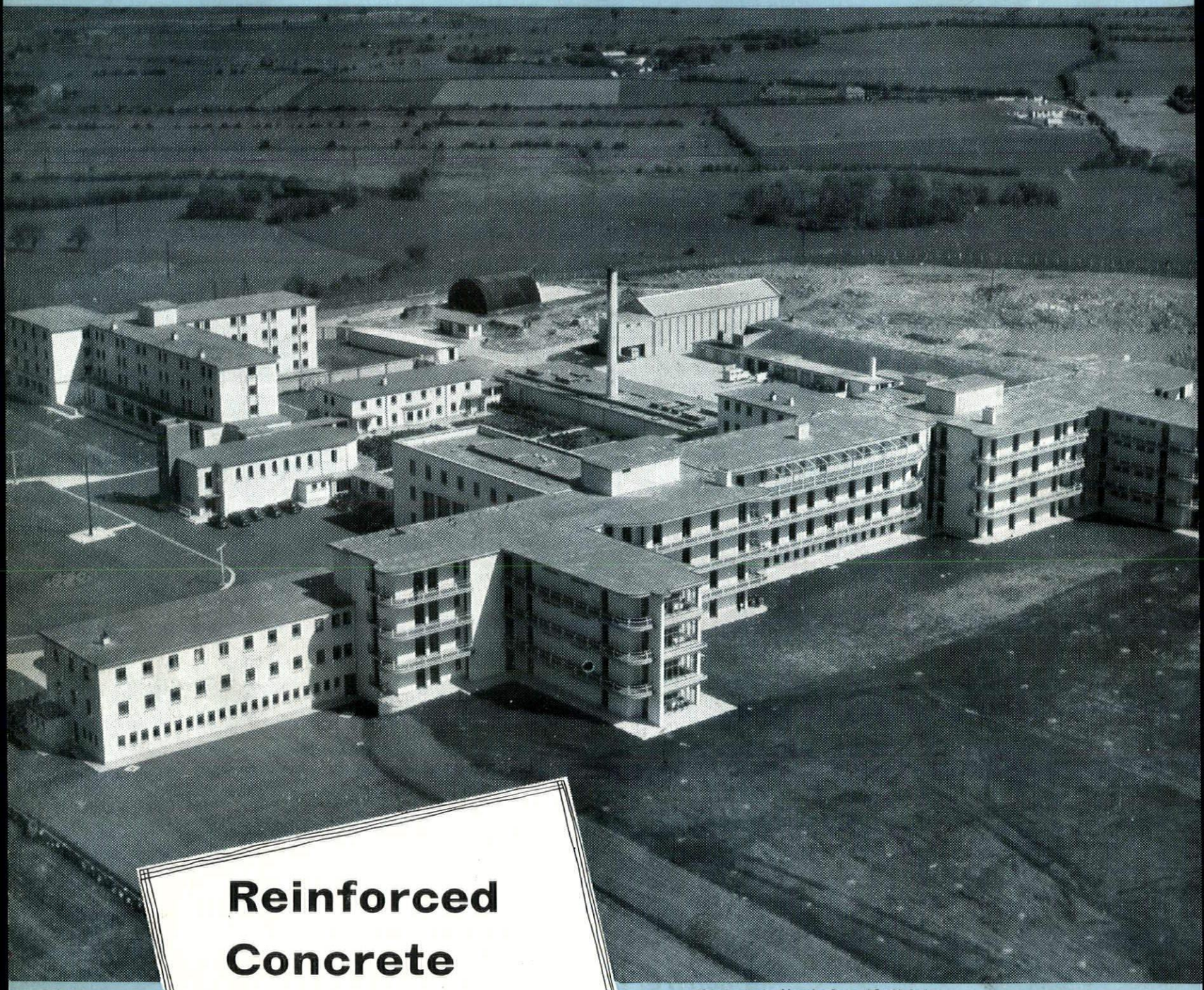

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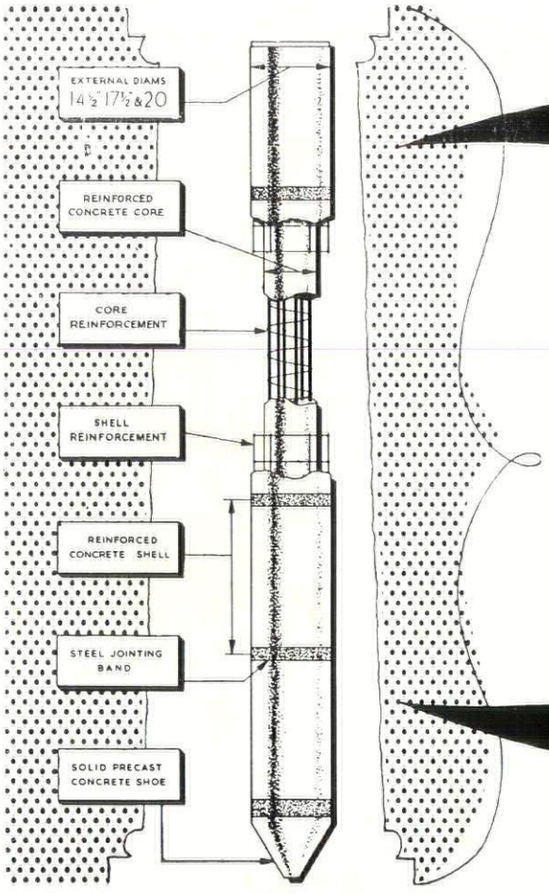

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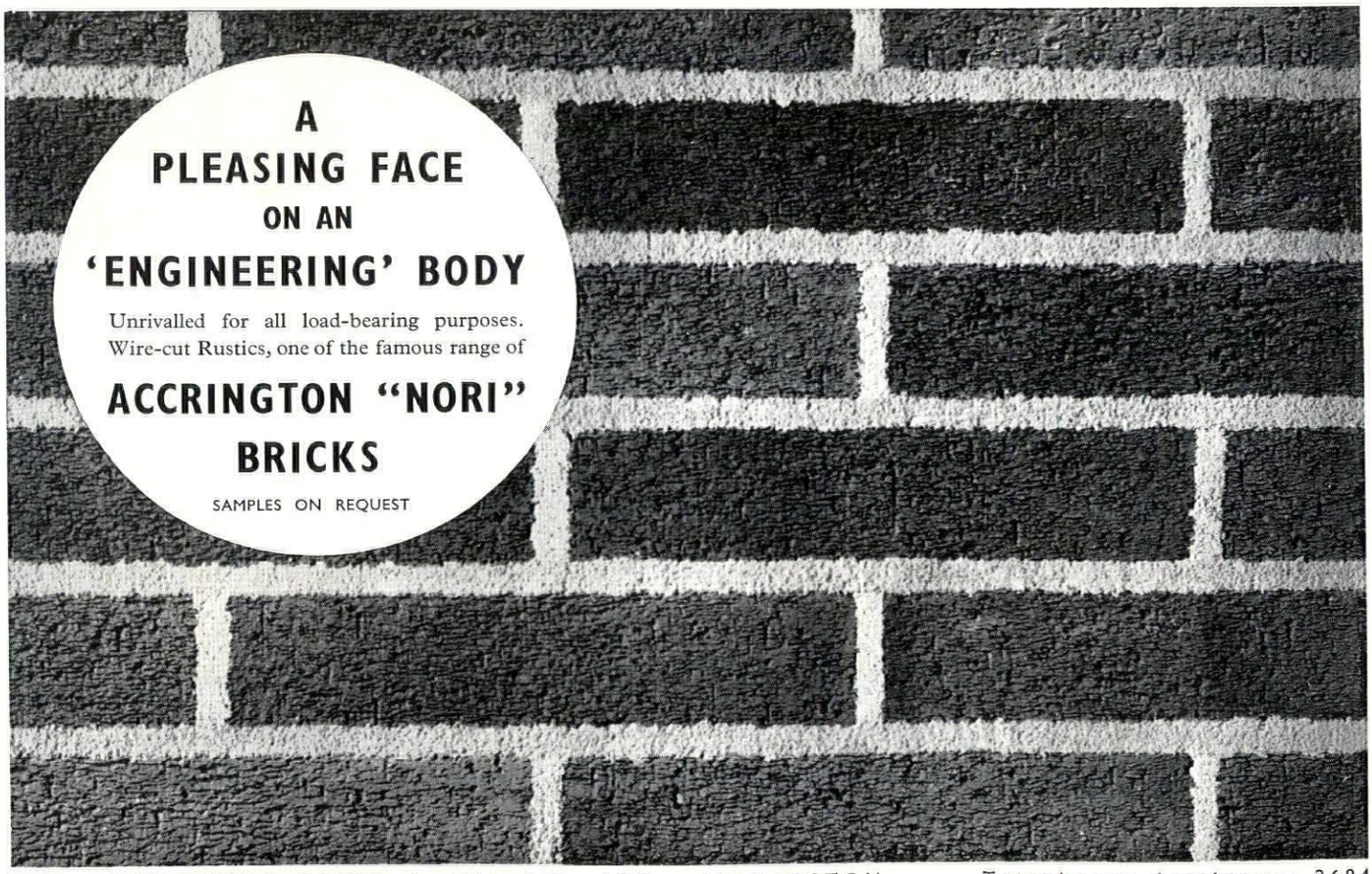

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THE ARCHITECTURAL REVIEW

Volume 121 Number 721 February 1957



This Month's Cover, crammed with saleable goods like the facades and counters of the shops and stalls that appear in it, reinforces a point of fundamental importance in Herbert Tayler's article on shops (pp. 98-104)—that there exists a basic vernacular tradition, nation-wide in its distribution, of treating the goods to be sold as more important than the shop they are sold in, a folk-poetry of insistent repetition and cornucopial plenty. This tradition reaches the level of conscious architectural design only, at present, in self-service stores, but its extension and development into other fields of selling might well be the foundation of a more healthy body of shop design.

81 **Marginalia**

82 **Correspondence**

84 **Frontispiece**

85 **Ornament and Crime** *by Reyner Banham* By now, the idea of an undecorated architecture has acquired so nearly the status of a moral absolute, or law of nature, that it is difficult to believe that it is more or less the work of a single mind. Whatever might have been said before in disapproval of certain kinds of ornament, it was Adolf Loos, the Viennese essayist and architect of the first quarter of this century, who first propounded a positive and encyclical condemnation of decoration in architecture and product design—and so forcefully phrased that it biased the whole Modern Movement against decoration. This anathema was propounded in an essay entitled *Ornament and Crime*, published in 1908, and Mr. Banham attempts, for the first time in the half-century that its ideas have been in circulation, a critical study of the essay, its argument, its historical setting, and the mechanisms by which it became known to the Modern Movement as a whole.

89 **School at West Bromwich:** *Architects, Richard Sheppard and Partners.*

93 **School at High Wycombe:** *Architect, Denis Clarke Hall.*

98 **Shops** *by Herbert Tayler* There are no historical shop interiors—they are one of the most transient types of design in which an architect may be employed, and their exteriors are only a little more permanent. Yet shops, as such, are as old and as universal as urban civilization, and have become one of the most influential showcases of the designer's art. But the encounter between art and commerce is not always visually or commercially successful. Mr. Tayler surveys the present state of this encounter, the revolution in shop design that has followed the war, the disparity in design between different classes of shops, the time-lag between metropolis and provinces, the failure of clients to extract optimum performance from their architects, the frequent tendency of architects to impose a style on the merchandising process, rather than extracting a style from the goods and the sales technique. The aim, he proposes, should be to give shops a functional, varied, realistic and appropriate character, within the modern style; to create a commercial vernacular, whose provincial manifestations should be the basis, not the debasement, of shop design.

105 There follows an illustrated commentary on some of the best contemporary shops *by Ian Hodgson.* Whether it is for good or evil, the West End of London contains the shops that set the style for the rest of the country, and Mr. Hodgson's study of recent examples of shop design concentrates mainly on this area. Even here he finds that a good deal is still wanting, in spite of the excellent work that has been done by a few architects for a few firms of retailers, travel agents and so forth.

112 **Bohemian Hawksmoor** *by Nikolaus Pevsner* In spite of the fact that we are usually right when we think of Continental examples of Gothic Revivalism as signs of English influence at work, there are a few isolated and independent Revivalists working ahead of the spread of English tastes. One of the most striking and original of these pioneers was Santini, whose characteristic works in Bohemia date from the first quarter of the eighteenth century, who was born a little after Hawksmoor and Vanbrugh, and died in the same year as Wren. Dr. Pevsner examines the nature of Santini's work and its sources both in late German Gothic and in the patterns to be found in Baroque plaster work, observes its relations with the rise of the Rococo, but finds it an historical freak, without followers of any significance, and without any appreciable influence on the rise of a more general German Gothic taste some thirty years after his death.

115 **House at Cookham, Berks.:** *Architects, Planning Design Team.*

117 **House at Seal, Kent:** *Architect, Nevill Tufnell.*

119 **House at Grantham:** *Architects, Gordon and Ursula Bowyer.*

121 **The Early Works of Soane** *by Dorothy Stroud* The study and evaluation of the architecture of Sir John Soane have both suffered from the fact that so little of his work has survived. However, a number of his early works have recently been identified or discovered, and it is possible now to form some kind of picture of his output from the time of his unfortunate encounter with the Bishop of Derry to his installation as architect to the Bank of England. As Miss Stroud points out, it is only in one of the designs for gateways at Langley Park that any promises of his highly personal mature style may be observed, though great originality and professional competence in the employment of established styles is apparent from almost the earliest identifiable works from his pencil.

123 **Current Architecture**

Miscellany

127 **History**

128 **Exhibitions**

130 **Architecture**

130 **Travel**

133 **Outrage**

135 **Books**

Skill

137 **Design Review: Household Storage**

141 **External Pavings** *by Robert Maguire* Now that conscious design of the ground on which we tread—Floorscape, that is—has re-established itself as part of the architect's interest and responsibility, the need arises to survey the range of ready-made and *in situ* materials available. In this, the first of two articles on the subject, Mr. Maguire surveys the types of flags, tiles, setts, and so forth, at the designer's disposal, and underlines the fact that the choice is not between sympathetic traditional materials, and unpleasant modern ones, but that within the range of economically practicable concrete products there is already a wide choice of admirable types and surfaces.

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

Authors: *Herbert Tayler*, F.R.I.B.A.; born in Java, of Scots and Dutch parents; both grandfathers engineers. Travelled much *before* training at A.A. School (a good arrangement) as well as after. In private practice now with David Green in Suffolk and London. Loves music and gardening and is an Associate of the I.L.A.; has struggled with partner against subtopia for ten years in own housing work before it became fashionable. *Ian Hodgson*, architect: born 1927 at Upper Norwood, 5th of 11 children of enterprising if consequently penurious parents: began work at 14 in reinforced concrete engineers' office and took to architecture in 1947 with various jobs between ranging from solicitor's clerk to schoolmaster: qualified part-time while working for Professor R. D. Russell, mainly on interior and furniture design: married, 1949, architect Uta Pevsner, has three children: too busy supporting and helping to rear family to have hobbies but enjoying it.

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THE ARCHITECTURAL REVIEW

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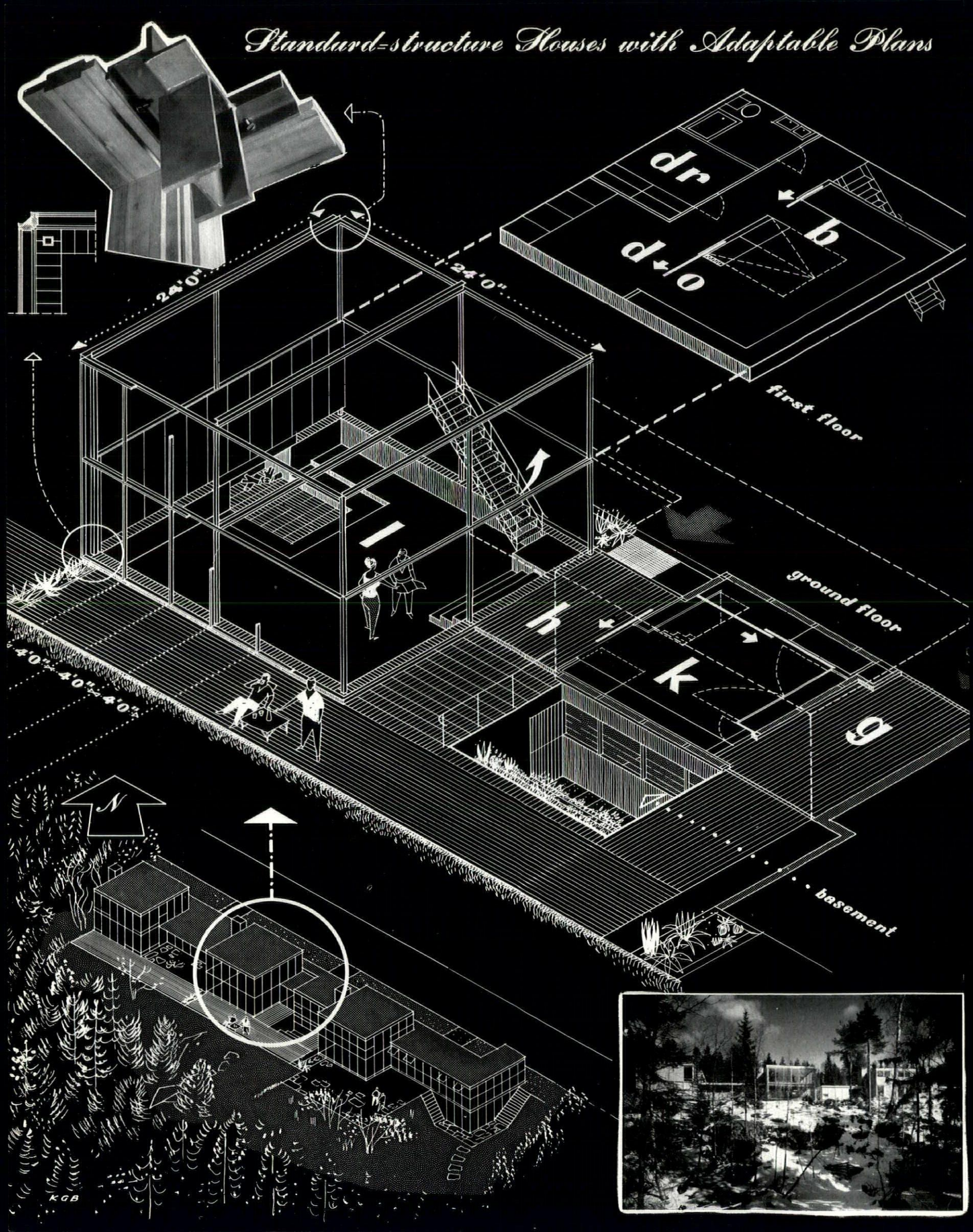
Standard-structure Houses with Adaptable Plans



To combine variable use with standard structures has long been one of the vital problems of modern architecture, and this perennial dialogue between structure and function has found a distinguished solution in these three houses near Oslo by Korsmö and Norberg-Schulz, analysed diagrammatically by Kenneth Browne.  *The centre house, occupied by Ärne Korsmö and his wife, utilizes the spaces provided by the standard frame as follows:* **g**, *garage;* **k**, *dual-purpose kitchen-workshop (with permanent workshop in basement below);* **h**, *hall, also serving as stage, when* **l**, *living room, becomes an auditorium;* **dr**, *dressing room, serving* **b**, *bedroom, which becomes part of* **d-o**, *drawing office, when beds are folded away. This ingenious arrangement by no means exhausts the possibilities of the frame, and variants are discussed in a note on page* 130.

Reyner Banham

ORNAMENT AND CRIME

THE DECISIVE CONTRIBUTION OF ADOLF LOOS

Everyone knows that Modern Architecture is undecorated. This concept is the layman's recognition check: flat roof, big windows, no decoration. It is also one of the great seminal half-truths that have now become rules of design morality. But how did this state of affairs come about? Did the spirit of the times command? Did the *Zeitgeist*, like a baroque angel, swoop down to stay a thousand pencils as they held poised above the beginning of an Ionic volute or an Art Nouveau lily?

In this particular case we can put these art-historical miasmas back where they belong, and recognize that they are the cloaks of ignorance. Ideas do not bumble about in the abstract, looking for somewhere to settle. They are formulated in the minds of men, and communicated from man to man. The *Zeitgeist* is primarily a record of our ignorance of the communications that took place in any particular epoch—grandiose statements of the order of 'Perspective was not the discovery of any one person, it was the expression of the whole era,' are simply a roundabout way of admitting that we don't know to whom Brunelleschi talked before he talked to Manetti, and that we would rather not go to the labour of drawing up the family tree of personal contacts that runs from Brunelleschi to all the great perspectivists of the Quattrocento.

We are a bit too glib in presupposing diffuse cultural forces that act upon creative minds like the weather or the common cold, and a little too chary of conceding that some one specific person at some determined (if no longer determinable) moment must have been the first to conceive of central perspective, the undulating facade, architecture without ornament.

To us, now, the idea of an undecorated architecture has so nearly the status of a

Mosaic commandment, to be flouted in practice but never queried in theory, that it is difficult to conceive of it as the thought of one man, and much easier to refer it back to the collective unconscious of the pioneers of Modern design. But the surviving literary evidence from the first twenty years of this century does not reveal any widely diffused hostility to decoration. There were ideas like Significant Form that were later to reinforce such a hostility when it had taken hold; there was a certain suspicion of past styles of decoration; there was even a certain indifference to ornament, articulated by Geoffrey Scott and earlier by Auguste Choisy, as the feeling that ornament was something that one might do without if one's command of formal composition was sufficiently sure. But only in the writings of one man, the Viennese architect Adolf Loos, will one find a positive anathema on ornament.

Did Adolf Loos, then, beat ornament single-handed? He certainly thought so himself, for he wrote in the introduction to his book *Trotzdem*, published in 1930, 'I have emerged victorious from my thirty years of struggle. I have freed mankind from superfluous ornament.' This is an uncommonly big claim even for a big-talking movement like Modern Architecture, and it needs scrutiny. But scrutiny will be facilitated if we look first at the weapons with which he fought. The example of his buildings was not decisive—their exteriors are sometimes, but not always, plain; the interiors, though devoid of decorative objects for the most part, exhibit almost a milliner's sense of the decorative qualities of wood and marble, fairface brick, turkey carpets, glass and metal. His doughtiest blows at ornament were struck in print, and the doughtiest of all in one single essay, published in 1908.

Its title is an eye-blacker for a start, *Ornament und Verbrechen:* Ornament and Crime. It brings the reader up with a jerk and sets his stock responses jangling. It is probably the first appearance of that pugnacious moral tone that was to characterize the writings of the Twenties and Thirties, and the opening paragraphs fully sustain this bourgeois-blasting, damn-your-delicate-feelings attitude:

> The human embryo goes through the whole history of animal evolution in its mother's womb, and when a child is born his sensory impressions are those of a puppy. His childhood takes him through the stages of human progress; at the age of two he is a Papuan savage, at four he has caught up with the Teutonic tribesmen. At six he is level with Socrates, and at eight with Voltaire. At this age he learns to distinguish violet, the colour that the eighteenth century discovered—before then violets were blue and tyrian was red. Physicists can already point out colours that they have named, but that only later generations will be able to distinguish.
>
> Children are amoral, and so, for us, are Papuans. If a Papuan slaughters his enemies and eats them, that doesn't make him a criminal. But if a modern man kills someone and eats him, he must be either a criminal or a degenerate. Papuans tattoo their skins, decorate their boats, their oars—everything they can get their hands on. But a modern man who tattoos himself is either a criminal or a degenerate. Why, there are prisons where eighty per cent of the convicts are tattooed, and tattooed men who are not in prison are either latent criminals or degenerate aristocrats. When a tattoed man dies at liberty, it simply means that he hasn't had time to commit his crime.
>
> The urge to ornament oneself, and everything else within reach, is the father of pictorial art. It is the baby-talk of painting. All art is erotic.
>
> The first ornament born, the cross, is of erotic origin. The earliest art-work, the first creative act of the earliest artist, was smudged on the cave wall to let off emotional steam. A horizontal stroke, the reclining woman; a vertical stroke, the man who transfixes her. The man who did this felt the same impulse as Beethoven, was in the same heaven of delight as Beethoven composing the Ninth.
>
> But the man of our own times who smudges erotic symbols on walls is either a criminal or a degenerate. It is clear that this violent impulse might seize degenerate individuals in even the most advanced cultures, but in general one can grade the cultures of different peoples by the extent to which lavatory walls are drawn upon. With children this is a natural condition, their first artistic expressions are erotic scribblings on the nursery wall. But what is natural to children and Papuan savages is a symptom of degeneracy in modern man. I have evolved the following maxim, and present it to the world: The evolution of culture marches with the elimination of ornament from useful objects.

This is still a tremendous performance nearly a half-century after its composition. . . . But it won't stand re-reading. This is *Schlagobers-Philosophie*, that whisks up into an exciting dish on the café table, and then collapses as you look at it, like a cooling soufflé. It is not a reasoned argument but a succession of fast-spieling double-takes and non-sequiturs holding together a precarious rally of clouds of witness—café-Freudianism, café-anthropology, café-criminology. The testimonies of these various witnesses don't really support one another, but they must have appeared convincing at the time, partly because they were all new and hot, but more especially for an overriding reason that will be discussed later. But Loos has no intention of giving the reader time to pick the argument to pieces, he wants to detail the poor response that the world made when presented with his 'maxim.'

> I had thought with this rule to bring a new joy into the world, but no-one has thanked me for it. Rather, people have pulled a long face and hung their heads. What oppressed them in my discovery was the proposition that no new ornament could be invented. Were we, men of the nineteenth century, to be incapable of doing what the simplest negro, the men of every previous age or nation, had been able to do?

'Men of the nineteenth century'—this must mean that the maxim had been enunciated in the Nineties originally, and at that time, with Viennese Art Nouveau flourishing like a rain-forest, it must have sounded more mad than sad. Loos, however, followed it up with Old Testament rhetoric.

> Then I said: Weep not. Behold the true greatness of our age,

that it can no longer bring forth ornament. We have vanquished decoration and broken through into an ornamentless world.

Behold. The time is at hand and fulfilment awaits us. Soon the pavements of our cities shall glisten like marble; Like Zion, the holy city, the Capital of Heaven.*

But no-one thanked him. What had gone wrong? Almost inevitably, he alleges an Imperialist plot: Certain reactionaries rejected his prophecies, the Austrian state continued to support and subsidize a reign of ornamental terror, retarding progress, making people wear felt boots instead of rational footwear, because it had found that a backward people was easier to govern. Some citizens of the Austro-Hungarian Empire were so backward that they had not yet been converted to Christianity, would have been looked down on by the Goths and Visigoths. Happy the country that has no such stragglers! Happy America!

America for Loos, as for so many of the pioneers, was the promised land of technology. Not a word about the Indian reservations or the hookworm belt, nor the coloured slums of the Northern cities, which he must have seen on his visit to the U.S. Americans were his ideal Twentieth Century men and

When two men live side by side, all things else being equal, the twentieth-century man gets richer, the eighteenth-century man gets poorer, assuming that each lives according to his inclinations, for the man of the twentieth century can cover his needs with smaller outlay, and thus make savings.

The vegetable that tastes good to him when simply boiled in water and glazed with butter, is only palatable to the other when served with honey and nuts, after the cook has slaved over it for hours. Decorated plates are expensive, whereas the plain white crocks that modern man prefers are cheap. One saves, the other overspends, and it is the same with nations. Woe to a people that hangs back from cultural progress. The English get richer, and we get poorer.

What would he have made of a Cadillac economy, where undecorated goods are apt to be in an inaccessible luxury price-bracket, while ornamental products are within the reach of all but the most depressed strata of society? One can guess, for a few paragraphs later he sketches in a satirical draft of a high-obsolescence economy, where everything is highly decorated and thrown away almost as soon as it is made, and everyone swims in wealth and well-being. But it is only a satirical view of a vulgar 'Land of Cockayne.' He is not envisaging it as a way of life that need be taken seriously, nor one that he wants any part in. He exhibits here that peasant streak so common in reformist aesthetes, and can see objects of use only as possessions whose market value must be maintained, not as equipment to be discarded when technically obsolete. Not for him the scrapping economy implicit in Futurism's 'Every generation its own house,' or Le Corbusier's 'On jette, on remplace.' In fairness one should note that he could accept expendability in trashy materials: 'I can accept papier maché in an artists' club, run up in a couple of days, torn down when the exhibition is over. But to play ducks and drakes with golden sovereigns, to use banknotes to light cigars, to crush pearls and drink them—*das wirkt unästhetisch.*'

But in skipping on thus far we have overpassed the vital paragraph that holds the historical key to 'Ornament and Crime,' and explains the instance of its writing and the immediate power of conviction that it undoubtedly possessed.

Now that ornament is no longer organically integrated into our culture, it has ceased to be a valid expression of that culture. The ornament that is designed to-day has no relevance to ourselves, to mankind at large, nor to the ordering of the cosmos. It is unprogressive and uncreative.

What has happened to the ornamental work of Otto Eckmann? What has happened to van de Velde? The artist used to stand for health and strength, at the pinnacle of humanity, but the modern ornamentalist is either a cultural laggard or a pathological case. He himself is forced to disown his own work after three years. His products are already unbearable to cultured persons now, and will become so to others in a little time. Where are now the works of Eckmann, and where will those of Olbrich be ten years from now? Modern ornament has neither forbears nor descendants, no past and no future. It may be received with joy by uncultured folk, to whom the true greatness of our time is a book with seven seals, but even by them in a short time forgot.

That fixes him in time. Where other men of his day may have had an uneasy feeling that Art Nouveau was losing its impetus, he had a personal quarrel with Hoffmann and the *Wiener Sezession*, and any stick would serve to beat the *Wiener Werkstätte*. For all that, it took courage—truculence even—to launch these personal attacks at a time when the world reputation of both *Sezession* and *Werkstätte* were at their height, and had made Vienna a centre of artistic pilgrimage. On the other hand, the crack-up was already signalled. Long-witted operators like Peter Behrens were quietly sloughing off Art Nouveau, and that symptomatic young person Charles Edouard Jeanneret was, in the very year of 'Ornament and Crime,' telling Josef Hoffmann he could keep his *Werkstätte*, recognizing that it was no longer creative. In articulating his quarrel with the *Sezession*, Loos was polarizing the attitude of a generation to decoration, as surely as Marinetti in the next few months was to polarize its attitude to machinery. In a time of decision his was a decisive gesture.

The decision taken, his position was clear: all forms of cultural regression are crime and waste; ornament is cultural regression and must therefore be a waste and a crime; worse than that, sex-crime. With his position so clearly given, and in such forthright terms, it comes as a further shock to find him hedging the issue with soft options.

I address myself particularly to those natural aristocrats who stand at the summit of human progress, and yet have the deepest understanding of the needs and impulses of lesser men—the Kaffir who weaves an ornament into his cloth after a receipt so subtle that it is only seen when the whole is unpicked; the Persian knotting his rugs; the Slovak peasant working her lace; the grannie who works wonders with crochet-hook, beads and silk—he understands them and lets them alone, for these are consecrated hours in which they work. A vulgar revolutionary might burst in on them and say 'that's a lot of rubbish,' just as he might shout to old ladies performing their Stations of the Cross 'There is no God.' But under an aristocracy even an atheist takes off his hat when passing a church.

Then he goes on to relate a touching parable of the dismay of his shoemaker on being asked to make a pair of utterly plain shoes, even at a third over the price of the normally-ornamented model. Ornament, he says, is the culture of the poor, and we—aristocrats who have Beethoven and Wagner—have no right to deprive them of it. But a cultured man who goes to hear the Ninth Symphony and sits down to design a sampler is either a show-off or a degenerate.

* Depressingly enough, Loos's views on clothing were entirely consistent with his views on architecture. His ideal was *der Mann im Overall*, so his Holy City would have looked rather like a set for *1984*.

> The death of ornament has brought the other arts to unbelievable heights. The symphonies of Beethoven could never have been written by a man who had to wear velvet, silk and lace. Anyone who goes around to-day in a velvet coat is no artist, but a clown or a housepainter. Wandering tribesmen wore bright colours to distinguish themselves from one another, but we have grown subtler and more refined—we moderns wear our clothes as a mask.
>
> So unbelievably powerful is a modern personality that it can no longer be expressed through clothing. Freedom from ornament is a sign of mental strength, and modern man may use the ornament of historic and exotic cultures at his discretion, but his own inventive talents are reserved and concentrated on other things.

In spite of the slight crescendo for the coda this is still a stingless tail, all passion spent. Nevertheless, 'Ornament and Crime' is still good fighting talk. In its author's own eyes it ranks with *Architektur*, written a year later, as one of his two prime writings, but not necessarily as his unique blow against ornament. To revert to the introduction to *Trotzdem*, we find that it continues 'Ornament was once synonymous with beautiful, but thanks to my life's work it now means inferior.' Life's work, he says, and on the narrow stage of Austria this might be true, but on the wider screen of the Modern Movement at large much of his writing after 1900 went by default for lack of republication on foreign presses. It is on the reprinting history of 'Ornament and Crime' that his claim to have liberated mankind must rest.

But it rests securely. Already in the Nineteen-teens it had attracted enough notice outside Vienna to earn republication, first in Herwarth Walden's expressionist magazine, *der Sturm*, in 1912, and then in Georges Besson's sprightly translation in *Les Cahiers d'Aujourdhui* in 1913.

These reprints brought Loos—and the essay—to the notice of an interested if restricted international readership. They also presumably brought Loos's ideas to the notice of the Futurist Sant'Elia, the first writer outside Vienna to be visibly influenced by them —Marinetti, the leader of the Futurists, had contacts with *der Sturm* as well as Parisian circles.

The French version was once more reprinted, unaltered, in No. 2 of *l'Esprit Nouveau*. One should remember that at this early date (March, 1920) *l'Esprit Nouveau* still had a third director beside Ozenfant and Le Corbusier, and while its appeal to those two for its relevance to architecture and design is obvious enough, its appeal to the third director, Paul Dermée, would be equally strong. For though he was a poet, he was also close in with the Dadaists, and one can imagine how gratefully any attempt to equate Beethoven with a cave artist, and a comfort-station muralist, would fall upon the ears of those who were trying to get the Morgue accepted as an object of sentimental interest and had already moustached the Mona Lisa. The reappearance of 'Ornament and Crime' while Dada was still going full blast was uncommonly timely, and guaranteed it a favourable hearing at another moment of decision.

For this reprint appeared after Le Corbusier had finished with his flower-box-smothered house-projects of the war years, but before the Villa at Vaucresson that ushered in his new style. It was read, and of this we can be certain, by Erich Mendelsohn, between his first and second Dutch visits; after the decorated Luckenwald factory, and before the undecorated Sternefeld house. It appeared after Gropius's decorated Sommerfeld House had been designed, but before the 'reformed' projects and the undecorated Jena theatre, and again we can safely posit communication between Paris and Germany. Riding hard behind this timely reappearance came the publication of Loos's first book of collected essays, *Ins Leere Gesprochen*, which covers the years 1897-1900 only, but shows him in his Plumbing-before-Art-work mood, and remains to this day better known and more widely read than *Trotzdem*.

For, by the time *Trotzdem* appeared, Loos had ceased to be timely. He caught no mood of disgust with *Art Nouveau*, nor any Dadaist mood of disgust with art in general. Not only had the mood changed, but the ideas he had pushed had now been so thoroughly absorbed and understood that they looked more like Laws of Nature than the Works of Man.

All his best ideas had been pirated by younger men. His advocacy of Thonet chairs and *Fauteuils Grand-confort* '*Maple*' had been so thoroughly taken over by Le Corbusier that Loos began to deride Thonet as *eine falsches Modell* in order to maintain some show of independence. But even the anti-ornament campaign had been plagiarized without acknowledgment, and in the introduction to *Trotzdem* he says, following what has been quoted already,

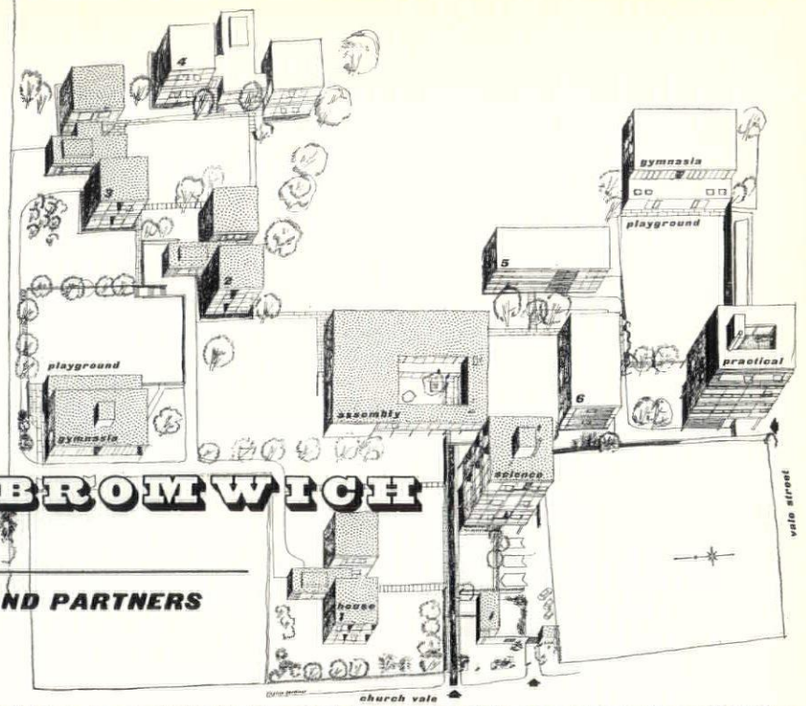
> But even the echo as it answers believes the note to be its own, and that perfidious book *Die Form ohne Ornament*, published in Stuttgart in 1924, conceals my efforts even while it falsifies them.

He might well complain. *Form without Ornament* was the catalogue *de luxe* of a Werkbund exhibition that toured Germany in 1924-25. Its illustrations make a brisk start with Jena glass and Stuttgart soap, but then trail off through such objects as Breuer's early Bauhaus furniture until they wind up with products so arty that they can only be described as *Sezession ohne Ornament*. The impossible, as Loos had seen it, had taken place, and the fine art designers had climbed on the anti-ornamental bandwaggon. Wolfgang Pfliederer says, in his introduction to this 'perfidious' book, 'If we survey the field of artistic handicraft today we find that it is not unified, but draws . . . from two sources . . . Technical form and Primitive form.'

Technical Form and Primitive Form. Engineers and peasants had been identified by Loos in that other prime essay, *Architektur*, as the two good, clean form-givers who did not commit the crimes of architects and artists, and to suggest that they might be tributary to the artistic handicrafts was to turn his arguments upside down and inside out. Within three years he was dead anyhow, and rapidly passing into that special limbo of oblivion that is reserved for those who have ideas that are too good to belong to one man alone. He had settled the problem of ornament as Alexander settled the Gordian knot, shockingly but effectively, and his ideas had gained an empire wider than the Macedonian's wildest dream. It is impossible now to imagine how the Modern Movement might have looked as a decorated style, but it might have been just that, had not its creators had ringing in their ears Adolf Loos's challenging equation: Ornament equals Crime.

SCHOOL AT WEST BROMWICH

ARCHITECTS	**RICHARD SHEPPARD AND PARTNERS**
architect-in-charge	**Stephen Gardiner**



Site plan. Tinted blocks are those completed to date: the numbers indicate the six houseblocks, each containing two houses of 180 children.

1, sculpture by Sally Arnup in the courtyard of the assembly hall and administration block. Behind it are the sliding windows of the library and underneath a glimpse of a houseblock.



2, main entrance, with caretaker's cottage right, science block centre and library beyond left. 3, glass entrances to gymnasia cantilevered out to form a draught lobby. 4, the courtyard with main entrance on the right. 5, on the facing page, the gymnasium block from the shadow of one of the houseblocks. The windows delineate the area of the gymnasia themselves, the projecting brickwork, the changing-rooms; in the foreground, the retaining wall of the playgrounds. 6, gymnasium block from the entrance to the science block, with the glass wall of the library on the right. These buildings form the main space around which the layout of the whole scheme was designed.



2

Churchfields School was conceived by the Education Authority as a twelve-form entry comprehensive school, and half has been completed; the rest will conform very closely to what is already built. The site is on the edge of West Bromwich, with a fine east view over the valley and consists of 11 acres for buildings and 33½ acres for the school playing fields. The West Bromwich Education Authority found the comprehensive system the most desirable: but to counter the effect of impersonality, the houseblock system was devised, dividing the children into houses of 180 each. Two houses are grouped together in one building, each distinct from the other, but sharing a common dining-room and kitchen: a centralised kitchen and dining-hall for the whole school would not have given the same intimacy. For central control of the separate blocks the administrative section was planned with the assembly halls and library in the centre of the site, making a focal point equally accessible for all blocks, present or future. The houseblocks vary slightly in plan: the third and last to be completed is bigger, having one classroom more in each house and two entrances. All these houseblocks have been designed on a domestic scale—small landings, 4-ft. wide staircases—and extreme economy in planning was sought to help balance the extra cost of the extremely long service ducts, drainage, and individual dining-rooms, kitchens and equipment.

The other buildings were designed with the same object in mind, viz. economic planning: the scheme for the gymnasium block eliminated all corridors; the science block is designed as a tower and the rooms

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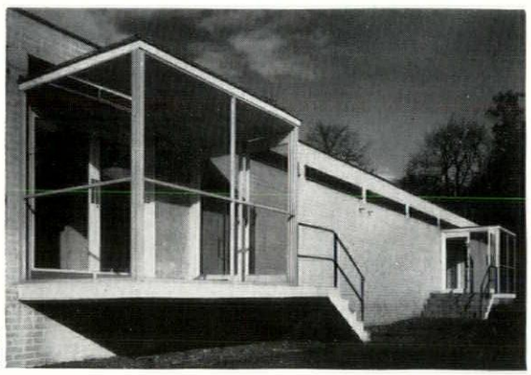

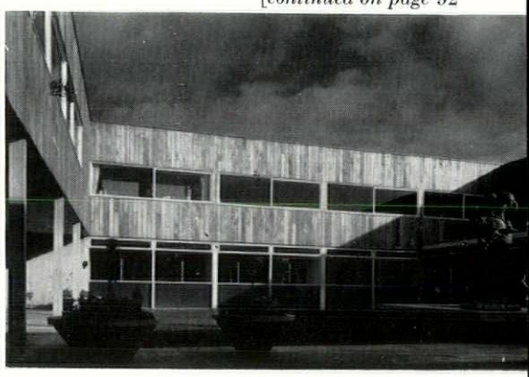

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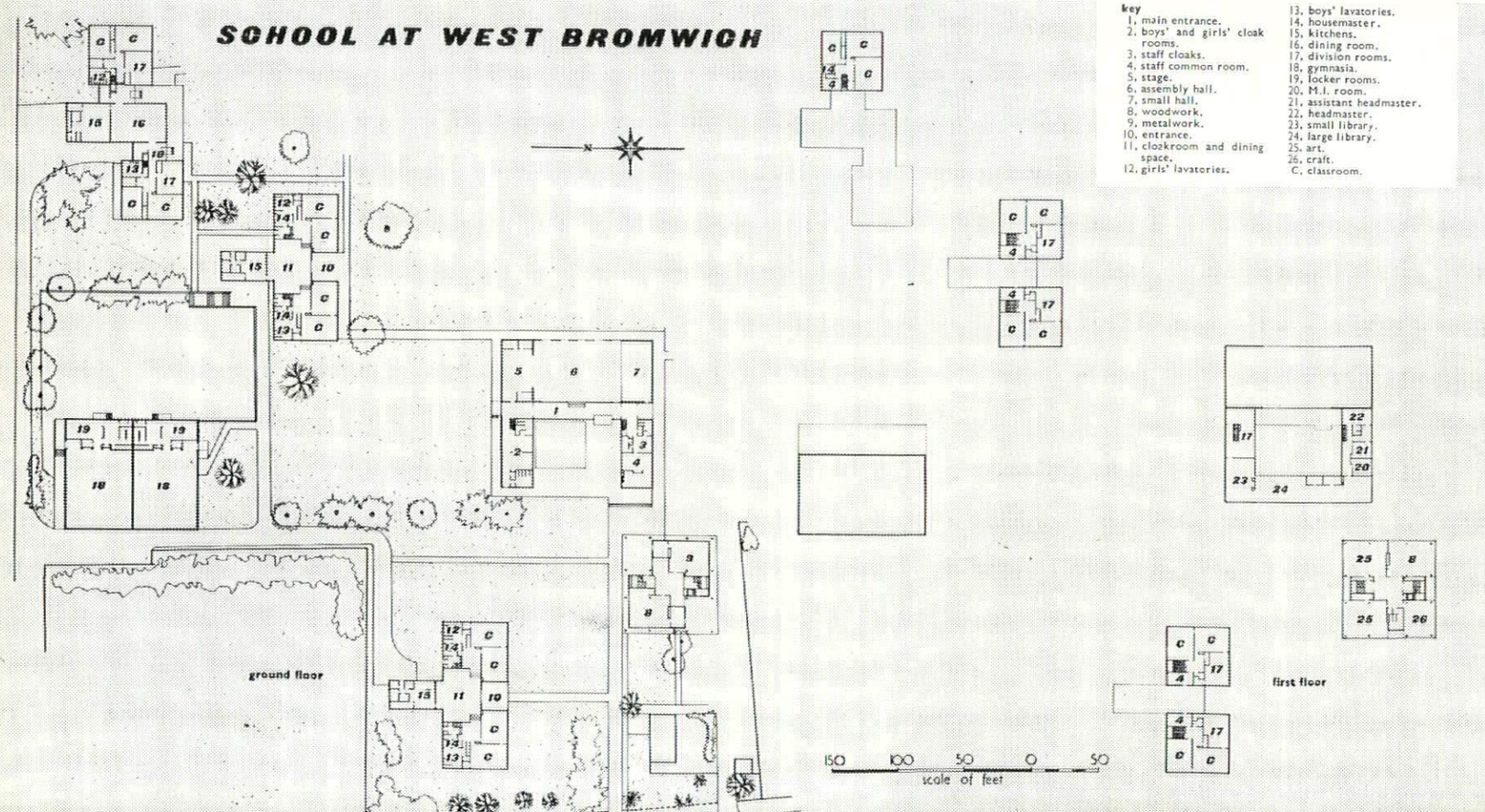
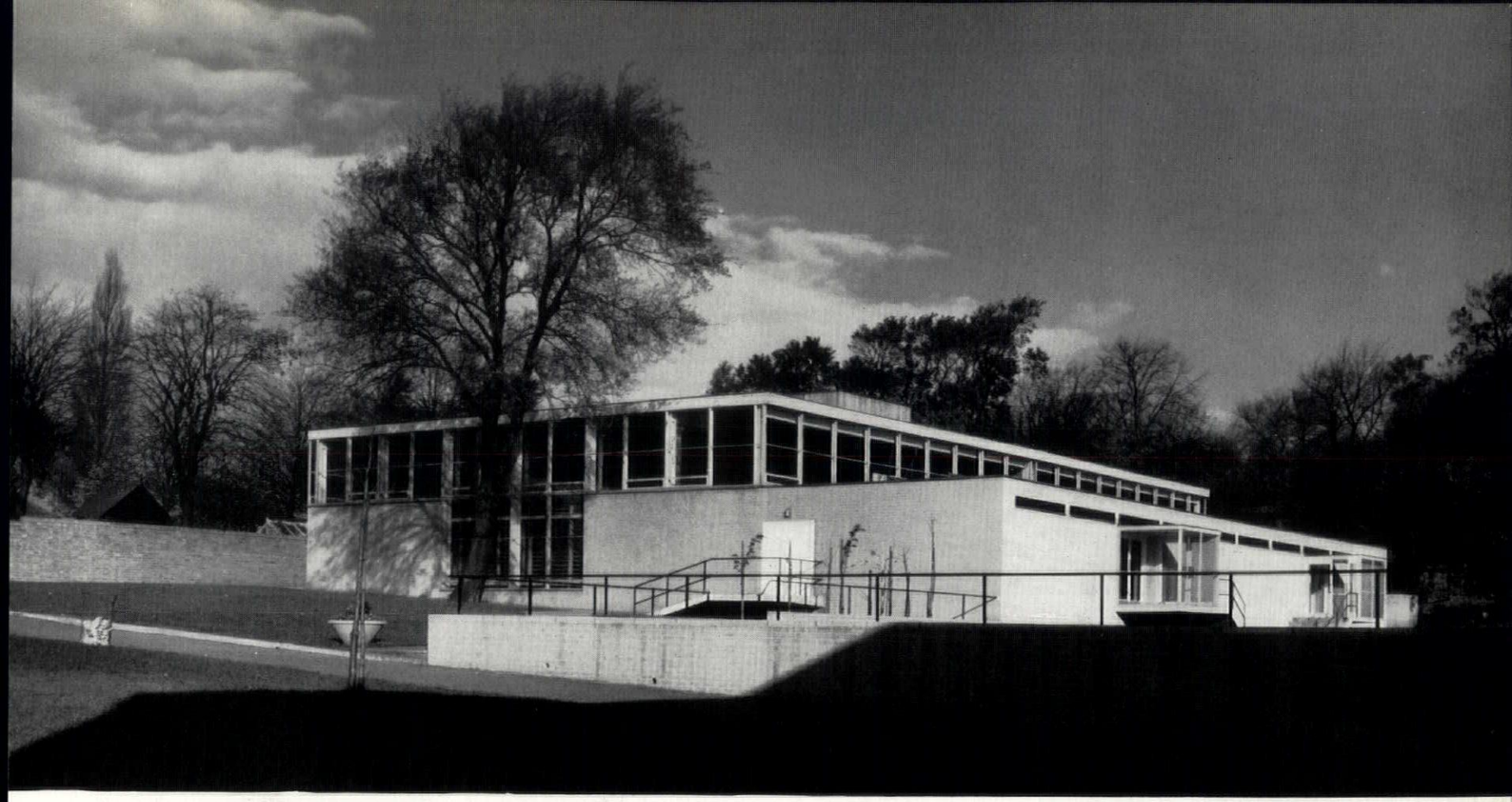
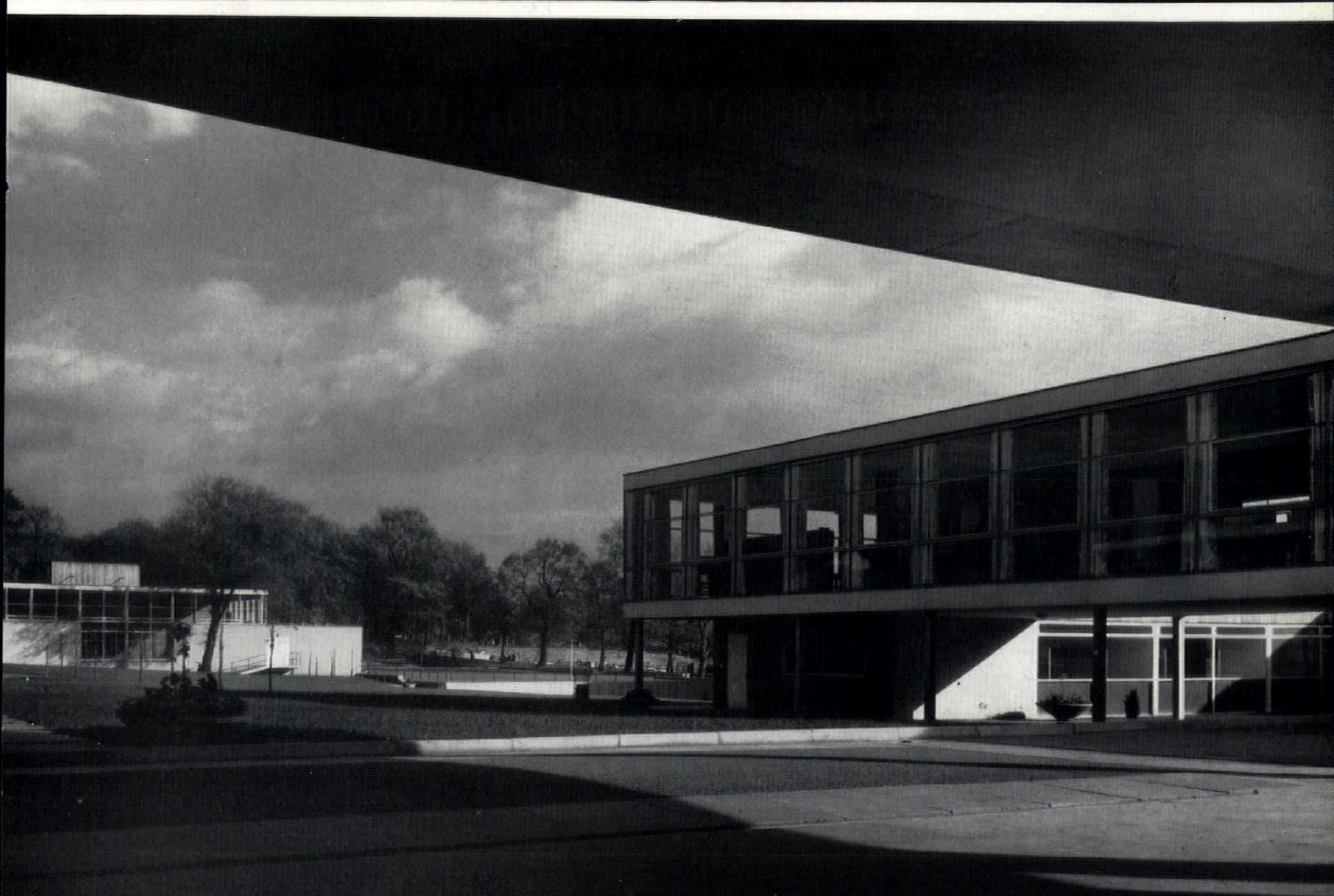
4

SCHOOL AT WEST BROMWICH

key
1, main entrance.
2, boys' and girls' cloak rooms.
3, staff cloaks.
4, staff common room.
5, stage.
6, assembly hall.
7, small hall.
8, woodwork.
9, metalwork.
10, entrance.
11, cloakroom and dining space.
12, girls' lavatories.
13, boys' lavatories.
14, housemaster.
15, kitchens.
16, dining room.
17, division rooms.
18, gymnasia.
19, locker rooms.
20, M.I. room.
21, assistant headmaster.
22, headmaster.
23, small library.
24, large library.
25, art.
26, craft.
C, classroom.









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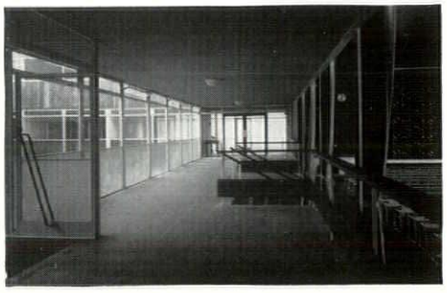

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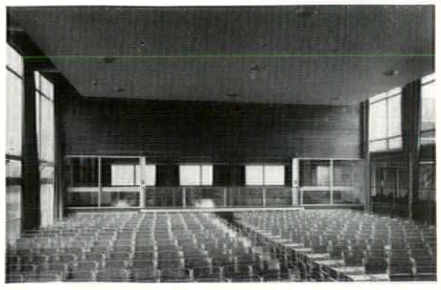

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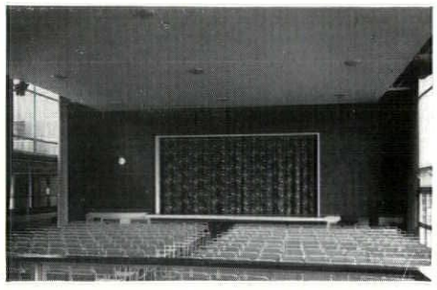


11

continued from page 90]

arranged tightly around a central coat space. Similarly in the administrative block, two assembly halls will be added later without interfering with the general design.

The structure and cladding of the building was affected by shortage of labour. Therefore a system of prefabrication was evolved, consisting of a normal steel construction of 'box' stanchions and R.S.J.s (the science block is of reinforced concrete) with timber stud infilling panels faced with cedar boarding and steel windows and glass from floor to ceiling. In the teaching blocks this glass is lined with breeze up to cill level to take heater units, cupboards, etc. The science block is completely glazed. To save labour, brickwork is confined to the gymnasium, assembly halls and ground floor of the science block where no other material seemed appropriate.

While the sooty atmosphere has influenced external colour—white is limited to fascias—variety has also been considered. The window panels on science block and houseblocks are differently treated from building to building. On the third houseblock, for example, a number of colours—puce, blue, Indian red—have been used on the same façade.

SCHOOL AT WEST BROMWICH



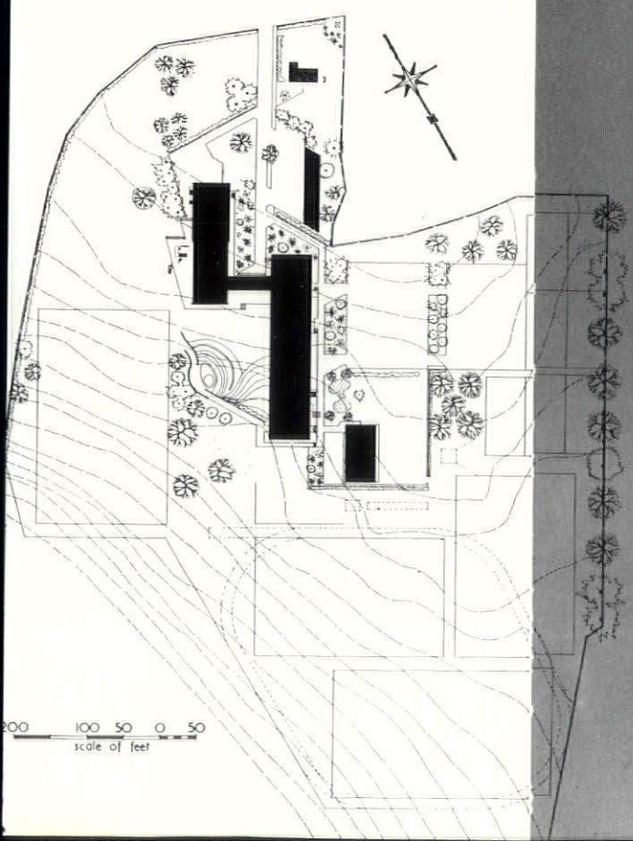
12

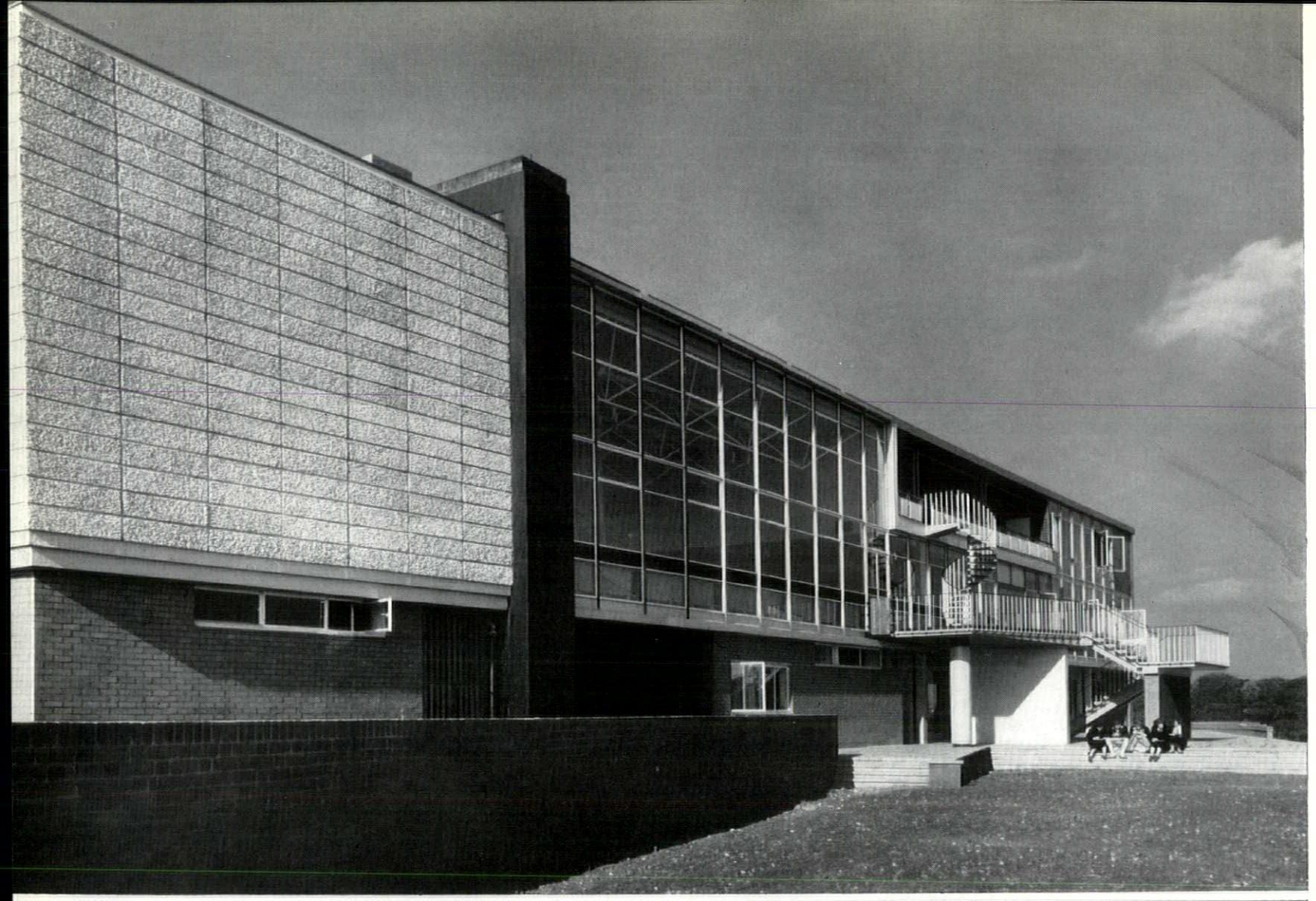
7, south elevation of houseblock near to the main road. All classrooms are grouped so that they have south-west and east light. Right, the science block. 8, the main entrance hall looking north. 9, the entrance hall looking south, and the assembly hall, left. 10, assembly hall and small hall beyond. 11, assemb.y hall stage with curtains by Shirley Blomfield. 12, staircase to the library in West African mahogany.

SCHOOL AT HIGH WYCOMBE

ARCHITECT	**DENIS CLARKE HALL**
architect-in-charge	**D. J. Duprée**

1, the school from the east; High Wycombe lies to the north. The block on the right contains most of the classrooms, with the administrative core on the first floor. The assembly hall occupies the first and second floors of the block to the left. Below is a site plan.





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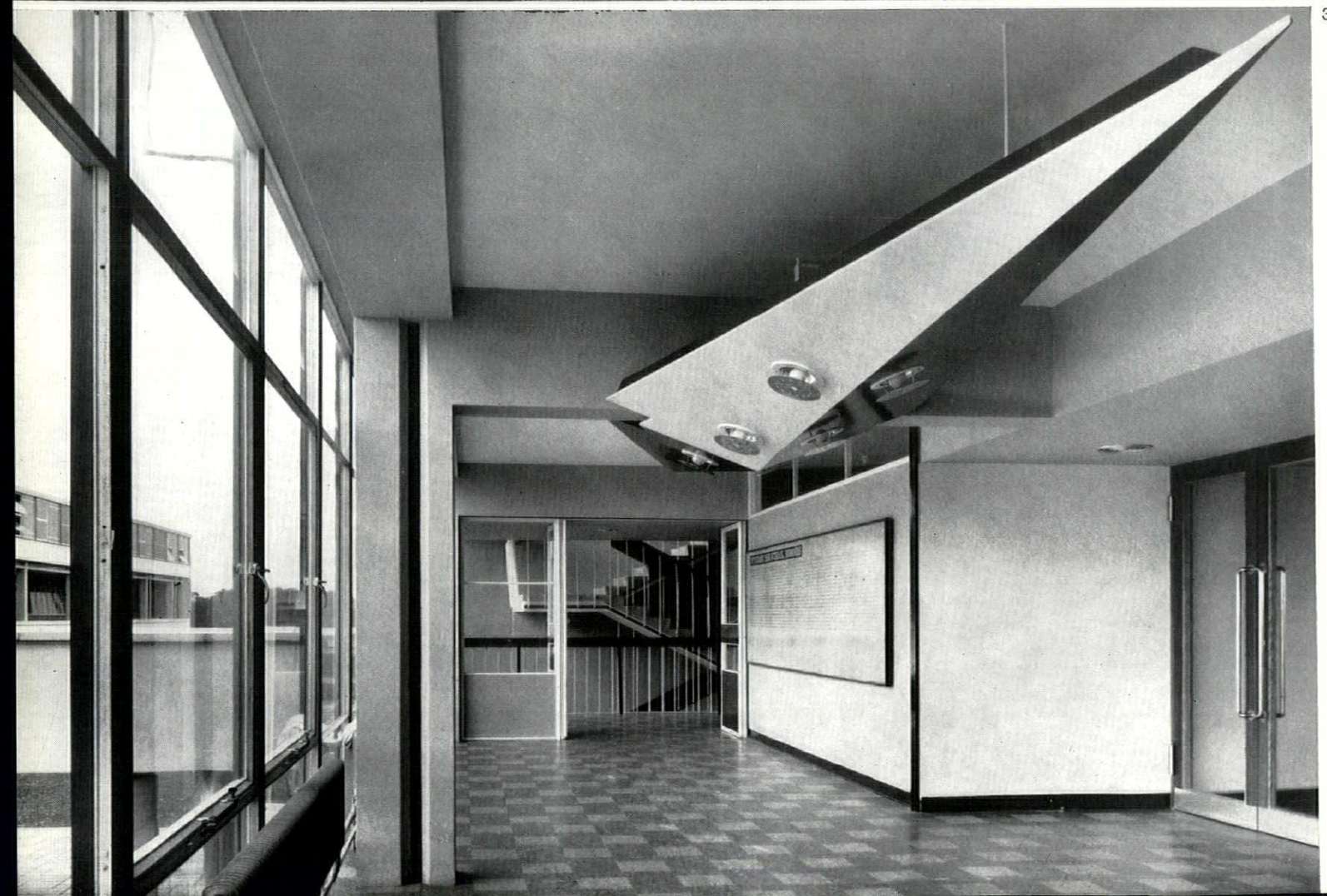

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facing page, 2, the assembly-dining block from the south-east, with the assembly hall windows centre ; the stage is defined by the textured pre-cast concrete slabs, left. On the second floor, beyond the assembly hall, is the library balcony, designed for outdoor reading. 3, lobby on the first floor of the assembly block ; the hall entrance is behind the viewer, the bridge to the classroom block is on the left.

The site is about one mile from the centre of the town on the road from High Wycombe to Marlow, and commands a superb northward view over the town and hills beyond. The school buildings are at the southern and higher end of the site and thus stand on the brow of the slope against the skyline.

The school is planned for 720 girls and a staff of 40 in three blocks set in echelon to link related accommodation in adjacent blocks as economically as possible by covered ways and an open bridge. The central teaching block has the main school entrance and all horizontal circulation at first-floor level. At this level is the administrative core of staff rooms, medical rooms, etc. Children's entrances are on the west side in three positions adjacent to the playgrounds. Access from these to the main cloakroom corridor and lavatories, also on the first floor, is by staircases which form the three vertical circulation channels. Thus, all parts of the block are accessible through the first-floor level without the need of long duplicating corridors. On the second floor are all the classrooms ; on the ground floor are the science laboratories, needlework, housecraft, art and craft rooms, and beneath these, at the north end of the block, are the changing-rooms linked to the separate gymnasium by a covered way. From this area a main horizontal duct, containing all the main service pipes, passes under the ground floor.

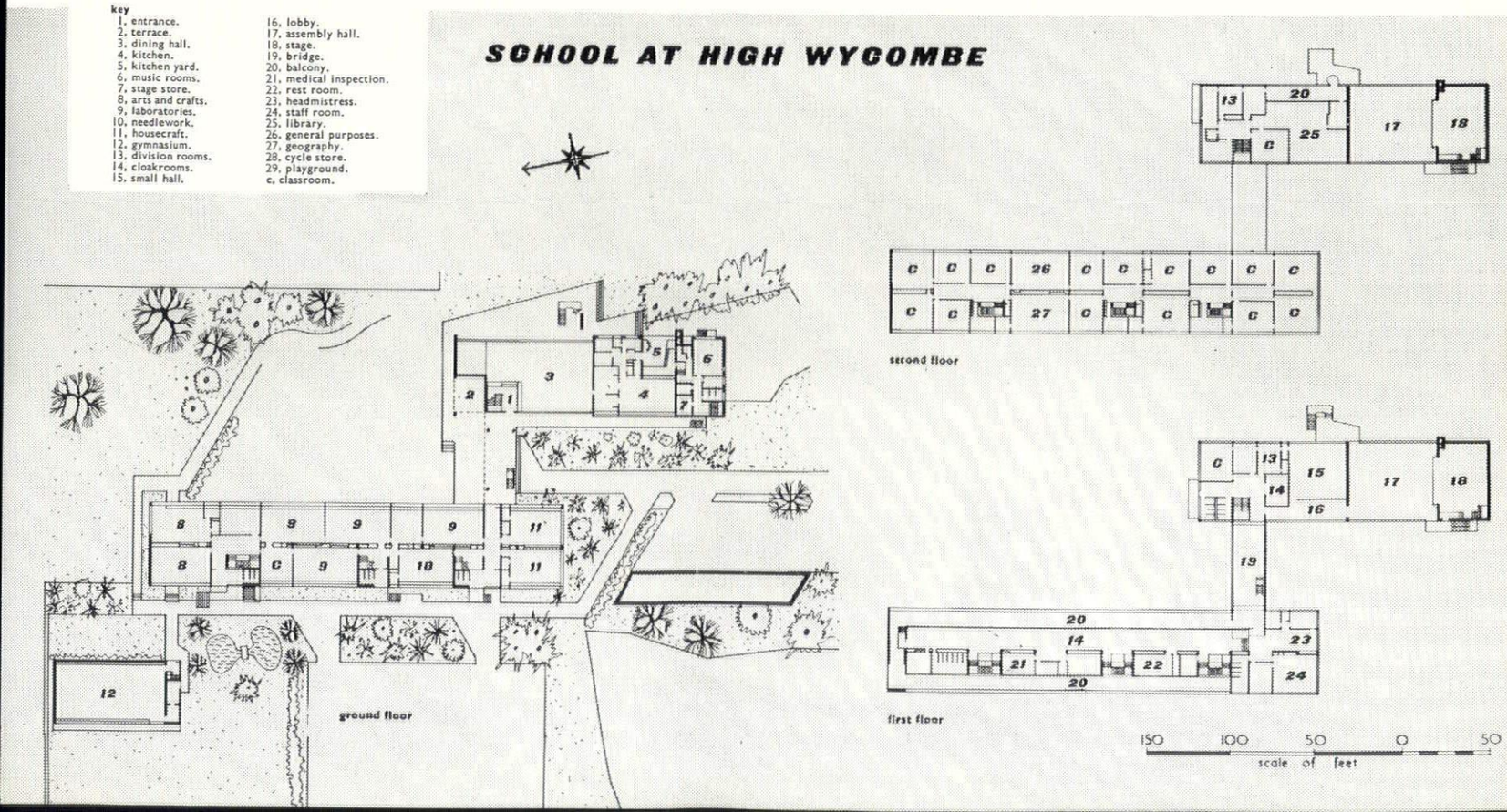
The third block houses the assembly hall with a large and well-equipped stage complete with full stage curtaining, lighting (operated from a special gallery) and sound amplification equipment. There is a cyclorama at the back of the stage, and a false proscenium, forestage and movable platforms, by use of which all types of drama can be presented, allowing experimental production methods. Beneath the stage and reached by separate staircase access are the music rooms which are also equipped as rehearsal and dressing-rooms and beneath these is the boiler-house. On the top floor of this block are further classrooms for the 120 sixth-form pupils, and the library, which has a wide recessed and sheltered balcony for outdoor reading. The library store which overhangs the rear part of the assembly hall serves as a projection room. At ground floor are the dining-hall and kitchen.

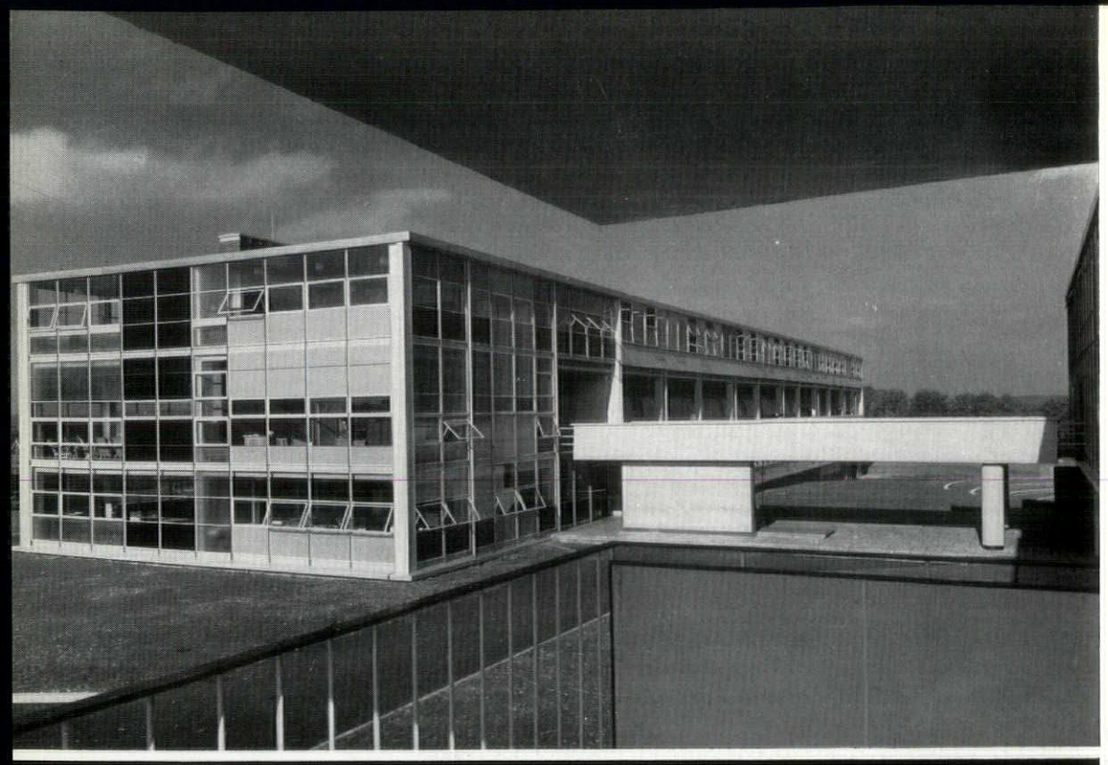
The building frame is of steel of orthodox construction except at first-floor level in the teaching block and over the assembly hall. The first of these variations from normal practice, which is to provide back lighting to the laboratories, is achieved by means of a floor at two levels, the lower being suspended from the higher which is in the form of tapered cantilever beams springing from the central columns. The assembly hall roof construction is of steel tube 'space frames' of geodesic form which spans the length of the hall between reinforced concrete beam walls, and permits full-height, full-length glazing of the long walls. Bridge, covered ways and staircase platforms, as well as the stage/boiler-house unit, are of *in-situ* reinforced concrete construction, the latter faced with precast concrete slabs with a special textured finish.

The entire school is centrally heated by low-pressure circulated hot water to radiators placed generally along the external walls. There is also a system of forced-extract ventilation serving the ground floor practical rooms, kitchens and stage. All trunking, main heating, plumbing, drainage pipes and electrical runs are concealed in ducts. Those in the main teaching block are in a central spine running the full length of the block and are connected to and served by the underfloor duct

SCHOOL AT HIGH WYCOMBE

key
1, entrance. 2, terrace. 3, dining hall. 4, kitchen. 5, kitchen yard. 6, music rooms. 7, stage store. 8, arts and crafts. 9, laboratories. 10, needlework. 11, housecraft. 12, gymnasium. 13, division rooms. 14, cloakrooms. 15, small hall. 16, lobby. 17, assembly hall. 18, stage. 19, bridge. 20, balcony. 21, medical inspection. 22, rest room. 23, headmistress. 24, staff room. 25, library. 26, general purposes. 27, geography. 28, cycle store. 29, playground. c, classroom.





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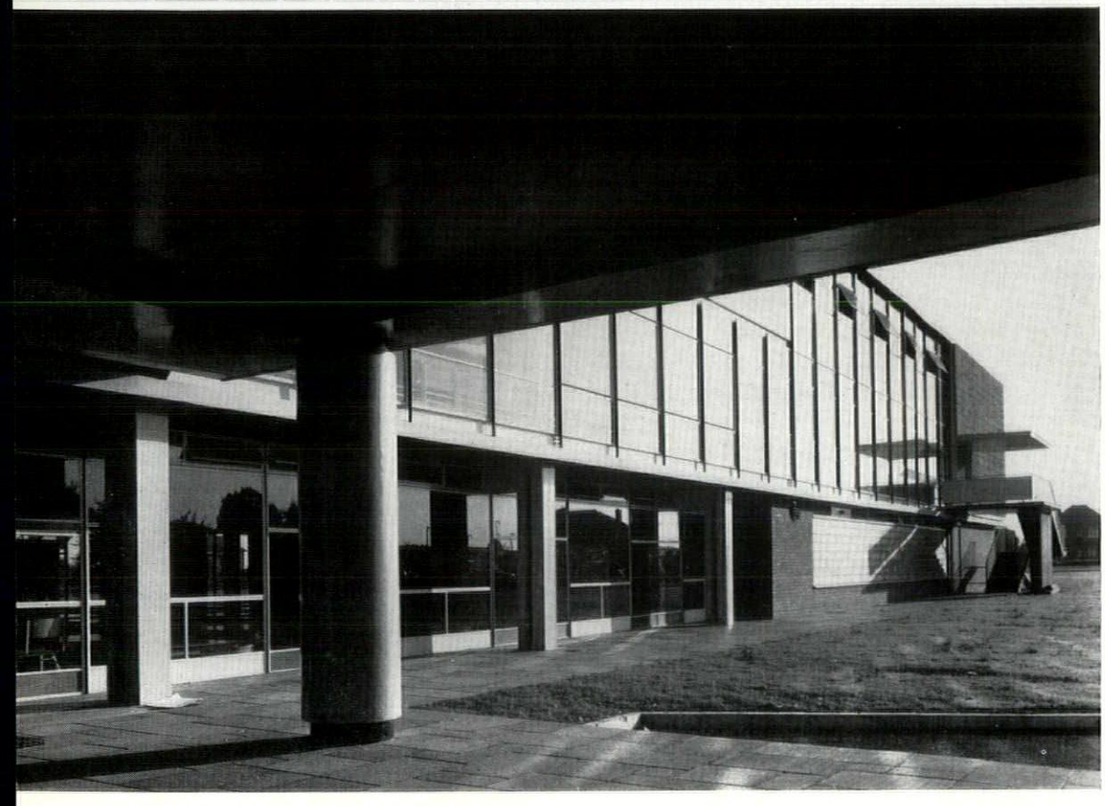
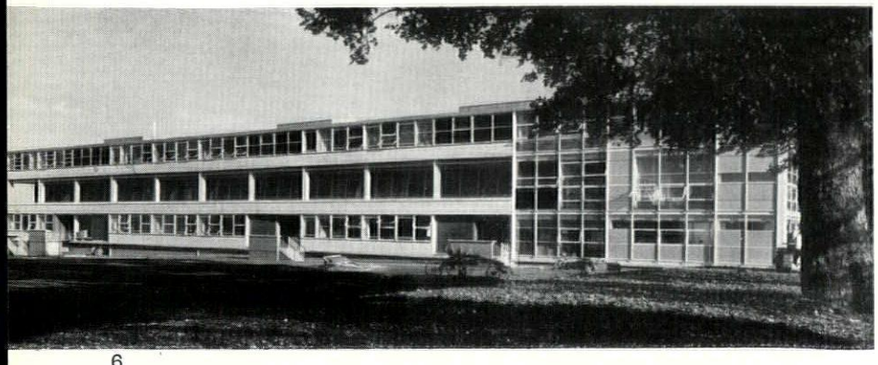


5

referred to above. An intercom telephone system, master radio and clock installations are also provided, serving instruments, loudspeaker points and slave dials respectively in all parts of the buildings. A class change bell system is worked in conjunction with the master clock so that class changes are rung automatically once the programme timer is set to a predetermined pattern.

Furniture and equipment generally have been specially designed. Internal colours are mostly soft with occasional bright accents; externally the colour register is higher: the soft blue balcony facings and the dark purple brick plinth at ground level contrasting with a bright red and blue pattern in the fully glazed south end of the main teach-

4, the classroom block from the platform of the stairway seen in the right of 5. Nearest the camera, on the first floor are the staff common room and headmistress's study. 5, behind the glazed façade on the ground floor is the dining hall; the brick wall beyond defines the kitchen area. 6, classroom block from the west. 7, assembly hall block from the west.



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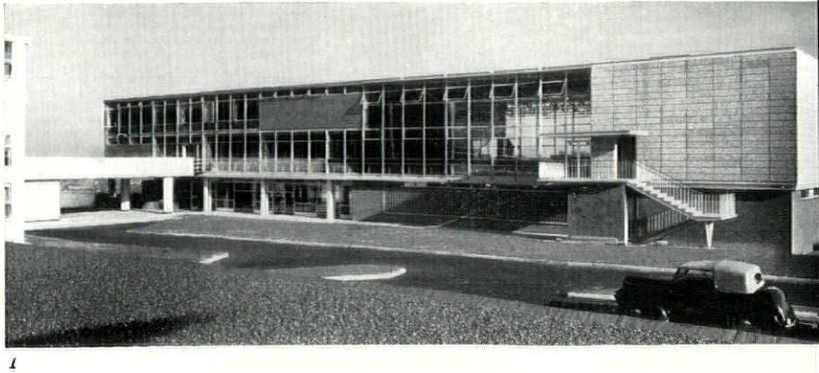
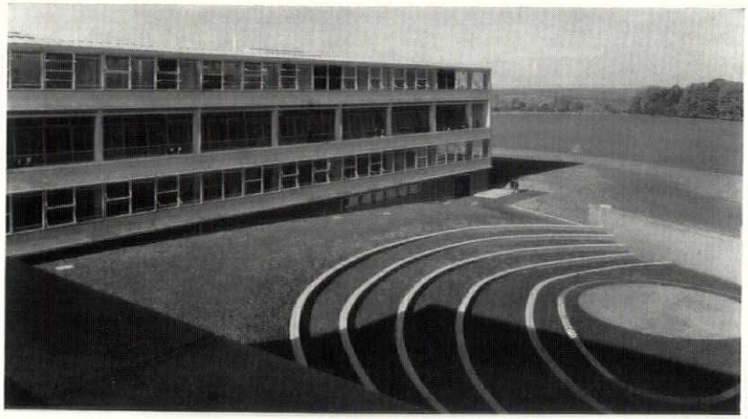


7

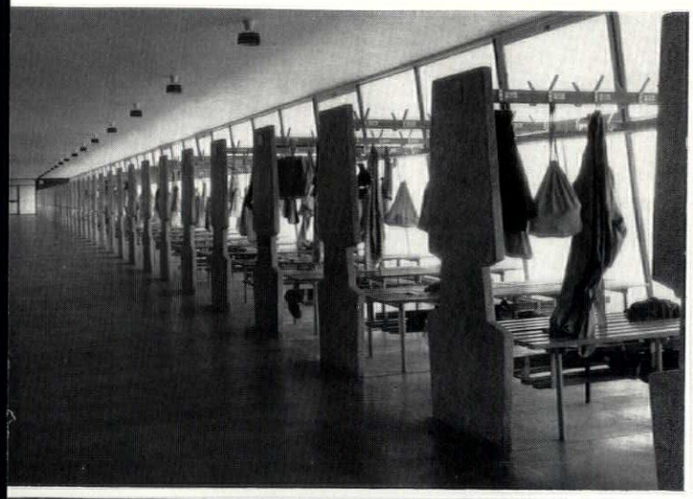
SCHOOL AT HIGH WYCOMBE



8

ing block, and occasional accents of black, yellow and lime elsewhere.

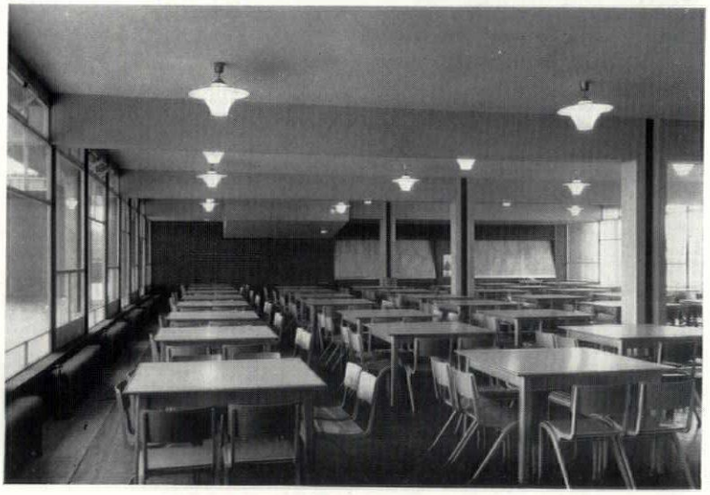
On the east side of the main block, enclosed to the south by the assembly/dining block and to the north and west by a curved back wall, is an open arena theatre which utilizes and emphasizes the natural contours of the ground and is overlooked by viewing balconies on each of the two main blocks. An extensive planting scheme is included.





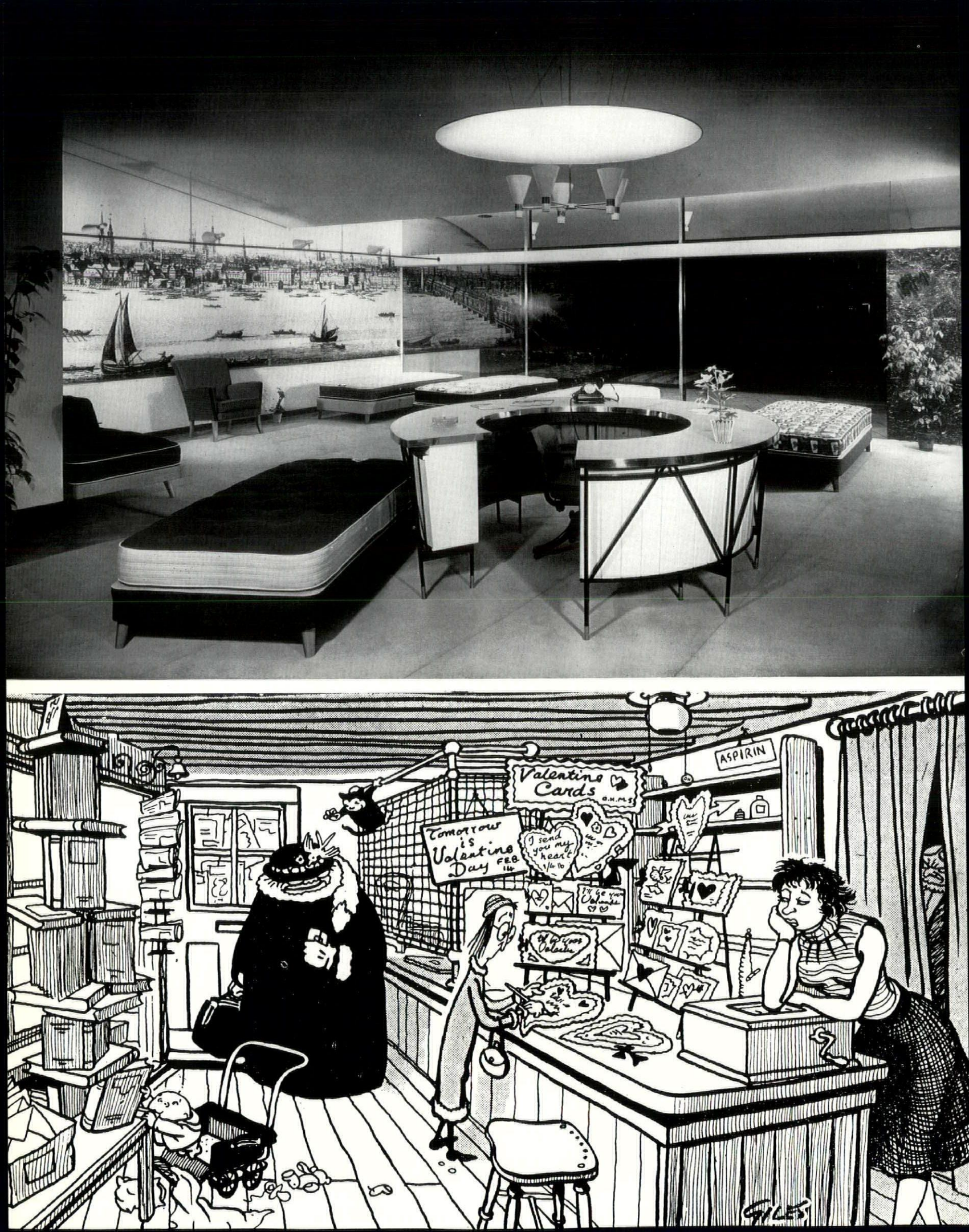
9, 10





11, 12

8, the arena, which a terrace in the assembly hall and the long balcony of the classroom block overlook. The open space beyond is planted with sycamores and flowering cherry trees. 9, the cloakroom on the first floor of the classroom block ; beyond the windows, right, is the long balcony seen in 8. 10, the doors, centre, lead to the cloakroom ; the bridge is through the door on the extreme right of the picture. 11, the assembly hall ; the object of the roof construction of geodesic space frames is to permit full-height wall glazing. 12, dining hall, looking towards the servery.


Valentine Cards
Tomorrow is Valentine Day FEB 14
I send you my heart
ASPIRIN
GILES

Upper deck and lower deck shop interiors: above, showrooms in Grosvenor Street, W.1, by Dennis Lennon; below, a village shop, anywhere, from Giles' topographical treasure chest. One is all architecture with precious little on display; the other sells everything and has never seen a shopfitter. In his article below, Herbert Tayler analyzes the merits of both and assesses what each can give to the other, and, in particular, the possibility of finding a link between them; a modern equivalent of the traditional window dressing techniques, at the same time functional and decorative. Without it the 'upper deck' will become sterile and precious, and the 'lower deck' will drift into subtopian uniformity.

Herbert Tayler

SHOPS

We spend an appallingly large part of our life shopping or shop-gazing. Shops have formed a part of the architectural scene in history and in pre-history. Shops are a necessity for all, a serious business for some and just pure fun for others. They are a part of life, almost as old as life itself and they will inevitably go on until almost the end of life itself. The last rather impressive sentence really needs the glorious climax of an illustration like the Parthenon to do it justice but there is nothing to be found, for the truth is shops are never great architecture, they are never even first-rate architecture, they are a minor architectural art, capricious, mutable, transient, evanescent.

Of all architecture, the interior is always the most changeful part, and impermanent even where the outside lingers on. There are no historical shop interiors. Most Edwardian and Victorian shops have by now lost their furnishings and decorations, even if their fronts are still intact, while a Georgian front is a rarity.

In spite of its own transience, however, it is the modern shop interior which has suddenly made the whole modern style in architecture real to the public. The pioneer work was of course done earlier and elsewhere, but if 'Contemporary' has arrived in the suburbs, in the provinces, and in the council houses, it is through the décor of shops, not the early modern domestic interiors; for who but a few friends or pilgrims had a chance to visit those private pioneer domains whose plate glass looked on the hills of Amersham or the South Downs or Highgate Village and not on to the crowds of Oxford Street? Unconscious prophets were the early critics: like living in a shop window, they said of the owner of a modern house, who nevertheless braved the glass, proudly self-conscious, without net and indeed without inhibitions, as he was forced to be whenever he felt like scratching himself.

After the war it became, more appropriately, the turn of the shop assistant to live in the shop window when the curtain went up, slowly and dramatically, on the interior.

Because everyone looks at shops, the interior, suddenly revealed, could not fail to be the most influential piece of architecture for twenty years—a popular free exhibition of modern design, and the public lapped it up, multi-coloured walls, metal light shades, queer chairs, plants, the whole lot.

This was the revolution of the open shop front, the flowering of the seeds sown under the glass of the Crystal Palace a hundred years earlier. Mere window dressing had now to become over-all dressing, with all the discipline, as well as the gaiety, which that naval term implies or which the rise of a curtain in the theatre implies. There we see the result of months of careful planning, the stage perfectly set, lighted and peopled, every movement carefully controlled, every sound premeditated, nothing left to chance, everything rehearsed, the faces, the hair-do's, everything. The modern architect has an affinity with the theatrical producer, and many of the new shops, superbly theatrical, are as smooth as an Old Vic lighting plot. The shopkeeper too has jumped at the opportunity of impressing his customers (who had graduated from his earlier wiles), with more mature means, namely the colourful emotions of the theatre and of abstract art. His rising sales are sufficient to offset any snags. Are there any snags? Let's wander round and see.

We will find four kinds of shop:
(1) Large department stores.
(2) Small retail shops.
(3) Miscellaneous; travel bureaux, restaurants and so on.
(4) Showrooms; wholesale or information only.

Although it is fun to look at shops, too much of it is also very tiring, so we will not go to any large department stores, but simply look at a few in the other three categories.

Of these, small retail shops form the largest and, for the designer, far the most difficult class. For the shopkeeper selling the goods is the main thing, but for the designer appearance comes first. If commerce and aesthetics conflict, selling must win or the shop must close. Need they conflict? An eternal argument! If you open up everything everything is seen, and if everything is to be seen, it must be perfect and nothing ever is. In a theatrical production (or in any other work of art) everything must be fully controlled and intended, but in a shop much remains beyond any control, including the customers, an unrehearsable but indispensable element in the scene. And, unlike a theatre, each imperfection, each withered or dusty plant, is seen at close quarters by the audience.

If the goods are beautiful it is easier and the problem is simply to display them well in small enough quantities (museums demonstrate that the highest art suffers most from jostling). The whole stock of small-sized goods can be tidily displayed and stored attractively on shelves, in drawers and on tables without dominating the interior. This can be clearly seen in shops selling such things as jewellery, pottery or shoes. Shoe shops have pioneered the dramatic, hushed, lush interior and it is mostly under full control. The whole of the stock is kept out of sight, so the field is left clear for marshalled rows of chairs, acres of deep pile carpet and a few selected shoes (in small sizes), discreetly spotlit. The rest is just space for design, pure, simple or otherwise.

However, the goods are mostly not beautiful but extremely ugly, and are too often not small, either in themselves or in their quantity, and the shopkeeper is anxious to show off all his stock. The designer fails if he aims at Stanislavsky when the show is at the Palladium, though his critics, like those in the theatre, are often unhelpful, scolding him for being employed at a vulgar music-hall anyway.

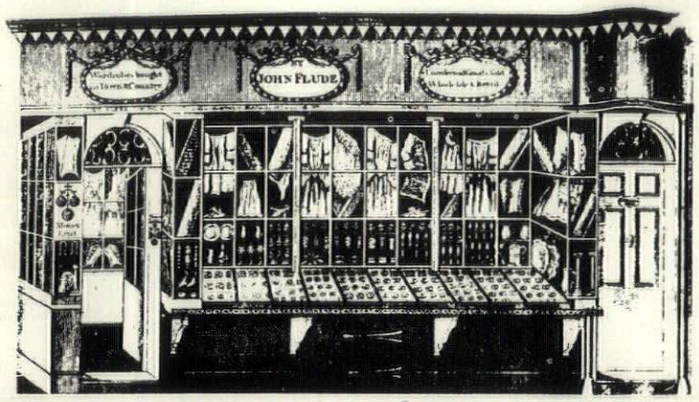
While the designer is to be blamed if he ignores the shopkeeper's requirements, or even subconsciously objects to the vulgarity of being in trade at all, the shopkeeper can fairly be blamed for many problems legitimately only his own; however, architectural critics seldom recognize this, or comment appropriately. A work of art is essentially a whole, and to the customer the appearance is only one factor, the service and the goods being more important. Yet how often does one see a pretty interior and rotten service? What about shop assistants, the cast of our play? At one extreme are terrifyingly painted idols currently crowned with all sorts of boyish hair, butter, lavender, mahogany, blacker-than black; at the other extreme, sleazy nitwits too busy stocktaking or just gossiping to attend to you. Of what use, in a work of art, is architectural beauty without personal beauty, and personal beauty without beauty of character or without the beauty of efficiency?

And how about display? A big subject, and a headache for the small shopkeeper who can hardly be expected to keep a whole-time designer, properly trained for the job. Yet, of course, display has grown into a highly specialized affair, refined, civilized, sophisticated, exotic, and it has had to cease confining itself to the 'show window,' since the whole shop has become a display. Done well, display adds enormously to the pleasures of shopping, but it also adds to the overhead expenses. Many shopkeepers remain naturally unconvinced that 'less is more' or that display is a highly disciplined art, not just a cliché and a carefree coil of tarred rope with a few

[*continued on page* 103



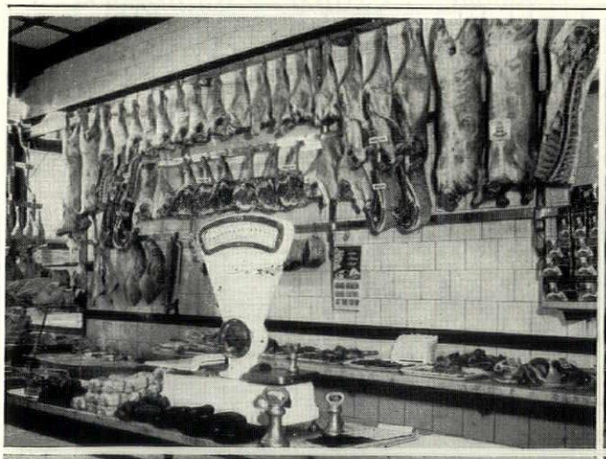
1, *James Wheeley's Paperhanging Warehouse, Little Britain, London.*



2, *John Flude, Pawnbroker and Silversmith, Gracechurch Street, London.*



3, *another eighteenth century interior, Lock the Hatter, St. James's Street, London. All the stock is on display, contained in a discreet but positive framework.*







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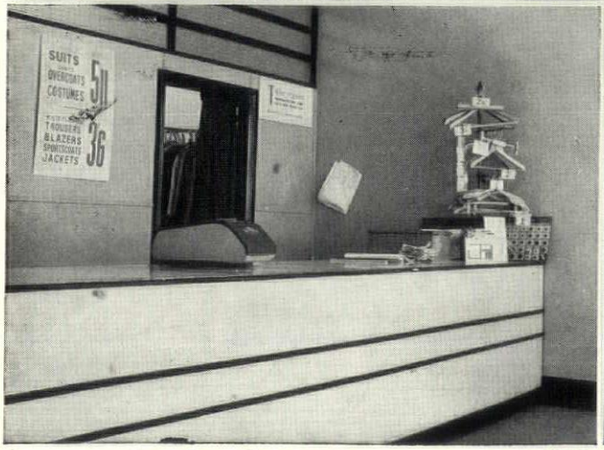
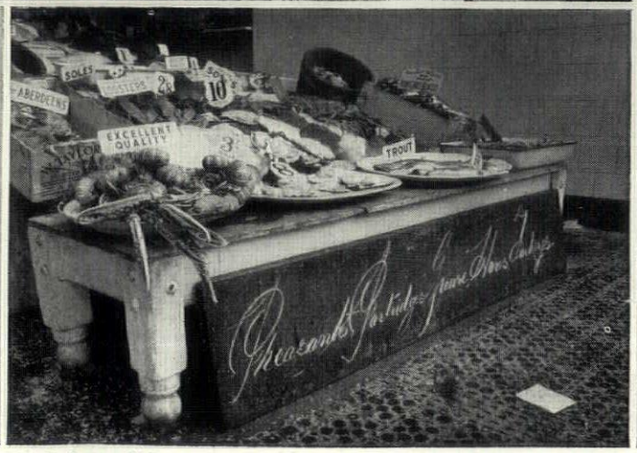
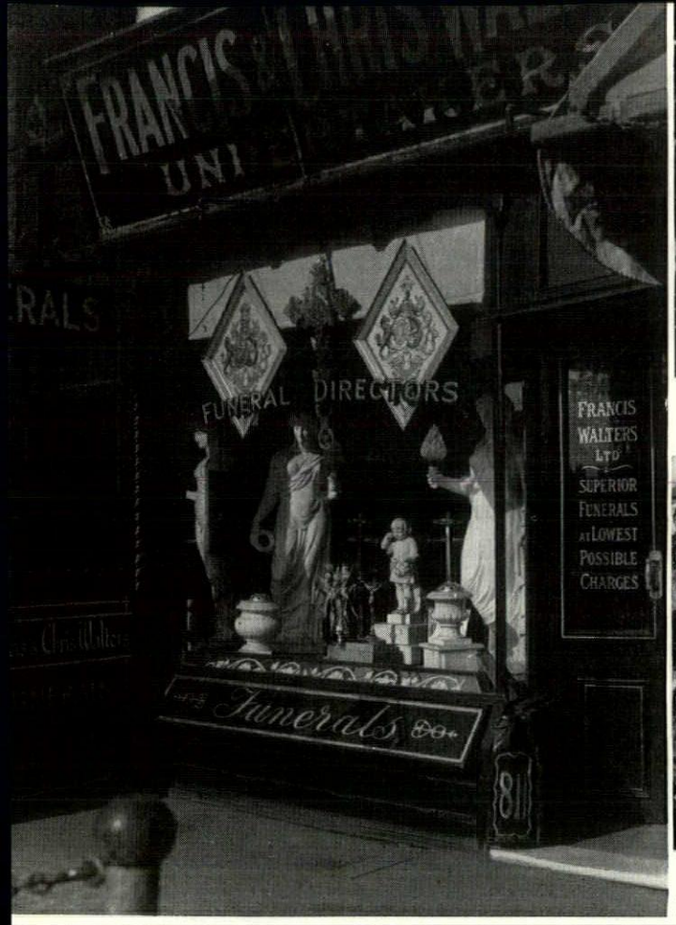






7, 8, 9

lower deck shopping: *'The classic timeless technique of the bazaar' here combines more or less successfully with modern detailing and modern goods.* 8 *is scarcely altered,* 4 *and* 5 *succeed by an overwhelming onslaught of goods.* 6 *and* 9 *partially succeed,* 7 *is completely sterile.*



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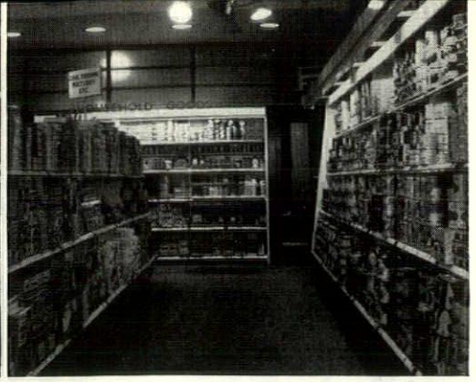

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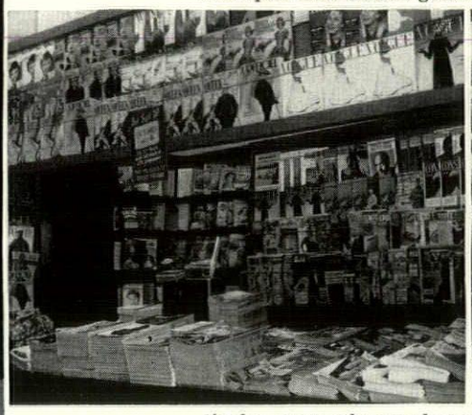
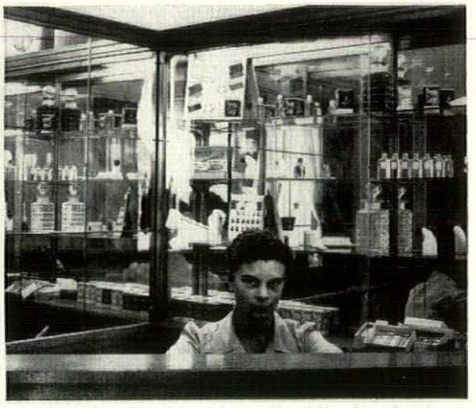
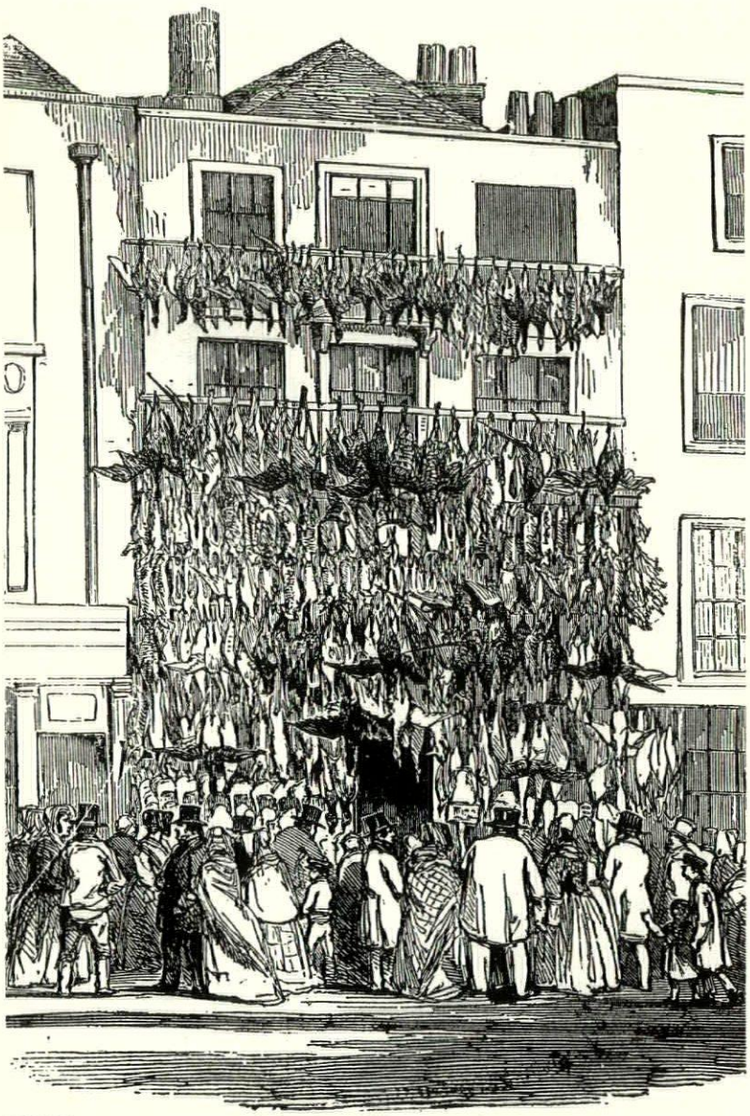




13, 14

lower deck shopping: *10 would look the same if it had been photographed fifty years ago; 11 and 13 are successful exploitations of old display techniques with modern goods. 12, a supermarket, shows the same idea systematized to suggest the parade ground, not the ringside. 14, on the other hand, tries to suggest sophisticated disarray and only succeeds in being a genteel mess. None of these eleven examples, 4-14, shows the slightest trace of 'upper deck' technique.*



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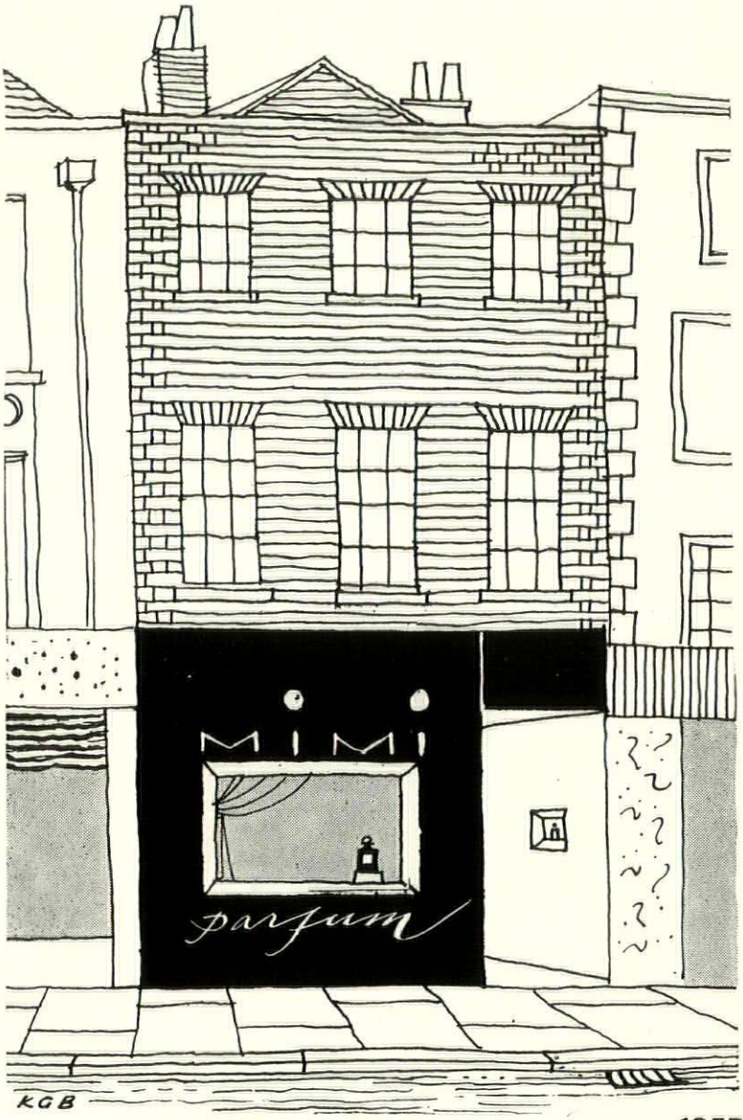


. . . 1957

continued from page 100]

pebbles hastily thrust under his beach shorts on Monday morning by an assistant with 'ideas' and tapered slacks.

Another problem for the shopkeeper is the vanishing counter. Its advantage is the downing of barriers making the inspection of goods behind (or under) the counter easier; its disadvantage a lack of focus for the customers, a lack of rallying point for the assistants with the result that both stand about looking detached and lost. The assistant is also now being seen in the round, and full length, instead of only in front elevation and cut in half by the counter, a severer test than formerly.

And then, much thought is given by shopkeepers to the process of wrapping and payment for goods. These processes should be simple, foolproof, quick and unobtrusive, but mostly they are still primitive, difficult and slow. Self-help is a new sales technique and, like so many imports to Britain from abroad, slow in becoming popular; but there are some half-way houses—the 'browsing' technique, for example, where the customer is left alone until he is ready to buy or to ask a question, which most people prefer to being promptly attacked by an assistant. This is not new, being as old as the market-place, and as its later counterpart, Woolworth's, yet it is never used in small shops, though large shops like Fortnum's and Harrods are in fact classy bazaars.

For unassisted leisurely inspection, however, all the stock must be on show, clearly labelled and priced. This means comprehensive businesslike display first and art after, yet it is interesting to see how naturally decorative the ranged-out goods in self-help or market-type shops can be. So we are back again to the goods themselves, the *raison d'être* for the shop, the shopkeeper and the customer, and for the shop designer, too, whether he likes it or not.

Away from strictly retail shops, the designer's problem instantly becomes easier and the results are therefore more often successful. In this category (which we have termed '(3) Miscellaneous') one may include a large variety of premises like travel bureaux, restaurants, bars, agencies or hairdressers, where a sales technique is present, however apparently remote from that concerned with plain buying.

What all these places have in common is the absence of goods standing about the place. The travel agency hands out small tickets and leaflets, and for its display, which includes no objects for sale, it needs only pictures to induce people to decide between Nice and Norwich. The merchandise of a restaurant or coffee bar is produced from behind the scenes or out of an Espresso machine, and the decoration is free to go its own abstract way, independent of the food served.

All these Miscellaneous non-retail premises still have the public in them, but not in the constant bargain-hungry streams that fill retail shops. The architectural character can be stronger, as it is not just a background, and the building materials can be better and more permanent where it is not necessary to display goods in front of them. Good finishes also resist wear and tear and ease the owner's maintenance. Scrupulous owner-maintenance is always prayed for by the designer and although he can make it less difficult for the shopkeeper, he can never eliminate it altogether.

Exquisite maintenance seems easiest for the owner of our fourth category, a large and growing one, the non-retail showroom. The stress is sometimes on the 'show' but more often on the 'room.' Here the producer-architect can reign supreme with no fear of the objects displayed ever being sold or mucked about, or that his carefully aimed swivel lights will be yanked out of position. Once the stage is set there are no scene changes. These showrooms have an air of ominous calm, which is undisturbed by the public or by the lavender-haired vendeuse at her spindly table (for 'information' only); undisturbed, it sometimes seems, by even the faintest breath of commerce. It is no doubt argued that lovely colour, form, texture and lighting do their fell work of salesmanship with subtlety, but a real danger exists of puzzling, arousing suspicions and finally alarm in that silly goose, the customer. If he has come, say, for a washing-up machine, he may forget all about it while gazing into the eyes of a Leonardo Madonna, whose connection with washing dishes is bound to elude him.

In some of these places the very goods themselves seem to intrude and in others the customer is out of place, so perfect and self-sufficient is the décor without either. One cannot help admiring such interiors—they obviously ask to be admired—but they seem curiously dead and divorced from reality. We have, in fact, in our tour of shops, reached the point furthest removed from the bustle of the market-place—refined but dull, the architect's heaven but not the customer's.

Is this curious fourth category a remnant of the exhibition-mania of the post-war years, when manufacturers, turning from guns to goods, had to re-establish their connections; when a public flattened and kicked in the teeth by shopkeepers had to be re-wooed; when architects, starved of any artistic work except camouflage, seized any opportunity with both hands and then proceeded to smother it? Is it too far-fetched to suppose that camouflage has had its influence in the exhibition world, disguising and distorting, not with camouflage nets, but with abstract ideas, much marble, vast photographs, Reg Butlers and trails of Tradescantia?

However, time soon brings comfort and light to the customer who now stands amazed. Who, for instance, now turns a hair at that ubiquitous enlargement of the goddess Athene brooding over a typewriter, laid like an offering at her feet? The highbrow novelty, the new visual thrill has relentlessly become a commercial cliché, and the front-rank designer feels bound to think up something new. The rank and file will happily churn out the clichés for a year or two more, until something new crops up for them too. Something other than wall-papered ceilings, House-and-Garden walls, plastic floors, Egyptian lettering, swivel lights, vertical boarding, venetian blinds, frameless doors with queer handles, egg-crate ceilings, rubble walls, indoor plants, acoustic tiles, open fronts, open stairs, iron chairs, marble tables, mosaic murals, basketwork and the whole world of Milan. How are we to avoid all these? to do something new? For answer turn to page XXX . . . If only we could, and have done! But the trouble with art theory is that it has no simple answers.

So leaving Art alone, let us go from the smart West-End to the side streets, then to the back streets, then to the lesser boroughs at the end of the bus route, to the outer suburbs at the end of the tube, and on to the provinces at the end of the world. Turn from High

Art to High Street and we may find something new.

Here is life in the raw, the typical shops, the true state of affairs, lightly touched by bygone fashions but untouched by architects. On it goes for miles and miles: HEROD the butcher; TIN the grocer; SKATE the fishmonger (frying tonight); PILL the chemist; TRASH—lending library; CASH'S bank; FLASH—electrical goods; KOPPER KATZ for cakes; ROT—dry cleaners; DOWDIE—drapers; WANDA—hair styles; BOOP'S for radio and I. PINCH the self-service senter; they all do a roaring trade and manage to provide both the necessities of life and the old, old fun of the fair. This is not just where the other *half* shops, it is where the other *ninety-nine-point-nine per cent* shop.

Now there is no novelty in having Art only for the few and it is arguable whether a fine art is necessarily a rare art. Modern architecture is often rather pompous about its role as an all-provider for human needs, its social functions and its ability to serve democracy, etc., but in reality most buildings are never designed by architects at all.

An article on post-war shop-fronts in the REVIEW for February, 1951, said 'It is in the small shop that least architectural success has been achieved. The traditional architect, by training and profession a man of fastidious taste, passed by them, like the Levite, on the other side.' Not only economically but spiritually and subconsciously, the architect still loves a princely client and cherishes Renaissance ideals; artistically an architect must be an autocrat to be any good and is it this which so readily predisposes the profession to oligarchy and thence to abstract preciosity? If so, heaven defend the High Street from being cleaned up by architects. Better vulgarity than preciosity.

Yet the average shop *does* need cleaning up badly and the job would appear to belong to an architect; only he must come off his polished pedestal, or whatever it is. The managing director of a large and successful business, a believer in good design and in architects, says it is this: 'There is only one small thing wrong with architects, either they wear their corsets too tight (and no one can go about doubled up) or they need some Ex-Lax.' Which means in more fastidious English that we must talk less about serving democracy and show some more true awareness of its meaning, because architecture is still being confined to the upper deck, out of reach and precious.

True simplicity is entirely lacking in English modern architecture. Instead there is an attempt at cerebral sophistication too glossy and smarty, quite unsuited to the English. Because they are often unsuitable, the places architects put up quickly become tatty; they never really belong and are consequently not loved by their owners. Architecture is now practised as a business, and not as an art, because art requires more contemplation and a slower tempo than industrial civilization permits. All the fashionable ideas come from the centres and are gradually distributed outwards, filtering through the side street, to the lesser boroughs, to the suburbs and eventually to the provinces. But what could be worse than this filtered modern—the style known as 'Contemporary'? Even before filtration, it is over-bred and, in the physically sooty and spiritually snooty atmosphere, achieves only a weary elegance at its birth. Why not begin from the outside and grow the art, like fresh young lettuces, in the open and then cart them into market?

Oligarchy works from the centre outwards but democracy from the outside inwards. It is the endless repetition of small badly designed things which make the modern scene such an Outrage. Think how much pleasanter life would be if a real vernacular cleanliness and simplicity of design could descend on the High Street. What an achievement this would be for the modern style!

A traveller does not feel he is in a two-decker civilization when he buys cakes in Denmark; both the goods and the shop design are good, and normal; and every architect should see the medieval street arcades of Berne and experience the pleasure of discovering rows of glittering new shops inside them, woven into the old heart, a brilliant piece of modern surgery.

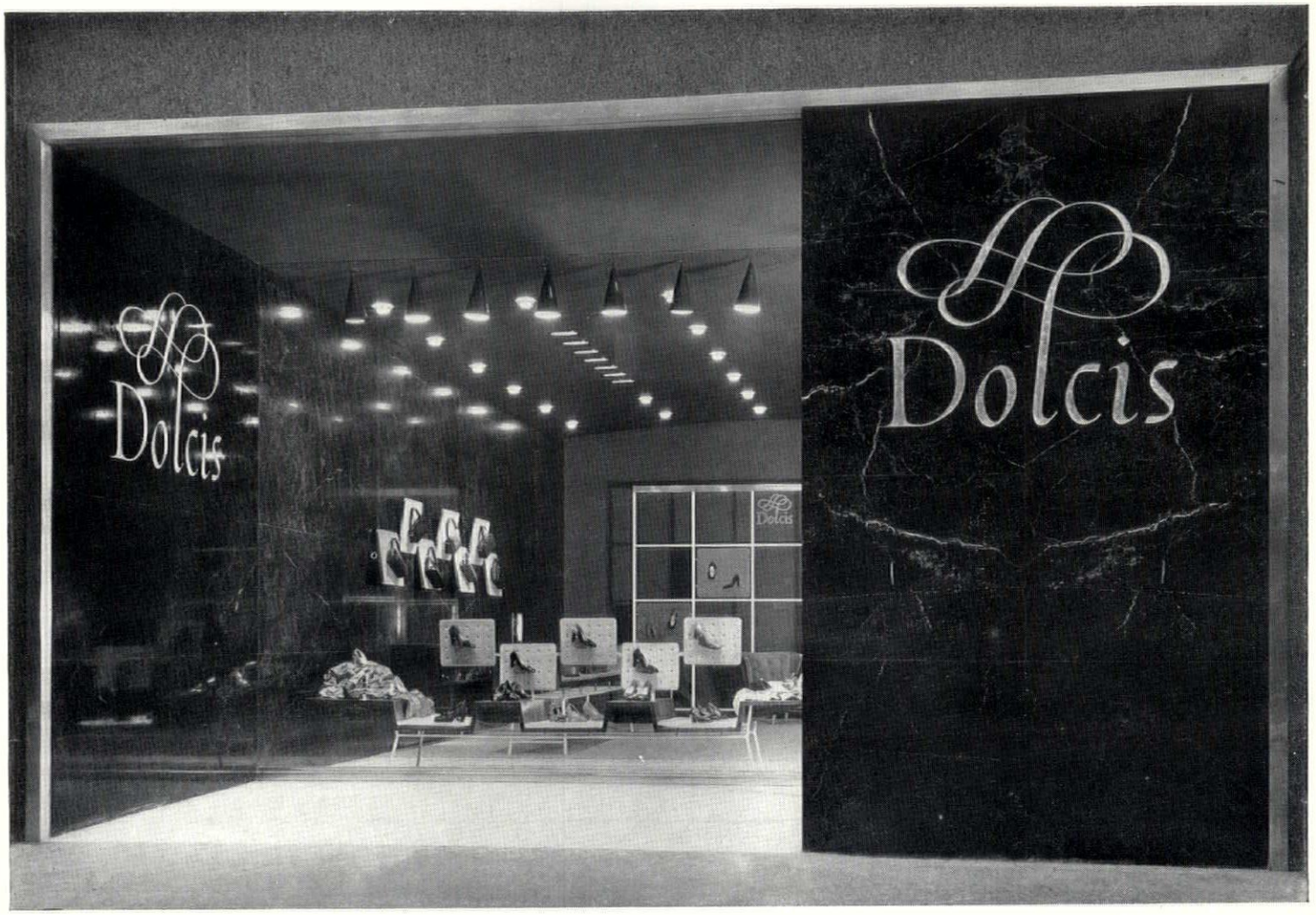
Is it that we fear provincial dullness and proletarian uniformity too much? But just look at our own High Street! It entirely lacks these qualities, except in the monotonous chain stores. We can create now whatever we want, but instead of superimposing our own abstract architectural character we could accentuate the slowly formed and therefore functional character of the business or trade for which we design. Look at the decorative displays made by fruiterers, fishmongers and florists! Here is a traditional art, and obviously immense trouble is taken, but it is an art that has grown out of convenience and necessity, for they have not heard of the Bauhaus and could not afford Moholy-Nagy even if they had. Most groceries and deep-freeze goods are now brightly packaged, and in time there will come a new tradition for display, like the old one for fishmongers with their chalked-up lettering and their patterns of plaice.

The end should be this: an appropriate, functional, varied, realistic character within the modern style. A democratic architecture; this would be something new for this country. It is what Modern is not; it entirely lacks a vernacular, a style easy enough to imitate well universally. Any style can be imitated badly, which is what happens with the style called 'Contemporary.' On the other hand, a formalistic architecture is always attractive to architects and always inconvenient to their clients. Classical architecture, superb in the right place, chills in the wrong one.

Today we are striving towards an ever greater elegance and perfection of detail, but too often with similarly inappropriate results. Because we have jettisoned Ionic capitals, we think we are doing a lot better than Selfridges. The solution is certainly not a return to the past, though the recent re-creation of a Victorian pub shows a weariness setting in with our modern style's inability to suit the right mood to the right occasion.

In childhood, shopping meant a whole pile of goods to admire, a vulgar and fantastic world of plenty, of colours and lights, of days in town and of Christmas. A dream world but not the guilty adult dreams of luxury and wealth and cupidity, a dream-state curiously reflected in some of our decorations of huge irrelevant forms, colours and symbols from the ancient subconscious via Freud and Dali. Is this our only highbrow prescription for the patient shopper? If so, no wonder he clings obstinately and cosily to Oxford Street Baroque and drinks in a jolly Victorian gin palace.

The average new shop in the average High Street, as Herbert Tayler pointed out in his article, is sunk in characterless mediocrity compared with its eighteenth-century ancestors or with unselfconscious 'popular art' window-dressing. The following article illustrates some of the best recent British shops (wholesale showrooms, which do not invite the public inside, are excluded). The critical commentary is by Ian Hodgson, and the examples illustrated show that a reasonable level of shop design does exist in the West End and in some provincial towns. But the quantity is small, the design rarefied, the clientele sophisticated; and the link between upper deck and lower deck shopping (see frontispiece, page 98) is still far to seek.

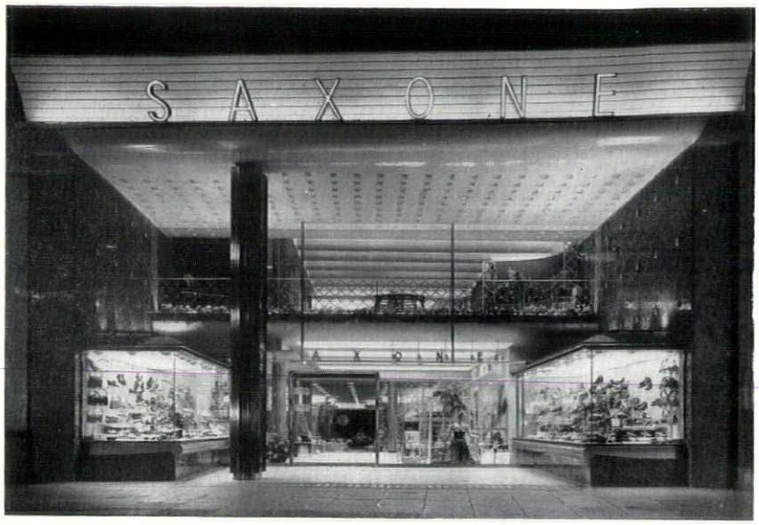


1, *Dolcis, Old Bond Street, London. Architect, Ellis E. Somake.*

Shops are creations of fashion, and rarely last longer than a generation nowadays without a face-lifting operation, if nothing more drastic. Perhaps this is why architects have avoided them, motivated by subconscious desires to create monuments, and what good is a monument that only lasts twenty years? Since the war, with the lifting of restrictions on luxury building, on shop-lighting, and on building materials, with Herculean efforts on the part of the Council of Industrial Design to make consumer, manufacturer and shopkeeper design conscious, the architect has ploughed a few wavering furrows on the formerly barren field of shop design. Not the pre-war pioneers, now the respected leaders of the profession, all so busy with higher things, but a new generation mostly trained or working as assistants just pre-war, and nurtured since on a rich diet of exhibitions. With a few exceptions these architects seem to have specialized in the 'shop' field, and the rest have left it to them. This is a pity: one would like to see other architects who have made names for themselves in other directions trying their hand. There are surely enough lighting engineers, display specialists, typographical experts to take sufficient of the donkey work and allow the architect to get on with the design. This statement will meet with cries of disapproval from those who think the architect should be a sort of latter-day Leonardo but never mind.

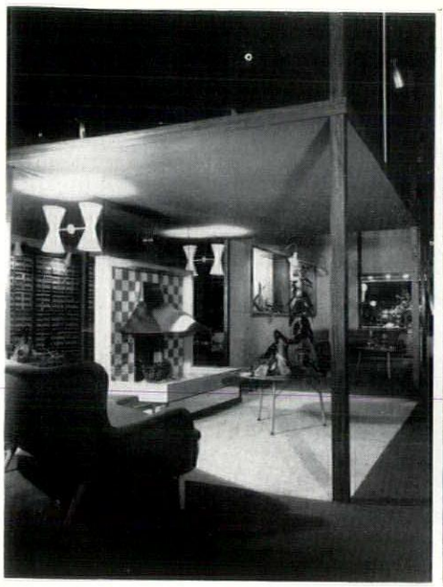
'Good design means business'—this well-intentioned slogan, alas more honoured in the breach than in the observance, was coined by the Council of Industrial Design in, I think, 1949. At that time the boom was at its peak, and the shopkeeper could sell everything upon which he could lay his hands, or most of them could; but not all. Cut-throat competition in the multiple shoe trade has resulted in a startling eruption of new shoe shops on the battered face of the West End of London. They have set about their task of ensnaring the coupon-free shoe-hungry public in many and often subtly different ways. The brash glitter of Oxford Street (Saxone, **2** and **3**) contrasts with the discreet glamour of Bond Street (Dolcis, **1**) or with the well-mannered respectability of Knightsbridge (Randalls, **4**, **5**). This movement, begun almost simultaneously by Dolcis and Saxone in Oxford Street and followed by many other branches of these two firms in London and elsewhere, has compelled most of the other multiple shoe stores to follow suit with varying degrees of success.

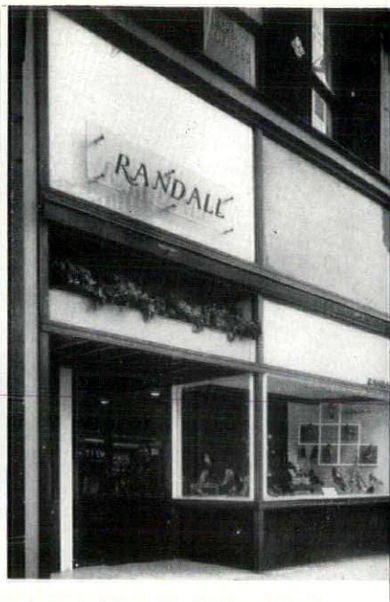
The Saxone shop, one of the first to make use of the double height and recessed front, suffers from an indigestible welter of textures, forms and finishes. Some rather feeble lettering has now been replaced by a bolder and more appropriate typeface, which is also being used on other Saxone branches. It does show the sense in commissioning and then sticking to, one or two good basic fascia designs, as Dolcis and Richard shops have done. But as a landmark in shop design this Saxone shop is unique. What a startling addition to the grubby Oxford Street scene it was, now no



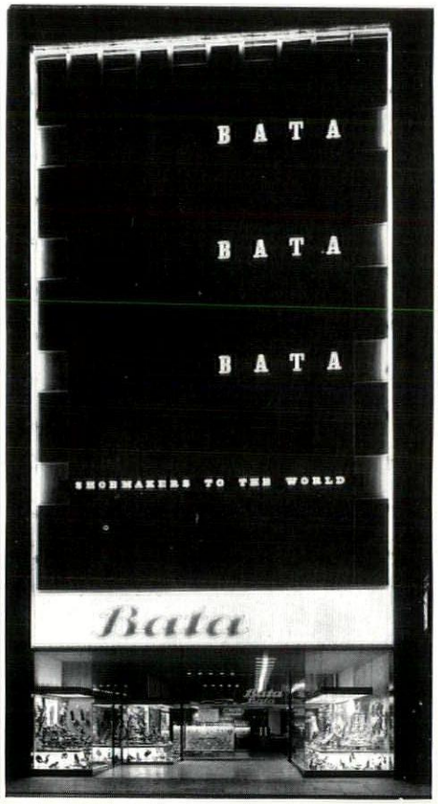


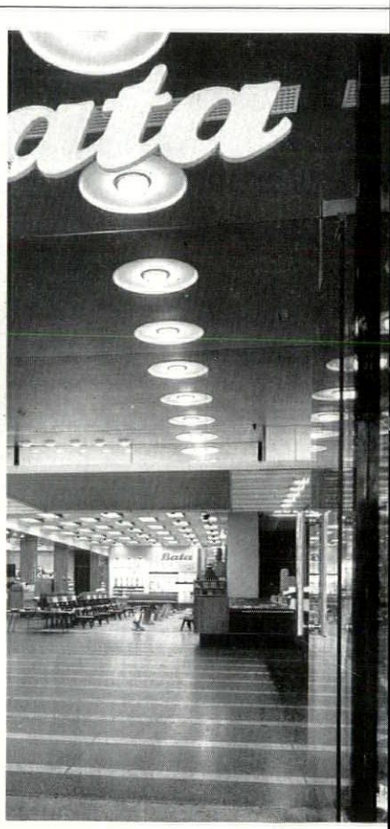
2, top, and 3, above, Saxone, Oxford Street, London. Architect, Michael N. Egan.





4, left, and 5, right, Randalls', Knightsbridge, London. Architect, H. Hubbard Ford.





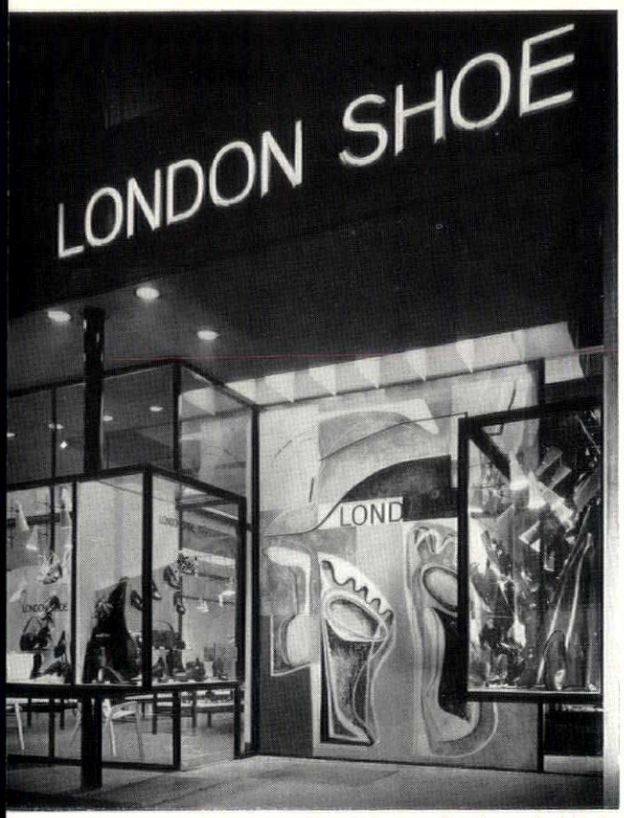
6, left, and 7, right, Bata, Oxford Street, London. Architects, Bronek Katz and R. Vaughan

longer alone, for there are twenty-seven shoe shops, mostly new or rebuilt, between Tottenham Court Road and Marble Arch.

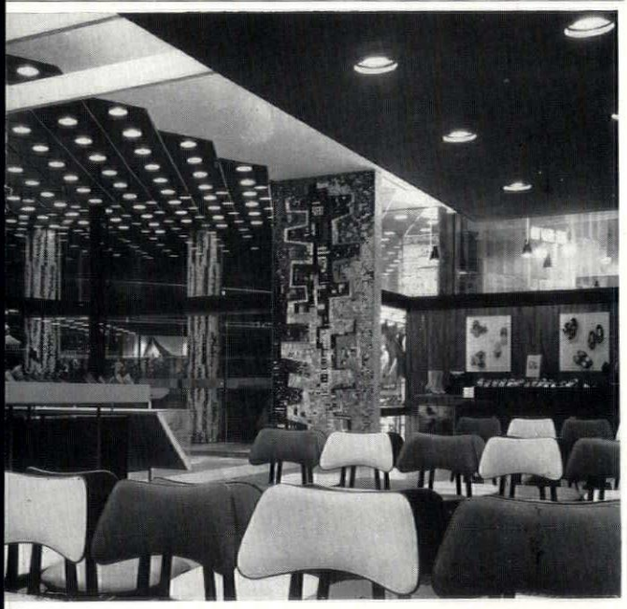
True-Form, on the corner of New Bond Street, **9**, has some commendably bold sans serif lettering outlined with neon but the interior suffers like Saxone from over-elaboration. The Bata shop, also in Oxford Street, **6**, **7**, by the same architects, has another version of the recessed front, single storey, with an ingenious use of mirrors to create the illusion of a higher ceiling at the rear of the shop, and a night-time use of neon which benefits from using the whole of the façade of the building from pavement to parapet as a frame. The London Shoe Company shop in New Bond Street, **8**, is perhaps the best of the shoe shops if a little self-consciously architectural. What a relief to have a plain white wall or two, a plain carpet, and a simple gridded ceiling without tricks, even if the furniture and fittings are rather angular and fussily constructional, and the patches of colour too brightly primary. The mural beside the entrance door comes off best from the other side of the street as perhaps was intended, but the insipid pale green fascia is a weak point in an otherwise neat front.

Window shopping is undoubtedly important for these shoe shops, for almost without exception they try to show as many shoes as possible and then more. The resulting confusion in the window contrasts with the comparative orderliness of the planning within; here the tendency is towards keeping the stock discreetly tucked away behind screens, or in another room altogether from the fitting room.

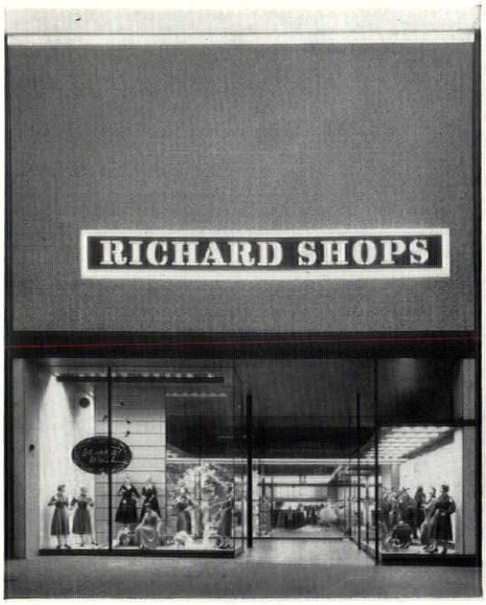
The desire on the part of the shopkeeper for as much window display as possible may have unfortunate results. This is the case in the Dolcis shop in Bond Street where the incised marble slab screening the entrance has been replaced by a sheet of plate glass, the neat display unit inside the main window has been added to, and an insignificant glass showcase introduced on the flanking marble wall of the set-back front. These trivialities, presumably incorporated to display a dozen more shoes, have succeeded in spoiling the coherence of what was a relatively simple and dignified shop, **1**.



London Shoe Company, New Bond Street, London. Architects, Chamberlin, Powell and Bon.



True-Form, Oxford Street. Architects, Bronek Katz and R. Vaughan.





10, left, and 11, right, Richard Shops, Oxford Street, London. Architects, Bronek Katz and R. Vaughan.



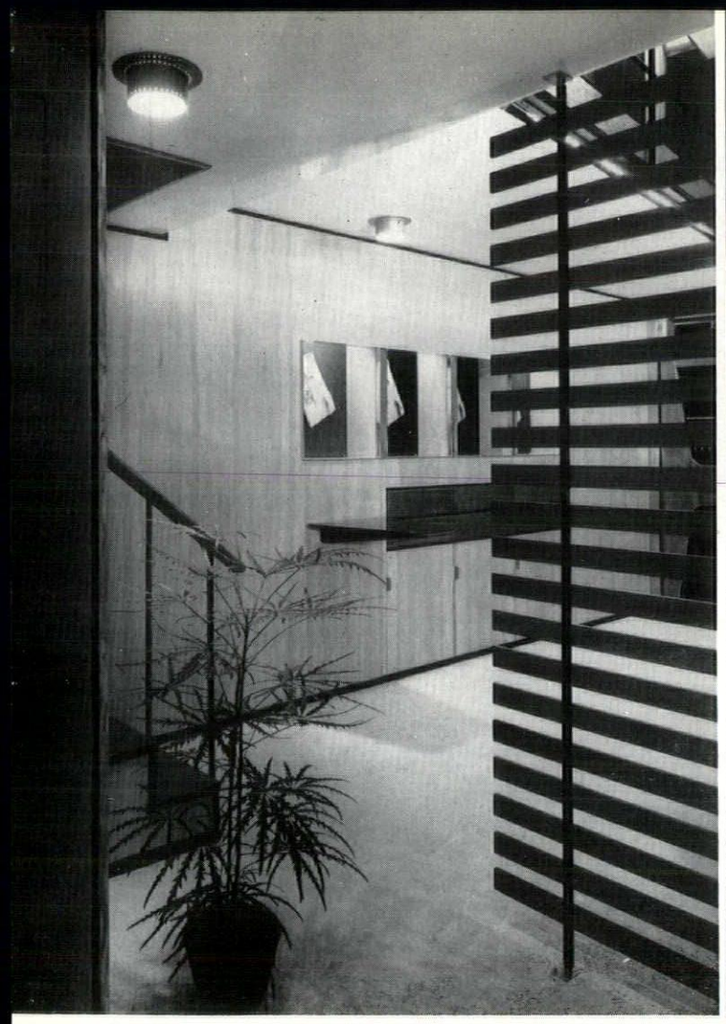
12, Cordells', High Street, Slough. Architect, Vivien Pilley.

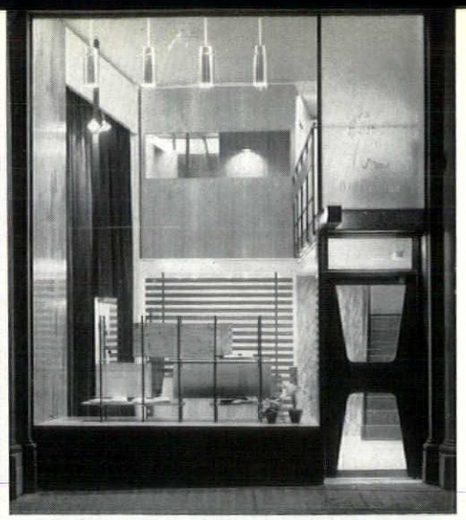
This vexing question of display crops up time and again. The dreariest of shopfronts and showcases can be brought to life by skilful attention to colours and arrangements of display and lighting, and the most elegant ruined by the contrary. This is particularly noticeable in shops selling fashion goods, where the background to the constantly changing goods is all important and changed as often as the goods themselves. In London Simpsons' windows and the vintage 1937 interior[1] are always worth looking at, and with Woollands, Liberty's and one or two others set a standard which other shops would do well to emulate. The smaller shops are, it is true, at something of a disadvantage, possibly being unable to afford really first-class display designers, but much can be done in a modest way if the desire to cram the showcases to bursting point is curbed, and a few basic principles observed (or consciously ignored). And surely it would pay such shops to use, perhaps on a part-time basis, painters or sculptors for this work rather than rely on the dubious talents of an enthusiastic salesman, as most of them do. The annual art schools' contribution to the Regent Street shop windows bears this out.

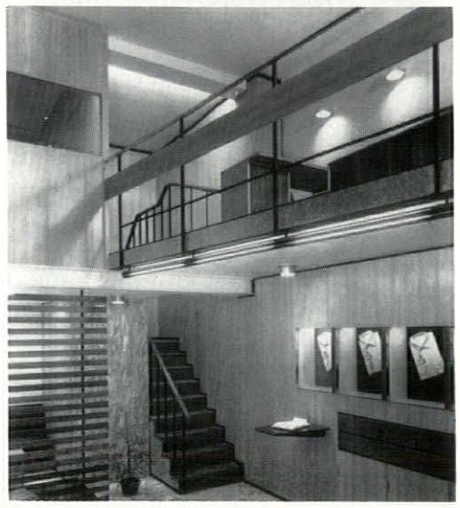
To reiterate, shops are creations of fashion, and it is illuminating on this point, if a little unfair, to compare two shops, one just finished, the other five years old, designed for the same retailer by the same architect. The Richard shop in Regent Street, which won a competition in 1949, contains many of the then fashionable details and mannerisms; the splayed window, the splay-legged counters, the free shaped hole in the ceiling. By contrast the new shop, in Oxford Street, is bang up to date, **10**, **11**. Miesian rectangles edged with black, plain surfaces everywhere, no angle but a right angle in the place, square black tube for everything. Even a Mondriaanesque mural in coloured glass, all are here. But how will they look in five years' time? Yet this tendency to date is not necessarily true of all shops; an old favourite like the Electricity Showroom[2] in Regent

[1] One of the best known works of Joseph Emberton, who died last November. (AR, December, 1937.)

[2] E. Maxwell Fry (AR, April, 1938).



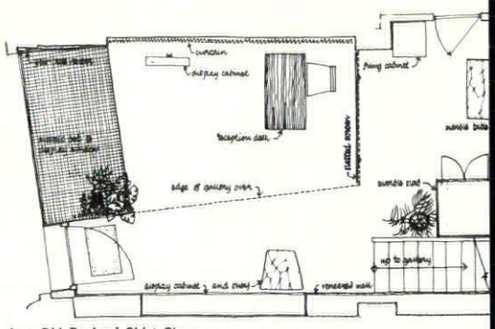




13–15, *The Old England Shirt Shop, Regent Street, London. Architects, Westwood, Sons & Harrison.*

16, *Jeanette, King Street, Nottingham. Designer, Misha Black, of Design Research Unit.*

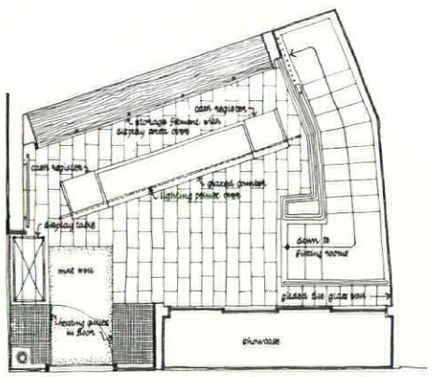




plan, Old England Shirt Shop

Street looks as well today as ever.

Certain sections of the Austin Reed shops if not actually 'self-service' are 'self-selective' and it seems, at any rate in ready-made clothing, more and more will become so. One of this type is Cordell, a small men's wear shop at Slough, **12**. Notice the excellent way the goods themselves are used repetitively, as a display feature. While it may not have the élan of Austin Reed, its cheap but cheerful approach to the selling of mass-produced clothing could well be emulated by some of the large multiple stores. Many of these have been virtually 'self-selective' for some years,



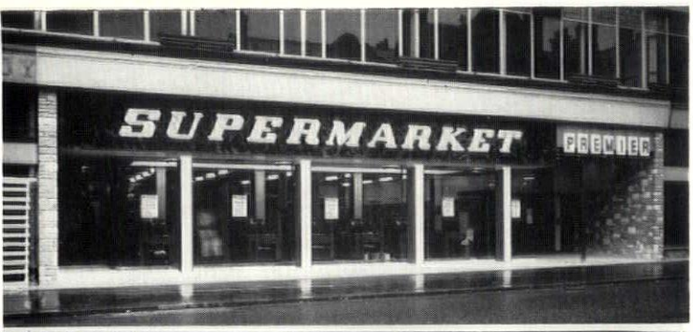
plan, Jeanette, Nottingham

with all goods displayed on open counters for the customer to inspect.

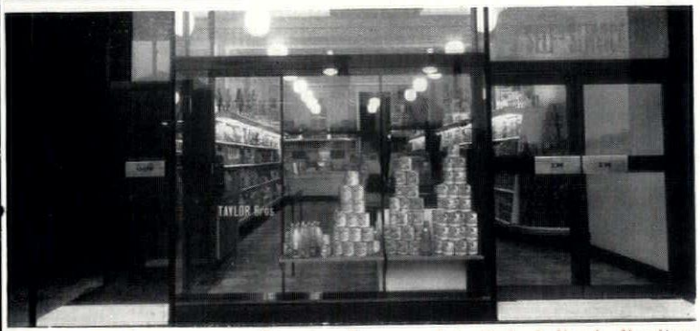
The Old England Shirt Shop in Regent Street, **13-15**, has a simplicity of materials and a delicacy of detail which is comparable with the best Italian small shops (and they are very good indeed). Only the rather feeble engraved lion and lettering above the entrance door is out of key. However, this is the client's own trade mark and name and one assumes the architect was not responsible for it.

Of almost as high a standard as the Shirt Shop, the small lingerie shop at Nottingham, Jeanette, **16**, has some good lettering and a reasonable use of a mirror wall (now part of the stock-in-trade of the shop designer); but the main window is somewhat cluttered and spoils the effect of an exceptionally well-detailed job.

The grocery shop, selling small-dimensioned packaged goods, is probably best suited to self-service; it was first seen in this country five years ago. The system had been used with great success in the USA for some ten years previously, and presented a ready-made answer to the post-war labour shortage. The CWS was one of the first to realise the advantages of the



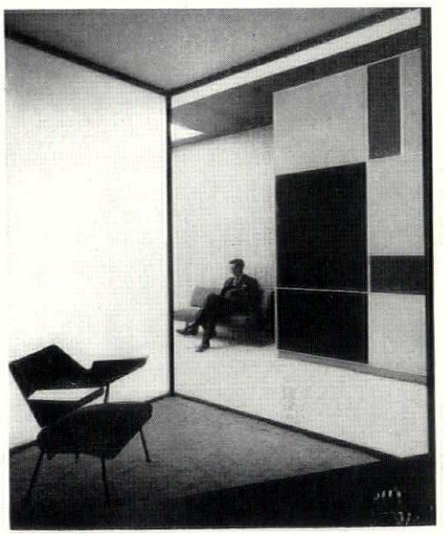




17, *top, and* 18, *centre, Premier Supermarket, Oxford Road, Reading. Architects, Thomas Mitchell and Partners.* 19, *bottom, Taylor Bros., Stone Cross, Harlow New Town. Architects, J. M. Austin-Smith and Partners.*







20–22, *Henly's, Piccadilly, London. Architects, W. S. Hattrell and Partners.*

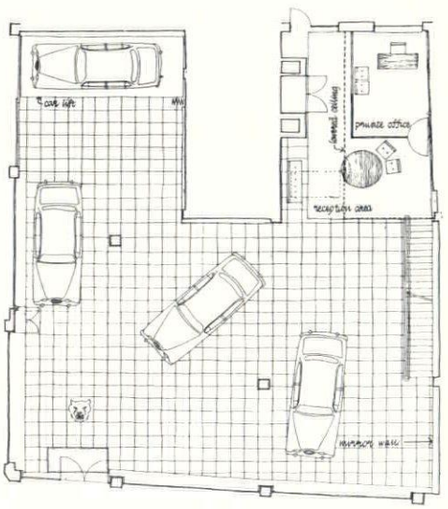
system, but, as with many of the goods sold in them, the design of their shops leaves much to be desired. The Scandinavian Co-ops, with a progressive design policy, architectural and industrial, set an impressive example which is yet to be followed here. Other multiple grocers to adopt self-service have been Express Dairy and Sainsbury, neither of whose new shops is exactly inspired. It is a pity that the excellent design of Sainsbury's packaging and labels do not have a worthier setting.

The Supermarkets at Richmond, Maidenhead and Reading, **17**, **18**, while dashingly 'contemporary' do at least acknowledge that there are tiles of other colours than brown and cream, and stone other than marble like minced liver. A smaller group of grocers' shops has commissioned a series of new self-service shops mainly in the Midlands and East Anglia, with commendable results, **19**. While by no means lavish in finishes or space, these shops are neatly detailed (except for the standard shopfitters' counters) down to the lettering on the doors and counter labels (but not the price tickets; here popular art holds its own).

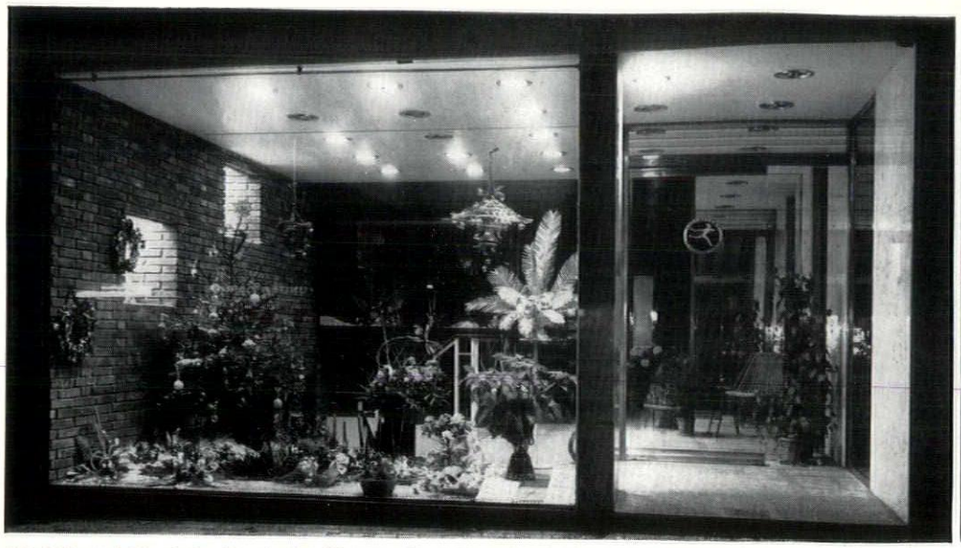
Rather better might have been expected of furniture shops now that more and more manufacturers are turning to contemporary designs to solve their sales problems. But apart from several worthy but not spectacular shops for Perring, the majority of them have been depressingly conservative.

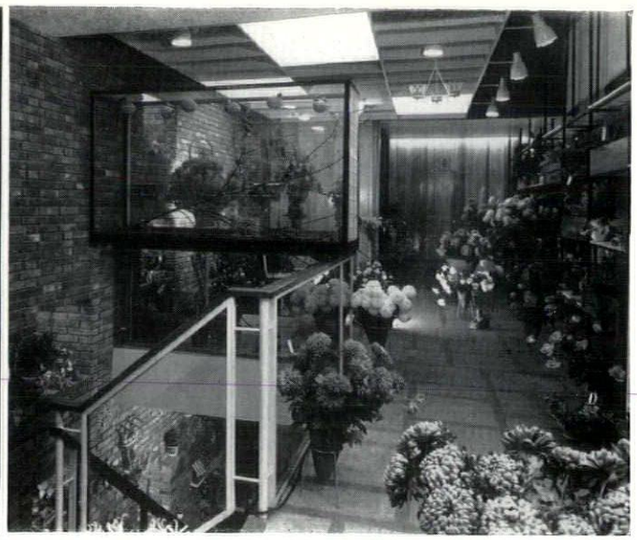
There are a few shops and showrooms which do not readily fall into any category, but which deserve mention. Henly's sleek showroom in Piccadilly, **20-22**, provides an excellent setting for Jaguar's sleek motor cars.

Norris the Florist, in Marylebone High Street, **23**, **24**, has so much going on,

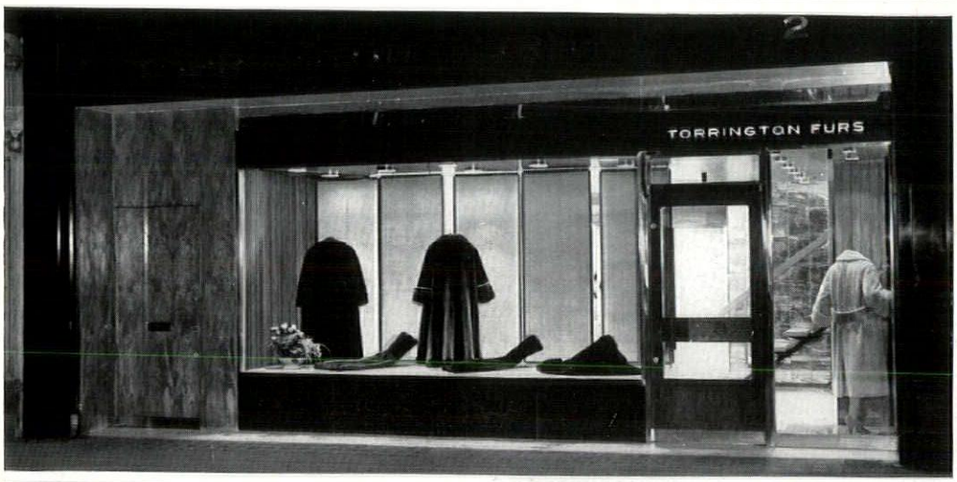


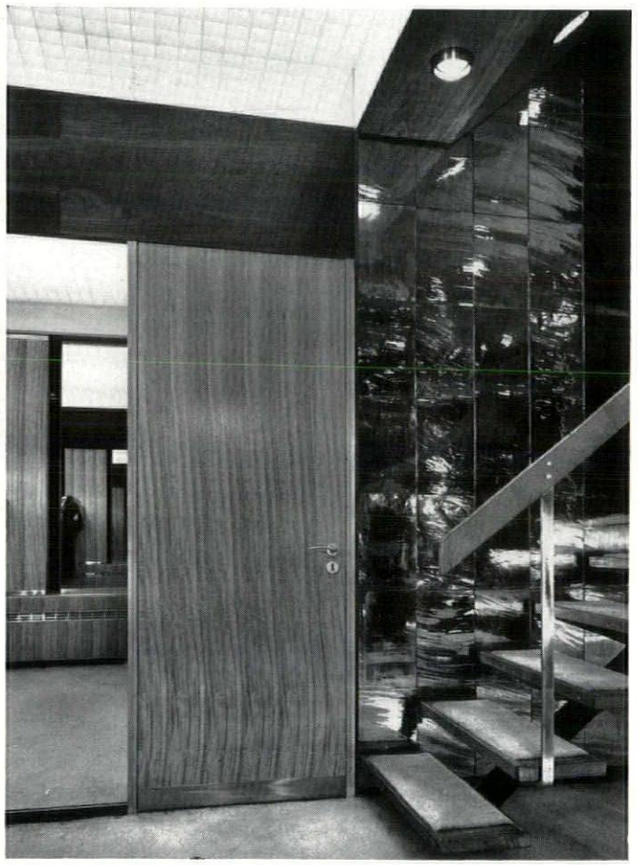
plan, Henly's Showrooms, Piccadilly

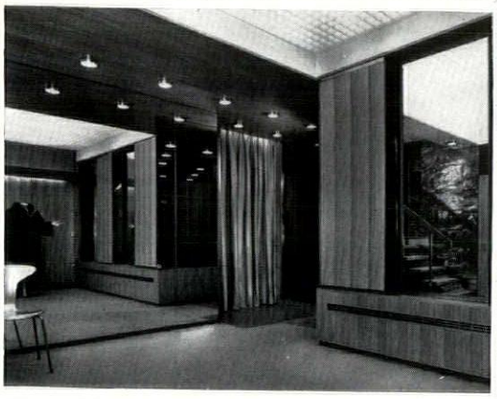


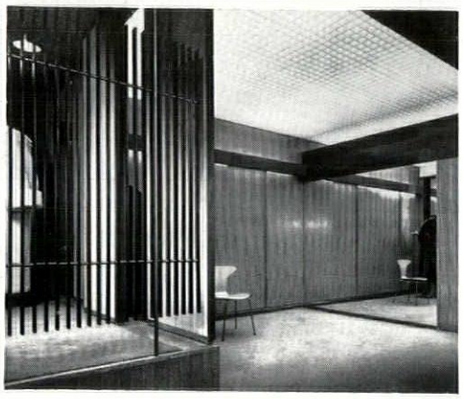


23, left, and 24, right, Norris the Florist, Marylebone High Street, London. Architect, John E. Beardshaw and Partners.









25, top left, 26, bottom left, 27, bottom centre, 28, right, Torrington Furs, New Bond Street, London. Architects, Irvine and Meddings.

goldfish pond, birdcage, false windows, brick, pine and marble, that the interior is more like an exhibition stand after someone has ordered a few too many flowers, but it is nevertheless one of the most adventurous of the flower shops and looks its best at night.

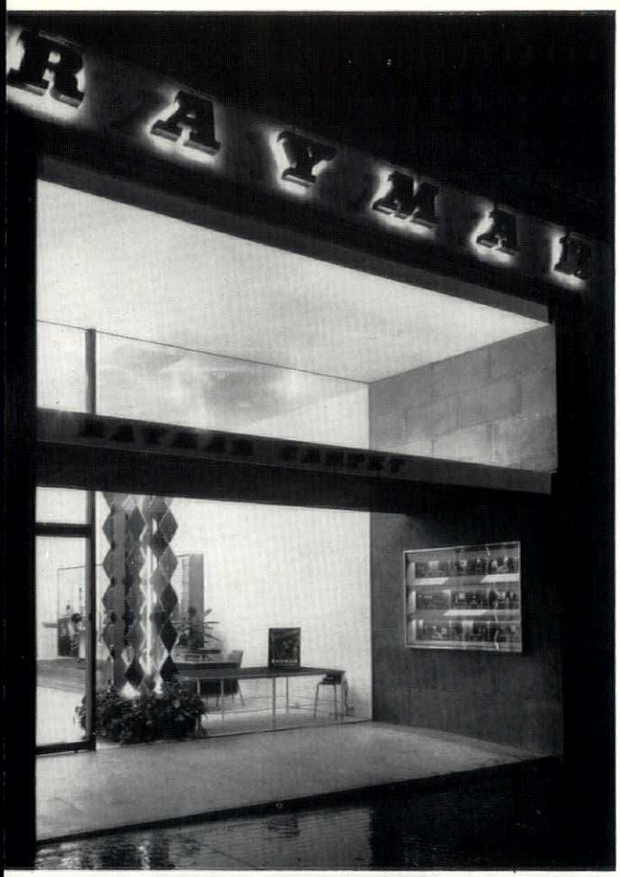
The fur shop, Torringtons, in Bond Street, **25-28**, is neatly detailed with well-chosen materials, though the lacquer on the rosewood fascia is treacly and the lettering a bit severe. The architect, when working as an assistant, was responsible for the excellent detailing of the Bespoke Department of Austin Reed, and the Old England Shirt Shop. All three have a quality of understatement strangely rare in English shop design.

The hairdressers' shops at Knightsbridge and Sloane Square, Richard Henry, **31**, **32**, have broken new ground where discretion, represented by a half-draped female bust in a ginger wig backed by a net curtain, has long reigned supreme. The placing of the staircase to the basement just inside the main window is an ingenious way of half-masking the reception area, and at the same time dispensing altogether with any necessity for window display. The workrooms themselves are businesslike, but the details of furniture, fittings and finishes are a little harsh and uncompromising.

Better Books in Charing Cross Road, **33**, is a good job well done, and obviously with economy in mind. It serves to show that it is not always necessary to indulge in expensive materials and finishes to achieve a design of quality. So much depends on the detail and minutiae, on the handling and choice of materials. This is where the design of the best shops in this country falls, in my opinion, below the standard of the best in so many others. Our shops work well in their fashion, without contributing much original thought to technique or planning. The few examples that will stand comparison with the best foreign shops (and I include the Swiss Travel Bureau[3] in the Strand and Georg Jensen[4] in Bond Street among these) are Torrington Furs, Old England, perhaps Jeanette and Max

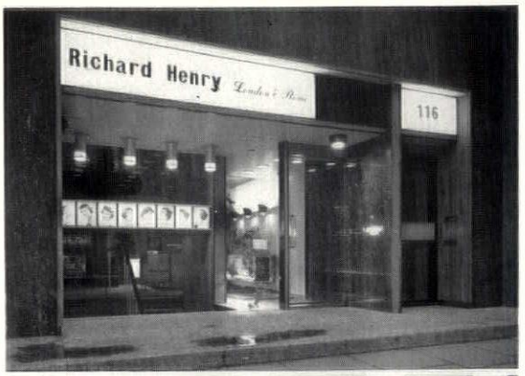
[3] Alfred Roth & T. P. Bennett & Son. AR, February, 1951.

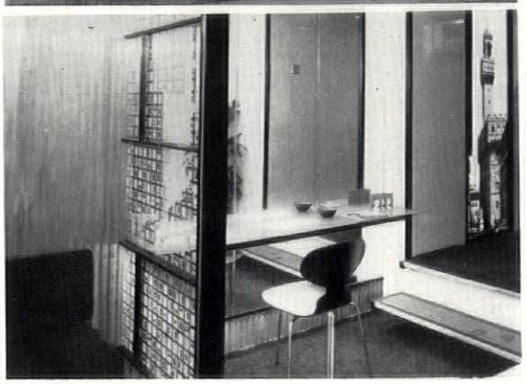
[4] O. Gundlach-Pedersen and Ebbe Andresen. AR, December, 1955.



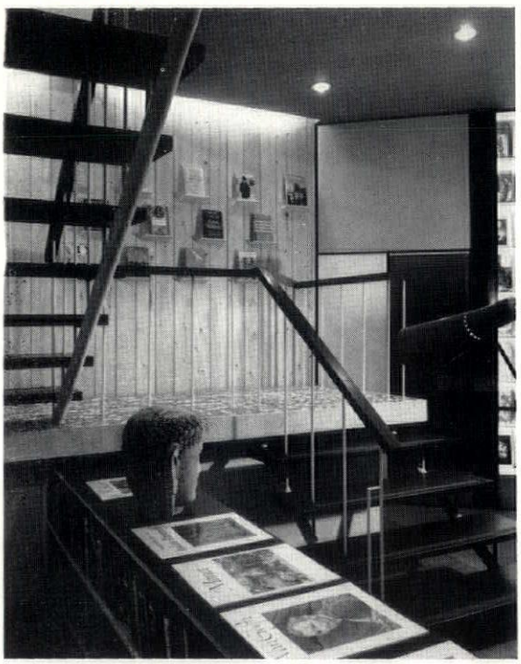


and 30, Raymar, Regent Street, London. Designer, Robert A. Spitz.





31 and 32, Richard Henry, Brompton Road, London. Architect, Kenneth Gibson.



33, Better Books, Charing Cross Road, London. Designers, Ronald Ingles and Vaughan Davidson.

Factor[5], and the three travel agencies, South African, Qantas, and Iceland[6]. The firm of architects who designed these last three were responsible for the Finmar[7] Showroom which, although not strictly a shop, should be mentioned with the examples above. Among showrooms which have windows to the street, thereby encouraging the public to window-shop, if not to buy, are Leisure[8], Vono (Frontispiece, page 98) and Raymar, **29**, **30**. The showroom selling one type of goods wins out over the less fortunate shop selling many. Raymar, with its simple arrangement of carpets and samples in a simple setting, shows particularly clearly the benefit of selling one type of goods only.

It will be noticed that the shops I have selected for special praise are all comparatively small; perhaps it is easier to keep them simple, for complexity of function often opens pitfalls for design. It will also be noticed that the majority of examples are in the West End of London. In the matter of shop design London has clearly for long set an example, good or bad, which the rest of the country has followed, and continues to follow. However, the over-all picture of shop design whether in provincial, suburban or central London streets is one of saddening mediocrity.

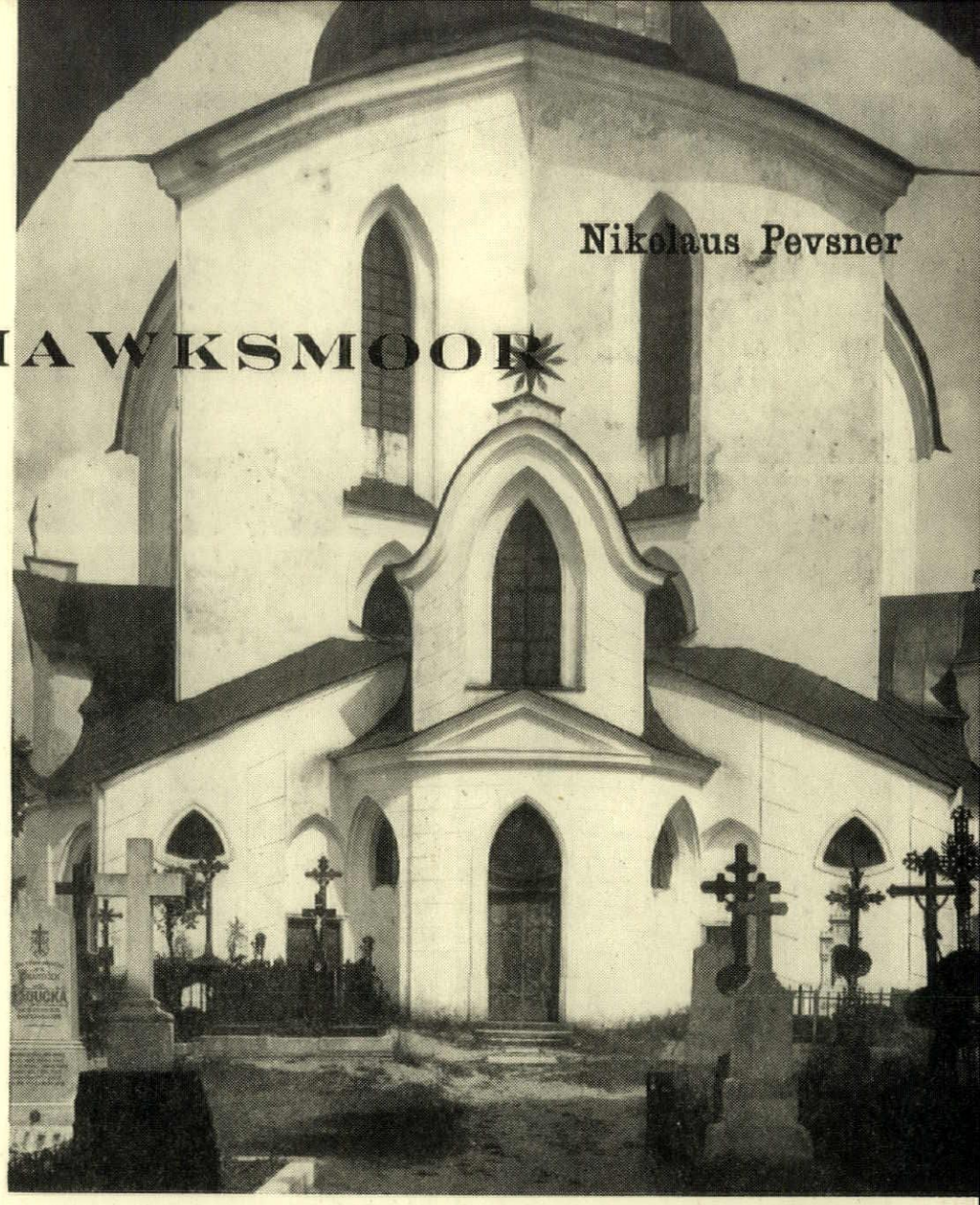
[5] Gordon and Ursula Bowyer. AR, March, 1956.
[6] All James Cubitt & Partners. AR, February, 1951; AR, October, 1951, and **AJ**, 20th November, 1952, respectively.
[7] James Cubitt & Partners. AR, November, 1954.
[8] Challen and Floyd. AR, October, 1954.



Nikolaus Pevsner

BOHEMIAN HAWKSMOOR

We are inclined to regard the Gothic Revival as an English prerogative, and to suppose that its exponents abroad were our followers. But this is not always true. There are rare cases of indigenous Gothicism in France and Germany, ahead of the spread of English influence, and one of the most remarkable of these is the case of Santin Aichel, also known as Santini, a contemporary of Hawksmoor, who created an original Gothic style of his own in Bohemia, in the years after* 1712. *In that year he began work at Kladrau, whose apse vaults reveal his characteristic strain of fantasy in the rib-work, and also the chapel at Saar,* 1, *which reveals originality of a more plastic order.*



1

While the dates of Santini and Hawksmoor correspond, their works were designed and built in two entirely different worlds. Hawksmoor built for noblemen and the Commissioners for the Fifty New Churches. He held appointments in the Surveyor General's office under the Crown and had been for very many years Wren's chief amanuensis and assistant.

Santini came from North Italian stock. His family had lived in that part of the country which had ever since the Middle Ages produced masons and decorators who travelled far in Italy and into Germany and Austria. They were itinerant craftsmen, and might settle in any country or province. Santini's family had made Prague their home, and here he became the favourite mason of Bohemian monasteries, chiefly Cistercian but also Premonstratensian and Benedictine. He was born in 1667, six years after Hawksmoor and three after Vanbrugh, and he died in 1723, the year of Wren's death. His work can be followed from 1703 onwards.

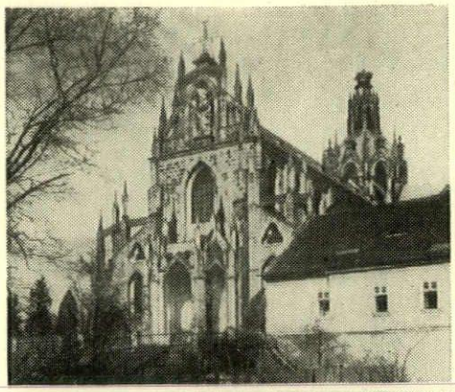
He built sometimes Baroque and sometimes Gothic. His Baroque is in the Bohemian idiom which was founded on Borromini and Guarini and is most familiar in the works of the Dientzenhofer family, both in Bohemia and Franconia. But his speciality was his peculiar, highly personal brand of Gothic, and 'more Gottico' is actually the term used by the abbot of Kladrau in a letter of 1720 to characterize his style.

Kladrau, 2, 3, is Santini's *magnum opus*, the complete remodelling of a Romanesque Benedictine church of which no more was allowed to remain than the ground plan in general, and the bare masonry of nave and aisles and chancel. All the rest is Santini's. His work started in 1712 and was completed in 1726. It comprises the vaults and the central tower which is indeed not a tower but a dome, that is the favourite feature used by the Baroque to distinguish a crossing. The details however are not Baroque but ornately Gothic, with ogee-gables and pinnacles. All forms are long and thin and seem rather a carpenter's than a mason's. This fragility is familiar to us from Batty Langley and others.

But the exterior trimmings hardly prepare one for the *jeux d'esprit* of the vault. They were clearly Santini's delight, and he indulges in them wherever he can. They appear in his earliest recorded work, the Cistercian church of Sedlec, 4, 5, 6, a building of the late thirteenth century ruined in the Hussite revolts of the early fifteenth century and thus, like Kladrau, a remodelling job, and they go on to the Premonstratensian Seelau of 1712, etc., 7, and the Cistercian Saar. The chapel illustrated here, 1, 8, was begun in 1719.

What are we to make of Santini's Gothicism? Is it Survival first of all or Revival? In England it is the country masons usually in whose work Gothic survives and the architects of a higher order, Wren, Hawksmoor, Kent and so on, who consciously revive it. But in Santini's case, although he was a mason rather than an architect, his attitude is that of Revival rather than Survival. There are clearly two sources to his configurations of ribs. One is the local Bohemian version of the German 'Sondergotik,' that is the Late Gothic in Germany. Its most brilliant exponent was Benedict Rieth. His vaults of Kuttenberg (or Kutne Hore), 10, of c. 1500 or of the Great Hall on the Hradshin at Prague are clearly taken up by Santini. He had in this no immediate predecessors. He might have found these forms suitable for the remodelling of a Gothic church or for work within a Gothic ensemble for the same reason for which Wren in his famous memorandum of 1713 on the completion of Westminster Abbey said: 'To deviate from the old Form, would be to run into a disagreeable Mixture, which no personof good Taste could relish.' Yet, in Santini's case, the flamboy ance of Benedict Rieth's ribs was by no means in harmony with the severity of

* The most important literature on Santini is Zdenko Wirth in *Pamatky Archaeologické* 1908, Hans Tietze in *Kunstgeschichtliches Jahrbuch der K. K. Zentralkommission* 1909, and Hans Gerhard Franz in *Wiener Jahrbuch für Kunstgeschichte*, vol. XIV (XVIII; 1950).



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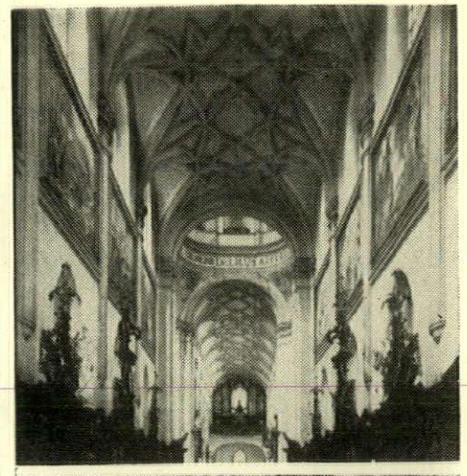

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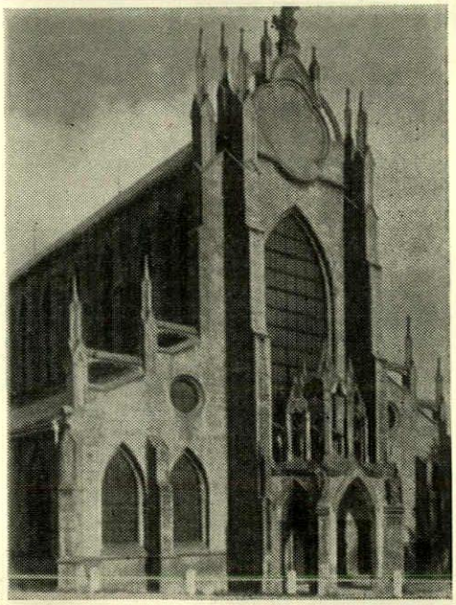

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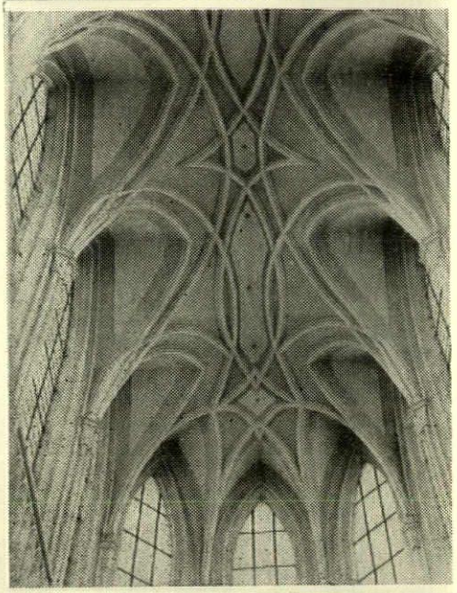

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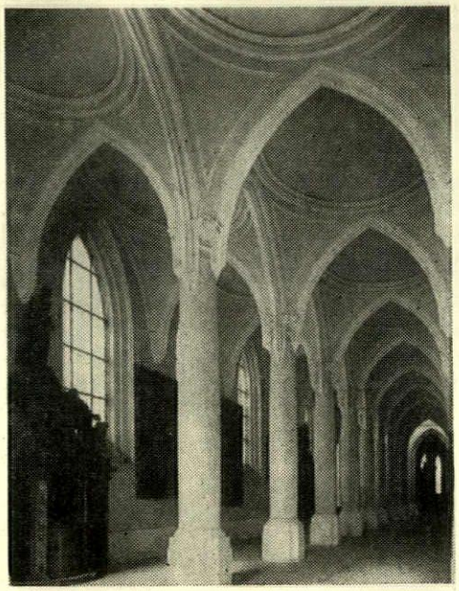

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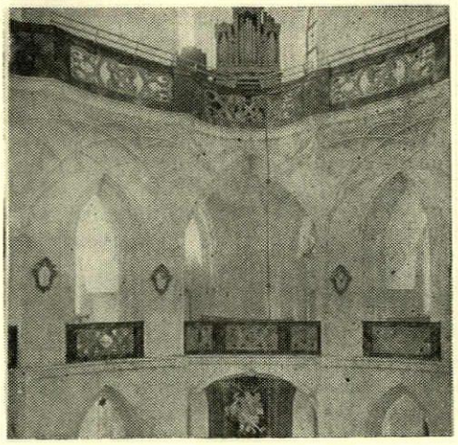

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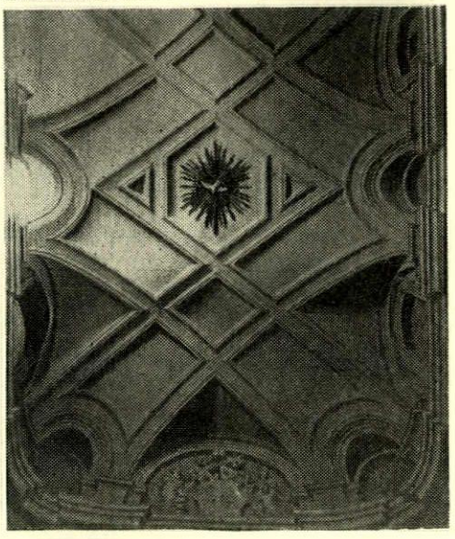
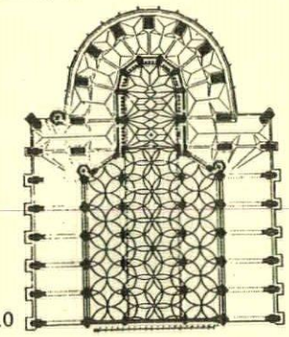


9

2, exterior and 3, interior of the Benedictine church of Kladrau, entirely rebuilt by Santini, and his most important work, 4, the remodelled thirteenth-century Cistercian church of Sedlec; 5, the choir vaults, and 6, baroque vaults on Gothic ribs in the same church, 7, aisle of the Premonstratensian church at Seelau, 1712. 8, S. John's chapel of the Cistercian church of Saar, begun 1719. 9, the Propaganda Fide, Rome, by Borromini, the stuccowork of which was one of the sources of Santini's work; another was late Gothic vaulting of the type found at Kuttenberg, 10.



10

Cistercian Gothic, and thus its revival amounts no doubt to a free choice for reasons of personal preference. This preference early in the eighteenth century can be explained by turning to the second source of Santini's fanciful patterns. This is the stuccowork favoured by Borromini in such buildings as the church of the Collegio di Propaganda Fide, 9, (1662–1666). There one meets the stars and interlaced stars which Santini liked so much, 10. So perhaps to him there was not all that much difference between the recent masters who were universally popular and the ancient masters whom he had rediscovered. He may well have seen his discovery less as a breaking away from the style of his day than as its confirmation in the no doubt highly respected art of those old masters whose work he had to continue.

That in addition the choice he made, the early sixteenth rather than the thirteenth or early fourteenth century, suited the general development of German and Austrian architecture from the Baroque to the Rococo, from the massive to the airy and playful was in all probability not realized by him either. One need only in one's mind substitute a coffered tunnel-vault for Santini's patterns of elegantly flung interlaced ribs, patterns reminiscent of the choreographer's art, and the Rococo bent of Santini's taste will be patent.

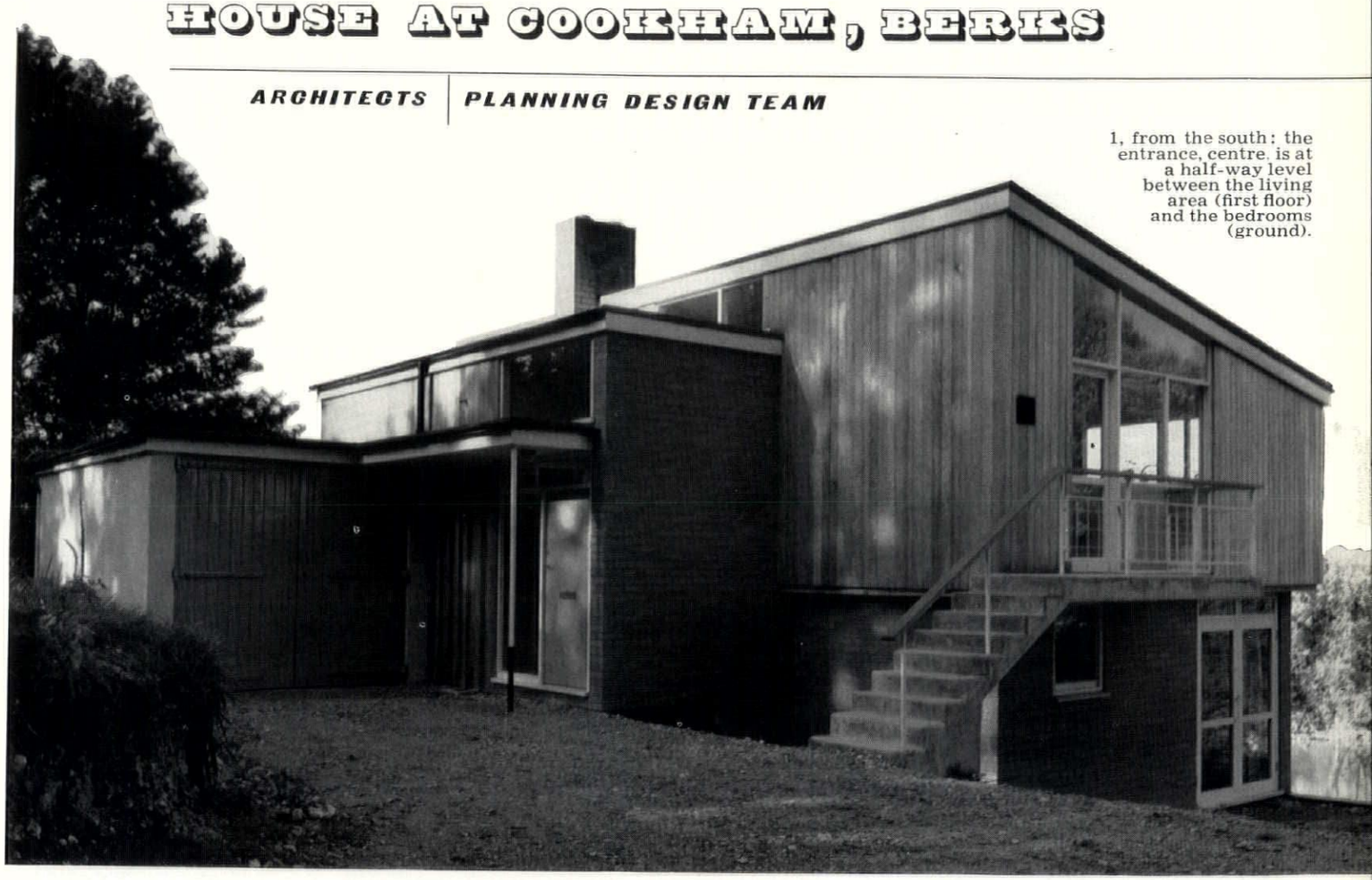
In all this he is the exact counterpart of Hawksmoor, though Hawksmoor's Baroque is different from the Bohemian mason's. But the recessed façade of All Souls has the very same carpenter's quality, that spindly thinness which we know from Santini's façades and ribs. The essential difference between Santini and the English is the Italo-Bohemian's more uninhibited gaiety and a naïvety which places his designs close to folk art. The façade of the chapel at Saar may look like a backdrop from Doctor Caligari, yet it is certainly not selfconsciously theatrical, and Santini could never have spoken of 'lean windows fattened with rich saints' as Horace Walpole did.

And finally, from the historian's point of view, Santini is a freak. He had no successors worth speaking of, and when the Gothic Revival appeared in Germany after 1750 as a general taste, it was in imitation of England and her completely consistent and close development of Gothicism from Hawksmoor to Walpole.

POSTSCRIPT. Santini is known to have visited Holland and England before 1700. Professor Dagobert Frey has suggested that the Ely Octagon may have influenced his dome at Kladrau. This does not to me seem necessary, and as nothing is known of what Santini saw in England one hesitates to assume a journey to Ely.

HOUSE AT COOKHAM, BERKS

ARCHITECTS | **PLANNING DESIGN TEAM**



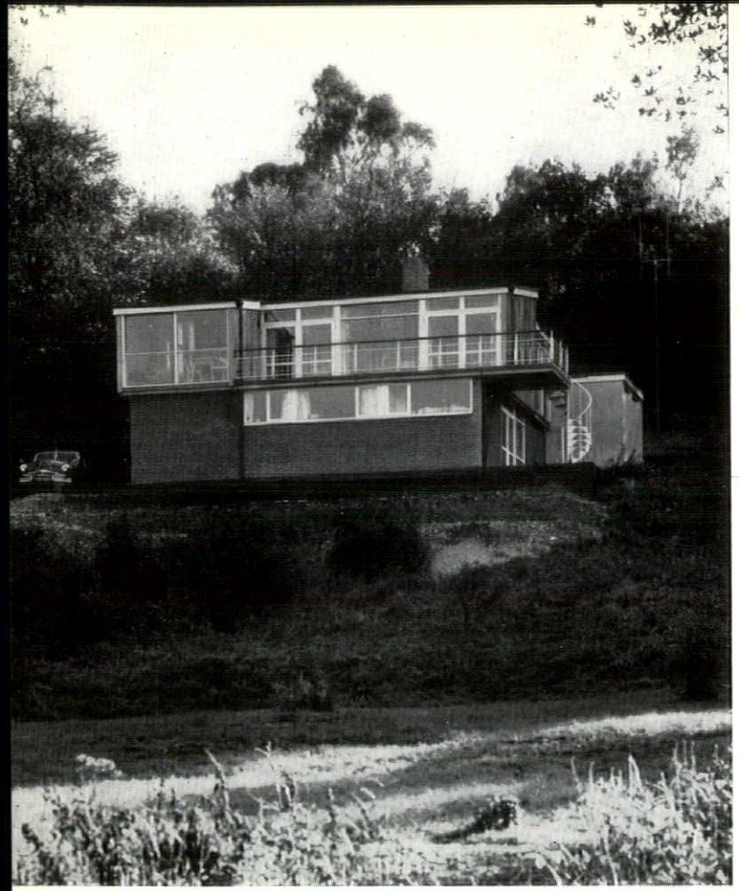
1, from the south: the entrance, centre, is at a half-way level between the living area (first floor) and the bedrooms (ground).

The site at Winter Hill is a steep slope overlooking the Thames, with a small flood meadow at the bottom, impractical for building; the subsoil is chalk. The approach to the site is down a steep, narrow lane, which made the delivery of materials awkward; to the south on the other side of the lane and to the west are well grown trees.

The planning was determined by the magnificent north view and by the wish to admit as much sun as possible, particularly into the living room; also by the only possible approach which is from the east corner. To answer the first need, the living-room, dining space and kitchen were placed upstairs and the bedrooms below were placed forward, to reduce the cut and fill to a minimum; the projecting portion forms a wide balcony. The entrance is at the halfway level, with a small flight of stairs up and down. The roof is mono-pitch, to make the north wall as low as possible, and so that a clerestory light could let in the sun. The children's bedroom is designed to allow for later subdivision, two doors being provided.

The construction is of load-bearing cavity walls up to ground-floor level, consisting of 4½-in. Uxbridge flint facings, 1½-in. cavity, and 3-in. breeze blocks. The first-floor slab is 6¼-in. hollow-pot, above which the construction is of timber studding with oiled cedar board outside, and foil-backed plasterboard inside. One brick wall at the entrance is carried up to assist bracing. The roofs are covered with wood-wool slabs, screed and built-up bituminous felt roofing. Over the main area of the living-room the slabs are channel reinforced and light angles span between front and back walls, bolted to main studs with timber connectors.

The floor finishes are plastic tiles in kitchen and children's room, wood-block in living- and dining-room, and fitted carpets in the bedrooms. The kitchen has a 'through' dresser opening to both kitchen and dining space, and a dustbin recess sealed from the kitchen, but



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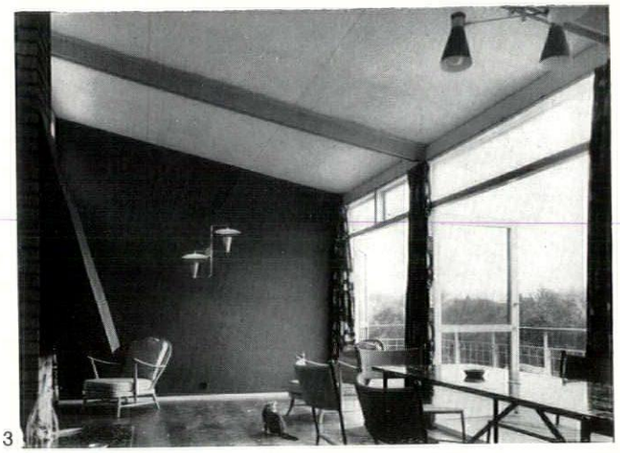

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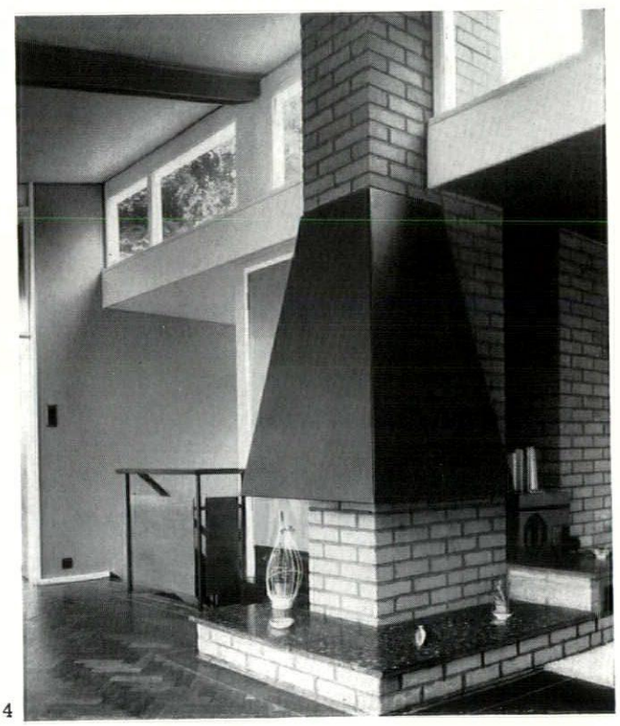
2, north elevation. 3, dining space with living-room beyond. The end wall is painted terra cotta colour; the lamp fitting is brass. 4, living-room fireplace with black sheet metal hood and green terrazzo hearth; the bricks are grey-purple flint-limes. 5, west elevation and children's terrace.

placed just outside the door. The hearth to the living-room fireplace is of Genoa green aggregate terrazzo; the hood has closing grilles to prevent loss of heat when the fire is not alight. The balcony rail is of weld-mesh panels, with teak handrail. The internal stair is of mahogany open treads and handrail, with ply panels supported by 1-in. steel tubes. Access from the children's terrace to the balcony is by a cast-iron spiral staircase. The sliding windows in the kitchen and living-room are single sheets of plateglass sliding on special ball tracks, with a timber hand-grip, but no timber framing. All framing is painted white; downpipes and other ironwork are black and natural wood is polished.

Heating is by the radiation system (oil-fired); the sloping site allowed the oil tank to be hidden in the ground and still give gravity feed to the boiler.



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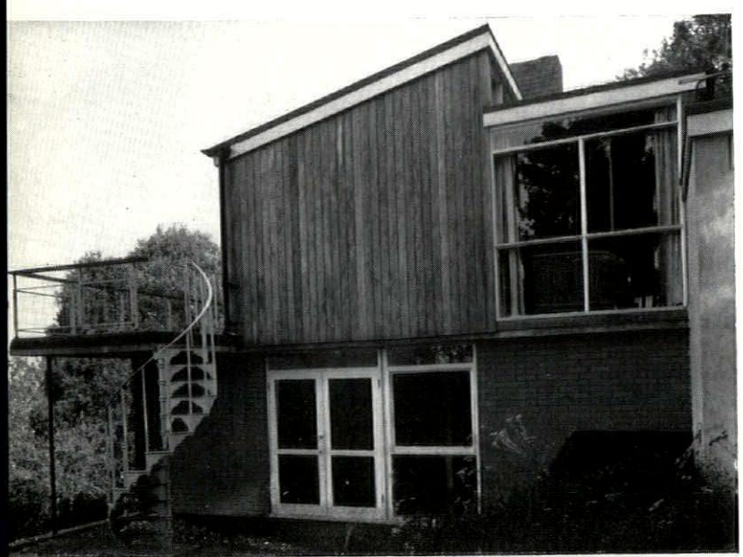

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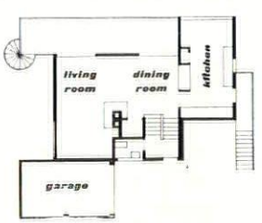
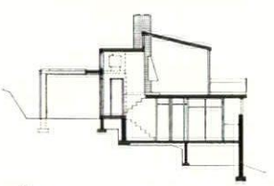
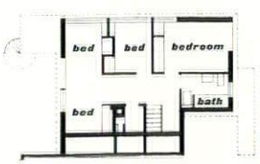


upper floor



section



lower floor

scale 1/32 in. = 1 ft.



HOUSE AT SEAL, KENT

ARCHITECT | **NEVILL TUFNELL**

1, south elevation ; 2, closer view of the hall entrance on the garden side.



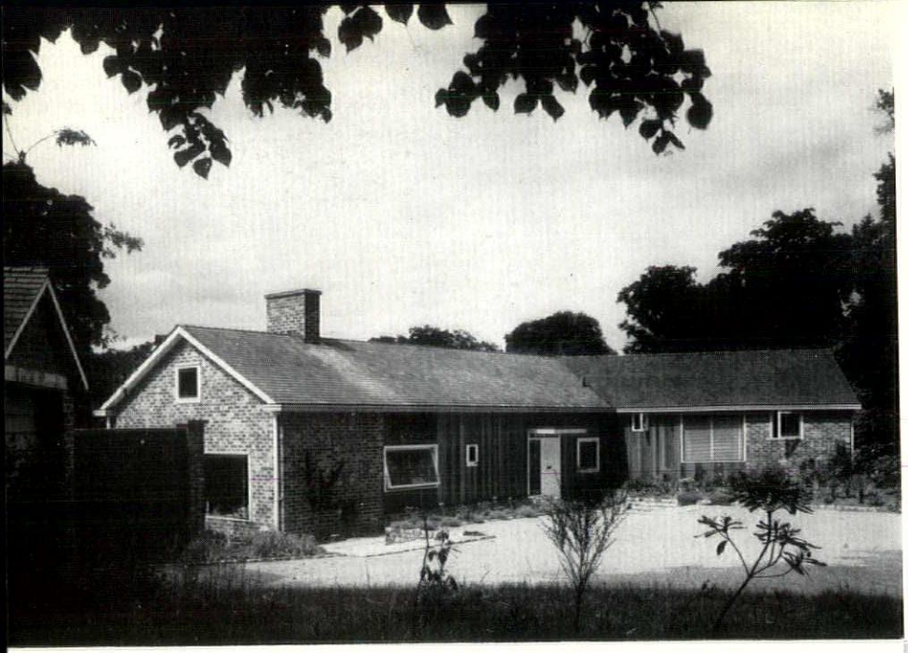
1



2

The house is in the grounds of one of the oldest properties in Seal. Planning objections to its construction came from householders whose properties were developed in the late 20's and early 30's: the Estate Trustees therefore forced the compromise east elevation which has two floors (and contains kitchen and dining-room, with an attic over) ; this greatly increased the cost but gives the interior a pleasing change of ceiling heights. Estimates from local builders were so high (£3 10s. per sq. ft.) that it was decided, with the assistance of friends, to build with direct labour under the owner's supervision. Notwithstanding unfavourable terms for buying materials and the maximum discount of 2½ per cent, the total cost, excluding the garden, was about 39s. 6d. per sq. ft.

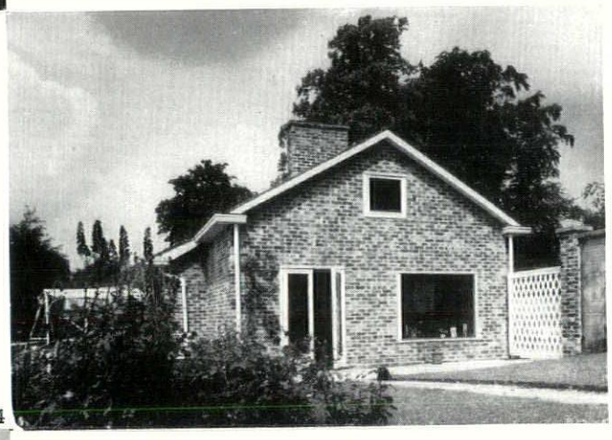
The main construction specifications were maintained



3

HOUSE AT SEAL, KENT

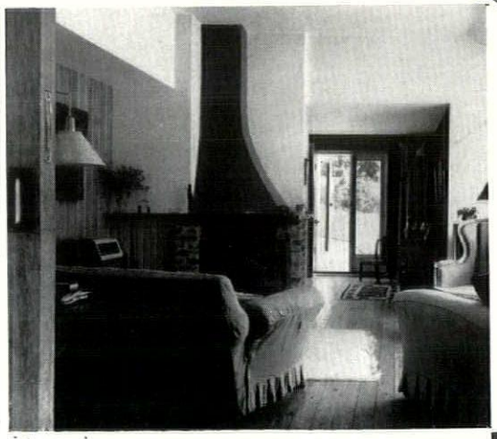
3, the house from the east: the finish is cedar board. 4, the two-storey east elevation containing dining-room and attic above. 5, looking from the hall through the living-room, with the dining-room beyond, where the ceiling height is lower than in the living-room, the space being taken by the attic. 6, the main bedroom at the north end of the house.



4

at the expense of ornamentation and elaborate fittings. The cavity walls are of stock bricks (seconds) with an inner skin of 4-in. insulation blocks which were also used for all the partition walls, to ensure sound insulation. Double-glazing is used throughout in purpose-made wood-frame windows except for the bedrooms which have side-hung pivoting double windows. Ceilings are of ½-in. insulation board with 3-in. vermiculite over. Reinforced precast gutter units were used to save the cost on making concealed gutters; cedar shingles were used on the roof. The footings are concrete but floor construction is unusual: 1-in. pine boards are secret-nailed to battens in the screed, and under the 5-in. concrete raft is a 5-in. layer of 2¼-in. clean shingle. It is thought that there can be no capillary attraction of moisture through this layer, and before the flooring was laid some tests were made to prove its effectiveness. Water proofing membrance between the concrete and screed, and roofing felt between the screed and the floor boards, complete the damp proofing.

Heating, apart from one large wood-burning hearth, is by electric convectors. A heat pump, assisted by an immersion heater, provides refrigeration and hot water.



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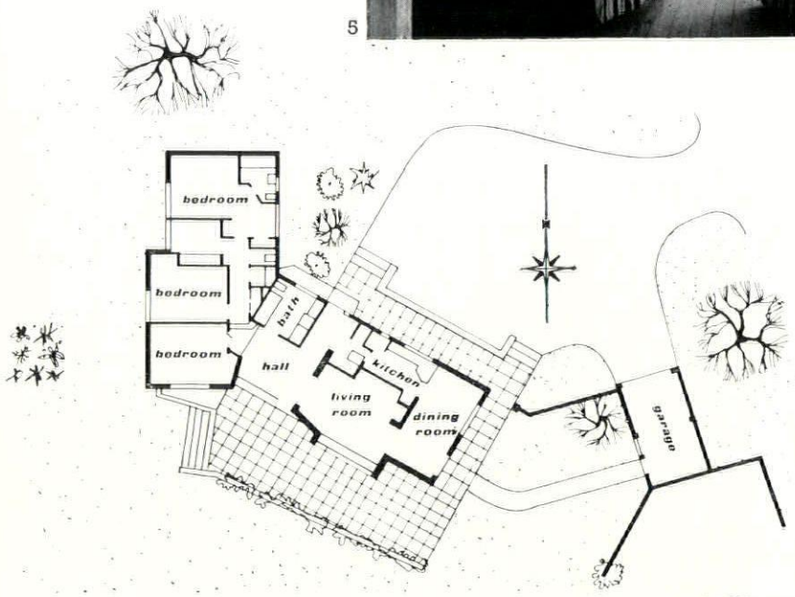

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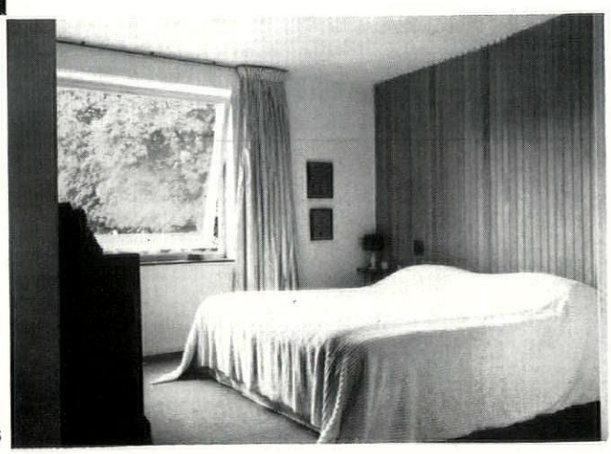

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HOUSE AT GRANTHAM, LINCS

ARCHITECTS | **GORDON AND URSULA BOWYER**

1, night view from south-west. 2, north-east elevation. 3, south-east elevation by day: the white fascia above the window houses a sunblind.



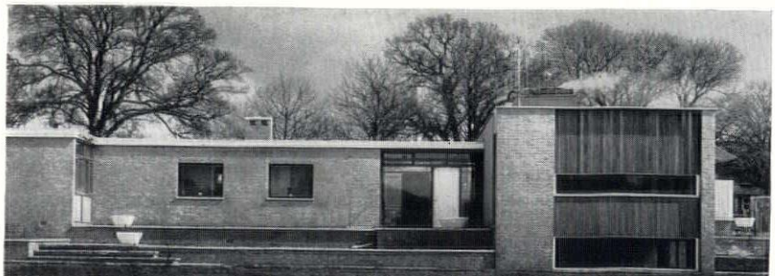
1

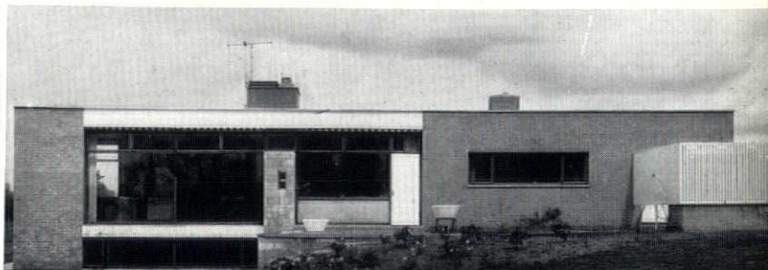
The site has good views of open countryside on all sides except the S.E. where the road is screened by a belt of trees. The ground slopes away to the N.W. and at the bottom of the slope a stream cuts off the client's farm from the rest of the site.

The accommodation is grouped in three blocks which are arranged in an H-form. One block contains the living-dining-room and kitchen with a games-room and boiler-room underneath; another, the entrance hall, cloakroom, main bedroom and bathrooms, and a third, two children's rooms and a spare bedroom with a garage attached at one end. This last can be cut off from the rest of the house when not required, as, for instance, when the children are at school.

Load-bearing brickwork is used, with infilling panels where large openings occur. Window frames are generally teak with a few in black-painted softwood. Fixed double glazed panels are used in all large window openings to reduce heat loss. In the lower part of window openings are bright blue-enamelled glass panels. The infilling panels above and below the strip window on the north-west side of the living-room are faced with teak strips; fascias and external doors are painted white. The fireplace wall is of Clipsham stone. The roof is formed from timber joists covered with ½-in. chipboard, ½-in insulation board and threeply roofing felt, and the ceiling is lined with aluminium-backed plasterboard.

Heating and hot water are provided by an oil-fired boiler in the basement; radiators are of the pressed steel type and all pipes are concealed in underfloor ducts.





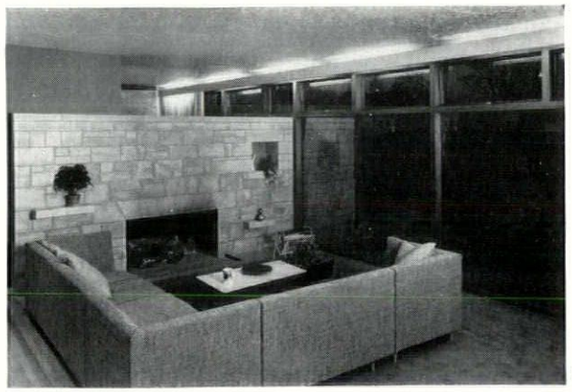
2, 3



4

HOUSE AT GRANTHAM, LINCS

4, dining space ; the weathered sycamore-veneered fitting divides off the kitchen ; beside the black ebonised sliding hatch is a mirror. The curtains are lemon yellow, the carpet olive green. 5, the kitchen side of the same fitting ; the back of the dining space mirror is painted orange. The ceiling is yellow, the floor blue lino. 6, log-burning fireplace in living-room set in Clipsham stone wall that projects through window (see exterior view, 1). Dining space is beyond it. Fluorescent tubes are concealed in pelmet ; sofa coverings are black and white tweed. 7, the north-west end of the living-room.



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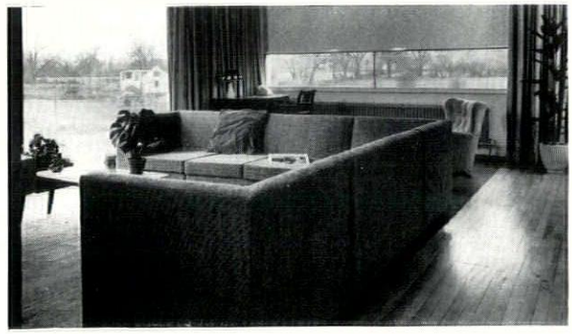

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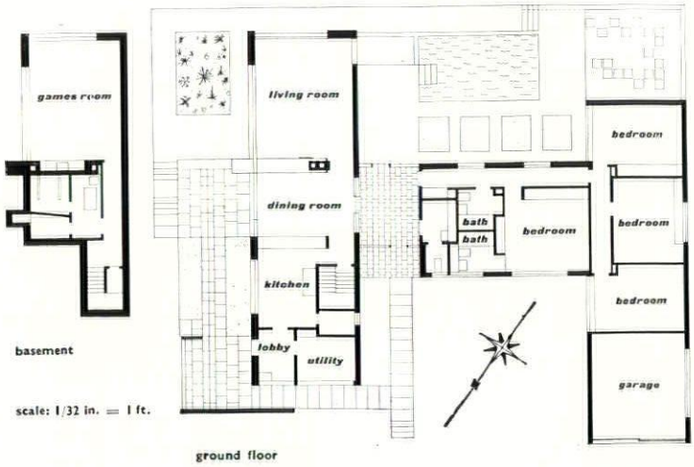
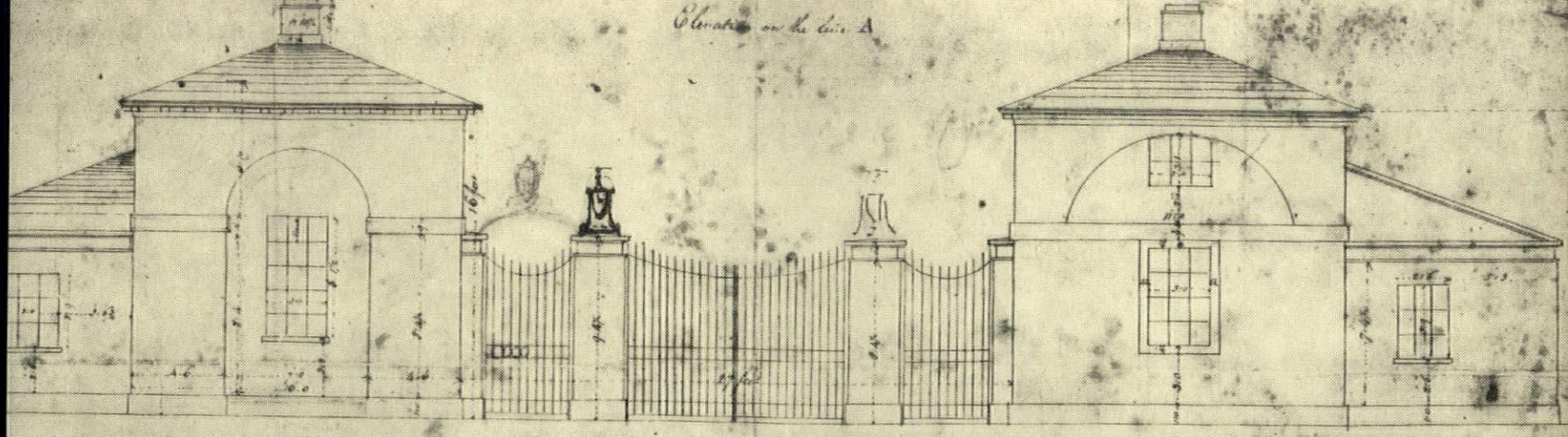


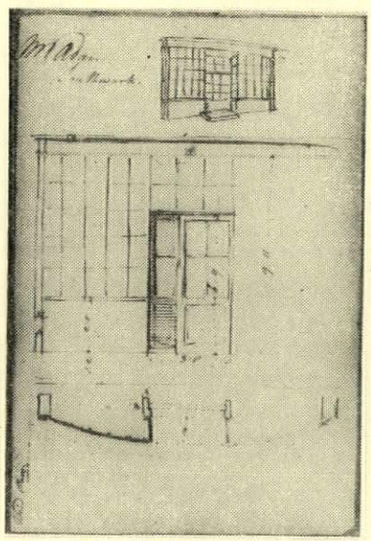


THE EARLY WORK OF SOANE

Dorothy Stroud

Sir John Soane has been unfortunate in that so little of his important architecture has survived. Several of his early works have, however, recently come to light, and while they lack the lively imagination of his more mature style, they probably owe their existence to the fact that they did not meet the violent prejudices often aroused by his more singular designs.

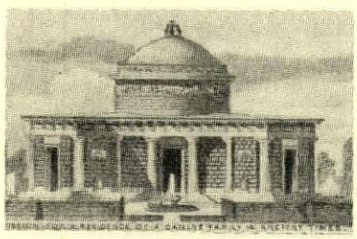
Soane returned from three years of study in Italy in June, 1780. During the next few months he picked up a precarious livelihood by helping George Dance with estimating at Newgate Gaol, and by redecorating, from 1781 onwards, two large London houses, one in New Cavendish Street for the Hon. Philip Yorke, and the other at Hyde Park Corner for the Hon. Wilbraham Tollemache. There was also a commission for tidying up a small estate in the Borough belonging to Francis Adams, 1, and a



Title-block (top of page) Soane's drawing of a pair of lodges he designed for the Hon. Philip Yorke at Hamels. 1, above, shop-front for Mr. Adams' estate in Southwark, from Soane's notebook.

good deal of surveying. But this gave little scope for a creative artist, and Soane's notebooks—those small pocket volumes in which he made scrappy, almost illegible notes to serve as an aide-memoire—confirm the impression that 1780–1781 was a lean period.

While in Rome, Soane had been introduced to the Bishop of Derry in, whose company he travelled to Naples and made a number of excursions. One of these was to Terracina to study the remains of the Villa of Lucullus, where the Bishop's curiosity was aroused as to the appearance of



2, design for the Bishop of Derry of 'a Residence for a Canine Family in Ancient Times.'

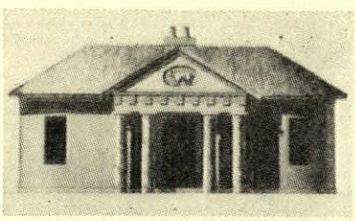
classical dog kennels. Soane thereupon made for him two versions of 'A Design for a Residence for a Canine Family in Ancient Times,' 2.

With the Bishop radiating affability and encouragement, Soane then ventured to make further designs for him, including a summer dining room for his Irish seat, Downhill; and a study of the Temple of Vesta at Tivoli of which the Bishop contemplated building a copy in his park.

Shortly after leaving Rome, the Bishop succeeded his brother as 4th Earl of Bristol, and wrote to Soane requesting his presence as he had chosen him to be the architect for a new mansion. Soane, full of confidence, curtailed his Italian stay and proceeded to Downhill, where for six weeks he hung about with no sign of a commission forthcoming. Eventually he asked leave to return to London, which was granted without any form of payment for the time and trouble he had expended on many designs for the Irish house.

Looking back on this episode from his later years, Soane described himself as 'keenly wounded, depressed in spirits, and my best energies paralysed.' The notebooks, however, show that he soon mastered his disappointment, and was cheered by the company of such good friends as James Peacock and Richard Holland (cousin of Henry, and a prosperous builder), with whom he frequently dined and on occasions went to the theatre. Even more important in the restoration of his spirits was the encouragement given to him by Mr. Yorke and Mr. Tollemache, and by some of the wealthy travellers who had met him in Italy and remembered him on their return. Of the latter the most eminent was Thomas Pitt, Lord Camelford, who was to consult Soane on a number of minor matters connected with his Oxford Street house, and his country places at Petersham, Boconnoc and Burnham. Another was John Stuart of Allanbank, who in 1781 put the redecoration of his Wimpole Street house into Soane's hands. Finally there were the three Norfolk gentlemen John Patteson, Charles Collyer and Edward Roger Pratt who gave him important commissions from 1783 onwards, and introduced him to other potential clients.

Setting aside the repairs and redecorations which were a useful but uninspiring part of his early practice, Soane's first contribution to architecture was a pair of lodges built for Mr. Yorke's country house, Hamels,



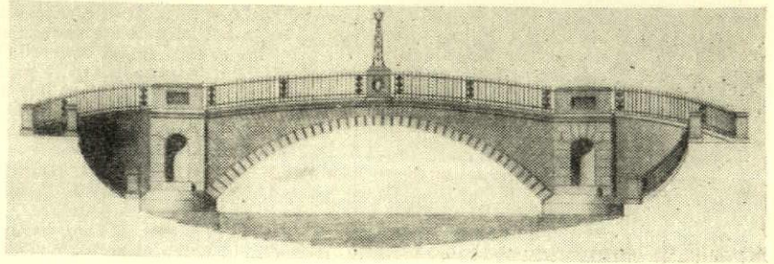
3, the Dairy at Hamels, Herts (water-colour by Soane).

near Buntingford (*title block*), followed by a dairy for the same client in January, 1783, 3, and a small bridge to span the river Wensum at Norwich, 4, designed in March and approved on April 2 of that year. The fourth was a wing added to the Rectory Manor House, Walthamstow, for William Cooke and begun in May; then came a cowhouse designed for George Smith at Marlesford Hall, Suffolk, in June. Of this quintette the lodges at Hamels and and the bridge at Norwich are the only survivors.

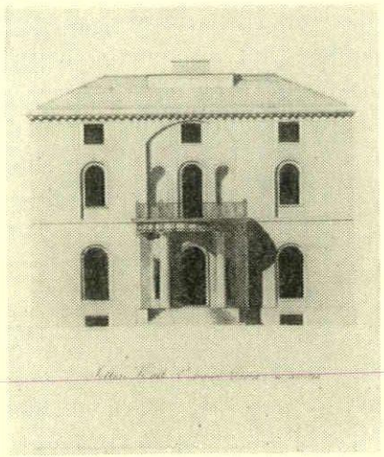
In 1783 Soane was 30, and although the hardest struggle was over (he had ventured to take the first floor suite of 53 Margaret Street for £40 a year, and had installed his own furniture), the chance of building an entirely new house had still not come his way. In July, however, Mr. B. G. Dillingham asked him for designs to replace an earlier building at Letton, 5 and 6, in Norfolk. The first set of drawings was complete in August, but work was not put in hand until the following May, by which time another request had come for a parsonage house to be built at Saxlingham, also in Norfolk, for the Reverend Mr. Gooch, and at almost the same time Soane was approached by Admiral Rowley about plans for a new house at Tendring in Suffolk (demolished 1956). These are all white brick with stone dressings, Letton being the largest, though its elegant entrance front, 5, with a segmental porch of Portland stone has been marred by Victorian additions. In 1785 Soane made the first of a number of alternative designs, 8, for Shotesham in Norfolk for Mr. Robert Fellowes, one of the most attractive of his country houses. Once again white brick was used, the pilasters being of Portland stone with Ionic capitals of Coade composition, 7.

Now commissions began to come in rapid succession. In 1785 Soane was asked to design a house at Blundeston for Mr. Nathaniel Rix—a house which is in every way a complete contrast to Shotesham. Of modest dimensions, it is built of red brick (intended by Soane to have been stuccoed but now painted white) and with its tall, thin, entrance façade, tiny ground floor windows, slate roof and sharply projecting eaves it has a singular hardness—one might almost say ugliness—which time has not softened.

Four minor works of this period must not be overlooked. They are a Music Room built for William Wynd-



4, Soane's drawing of his bridge over the Wensum, Norwich.



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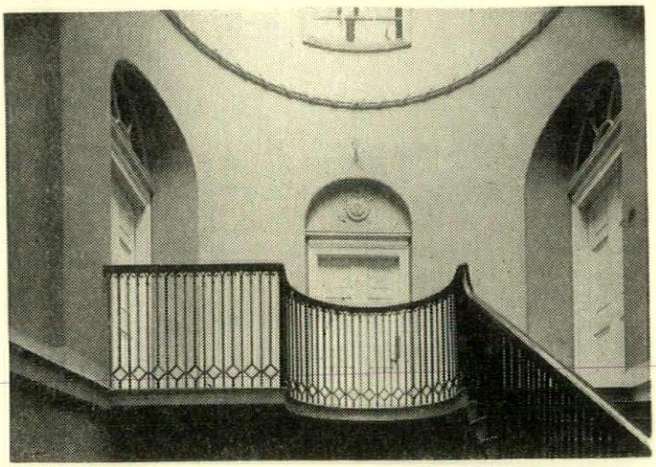
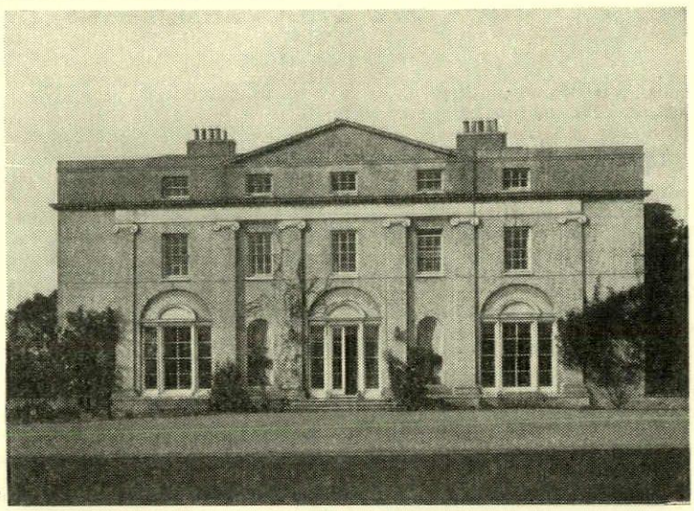


6

Letton Hall, *Norfolk, designed in* 1783 *for Mr. B. G. Dillingham:* 5, *pen and wash drawing showing the entrance front, altered in Victorian times.* 6, *interior, showing the first floor landing under an oval domed skylight.*



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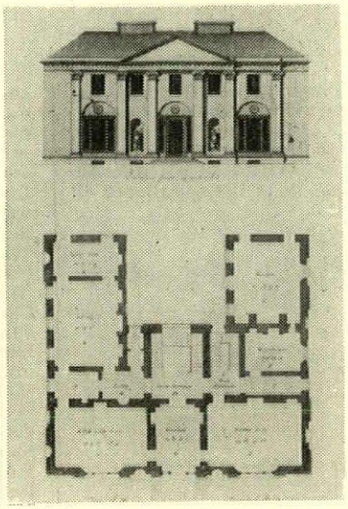
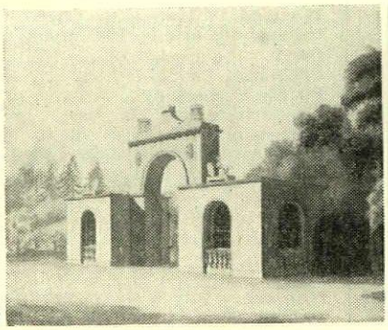


8

Shotesham, *Norfolk, for Robert Fellowes in* 1785: 7, *the brick facade; the pilasters are Portland stone, the Ionic capitals Coade stone.* 8, *one of several preliminary designs for the house.*



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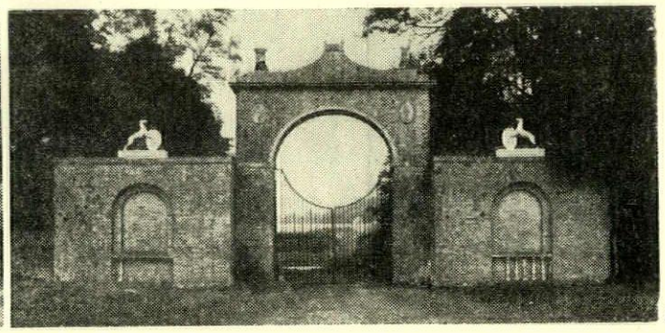
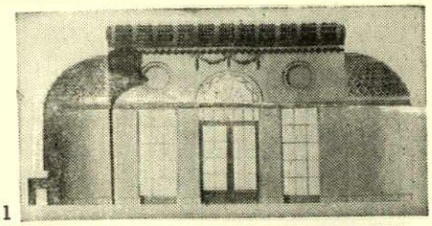


10

Langley Park, *Norfolk, the entrance screen:* 9, *Soane's drawing;* 10, *as it is today. Built towards the end of the* 1780's *for Sir Thomas Beauchamp, it shows the first signs of the 'Soane style' shortly to emerge.*



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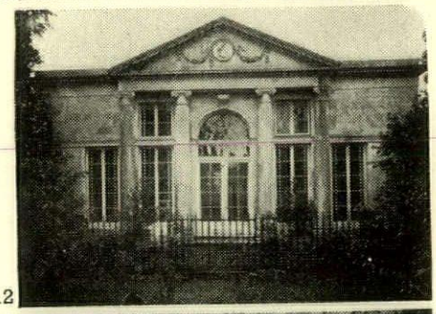

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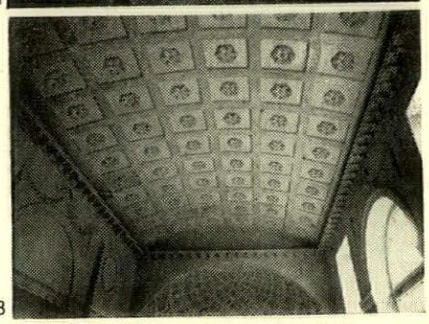
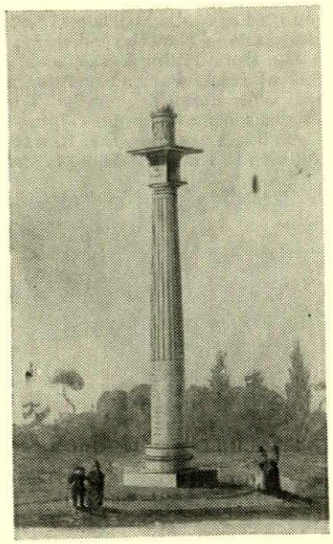


13

Earsham, *Norfolk, the music room,* 1784, *for William Wyndham:* 11, *engraving of the interior, by Soane.* 12, *the exterior.* 13, *the coffered ceiling.*



14, *column at Felbridge, Surrey, erected by James Evelyn to the memory of his parents.*

ham of Earsham in 1784, 11, a column erected as a memorial to his parents by James Evelyn of Felbridge, 14, entrances to Langley Park for Sir Thomas Beauchamp, and a library added to Holwood, Kent, for William Pitt. Of the library there is no record beyond a plan and Soane's bills, although he was later to make more extensive additions to this house. Mr. Evelyn's column—Doric, with a snake encircling its base carved by Soane's friend Edward Foxhall—was saved from destruction in the 1920's by the owner of an estate in Northumberland who transported it from Surrey and re-erected it in the park of Lemmington Hall. The Music Room has survived at Earsham, though it is now somewhat obscured by a shrubbery. Soane described it as 'Originally intended for a greenhouse and completed for that purpose but . . . since converted into a music room.' The Portland stone façade is enriched with Ionic columns and a pediment containing a medallion draped with garlands, 12. Inside, the walls are decorated with plaster swags and the ceiling is elaborately coffered, 13.

Both the entrances to Langley Park are standing. Designs for the first, consisting of a pair of lodges with windows set between three-quarter Doric columns, were submitted in August, 1784. For the second, designs continued to be made and altered from 1784 onwards, the earliest being embellished with a row of Ionic columns across its façade and recumbent lions over each of the lodges. These details were eliminated, and as executed towards the end of the decade, 9 and 10, it consisted of a plain brick arch set between two small brick blocks each containing a single room. Two oval pateras adorning the arch, and two ornamental chimney pots, are of Coade composition, but the greyhound supporters flanking the archway are of natural stone, and were supplied by the mason at a cost of £26 5s. 0d.

Of his early works, this second Langley gateway alone prophesies the 'Soane style' that was to emerge soon after 1790. In its lack of a blocking course for the wings, and its swept up central feature which is neither a pediment nor a gable and supports a top-knot like a cinerary urn, it edges away from the conventions of contemporary Georgian architecture.

The right date for concluding a list of Soane's first fruits is probably 1788. In that year he gathered up the best of his designs and published them in a folio volume dedicated to George III. In the same year he was appointed Architect and Surveyor to the Bank of England, and although some months were still to pass before the death of his wife's uncle, George Wyatt, brought him a fortune, his practise was firmly established. The days of subservience were over, and he could now afford to follow the advice of Philibert de l'Orme that 'an architect should be careful in his choice of a client.'



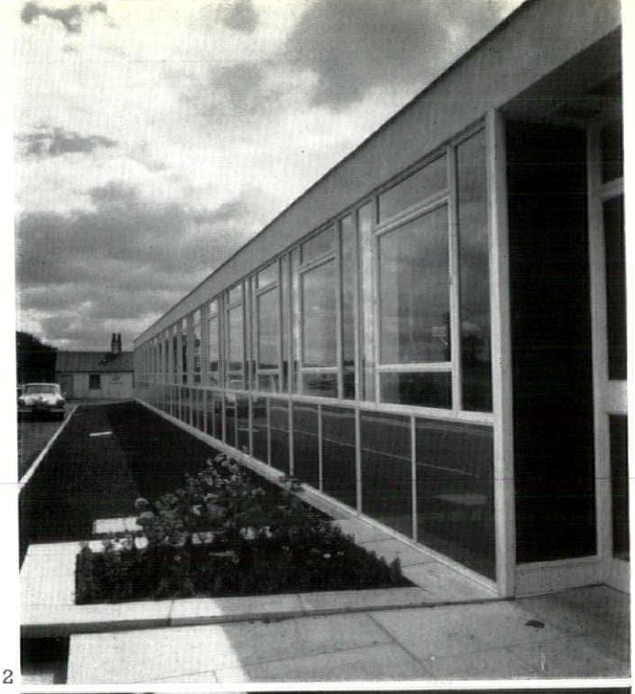
1, *the north front of the factory, with Harlescott Lane crossing the foreground.*

FACTORY AT SHREWSBURY

ARCHITECTS, WALTER MARMOREK AND LIONEL WEAVER

The clients, who are corset manufacturers, wanted a one-storey factory of 37,500 sq. ft. with a simple flow of production, minimum obstruction from columns in the production area, a high level of daylighting, flexibility to move and connect electric sewing machines and equipment over the whole area, good ventilation and a low noise level. The level site is in a new industrial estate lying to the west of the Whitchurch road about three miles from the town centre.

The calculated average daylight factor in the area is 10.5 per cent and the ratio of glass to floor area including clerestory windows is 37 per cent. The monitors are glazed with white plyglass to give light diffusion to eliminate glare and provide thermal insulation. Clerestory windows at high level round the perimeter of the tall block give draught-proof cross ventilation. To reduce the noise level generated by several hundred sewing and other machines, the wood



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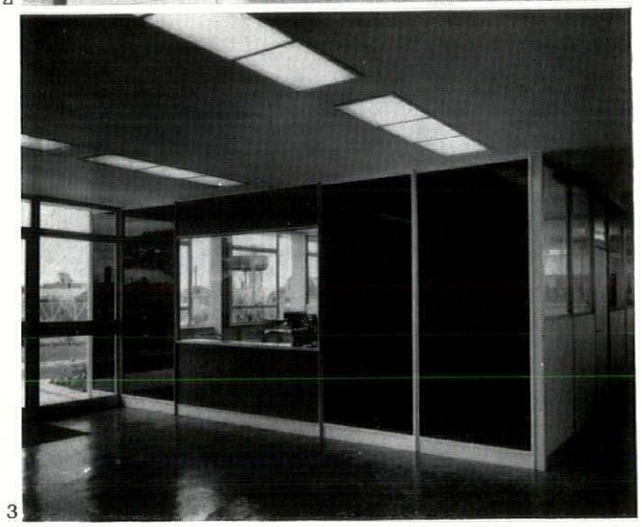


3

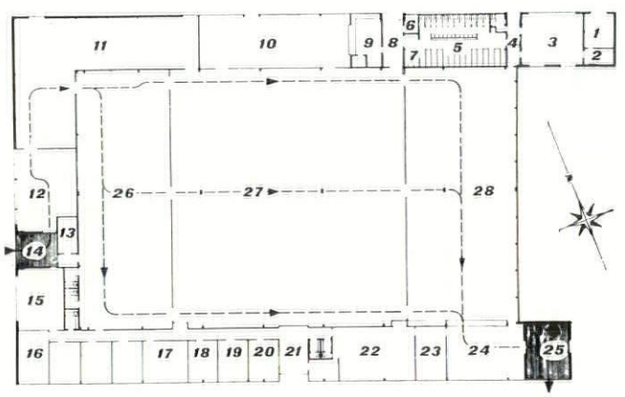
2, looking along the north front from the main entrance. 3, the entrance hall: the wall colour is dark brown, and the floor finish is thermoplastic tile.

wool slabs used in the roof construction, to provide a decking and thermal insulation, were left exposed.

The steelwork is on a 27 ft. grid, and a 6 ft. 9 in. module, the latter to accommodate standard channel reinforced wood wool slabs used as roof decking. The roof girders, which are accommodated within the height of the monitors, are approximately 7 ft. high and span 54 ft. 4 in. and 60 ft. 5 in. They are supported on two broad flanged beams with stanchions of standard sections, in the centre and at the outer perimeter. An expansion joint is provided through the centre of the building and the roof is lifted 3 in. at the centre to drain towards the end of monitors.

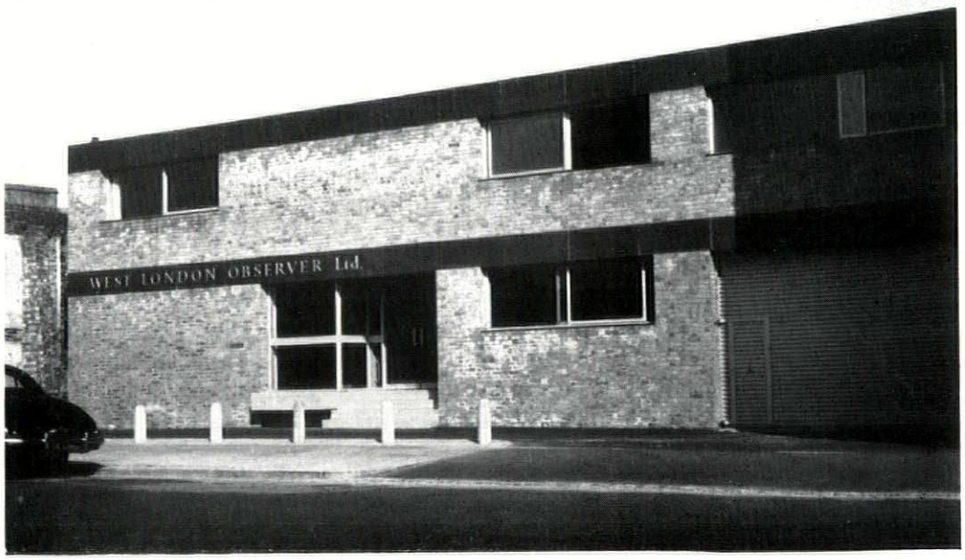
The low buildings are also steel framed with wood wool decking and three layers of built up roofing.

External walls are non-load-bearing cavity and a curtain wall with infill panels of coloured plyglass runs round a great part of the low wing. Monitor ends have asbestos cladding. The floor is reinforced concrete slab with 3 in. screed incorporating an electric floor heating system.



key
1, transformers.
2, sub-station.
3, mechanics and carpenters.
4, lobby.
5, W.C.s.
6, rest room.
7, women's cloaks.
8, works entrance.
9, kitchen.
10, canteen.
11, raw materials.
12, unpacking, weighing and measuring.
13, outworkers office.
14, unloading bay.
15, stores and buying.
16, design.
17, director.
18, production control.
19, personnel and wages.
20, receptionist and telephone.
21, main entrance hall.
22, order department.
23, accounts.
24, despatch.
25, loading bay.
26, cutting.
27, main production.
28, finished stock.

scale: 1.80 in. = 1 ft.



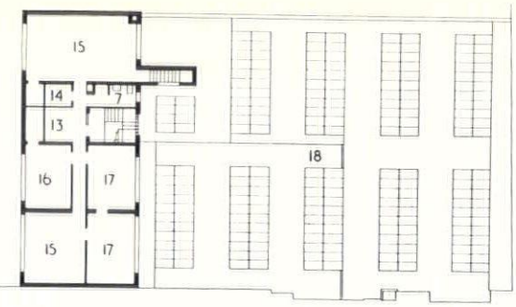
4

4, the entrance front, facing west. The fascia is Welsh blue slate, the lettering is in gold.

NEWSPAPER OFFICE IN WEST LONDON

ARCHITECT, JOHN G. FRYMAN

The Cromwell Road extension to Hammersmith Broadway involved the demolition of the long-established offices and works of the West London Observer Ltd. An alternative site was found in Latimer Road, W.10, the building was commissioned in January, 1955, and completed



first floor



50 40 30 20 10 0 10
scale of feet

ground floor

key

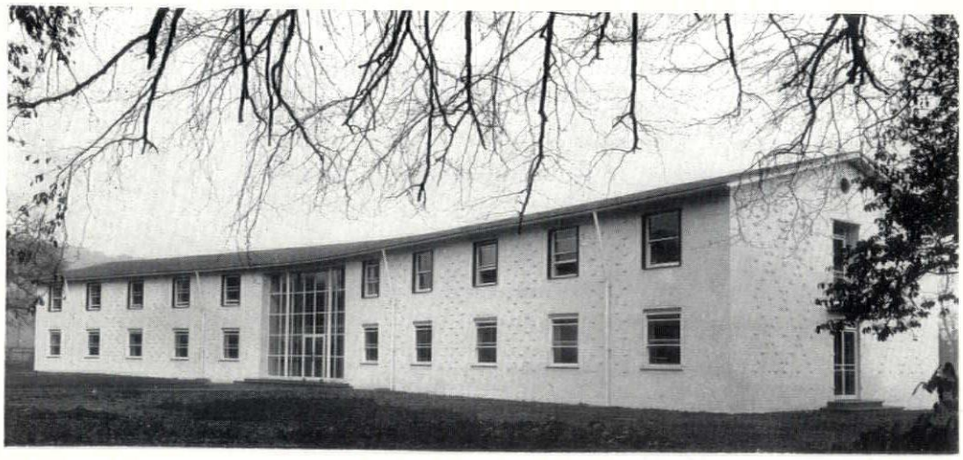
1. entrance.
2. enquiries.
3. library.
4. stationery store.
5. paper store.
6. mess room.
7. men's lavatory.
8. women's lavatory.
9. job room.
10. main press room.
11. linotype room.
12. composing room.
13. waiting room.
14. tea.
15. director's offices.
16. editorial.
17. general offices.
18. glazed roof.



5, the entrance. The steps and flower box are faced in terrazzo.

in August, 1956. It consists of a main press room, linotype, composing and job rooms with paper stores, etc., and associated staff facilities, and has a two-storey office block on the front.

Construction is generally load-bearing brickwork with reinforced concrete floors and roofs; windows are large timber-framed sliding sashes with slate cills. The yellow stock facings are enclosed with polished Welsh blue slate bands and copings; fascia lettering is carved and gilt.



6, the west front with the entrance hall in the centre. Brick and woodwork are white, and soffits green.

STAFF COLLEGE AT HENLEY-ON-THAMES

ARCHITECT, GEDDES HYSLOP

The Administrative Staff College was started in 1946 in a house on the banks of the Thames, but the residential block, completed in November, 1955, is the first completely new building and contains forty study-bedrooms.

Walls are 11-in. cavity; the outer skin is of Uxbridge flint bricks and the inner of clinker blocks, which are also used for partitions. The first floor is of



7

Staff College at Henley-on-Thames

hollow tile and the roof is supported on steel trusses carrying timber rafters and ceiling joists, and covered with insulated copper roofing.

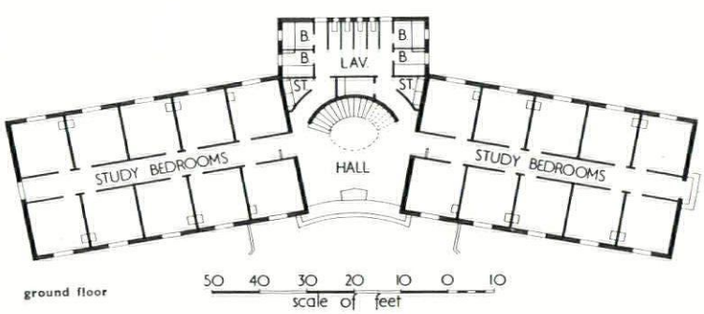
The semi-circular stair has pre-cast steps with terrazzo finish, and is built into a 9 in. brick wall. Bedroom windows are timber sashes; those in the hall and elsewhere are steel, the large hall window being double glazed. Cills are slate projecting internally to form window boards which overhang the radiators. Radiators and domestic hot water are supplied by an underground duct from the central boiler house about 160 yards away. No pipes show externally.

The floors of the hall, bedrooms and passages are cork, and bathrooms and lavatories asphalt tile. The glazed swing doors from the corridors to the hall are African mahogany and external steps are slate; corridors and hall ceilings are finished with perforated acoustic tiles.

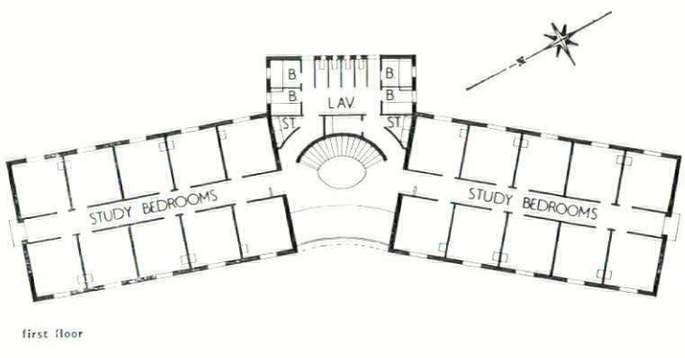


8

7, the stair from the entrance hall. The back wall is painted Indian red and the balustrading grey; the cork tile floor incorporates the college crest. 8, the college from the east.



ground floor



first floor

HISTORY

PALM HOUSE AT KEW

After various rumours to the contrary, and after the sudden reappearance of the Coronation arches and their equally fast disappearance, the Palm House at Kew, 1, *will by the end of the Spring be made as good as new and as handsome.* For the handsomeness Decimus Burton has very generally been praised and indeed the Palm House is, after the Athenaeum and the Hyde Park screen, his most famous work. His responsibility has long been established and only recently Mr. Colvin has confirmed it. More recently still, however, Professor Henry-Russell Hitchcock in his double-decker sowed the seeds of doubt. What Professor Hitchcock did was to bring forward the name of an engineer. 'The ironwork was provided by Richard Turner of Dublin, who was soon also undertaking to span the considerably broader shed of Lime Street II.' After commending the structure Professor Hitchcock added: 'Whether this ornamental restraint combined with real grace of expression should be credited to Turner or Burton is not clear.'

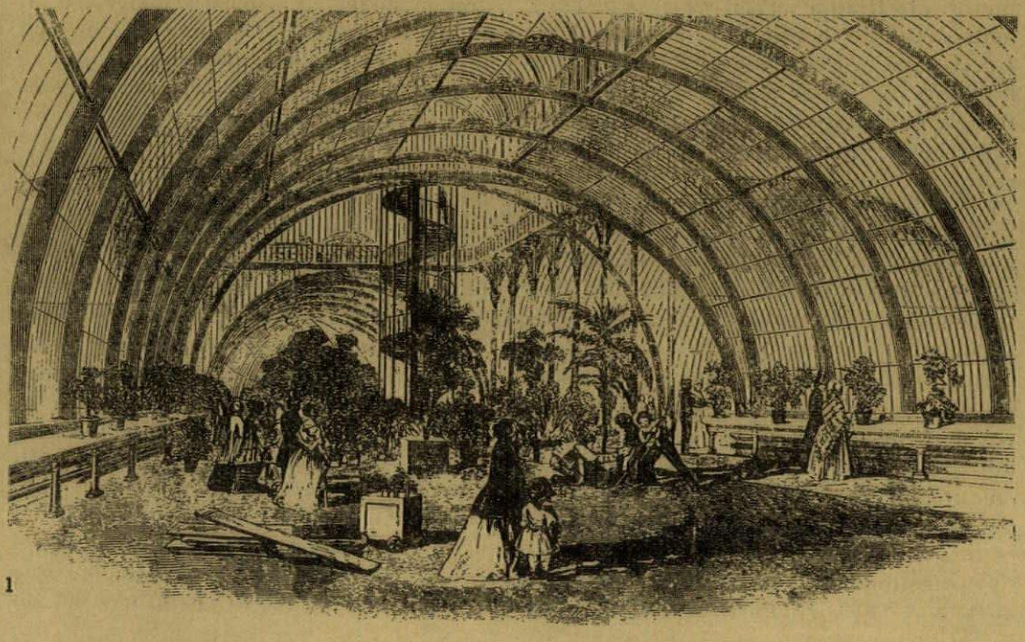
Irishmen are always protesting about the travesty of the stage-Irishman but if anything derogatory is written about them they start behaving from like something out of Charles Lever. So when seventy-five years ago Maurice Adams wrote some articles on conservatory buildings for the *Building News* and said that Burton built the Kew Palm House things began to happen. Over in Ireland Thomas Drew read the article and discovered that his old friend Turner had been done out of the credit. He wrote off to Turner to get the necessary facts and then to the *Building News*. 'Many middle-aged architects will remember Mr. Turner in his vigorous days when he was ubiquitous, with a stock of daring and original projects always on hand, remarkable for his rough-and-ready powers of illustration of them, and sanguine belief in them, and his eloquent, plausible, and humorous advocacy of them. . . . As he is still extant and vigorous, although advanced in years and retired, I have obtained an authoritative statement from him, that the palm-house was not only erected by him, but was solely his design, although carried out under the supervision of Mr. Decimus Burton.' According to Turner Sir W. J. Hooker, the Curator of the Gardens, accepted his designs but when the plans reached the Board of Works they were discarded and, in Turner's words, 'a most absurd set of plans was produced by Burton, with the help of an engineer.' However, Turner persuaded the Duke of Newcastle to intervene and in the end he triumphed. To display the merits of his design and its strength—it must have looked a pretty risky affair to the public servants—he had a section built in the yards of Messrs. Grissel and Peto and it was there successfully tested. 'Anything more foreign from Mr. Burton's design it would be difficult to imagine,' Turner concluded.

Maurice Adams meekly replied that it was always stated that Burton was the responsible architect and he had assumed this to be true and moreover he had got from Burton an entire set of tracings from the working drawings inscribed with his name as the architect.

The editor of the *Building News* was too wily to fall into any trap. He knew his history, he knew all about Who Was The Art Architect Of The Houses Of Parliament? and he wasn't going to be made responsible for a new dog-fight called Who Was The Art Architect Of The Palm House At Kew? He applied very wisely to Mr. J. Smith, the ex-Curator of the Gardens. Smith had been on the spot at the time and he confirmed what Drew had written and added that Burton's plans had been useless because of the superabundance of pillars—plenty of taste but no room for the palms. He reported that Turner said to him: 'Give me a piece of paper and I will show you what it is going to be.' Smith recorded: 'He took the paper, folding it to make a crease in the middle, then, with a pen, quickly traced a vertical profile of one half of the intended house, on one side of the crease, then, folding the other half of the paper on the inked part, and, on opening it, there was a section of the whole length of the palm-house, as it was afterwards erected, and which proved satisfactory to me as far as the accommodation and growth of the plants were concerned.' It was Smith's notion, so he admitted, to use tinted glass.

After the letter from the ex-Curator no-one else wrote, not Burton himself nor any of his friends. Obviously enough it was agreed that Turner's claim had been indisputably established—the working drawings proved nothing since Burton was supervising and since architects before and after him signed other people's inventions with a very good grace and no qualms of conscience. It is a curious fact that after so quick a victory for Turner the memory of it should so completely have vanished. Burton, having been knocked out, was agreed to have won on points.

In accounts of the unhappy relations between architects and engineers in the



1

nineteenth century the engineers seem steadily to be getting the better of it. Surely it is up to a registered-architect-scholar to take Waterloo Bridge from Rennie and present it to J. L. Bond, for the honour of the profession?

Peter Ferriday

EXHIBITIONS

PAINTING AND SCULPTURE

Marked, perhaps, by the way in which Mr. Douglas Cooper's brilliantly persuasive catalogue numbed the critics and reduced comment on Braque's achievement to a devotional hush, I was reminded by the Braque Retrospective that Picasso's infinitely richer contribution to painting has not yet been presented in London with anything like the same adequacy. Braque is the leading mandarin of French painting, and the selection from fifty years of his work created so consistent an effect of ceremonious arrangement and magisterial tastefulness that I had the impression that he was observing some courtly code which discountenanced the expression of thought and feeling.

Mr. Cooper's study of Braque's development is as objective as his enthusiasm will allow, and although it was a foregone conclusion that he would consider Braque to be the inventor of cubism, he conducted his researches with impeccable scholarship, and no one is likely to challenge his dating of the pictures which he finds relevant to the problem. He assigns the first cubist pictures to Braque on the evidence of some 'cubes' in the landscapes he painted at L'Estraque in the summer of 1908. But it has always seemed to me that the sharp facet is more important in cubism than the representation of cubes, and there were sharp facets in some nudes painted by Picasso in the Spring of the same year.

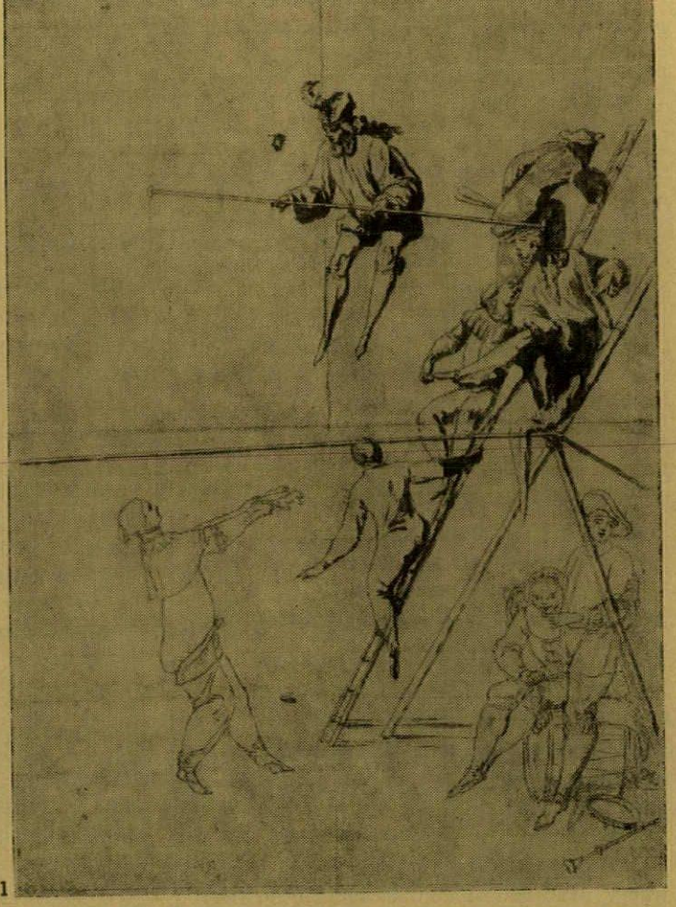
A particularly fine example of Picasso's analytical cubism—the portrait of Uhde—was included in the I.C.A. exhibition called 'Picasso Himself.' It was treated purely as a document; it had been taken out of its frame, put into a mean little baguette and given a corner on one of the many screens covered by photographs and souvenirs, and from a distance its yellowish grey colour and the fragmentation of its forms gave it the look of those discoloured strips of newsprint which appear in some cubist drawings made by Picasso and Braque in 1912 and 1913. In Picasso's *papier collés* these bits of newsprint stick out like sore thumbs, intentionally so; but in Braque's work they assume a kind of mellowness and refinement. The one was interested in disruptions, the other in reconciliations.

Signor Argan has pointed out (in his preface to the catalogue of Mr. Estorick's large, ambitious, open-minded but extremely unbalanced collection of twentieth-century Italian paintings and sculpture, which followed the Braque show at the Tate) that it has now become clear 'that cubism did not solve the problems and reconcile the contradictions, simply because all these problems were not purely artistic ones but were part of the culture, the civilization and the conscience of Europe'. Yet Braque's cubist *papier collés* 1 are exquisite arrangements of arbitrary elements, 2, and by specializing in the *nature morte* he has been able to apply the same principle in his paintings, so it can be claimed for Braque that on a purely artistic plane involving a strategic withdrawal from the human situation, he has often succeeded in reconciling innocuous contradictions.

If I have been more enchanted by the drawing of acrobats, 1, by Claude Gillot, which I saw at the fascinating Arts Council exhibition of sixteenth- and seventeenth-century Theatre Design in Paris, it is possibly for the vulgar reason that it has more human interest than the work of Braque. But I also think that Gillot's draughtsmanship is more sensitive and his feeling for 'arrangement' more daring, and that it is even closer to the spirit of Rilke's fifth elegy than Picasso's *Les Saltimbanques*, which inspired it, for here, indeed, are the 'lofty figures of heart-flight, their towers of pleasure, their ladders just quiveringly propped by each other'.

William Scott seems suddenly to have felt the need to reflect rather more of himself in his canvases than his professional concern with pictorial values. In his recent show at the Hanover Gallery he exposed some paintings of the nude that expressed a not entirely respectful delight in the female figure, and even his pots and pans have become somewhat boisterous. His anatomical deformations are both comic and horrible, 3, but they have rid his work of the last trace of aesthetic pomposity.

Max Ernst has gone off in the opposite direction. The recent paintings in his rather haphazard Retrospective at the Matthiesen Gallery are aesthetic souvenirs of some of the fabulous results of past poetic escapades. Something rather pathetic has happened in the process, and the man whose sardonic experiments in automatism led his work into a mysterious relationship with the art of Altdorfer and Hercules Seghers has become a solemn purveyor of interplanetary fantasies, 4, which look like unimaginative pastiches of Paul Klee.

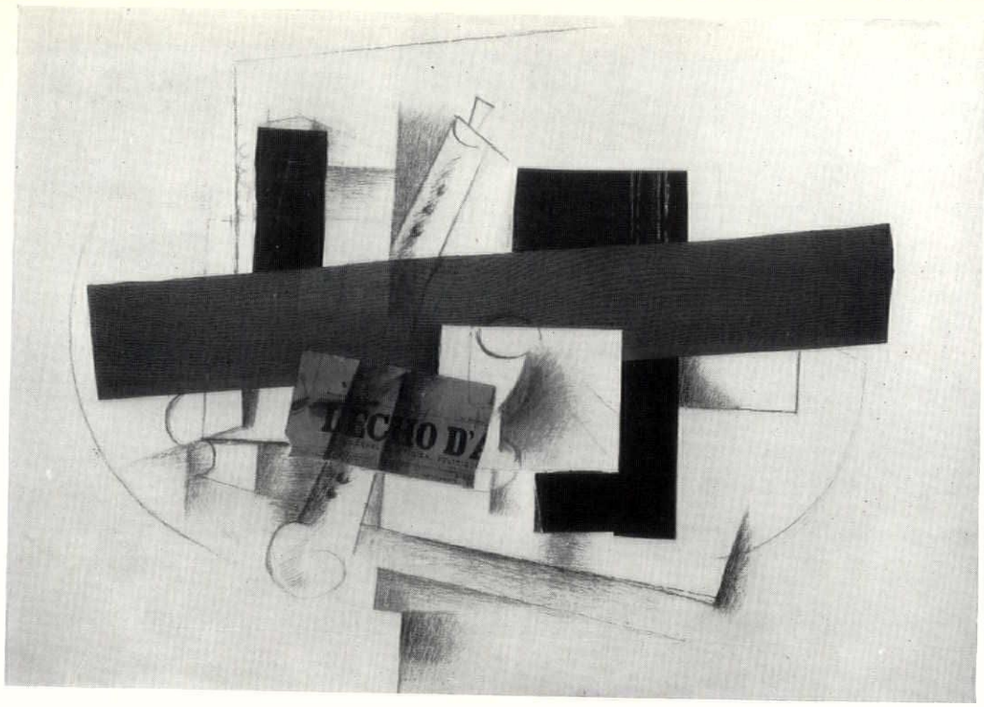


1

Different again is Manzú's position. His second exhibition at the Hanover Gallery bore a very strong resemblance to the first, but the budding grove of naked young girls presided over by grim clerics in conical vestments retained its *frisson*. I reproduce one aspect of this rather perverse situation, 5, to show that if Manzú himself is roused by its ambiguities the results can be separated without loss.

The Academy exhibition of British Portraits is a triumph for the eighteenth-century painter Allan Ramsay. His likenesses have an introspective cast; they are serious attempts to evaluate human personality and remind us that at such a level the making of a portrait is the most intimate of all acts. After Ramsay, portraiture of this kind does not recur until our own time, though G. F. Watts seemed sometimes on the verge of it. It confronts us again in the portraits of Gwen John, in Sutherland's tense study of the Hon. Edward Sackville-West, 6, and in the work of an artist who, inexplicably, is not represented in the Academy show, William Coldstream.

Robert Melville



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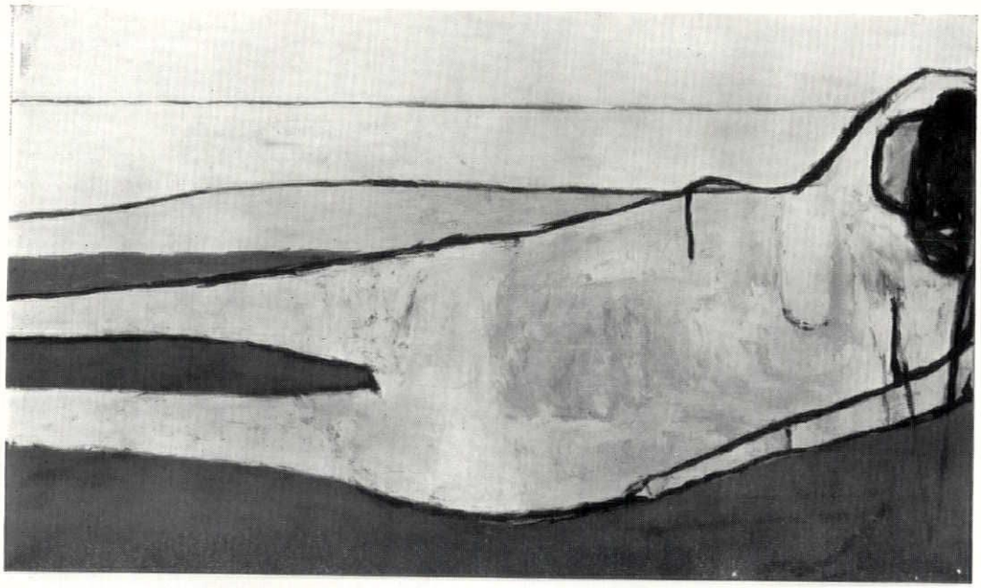

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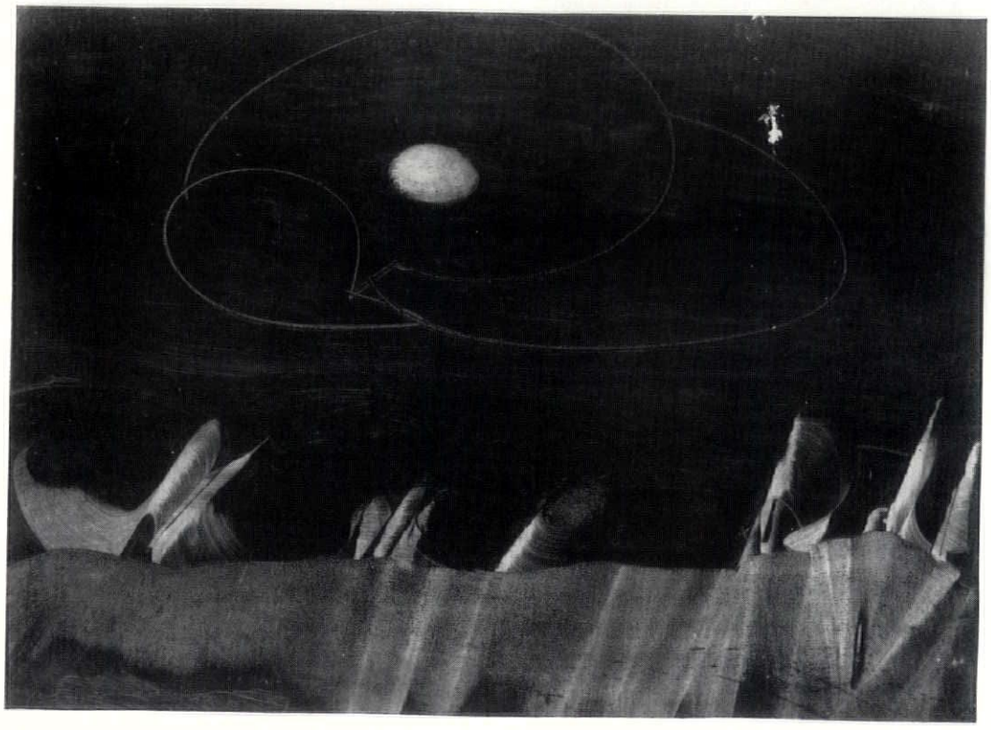

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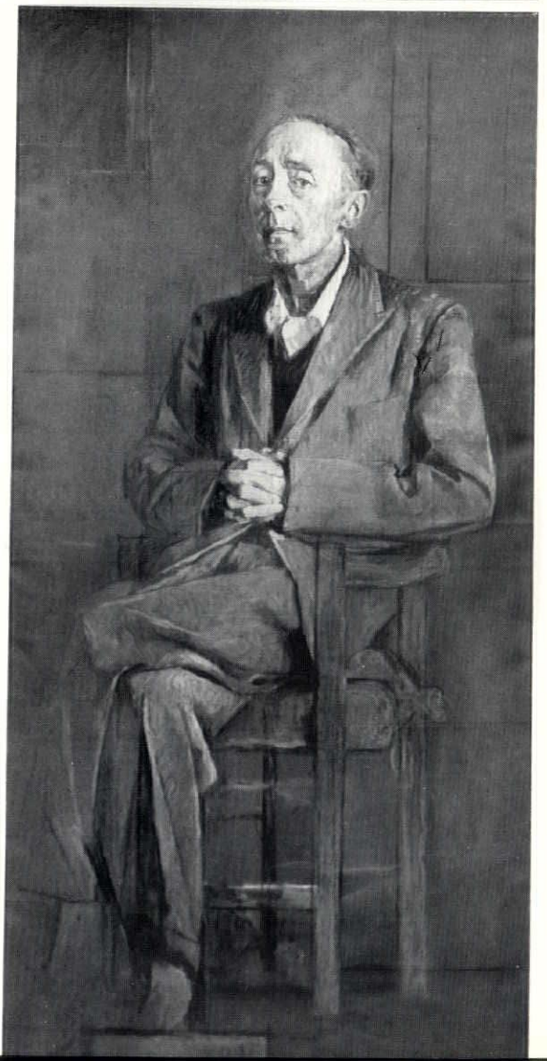


6

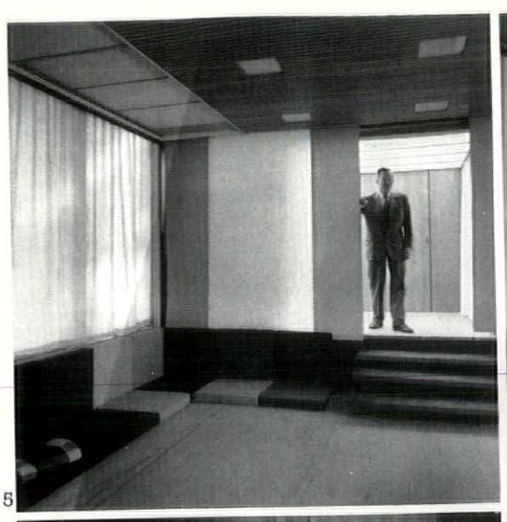
ARCHITECTURE

THE ADAPTABLE HOUSE

A building that fits its function like a glove may become a strait-jacket as the function changes, a structure that brings the benefits of standardization may bring its penalties too—may do, but neither need do so.

Flexibility of plan and adaptability of use within a standard frame are admirably demonstrated by a row of three houses near Oslo, designed by Arne Korsmö and Christian Norberg-Schulz, and completed in 1955.

The main structure of each of the three houses is largely standardized, and the steel frame of the two-storey parts is completely so (see also the frontispiece to this issue, p. 84). But within the given space-cage a variety of planning solutions have been realized. Externally this is revealed in the differing fenestration of the Korsmö house, 1, and the Schulz house, 2—a difference that derives from the dispositions of the interiors. In the Korsmö house the entire ground floor of this part is treated as a single uninterrupted room, 3, which does not, however, break upwards into the floor above, but in the Schulz house full use is made of the double height of the main windows, 4, and the bedrooms on the floor above have balconies overlooking the well thus created.



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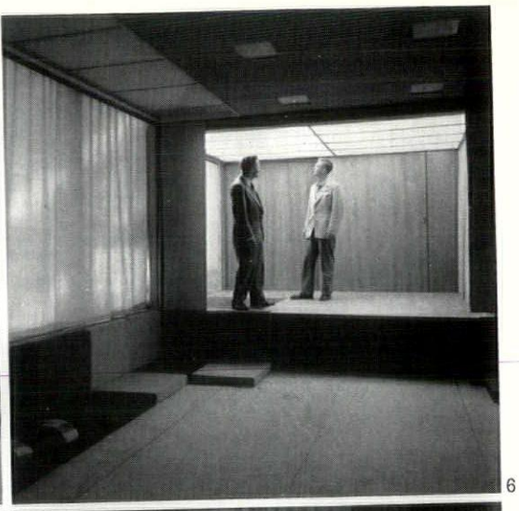

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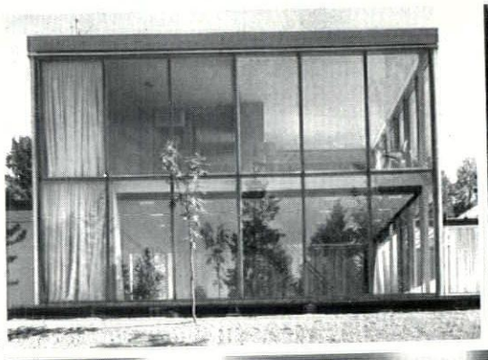
But if, at a later date, the occupants' requirements should change, this well could be floored over and the bedrooms brought up to the outer wall, a type of flexibility that is assisted, not obstructed, by the standard structure employed.

But there is another kind of flexibility of use that can only be answered by the day-to-day mobility of the elements of the house and its equipment. In the Korsmö house, for instance, the occupants' activities include model-making, work in enamels and ceramics, and entertaining that embraces discussions and the projection of slides, films, etc. For such semi-public occasions, the staircase seen in 3 can be swung out of the way and the 'landing' on which it rests can be removed, thus freeing that corner of the room, while the removal of the screens and the steps in 5 permits the conversion of the hall into a kind of stage, 6. Similarly, in the Korsmö's kitchen, all the cooking and laundry equipment can be shut away behind doors, and the opening of other doors reveals the do-it-yourself tackle, 7, while if all doors are left shut, there remains a neutral area of room-space, 8, that can be added to other areas in use for entertaining or whatever the needs of the hour may be. P.R.B.



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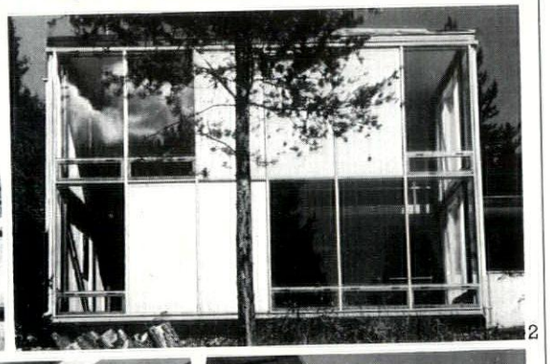

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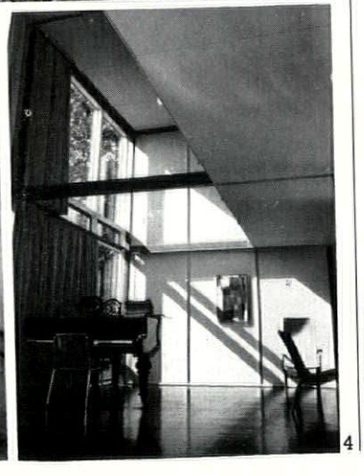


4

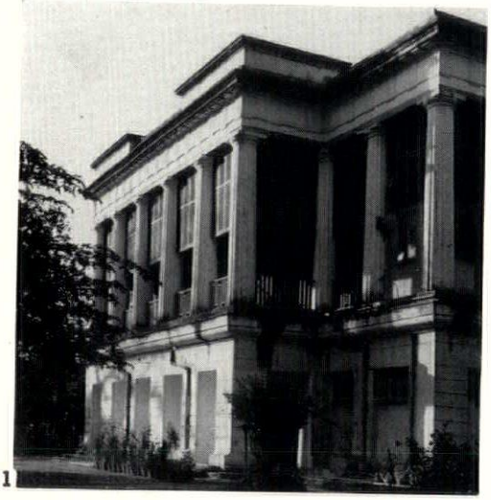
TRAVEL

PICTURESQUE IN THE PRESIDENCIES

Many distinguished camera eyes have been trained on the Indian scene in the last few years, but few have been focused on any part of British India, except the inevitable splendours of New Delhi. We have seen magnificent views of Chandigarh and

sympathetic studies of vernacular building, abstract images of the geometry of Jai Singh's observatory and mysterious ones of the cave-temples of Ellora and Ajanta, but the substantial monuments left on Indian soil by the East India Company and the British Raj have remained almost unphotographed until Roderick Cameron's recent foray, whose results will be published in book form, as *Shadows from India*,* later in the year.

Yet the Cameron photographs suggest most forcibly that this neglect is unjustified, and that where an Anglo-Indian architectural tradition had time to mature fully, as in the Company's three 'Presi-



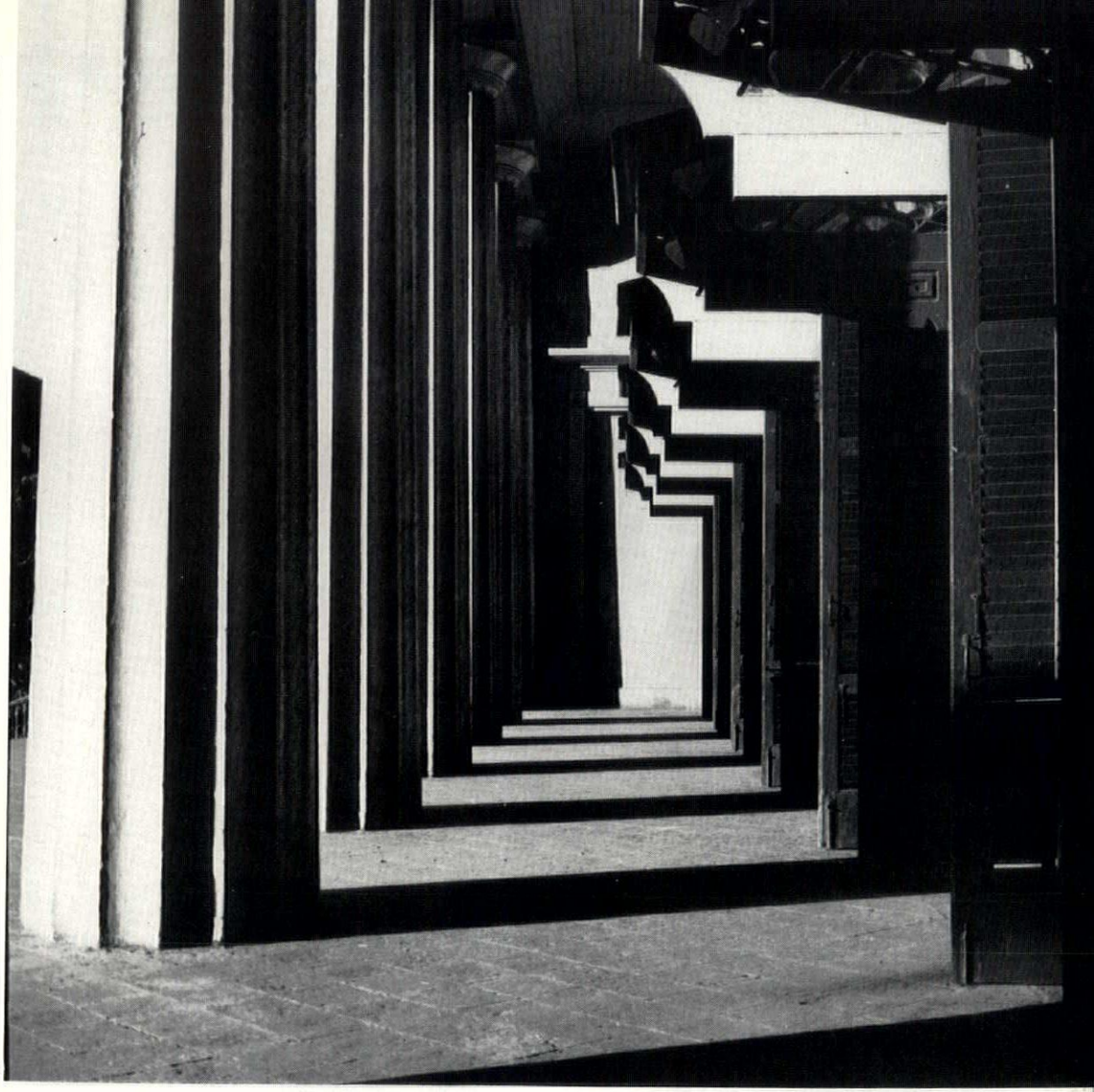
1

dencies' of Madras, Bombay and Calcutta, it produced buildings comparable with those of the Caribbean or the Old South, and in one respect surpasses all other Euro-tropical architecture—in that it is rich in bold Neo-classicism. Nowhere else does the tropical sun fall on forms so apt to its dramatic shadows as the pure Doric —the Doric of the Theseion—of the porticoes of the Old Town Hall at Bombay, 3, and nowhere else can pure Greek forms be seen in so eloquent a juxtaposition as they are here, confronted with a row of

* To be published by Heinemann in August.



2



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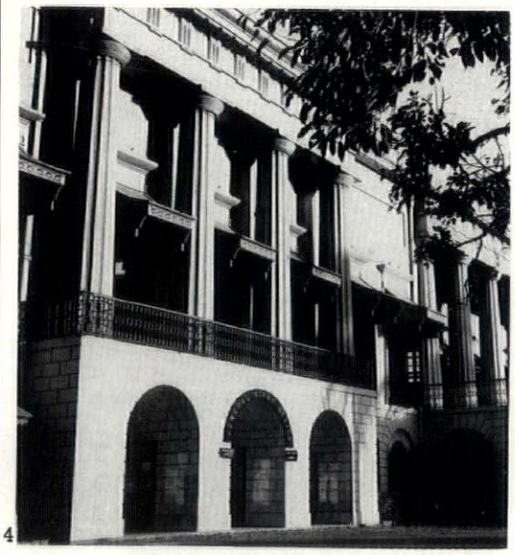


4

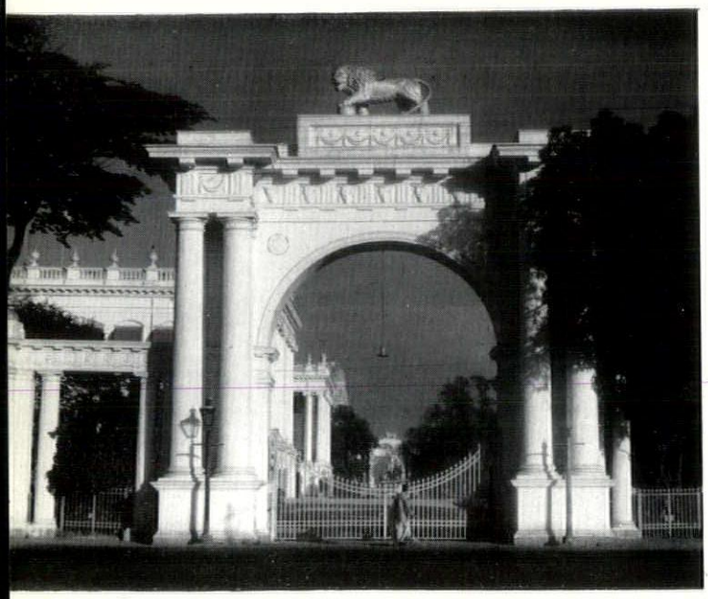
box-shuttered doors with strange side-glazing in their heads. Such confrontations of European art and native artifice are not rare in the tropics, but here there are implied a British source; the mind and style of the Regency.

The quality is so Regency on some occasions that 5 could almost be a vignette from Regent's Park, though in fact it comes from Calcutta—a lush image of urban arcadia—and equally Regency are the undercut basement, the high colonnaded balcony (Doric again) of the Calcutta merchant house seen in 1. Indeed it is to Nash directly that one must compare the façades of some of the major official buildings of British India. The exterior of Bombay Town Hall shows that its soldier-architect, Colonel Cooper, could rank his porticoes in the true manner of the Nash terraces, 4, while Captain Wyatt's design for Government House in Calcutta, 2, though eclectic, and begun as early as 1799, is clearly of the same persuasion.

What makes this clear is not only the building itself, but the way in which its triumphal-arch entrances—similar in form



5



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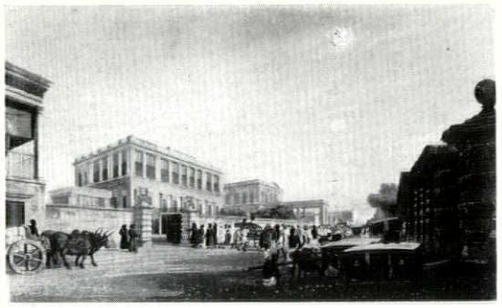
7

to those of Cumberland Terrace, similar in function to those of Chester Terrace—frame and control the view across its pavilions, 6. These views suggest the dominance of a trained and sophisticated picturesque vision in British India; James Frazer's slightly later views of the Calcutta scene confirm it. In his magnificent view of precisely one of these gates, 7, it is seen grandiosely dramatic, though without falsification of its scale, undwarfed then by trees and silhouetted against a



8

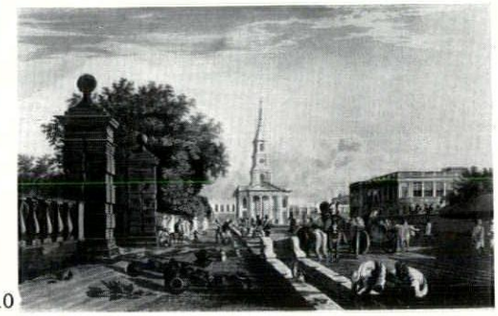
sky as vast as the perspective that tapers away to the portico of the Scotch Church in the distance. Frazer shows us that in his India the Picturesque took on a tangibility that it was losing in Europe.

The high-porticoed merchant houses in 8, looking down on the Loll Bazaar, had for a foreground a race of men far more sharply contrasted against the architecture than the rag-clad *banditti* of Romantic painting. Wherever Frazer turned his



9

observant eye in Calcutta, he saw this picturesque population, as alien to the buildings as the birds that aped the function of parapet statuary, 9 and 10. At a time when the *staffage* in the fore-

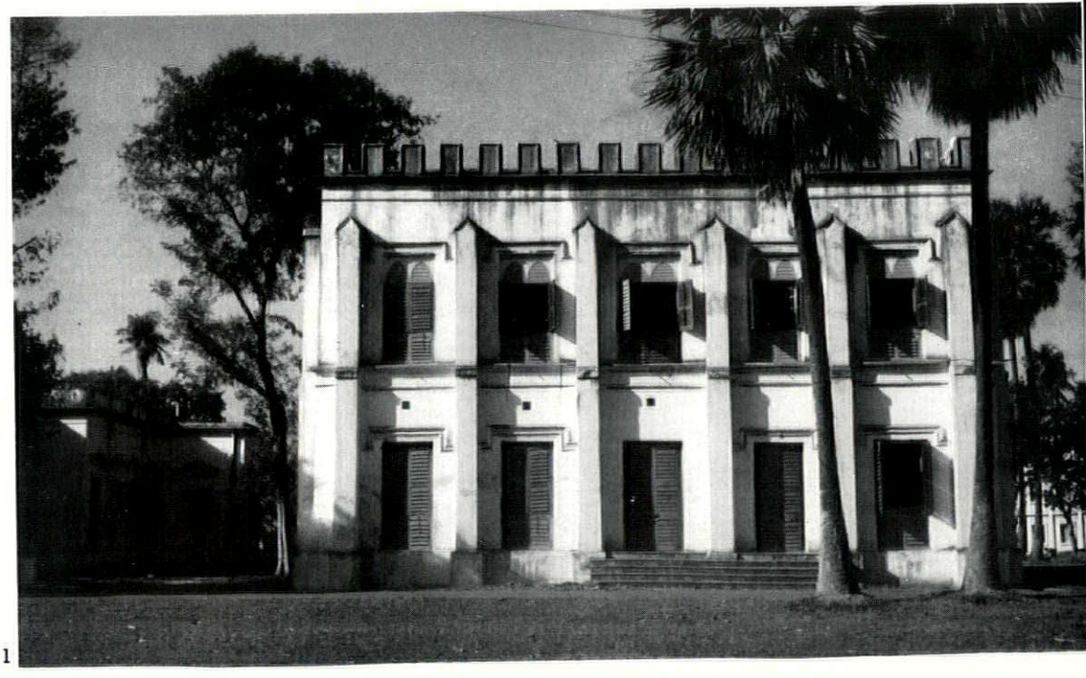


10

ground of the Italian scene, disoriented by Napoleonic Wars and egalitarian politics, were developing ideas above their stations, those of Calcutta remained in their places, socially and pictorially.

Given these scenic advantages, given the sophisticated sensibility, it can hardly surprise us that British India went on to develop—had already developed—the full gamut of artefacts proper to the Picturesque, from Romantic revivalism to relaxed *Villeggiatura*. Madras can offer a sample of pure Gothick—not the hard-faced export-ecclesiology of the Victorian epoch, but a true expression of Gothick fantasy, 11, complete with crenellations, buttresses, and nine such purely pattern-book dripstones over the windows that one wonders what fanciful flourish is missing from over the central doorway.

The cultivation of *Villeggiatura* takes us inevitably beyond the confines of the Presidencies, and deeper into the nineteenth century, but even its most contrasted manifestations seem securely related to that favourite late-Regency theme of the Swiss Cottage. On the one hand there is the strict territorial and psychological equivalent of the chalet; the houseboats of



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12

Kashmir, remote and fret-worked dream-palaces, 12, far removed from the heat and bustle of the mercantile or military life, that are as true to the best traditions of riparian fantasy as Steam-boat Gothic, but phrased in an idiom so unmistakably vernacular as to be authentic folk art.



13

On the other hand, there is the attempt of sophisticated people to re-create that folk-fantasy at home, as in this house at Poona, 13, where buttresses as business-like as those on a house by Voysey, frame canopies where barge-boarding and dag-work achieve effects as fanciful as their function (as sun-breakers) is practical. The result is entirely Anglo-Indian; St. John's Wood was never like this, but neither was the Taj Mahal. Its manifest authenticity as architectural expression makes one hope that Roderick Cameron's photographs will inspire some budding Summerson to chronicle the building-history of British India, the hot-house of the Picturesque.

Michel Santiago

OUTRAGE

TOMORROW'S OUTRAGE

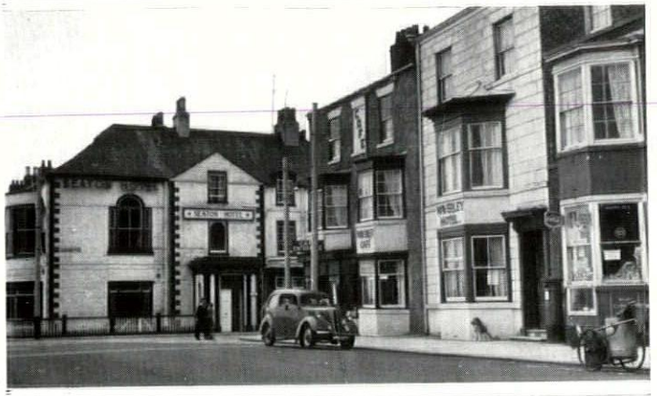
Planning proposals for the next twenty years, when complete, are codified into a Development Plan—very sketchy for the countryside, very precise for the towns. They are reviewed after every five years: the first Development Plan to be approved, that for the County Borough of West Hartlepool, came up for review last November. Thinking it likely that the proposals might reflect the worst features of planning in the town-hating decades,

tomorrow's outrage: *West Hartlepool's three virtues—a bustling and virile town centre, 1, the old nucleus of Seaton Carew, 2, and unspoilt country near at hand to the west, 3. On the right are the agents of complete disintegration: housing on open country taken in by a boundary extension, 4, disused land near the centre, 5, and the provision of 'open space' which looks fine on paper but not on the ground, 6.*





1





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the 'twenties to the 'forties, we carried out our own short review of the plan; the sad results are printed below. It is likely that most towns have similar proposals incorporated in their development plans: the five-yearly review does offer some chance of altering them, and should be followed up urgently by local societies. The alternative, for all but a few 'preserved' towns, is pretty grim.

West Hartlepool is a Victorian New Town and coal port—begun 1855—next to the old and now shattered town of Hartlepool on the Durham coast. It would be few people's first choice to live in, but it has got three assets: first, a cheerful bustling town centre, 1—no architectural value, but alive, exactly fitting the size of the town and without traffic problems. Second, an old seaside village, Seaton Carew, now unhappily inside the borough boundary, 2. Third, countryside within walking distance of the centre of the town, 3 (and, moreover, countryside which is still not industrialized).

Now look at the Town Map and the accompanying report. Almost deliberately and wilfully this trio of advantages will be wiped out. First, the centre is to be redeveloped in the New Town way to become an anti-social set of social amenities. This poor misused area is going to contain:—

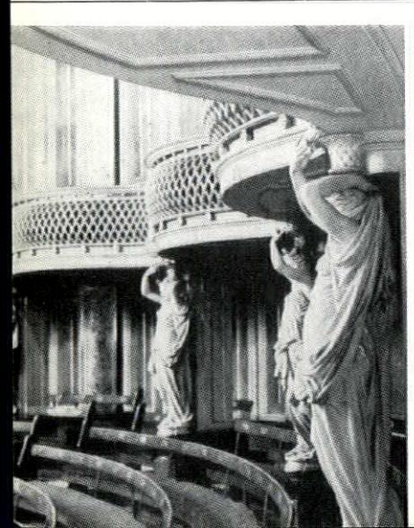
> four fragmentation open spaces, one primary school and grounds, one secondary school and grounds, one 'area reserved for local government offices,' and one bus station.

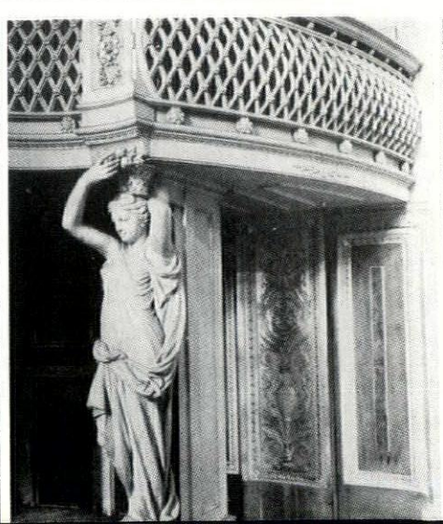
To paraphrase Henry Reed, in utter exasperation: whatever you do, *don't* make the bleeder into a town centre.

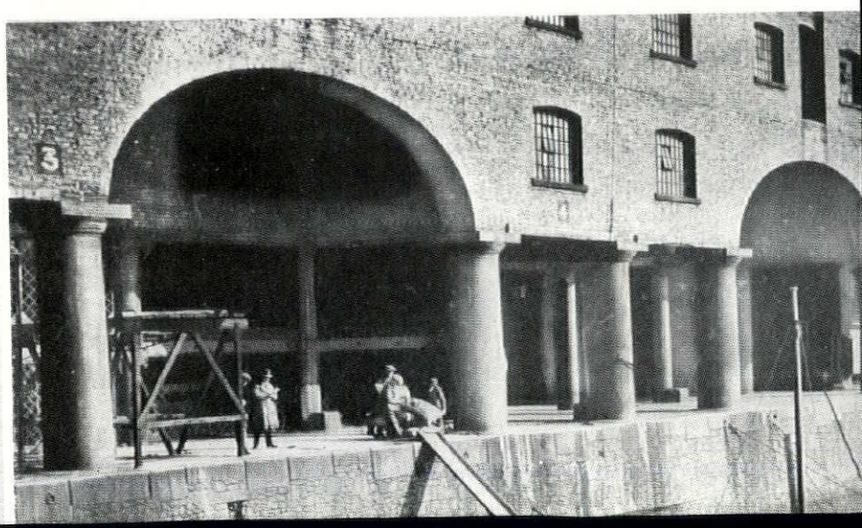
Second: one of the stated purposes of the development plan is the 'satisfactory development of Seaton Carew as a holiday resort.' This involves the removal of existing buildings between the Seaton Hotel and the Marine Hotel as shops. The 'existing buildings' are the view in 2. No need to imagine the shops that will replace them or to guess what Seaton Carew will look like as a 'satisfactory holiday resort.'

Third: the countryside has largely gone already in the first five years: that shown in 3 is due to go. It is replaced by the familiar pattern of housing, 4, while areas like 5 remain derelict (and possibly have never been built on) near the centre. The housing in 4 is out over the borough boundary as shown on the Town Map. There is no reference to a boundary extension in the report: it has been quietly pencilled on the MOHLG copy of the map, and is only too evident in the flesh, several acres of it eating away the Durham countryside. In return there is a lot of green (public open space) on the Town Map. The largest part is actually, though it is hard to credit, the area between low and high tide on the beach! Another wedge is an 'open space system from the south-west' and consists of 'school sites with playing fields, Stranton cemetery and a narrow strip of allotment gardens' —here is part of it, 6.

Is this planning, or meticulously organized chaos? Can towns like this be trusted to plan themselves and the surrounding countryside at all? **Ian Nairn**







BOOKS

THE LOWRY COUNTRY

THE LANCASHIRE ARCHITECTURAL GUIDE. *By P. Fleetwood-Hesketh. Murray 28s.*

The third of the new series of Murray guides, and bursting at the seams, as any good book on Lancashire must be: it will be a revelation to those who think that worthwhile provincial building stops somewhere just north of Warwick, Shrewsbury and Stamford.

Mr. Fleetwood-Hesketh has produced a sober and coherent picture of Lancashire building as a close reflection of national architectural styles. My own idea of the virtues of the county may be cranky and out-of-fashion; but I think that Lancashire buildings are at their best when they are most provincial and least correct, and I would have liked to have seen more of these in the illustrations; for example, Stidd almshouses with their monstrous frontispiece, the seaside architecture of Blackpool, Billinge church, Manchester warehouses, Edgar Wood and Sellars' Art Nouveau buildings: in particular I was disappointed, as I think most REVIEW readers will be, by the post-war selection—one of Robert Atkinson's brick cathedrals and some urban sprawl at Speke.

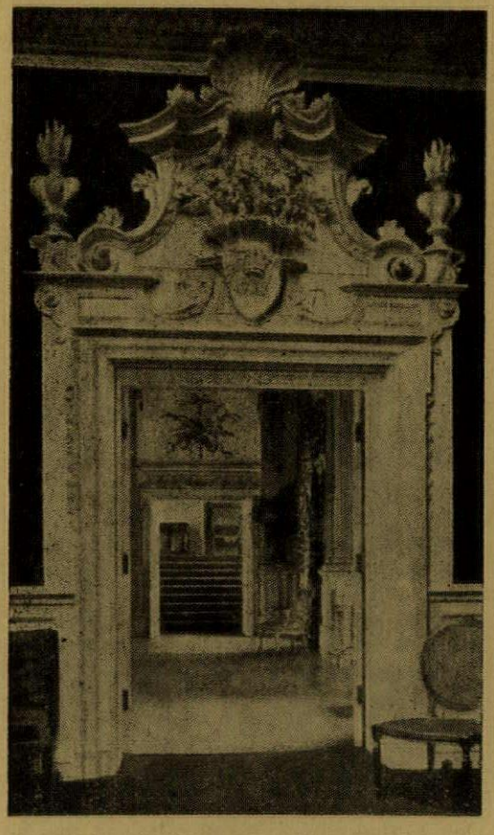
But there is plenty to look at. Some of it may not be there much longer: few counties have so many interesting buildings to the acre and few counties have been so careless about them.* The tower of St. Luke's at Liverpool (page 101) is doomed, if the competition winner's design gets built, to be replaced by a poor wee affair of half the size and vitality. Emmott Hall and Parbold are patently empty and ripe for demolition in the illustrations (pages 72 and 64): West Dingle looks on the point of collapse (page 91). Liverpool Corporation have just recommended the demolition of most of Allerton House: Carr House at Bretherton has fallen empty since the book went to press, the only virile building on that awful thirty-mile monument to the meanest kind of residential subtopia—A59 from Preston to Liverpool.

Lancashire may lose through well-meaning improvement as well as philistinism, through reclamation in the wrong way of areas whose character is caught so beautifully in the first description in the Gazetteer:

> 'ABRAM. South east of Wigan. Sett-paved roads and cinder paths; collieries, railways and the Leeds and Liverpool Canal. The wet fields are divided by skimpy hawthorn hedges. The few trees are stunted and black.'

That is L. S. Lowry's Lancashire, grim but alive, and its virtues are worth a long look before being thrown away. **Ian Nairn**

*Liverpool, through bombs, neglect, and irresponsibility, now has only a fraction of the worthwhile buildings that it had in 1939, and is rapidly building itself the worst post-war city centre in the country as well.



books: the Lowry country. *Above, a doorcase dated 1733 at Knowsley, one of a number of local examples of plasterwork which is as Baroque as any in the country. On the facing page, the two sides of Liverpudlian architecture in 1850: left and centre, two views of the concert room in St. George's Hall, by Elmes and Cockerell. Right, a warehouse in Albert Dock, designed under Jesse Hartley, the Dock Surveyor.*

STRANGE, POTENT, INIMITABLE

THE JAPANESE HOUSE AND GARDEN. *By Tetsuro Yoshida. Architectural Press, London 60s.*

THE ARCHITECTURE OF JAPAN. *By Arthur Drexler. The Museum of Modern Art, New York.*

CONTEMPORARY ARCHITECTURE OF JAPAN. *By Shinji Koike. Shokokusha Publishing Co., Inc., Tokyo.*

It never rains but it pours. No book on Japanese architecture has appeared in English, I believe, for nearly twenty years; now three are available (the volume in the Pelican Art History, with the section on architecture by Alexander C. Soper, was reviewed in AR, Aug. '56, page 124). Yoshida's book is a translation by Marcus G. Simms of the second edition, issued in German in 1954, of the author's treatise originally published in Germany in 1935. Drexler's book is related to the phenomenally successful showing of a complete Japanese house and garden at the Museum of Modern Art in New York during the summers of 1954 and 1955, although only a final Supplement of 15 pages is devoted specifically to that exhibit. Yoshida's book is entirely concerned with traditional house-architecture; Drexler's with Japanese architecture other than domestic as well as with houses. He also includes a very selective coverage of modern building, with which Koike's book (with Japanese and English text) deals more extensively.

For almost a century, since Godwin stripped his rooms in Bristol in the early 1860s to a near-oriental nudity and Nesfield began to exploit Japanese motifs in his architectural ornament, the arts of Japan have been of recurrent interest to the architects of the Western World—I say 'arts' purposely, for before the publication of E. S. Morse's *Japanese Homes and their Surroundings* in 1886 there was little or no opportunity to study Japanese architecture. Even Frank Lloyd Wright, whose mature style Japanese influence helped to crystallize around 1900, claims that his knowledge of Japan came largely from prints—and actor prints at that! A succession of Japanese buildings, by their nature readily reassembled abroad from the original elements, of which the Museum of Modern Art's house was the latest, have in the last hundred years made it possible for architects and laymen who have never visited Japan to appreciate the qualities, both functional and aesthetic, of the Japanese house. And from Godwin to Gropius (who visited Japan only last year), the impress of Japan has balanced, if it has not cancelled out, that of such fountainheads of Western tradition as Greece and Rome for generation after generation of advanced architects. The latest generation now in their twenties are apparently proving no exception, and they will have the advantage of a visual documentation richer than was ever available before.

Only with these present publications, perhaps, has Japanese architecture been satisfactorily presented to English and American readers. Yet, as often, adequate presentation has come only after most that can be absorbed has already passed into the bloodstream of modern architecture in the Western World. So multifarious and long continued has been the pattern of Japanese influence on the West that it is hard at this late date to say how many of the similarities between our present modern traditions, established gradually over the last 60 or more years, and Japanese traditions are due to borrowing and how many to parallel development. Modular organization, visible framed structure, open planning with movable partitions, built-in furniture, interaction of house and garden, plain walls, frank exploitation of natural materials, particularly wood, horizontality, wide eaves, and various sorts of screens for sun control are only some of the elements common to modern architecture and traditional Japanese house architecture.

There are also deeper affinities of principle and approach. But it is a healthy feature of all these books that they stress the idiosyncrasy of the Japanese approach and its derivation from climatic and spiritual peculiarities very different from those of the modern Western World. Here the contrast between their traditional architecture and what the Japanese are now building in emulation of the modern architecture of the West (as most fully illustrated in the Koike book) brings one up short. It would seem on the whole that the Japanese were profiting less today than the West from their own traditions. If a Kosaka in his Postal Life Insurance Office at Sendai, which is of traditional wooden frame construction, seems able to make the best of both worlds, that is hardly so evident in his Nurses' Training School in Tokyo. The long-established Yamada's hand-

some Y-shaped Welfare Pension Hospital in Tokyo might have been built anywhere in the Western World; and Yoshimura's excellent Aritomi house in Tokyo seems to have borrowed back from California much of what the Californians began to learn from the Orient fifty years ago. Only Sakakura's Museum of Modern Art at Kamakura seems to parallel in its elegant combination of international ideals and regional details the subtlety of his master Le Corbusier's absorption of certain Indian ideas in his High Courts at Chandigarh. Gropius' pupil Yamaguchi in his Lecture Hall at Kanto-Gakuin University in Yokohama seems far less responsive than his master to local ideals and traditions, excellent and even original as is this building of his.

Paradoxically, one may therefore suggest that in the present state of things such books as Yoshida's and Drexler's might be of more value to Japanese architects than to those of the West. The Japanese seem to need now just the sort of reintroduction to the values of their own tradition, as seen from within the broad frame of reference of Western modern architecture, that Drexler in particular gives. But both books should be of great interest to Westerners all the same. It is fascinating to see the source—or the parallel—to so many of our contemporary ideas and to consider whether, in the translation of these ideas to the needs of the Western World, as much has been gained as has very evidently been lost. Does the individual genius of Frank Lloyd Wright make up for the quiet assurance of a tradition which, according to Koike, was never known as 'architecture' but only as 'house-building' (*Zoka*) until the impingement of the Western World on Japan eventually brought in the more pretentious term *Kenchiku?* Can we, with our declining standards of traditional craftsmanship and our dwindling use of natural materials, expect to rival in rich simplicity the effects of the Japanese carpenters whose discipline is that of cabinetmakers?

However that may be, the real value and stimulus of these books by Yoshida and by Drexler, as of any that present effectively distant arts of building—whether distant in time or in space—lies in their intimation of strange and potent beauties that must remain essentially inimitable. Here the Drexler book is the richer. Not only are his photographs of such buildings as both illustrate—the Ise Shrine, for example, with one view in Yoshida to ten in Drexler, the Katsura Palace, with nearly sixty illustrations in Yoshida, many of them of very minor details, to twenty in Drexler—generally finer (when they are not identical) but, since his subject is Japanese architecture and not just the Japanese house, Drexler includes buildings ranging from temples to castles which enormously extend one's picture of Japanese building materials and methods. Temples, with their pagodas and their very rich decorations, as also the stone bastions of the castles, are more related to Chinese architecture, less indigenous than the palaces and houses, but magnificent none the less. The range of garden design, from courtyards of smooth-swept white sand ornamented by a few groups of carefully chosen and artfully placed rocks, as at the Ryoanji Temple, to landscapes of almost eighteenth century English extension, such as the Pond Garden of the Shagakuin Imperial Villa, is also greater in Drexler than in Yoshida, and will be a revelation to many who believe they already know the Japanese garden.

Yoshida, however, gives rather more technical material in graphic form, not least a section with plans of sixteen houses, contemporary but of the traditional order. Yet Drexler's account of structural methods is perhaps subtler, since he is more fully aware of the problems raised by Western criticism concerning honesty of structural expression. It is interesting and healthy to learn that Japanese structural frankness is by no means as total as it appears to the casual eye or has been claimed to be by European purists. Curiously enough, Yoshida is more critical of the primitiveness of Japanese traditional concepts of structure. Drexler writes well; so may Yoshida have done in Japanese, but the double translation, from Japanese into German and from German into English, has naturally produced a characterless text of rather unpleasant texture.

To all those who find in the Japanese house, as in the Greek temple and the Gothic church, one of the absolutes of architectural achievement, these books will be rewarding both for the pure pleasures of contemplation they offer and for the extensive and revealing information they provide. After looking at them, alas, one's interest in the Koike selection of current production is likely to be rather faint. We will do well to remind ourselves, then, that to look at books of current production in Greece or even, say, in France after renewing one's impressions of fifth-century temples or twelfth-century cathedrals would likewise be disconcerting if not even more depressing. The curious difference is that the traditional Japanese house remains a living phenomenon, as the example in the garden of the Museum of Modern Art, the most popular architectural exhibit which that institution has ever shown, made evident to a wide American public. The inclusion of the plans, elevations, and sections of that house in the Supplement, as well as a suite of fine photographs of the building and its garden setting, so surprisingly seen not against Fujiyama but against McKim, Mead and White's University Club and Philip Johnson's Whitney Museum, is not the least interesting feature of the Drexler book. **Henry-Russell Hitchcock**

THE DEFINITIVE BELVEDERE

THE CORTILE DEL BELVEDERE. *By James S. Ackerman. Biblioteca Apostolica Vaticana,* 1954. 12,000 *lire.*

Between 1840 and 1920 there appeared a remarkable series of books on Roman architecture of the High Renaissance. These were the life-work of two generations of painstaking scholars. Subsequent students found their research both exhaustive and exhausting. For thirty-five years no one has dared or cared to undertake a major new investigation within that field. Now this handsome book has emerged from the cold ashes of Letarouilly's, von Geymueller's and Dagobert Frey's enthusiasm.

The author outlines the complicated early history of the Vatican with admirable clarity; he reconstructs Bramante's project for the new extension court by court, wall by wall and floor by floor; he chronicles in full detail the construction completed during each of the first nine pontificates of the sixteenth century and deals amply with the development of the building from 1585 to the present day. The body of the book concludes with a discussion of the sources of the design, an analysis of those qualities which gave it distinction and a suggestion of the influence it exerted. Finally, a series of appendices include a reprinting of all known descriptions, a publication of all documents so far identified and a detailed catalogue of all available graphic material up to 1585. Excellent in every part, as a whole the text of *The Cortile del Belvedere* has established a new and larger meaning for the hackneyed phrase 'definitive study.'

Mr. Ackerman has done more than provide historians of Renaissance architecture with a model monograph; he offers them a challenge. He discovered a mid-sixteenth century painting of the building in the guise of an ancient ruin. By a learned yet imaginative interpretation of this new evidence, he concludes that 'throughout the first half of the sixteenth century, Bramante's Cortile was seen as he meant it to be seen; a re-embodiment of the Roman villa or palace garden.' 'The plans were the result of considerable archaeological research.' The implications of this suggestion are extensive. Ackerman may well have found a rich new vein leading from the old mine.

The illustrations supplement the text adequately, but are otherwise a disappointment. Surely at this price one could expect something more than forty-seven postcard-size figures. The only reproductions of the existing building are four small photographs, tired examples of familiar views. The justification of this book is the fact that the Cortile del Belvedere 'exists today only in name; and if it is to be understood and appreciated it must be reconstructed.' But for a masterpiece of architecture to be satisfactorily reconstructed the final result must include some model, drawing or doctored photograph that establishes the definitive visual image for its time. All that is provided here are three large diagrams. As visualizations they are mere skeletons; as charts they are neither consistently clear nor wholly accurate.*

Fortunately this study is only a beginning. The author originally planned to publish a monograph on the history of the whole Vatican during the sixteenth century. It is gratifying to read that he has come 'enticingly close to that aim.' One can only hope that he now projects a companion volume. Highly desirable in itself, it would also provide an opportunity to make good the one major shortcoming of this otherwise admirable book. **John Coolidge**

* For example, on plate I the relation of the loggie of the upper court to the top floor of the intermediate court is puzzling. On plate II the cornice of the court wall is broken while the entablature of the niche is continuous. On plate III it is hard to identify the work completed under Leo X and impossible to date the roofs.

SKILL

A MONTHLY REVIEW
OF BUILDING TECHNIQUES & INDUSTRIAL DESIGN

1 interiors
2 design review
3 techniques
4 the industry

DESIGN REVIEW

HOUSEHOLD STORAGE

A new approach to built-in furniture is suggested in the following survey of current British domestic storage equipment. The survey excludes kitchen storage, which will be dealt with in a separate article.

Today's smaller houses and higher standard of living (hence more personal possessions) means that serious thought is needed on the design of household storage equipment. Post-war solutions have been mainly in two directions: firstly, the adaptation to a modern idiom of traditional types of storage (wardrobes, chests-of-drawers, sideboards) and, secondly, the creation of new equipment designed to serve specific contemporary needs (stacking units, open-frame constructions).

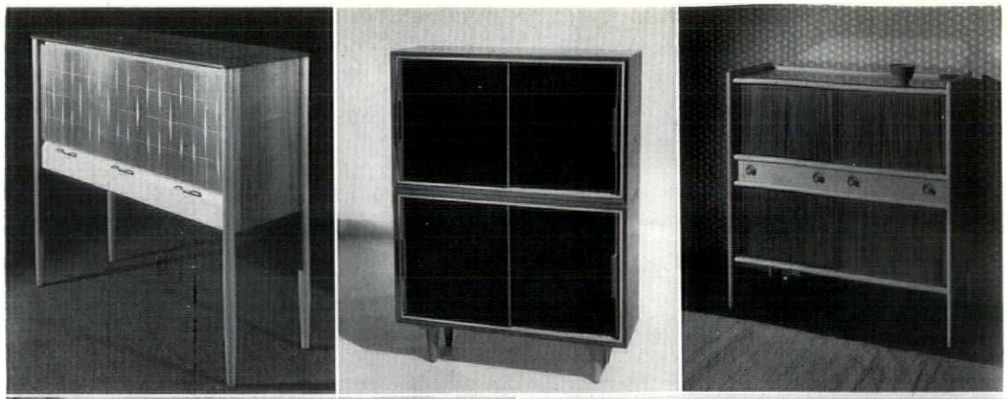
In the first category, designers' efforts have recently been concentrated on building in refinements to an essentially static idea. Considerable attention has been paid to the selection of woods, to detailing of carcass structures, and, recently, to the use of techniques for applied decoration. The form and purpose of this type of storage have remained unchanged, and designers play with styles rather than produce original creative solutions.

By contrast the second category recognizes present-day living conditions; the unit idea was originally developed to help the increasing numbers of young couples unable to start married life with completely furnished homes. But it has remained very largely an idea, and in its true sense has been confined mainly to bookcases. Consistency of dimensions and style throughout a range is a welcome step forward, but it is *not* unit furniture—and at the high prices usually demanded is not fulfilling its original purpose. *Stacking* and *extendable* units have only recently been developed for multi-purpose storage.

Other factors have influenced recent designs. The use of vacuum cleaners, more efficient types of solid-fuel-burning fires, and, to some extent, central heating have



1, *Kandya Ltd., designed by Frank Guille.* 59 *in. by* 58½ *in. by* 16 *in. deep.* £37 10*s.*



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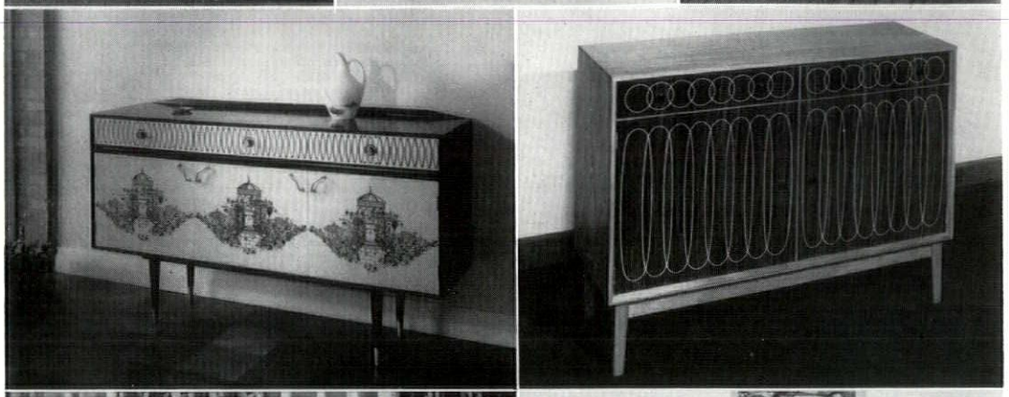


5, 6



7, 8

2, *Heal & Son Ltd., designed by H. E. Long. Height:* 4 *ft.; depth:* 1 *ft.* 6 *in.; width:* 4 *ft.* 4 *in.* £43 10*s.* (*All prices are approximate and include purchase tax*). 3, *D. Meredew Ltd., designed by Meredew Design Group. Height:* 4 *ft.* 3 *in.; depth:* 1 *ft.; length:* 3 *ft.* £22 18*s.* 6*d.* 4, *Kandya Ltd., designed by F. Guille. Height:* 4 *ft.* 3 *in.; depth:* 1 *ft.* 6 *in.; width:* 4 *ft.* £29. 5, *G. W. Evans Ltd., designed by Robert Heritage. Silk screen: Dorothy Heritage. Height:* 2 *ft.* 10½ *in.; depth:* 17 *in.; length:* 4 *ft.* 6 *in.;* £60 1*s.* 3*d.* 6, *Gordon Russell Ltd., designed by W. H. Russell. Height:* 3 *ft.; depth:* 1 *ft.* 7 *in.; length:* 4 *ft.* £30 16*s.* 7, *W. G. Evans & Sons Ltd., designed by Peter Hayward. Height:* 33 *in.; depth:* 18 *in.; length:* 54 *in.* £40. 8, *A. Younger Ltd., designed by John J. Herbert. Height:* 2 *ft.* 11 *in.; depth:* 1 *ft.* 7 *in.; width:* 4 *ft.* 5 *in.* £35 15*s.*

had a marked effect on cleanliness in the home. Dust from brushed carpets and smoking fires no longer dictates the necessity for closed storage, and the open-frame unit has become a practical possibility. Most designs of this type are, however, expensive when their basic simplicity of construction suggests cheapness. Serious production for mass markets has yet to be tackled and often the most successful examples are 'purpose made.'

The illustrations show some of the better achievements by British designers; they still remain piecemeal solutions of storage problems. To what extent do they relate to the design of new housing, or, for that matter, to the real needs of the occupants? Storage, if it is successfully to fit in to the pattern of living, must be directly related to the plan of the house. Yet today the architect and the furniture manufacturer produce their own solutions which will eventually come together in the furnished home. If the combined result is satisfactory, it is certainly not by design.

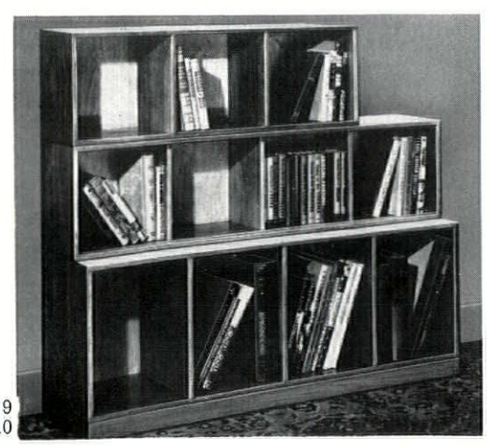
There is sufficient standardization of housing units for large scale development schemes to justify a closer relationship between furniture manufacturers and the building industry—already explored to a limited extent in the production of kitchen storage. The cost of joinery excludes the extensive introduction of built-in storage for general household use and does not provide the quality of finish or intricacy of fittings normally demanded in the living room. Factory-made units, delivered to the site ready to be installed in large sections, would fulfil these requirements and in addition provide major economies by allowing the building itself to replace various elements of the carcass. By including the price as part of the mortgage repayments, the householder could derive the benefits of economic purchase which was initially the underlying principle of the unit system.

Living and Dining Room Storage

Sideboards. Apart from the mirrored back, which has almost entirely disappeared, the sideboard has retained traditional form, but it is doubtful if its traditional use as a side carving table is very common.

By accepting this doubtful basis as a starting point for design, most sideboards are too low to provide convenient access to the storage compartments. At the same time, the arrangement of drawers and cupboards seems usually to be the wrong way round. Drawers, which have access from above, are placed at the top, and cupboards, which have access from the front, are so low as to enforce stooping to find anything placed at their backs. In the sideboard from Heals, **2**, this arrangement, sensibly, has been reversed and the whole unit lifted to a more comfortable height.

Careful detailing is common to all the sideboards illustrated here and such exaggerated characteristics of the early contemporary style as widely splayed legs and Spartan finishes have been avoided. The use of contrasting surfaces in **5** and **6** emphasizes the structure and suggests lightness. The desire to create more visual



9
10

9, *Phœnix Gallery. Standard sections: height:* 11 *in.; depth:* 8 *in.; length:* 42½ *in.* (4 *units*). *Large sections: height:* 15 *in.; depth:* 11 *in. length:* 42½ *in.* (4 *units*). 10, *Minty Ltd. Height :* 5 *ft.; depth:* 11¼ *in.; width:* 2 *ft.* 3 *in. Oak:* £20 16*s.* 6*d.; walnut:* £19 7*s.* 6*d.*

interest is being increasingly expressed in decorative treatments. Three different techniques have been used in these examples: **2** and **6** show contrasting possibilities in routed decoration, **7** uses a traditional inlay technique, while **5** introduces a new element in silk-screen printing. By comparison, **8** seems austere, although its proportions and finish make it a pleasant and unobtrusive piece.

The sideboard proper has more limitations in a combined dining-sitting room; it is then used for more general storage and a few larger cabinets have been made to fill this need. Where space prohibits longitudinal expansion, building upwards is a natural alternative. An effective solution to this problem can be seen in **3**, which makes use of P.V.C. sheeting on the door fronts to contrast with the slim wood carcass. The similar function of **4** is expressed in a different style, suggesting a link with peasant craftsmanship.

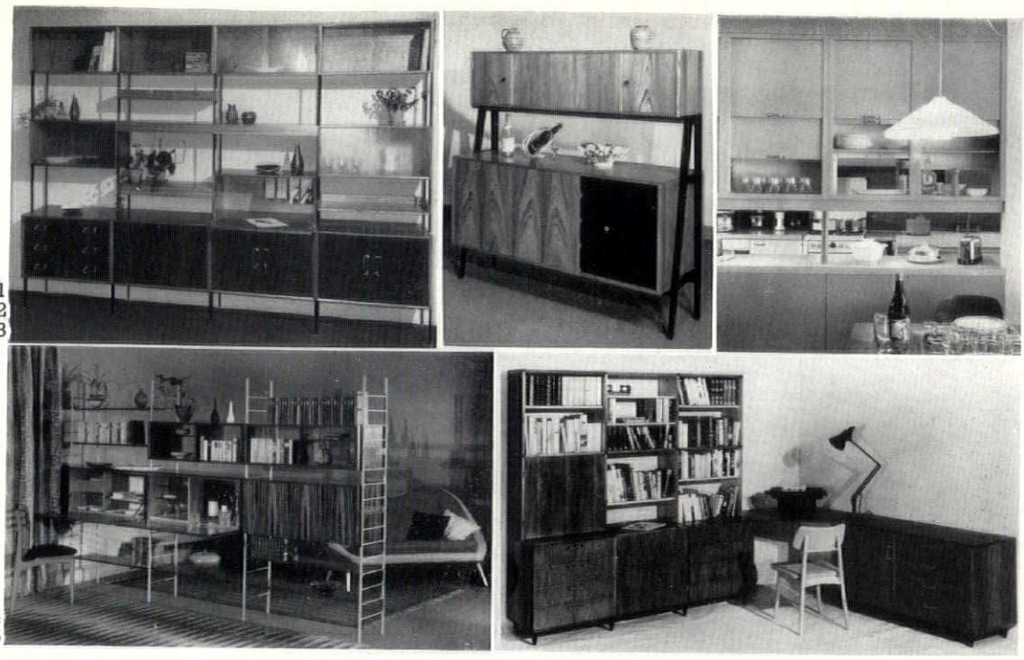
Multiple Storage. The unit idea in furniture is of pre-war origin, but its subsequent development has not been as great as the frequent use of the term might indicate. Early experiments were confined mainly to bookcases and **9** shows typical examples of the versatility which this type of unit provides. The single-purpose type of bookcase, **10**, gives less scope for the varied demands of modern informal living—demands which are better served by the more recent cupboard and shelf units combined in arrangements which can spread across an entire wall or form an open screen to divide a room. The ladder principle, **14**, is one of the simplest solutions, although the height is fixed and variations are limited to sideways extension and to the disposition of cabinets and shelves. More flexible is the 'Vanson' unit, **11**, which can be varied in both length and height; in addition, the partial recession of the supporting members allows a flush joint between the cabinets which results in a more compact and unified appearance.

The chief drawback of all these types of unit construction, however, has been the failure to disguise the appearance of accumulated single items. An answer to this problem has been found in the 'Extend' range recently introduced by Meredew's, **15**. Although detailing and finish could undoubtedly be improved, the principle of interlocking sections which can be built up in an infinite number of combinations is good and deserves further exploration.

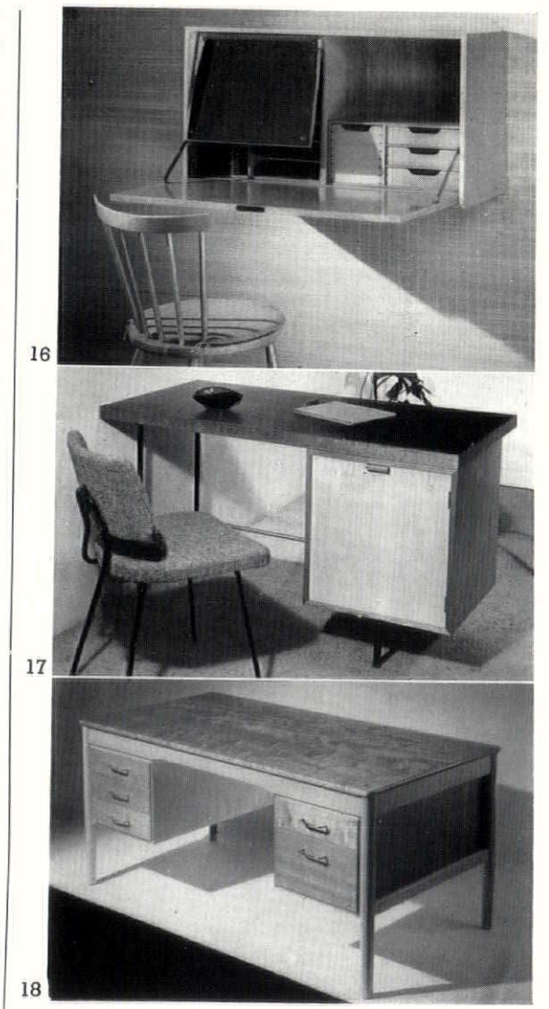
The backs of all the storage fitments discussed so far have a blank side, and this presents obvious difficulties when they are used as room dividers. The need for double-sided furniture has long been felt, and **12** and **1** show two recent designs which have tackled the problem sensibly. In **13** particularly the proportions are elegant and gain in effect from the contrasting painted and natural wood surfaces. There is still a long way to go before the full double-sided unit, such as **16**, which extends from floor to ceiling and divides the kitchen from the living-room in the French show flat exhibited at Hälsingborg, becomes a practical commercial proposition in England.

Specialized Storage The study as a separate room is seldom practical today, and few homes have space for a desk as such; but a simple unit within the framework of other storage, as in **14** and **11**, has positive advantages. Where this is not possible, for example in a bedroom, a compact wall-mounted structure such as **16**, from Denmark, would find many uses. Several available office desks would fit well into a modern domestic interior. The Hilleplan desk, **17**, has the smart workmanlike lines which characterize Robin Day's style, while L.M. Furniture's model, **18**, has the more gentle appeal of wood used in the manner of Danish craftsmanship.

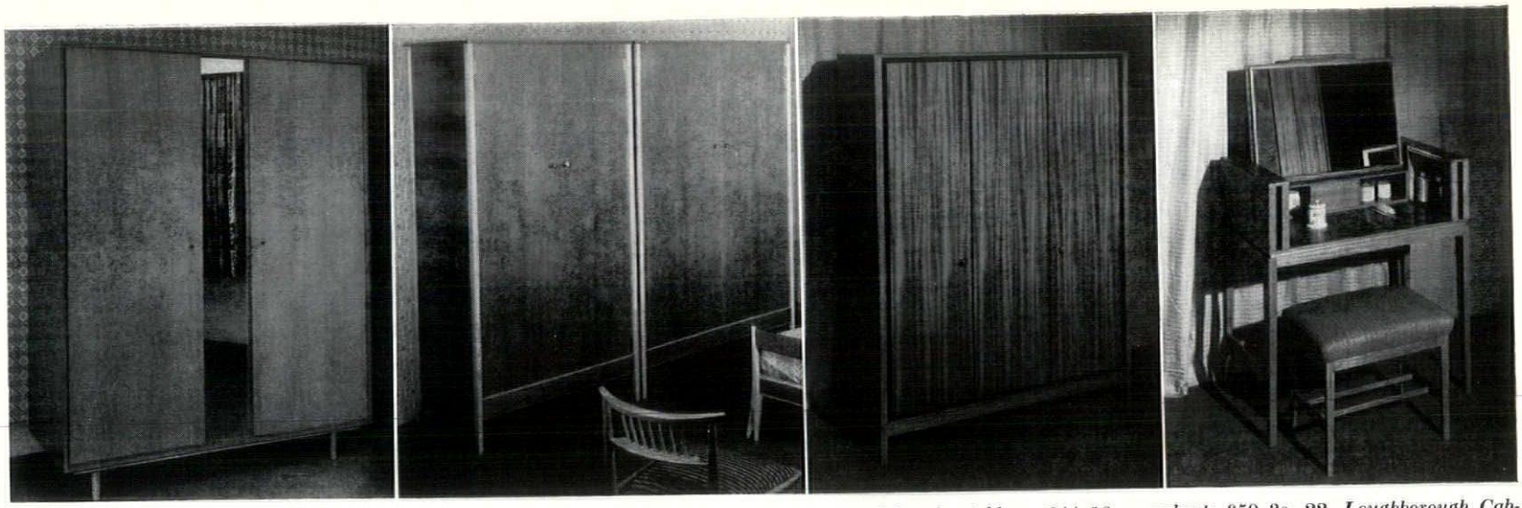
Bedroom Storage. Here, satisfactory storage arrangements are of even greater importance than in living and dining rooms. Built-in cupboards are common in new



11, W. G. Evans & Sons Ltd., designed by Peter Hayward. Length: 27 in.; depth, small carcass: 13½ in.; large carcass: 18 in.; width, small carcass: 11½ in.; large carcass: 16 in. £145. *12, A. Younger Ltd., designed by John J. Herbert. Height: 5 ft. 5in.; depth: 1 ft. 10 in.; width: 5 ft. 2 in.* £95. *13, double-sided unit dividing kitchen from living room in the French show flat at Hälsingborg,* 1955. *14, Heal & Son Ltd., designed by Nigel Walters. Height: 5 ft. 11½ in.; width: 9 ft. 2¾ in.; ladder:* £7 5*s.; shelves:* £4 *to* £8 10*s.; cocktail cabinet:* £82 10*s.; sideboard:* £82 10*s.; wireless cabinet:* £81 10*s.; display cabinet:* £60. *15, D. Meredew Ltd.* £114 10*s.* 9*d.* (*whole unit as photographed*).



16, Designed by Paul M. Volther for the Danish Co-operative. 17, S. Hille & Co. Ltd., designed by Robin Day. Height: 28½ in.; length: 4 ft.; width: 2 ft.; cabinet: 1 ft. 6 in. wide and 1 ft. 6 in. deep. £24 14*s.* 9*d.* *18, L. M. Furniture Ltd., designed by Tom Lupton and John Morton. Height: 2 ft. 5 in.; depth: 2 ft. 6 in.; length: 5 ft.* £16 10*s.* (*table only*). £42 10*s.* (*with 2 units*).



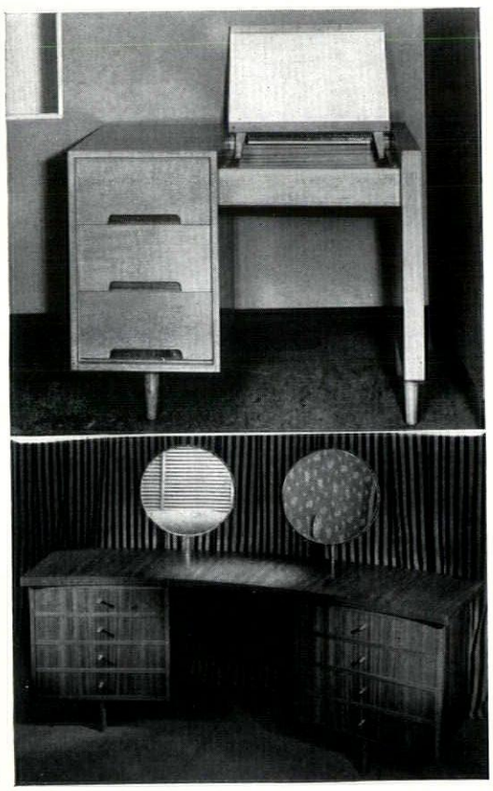
19, 20

21, 22

19, *the Stag Cabinet Co., designed by John and Sylvia Reid. Height:* 6 *ft.; depth:* 1 *ft.* 10 *in.; width:* 4 *ft.* 6 *in.* £35 15*s.* 20, *Nicholls & Janes Ltd., designed by Robert Heritage. Height:* 6 *ft.* 3 *in.; depth:* 1 *ft.* 10 *in.; width:* 4 *ft. Set of wardrobe, robette and dressing-table* £142. 21, *Loughborough Cabinet Manufacturing Co., designed by Ward & Austin. Height:* 5 *ft.* 9⅜ *in.; width:* 4 *ft.* 2 *in.; depth:* 1 *ft.* 8 *in. Mahogany:* £44 18*s.; walnut:* £50 3*s.* 22, *Loughborough Cabinet Manufacturing Co., designed by Ward & Austin. Height:* 3 *ft.* 2 *in.; width:* 2 *ft.* 10⅜ *in.; depth:* 20 *in. Mahogany:* £16 14*s.* 6*d.; walnut:* £18 4*s.*

houses and flats and usually provide adequate hanging space, although they lack the refinements of fitted trays, mirrors, etc. In the smaller bedroom, however, the unobtrusive character of this type of storage, with its painted surfaces closely matching walls, is an advantage, and visual interest can be concentrated on other elements—a bedspread or dressing-table.

In larger rooms, the unobtrusive built-in



23

24

23, *the Stag Cabinet Co. Ltd., designed by John and Sylvia Reid. Height:* 2 *ft.* 5 *in.; depth:* 1 *ft.* 6 *in.; width:* 2 *ft.* 11 *in.* £15. 24, *H. Morris & Co., designed by Neil B. Morris. Height:* 1 *ft.* 4½ *in.; width:* 1 *ft.* 8 *in.; length:* 6 *ft.* 4 *in.* £57 10*s.*

cupboard is not the best solution. What is needed is a series of factory-made units complete with internal fittings and providing the surface qualities and refined detailing of the best wardrobes in current production. The failure to provide any built-in storage in the majority of inter-war housing, however, makes the conventional wardrobe a necessity in many homes.

One of the designer's chief problems is to reduce the apparent bulk of the wardrobe and in the 'Stag' model, **19**, this has been cleverly achieved by the full-length mirror which appears to divide the wardrobe into two. The 'Stanhope' design, **20**, has a similar lightness of touch where the emphasis is on the thin supporting framework; also in the wardrobe, **21**, where the ebonized strip gives the same result. Each of these three designs is part of a matching set and the high standards which they attain are carried through in the other pieces, as can be seen in the dressing-tables, **22** and **23**. Both these designs make use of a lift-up lid with a mirror on its under surface, closing to form a flush table or writing-desk. A more ambitious and expensive conception, **24**, has tackled the problem of the often ugly, fixed dressing-table mirror, which shows its plywood back from so many bedroom windows. The twin circles, here, are charming and original and show a sensitivity to scale and the qualities of materials which mark the skilled designer.

GRATINGS AND COVERS

by Hugh Wykeham

The architect whose attention has been directed to floorscape will often find that his best intentions for detailing at that level are frustrated by the difficulties of acquiring a body of comparative knowledge of the visual effect of manhole-covers, gratings and so forth when actually installed and in use.

The ranges of the different manufacturers would tax even the most capacious visual memory, but, in any case, the difference between the appearance of an illustration of a product in a trade-catalogue and the appearance of the product itself in a kerb or pavement is almost absolute.

For these reasons one cannot but be grateful that Broads Manufacturing Company showed a fair sampling of their wide range of covers and gratings at the recent Public Works Exhibition at Olympia, actually set in kerbs and road surfaces, thus making useful comparisons possible, even though the 'show finish' of most of them bears little resemblance to the sheen they acquire from daily traffic wear.

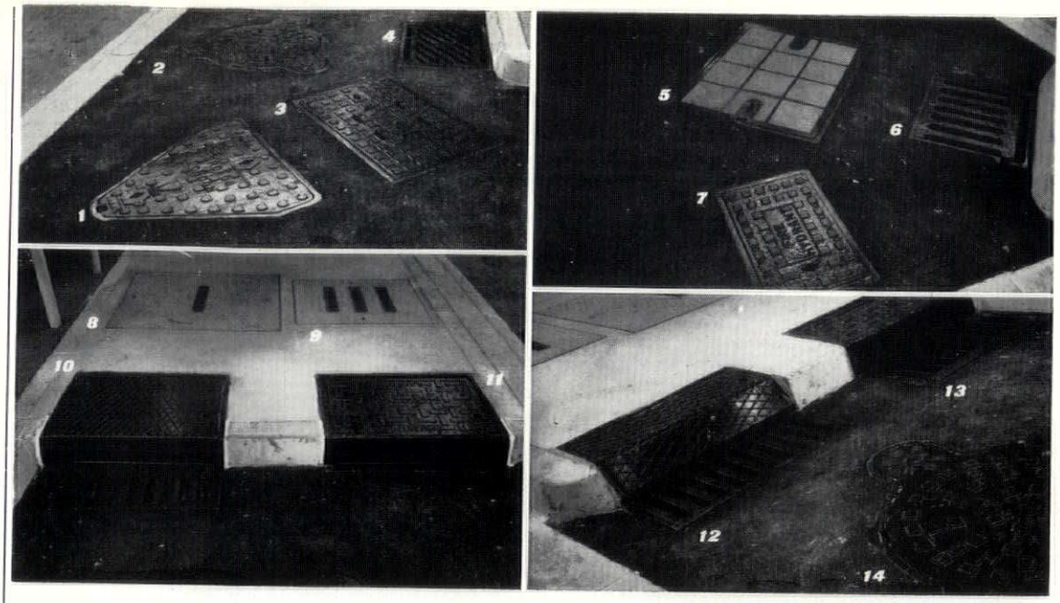
Even within this one manufacturer's range, the variety of possible alternative patterns—often with performances that overlapped sufficiently to provide genuine choices—is remarkable. Among gully-grates, for instance, the alternatives shown included the classic straight-barred model, **6**, the *Guardian* diagonal model, **4**, and the *Trirec*, which offers a new shape on the ground. Those almost-sculptural storm-grates, with their curved and bevelled bars, were not shown (though included in the range) but there were a number of kerb-fitted gully covers with flood deflectors, such as the *Highway*, **10** (and a variant without a deflector, **11**), the *Fullway*, **13**, which has a true grating rather than a deflector, and the Neath By-pass model, **12**, a 'special' that preserves the contour of a

[continued on page 141

'battered' kerb by virtue of a cover with a turned-down skirt.

Inspection covers—a term that embraces more than just manhole lids—ranged from light-duty *Broadstel* covers, **8** and **9**, familiar in urban pavements, to a variety of heavy-duty equipment, including recessed models to be filled with road surfacing materials—though **5**, whose fill contrasts with the surrounding surface, represents a situation that would not normally arise in practice. Regular metal covers (besides traditional circular and rectangular models, e.g. **13**) included two particularly interesting non-rocking types with three-point suspension. Not only do these eliminate the nerve destroying clatter caused by loose lids in busy roads, but the three-point suspension reveals itself at the road surface in two forms that are still unfamiliar to the floorscaper—the three-lobed *Ner-Rok*, **2** and **14**, or the approximately triangular, **1**. The performances of these last two models overlap considerably, in terms of loading and access dimensions, and should provide the kind of choice that ought to allow the architect and his engineer to agree upon covers that are visually as well as technically appropriate to the design in hand. Cost margins, of course, may impinge on aesthetic ones, but may be affected in turn by the quantities involved, a point that would have to be taken up with the manufacturers themselves.

Broads Manufacturing Co. Ltd., 4, South Wharf, London, W.2.



TECHNIQUES

EXTERNAL PAVINGS 1

by Robert Maguire

The conscious use of paving materials to give character to paths and pedestrian areas has now at last re-established itself. In its articles on Townscape the ARCHITECTURAL REVIEW *has sought to stimulate interest in this matter, and from time to time has published examples from the functional tradition found in our towns and villages, and suggestions on the way in which this lively tradition may be continued in the future. Those architects and planners who have considered pavings important and have attempted something beyond the bare minimum have, however, come across one major difficulty—cost. Pavings and other similar external works are still thought to be dispensable luxuries by the average client (particularly by the average committee-client), and unless their cost can be brought down to a reasonable level they are often likely to be omitted altogether. This is the first of two articles in which Robert Maguire reviews the range of paving materials now available, and gives some indication of their cost, based on today's prices.*

A few years ago only two kinds of paving were available—the 'sympathetic' traditional materials, such as stone flags and paving bricks, which were and still are expensive, and comparatively drab materials such as concrete flags and asphalt, which were cheap. This was probably the result of the general attitude before the war, when architects were commonly supposed to require only 'high class' pavings while economy was considered the concern of those who had merely a job of work to do.

Since then some considerable effort has been made to develop new methods of paving cheaply, and the results so far have been notable for their revival of a good straightforward character; prettiness seems at last to be on its way out. In particular the work of the Cement and Concrete Association and a number of member firms has done much to relieve the prejudice against concrete as a paving material; and it has been shown to be not only one of the cheapest, but also a material offering many variations in character.

In these articles both traditional and newly developed materials will be considered, in order to give as full a picture as possible and to allow comparison. They will be dealt with under the following headings:—

Flags. Flat units of any size over about 1 ft. 6 in. square.

Tiles. Flat units under 1 ft. 6 in. square.

Blocks. Fairly thick units of small surface area.

In situ. Materials laid 'wet' in slab or membrane form.

Loose. Small-sized material spread over the ground and sometimes rolled in.

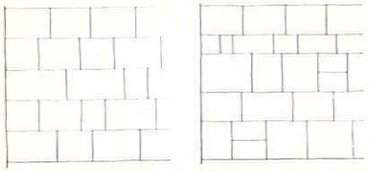
Flags

Stone. There is quite a large range of stones hard enough to be used for paving, but most of them are now quarried in such small quantities as to be impracticable for any but local use. This is fortunate, for with the increasing industrialization of the building industry tending to iron out regional character, it is as well that one or two such circumstances still provide some relief.

The two stones generally available for paving are York, a sandstone, and Portland, an oolite limestone. The latter is normally rather soft and should not be used in places where excessive wear is expected. Purbeck Portland, which comes from an adjacent bed, is harder but more expensive. The colours of these stones are well enough known to need no description. The cheapest surface finish for York stone is riven, 1, i.e., split along the natural cleavage plane, producing a pleasant rough texture; Portland stone is sawn and may be used with the saw-marks left on. The thickness will vary according to the size of individual flags between 2 in. and 2½ in. Economical sizes depend entirely on what can be cut out of the available blocks of stone at the quarry, and this generally means random sizes. An average width for both types of stone is 2 ft. 6 in., and



1. *York stone paving with a natural riven surface at King's College, Cambridge. A wide edging of cobbles has been used to provide a hazard to the grass. (Architects: Holford and Wright.)*



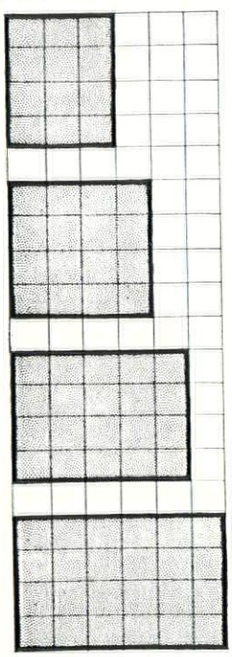
2, *a method of setting out stone paving which allows economical sizes of flags to be cut. The 'courses' are of equal width (2 ft. 6 in.) but the flags vary at random in length.* 3, *another layout which allows for a larger range of sizes.*

in laying out paving it is a good idea to specify 'courses' of this dimension in one direction and allow the lengths of flags to vary, 2. Alternatively, greater freedom can be allowed by specifying two or three possible course widths, 3.

BSCP 202.102 recommends that all stone paving should be bedded solid in mortar, the kind of mortar being chosen to suit the stone. Traditionally, however, flags are laid on 'five dots' of mortar at the corners and centre of each flag. This facilitates lifting, which, unfortunately, is still necessary for access to services. The foundation can be of hardcore or merely well-rammed earth, with a covering of ashes or small clinker; sand, although frequently used, is to be discouraged unless the joints are well pointed up, as the seepage of surface water tends to move it. Clinker should not be used under limestones because it can cause efflorescence on the surface.

Slate. Slate flags for external paving are now unfortunately priced almost out of existence. The cheapest types are Delabole and Lancashire slates in sawn slabs (left rough), and with an average width of 2 ft. They may be considerably thinner than flags of other stones; 1 in. to 1¼ in. is reasonable.

Cast stone. The makers of cast stone can 'reconstruct' any suitable natural stone in the form of flags. Apart from the colour and texture, cast stone flags can be regarded as similar to those made in precast concrete, and should be subject to the same strength requirements. They may be made to any practicable size, and if ordered specially, the number of different sizes should be small in order to make production economical.



4, *British Standard sizes for precast concrete flags. The usual thickness is 2 in., but B.S. 368 also allows for the manufacture of 2½ in. flags.*

Precast concrete. There are two distinct types of concrete flag-stone; the one mass-produced by hydraulic pressure, and the other cast in open moulds without pressure. Hydraulically pressed flags are often referred to as Standard Flags, being produced to the full requirements of B.S. 368, which lays down a minimum strength and also governs sizes, 4. The B.S., however, allows for the production of flags with or without pressure, but states that if pressure is used it must not be less than 1,000 lb. per sq. in. A hydraulic press, which is the only practicable piece of equipment capable of this pressure, can produce thousands of flags a week, so that it is difficult for the open-mould method to compete in the same market. The makers of open-mould flags, therefore, tend to by-pass the B.S. and produce higher-priced flags to meet more special requirements.

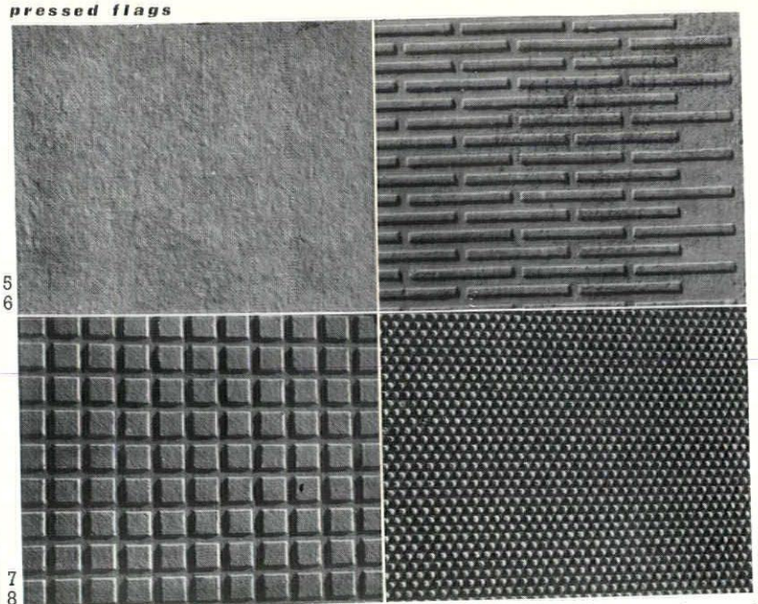
Pressed flags. The hydraulic press consists of a number of mould trays on a turntable, which are brought in turn under first the feed hopper and then the press itself. The bottom of each mould is covered with a fine wire mesh on top of which is placed a sheet of paper; the hopper then feeds in the exact amount of concrete mix, which is very dry. Under the press, the water is forced out through the paper and mesh. The paper prevents the fines of the concrete being forced out along with the water. Immediately after pressing the flag is set sufficiently to allow lifting and stacking.

From this description it must be obvious that the pressing process has limitations. The first and most important is that associated with all mass-production machinery—once set up for a job, it is most uneconomical to make any alterations. The architect is not, therefore, usually in a position to ask for anything but the manufacturer's standard lines, however small the alteration.

The second limitation concerns the surface texture of the flags. The standard texture is that of the wire mesh, 5, which is fairly pronounced even though imprinted through the paper. It provides a reasonable non-skid surface which is not very attractive, but wears off after about two years, giving way to the texture of the aggregate. It is possible to obtain different textures, 6, 7, 8, by placing perforated steel plates in the bottom of the moulds, but unless these are included in the maker's standard range it will be difficult to persuade him to do it for small quantities. Textured rubber mats cannot be used, as there is no escape for the water.

Most manufacturers concentrate on the production of 'natural' (grey) flags. These are made with unpigmented cement and usually the local aggregate. Consequently the products of different manufacturers vary considerably; there are green-greys, pink-greys, off-whites, and so on, according to the aggregate used. The accidental juxtaposition of these greys in, for example, London pavements, sometimes produces a very pleasant effect and leads one to consider how it could be used intentionally. There is, however, no way of telling the exact colours other than by collecting samples. This can also be deceptive, as new flags have a surface colouring of cement dust, which wears off later. One manufacturer has attempted to avoid this and to 'pre-weather' the flags by saturating the mould paper in a retarding liquid which affects the set of the surface cement only: after removal from the mould, the surface is washed down and brushed to expose the aggregate.

pressed flags



5, *the standard surface texture of an hydraulically pressed flag.* 6, *a 'bar-faced' texture for pressed flags, obtained by placing a slotted steel plate in the mould.* 7, *'square-mesh' texture, obtained by placing a standard steel grille plate in the mould.* 8, *'pimple-faced' texture. This is a very fine texture and soon wears down as the 'pimples' contain no aggregate.*

Flags can be made to other colours than grey by using a pigment in the cement. Most makers stock 'red' (pink) and 'buff' (ochre) flags as standard lines; other pigments tend to weaken the mix and make it difficult to guarantee B.S. strength. Generally speaking, manufacturers use too much pigment, producing unsubtle colours.

The 2-in. thick flags are quite suitable for general use, and it is difficult to see why 2½ in. flags are still produced; they are not sufficiently strong to take vehicular traffic, and excessively strong for pedestrian traffic. An explanation offered by one manufacturer is that they are useful for replacing parts of old stone paving, which is often 2½ in. thick.

The flags should be bedded on 'five dots' on a foundation of well-compacted ashes or clinker.

Open mould flags. The casting of flags in open moulds offers considerable scope both in surface texture and shape. There are two kinds of surface texture; mechanical texture and exposed aggregate.

Mechanical textures are obtained by means of a profiled bottom to the mould. Almost any textured material can be used, but the best results so far have been from rubber mould

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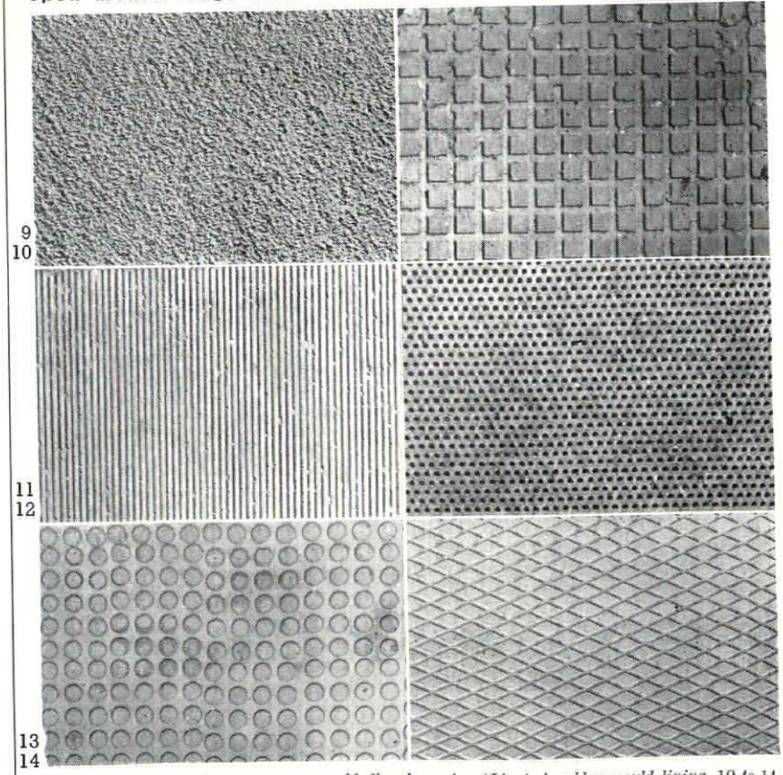
open mould flags with mechanical textures

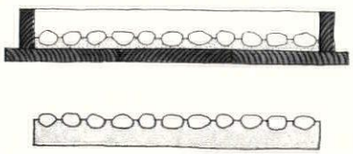


9, *the surface obtained on an open-mould flag by using 'Linatex' rubber mould lining.* 10 *to* 14, *textures obtained by using standard rubber sheetings:* 10, *from square studded rubber used for bus platforms;* 11, *from fluted rubber used for bath mats;* 12, *from batting-glove rubber;* 13, *from plain sheet from which washers have been punched;* 14, *from diamond studded rubber.*

continued from page 142]

linings. One rubber firm make a lining which has a rough-cast texture, 9, but otherwise standard patterns of rubber sheeting, 10 to 14, produced for other purposes (such as bus platforms and bath mats) must be used as special patterns cannot be made economically. Rubber has the disadvantage that it can be used only for about thirty or forty times, after which it disintegrates. The life of a lining can be helped if lanoline or castor oil is used in place of the normal mould oil. Experiments with polystyrene mould linings are at present being made, and these are said to have an indefinite life and can also be made fairly cheaply to special patterns.

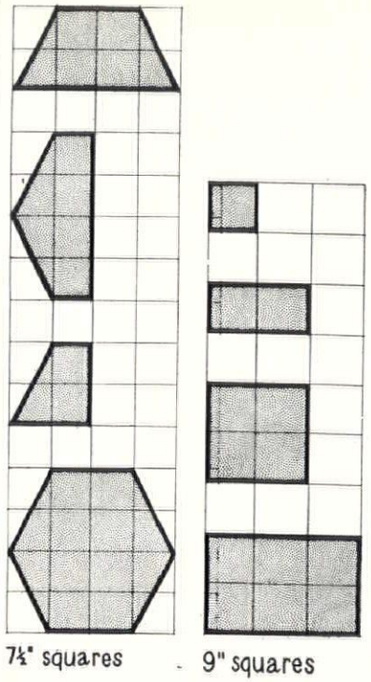
The exposed aggregate technique was developed primarily for cladding panels, and its use for these is now well-known. Hundreds of colours and textures are possible, and may be inspected at the Cement and Concrete Association's research station. Only a restricted range is suitable for paving. Some aggregates are too polished and others so sharp-edged as to be dangerous, while the larger types give a very uneven surface. This last, however, may be useful for positions where the paving forms a 'hazard' rather than a walking sur-



15, *method of casting flags with large-sized aggregate surfacing, such as cobbles. The stones are laid in a bed of sand in the bottom of the mould; when the flag is removed from the mould the sand is brushed away, leaving the stones protruding.*

face, such as an edging to grassed areas.

The cheaper aggregates, 16, may be used throughout the mix, so that all that is necessary is to wash and brush off the surface fines. The more expensive aggregates, 17, are scattered over the surface a short while after casting, tamped in and the flag is washed and brushed as before. For larger aggregates, such as flint cobbles, the process is slightly different. A bed of sand, about half the thickness of the aggregate, is put in the bottom of the mould, and the stones placed in it, 15. The flag is cast on top and after



19, *left above, sizes of 'Mono-Hex' precast concrete flags. The half and quarter flags are used for filling up the odd spaces left by the hexagon grid at edges.* 20, *right above, sizes of 'Noelite' paving.*

removal from the mould, the sand is brushed away leaving the aggregate protruding halfway out of the flag, 18.

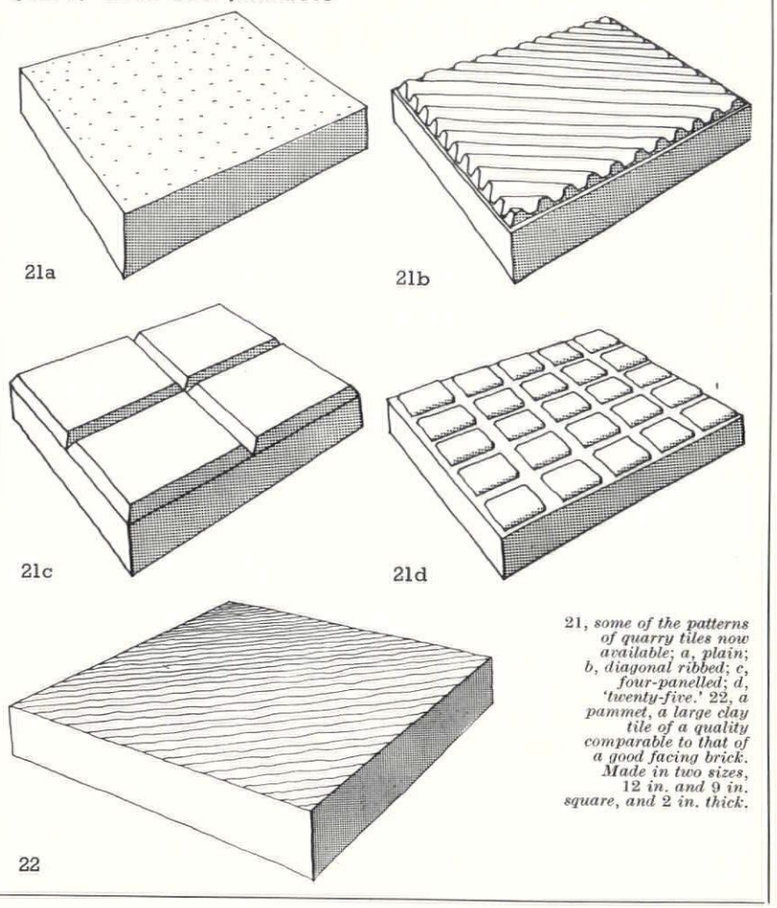
One manufacturer is now producing a very comprehensive system of precast concrete paving based on a hexagon grid, 19. Besides ordinary flags with smooth, textured or chequered surfaces, the system includes half and quarter flags, tree grilles, planting kerbs, gulley and manhole covers.

Another proprietary system, 20, is based on a 9-in. module. It is available in five colours.

Tiles

Tiles are not normally associated with external paving, possibly because the scale of their pattern is rather small. On the other hand, the paving brick is one of the oldest forms and its pattern is also small in scale. In recent years the production

quarry tiles and pammets



21, *some of the patterns of quarry tiles now available; a, plain; b, diagonal ribbed; c, four-panelled; d, 'twenty-five.'* 22, *a pammet, a large clay tile of a quality comparable to that of a good facing brick. Made in two sizes, 12 in. and 9 in. square, and 2 in. thick.*

of paving bricks has dropped, owing to the great demand for common building bricks, and quarry and other tiles have tended to replace them. The price of, for example, quarry tiles compares favourably with that of paving bricks of equivalent quality.

Quarry tiles. These are available in several sizes, the most useful from the point of view of external paving being 6 in., 8 in., 9 in. and 12 in. square. Thicknesses vary according to the size and use from ½ in. to 2 in. A 6-in. square by ⅓ in. tile would, of course, require laying on a carefully prepared concrete foundation, and this increases the cost. It may be found cheaper to use a larger, thicker tile laid in the manner of a flagstone.

Colours are usually limited to red, brown and buff, but quarries are now available with a number of interesting surface textures, 21.

Pammets. These are clay slabs of about the same quality as a good facing brick, 22; they are made in two sizes, 9 in. and 12 in. square, and are 2 in. thick. They can be laid in a similar way to paving bricks.

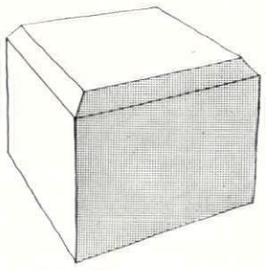
Terrazzo tiles. Terrazzo tiles are made 16 in. and 12 in. square, and 1 in. to 1½ in. thick. They are rather expensive and they also require a good foundation. A large range of colours is available.

Concrete tiles. These must be distinguished from concrete flags, for quite apart from their size they are made to a very different specification. They are not recommended for external use as they are liable to damage by frost.

Blocks

Under this heading are included setts and paving bricks, and it is regrettable that both these forms are tending to die out. They were, of course, used mainly to carry vehicular traffic, and for this purpose have been superseded by more modern techniques. For pedestrian uses they are rather uneconomical, having excessive thickness and requiring a great deal of labour in laying.

Setts. Concrete setts, 23, have been made experimentally by at least one firm, and may be worth while for such places as car-parking areas, where a different texture to the usual road-metal is required for demarcation reasons, 24.

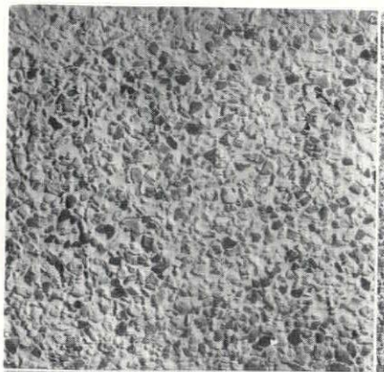


23, *a concrete sett. The sett is a 5-in. cube, with its top edges chamfered.*



24, *concrete setts laid with straight joints on a fore-court used for car-parking.*

surfaces



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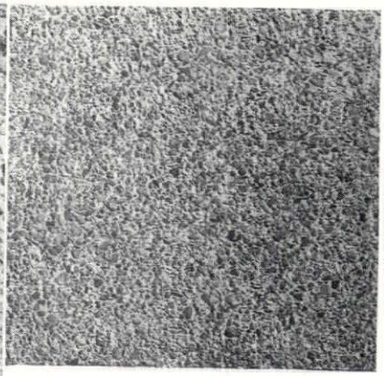

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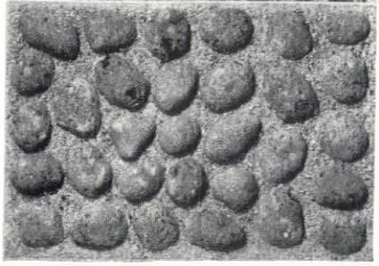
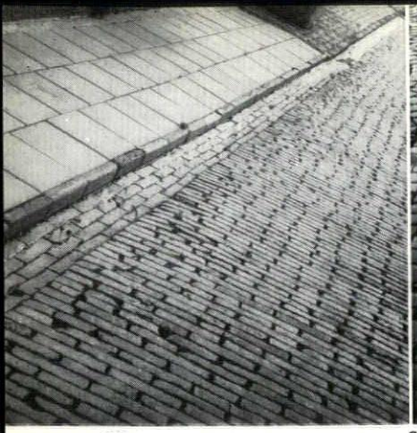


18

16, *a flint aggregate exposed on the surface of a concrete flag by brushing and spraying.*

17, *crushed slate used as a surfacing. The slate is scattered over the surface a short time after the flag has been cast. It is tamped in, and later the surface is washed and brushed to expose it.*

18, *large 'washmill flints' used as surfacing to a concrete flag. These flints are by-products of the cement-making process, and have a pitted texture.*



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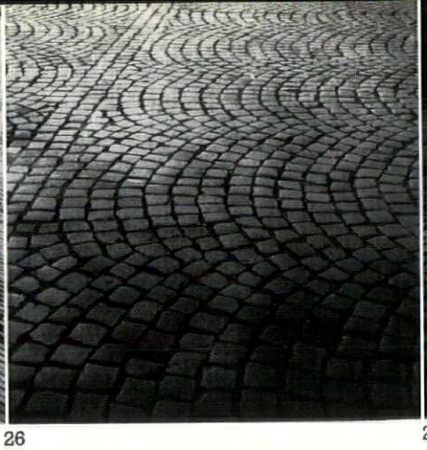

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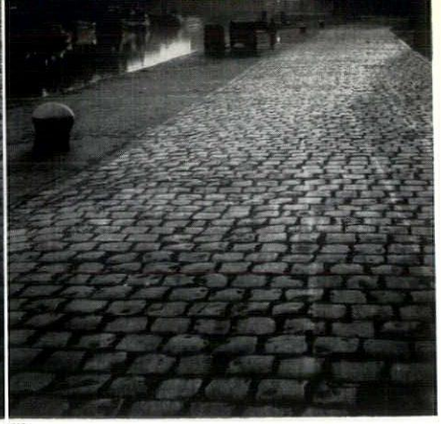


27

25, *rectangular granite setts laid in 'stretcher-bond' pattern. This is likely to be the cheapest method nowadays.* 26, *square setts laid fan-wise.* 27, *square setts laid in 'stretcher-bond' pattern.*

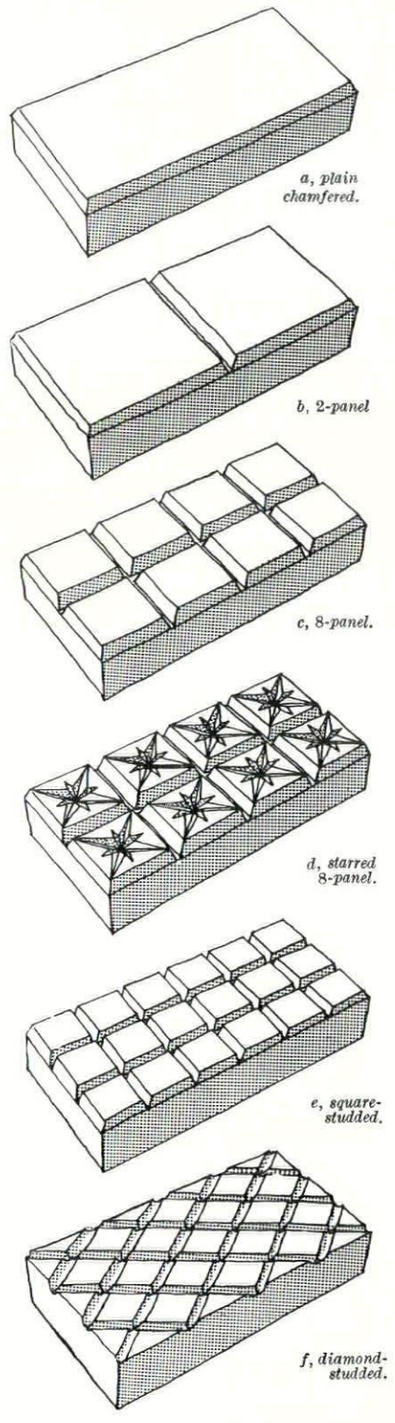
material	finish: colour texture pattern	thickness	sizes	cost of raw material	pattern of laying	foundation type and bedding	total cost per yard super
York stone	riven	2 in.	2 ft. 6 in. wide × random lengths	70s. 0d. per yard super	2 ft. 6 in. courses	bedded solid on 4 in. concrete and hardcore	**95s. 0d.**
York stone	riven	2 in.	2 ft. 6 in. wide × random lengths	70s. 0d. per yard super	2 ft. 6 in. courses	five dots on consolidated ashes and hardcore	**87s. 6d.**
York stone	riven	2 in.	2 ft. 6 in., 2 ft., and 1 ft. 6 in. × random lengths	60s. 0d. per yard super	three course widths	five dots on consolidated ashes and hardcore	**75s. 6d.**
Portland stone	rough sawn	2 in.	2 ft. 6 in. wide × random lengths	100s. 0d. per yard super	2 ft. 6 in. courses	five dots on consolidated ashes and hardcore	**120s. 0d.**
Delabole slate	rough sawn	1¼ in.	2 ft. wide × random lengths	6s. 7d. per foot super	2 ft. courses	five dots on consolidated ashes and hardcore	**77s. 6d.**
cast stone	ex mould	2 in.	2 ft. × 3 ft.	15s. 0d. per yard super	rectangular grid	five dots on consolidated ashes and hardcore	**25s. 6d.**
precast concrete flags, hydraulically pressed	natural colour, standard non-slip	2 in.	BS sizes	10s. 3d. per yard super	2 ft. courses or rectangular grid	five dots on consolidated ashes and hardcore	**20s. 0d.**
precast concrete flags, hydraulically pressed	ochre pigment, standard non-slip	2 in.	BS sizes	12s. 9d. per yard super	2 ft. courses or rectangular grid	five dots on consolidated ashes and hardcore	**22s. 6d.**
precast concrete flags, hydraulically pressed	natural colour, bar or pimple pattern	2 in.	BS sizes	10s. 9d. per yard super	2 ft. courses or rectangular grid	five dots on consolidated ashes and hardcore	**20s. 6d.**
precast concrete flags, open-mould	texture of rubber mould lining	2½ in.	2 ft. 6 in. × 2 ft. 6 in.	31s. 6d. per yard super	square grid	five dots on consolidated ashes and hardcore	**44s. 0d.**
precast concrete flags, open mould	exposed aggregate (flint ballast)	2 in.	2 ft. 6 in. × 2 ft. 6 in.	36s. 0d. per yard super	square grid	five dots on consolidated ashes and hardcore	**49s. 0d.**
precast concrete flags, open mould	exposed aggregate (Mountsorrel granite)	2 in.	2 ft. 6 in. × 2 ft. 6 in.	40s. 6d. per yard super	square grid	five dots on consolidated ashes and hardcore	**53s. 6d.**
"Mono-Hex" precast concrete flags	smooth	2 in.	2 ft. 6 in. hexagon	20s. 6d. per yard super	hexagonal grid	five dots on consolidated ashes and hardcore	**32s. 0d.**
"Noelite" precast concrete flags	natural colour	2 in.	2 ft. 3 in. × 1 ft. 6 in.	12s. 0d. per yard super	rectangular grid	five dots on consolidated ashes and hardcore	**22s. 0d.**
quarry tiles	brown, four-panelled	1¼ in.	6 in. × 6 in.	24s. 0d. per yard super	square grid	bedded solid on 4 in. concrete and hardcore	**47s. 0d.**
quarry tiles	brown, plain (third quality)	1¼ in.	9 in. × 9 in.	12s. 0d. per yard super	square grid	bedded in mortar on consolidated ashes and hardcore	**29s. 6d.**
pammets	red	2 in.	12 in. × 12 in.	42s. 6d. per yard super	square grid	bedded in mortar on consolidated ashes and hardcore	**62s. 0d.**
terrazzo tiles	grey mixture	1½ in.	16 in. × 16 in.	41s. 0d. per yard super	square grid	bedded solid on 4 in. concrete and hardcore	**65s. 0d.**
granite setts, second hand	worn	4 in.	variable	50s. 0d. per ton	stretcher bond or square grid	on sand and hardcore; joints grouted up	**30s. 0d.**
paving bricks, pressed	red, eight-panelled	2 in.	9 in. × 4½ in.	12s. 6d. per yard super	laid flat in stretcher bond	on ashes and hardcore, dry joints	**26s. 0d.**
paving bricks, Staffordshire blues	blue, eight-panelled	2 in.	9 in. × 4½ in.	26s. 6d. per yard super	laid flat in stretcher bond	on ashes and hardcore, dry joints	**42s. 0d.**
paving bricks, Staffordshire blues	blue, eight-panelled	2 in.	9 in. × 4½ in.	26s. 6d. per yard super	laid flat in herringbone pattern	on ashes and hardcore, dry joints	**45s. 0d.**
hard stock bricks	plain	2⅜ in.	8½ in. × 4¼ in.	300s. 0d. per 1,000	laid flat in stretcher bond	on ashes and hardcore, dry joints	**25s. 3d.**
flint cobbles	smooth, round	approx. 3 in.	approx. 3 in.	—	random, set close	hand pressed into initial 2 in. thickness of concrete on 2 in. sand	**50s. 0d.**
broken flagstones, second hand	rough, but straight edges	varies	2 in. to 3 in. wide, random lengths	—	coursed	sand on hardcore, joints grouted up	**40s. 0d.**

Table of comparative costs of various paving materials, methods and patterns of laying. The prices in this table are based on quantities of 100 *yards super or more, executed as part of a larger building contract in the London area. The prices given for the raw materials include haulage, which is sometimes considerable (as, for example, for blue Staffordshire bricks). Allowance should be made for this when considering conditions in other areas.*

The only granite setts now available are second-hand, and prices fluctuate according to supply. They vary a great deal in size, from a 4 in. cube to about 12 in. by 6 in. by 5 in. The traditional ways of laying are very attractive, 25, 26, 27, but likely to be very expensive; a brick-bond pattern is the most economical.

Paving bricks. Almost any hard, non-dusting brick can be used as a paving, but for places where heavy wear is expected, one of the bricks made specially for this purpose should be used. These are made of heavy plastic clay and pressed, and their colour is usually blue or red. They may be obtained in a number of mechanical surface textures, 28, which date from the nineteenth cen-

28 (*below*), *a selection of paving bricks with mechanical textures*;



[Series continued on page 146



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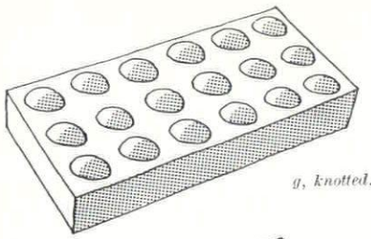
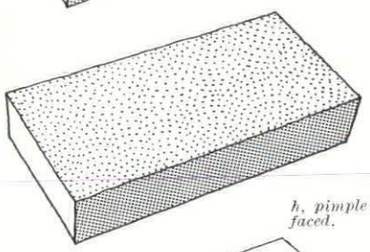
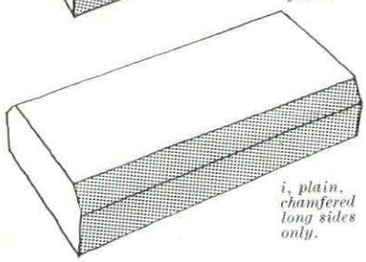
continued from page 144]



g, knotted.



h, pimple-faced.



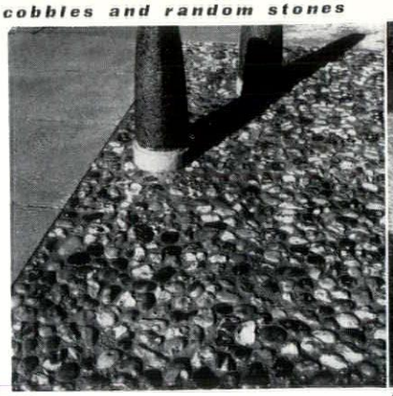
i, plain, chamfered long sides only.

All these bricks are intended to be laid in 'stretcher-bond', which is cheapest. The last example (i) gives a very powerful uni-directional pattern. Plain bricks can also be laid in herring-bone pattern, but this is more expensive.

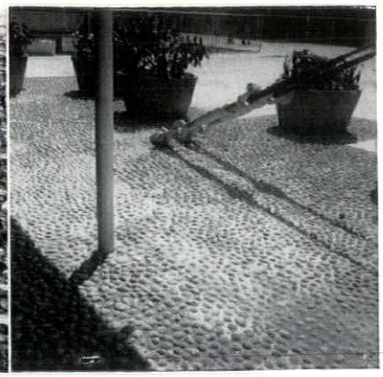
tury and are very characteristic of this type of paving.

The bricks are laid on edge for vehicular traffic, but for ordinary pedestrian use may be bedded flat in cement mortar on well-compacted ashes or clinker. The joints between bricks need not be filled or pointed, and it is interesting to note that paving bricks are made to the full 9 in. by 4½ in. size without allowance for jointing material.

cobbles and random stones

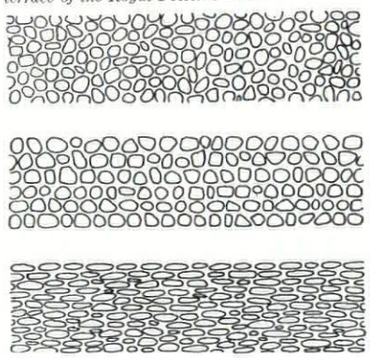


29

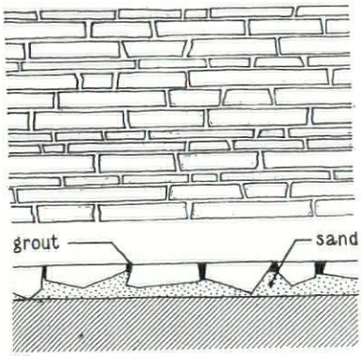


30

29, round and irregular flint cobbles set in concrete, at the Cement and Concrete Association's research centre at Wexham Springs, Bucks. These cobbles are coloured brown, grey and white. The bollards are of concrete with an exposed aggregate finish. 30, very regular round cobbles on the terrace of the Royal Festival Hall.



31



32

31, patterns of laying cobbles; top, random; centre, coursed (for edgings—see also 1); bottom, flat cobbles laid parallel. 32, a method of using up broken flagstones (normally used as 'crazy paving'). The stones are bedded on edge in sand.

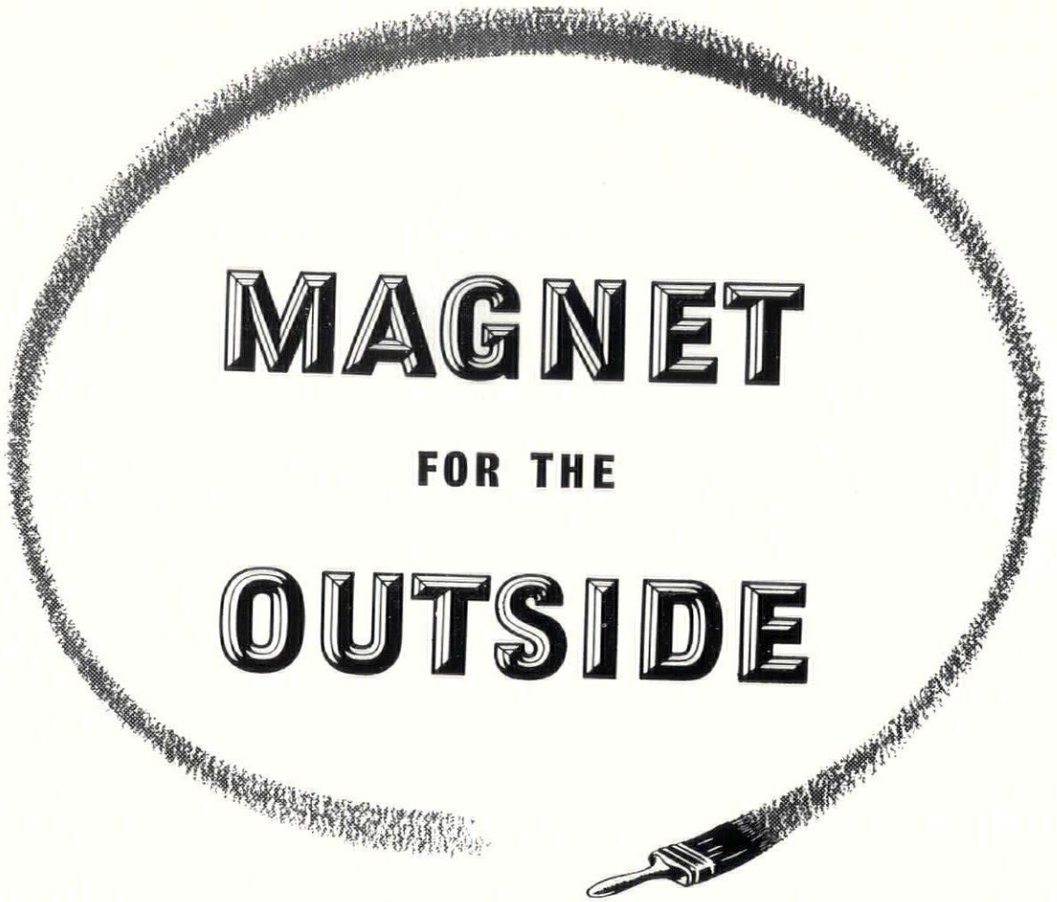
Cobbles. Cobbles, which are fairly large, round or flattened flints, are also best included in this category. They may be obtained through firms which supply flint regularly to the pottery trade. One form of flint ('wash-mill') now obtainable is a by-product of the cement-making process, and is grey in colour with a pitted surface; natural cobbles are smooth and vary in colour through white, grey, and brown. Cobbles are sold graded in size, the largest size being about 4 in.

The cheapest form of bedding is to put down a 2-in. layer of sand, compacted, with a 2-in. layer of concrete (small aggregate) on top. The cobbles are then hand-pressed into this, the final thickness of concrete being about 4 in. with the cobbles protruding. They can be set in at random, or roughly coursed, 29, 30 and 31. They can also be 'knapped' to give a flatter surface and interesting texture, but this puts the cost up considerably. For vehicular traffic a concrete slab foundation is necessary.

Random stones on edge. This is another form of paving, 32, which can be fairly cheap under certain circumstances. It provides a way of using old broken flagstones or quarry waste to give a much better character than that of crazy paving, which is the more usual way. As the stones are laid with their natural bed vertical, they wear better than ordinary flags.

[Conclusion and acknowledgments on page 148





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continued from page 146]

The irregularity of the stones necessitates their being laid in sand, and so the vertical joints should be pointed up to discourage the seepage of water.

acknowledgments

Cement & Concrete Association, 9-18, 29; Tarmac Ltd. (Vinculum Division), 5-8, 27; Mono Concrete Ltd., 19; Noelite Ltd., 20; J. C. Edwards (Ruabon) Ltd., 21a, c; Candy & Co. Ltd., 21b, d; Everett's Brickworks Ltd., 22; William Thomas & Co. Ltd., 28a, b, c, d; Accrington Brick & Tile Co. Ltd., 28e, f, h; George Woolliscroft & Son Ltd., 28g, i; also the Natural Rubber Development Board, who supplied the rubber mattings for the products shown in 10-14.

THE INDUSTRY

Control of Chimney Draught

The rich variety of terminals which have been thought up in the last hundred years to stop down draught makes one hesitate to give countenance to yet one more. The trouble with all versions on the market up to now is that the obstacle which they place in the way of down draught is always to some extent an obstacle to up draught, too; also, they make no serious attempt to *stabilize* the draught in the chimney. It is not, after all, only a matter of preventing smoke in the room, but also of ensuring even, economical burning. The 'Supira,' a new terminal patented in Switzerland, does precisely this. A series of concrete blocks shaped carefully in the form of hollow truncated cones are set one on top of the other like bowlers' caps on a cricket umpire's head, leaving louvred vents on all four sides between. Notched into the topmost of these is a shaped concrete bar which offers virtually no obstruction to up draught and which diverts down draughts—coming from any direction and at any angle, not excluding the vertical—down through the louvres. At the time of writing the trade price is £4 4s. and the retail price, though not fixed, is likely to be about £4 12s. 6d.

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High Wycombe School for Girls. *Architect:* Denis Clarke Hall. *Consulting engineer:* R. F. Galbraith. *Services consultant:* A. H. Barker & Partners. *Quantity surveyors:* Davis, Belfield and Everest. *Clerk of works:* J. Cross, succeeded by G. Hoskins. *General contractors:* Gee, Walker & Slater. *Sub-contractors: Joinery work:* R. Cattle & Co. *Acoustic tiling:* John Dale Ltd. *Brick supplier:* Pratt (Watford) Ltd. *Flooring:* Marley Tile Co. *Fleximer flooring:* Semtex Ltd. *Wood block floors:* S. Bennett & Son. *Cork tile flooring:* Horsley Smith & Co. *Prestressed concrete floors:* Concrete Ltd. *Fencing:* Penfold Fencing & Engineering. *Balustrading, cloakroom equipment, towel racks:* B. Finch & Co. *Cycle racks:* Parker, Winder & Achurch Ltd. *Cycle shed gates, spiral staircases, fuel grills, ironmongery:* N. F. Ramsay & Co. *Kit lockers:* Cloakroom Equipment Ltd. *In situ terrazzo:* The Mosaic & Terrazzo Co. *Glazed wall tiling:* Harradine, Rouse & Co. *Insulation board ceilings:* The Merchant Trading Co. *Roofing (aluminium decking and felt covering):* William Briggs & Sons. *Wall cladding (precast concrete blocks and cills):* Shockcrete Products Ltd. *Precast terrazzo:* Marriott & Price Ltd. *Lightning protection:* R. C. Cutting & Co. *Metal door frames:* Henry Hope & Sons. *Metal windows and doors patent glazing:* The Crittall Manufacturing Co. *Tarmacadam paving:* Wainwright Paving & Contracting Co. *Paint:* Duresco Products Ltd. *Sanitary fittings and equipment:* Wiggins Sankey Ltd. *Coloured concrete paving:* Noelite Ltd. *Stage lighting:* Strand Electric & Engineering. *Gymnasium equipment:* Spencer Heath & George Ltd. *Suspended ceilings:* W. H. Colt (London) Ltd. *Stage equipment:* G. B. Kalee Ltd. *Curtain track:* Silent Gliss Ltd. *Structural steel:* Dorman Long. *Tennis courts—surface:* W. H. Gaze & Sons. *Blackout blinds:* Tidmarsh & Sons. *Steel space frames:* Scaffolding (G.B.) Ltd. *Ash:* London Lift Co. *Asphalte paving:* Hobart Paving Co. *Duct linings:*

[continued on page 150

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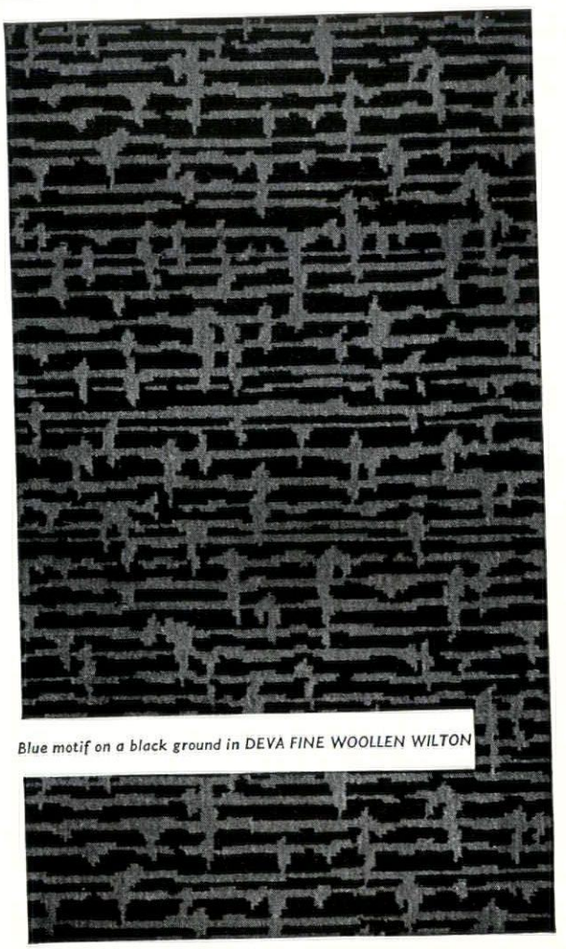

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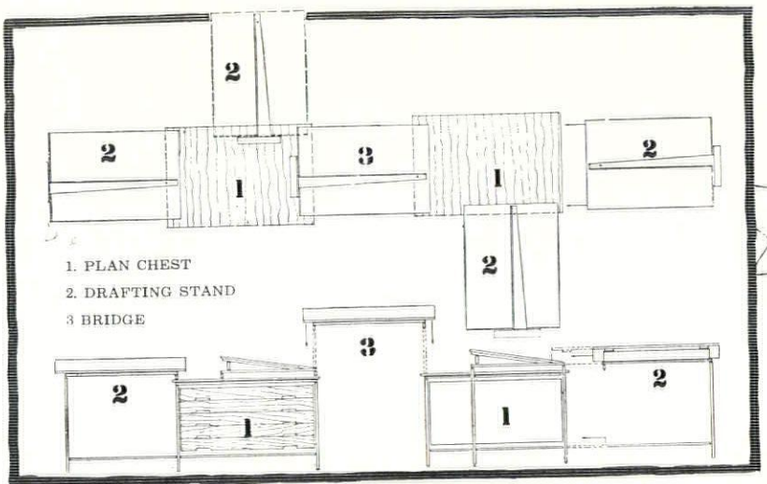
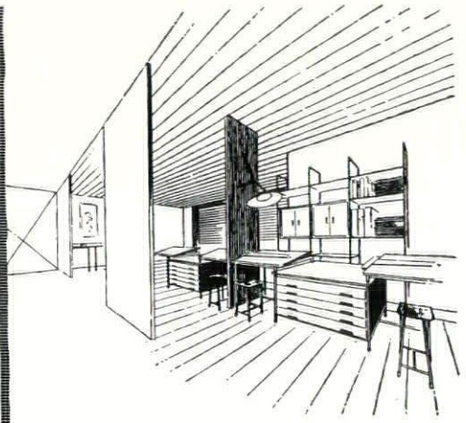
British Paints Limited have asked us to state with reference to their advertisement for 'Superlative' paint, which appeared in our November issue, that the paint which has been withdrawn in its favour is 'Luxol 1' and *not* the 'Luxol' One Coat Enamel, recently introduced and publicized so extensively.

We regret that, owing to a printing error, in the advertisement on page 346 of the November issue, the architects' names were spelt incorrectly and should be Ryder and Yates, A/A.R.I.B.A.





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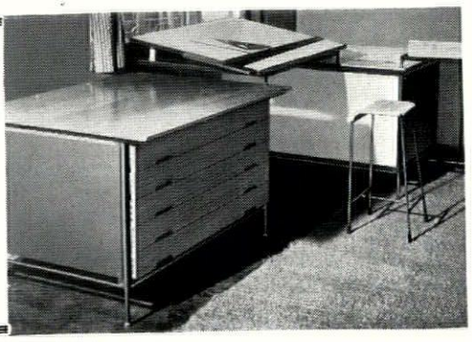

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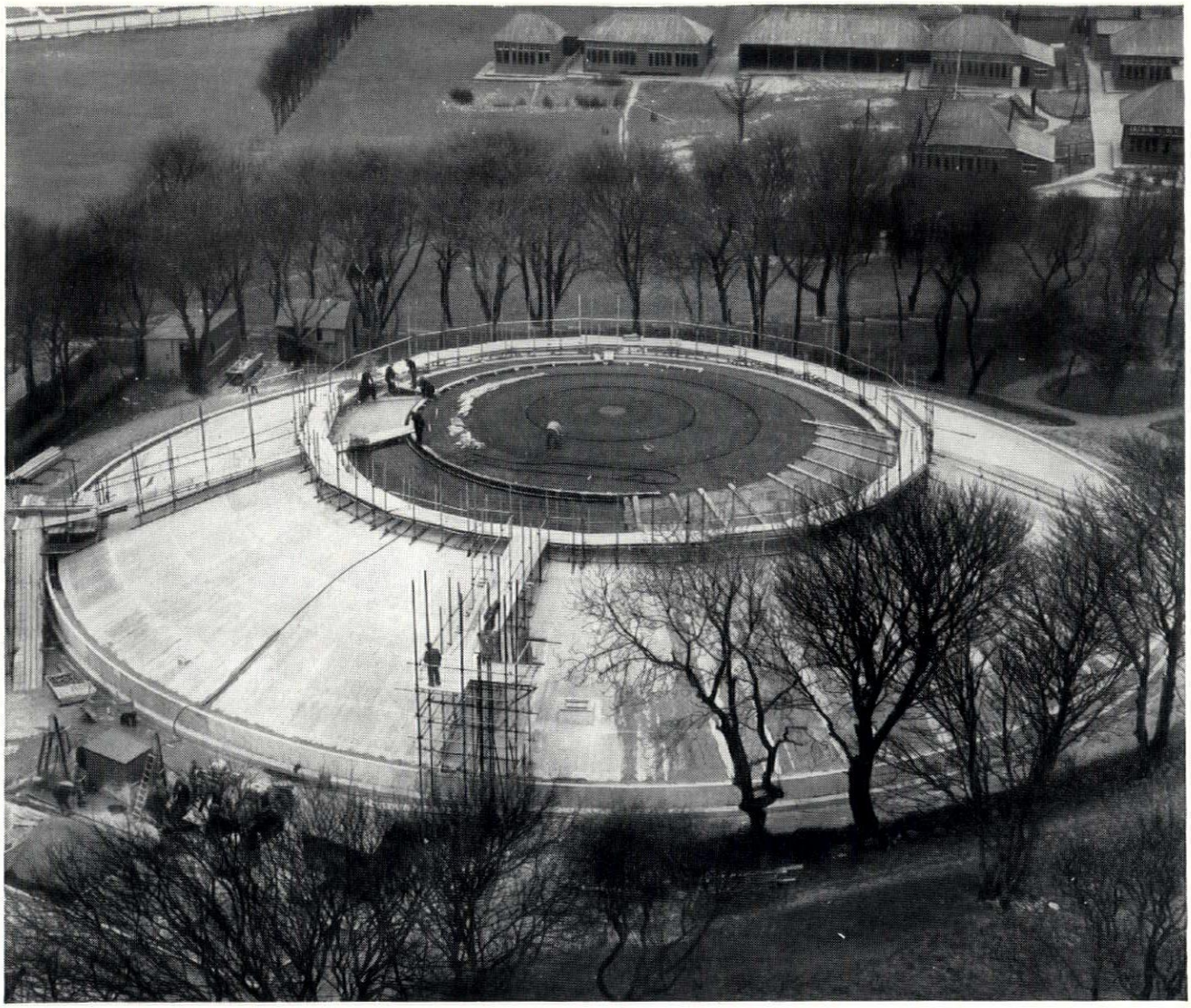

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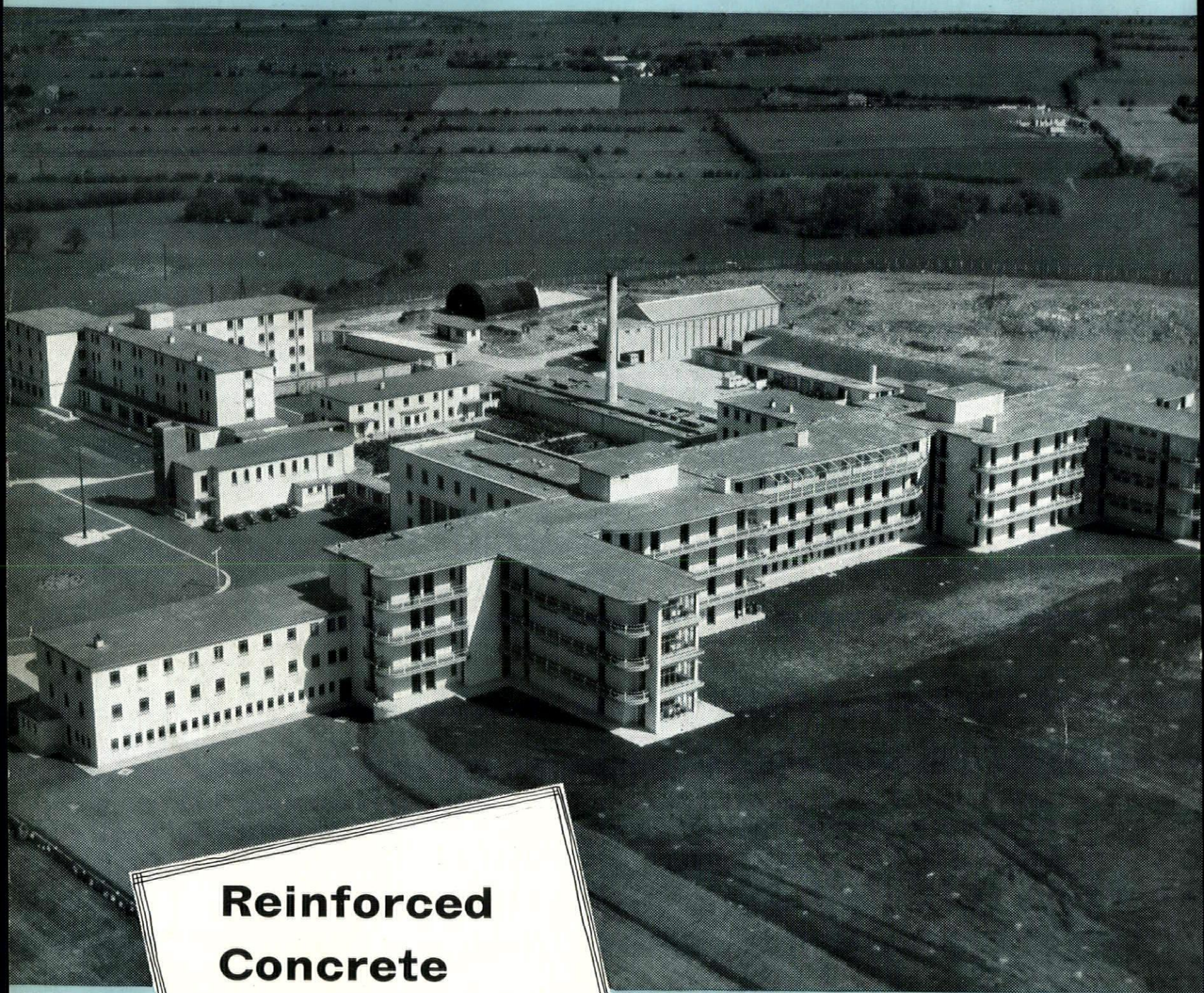

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MARGINALIA

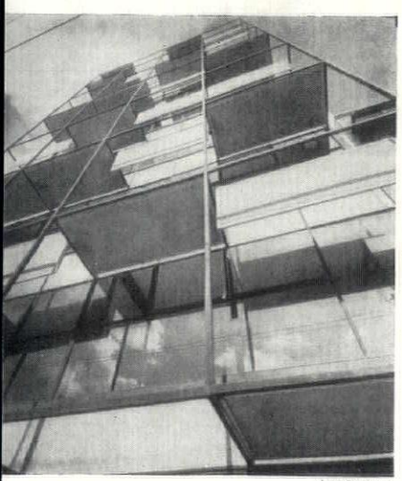
Facade

The range of possibilities facing the contemporary architect when, plan and structure satisfied, he finds himself at the outer skin, is now so vast that façade design is becoming a field where many are tempted to give up choosing and simply order patent-glazing from the catalogue. Concomitantly, however, the rewards for those who do choose a particular solution, and have the talent to realise it, are also considerable. Among recent buildings where the outer skin has been handled with originality and success are a bank-cum-apartment building in Lappeenranta, Finland, by Olli Kivinen, 1, where the elements of the cladding



Arkitekten

—window, balcony-grille, concrete panels—elegantly emphasize that they are only cladding by the way in which their pattern overruns the horizontals and verticals of the

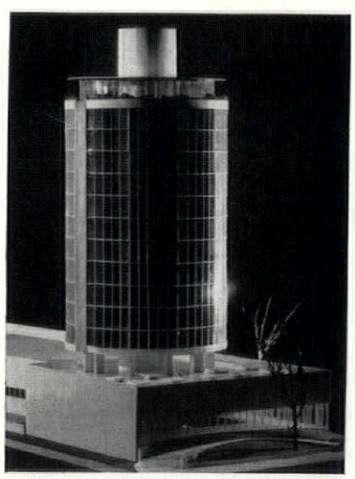


Arquitectura

structure, and an office block in Mexico City by Martinez and Moreno, 2, where the need for sun-protection has resulted, not in a massive egg-crate nor a complication of movable louvres, but in a slender space-sculpture, parsimonious in material, rich in spatial effect.

Crystal Tower

With *fabulous* now as much an everyday term in the description of hotels as it is of clothes and cars, the appearance of the newer luxury hotels all over the world is tending toward more startling silhouettes, more lavish trim, smoother services, more dramatic special features. A lively Commonwealth contribution to the concept of the Hotel Fabulous is this project, 3, for the Crystal Tower Hotel in Melbourne, designed by Kenneth McDonald. Although it is too early to say anything of the services and trim—which, at a building cost estimated at £750,000 for a 110-room hotel, ought to be well in the fabulous class—it is clear that a startling, though perfectly workable, silhouette has been evolved, with the guest-rooms ranged ten to a floor around the circular core of lifts and services, while the special features include not only a rotating cabaret on the roof (some form of rotating accommodation seems almost mandatory for Hotels Fabulous around the Pacific) but also a hundred-foot sweep of glass across the entrance-wall, slightly curved on plan, so that the life of the foyer will be seen—very properly—as in a giant CinemaScope screen.



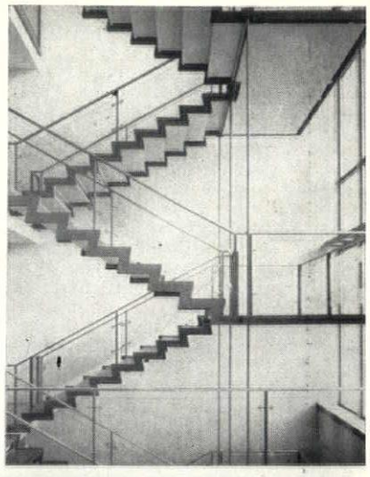
3

Caribbean Capital

The Commission set up in the Summer of 1956 to report on a possible site for a new capital city in the British West Indies, to house the central organs of the Caribbean Federation, has confounded most expectations by settling on Barbados as the most suitable location. The solution proposed smacks of traditional compromise, in that it avoids the direct problems of grafting Federal institutions on to an existing large city like Kingston, Jamaica, or of creating a new city from scratch—and thereby giving an economic boost to a less developed colony. Further, though Barbados is well integrated into the local communications network, it is not very well served for trunk routes going out of BWI to existing capital cities in other parts of the world. The Commission's report (HMSO, 3s.) gives a good picture of the large mass of conflicting pressures to which their deliberations were subjected, but not the ultimate local pressure—the subsequent decision of the federating colonies to have their capital on Trinidad.

Municipal Machine Aesthetic

The problem of 'Character' in functional buildings, raised some 12 months ago by Robin Boyd (AR, Feb. 1956), is sharply rephrased by Arne Jacobsen's new Town Hall for Rodovre, near Copenhagen. Here, for the first time, the elements of a style hitherto associated with the automobile industry (e.g. General Motors Technical Centre, Ford Assembly at Aveley) appear in a building to house a municipal council, 4, complete even to the extensive horizontality and the repetitive patent-glazing of the outer



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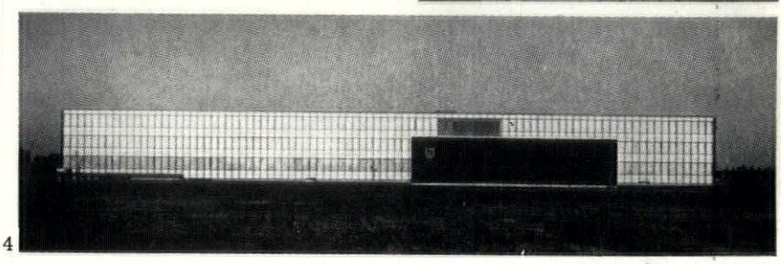


4

Bauen und Wohnen

skin. The use of this ultimately Miesian aesthetic, consistent even to to the hairtrigger detailing of the staircase, 5, is as startling in this context as at Hunstanton School, but on closer examination even more arguable. The generalized Miesianism of Hunstanton was, indeed, generalized, and had been developed at IIT for educational buildings, though they differed in function. The machine aesthetic used by Jacobsen has no generalized connotations, it has never been anything but specific, and applied to a limited range of functions, and it will be interesting to see if Rodovre can convincingly render the style more generalized and adaptable to a variety of differing functions.

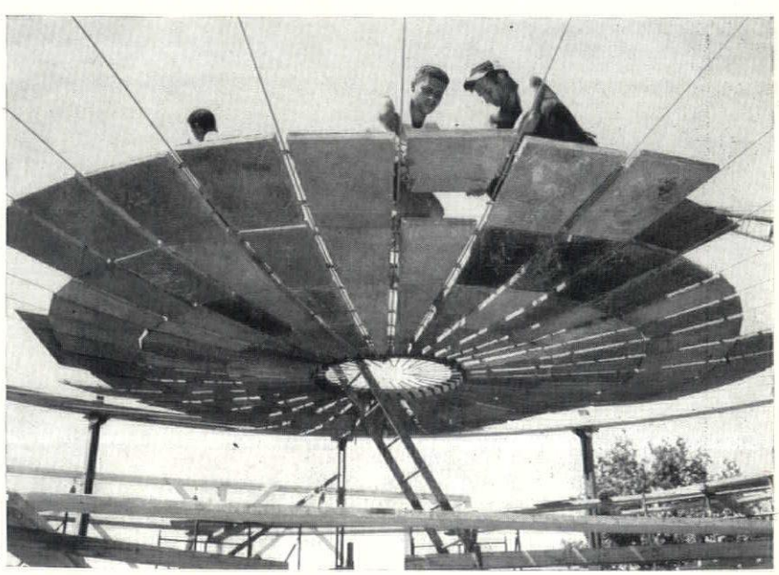
Dome in Tension

Erected by students of the Schools of Architecture and Engineering at Columbia University as a vacation project, and designed by the same students in the preceding spring term, 1956, the Litchfield Dome, 6, is saucer-shaped with an open oculus at its low point and supported at its rim by a laminated wooden ring beam 50 ft. in diameter. Structurally it consists of thirty-six radially disposed steel cables, between which wedge-shaped concrete slabs are hung. In order to prevent wind-flutter and other flexibility risks, the whole structure is rendered monolithic and stable by an ingenious post-tensioning process devised by the Uruguayan engineers Viera and Mondino, in which the structure is first overloaded, to deflect the centre downwards, and the grouts between the slabs are then poured while the structure is in this condition. Once the grouts have set they maintain the dome in the tensioned state even after the overload has been removed.

English Homes Revisited

The second volume* of Christopher Hussey's total overhaul of Avray Tipping's *English Homes* covers the years 1760–1800, somewhat improperly styled *Mid-Georgian*, but currently the most popular period of English domestic architecture. The

* English Country Houses (*vol. II, Mid-Georgian*), *by Christopher Hussey, Country Life, 6 gns.*

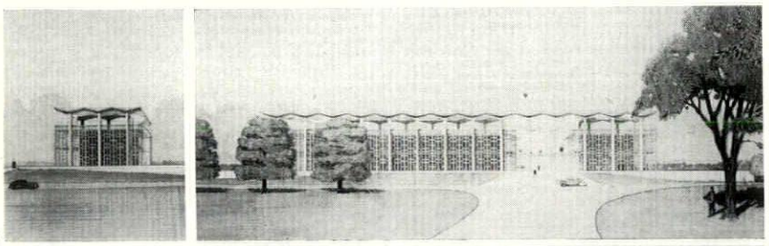


6

change that has come over many aspects of English life, since the relevant volume of Tipping appeared in 1926, is reflected in the title *English Country Houses*, which automatically rings the mental echo *Open to the Public* (and, in fact, most of them are, whether National Trust property or not) and in the style and matter of the text; gone are the dynastic and faintly snobbish connotations of Tipping's word *Home*, replaced by the documented facts and stylistic analyses of the New Art History, with its footnote references to *NBR*, *Summerson*, *Colvin*, and *Gotch*, its niceties of discrimination between the Sublime and the Picturesque. Mr. Hussey has done a massive art-historical labour, and done it well. The book will sell, even at six guineas, because the public that likes Adam has now begun to hear of Henry Holland and Nicholas Revett, and will go a little way out of its way to see their work. But the true monument of these labours will be found, in future, in footnote references to *Hussey, ECH, II, page so-and-so*, for Mr. Hussey is clearly in the midst of what will be a standard work of reference for years to come.

Memphis Fine Arts Centre

The winner of a competition set by the town of Memphis, Tennessee, incorporating an art academy, a theatre and a concert hall for a Fine Arts Centre is the firm of William Mann and Roy Harrover, architects, and Leigh Williams, associate, all aged between 28 and 33. The winner groups the three elements into a high structure, the second prize-winner (A. L. Aydelott and Associates) separates them in individual buildings grouped on a piazza, and the third (Thomas F. Faires and Associates) places them in separate buildings, connected by linking units. In the winning design the art academy is a separate building; its base level houses crafts and shops, with a sculpture court (see 3), administration, exhibition space and a library are on the 'plaza' level, and open studios, divided by movable walls, are on the floors above. The theatre and concert hall share the same stage and auditorium and accommodate, by means of sliding screen partitioning, audiences of 400, 800 or 1,200. Space saved in this combination is devoted to enlarging the lounge, lobby and public space, into which the exhibition area opens.



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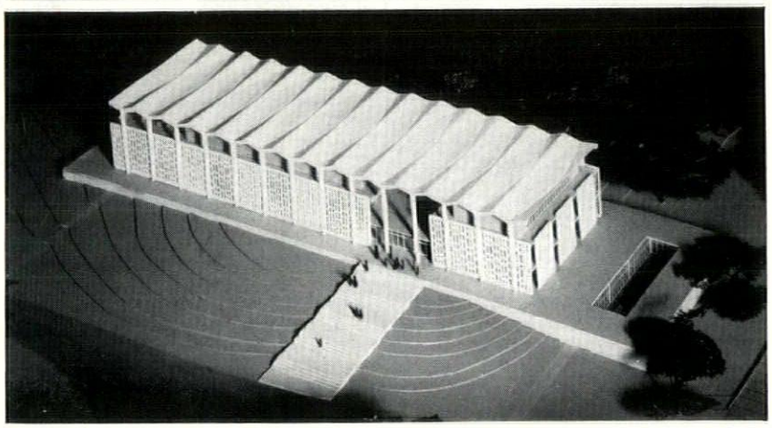

9

Top left and right, south and east elevations respectively and below, model of the winning design for a new fine arts centre in a public park at Memphis.

Talbot Hamlin

Three things must be remembered about Talbot Hamlin, who died in 1956 at the age of sixty-seven.

In the first place he was the recognized authority on the Greek revival in the United States. His book of 1944 is excellent and was followed in 1956 by an equally excellent book on the most brilliant architect America had produced before Richardson, Sullivan and Wright: Benjamin Latrobe.

In the second place he was for many years the Avery Librarian, that is, in charge of the architectural library of Columbia University which is one of the finest, if not the finest, library of architecture in the world and which profited enormously from Hamlin's initiative and scholarship. The librarianship involved a great deal of advising of scholars and students and there must be many who, for the rest of their lives, will remember Hamlin's never ruffled kindness.

Finally he was by no means a scholar only. He could be popular in the best sense as is proved by his one-volume *Architecture through the Ages* (1941), the best ever done in America. And he even could fight for a topical cause especially when he was young. His papers on Art Nouveau published in *The Craftsman* as early as 1902–3 have by now themselves become history.

CORRESPONDENCE

The Great Seal and the Egyptian Revival

To the Editors,

SIRS,—We were very much interested in the article *The Egyptian Revival* by Nikolaus Pevsner, for the reason that we prize Dr. Pevsner's



writings and also because the Newark Library provided the illustration for the County Court House, a reproduction of one of the rare Currier and Ives prints which we were honoured to furnish to THE ARCHITECTURAL REVIEW. It occurs to me that the fashion for the Egyptian style of architecture influenced even the design for the Great Seal of the United States, of which the obverse shows a truncated pyramid—the symbolism being that the unfinished pyramid denotes that following generations must pursue the work yet to be accomplished and also that it leaves room for amendments to the Constitution to rectify the possible errors of the builders! The design for the Great Seal was adopted in 1782 in the full stream of the Egyptian revival.

Let me say also how much we and our visitors enjoy the REVIEW and appreciate its lively and informative articles.

Yours, etc.,
MARCELLE FREBAULT.

The Public Library,
Newark, New Jersey.

The Leine Schloss

To the Editors,

SIRS,—In the November issue of THE ARCHITECTURAL REVIEW appeared an addition by Mr. Bryan Little to my brief note on the Leine Schloss in Hanover. The addition was most welcome as corroborating my main point, the English influence on German architecture. In my contribution I had refrained from giving details, based as they were on the individual taste of one monarch, William IV. Such instances are by no means isolated or merely personal: they testify to a widely prevalent attitude. The so-called English Garden in Munich, inspired by Count Rumford (Benjamin Thompson) is a case in point. Incidentally, George Dance the Younger was commissioned by him in 1791 to supply plans, some of which survive, for a 'Thatched Ice House' for this park. That the great Schinkel visited this country in 1826 and that his work in the Gothic style shows definite traces of English impressions is familiar to everyone. So is of course the fact that after 1842 the church of S. Nicolai in Hamburg was rebuilt by Gilbert Scott in a neo-Gothic style. These few and random examples reveal the ubiquity of English influence in Germany in the late eighteenth and early nineteenth centuries.

Yours etc.,
HELEN ROSENAU.

History of Art Department,
Manchester University.

Intelligence

The international competition for the design of a new opera house for Sydney, NSW, has been won by the Danish architect Jorn Utzon. The US group Marzella and Associates were awarded second prize, with the English partnership of Boissevain and Osmund third.

The RIBA hopes to show its exhibition on subtopia very shortly at 66 Portland Place, W.1; after which it will be on tour in various parts of England for about 18 months. The particular object of the exhibition will be to show how the architect can help to counter subtopia; and certain case-histories will be shown of outrages averted or actually destroyed, e.g. the electric pylon in the centre of Woodstock.

ACKNOWLEDGMENTS

COVER: Browne, Arphot. MARGINALIA, pages 151–152: Memphis Arts Centre, Hitchings & Newman. EUROPE REBUILT 1946–56, pages 161–176: France, 1, 4, 17, 18, 21, Robert Browning; 2, 5, 7–9, Jean Hubert; 3, André Claudel; 6, Cherojon and USIA; 10, R. Houette; 12, Drancourt; 13, 'La Cicogne'; 14, USIA; 15, 19, 20, 23, MRU; 16, Photo Industrielle; 22, 29, Biaugeaud & Harang; 26, McCallum, Arphot; 28, Timothy Rendle. Italy, A, Pal. Olivetti, Milan; B, 4, 5, 11, Luce; 3, 12–14, 27, S. Lang; 6, 21, A. Villani & Figli; 9, Marion Johnson; 16, Foto Arte, Livorno; 18, 23, Nairn, Arphot; 19, Fortunati; 20, T. Rendle. Holland, B, McCallum; 1, 17, 18, Nairn; 2, Aerophoto 'Nederland'; 3, Netherlands Govt.; 4, RVD; 5, Spies; 8, Pers Foto Dienst; 10, 22, 29, Bouwkundig Weekblad; 4, Dert; 21, R. Browning; 23, 24, J.G. Van Agtmael. Britain, A, 5, 7, 8, 10, 11, 16, 18, 19, 21, 26, 31, Galwey, Arphot; B, 32, J. R. Pantlin; 1, 3, 4, Entwistle; 2, J. R. Douglas; 9, Ernie Johnson; 12, 13, Dermot P. Fitzgerald; 17, C. Westwood; 20, Shaubert; 22, 25, Reece Winstone; 23, Desmond Tripp; 24, C. & E. Photography; 27, E. R. H. Read; 28, 29, McCallum; 30, Topical Press Agency; 33, Henry Lewes. West Germany, A, 17, 22, 28, 29, McCallum; 1, 15, Presse u. Informationsamt der Bundesgregierung, Bonn; 2, L. Windtosser; 3, 4, Gerhard Schwab; 5, Fr. Grieshaber; 6, Elisabeth Hase; 7, Artur Pfau; 12, Lambert Ridder; 13, Rathschlag; 14, 18, Hugo Schmölz; 19, 21, 23, Archiv des Städtlichen Presseamtes, Hanover; 24, John Gloag; 25, Stadtbauamt Würzburg; 27, Fuchs. GEMOLOGICAL INSTITUTE IN CALIFORNIA, pages 183–185: Julius Shulman. SWITCH ON, frontispiece, page 186, photo Royal Netherlands Embassy. CURRENT ARCHITECTURE, pages 194–198: School in Camden Town, Galwey; Flats in Highgate, J. F. Marshall; Laboratories at Enfield, J. R. Pantlin; Bus Garage near Elstree, J. S. Murray. MISCELLANY, pages 199–204: Genoa Treasury, Marilyn Silverstone. Exhibitions, 1, Sam Lambert; 2, 3, Arts Council; 6, Beaux Arts Gall. SKILL, Interiors, pages 205-208: Entrance at Witton, Galwey; Entrance at Bradford, Mann Bros.; Canopy, etc., at Oxford Circus, Millar & Harris. Design Review, pages 208–210: 1, COID; 2, J. Maltby; 3, Heal & Son; 4, Hygena (J. Maltby); 5, CSA (COID); 6, Leisure; 9, General Electric; 10, Prestcold; 11, Electrolux; 14, Amana. Techniques, pages 210–214: 1, Photo Process Co.; 2, J. Maltby; 4, BEDA; 8, 9, P. W. & L. Thompson; 12, 13, Edward Eves; 15, Chiswick Studios; 17, W. Bullock; 18, Morland Braithwaite; 19, 20, Clifford Studios; 22, Wallace & Gilbett; 24, Barr. The Industry, page 216: Crittall window, J. Maltby.

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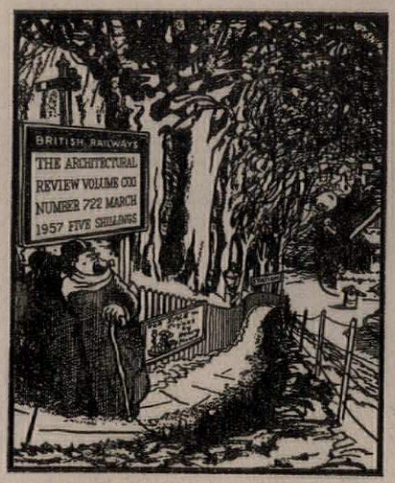

The Cover magnifies a part (about one third) of a cartoon by Carl Giles of the *Daily Express*, in order to emphasise his unique command of the elements of a true picturesque vision. Not only does he relish, in detail and at large, such arcadian landscapes as are seen here, with their changes of level, their lush planting and their artful architecture, but his mode of conducting the viewer's eye through its intricacies, its subsidiary scenes, and deep into the picture space, belongs to the picturesque tradition as well. Giles, indeed, is one of the most acute and sophisticated draughtsmen in the field of architecture and topography in England today, and Robert Melville pays tribute to his remarkable abilities on pp. 177-182.

151 **Marginalia**

152 **Correspondence**

154 **Frontispiece**

155 **The Revival** *by Peter Ferriday* Whatever else the Gothic Revival in Nineteenth-Century English Architecture may have been, it was the record in stone, literature and litigation of the group-biography of one of the most remarkable sets of personalities that have ever practised or patronised the art of building. Mr. Ferriday, drawing deeply on the abundant, but often obscure, literary sources of the period, reveals a movement of ideas that went beyond the acknowledged heroes—Pugin and the Ecclesiologists—and far deeper into the national life, while it lasted. It was supported by the largest and most intelligent body of lay interest that architecture has enjoyed in this country, it needed a great deal of money, and therefore had to be widely based in society, its architects took themselves seriously as artists, became fanatics for work and for their principles, and squabbled noisily among themselves, with a polemical violence and command of invective that was a lasting embarrassment to the infant RIBA. Its impetus faded as the need to rebuild decrepit churches was satisfied, and as moral and intellectual energy was directed into social, not religious, channels, but the monuments that survive display not only the genius of their designers, but the deficiencies of the civilization that paid the bill.

158 **Europe Rebuilt: 1946-56** *by J. M. Richards* The rebuilding of Europe has now been in progress for a full decade, and although much remains to be done, sufficient has already been done in general to show the quality, or lack of it, of ten years' work. The inescapable conclusion, backed up by pictorial surveys of the average standard of work in individual countries, is that the general quality is a disappointment, and—above all—that what would usually be termed Modern Architecture has failed to become the norm for rebuilding-work, contrary to the expectations that were current at the end of the war. The reasons for this turn of events are complicated, involving national nostalgias, the survival of pre-war personalities, the availability or otherwise of mechanical and industrial resources. But beyond this, it seems, the battle for Modern Architecture may have been far less securely won than appeared to its converts at the end of the thirties, and may still have to be fought, especially at the level of those for whom aesthetics are not the main criterion.

177 **Giles** *by Robert Melville* Among the popular comic draughtsmen currently working for English mass-readership newspapers, Carl Giles is outstanding for the quality of his observation, his ability to marshal a body of (often irrelevant) comic detail, his command of spatial illusion. In this study of Giles's work, Mr. Melville dwells on his mastery of atmosphere, his realism in the creation of comic types and their backgrounds, the effect of his accumulations of comic side-issues, while an illustrated supplement examines Giles's characteristic mode of vision, firmly based in the anti-classical tradition of the Picturesque, closely akin to that of townscape, sensitive to the pleasures of arcadia and the terrors of subtopia.

183 **Gemological Institute in California:** *Architect, Richard J. Neutra.*

186 **Switch ON** *by Michael Regan and Gordon Cullen* It is not economically possible to give Britain the road system it needs in any immediately foreseeable future, and the imperative task of reducing the irritation and frustration to which motorists are subject must be tackled by other means as well as the construction of new highways. The authors examine one of the chief of the accident-causing, efficiency-lowering frustrations—the inability to overtake—and identifies two of its main causes as: parked vehicles at the roadside, and inadequate forward visibility due to undulations and serpentinings of the road itself, and proposes—among other aids—a system of priorities, clearly indicated on the road surface, that would permit overtaking with confidence even where visibility was restricted.

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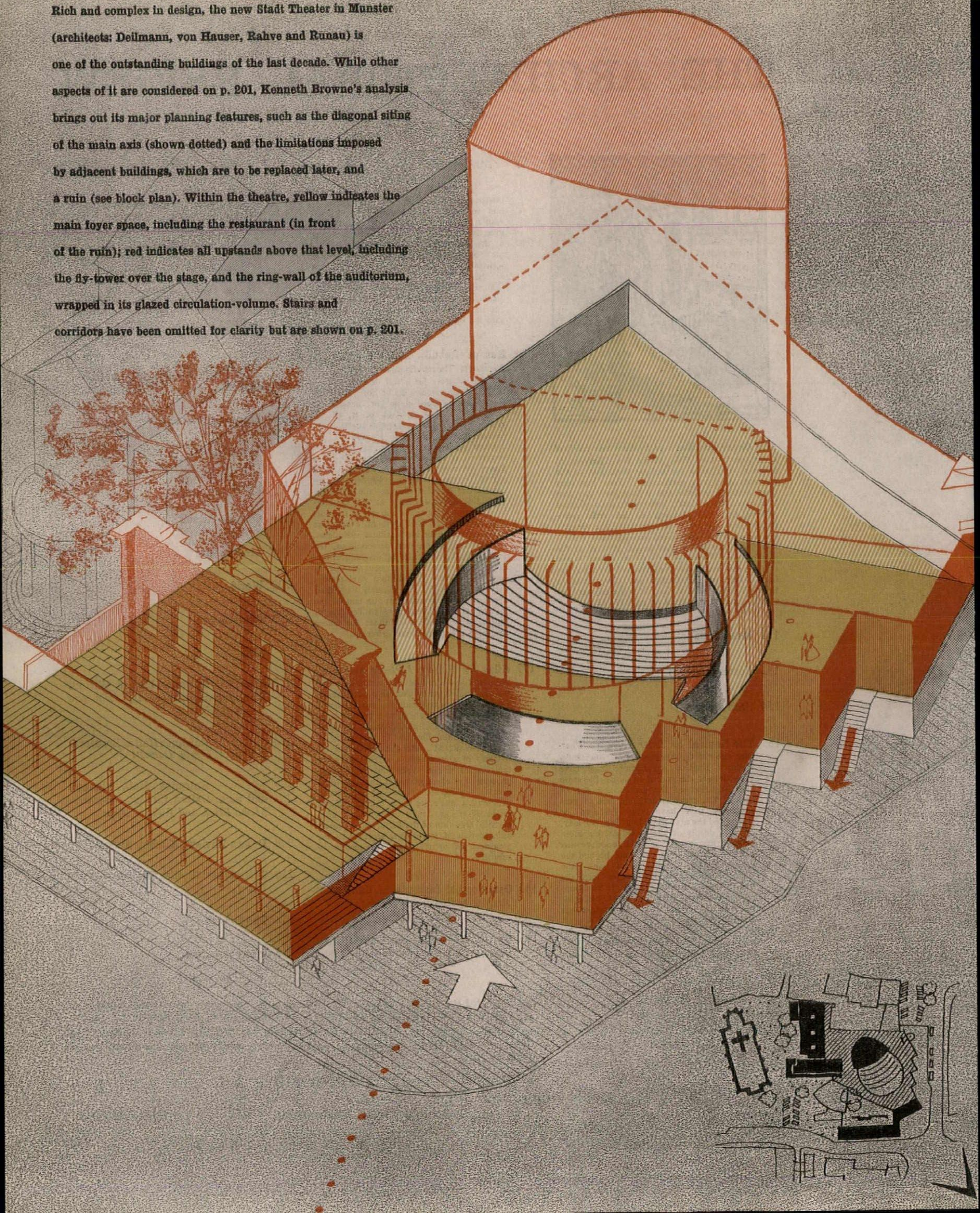
FIVE SHILLINGS

Rich and complex in design, the new Stadt Theater in Munster (architects: Deilmann, von Hauser, Rahve and Runau) is one of the outstanding buildings of the last decade. While other aspects of it are considered on p. 201, Kenneth Browne's analysis brings out its major planning features, such as the diagonal siting of the main axis (shown dotted) and the limitations imposed by adjacent buildings, which are to be replaced later, and a ruin (see block plan). Within the theatre, yellow indicates the main foyer space, including the restaurant (in front of the ruin); red indicates all upstands above that level, including the fly-tower over the stage, and the ring-wall of the auditorium, wrapped in its glazed circulation-volume. Stairs and corridors have been omitted for clarity but are shown on p. 201.



PETER FERRIDAY

THE REVIVAL: STORIES ANCIENT AND MODERN

Pugin, in his *An Apology for the Revival of Christian Architecture in England*, described a cemetery entrance with fine and characteristic dash. 'This is generally Egyptian probably from some associations between the word catacombs which occurs in the prospectus of the company, and the discoveries of Belzoni on the banks of the Nile; and nearly opposite the Green Man and Dog public-house, in the centre of a dead wall (which serves as a cheap medium of advertisement for blacking and shaving-strop manufacturers), a cement caricature of the entrance to an Egyptian temple, 2½ inches to the foot, is erected with convenient lodges for the policeman and his wife, and a neat pair of cast iron hieroglyphical gates, which would puzzle the most learned to decipher; which, to prevent any mistake some such words as 'New Economical Compressed Grave Cemetery Company' are inscribed in *Grecian* capitals along the frieze, interspersed with hawk-headed divinities, and surmounted by a huge representation of the winged Osiris bearing a gas lamp.'

There had been a great falling off. 'Our good old St. Martin's, St. John's, St. Peter's, and St. Mary's Streets, are becoming Belle-vue Places, Adelaide Rows, Apollo Terraces, Regent Squares, and Royal Circuses. Factory chimneys disfigure our most beautiful vales; Government preaching-houses, called churches, start up at the cost of a few hundred each, by the side of Zion chapels, Bethel Meetings, New Connexions, and Socialist Halls. . . . In short, national feelings and national architecture are at so low an ebb, that it becomes an absolute duty in every Englishman to attempt their revival.'

Some of these comments may be exaggerated, some misleading—there are Butcher Rows, Silver Streets, Leather Lanes, Cornhills to be set against the good old saints—but they have a convincing ring. As the picture is built up detail by detail so it is condemned. It is expert journalism very obviously of the Dickens sort. It is also, in message and tone, not unlike the attacks on vulgarity being made by contemporary novelists. 'On my arrival at North Villa I was shown into what I presumed was the drawing-room. Everything was oppressively new. The brilliantly varnished door cracked with a report like a pistol when it was opened; the paper on the walls, with its gaudy pattern of birds, trellis-work, and flowers, in gold, red and green on a white ground, looked hardly dry yet; the showy window-curtains of white and sky-blue, and the still showier carpet of red and yellow seemed as if they had come out of the shop yesterday; the round rosewood table was in a painfully high state of polish.' That is another artist's son, the young Wilkie Collins.

The fusion of Gothic architecture and Christian architecture, and of Classic architecture with the Pagan, was taken none too seriously even by the Gothic men themselves.

'And Gracian, too, he plainly shows
Is wicked and ondacent.
There's not a bit of pious taste
Iver since the Reformation;
'Twas Harry the Eighth, the nasty baste,
That introduced the Gracian."[1]

The confusion of the two things was pointed out forcibly and regularly; Father Newman went so far as, regretfully, to call Pugin a 'bigot.' But if Pugin did not get away with his case entire still a good deal of it was saved. Classic architecture became a symbol if not of irreligion at least of latitudinarianism. It was a 'defunct style, produced at great waste and sacrifice of power and labour, and therefore unsatisfactory to the intelligent mind.' The same possessor of an intelligent mind said that, 'It is impossible not to feel that the great and general interest in art, created by the revival of true principles within the last few years, is a subject of the greatest congratulation to all true artists.' True artists had to mind where they went. 'And is it possible, my readers will exclaim, that you, an architect, can have dared to pass within sight of Vicenza without making long sojourn there to drink in the lessons which the works of your great master Palladio are there to instil! Even so, readers.' Mr. Street was incorruptible. A non-conformist historian of the century writing of the caryatids of St. Pancras church put the whole matter very clearly. 'The architecture of pagan idolatry and the emblems of Greek female slavery were thought fit types for a building devoted to the honour of the true God and "the law of liberty".' The law of liberty! Even so, readers.

Consistently in Gothic revival writing there was an emphasis on the architect as artist; the architect was to remove himself from mercantilism, from bank building, from trade—from vulgarity. No one had a keener eye for vulgarity than Pugin ('advertisement for blacking and shaving-strop manufacturers') and Ruskin. They were for art, the Classic men for commerce, for every-day jobbing work, for rule and not inspiration. They stood for the things of the spirit, the Classic men for the things that could be bought out of their five-percents. And surely they did. It was no mere matter of self-persuasion or conceit. They were the best men, devoted, incredibly hard working. Even an early Revival man, Edward Blore, got locked in a church he was sketching all night. They put their life and soul into the work. Descriptions of Street's office fortunately remain; he worked as no earlier English architect had ever worked and himself designed everything down to the smallest detail. His assistants knew they were not there to amuse themselves but that they were being trained as missionaries. How different the office life of our dear classicist! To a mother enquiring on behalf of her son about the conditions of service in his office Henry William Inwood wrote; 'My office hours are from ten till four, or earlier or later, as my young men find they can conveniently be at the office.' Those two perfect representatives of their schools, G. E. Street and Sir William Tite, illustrate the differences of tone and seriousness. Street had addressed members of the Institute on one of his restorations and had advocated—with historical justifications—the old custom of seating the men on one side, the women on the other. Tite, the chairman, observed that this was 'a little cold, unfriendly, ungallant and unbecoming.' It was much as if one man described somebody as 'saintly' and another replied, 'Oh yes, he's a good fellow.' The Goths were players, the classic men the gentlemen. 'I inherited a fortune, married a fortune and made a fortune,' Tite was reported (on no known authority it must be admitted) to have said to the Prince Consort. 'Lucky man,' the Prince Consort replied.

[1] Quoted from *Pugin*, by Mr. Trappes-Lomax.

Oxford malignants, Cambridge eccentrics

The tragedy and farce of the Oxford Movement, the simple farce of the Cambridge Camden Society are too well known to need any attention here. The Gothic Revival owed little to the Oxford Movement—the Martyrs Memorial was the tenuous link; Mr. Scott and the Rev. Mr. Golightly no doubt had something in common—a distaste for the best? The Camdenians did exert a considerable influence and the Rev. Basil Clarke has excellently described it. They succeeded in establishing some sort of censorship, their pets did well, E. B. Lamb did not. The long chancel, and the choir in it, became accepted as a matter of course; west galleries were out, altar rails in. 'Reverence' became a watch-word, table for altar a vulgarism, Perpendicular something to be got rid of.

The Camdenians have had rather more than their due, the county or diocesan architectural societies, which sprung up in the early 1850's, rather less. These societies were in membership less clerical than the Camden Society and much less full of verbiage. Their annual excursions and meetings were splendid affairs arranged with a good deal of ingenuity by honorary secretaries to whom hearty votes of thanks were invariably proposed, seconded and carried by acclamation. The acclamation was well deserved. The secretary fixed the itinerary; train times were consulted, brakes waiting at the station, parsons informed that the society would be visiting their church, dinner arranged at the Crown Hotel. The day began with an 'Early English breakfast.' The cathedral was visited and the works of restoration discussed. After lunch the party set off to visit four village churches, arriving at the last at about 4.30; the secretary made sure that the last visited parson had a remunerative living—the party getting a free tea. After dinner the Society listened to an address of welcome from the mayor who spoke of their 'scientific labours.' There was more church visiting the next morning and then at 1.00 the Elizabethan mansion of Sir Treverton Dalrymple, Bart., was inspected. Sir Treverton and his lady provided the 30 scientists with a 'sumptuous repast.' The scientists acknowledged the free meal with a hearty vote of thanks. More papers in the evening, plans of new churches, submitted to the Society's attention by architects from G. Scott downward, were inspected, the accounts were gone through and signed, and the holiday was over. The honorary secretaries began plotting a route of wealthy clergymen and rich landowners for the next year!

These architectural societies were the backbone of the Revival. Their members knew a great deal about Gothic architecture—probably more than an architect does now—and they knew all about the latest works of Messrs. Street, Butterfield, Teulon and Scott. They subscribed to the *Builder* and *Building News* and kept an eye on churchwardens. Ld. Alwyn Compton, Sir Henry Dryden, Archdeacon Trollope, the Rev. G. A. Poole, and many, many others were inveterate Society men. All the local architects had to be at the ready. Mr. Law had to be able to discourse authoritatively on the churches around Northampton, Mr. Fowler on those in Lincolnshire, Mr. Hopkins on those near Worcester. If they couldn't they would be a few five per cents the poorer. Never before or since had the interest in contemporary architecture been so great, or for that matter so intelligent. The Gothic Revival man could be sure that in every town he worked in somebody would be observing with a keen eye and an informed taste, and that when the Bishop had opened his church a detailed description of it would appear in the local newspaper. There were consolations.

It is sometimes forgotten—and apologists of highchurchmanship tend to obscure the fact—that the church revival cost money. The building of the thousands of new churches, parsonages and church schools was not inaugurated by the Oxford Movement, or by highchurchmen, but in spite of them. The Government had provided some money early in the century to plug the obvious gaps, but it was not until the 1830's when Lord Grey and Lord John Russell reformed the church, overhauled its administration, spread the spoils equitably that churchmen began to feel that they could put their house in order and laymen began to feel that they could contribute without the money ending up as a figure in a bishop's bank-book. Bishop Blomfield[2] was as much the genius of the church revival as Newman or Pusey. From the architect's point of view he was certainly as important—five per cent on a

[2] Sir Arthur's father. Sir Reginald's great-uncle and a 'strong man.' When told that Blomfield had been bitten by a dog George IV asked, 'Which snapped first?' The poor Bishop led a hectic domestic life; being a widower with a family he married a widow with a family. One day Mrs. Blomfield rushed into his study—'Oh, Bishop, quick, quick, there's not a moment to lose! Your children are siding with my children and are murdering our children!' One of the combatants must have been Arthur.

£4,000 church, five per cent on a £1,500 parsonage, five per cent on a £1,000 school. And between 1840 and 1875 twenty-five and a half million pounds were spent on Anglican churches.

scenes from clerical life

How did the Church Revival and its incarnation in stone, wood, mortar and lead begin in the village?

St. Antholin's church in the small town of Tadbrook was urgently in need of repair. A builder estimated the repairs would cost £700, but the churchwardens refused to do anything about it—the church had been good enough for their fathers, it was good enough for them. One stormy night the spire came down and with it the body of the church. The energetic new parson, Mr. Sanderson, had to get the money for a new church. The Church Building Society and the local gentry, only too well informed as to the culpable negligence of the churchwardens, refused to assist. Mrs. Clutterbuck, the local busybody and moneybag, organized—much to Mr. Sanderson's annoyance—a bazaar. But on the very day of the bazaar the neighbouring town of Snobbington was visited by 'Signor Salamandro, the original Babylonian conjurer' with 'his extraordinary performance of thrusting a red-hot poker into a barrel of gunpowder without causing an explosion.' Tadbrook visited Snobbington, the bazaar was a flop. So it came about that Tadbrook had to have a Cheap Church. Nothing deterred, Mrs. Clutterbuck sought out Mr. Compo who had begun his career building for Dissenters; 'So having pleased the Dissenters, by making their conventicles like churches, he was now reversing the experiment, and making his churches like conventicles.' This Compo even went so far as to suggest a portable vase of white Wedgwood for a font! The conventicle-church cost £1,200. And, of course, it was burnt down before it was opened. (The ire of the High Church God?) A young lady—no thrusting Mrs. Clutterbuck, no bazaar bustler, but demure, young, rich—handed over to Mr. Sanderson £6,000, anonymously, on the condition that the church was pewless. The day was saved. (And Mr. Sanderson, he was a bachelor, and the quiet lady—well, who knows?)

The Rev. Francis Paget wrote this charming story in 1841 (Tadbrook in reality was Ladbrook in Warwickshire) and followed it by another on the vicious pew system in which he incidentally disclosed that 'the ringers were in the habit of using the passage round the bell-chamber for the filthiest purposes imaginable.'

a new lamp and bad old days

Two factors are needed in any great movement; an inspiration and something to hate. The inspiration was Newman, the light of the age; the aversion was the eighteenth century. The church revival man delighted in anecdotes to the discredit of his predecessors. The dark ages were (a blind eye turned to the evidence of Richardson and Johnson) very dark indeed. The old parsons were all Port and Paley men, or worse. Every pew had a fireplace and was six feet tall, every wall was patched with bricks, every roof rotten, every spire tottering. Parson Kilvert handed down to posterity the story of communion service at Fordington early in the century. There were two male communicants; when the cup was given to the first he touched his forelock and said 'Here's your good health, Sir.' The second had more orthodox notions, saying, 'Here's the good health of our Lord Jesus Christ.' By repetition of such stories the Revivalists undoubtedly did make themselves feel better every day and in every way. This great satisfaction in the course of events naturally spread to the Gothic Revival. Teulon's first church, of 1846, was described thirty years later, as 'not uncreditable for that remote period, the ecclesiological enlightenment of which was of the twilight of dawn to our present day noon.'

the hour and the man

The Oxford Movement necessarily appealed to the educated, to those with a sense of history. It consequently appealed to many architects, who, if a mixed lot, were to be numbered in the educated; nearly all the distinguished English architects had been and were scholars of some standing, and among the Goths Street showed astounding powers of historical research. The Movement, or the church it did so much to create, found its expression suddenly and completely. 'I will not shrink from uttering my firm conviction that it would be a gain to this country were it vastly more superstitious, more bigoted, more gloomy, more fierce in its religion than at present it shows itself to be.' Thus spoke the Rev. J. H. Newman. And if we were asked to go to a church that appeared to be—in its bricks and mortar that is—a tabernacle of superstition, bigotry, gloom and ferocity, where should we go? Towards Oxford Street. 'For myself I must say that, though I have a rather large acquaintance with English and foreign works executed since the revival of the Pointed art, I cannot hesitate for an instance in allowing that this church is not only the most beautiful, but the most vigorous, thoughtful and original among them all.' G. E. Street's opinion of All Saints, Margaret Street, is still likely to receive general assent, at least as regards the exterior. How powerfully it affected other architects a walk through any town in England (Welwyn and Letchworth, supposing one calls them towns, excepted), will testify. The ceremonial of the church itself, opposed at first so bitterly, spread as fast and as thoroughly, until a décor of a Methodist church of 1890 might have seemed on the flashy side to a high Anglican of 1820. How marvellous All Saints must have seemed at the time, what an infinity for development and invention it offered! In producing a fine building Butterfield appeared to have shown the way to a great architecture. *La littérature engagée* is familiar enough; was not All Saints an example, bearing in mind Newman's words, of *l'architecture engagée*.

a blight on hope!

With Newman and some lesser men gone, with Pusey and Keble having dug in firm it might have seemed possible—indeed it did seem possible—that the Church could be united, or at least keep up a decent pretence in front of strangers. How miserably the hope failed hardly needs going into.

To a low churchman everything seemed the thin end of the wedge, Confession was the thick end of the wedge. Lady poets rose in all their plumage;

'Don't go to confession, oh, never make known
The secrets of others, or even your own
To a man in a clerical hat.'

For some reason the Oxford Movement has been blamed for the ritualists, which is visiting the sins of the sons on the fathers. Purchas, Bennett, Lowther, Mackonochie, especially Mackonochie, the mass in masquerade bunch, the six-candlestick lot, the incense puffers, the genuflectors, the vestment men, they were a new and an alarming breed. Martin Tupper did not like them at all; he warned . . .

'Flirts of the chancel! ye Milliner priests,
Decked in your laces and satin bound hems,
Bringing back Baal's idolatrous feasts,
Bowing and music and flowers and gems,
Firework devices and trumpery wreathes,' etc.

(The 'firework devices' is, one supposes, not to be taken literally.)

This much-divided Church produced an equally divided Gothic Revival. The entry under Wightwick in Mr. Colvin's Dictionary will indicate how precarious the architect's living could be. Street's position was well known; he had set up practice in Wantage to be near the Butler circus of highchurchmen ("the wonderful "go" there was at Wantage,' said Charlotte Yonge). The outcry against the Law Courts was at least partly engineered by religious opponents, and the outcry against the Law Courts was the death knell of the Revival.

The squabbling over the height or depth of the church was the perpetual accompaniment of the Revival. There were dangers on either side. When a Cornish parson decided to put spittoons in his church a journalist commented, 'This is an "ornament" certainly unauthorised either by the first prayer-book of Edward VI or any canon or precedent. We trust he may escape the tender mercies of Lord Cairns and the Protestant Association.' That was one side. During the restoration of a 'high' Brighton church one of the workmen got into the pulpit and declared, 'I publish the banns of matrimony between this church and the Church of Rome.' 'And I forbid the banns,' called back another workman. 'On what grounds?' ' 'Cos the parties is too near akin.' That was the other side.

How violent the antipathies were is only too easy to illustrate. Scott's Exeter reredos was chucked out—but at least in an orderly, legal fashion. Later on, at Eccles in Lancashire, law and order went by the board. The vicar wanted to put up an alabaster reredos for the old wooden one. A meeting was called at which the vicar spoke for an hour, denying ritualistic practices, calling himself an Evangelical,[3] and consenting to omit objectionable features. He claimed it had the Bishop's approval. A resolution was moved approving the application for a faculty for the reredos. A counter-resolution was proposed, and the vicar declined to accept it. 'For once I am master here!' he unwisely shouted. Uproar! A flag was hoisted, 'Vote for the Amendment.' The vicar's strong arm men made a rush at the flag and its hoister, but the amenders fought back. Chairs and tables were overturned, and there were bruises all round in the hand-to-hand fighting. The vicar fled to the safety of an ante-room, his opponents triumphantly carried their flag through the streets of the town.

That affair must have warmed the hearts of the Methodists, Roman Catholics and Agnostics.

[3] After 1850 'Evangelical' ceased to have its early Wilberforce-Simeon-Bickersteth connotation.

architect v. architect (and no holds barred)

The greatest of English sociologists, Matthew Arnold, in his examination of the England of his time found an abundance of eccentricity, provinciality, boastfulness, and quarrelsomeness. The deficiency of sweetness and light was nowhere better displayed than in the architectural profession.

It must be admitted that the architect is in a difficult position. He is after all an artist—his stuff (product of mind and learning) is up for sale and therefore up for judgment. No-one is better qualified to judge the work offered than another architect. In literature this has always been a matter of course; a writer is reviewed, and expects to be, by another writer. But writers have no trade union, while the architects have an Institute. If architects belong to one society they must not bang each other about the head in public; it would be bad for trade. As a rule they quickly decided to bang each other about in categories. They wrote about the dead hand of classicism, meaning Smirke, or lunatic Goths, meaning Street and his friends. It was not surprising that criticism fell into the less competent hands of amateurs; men like E. B. Denison who would call a Street a Street.

No doubt, given a lot of good will and a full complement of amenable men, the system could have been made to work. But the Victorians, as Arnold said, were not like that, not in the least. They had a genius for quarrels. Even the blandiloquent Scott quarrelled. Buckler and he had a tremendous set-to; and there was the Foreign Office!

If the smiling Scott could quarrel it was hardly to be expected that the others would refrain. T. H. Wyatt v. Seddon and Pritchard was fairly mild, E. W. Godwin v. all and sundry was rougher. Even the jovial billiard player and President of a Glee Club Sir Arthur Blomfield was forced to show his fangs by Denison. Young Barry v. young Pugin was going too far; young Pugin v. Street was going very far. It was all, of course, aggravated by competitions—could any architect bear to sit back and see his design beaten by another of his designs filched from an earlier work by another architect? It happened to poor Godwin. 'I deny the allegations and scorn the allegators' they all said.

In dealing with quarrels one has to leave the great Street until last. He quarrelled with everybody, furiously. His little leisure must have been wholly spent in penning indignant letters. A Street row was always to the same pattern. His first move was to repudiate the criticism in point of fact; his second letter pointed out that his adversary had failed to answer the points he raised; his third letter showed the discrepancies between the original criticism and his adversaries' third epistle; so it would go on until the editor closed the correspondence—by which time the original subject would have been entirely lost sight of. While he was furiously protesting against repairs being made to St. Mark's he was himself making even more outrageous ones to the fratry of Carlisle Cathedral. Another architect, W. H. Wooler, felt impelled to comment; 'of course, different buildings may require this totally different treatment, but the only difference the average of mortals will be able to see is, that in one case Mr. Street is the architect, and, in the other case, he is not.' However, Street's

great triumph as a controversialist came with the Law Courts. The competition had been hopelessly mismanaged. Young Barry and Street almost got the job together, then Barry was given the task of designing a new National Gallery, and Street left in sole command. No sooner had this been fixed than Ayrton, the First Commissioner, Trevelyan and Bentinck decided that the Law Courts should be on the Embankment. Street's inventiveness did not fail. When his drawings and plans were made he was told—Carey Street! A new set of drawings and plans from the inexhaustible source. (The less-known, but not uninteresting, detail is that as soon as the land was bought hundreds of very poor people were, with hardly any notice at all, ejected from their homes, chucked on to the streets—this was Victorian 'metropolitan improvement'; it was left to American philanthropy to collect the human debris.) While the foundations were being dug Street was hounded by the opposition, by Cavendish Bentinck,[4] by Fergusson (the worst of the lot), by Denison, by Barry, by Pugin, by *The Times*. Some of the criticism was very good, all of it should have been left unsaid. The President of the Institute—T. H. Wyatt—had to deplore the conduct of his professional brethren and warn them that they were bringing the profession into ill repute (and he casually let it be known that he was not satisfied with Street's design!). Street bore it for a long time in silence; in the end he let loose on Fergusson and Barry. The behaviour of the Gothic men was only to be likened to the squabbles of family round the death bed.

Only once did the quarrels rise to wit. After the selection for the Gold Medal had been made (the recipient being presumably one of the trabeated school) William Burges suggested it should in future be shot for by the Artists' Volunteer Rifles. Burges was never quite wholly serious.

The passion for interference in other people's business was well developed in the Goths. Scott could never keep his nose out—and Buckler very properly bit it. Street was a hopeless case, the rest not much better. The perfect example of it—of English hypocrisy too—comes from Gladstone. The copious great statesman wrote remonstratively to the inhabitants of Florence on learning that Montecassino was to be either altered or rebuilt. (Why to the Florentines we do not know, nor alas, what their reply was.) At the time of this sorrowful abjuration Mr. Scott, R.A., had on his warpaint, and Mr. Gladstone did not see fit to send a remonstrance to the Dean of Chester. *Foreign* atrocities were Mr. Gladstone's speciality.

united we stand

The divisions of the Goths have been briefly illustrated, their effects on the profession can easily be guessed. At the height of the Revival—at the height, that is, of the greatest building boom in English history—only one architect in four was a member of the Institute according to one President, one in seven according to Godwin. Amongst the outsiders were many of the best—Pugin had never had any contact with other architects (other than Barry, which is what perhaps put him off), Butterfield, Bodley, Norman Shaw, Nesfield, Webb stayed outsiders. The Institute was an insignificant body. In 1870 its income was only £1,952; the expenses were £1,428, £886 on salaries, £36 on library books. Its librarian was shared with Lambeth Palace. The Institute's money was not wisely spent; the leaders of the profession hoped to dazzle the world with conversazioni—at the 1876 party a band of the Coldstream Guards played—and wasted their resources and impressed no-one.

Some of the architects did their best to make a profession of it—Donaldson[5] amongst others—but they could never get uniformity, agreement or members. The successive Commissioners of Works treated architects like tradesmen, the architects treated each other worse. Ferrey was invited to become a diocesan architect but refused unless he were paid £150 a year for his professional services. Street took the job for nothing. That sort of thing didn't produce brotherly love. Burges produced (E. W. Godwin helping a little) a most magnificent, startling and unlikely design for the Law Courts. Part of it went up as Bradford Town Hall (signed Lockwood and Mawson[6]). That was a very unkind cut from a fellow professional.

Had the architects kept their little differences to themselves things might have been better, but they were notorious. In one legal action involving an architect counsel said that if the client did not behave according to the accepted practice with one architect he would not get another. 'He would get plenty,' interjected the Lord Chief Baron. (On this occasion a journalist provided as a similar case Daniel O'Connell's opinion of his fellow-countrymen, 'If you want to roast one you will get another to turn the spit'.) They could not even keep up the tradition of unopposed elections for the Presidency. Needless to say Street was the culprit there.[7]

It is a curious fact that the reviewing and criticism of new buildings in the technical press was moderate and kind. Mr. Bassett Keeling's St. Mark, Notting Hill, was admittedly described as an 'atrocious specimen of coxcombry in architecture,' an E. B. Lamb design described as a 'nightmare dream,' and Keble College—and there is a touch of genius here—as a 'holy zebra.' But on the whole the critics were kind. The only man to be unpleasant about Scott when he was alive was E. W. Godwin.

a stitch in time

One of the famous if hardly eminent Victorians was Edward Simpson of Whitby. His livelihood was archaeologists. He was known as Flint Jack. His work was the manufacture of flint implements and he was as prolific as Grimes Graves. No doubt many of our museums still display his work. On the whole he was popular enough and there was some indignation at his being condemned to a year in Bedford gaol—of course he was advised to improve his ways of thinking on the works of his famous predecessor there. After this inhospitable reception in the south Jack returned to home grounds only to be caught again. He was given six weeks by the Northallerton Bench in spite of having pleaded that he was 'superannuated with drink.' Soon after that term he was back again. He did reform slightly by selling his frauds as frauds and giving lessons on the art. He then left for Lincolnshire having added to his accomplishments the manufacture of monastic seals. . . .

Messrs. Ashworth, Atkinson, Benest, Blomfield, Brandon, Butterfield, Carpenter, Chancellor, Christian, Clarke, Fowler, Goddard, Gould, Hayward, Kempson, Law, Nicholson, Norton, Paley, Pearson, Phipson, Preedy, St. Aubyn, Scott, Slater, Smith, Street, White and Woodyer were in a trade not dissimilar. They faked Gothic churches and kept out of prison.

A good deal of the restoration was necessary—a great deal more than the S.P.A.B. would admit—and architects did what was necessary. And a little more. Street was once reported as having 'restored the antiquity to the church.'[8] But, whatever one's views on restoration, there was no doubt that the Goths, by excess, created a new and powerful enemy to their cause, and alienated many of their natural following, the clergy. A young clergyman interested in architecture would, about 1840, have joined the Camdenians; forty years later he would have joined the S.P.A.B.

Had it not been for Ruskin the anti-restoration movement might have succeeded earlier, but Ruskin had a way of driving everyone else into the opposite camp. His socialism[9] had come as a terrible shock; it was much as if the Archbishop of Westminster were to advocate common services with the Anglicans. Ruskin's diatribes against restoration produced a flock of pro-restorers. But Ruskin was a genius with a way of his own. Had he not replied to a Sheffield society of artists, which invited him to come and address them, that if they were artists they wouldn't be living in Sheffield. When he was asked to subscribe to the restoration of Warwick Castle he splendidly wrote back; 'I am at this hour endeavouring to find work and food for a boy of seventeen, one of eight people—two married couples, a woman and her daughter, and this boy and his sister—who all sleep together in a room 18 feet square, in the heart of London; and you call upon me for a subscription to rebuild Warwick Castle!' No doubt readers will recall Mr. G. B. Shaw's postcard to the Prime Minister which ended, 'my answer is a hollow laugh.'

decline and fall

The defeat of any great movement is a fascinating study. What were the inherent weaknesses? Who overthrew it? Some of the weaknesses have already been suggested. The Goths were quarrelsome, they were too closely connected with the Church. They had never succeeded in putting down the notion that Gothic was expensive, they had never cut away from archaeologising.

A positive force in the overthrow was R. Norman Shaw, and there is no explaining him. Sir Richard Burton once listed the four great Protestants, explaining what they protested against, and then added his own name as the fifth with the words, 'and Sir Richard Burton, who protested against the whole business.' Shaw 'protested against the whole business.' Shaw had been the young hopeful of the Goths. He had, at an early age, received commendation from Sir George Gilbert. And then he produced his Leadenhall offices; Donaldson called them a 'deformity' and 'an abuse of high powers.' The offices were just the beginning; there came to the astonished eye of the magazine reader a splendid succession of country houses. Here was no tentative experimenting but genius in full flood. The percipient could hardly doubt that the Orders were just round the corner. Burges said that the Queen Anne style of the 'deserters[10] from the Gothic school' came from three causes; it was easier to design; it required fewer drawings, and was cheaper. Whatever the truth of the matter was there could be no doubt that the hero of the young was no longer G. E. Street[11] but Norman Shaw. There was something about the Law Courts. It was a Pyrrhic victory. The interested went to see it, said 'magnificent,' and, on the quiet, 'never again.' Somehow Street had seemed to have played out the possibilities of Gothic in one shot; it was his greatness to have done so, and perhaps the limitations of his creed to have been able to.

As the Gothic Revival had in its early days been intimately connected with the Church Revival so it was towards its close. For one thing the churches had been built or restored over the forty years. The Revival had lost its impetus. Mr. Mackonochie had at last been ejected, litigation was on the wane, enthusiasm was considerably less. The Churchmen were preparing to admit failure; England wasn't converted or reconverted, the missionaries had been given the cold shoulder or had never even got through the door. The artist is quicker to respond than his fellow men. The 'deserters' from the Gothic school were admitting in their way what churchmen would not or could not concede until 1900. Miss Potter in 1850 might have spent her time embroidering altar cloths and teaching the village children their catechism; Miss Potter in 1890 was busy collecting figures about sweating shops. The local aristocrat (supposing he was not one of the old irredeemable horse, gun and gambling sort) might have built a church, restored another and been chairman at many meetings in aid of good causes; the new leader of society was the Prince of Wales, and sin, only too obviously, was not necessarily ugly. Tempers, where Ireland did not enter the discussion, had improved; the House of Commons even was no longer the scene of 'beastly bellowings.' Harcourt or Balfour never bellowed at anyone. There Matthew Arnold had done his work.

At their best and most representative Gothic revival buildings retain that Victorian quarrelsomeness, violence, assault. All Saints, Margaret Street is still something of an affront; the Law Courts are not restful, Mr. Seddon's work will never tone down. Grace and restfulness they never offered, and at their best they splendidly display, not only the genius of their designers, but the deficiencies of the civilization that paid the bill.

[4] A man who liked what the Butler saw. A staunch SPAB man he was asked why he then let Branksea Castle become ruinous. He had no answer.

[5] But it was Donaldson who refused to subscribe to the Pugin Memorial Fund. T. H. Wyatt finally loosened Donaldson's grip on the Institute.

[6] 'Messrs. Lockwood and Mawson have been largely engaged in competitions, and we understand that the firm has kept a separate staff for this kind of work.'

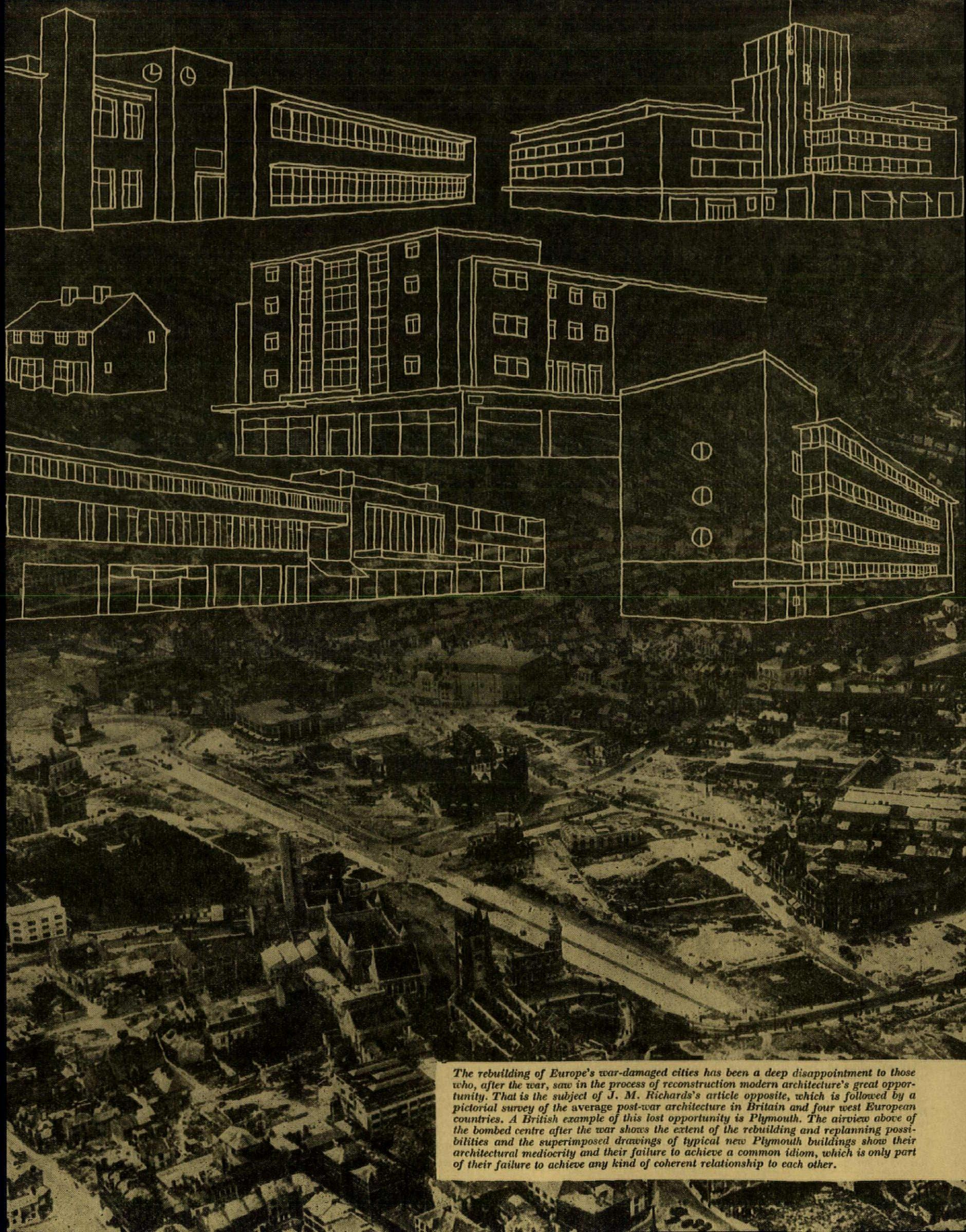
[7] The tradition was almost broken when Beresford Hope became the President, but he was conscientious—even if he did doze and nod through the papers—and secured the prefix.

[8] 'Great Britain will tend more and more to become a Free Commonwealth with a Republican Government under Monarchical Forms and a hereditary President.' Horatio Bottomley.

[9] H. G. Wells said that the Webbs' socialism was all offices and no living rooms; Ruskin's and Morris's was all living rooms and no offices.

[10] E. W. Godwin—brought over by beauty—Robson and Stevenson were described as 'secessionists' which conveniently dates them.

[11] How much Street had been the hero of the young can be seen in Gerard Manley Hopkins's letters to Bridges.



The rebuilding of Europe's war-damaged cities has been a deep disappointment to those who, after the war, saw in the process of reconstruction modern architecture's great opportunity. That is the subject of J. M. Richards's article opposite, which is followed by a pictorial survey of the average *post-war architecture in Britain and four west European countries. A British example of this lost opportunity is Plymouth. The airview above of the bombed centre after the war shows the extent of the rebuilding and replanning possibilities and the superimposed drawings of typical new Plymouth buildings show their architectural mediocrity and their failure to achieve a common idiom, which is only part of their failure to achieve any kind of coherent relationship to each other.*

J. M. Richards

EUROPE REBUILT: 1946-56

WHAT HAS HAPPENED TO THE MODERN MOVEMENT?

It is ten years since reconstruction got under way in the war-damaged countries of western Europe; ten years of building on a greater scale than those countries have ever before experienced. The initial phase can now be said to have ended. Although much remains to be done—although the housing shortage is still nearly as acute in some places as it was at the end of the war, although the cities of the Rhineland still show large areas of devastation and even in Britain, where the extent of damage was less, economic difficulties have slowed up the rebuilding of bombed cities, nevertheless the damaged European towns and cities have, by and large, been rebuilt—at least sufficiently for an appraisement to be made of the architectural results.

We had great expectations of those results, since the war came at a moment when the revolution of the nineteen-twenties and thirties, which aimed at replacing an architecture based on historical precedent by one based on scientific analysis, was rapidly being consolidated. The architect's new concern with social and functional problems and the largely industrialized building techniques he employed to solve them, together with the new visual language he largely derived from these, added up to what was called in the nineteen-thirties the Modern Movement. It was expected that post-war reconstruction would give this movement enormous impetus; in fact that from the first ten years of reconstruction there would emerge a Europe transformed—at least as regards the newer parts—from a scene of confusion, arising from generations of conflicting aims and prejudices, into a scene adorned with a consistent, though perhaps a regionally differentiated, standard of architecture deserving the adjective modern.

Somehow that has not happened. The confusion is still with us. The products of ten years of rebuilding are little different to look at from what they would have been before the war; at least that is the general impression the traveller gets everywhere in

Europe except in western Germany (and to a less extent in Italy), where there has been a change, if not a total transformation. It is time the absence of fundamental change elsewhere was recognized, especially by those accustomed to declare that the battle for modern architecture has been won.

To show the extent to which it has not been won is the purpose of the pages that follow. On them are displayed in sample form a cross-section of the post-war architecture of five western European countries: France, Italy, Holland, Britain and West Germany—as it is, not as the connoisseur of architecture may have been led to suppose it is. For the normal role of this and other architectural magazines is to put on record new buildings of special interest and significance and to pass over as unworthy of attention the buildings of no interest and no significance. Each country of western Europe has produced a number of excellent buildings since the war, and they have been duly illustrated, but the publicity deservedly given to them may easily have created a misleading impression. The test of architectural progress is the ordinary level of building, whether it gets into the magazines or not—and usually it doesn't.

On the following pages it does. The illustrations tell their own dismal story, although they are not designed to give a dismal impression, but a fair summary of the real state of affairs. This cross-section in miniature is by its nature a pictorial one, and indicates only what the eye sees—not the totality of architectural achievement. It may be that in some places and on some occasions progress has been made—for example, in the field of social planning, of accommodation standards or of the economic use of building resources—which is not reflected in the visible result, and for which no credit is given here. Yet by and large it is not unfair to assume that buildings which seem to owe allegiance to a passing epoch possess the attributes of that epoch. Form may not mean much apart from function, but it is a fairly reliable guide to the architect's conception of function.

The following pages are concerned with facts—in most cases ugly, all too visible facts—which require to be put on record to indicate the extent of the challenge that still has to be met by those who believe that modern architecture has an important part to play in raising standards of civilization, both functional and visual. In introducing them it may be permitted to suggest some of the causes that lie behind western Europe's utter failure to seize the opportunities post-war reconstruction offered to it.

The basic causes, no doubt, lie deep among the psychological intangibles: among questions of collective will and national morale, and by proceeding to analyse the varying vitality of nations we could perhaps account, if not for the failures of western Europe as a whole, at least for the far greater degree of failure in some countries than in others. Britain and France are—or behave like—tired countries; Italy and Germany do not, which cannot be explained by the usual cynical observation that the former were the victors and the latter the vanquished, since there is the example of the perennial vitality of the U.S.A.

But such issues are beyond the scope of this article, and we must restrict ourselves to such questions—and such tentative answers—as lie closer to the architectural field. One obvious cause of the absence of boldness and enterprise in the post-war architecture of Europe is the fact that in the political atmosphere engendered by the war the public's instinct lay in the direction of replacing what was there before, and this applied especially where nationalist feeling in the newly liberated countries demanded a style of architecture reminiscent of national tradition. Another is that high quality modern architecture, with its dependence on well finished prefabricated components, needs a mechanized building industry, which in western Europe generally did not exist, or at any rate was not organized to undertake building on a national scale. The result was that the craft-based industries dominated rebuilding, with all the architectural inhibitions that implies—witness the largely traditional style of English housing, which only prevailed after the numerous types of prefab had been discarded because the house-building industry was not organized to take advantage of them.

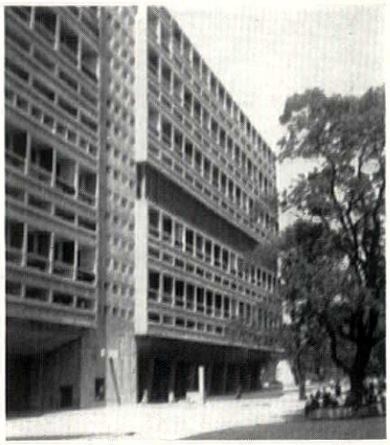
Thirdly, the bulk of rebuilding work was entrusted to the older generation of architects, and especially those having pre-war commercial or official connections, who had maintained those connections while the younger generation, preoccupied with the war, had little opportunity to establish them. Nor had the younger generation the required experience of building. Although war conditions favour in some ways the introduction of untried ideas, they disrupt at the same time the processes by which the men with untried ideas are normally given their opportunities.

Fourthly, and finally, it may simply be that the modern movement was not as firmly established, nor its principles as well understood, as the progressive architects allowed themselves to believe; that the battle they hoped was won, because of the acclaim they received from the converted, has to be fought again on the level of the aesthetically unconvertible.

There are no doubt other considerations peculiar to individual countries, and some of these are suggested in the comments alongside the pictures. It only remains to add that we are concerned here with buildings and groups of buildings—the form in which the new architecture meets the traveller's eye—and not with the planning schemes that give rise to them. The task of reconstruction has, of course, offered great opportunities for replanning, and many improvements in layout have no doubt been made in rebuilt towns without any visible improvement in the architecture, just as good buildings exist which nevertheless mark lost opportunities to replan. That is another story; yet in a way it is the same story, because if there is one visible symptom of our failure to apply modern architectural principles to the needs of the post-war world it is the obstinacy with which buildings remain individual bits of architecture, instead of linking themselves together into a coherent picture.

1. FRANCE

Because of the presence there of Le Corbusier, a solitary giant, France has acquired a false reputation for being a country with a contribution to make to modern architecture. In fact, France is the most conservative country in Western Europe, with about the same amount to contribute as Portugal. Apart from Le Corbusier's famous Marseilles block, A, and its younger sister at Nantes and his chapel at Ronchamp (all of which are, literally, epoch-making) the post-war buildings of first-rate quality consist of as many apartment or office blocks as can be counted on two hands. The ordinary productions of French architects, in spite of the immense opportunity created by the war, show little advance on what they were producing in the 1930*'s and little sign of building up a consistent modern idiom. They suggest an absence of purpose and direction, which latter also reflects the extreme provincialism of provincial France. Such sophistication as exists in Paris and the big cities has little influence elsewhere; what it has is seen chiefly in the smart shop-front and the modernistic café and seaside villa. Architecturally, as perhaps one should expect in a country of which large areas are still quite unindustrialized, the smaller places are self-contained and self-sufficient, and what changes there are are changes of fashion rather than of ideals and principles.*



A, flats at Marseilles by Le Corbusier.

At the end of the war France possessed one great architectural figure besides Le Corbusier: the veteran Auguste Perret (obit. 1955), and he was put in charge of war-damaged Le Havre. The result is one town with a new centre dominated by rigorously disciplined and elaborately modulated architecture. Although the classical precepts with which Perret was chiefly concerned in his old age are more in evidence than the structural experiments he pursued in his youth, and Le Havre, 1, therefore pushes forward no frontiers, it is still the one town in France where a consistent architectural character has emerged from post-war rebuilding.

Far more typical of the war-damaged towns of France is Amiens, which is illustrated by a number of pictures, 2-9, just because it is so typical. What is to be seen there is to be seen anywhere in northern France. There is no discipline and—in case that may be thought forgivable in a city with such picturesque tradi-



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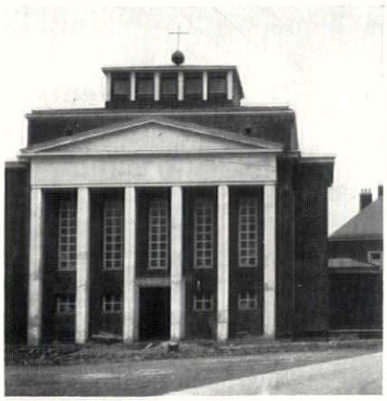

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tions—no character; instead, a purposeless mixture of styles and architectural attitudes. 2 is a typical street view with a building loaded with period motifs on the left and, on the right, a watered-down, partly modernized, version of standard French neo-classical street architecture. 3 is another example of an orthodox classical style brought up to date by leaving off some of the ornament and playing about with the proportions. Other buildings display instead the modernistic clichés, 4 and 5, without giving much evidence of the modern constructional methods that can be presumed to have been employed. Modernistic clichés, perversely enough, are commonest in the bombed areas closest to the cathedral.

Sometimes the formless architecture of compromise at least possesses a clumsy simplicity, 6; and sometimes when the occasion is a monumental one a famous architect is given an opportunity which, in an age and country possessing some convictions, might have made architectural history; but the mediocrity of the tour Perret, 7, shows that it is chiefly the effect of rhythmic repetition which gives distinction to the same architect's work at Le Havre. Often the attempt to manufacture architecture results in a fussy pretentiousness, 8. Most typical of all, perhaps, is the negative timidity of 9, which might equally well be in Orléans or Lyons—or, for that matter, in Southampton or Rotterdam or Genoa or Cologne. It belongs nowhere and is going nowhere.

To show that Amiens is not alone among the reconstructed towns of northern France for mediocrity of architecture and for the variety of styles favoured, here are three examples from Calais: 10, reminiscent-fantastical, with utilitarian-traditional in the background; 11, domestic monumental (like a 1900-ish golf-course hotel somewhere in Scotland, though in fact, it is a brand new block of flats); 12, the magpie collection of motifs that has always been typical of the French seaside. A similar state of affairs is evident in Beauvais (13, a modernistic front superimposed on an ordinary pre-war street façade), in Aunay (14, village housing in a cautiously reminiscent style) and in Lisieux (15, high-density town housing). This last, with its staccato window-pattern and layers of contrasting material, could not, perhaps, be anywhere but in France; but there is also plenty of anonymous, borough-engineer-style, mass housing in the neighbourhood, of the type of 16 (which happens to be at Le Havre) in which semi-industrialized methods of building are used to produce nothing more adventurous than an enlarged version of traditionally built cottage housing, which might be anywhere between Glasgow and Naples.



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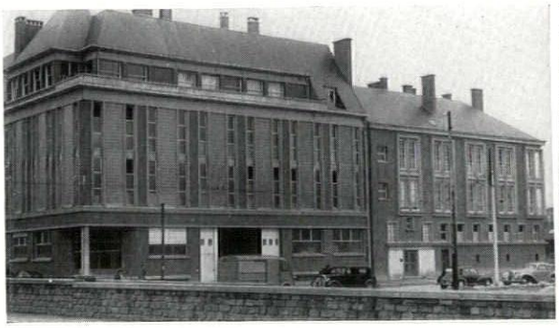

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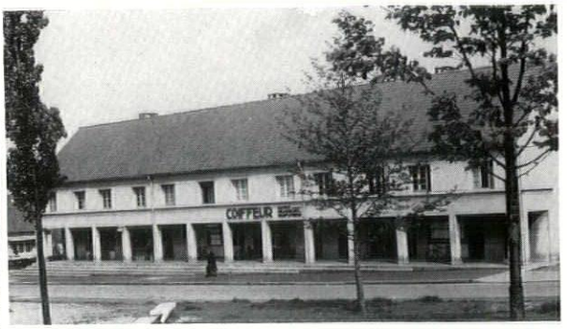



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Housing outside the bigger towns is not unfairly represented by the next four pictures: mixed terrace flats and houses on the outskirts of Roubaix, 17 (equally depressing both as town-planning and as architecture); smugly conventional municipal flats, also at Roubaix, 18; municipal cottage housing at Grand-Couronne, 19; another municipal housing scheme, with rather more forward ideas about planning oddly at variance with its backward ideas about architecture, at Sotteville-les-Rouen, 20.

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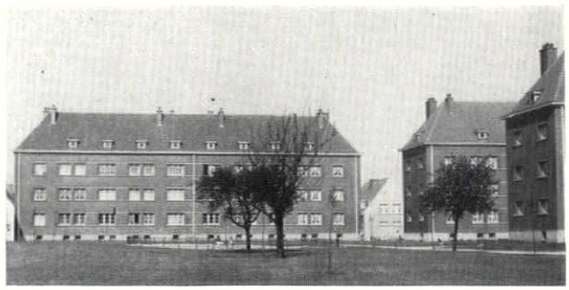

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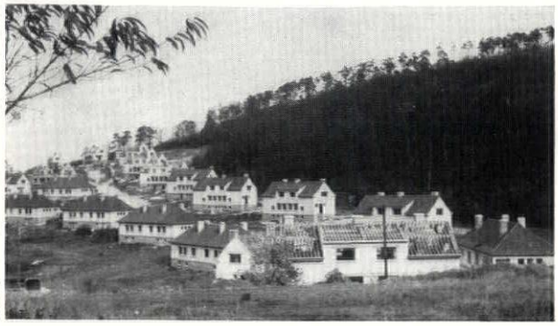

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In eastern France the opportunities were less and the sheer silliness of some of the Normandy rebuilding less in evidence. The commonest type of rebuilding here is a clumsy and superficial modernistic, as at Maubeuge, 21, which is only sometimes relieved by isolated buildings (like this block of flats at Strasbourg by Beaudouin, 22) where a good architect has concerned himself with the principles of modern architecture rather than with style.

21


22


In central France, too, the heavy-handed, watered-down classical (municipal flats at Orléans, 23) or the cautiously traditional (Place de la Résistance, Tours, 24), are more characteristic than the occasional praiseworthy excursions into a frankly modern idiom (25, shops and a cinema at Nantes; 26, fire-station at Bordeaux). On the west coast, too, there is one heavily war-damaged town, Royan, where the style of rebuilding is contemporary. The use of that style may be slapdash and superficial (27 is typical) and in many cases may consist only of contemporary clichés applied to conventionally conceived structures. But here at least there is awareness of a new era of architecture.

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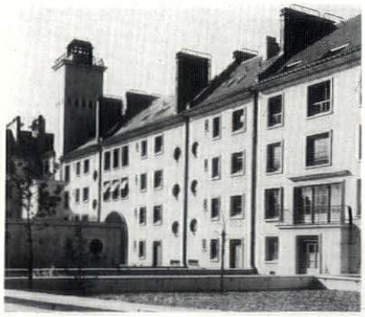

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In the extreme south, an even more favourable impression is given by the circumstance that, although there is plenty of mediocre building, the only large areas of reconstruction are the water-fronts of the various Mediterranean ports—Marseilles,

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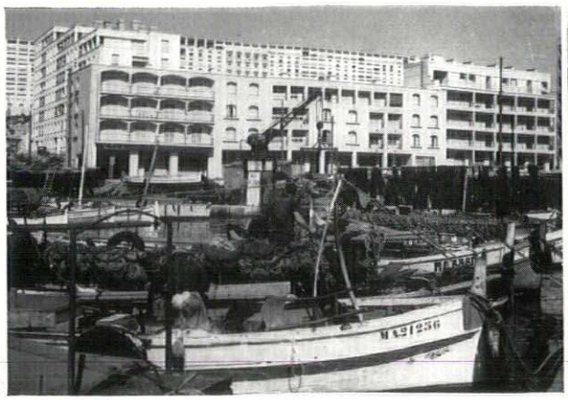
27


1. FRANCE

Toulon and the rest. Whether the reason is the influence of nautical functionalism, the tradition of simplicity that belongs to the sunny climate of the south or merely the chance or deliberate appointment of more go-ahead architects, this highly concentrated housing and commercial development (Marseilles, 28; Sète, 29) belongs unmistakably to the generation that built it. The architectural quality varies, but criticisms here must chiefly be made on planning grounds and on the basis of an evident insensitiveness to the subtleties of place.





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2. ITALY

Italy shows much more vitality than France; more willingness to experiment, and therefore far less dreary reminiscence of pre-war—and even pre-first world war—routines. The new buildings benefit from the same advantages as the French Mediterranean ports, and all over Italy the predominance of white walls with sharply cast shadows gives the traveller from the north an impression of modernity which does not always survive close inspection. In addition, the Italians have an instinctive sense of form which often brings to conventional and commonplace buildings some of the qualities that in other countries have only been reintroduced by the efforts of the modern architects. Nevertheless there is a large quantity of work that shows little awareness of modern ideas and opportunities to set against the good modern architecture that Italy has begun to produce in greater quantities since the war. The best of this is to be seen in Milan (where a number of high quality flats and commercial buildings have gone up, A) and Genoa; though the most distinguished post-war building is probably the new railway station in Rome, B. The more conventional building does not generally involve historical reminiscence so much as either a fanciful modernistic or some variation of the simplified classical that was the official style during the fascist regime.*



A, Olivetti building, Milan, by Bernasconi and others.



B, Rome railway station, by Calini and others.

*It should be added that the pictures below cannot be compared exactly with those chosen to represent the other countries discussed on these pages, because in Italy war damage was more scattered and did not in the same way affect the big urban centres, where most building naturally takes place. They illustrate post-war rebuilding generally rather than the reconstruction of war damaged areas.

The first two pictures, both from Naples, represent two styles of design frequently found in post-war Italian architecture: 1, a survival of the imposing, somewhat theatrical style, with a hankering after classical formality, of Mussolini's Italy (this is a group of permanent exhibition buildings); 2, multi-storey private-enterprise housing that is modern only in the sense that no period motifs are





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employed. 3, at heavily damaged Rimini, is even more typical of the run-of-the-mill, four-square, unfussy but somewhat characterless housing to be seen all over Italy.

The state-subsidized working-class housing has much the same character, and tall blocks of these stand up in many places in alarmingly close-packed ranks: 4, Foggia; 5, Chieti (Abruzzi). Village housing, especially in the south, has a more sympathetic character and, though largely traditional in conception, a surprisingly modern one when it relies on the simple geometrical forms of the local vernacular: 6, San Benedetto Val di Sambro (Bologna); 7, La Martella (near Matera).



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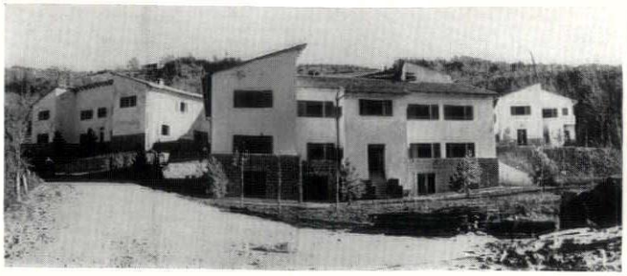

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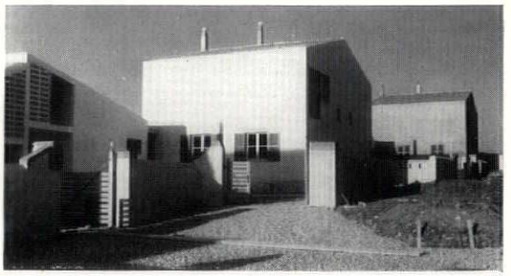

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Simple geometry can also be brutal and insensitive, especially when allied with harsh contrasts of material, as in this typical provincial school at Sassari (Sardinia),8. There is a rather greater appearance of sophistication in the simplicity of 9 (school at Ancona) and 10 (municipal offices at Lecce), but it consists only of a stylish veneer applied to a conventional street-façade. Once again, there are vestiges also of the heavy neo-classicism of the fascist era. The same applies to this church at Francavilla al Mare (Chieti), 11, which is typical of a certain type Italian rebuilding in that it preserves the skeletons of period styles, but discards the detail (and often the proportions as well) that gave them their character.



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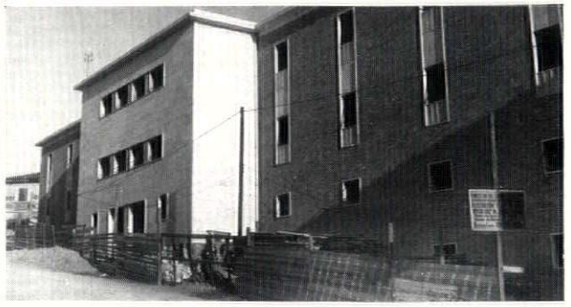

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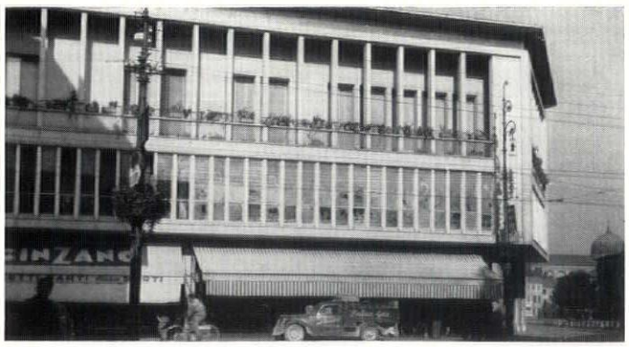

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In the more populated areas farther north the same kind of smoothed-over neo-classical alternates with a rough-and-ready modernism, the difference between the two being only a surface one: 12 and 13, at Padua; 14, at Pesaro (a municipal building); 15, a hospital at Popoli in the province of Pescara. Sometimes the two are cleverly amalgamated, and when this is done with skill and a sensitive eye for materials and



14



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modelling we get a result as lively, if eccentric, as 16, the new public buildings in the centre of Leghorn.

Such an assertion of individuality more often results in a pointless whimsicality, as in this commercial and hotel building in Milan, 17. Milan generally, however, is a city of more sophisticated architecture, and more than any other city in Italy can claim that the great quantity of building that has gone forward since the war has been contemporary in spirit and much of it experimental in a more than voguish sense. Milan is the home, also, of a rather doctrinaire modernism: witness the city's first skyscraping office block, 18, the new areas of high-density housing, 19, and a self-consciously *avant-garde* chemical factory on the outskirts, 20.



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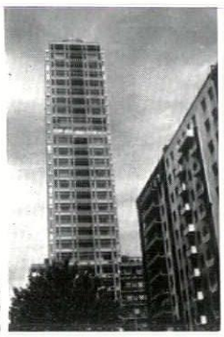

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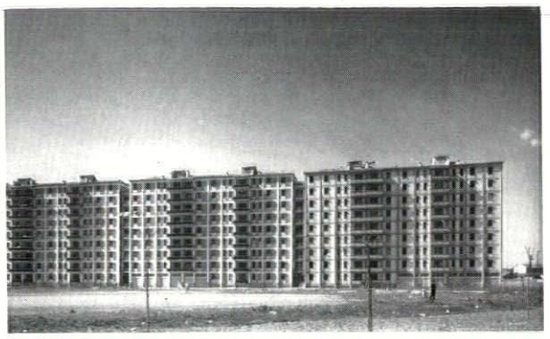

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The rival to Milan as a centre of architectural activity is not unnaturally Rome. Here, too, are to be found a number of straightforward modern buildings, though a certain formality, reminiscent of the official style of the 1930s, is often an accompanying characteristic, as in 21, an office building in the Viale Eritrea. There is also plenty of building in the bald utilitarian style of the Ciampino airport at Lazio outside Rome, 22, and there are excursions into fantasy, like this domed church, 23, in one of the new housing neighbourhoods on the same side of the city. Most typical, perhaps, of the new Rome are the massive blocks of flats, 24, that have risen in great numbers about the hill-tops of the residential districts. Once more, cottage housing often shows a more sympathetic character, if only by references back to the vernacular tradition, as in the case of this estate at San Basilio, 25, in one of the new industrial suburbs.



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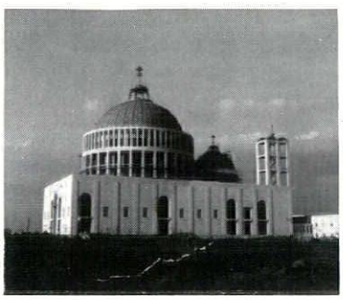

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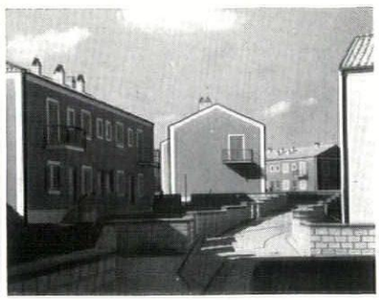

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Returning from Rome to the north we find in Genoa, 26, a new building in the Piazza Caricamento which, however clumsy, at least has the courage of its convictions and is not afraid to assert itself among its neighbours of earlier epochs. Finally, to symbolize the confusion of ideas that still reigns in Italy (though not to such a degree as elsewhere in Europe) here, 27, is the street leading up to the Ponte Vecchio at Florence—a street of shops in which the orthodox, the modernistic and the nondescript are inextricably mingled.



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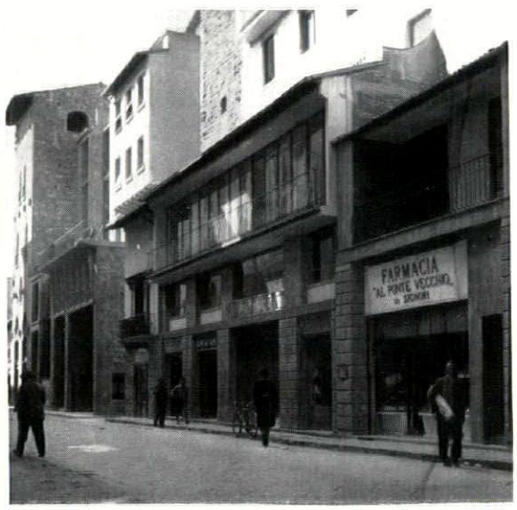

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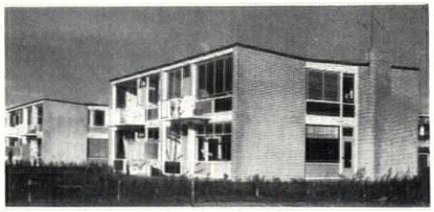
3. HOLLAND

It is not an exaggeration to say that in Holland the bulk of post-war architecture indicates not merely a failure to move forward from pre-war standards and values but a retreat to the values prevailing before the 1914-18 *war. In the* 1920's *and* 1930's *Holland was an* avant-garde *country towards which architects all over Europe looked for leadership. The Dutch were among the pioneers of the new architecture. They suffered immense destruction during the last war and have been energetic in rebuilding. In the course of rebuilding the better architects have not lacked opportunities, and in the replanned centre of Rotterdam, for example, there are some first-rate commercial buildings, A, which have both transformed and improved the pre-war character of that city. There is also a fair quantity of housing of excellent modern quality, B. But these are exceptions, which suggests that modern ideas may not have been so well established as the admirers of the pre-war achievements supposed. The nature of much of the post-war work, moreover, suggests a more positive influence at work as well. There seems to have arisen since the war a powerful reaction in favour of architecture with a regional character, employing traditional motifs. It may at first have been a response to nationalist feelings stimulated by the liberation, but it has continued, and is specially identified with the Delft school. The result is a plethora of gabled houses in traditional style and much somewhat arty brickwork. Quite large commercial structures are influenced by the same cosy ideals, which may also be responsible for the suburban appearance that is increasingly being given to the Dutch landscape. Where Dutch architecture does not positively look backwards it seems, with honourable exceptions, to have stagnated and become duller.*



A, department store in Rotterdam, by van den Broek and Bakema.



B, houses in Amsterdam by Aleert Warners.

It is to Rotterdam, the most heavily damaged city in western Europe, that everyone first looks for evidence of how the Dutch have met the challenge they faced ten years ago. They find not one answer but many. The commercial centre of the city presents once again a busy metropolitan scene, 1 (view from the portico of the surviving Exchange building), in a setting that is modern in general character but in detail combines a remarkable variety of architectural attitudes, most of them having a heaviness in common which prevents their variety of treatment from producing an agreeable picturesqueness. The same heaviness makes the vast Groothandelsgebouw, 2, too overpowering for comfort and the high flats, 3, an example of enlightened site planning, too monumental for their purpose.

Mixed with this somewhat heavy-handed modernity (and, it



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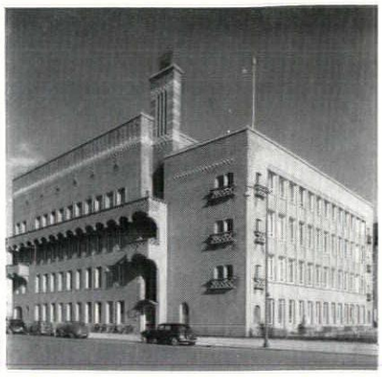
must be said on Rotterdam's behalf, a sprinkling of buildings of more distinguished quality) are more fanciful styles, of which this eye-hospital, 4, is typical, and a larger number that are fairly plain but strongly influenced by the work of the brick-gable school of Delft, 6. The sentimental outlook of the followers of this school, and their emphasis on national traditions, is even more in evidence outside the big cities—e.g. this group of buildings (also a hospital) at Maastricht, 5. The housing that springs from the same source is exemplified by this terrace of flats at Groningen, 7, though the detailing is not always so coarse and restless.



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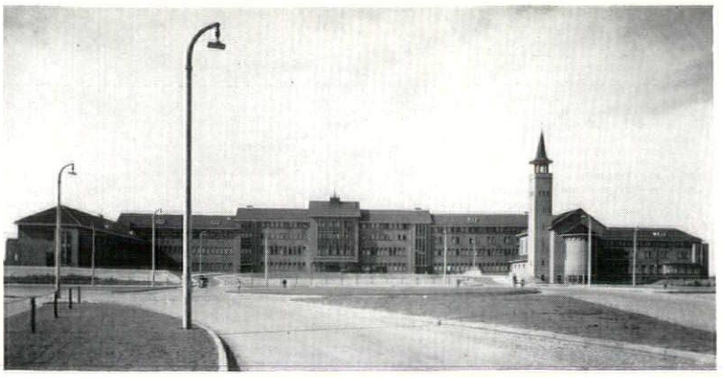

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Nationalism sometimes merges into romanticism; this example (church at Amstelveen, 8), more sensitive and distinguished than most of its kind, has affinities with the romantic architecture of pre-war Scandinavia. And sometimes nationalism leads to copying old traditions almost brick for brick, especially in small-scale domestic buildings: 9, housing at Zandvoort, the much-damaged North Sea resort; 10, old people's homes at Bergen. But naturally the urge to recapture the past is specially strong in places that were famous, before they were destroyed, for their antique character. 11 is a street in Middelburg, carefully rebuilt in imitation of its original style. Such a policy can be understood, if not approved of. It is less easy to understand the philosophy behind the new town hall at Middelburg, 12, which might have been designed in one of the most history-conscious decades of the nineteenth century.



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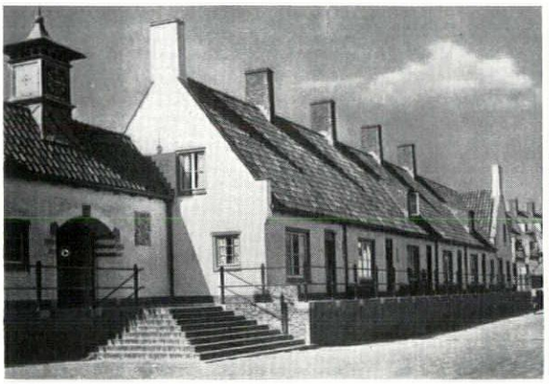

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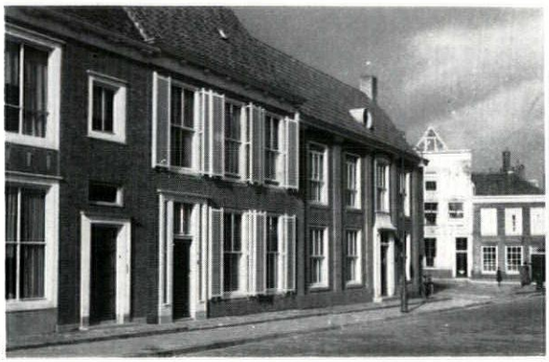

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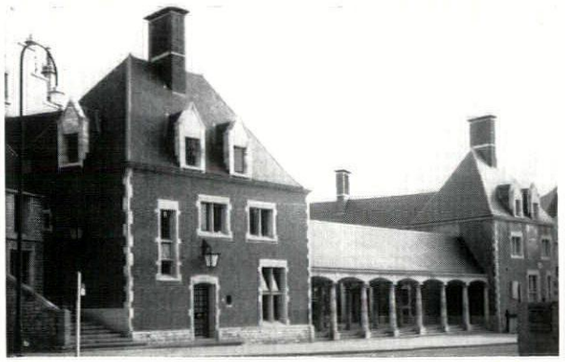

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Equally eclectic—and far more eccentric—is the new railway station not far away at Flushing, 13, which it is hard to believe was designed after the war, and for such a purpose. Flushing, indeed, offers a rare mixture of building styles, none of which could be dated with any certainty on the strength of its appearance: 14, traditional-style terrace housing;



13



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15, flats so characterless that they might be anywhere in the northern half of Europe; 16, a school of which the same can be said—also that its date might be anything after 1910.





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Another area of widespread devastation, on the far side of Holland from Middelburg and Flushing, was that of the Rhine bridge-heads—Arnhem and Nijmegen. Here there is less eccentricity but equal timidity, except in the case of the Province House at Arnhem, one of the few new Dutch official buildings with character—a character, however, both odd and provincial. Generally, the thoroughness and earnestness of Dutch replanning policy goes hand in hand with an extraordinary absence of architectural conviction, exemplified in these two pictures from Arnhem—a block of flats, 17, of orthodox type with a few contemporary clichés superimposed, and a row of brick houses with shops beneath, 18, in familiar old Dutch style; likewise in these two from Nijmegen—a church, 19, that is typical of the more genteel productions of the school of Delft, and some cottage housing, 20, which might have been built anywhere in Holland at any time during the past thirty years, and, indeed, might equally be in an English suburb or new town.





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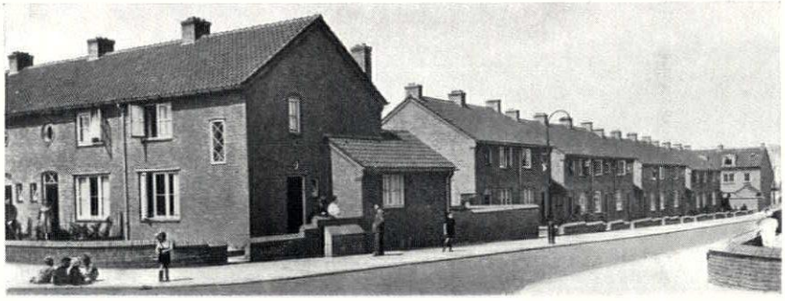

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Not all Dutch post-war housing is as uninspired as this. Here, 21, are some municipal flats at Utrecht, a good deal fresher and more positive in treatment. Yet the more hopeful impression created by such as these is soon dispelled by the far larger quantity of housing like 22, at Breda. And even in Amsterdam, whose progressive housing policy before the war set a lead for all Europe, a standardized dull orthodoxy, 23 and 24, seems now to be the rule. The Hague is somewhat more forward-looking, some of the newest municipal flats in that city being gay and enterprising, 25, with a breadth of treatment suited to the spacious planning of the new residential neighbourhoods. But even in The Hague the visitor is equally likely to come across examples like 26, flats which it is difficult to believe were put up only eight years ago.

Perhaps the example that summarizes most fairly the qualities and defects of Dutch housing is 27 (also at The Hague) where taste and traditionalism combine to produce a certain superficial charm, but the question must still be asked: is this a sufficient answer to the challenge of the modern world?





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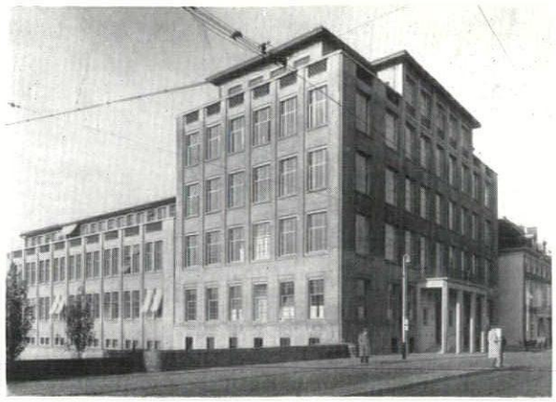
3. HOLLAND

Finally, two important buildings in The Hague reflect the mixture of styles seen in new buildings of a more public kind: 28, the discreetly conservative Ministry of Education building; 29, the KLM offices, more vigorous in conception but exemplifying again the retrogressive influence associated with the school of Delft, which pervades Dutch architecture so strongly.





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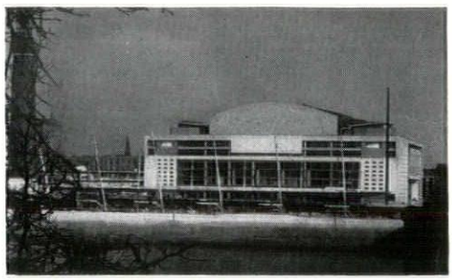
4. BRITAIN



A, Royal Festival Hall, London, by the L.C.C. architects.

If some of the Dutch post-war building seems to represent a return to before the war before last, most of Britain's has not yet emerged from it. The strange impression the traveller in Britain gets is that, instead of one architectural epoch succeeding another, several are occurring simultaneously. Architects or builders are designing as they designed in the 1920*'s or even the* 1900*'s, as though they were unaware what other architects were doing elsewhere. It is a familiar complaint that the British as a whole don't use their eyes, but one that becomes much more serious when it appears that those of the British who are responsible for visual standards—the architects and builders—have ceased to use them either. There is, of course, modern architecture in Britain, but it is a small proportion of the whole. There have been hopeful moments: when the most important new public building of our time, the Royal Festival Hall, A, was put in the hands of architects who could be counted upon to look forward instead of back, and when a young firm of architects with ideas about structure as well as style were made responsible for the first large-scale central rehousing scheme, B. But with honourable exceptions (the chief of which are the recent work of the LCC and school buildings, first in Herts and then in many other places), the only new phenomenon that has emerged since the war is a meanly finished utility commercial style of no distinction whatever, employed by development companies for the rebuilding of city sites often of such importance that in other countries it would be regarded as a matter of public pride that they were rebuilt worthily. In Britain nobody cares. These pages are concerned especially with the opportunities presented by wartime destruction, and it is saddening that it is in the blitzed cities that the failure of British architecture to show decision, enterprise or taste is most apparent. With the exception of Coventry and, to a less extent, Canterbury each is an object lesson in how not to rebuild, not only in architecture but in planning, the brave new reconstruction schemes that were produced at the end of the war having, almost without exception, been whittled away in the interest of expediency and* laisser faire. *Britain finished the war with internationally admired planning legislation, but the value of legislation depends on willingness to use it. How far Britain has still to progress is indicated by the quantity of badly designed speculative housing that has*



B, housing in Pimlico by Powell and Moya.

been springing up ever since financial controls were lifted. Planning controls were meant to stop such things; instead they multiply, and are threatening to nullify the very real improvement that was slowly taking place in local authority housing.

Canterbury, on the whole, has a better record than most of the badly bombed cities, so this typical picture of a rebuilt shopping-street, 1, with its inoffensive but somewhat genteelly modernized version of the familiar Georgian, represents the better work done in such places. There is plenty in the south-east region that is either worse or more old fashioned or both, such as 2, offices at Ramsgate, heavily mock-Georgian with an un-Georgian window pushed in where convenient; and 3, a factory at Folkestone in the crude modernistic style of the 1930's. There is also plenty of borough engineers' housing, like 4, also at Folkestone, as commonplace as such houses used to be before the general improvement in council housing that took place after the war.



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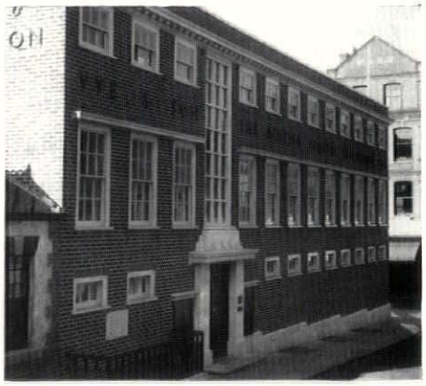

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Moving north, to the much bombed city of Hull, we find a similar, and perhaps more dismal, picture: pretentious mock-Georgian in the centre, 5; crude quadrangles of flats, 6, and tastelessly dolled-up factories, 7. But that is commercial architecture. A university ought to know better, yet here is a new building for University College, Hull, 8, whose dreariness speaks for itself. Schools are often just as dreary, which is even less forgivable seeing the example that has been set by a number of good school architects in other parts of the country. This one, 9, is farther north on Tees-side; so is the typically uninspired council housing shown in 10; so, too, is 11, a house that it is astonishing to find dating from after the war—a grim reminder that the influence of modern ideas on the mass of British architecture is as yet negligible.



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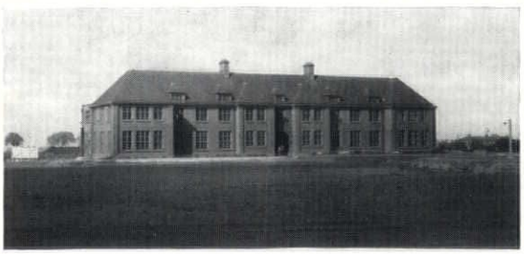

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Travelling right across England to Plymouth, one of the most heavily bombed cities, the picture we get is little more encouraging. 12 shows the fine scope of Plymouth's opportunity, but the clumsy architecture on the left is typical of the rebuilt city centre that has come out of it. The housing in 13 is fairly typical and equally depressing.



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Along the coast from Plymouth is Southampton, where flats in similar style, 14, look a little more up to date only because they have discarded the pitched roof, and where this somewhat ambitious factory building, 15, is to be found. It is typical of any number of misguided attempts to dress up what could have been rational and elegant structures. Still farther along is Portsmouth, where the United Services Officers' Club, 16, has adorned its exterior with a mixture of mock-Georgian and modernistic detail, but where the wholly modernistic, 17, is perhaps even less to be welcomed.



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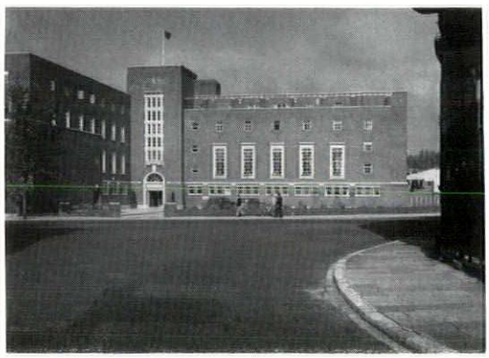

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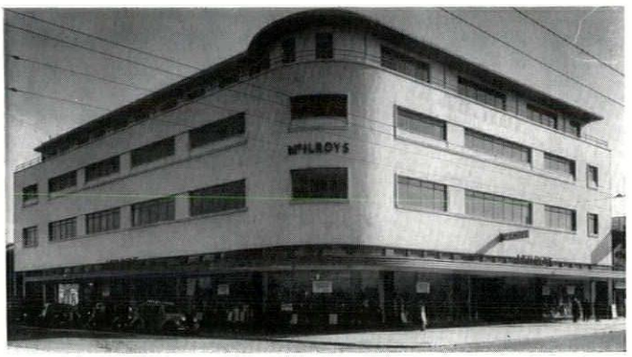

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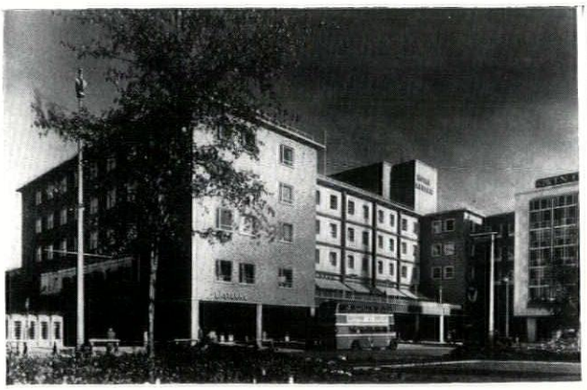
After the banalities of these coastal cities it is a relief to travel inland to Coventry, to the one bombed city in Britain where plans made after the war have not been whittled away in the interest of expediency and where, as a result of the leadership of Donald Gibson, the city architect, a contemporary spirit now prevails in the rebuilt centre, 18. But even at Coventry the reasonably good modern buildings have gone up side by side with such conventional and characterless examples as the offices in 19.



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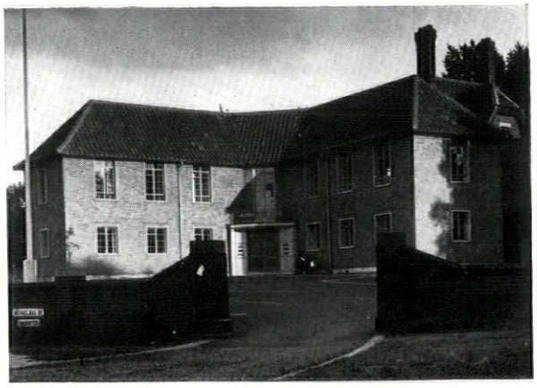

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Leaving Coventry for other war damaged cities, conventional and characterless architecture becomes again the rule rather than the exception. At Norwich, 20, we find the usual watered-down Georgian superstructures rising above crudely modernistic shop-fronts, and at Exeter, 21, Georgian again predominates in shops dressed up in the mixture of styles we became most familiar with in the 1930's. At Bristol, the modernistic seems to predominate over the neo-Georgian, both in the commercial buildings that line that beautiful city's exceptionally ugly new shop-



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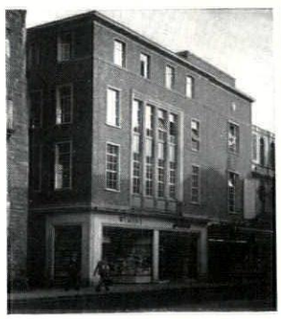

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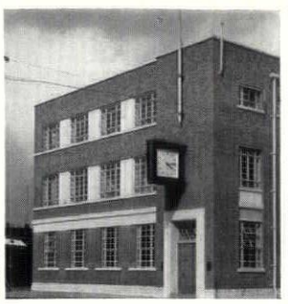
ping-streets, 22, and in many new industrial and other buildings. The shipping offices, 23, and the health centre, 24, exemplify styles of building to be found in their hundreds in every part of Britain. So, unfortunately, does 25, also in Bristol: commercial-modernistic in the shop on the left, which shows no advance except in matters of fashion from the one in the centre, which is a typical pre-war façade with a post-war shopfront.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When at last we come to London we ought to find ourselves in a place which shows some understanding of, and sets a lead in the practice of, the principles of modern architecture. Yet most of the new office buildings which have been central London's biggest contribution to post-war rebuilding are of an abysmally low standard, whether regarded from the point of view of use of site, use of modern structural techniques or architectural conception and execution. 26 and 27 are typical examples (in Rosebery Avenue and Shepherd's Bush), and lest it be thought that their poverty-stricken design results from the fact that both happen to have been built only a few years after the war, here, 28, is one only just finished: in Piccadilly of all places. In any other capital than London those responsible would surely have insisted on a standard of design worthier of so important a situation. And lest it should be thought that the vestigial classical cornices adorning this building are all that now remains of the pre-war propensity for embellishing even the least suitable buildings with the full panoply of period-revival trappings, here, 29, are the huge offices for the Farmers' Union at Hyde Park Corner, also only just finished.


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New housing has gone up everywhere in London, a little of it good, some of it passable, most of it not. This sort of thing, 30 (post-war flats at Hammersmith) should be looked at again by anyone with a tendency to become complacent on account of the admirable achievements of the LCC. 31, flats in Park Lane, is an example of a more luxurious kind. Once more, what other capital city in the world would allow so trivial a building to be designed for a vacant site in one of its most prominent and distinguished streets —or, having allowed the design, would greet the result without a murmur of protest? Finally, one of the saddening phenomena of the last two or three years has been the return of the speculative house-builder, bringing with him all his pre-war stock-in-trade of arty porches,


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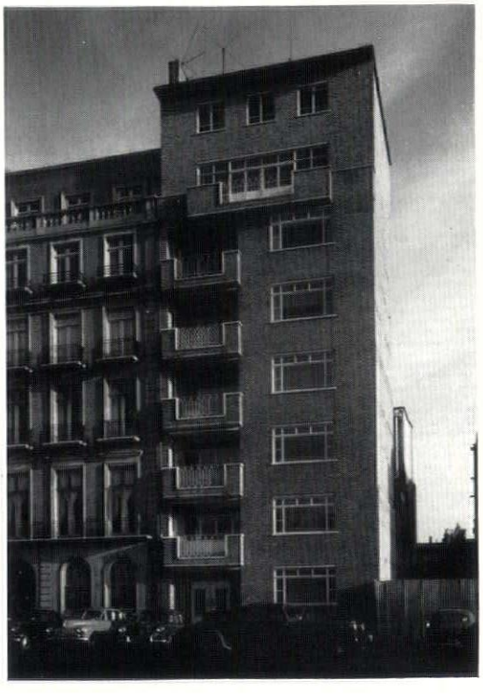
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timbered gables, restless roof-lines and angular bay-windows, as though the good work recently done by many domestic architects, private and official, had never happened. 32 and 33, both from the outskirts of London, give some idea of what is happening, but only reveal a fraction of a vast and depressing whole.



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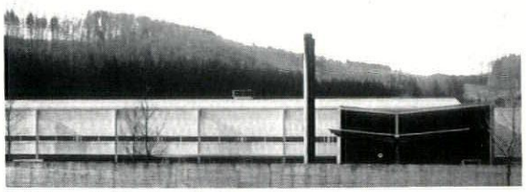
33

5. WEST GERMANY

By putting Germany last, we are able to end on a rather less dismal note. Architecturally it is a go-ahead country. There is much that is coarse and commonplace, but the intention at least is to build in the spirit of our time, beginning from the point reached when the Nazi revolution took place; there is relatively little of the pompous neo-classical style of the 1930's. *There is also very little harking back to traditional practices or, as found in Britain and France especially, failure to perceive that traditional practices are technically and functionally out of date, not simply aesthetically outmoded. The battle in Germany is not, that is to say, a battle for modernity so much as a battle for quality and imagination. It is interesting that the heaviness which is the besetting sin of modern German architecture is often allied nevertheless with the thorough exploitation of modern building techniques; although in Britain we attribute heaviness to our failure to make use of modern techniques. Commercial buildings tend, in Germany, to be more lively than public or official buildings, but there are distinguished exceptions like the opera house at Munster, A. Industrial buildings, too, set a standard probably unrivalled in Europe, B. A phenomenon difficult to account for is that the technically enterprising and aesthetically uninhibited standard of design which creates so good an impression everywhere, does not seem to apply to domestic building, where a sentimental traditionalism predominates.*

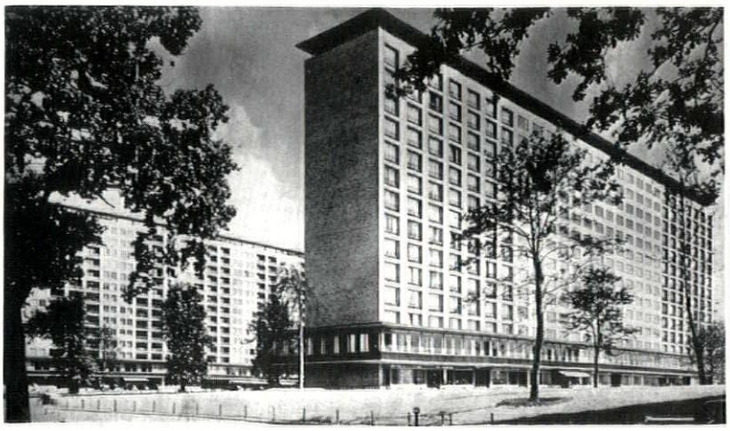


A, Munster opera house by Deilmann and others.



B, factory at Blumberg by Egon Eiermann.

Travelling through the war-devastated cities of West Germany one gets a dominating impression of a clean break with the past—everywhere from Hamburg to the upper Rhine and from Munich to the Ruhr. A high proportion of the buildings could truthfully be described as modern, even if a fair number are on the grim and forbidding side, like this monster housing scheme at Hamburg, 1. New buildings have transformed the very centre of cities like Stuttgart, 2, where the remnants of ancient monuments provide an



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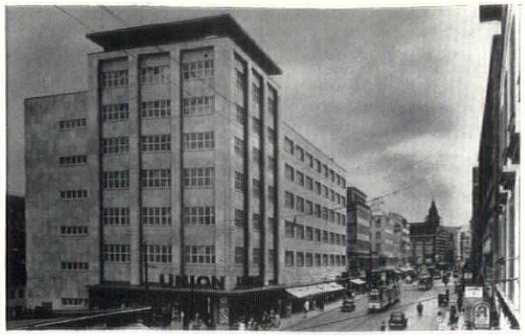
agreeable foil to smart rectilinear façades. Here, as everywhere else, the more sensitively designed modern buildings alternate with the cruder forms of modernism, 3; on the outskirts of Stuttgart, 4, we are confronted with the phenomenon referred to above: the far more traditional character of most domestic building.



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In other cities the story is the same. In Frankfurt we find a preponderance of straightforward, if somewhat routine-bound, modern commercial buildings—5 and 6 are typical—varied occasionally by buildings in which the modernism preserves a flavour of neo-classical formality, 7.



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In Munich, too, buildings with a positive modern character, 8, share the new sites with those displaying a conservative version of the same theme, 9. From Munich, too, comes this example, 10 (an electricity company's offices), of the survival, still occasionally met with, of the classical style favoured during the Nazi régime. For even in Germany the battle for modern architecture is not completely won. There are examples of the regional romantic such as 11, and even of the full-blooded period-revival, 12. Both these are in Munster and make a strange contrast to the imaginatively conceived opera house referred to and illustrated on the facing page.



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But when we get back to the big city centres inhibitions seem to fall away again. 13 and 14 are typical of the high standard of design to be seen now in the commercial quarters of Cologne, though in Cologne, too, there is a quantity of contemporary for-



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malism, 15, an occasional example of eclecticism that harks back to well before the war, 16, and an opera house, 17, that is aggressively modern but in the somewhat blundering Germanic style that turns modern architecture into a display of the gymnastics of which modern construction is capable. In Cologne, too, is this church, 18, in the home-spun style that shows, albeit clumsily, the continuing influence of the arts-and-crafts movement.

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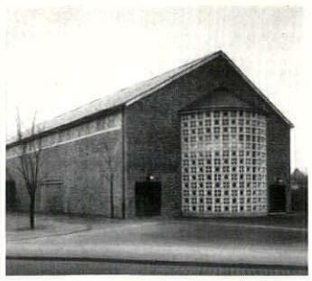

Hanover has, perhaps, the highest average standard of all: the real distinction of 19 and 20 is by no means exceptional and there is a relatively small amount of building as commonplace as 21. Even 22, in spite of a certain crudity, suggests a firm intention that the new Hanover should be not only contemporary but coherent. Only in some of the new housing at Hanover, 23, are we reminded of the west German propensity for a cosier, more sentimental, approach when it comes to domestic architecture. There are also, as there are all over Germany, examples of this style, 24, a typical production of many official architects' offices, which remains basically traditional while presenting a smoothly modernized face. This is a school.

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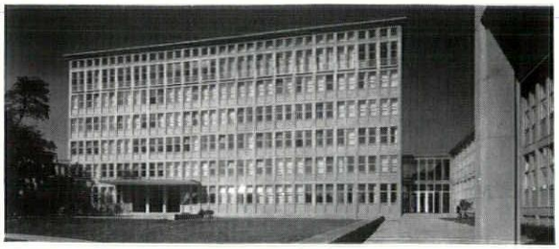
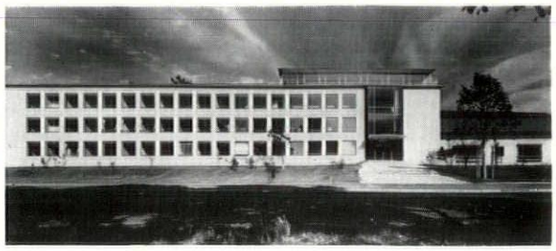

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25 is another type of school, at Wurzburg, in which the traditionalism is more pronounced, with a more romantic regional flavour. Neither of these schools suggests an urge to meet the challenge of new ideas, nor does the cautious conservatism of this Government housing at Bonn, 26. And there are many examples of the kinds of monumentally inelegant industrial work such as Germany produced in great quantities before the war—witness the vast new Opel factory at Russelsheim, 27. But, typical as these are in many ways, none of them suggest the boldness and vitality that are the dominating characteristic of post-war German architecture as a whole. This is best shown by the quantity of passable modern building that goes up almost unnoticed in every West German town. These three examples (from Oldenburg, 28, Essen, 29, and Kiel, 30) have been chosen almost at random from a hundred times as many.

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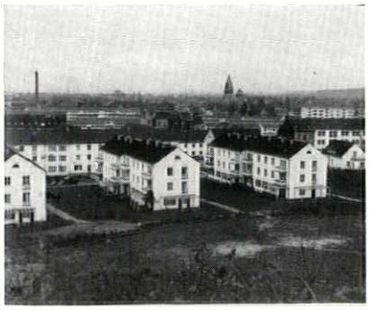
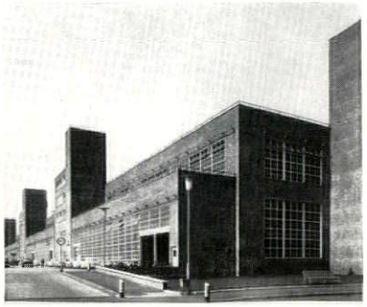



28
29
30






Robert Melville

GILES

Carl Giles is probably the most popular English comic artist of our time, and is certainly one of the few distinguished draughtsmen to be found in the massed ranks of 'funny men' working for the big-circulation newspapers. The circulation of *The Daily Express* and *The Sunday Express*, which ensures for his work a day-to-day audience of several million men, women and children, does not in itself signify great popularity, but the fact that the album devoted year by year to a selection from his *Express* cartoons is printed in a limited edition of half a million copies and is unobtainable a few weeks after publication provides massive evidence of his general appeal.

Broadly based popularity of the kind enjoyed by Giles imposes its own peculiar responsibilities and restrictions, and although vast areas of human behaviour and experience are strictly excluded from his terms of reference, the secret of his pre-eminence as a newspaper comic is to be found, I think, in the superbly effective way in which his graphic exuberance creates the illusion of an almost reckless freedom of comment.

He could not be called a scintillating wit, and even his sense of humour is not very highly developed. He is content for the most part to exploit the unsophisticated, knockabout humour of *Comic Cuts*, and to extend its range by taking a slapstick view of contemporary topics and events. The stable element in his work is its gleeful exaggeration; it by-passes the weak captions, hackneyed jokes and stock characters that frequently but not at all disastrously take the sharpness out of the ostensible point of his cartoons, and leads a life of its own.

Even when the joke in the caption is a good one, the drawing does not confine itself to illustrating the point, and a cartoon about the recent gangster trials provides an excellent example of the way his sense of fun 'exceeds necessity.' Two judges are standing in the central hall of the law courts, and one says to the other, 'Nicked my kisser with my slasher whilst shaving this morning.' The drawing of the two judges very pleasantly and adequately illustrates the caption, but these figures occupy only $2\frac{1}{2}$ inches of a cartoon which spreads across the entire width of a page of *The Sunday Express*, and the rest of the space is occupied by irrelevant 'business.' Without making a catalogue of these comic goings on, mention may be made of the barrister who is studying a Soho-English dictionary, a gangster witness who has playfully flicked his jack-knife at another barrister

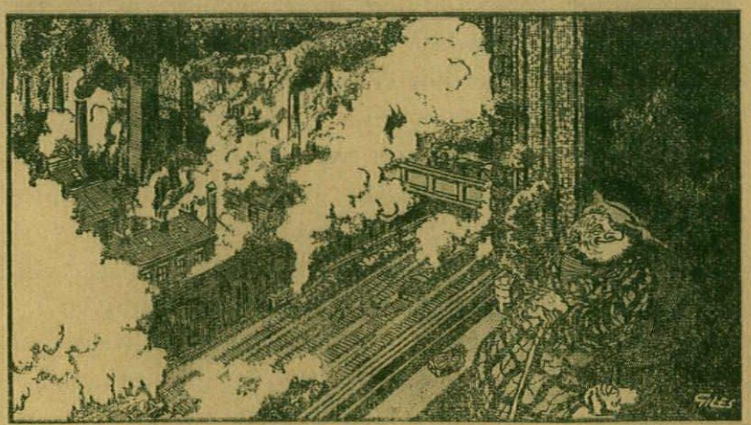
and pinned his gown to the floor, a second disreputable witness who has tied a strop to the sword of the statue of Justice and is freshening up his razor, and posters on the walls of building on the other side of the street which advertise sticking-plaster, and detergents suitable for removing blood-stains from shirts, or bear such captions as 'Read Jack Spot's life story by Billy Hill.' Even under the gothic lettering of 'Court 3' there is a tiny notice that can be read if one's eye-sight is good enough: 'Ye passing of betting slips is forbidden,' it says. So although the point of the cartoon is made instantaneously, a considerable time can be spent upon an examination of the by-play. But this is an example of Giles at his best, and the value of the by-play is even more apparent when the joke is weak. For instance, as a comment on the visit of Russian statesmen, the remark of the village wiseacre who is one of Giles's stock characters —'Malik, Malenkov, Serov, Krushchev, Bulganin—if them Russians was to declare war today there'd be half of 'em over here already'—doesn't strike me as being very funny, but Giles proceeds to dot the i's and cross the t's of this Russian 'invasion' in a most absurd fashion. Two yokels greet each other with the clenched fist, a Russian air-liner flashes past the Norman tower of the village church, a child with hair standing on end has just taken a sip from his father's bottle of vodka, an itinerant musician plays 'I wore a red, red rose' on a tin whistle, and so on and so forth. The by-play is scarcely funnier than the caption, but there is something peculiarly endearing about the trouble he takes with these little goings-on in order to keep one's attention, and by the time one has winkled out every absurd and minute detail one is not exactly in a position to sit in judgment. One may not have been amused, but one has certainly been entertained.

Lord Beaverbrook has called Giles's humour 'sardonic,' but there is nothing of the social reformer or axe-grinder in Giles to give his humour a provoking or angry edge, and there is little sign of bitterness or mockery in his work. On the rare occasions when he tries his hand at being scornful he is careful to blaze away at some outrage which is always with us and for which no one ever has any feeling of personal responsibility, as in his cartoon against litter-bugs, where he depicts a couple of pigs in a neat enclosure looking out at a landscape strewn with refuse, and one pig is remarking to the other: 'Yet it's us they tag "dirty"!' In such attempts at social criticism his gleeful exaggeration becomes incongruous, and in this particular instance his smirking pigs undermine what may well have been genuine indignation, and remind one rather too effectively of the communo-fascist pigs in Orwell's 'Animal Farm.'

The American servicemen's paper, *Stars and Stripes*, pays Giles the compliment of calling him 'Britain's best cartoonist since World War II,' but when it declares that he has created 'more subtle humour at the expense of American servicemen than any other cartoonist who was not born, bred and drafted in the USA,' it surely means not 'subtle' but 'rollicking' or 'uproarious.' Some of his cartoons of American servicemen in England are very funny indeed, but I would have said that subtlety is a quality that he takes some trouble to avoid.

He is obviously appreciative of other and more sophisticated kinds of humour, and sometimes refers to them in his own clear-cut, simplified, de-sophisticated way. The young woman named Vera who appears in many of his family cartoons—she wears glasses, and feels that 'somebody or something' has taken the poetry out of her life—is not so much a character from life as a broad, kindly skit on the subjective ambiguities of the humour that arises from the study of Freudian man. From time to time he also acknowledges the more sadistic aspects of contemporary humour in some of the cartoons devoted to the escapades of his gangs of goblin-like children, but without ever disclosing a streak of morbidity.

Someone—I don't know who, but he is quoted by Mrs. Giles, the artist's wife, in her introduction to one of his albums—has pertinently remarked that Giles



"Why do you always have to be awkward, Grandpa—telling that smog inspector that you're 97, lived here all your life and love it?" a

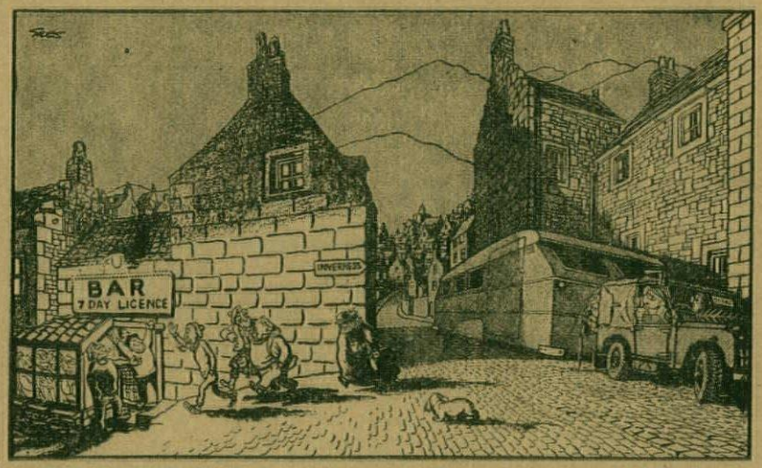
'draws real buildings, real pubs, real railway stations,' and I was sharply reminded of the fact by one of his less amusing cartoons, on smoke-abatement, which nevertheless provided an excuse for a splendidly dramatic aerial view of trains and factories, a.

This brings us to an aspect of the fascination of his cartoons which seems to owe nothing to his sense of

the comic, although it is arguable that the authenticity of his settings sharpens the impertinence of the comic by-play: the lovingly observed 'monastic gothic' of the law courts in the 'Nicked my kisser with a slasher' cartoon may be considered a case in point.

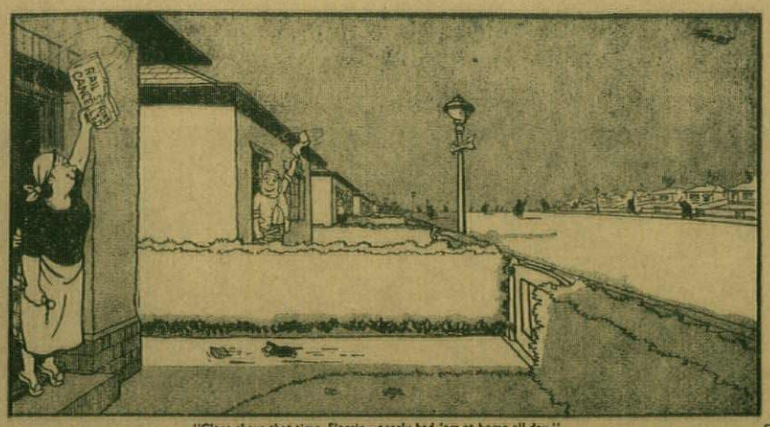
It is odd that he never caricatures a building. A good many of his architectural settings appear to derive from the area of Suffolk around Ipswich in which he has made his home, and the old houses and steep streets that provide some of his happiest backgrounds would lend themselves to a treatment as quaveringly comic as his village wiseacre or Emmet's vintage locomotives, but he evidently feels no temptation to tamper with them. He has the same serious attitude towards machines of all kinds, and it is as if he were intent on telling us, affably and unpretentiously, that man is less noble than his works.

Be that as it may, he has a flair for seizing the spirit of a neighbourhood. He can re-create equally well the wind-swept, rain-washed look of a small Scottish town, b, or the bleak neatness of a housing estate, c,



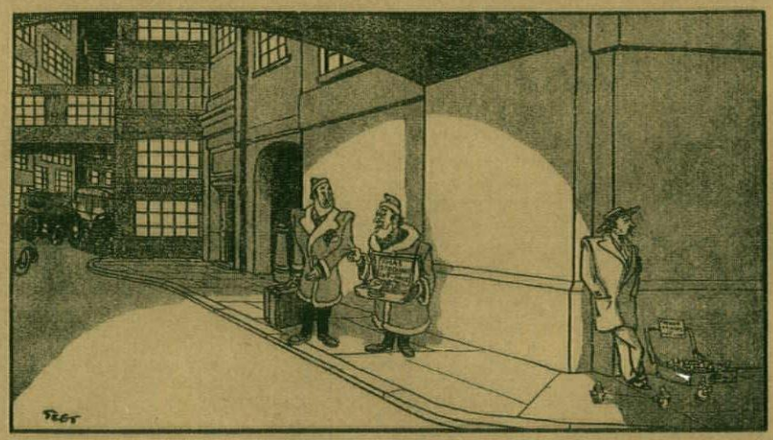
b "What have we stopped to celebrate this time—the Battle of Bannockburn or Battle of Britain Week?"

and has a particularly sharp eye for the juxtapositions that arise from piecemeal change, whether it



"Close shave that time, Florrie—nearly had 'em at home all day." c

be a matter of suburban gardens, or the glass and concrete invasion of Dickensian London, d. In fact, his cartoons seem to have incorporated the functions of topographical draughtsmanship, and if one compares his settings with the last polite remnants of the

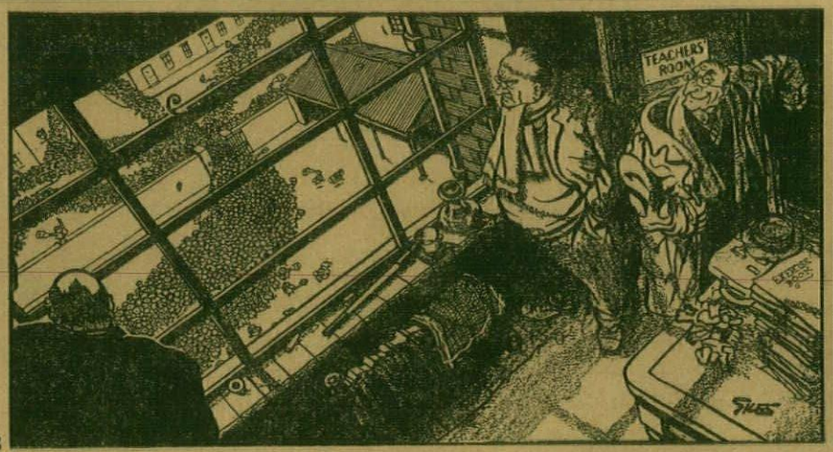


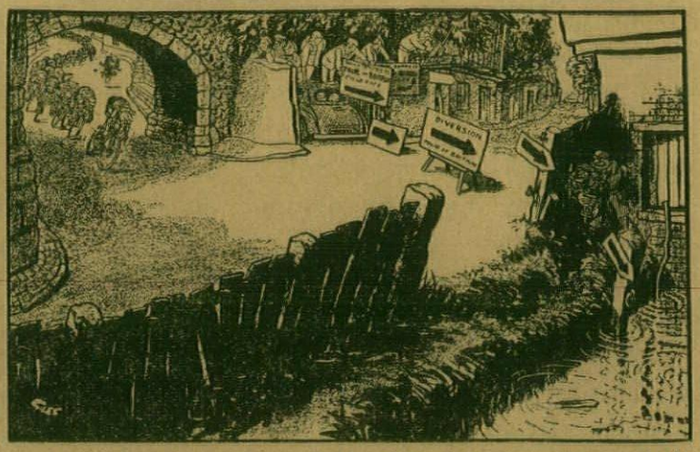
"Nice piece of suiting, Sidney—very nice." d

topographical tradition still sometimes to be seen in the nicer Sunday papers when a famous building or precinct is about to be demolished, one cannot but acclaim his gift for capturing the ineffable overtones of lived-in places in bold and inimitably simple generalizations.

Giles as observer of architecture, townscape and space is completely at one with Giles the creator of humour. His roving, anti-classical eye scans the wide scene, recording details that are comic, true, significant, typical, and drawing the viewer's eye deep into the multifocal worlds-within-worlds of his pictorial imagination. This serial vision of objects in space is popular and sophisticated, in the best senses of both words, and picturesque, in the best original sense

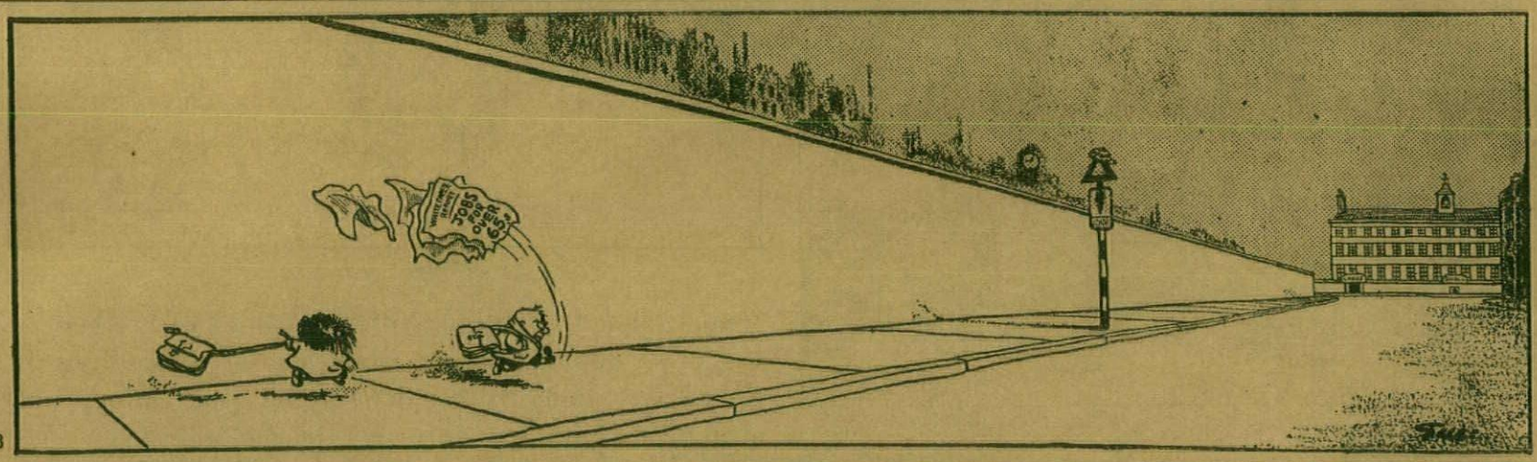
of that much-abused word; it is a vision that is well suited to the appreciation of townscape, to the enjoyment of Arcadia, and the recording of the horrors of Subtopia.





1, 2

giles with the roving eye In so far as the broad public, for whom Giles's humour is intended, are aware of sources or influences, the only one they are likely to notice is the cinema—the over-wide format, the occasional nose-dive perspective from a high window, 1, the use of a roving, scanning eye. But the chances are that Giles and Hollywood have this turn of eye independently from a common source, the general tradition of anti-classical landscape painting that threads back through the popular post-card picturesque, Romantic painting and the Picturesque proper, to Mannerist Landscape of the Dutch and Italian schools. His use of a steep drop from a forescene straight to a distance without middle ground (see 10 and 13, below) shows him tapping this tradition somewhere near Turner; his many worlds in one, and his use of narrow visual exits near the edge of the picture-space, to lure the eye away from a busy foreground, 2, takes us back at least to Saenredam and the problems discussed by Roger Hinks in *Peepshow and Roving Eye* (AR, September, 1955.) (1: *'Of course, boys and girls of intelligence learn infinitely more by rubbing shoulders with their playmates than they can possibly absorb in the classroom.'* 2: *'Several motorists . . . used the Daily Express Tour of Britain as an opportunity to strike at their enemy, the cyclists.' Giles points out 'I am a cyclist—that's me cutting the corner on a trade bicycle.'*)



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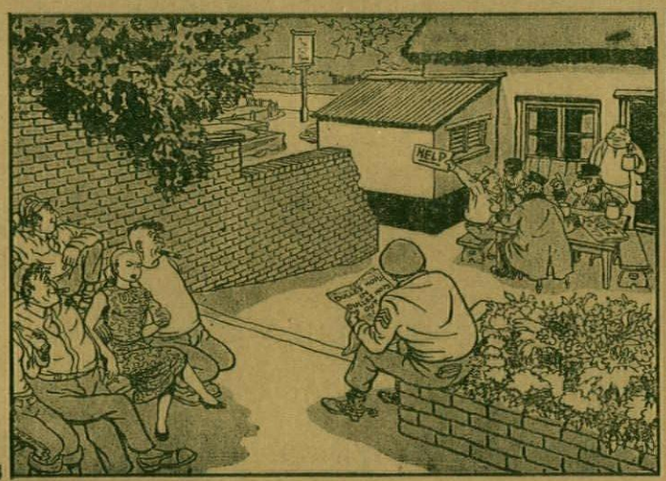
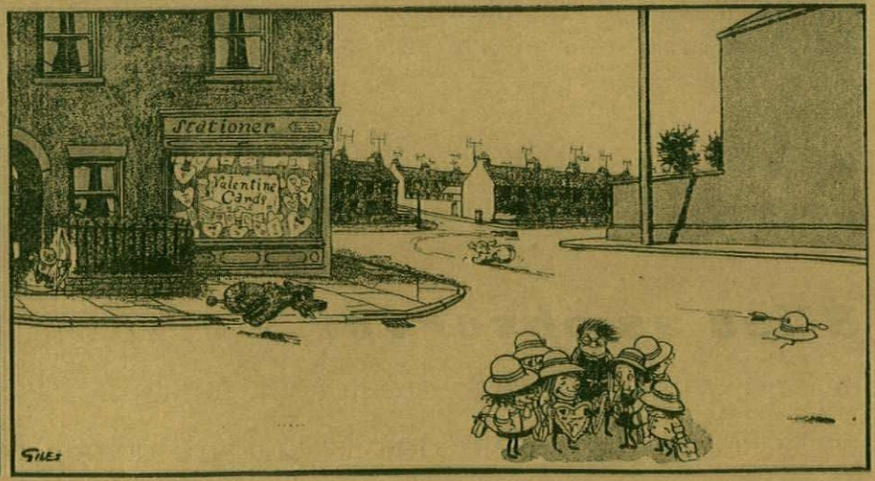




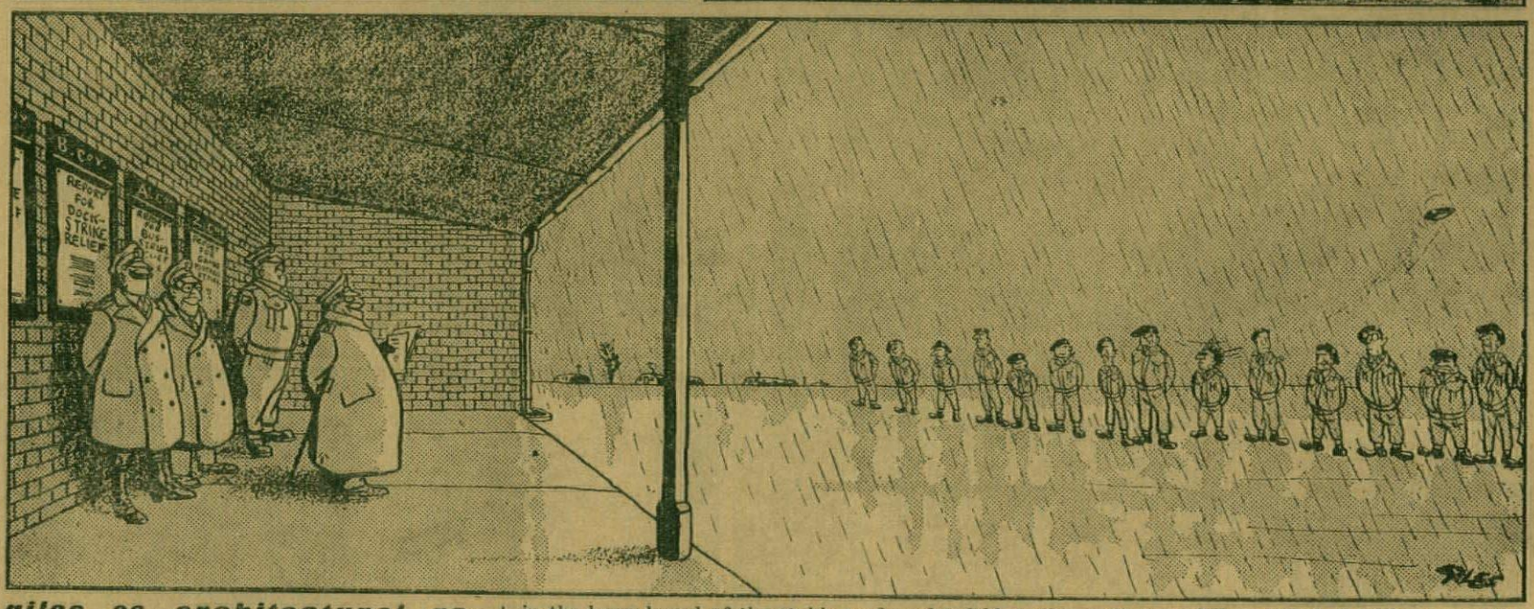
4, 5

giles as space-maker Giles's world has no backgrounds—only in an occasional interior is there an enclosed picture box—it has back-spaces instead. Into these spaces the eye is either bullied by the obvious perspective compulsion of a long fence or wall tapering from the edge of the picture towards a vanishing point it often almost reaches, 3, or more subtly cajoled and seduced to follow a devious route, often three-dimensional in character, 4, in which vital links may be no more than suggested, as at the point where the path, turning across the back of the outhouse, is temporarily hidden by the broken end of the wall. It is to be noted that this type of space in Giles is friendly and humane, whereas

that of the long wall is rarely so, while the use of pure space, abstract space, is with him always hostile, and isolates man from environment, seeker from object, promise from performance, 5, rather than a mere rehearsal of themes from Dali. (3: '*By the time we're a 'undred some bright client 'll decide we're not too old to go back to school.*' 4 [detail]: '*Help.*' 5: '*Cupid is a knavish lad—Thus to make poor females mad.*' [*Shakespeare*].)

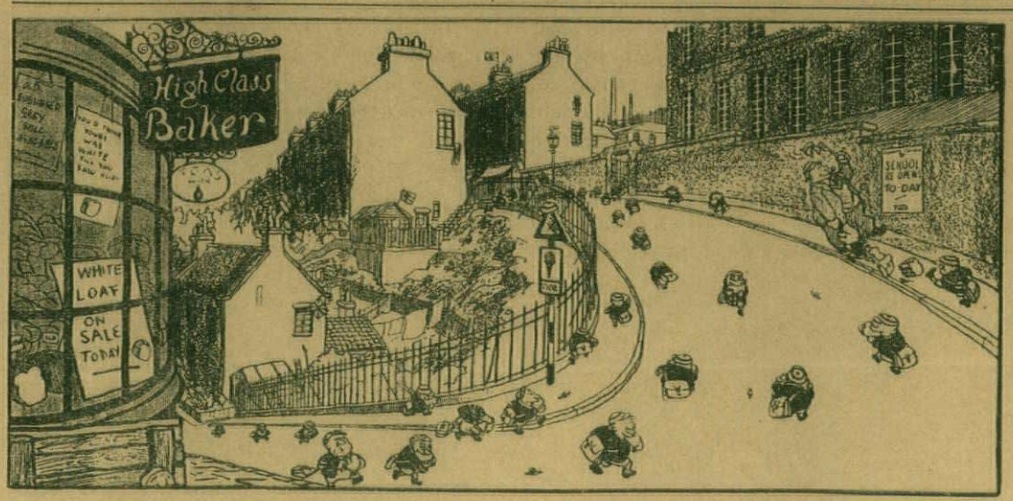


6,7



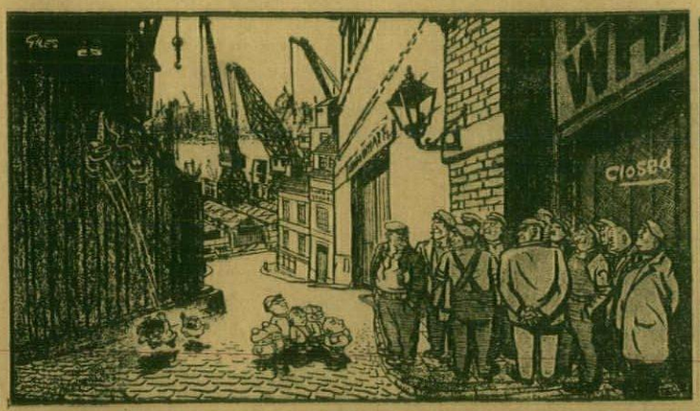
8

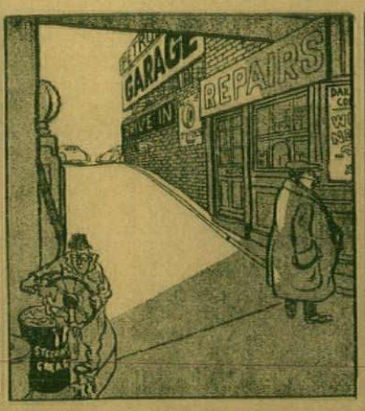
giles as architectural recorder Giles is less an architectural draughtsman than the passing recorder of architectural fact. Sometimes this is no more than the accurate recording of a particular building, for the sake of a sort of souvenir-card authentification of place, but more often it deals with what might be called the Constituent Facts of architecture, such as the nature of a certain kind of inn-yard in the country, identified accurately by the scarff-joint in the barge-board of the stable roof, and a fold of wall that must be the entrance to the urinal, 6. Or it may be another class, of constituent facts, such as the giant scale, the expressionist drama of the backsides of current building types like football stadia, 7. Or beyond this again, his ability to seize and express what might be termed the One Ultimate Fact About All Architecture, the difference between belonging inside, in shelter, and being left outside in the unfriendly elements and the endless undifferentiated, hostile space, 8—another aspect of abstract space isolating man from his most basic needs—which appears here in the most chilling aspect that Giles has ever given it. (6: [detail]: '*Boy Tom and Boy Dick be discussing Berlin Peace Conference.*' 7: '*Isn't he supposed to be at the Lord Mayor's banquet?*' 8: '*Now with reference to this railway strike—I suppose all of us at some time or other have wanted to be an engine driver. . . .*')



9

giles in the townscape The humane quality of Giles's richly devious routes through deep space has already been noted; it reveals the mind of a natural Townscaper. Almost inevitably, Gilestown is an aggressively split-level place, with roads angling around impossible corners that make drama out of the dullest buildings, 9. It is stuffed with the ornaments and impedimenta of the streets and pavement, full of surprise and incongruity—not only of the close-up kind, but also of the remote and irrelevantly poetical kind, as where a distant dome serenely focuses the deep space of a close and squalid foreground, 10. On the other hand, he is fully conscious of the effect of an enforcedly close horizon, over which the eye is lured without any certainty as to what lies beyond, 11—except the

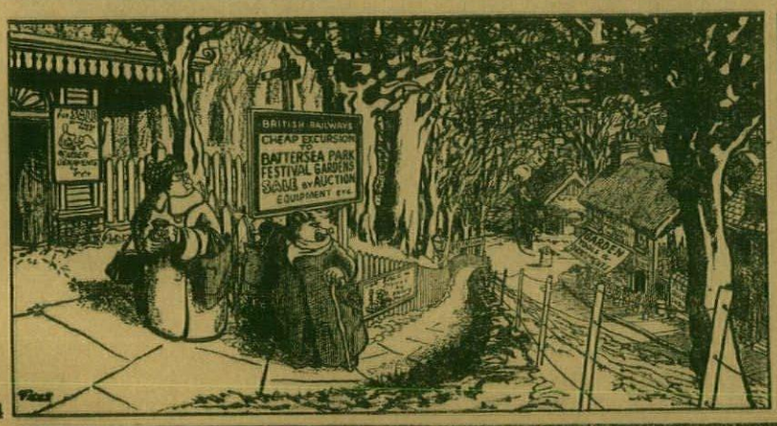


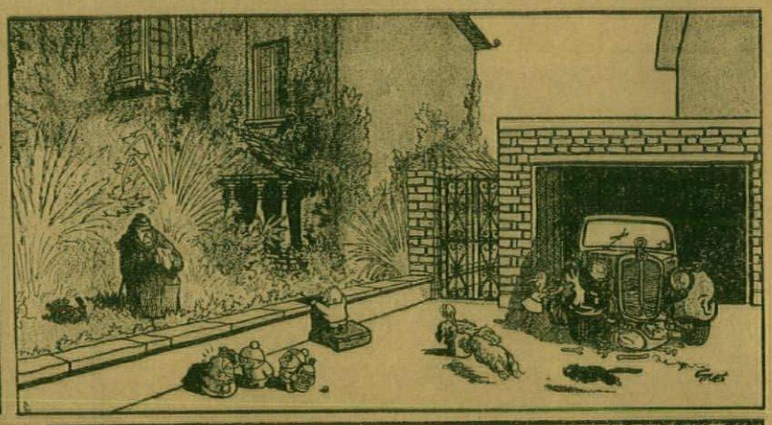




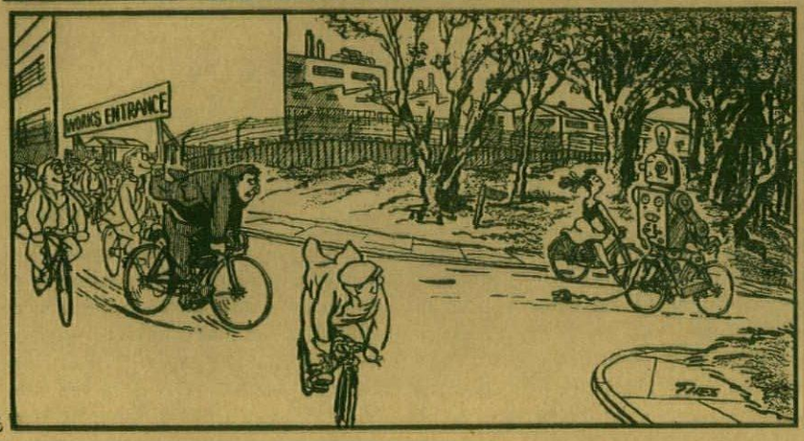
10, 11, 12

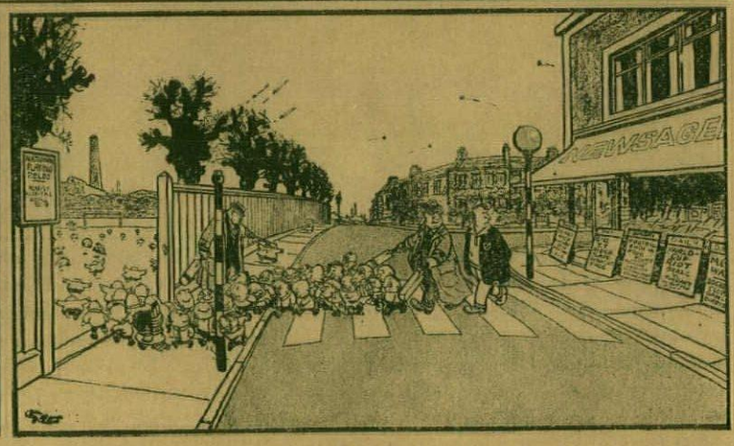
certainty of surprise and revelation. The Good Places in Gilestown show his understanding of the raw material of townscape epitomized in 12, with its changes of level, its rich floorscape of cobbles, steps, gutters, trap-doors, its public spaces on a human scale; its well-framed views of interior and exterior spaces, its intimations of a pedestrian network, and its lively immediacy in presentation of man to environment. (10: '*Cargo of crime comics from the States in Dock A. . . . Can we break strike and unload, please?*' 12: '*Watch your step, fellows —the natives seem restless tonight.*')





13, 14





15, 16

giles in subtopia The Townscape Eye gives Giles the necessary qualifications to chronicle with accuracy—if a cynical accuracy—the descent of the arcadian ideal into Subtopia. His Arcadia is drawn from its true suburban prototypes on the southern and far-western fringes of London. Steep paths drop from hillside churches and embankment-side stations to areas of boskage, arty thatching and crafty barge-boarding, 13. Ruskinian detailing and hardy exotic plants abound; the wrought-iron gates are still in position, the stone balls are still on top of the gateposts. The degrees of degradation from here to squalor are noted with care—even the precise point along the road where lush Arcadia ends, and cut-price Subtopia begins, 14, or the equally precise point where the bits of Arcadia or open country that are left become Subtopia simply by being left, 15. And, finally, there is ultimate and consistent Subtopia, with its grim perspectives, its murdered trees, its beheaded road-signs, its littered 'open spaces' overshadowed by the messy backsides of industry, 16. The man who knows his Giles—and that means a very large slice of the community—knows already what is right and what is wrong with the face of England, possesses already an educated eye. The problem is to persuade him to see these rights and wrongs as the product of human decisions and abdications, and then to act on what he sees. (13: '*You'll get nothing up there that I ain't got in my shop, Bert 'Iggins.*' 14: '*My dad says they ought to send you out to the Bahamas on these germ-warfare tests, Mr. Smiff.*' 15 [detail]: '*Doing me out of overtime's one thing—riding home with me Popsy's another.*' 16: '*Lot of good us trying to teach children that sport's the thing.*')

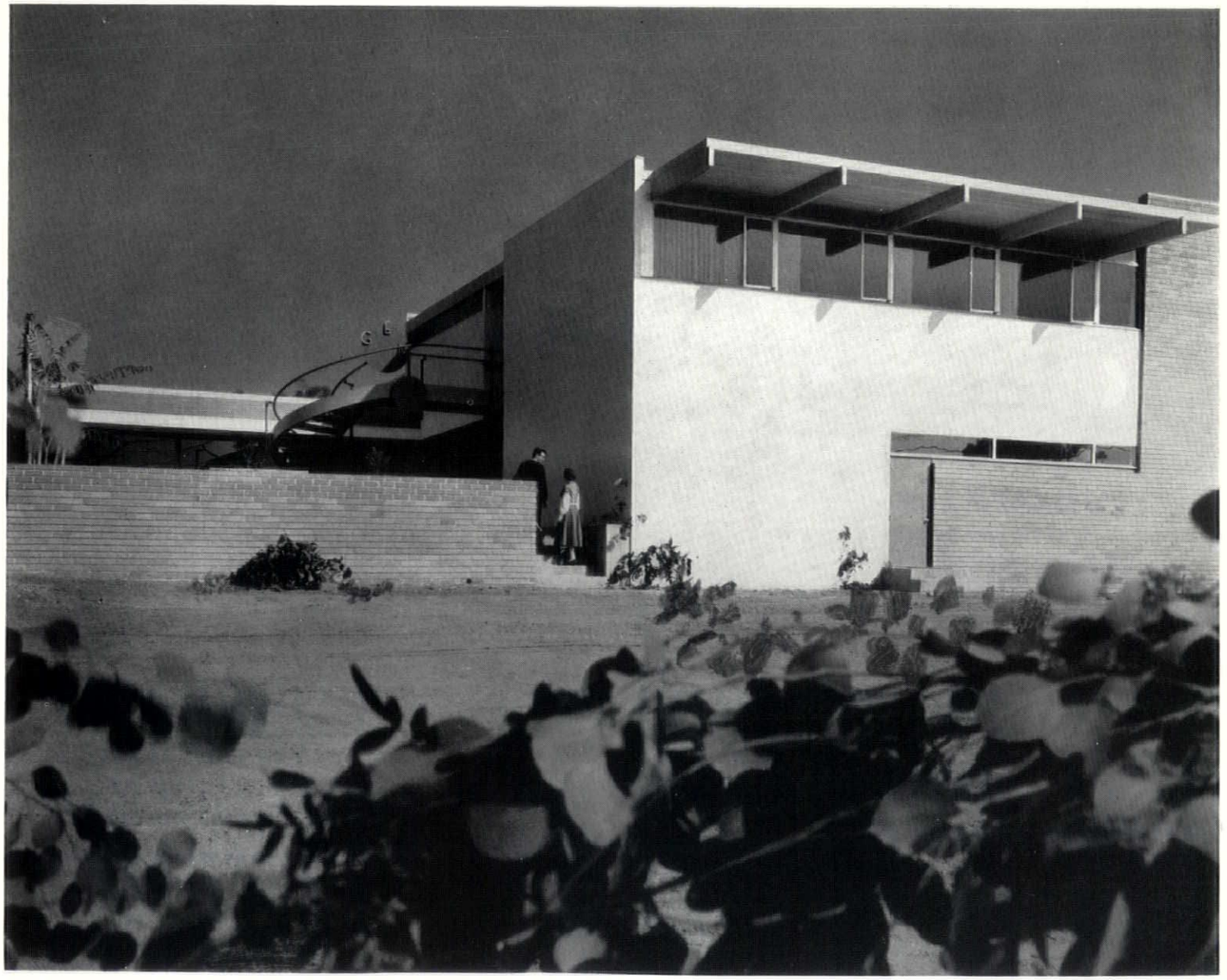
GEMOLOGICAL INSTITUTE IN CALIFORNIA

ARCHITECT | **RICHARD J. NEUTRA**

This is a non-profit-making educational and research centre for American and Canadian jewellers, providing training—both on the spot and by correspondence courses—in identification and valuation of gems and also a gem-testing laboratory service. The site, at Brentwood, is about forty miles east of San Francisco near the Sacramento river: it is on the south side of San Vicente boulevard—the frontage provides rental space for two 24 ft. by 48 ft. shops. The general office and storage rooms are on the ground floor, and the laboratories, classrooms and administrative offices are on the first floor ; the classrooms can be thrown together to form a lecture hall. A

[*continued on page* **185**

1, rear elevation and parking ; the patio is behind the brick wall on left.



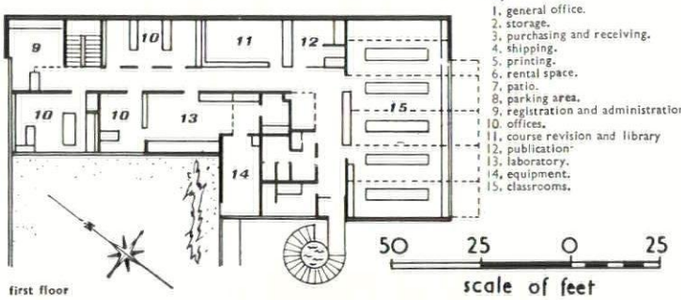


2

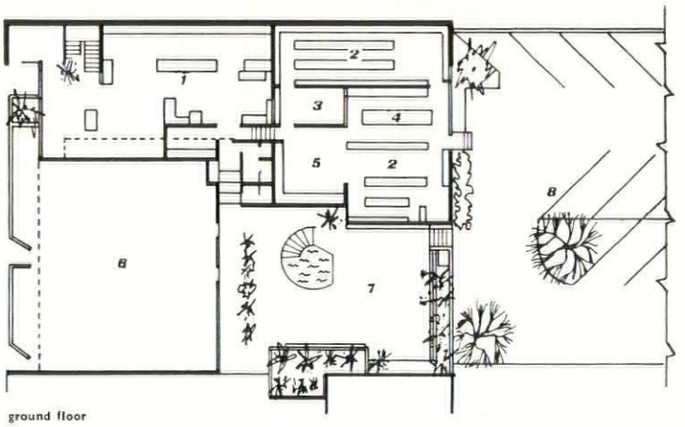


3

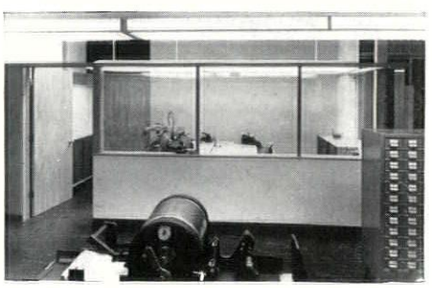
key
1. general office.
2. storage.
3. purchasing and receiving.
4. shipping.
5. printing.
6. rental space.
7. patio.
8. parking area.
9. registration and administration.
10. offices.
11. course revision and library
12. publication
13. laboratory.
14. equipment.
15. classrooms.



first floor



ground floor



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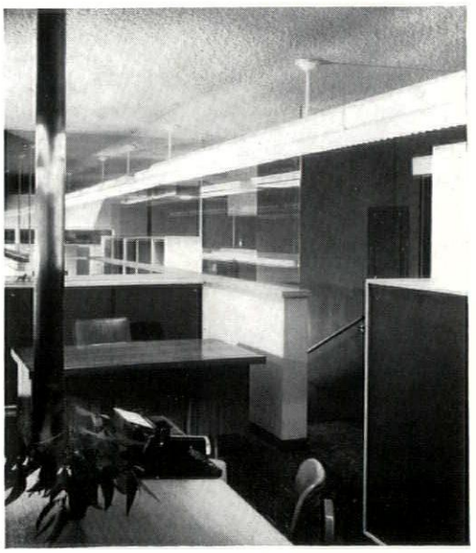


5

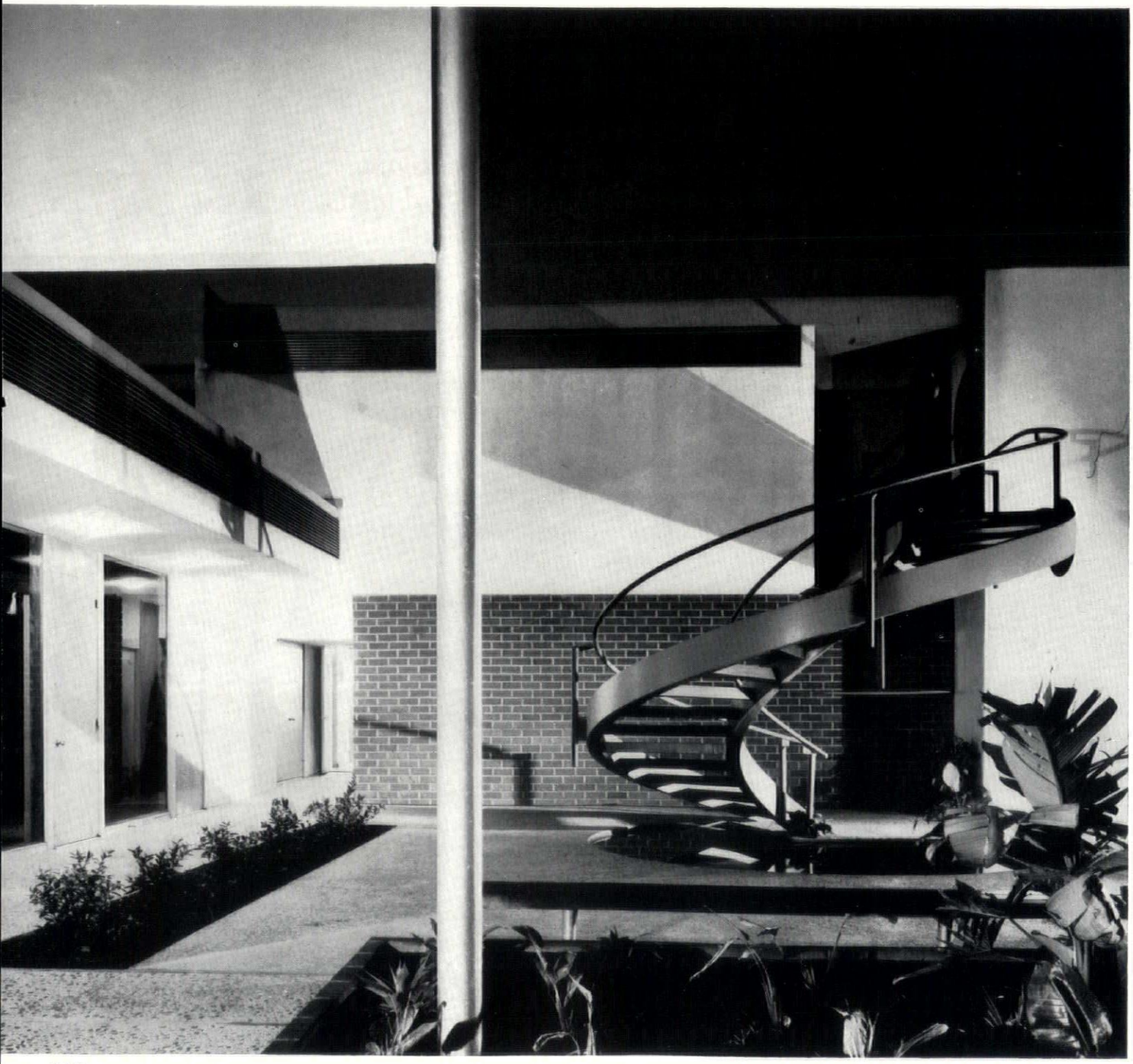
continued from page 183]

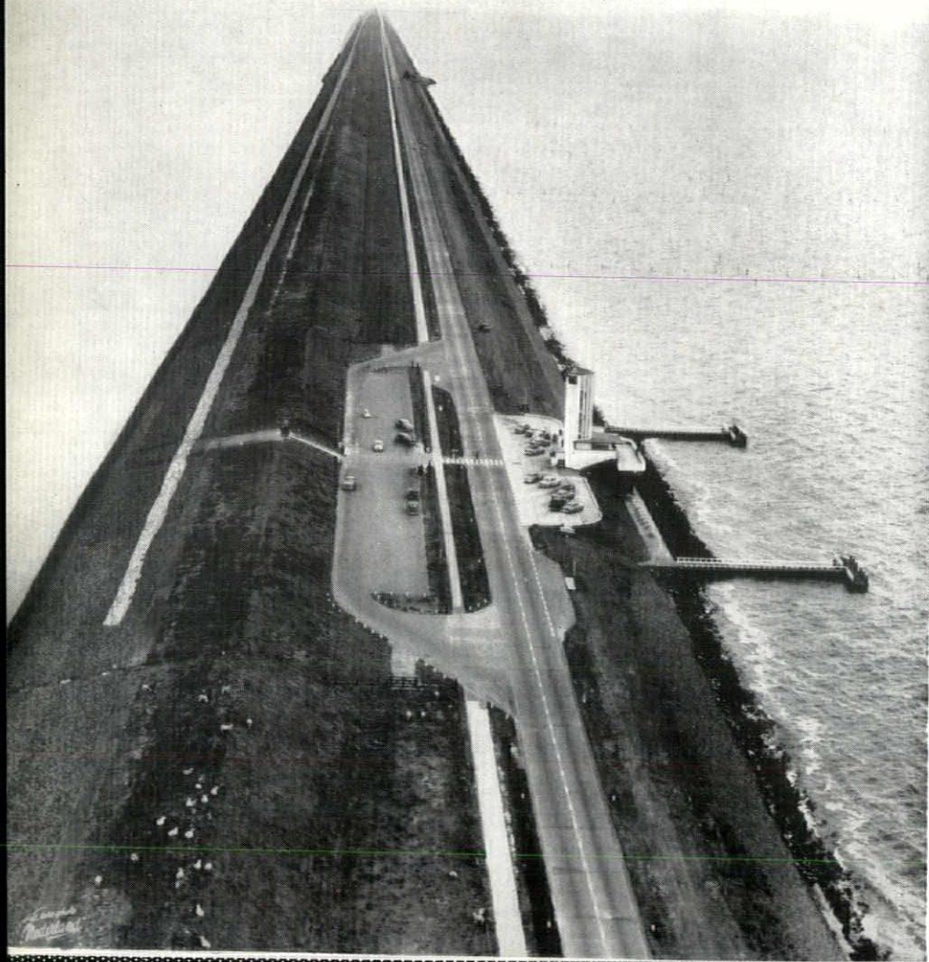
pebble-faced concrete patio faces the rear entry parking lot and will connect with the patio in the adjoining office building ; from it a self-supporting spiral staircase forms the main entrance for visitors: it turns 270° and is reflected in a small pool in the patio itself. The building is steel framed with wood stud bearing walls ; the foundations include 40-ft. r.c. columns, as the site consisted of loosely filled earth. The entrance has a concrete floor with a visible aggregate of semi-precious stones ; this treatment was also used on the heads of the spiral staircase, which is made up of steel box sections tied together with open pans of steel into which the concrete treads were poured.

The collaborators on the design were Benno Fischer, Serge Koschin, John Blanton, Perry Neuschatz and Gunnar Serneblad.

2, street frontage ; institute entrance on left, shop rental space centre and right.
3, spiral staircase inside patio, winding up over a pool to form main entrance from the car park.
4, one of the instructors' offices on the first floor.
5, looking from the general offices to the shipping department at the back of the building.
6, patio and staircase from the west.

6





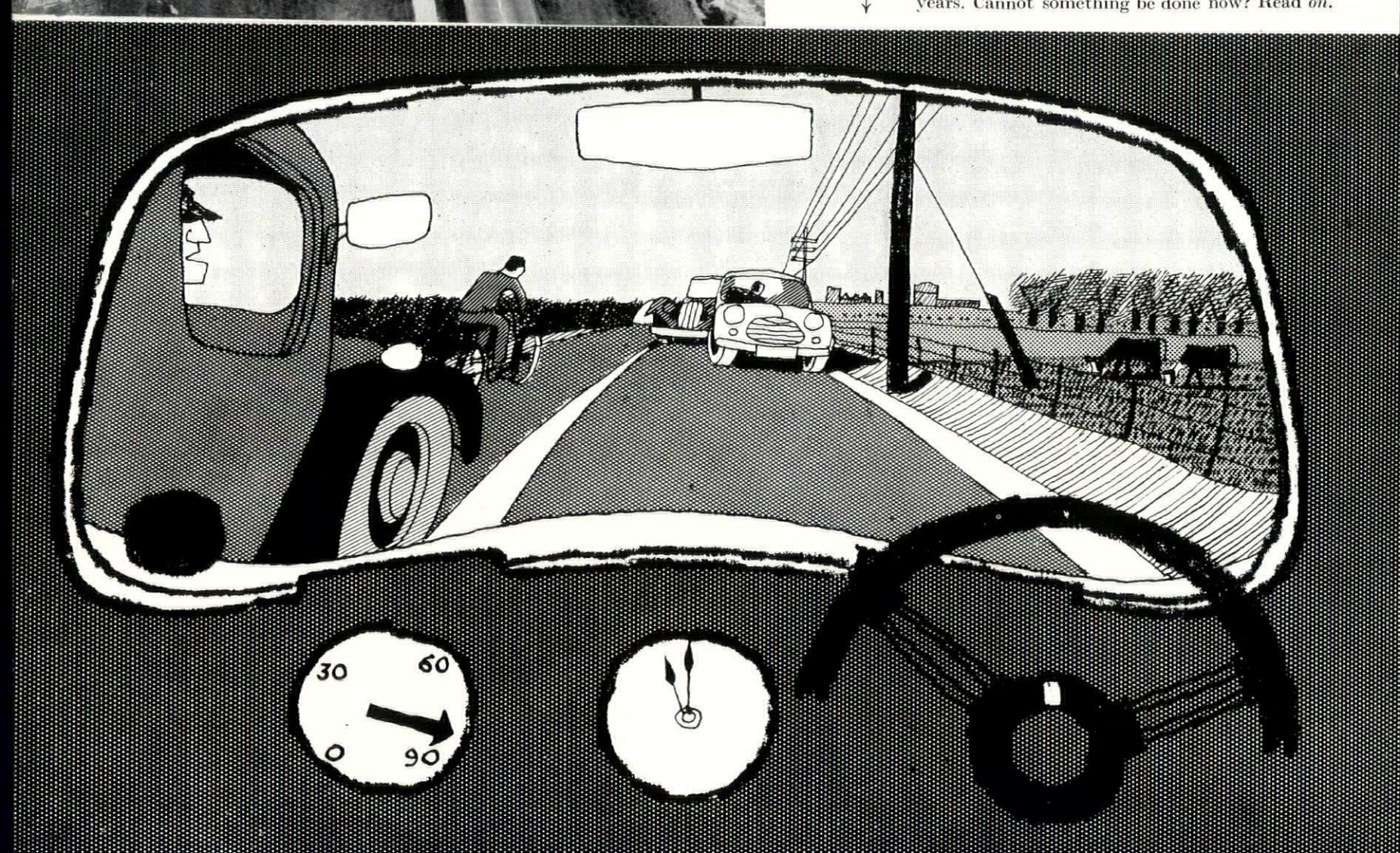


frustration ↑ ←

ideal road

danger ↓

Occasionally experienced, the ideal road like this dyke over the IJsselmeer is the motorist's dream. Sixty miles in sixty minutes or less. The taut, balanced machine we sit in can do it easily. What we get, in fact, is frustration; a crocodile of ill-assorted vehicles negotiating bends and undulations at 20 m.p.h. This results in frayed nerves for the majority and actual danger in impetuous risk-taking. The easy answer is to rebuild the road system but this may take 50 years. Cannot something be done now? Read *on*.



Gordon Cullen
and
Michael Regan

SWITCH ON

A PLEA FOR A ROAD POLICY THAT SUBSTITUTES FOR PIPE-DREAMS OF CLOVER-LEAVES AND AUTOBAHNEN PRACTICAL MODIFICATIONS THAT CAN BE REALIZED NOW ON EXISTING ROADS TO MAKE MOTORING SAFER AND LESS FRUSTRATING.

THE IDEAL ROAD SYSTEM

What is the predominant mental experience of the motorist as he journeys on the roads of Britain today? The answer is irritation. Irritation and frustration. And after irritation comes the dream, the dream of what could be. Once you open these magic casements a whole new world lies before you. You savour the tang of that unfolded, wide ribbon of road sweeping imperiously to the horizon. In that mood you start to plan your ideal road system; the frustrations of cross roads and traffic lights are smoothed away in clover-leaf crossings, contours are laughed at as the vital ribbon stretches serenely and indifferently over the slender, sinewy viaduct and cuts through the whale-backed hills. You sweep past towns on by-passes, you cruise at 100 m.p.h. down autobahnen and autostrade. There is one snag to the thing and only one—it is a dream. We shall be dead before these roads are built.

ECONOMIC REALITY

In the last ten years the number of vehicles registered has more than doubled (from less than three million in 1946 to more than six million in 1955). It is predicted that in the next 25 years the number will be doubled yet again. The Ministry of Transport has already instructed all highway authorities to base their plans for road works on the assumption that future traffic will be some 75 per cent. above that of 1954. But we know that even if, in the near future, we could afford to build one or two ideal highways we can't seriously expect to discard the network of roads that represents 90 per cent. of mileage in the country.

FRUSTRATION, THE CURSE OF DRIVING

The first sensible thought is that the curse of driving is not inability to do 100 m.p.h. but frustration. How does this frustration arise? Most drivers would agree that however tortuous the road the driver is at peace with himself *providing* he can use the road at his own speed. The source of irritations and frustration is not the existing road system as such; it is the traffic on it. Cars are becoming faster and more powerful each year but cruising speeds are dictated by hold-ups far more than by the cars' capabilities, and the very fact that a driver has to drive at a speed far below that of which his car is capable is psychologically a factor making for accidents. The only thing which to some extent saves the situation is that British drivers are the best mannered in the world, the most careful and probably the most all-round efficient. We speak of accident figures as if they were the result of a criminal class of drivers, but if drivers were not on the whole almost miraculously clever and careful these figures could be quadrupled.

The vast majority of road accidents are the consequence of driver's neurosis built

DRIVER'S NEUROSIS

up during years of driving by a sense of frustration. It is particularly evident on crowded roads and in the urban street. Overtaking on bends and brows of hills, shooting traffic lights and the general urge to hurry—all these are the consequence of endless hold-ups. Even the urge to overtake your enemy in the next car and not to let him overtake you is enormously increased by a lifetime of stopping and starting and being outwitted by others suffering from the same psychological disease. Frustration leads drivers to drive dangerously out of pique, lateness, exasperation, nerves or exhaustion.

Of course the road system with its lack of laybyes, its undulations, corners and crossings is the cause, the infuriating cause of hold-ups, but there is a distinction to be made and it is a vital distinction. Since we have to assume that a short-term solution to the road problem involves retaining the road system much as it is, then the one essential is to remove driver frustration—in other words we must decide that natural hazards do not, in themselves, cause frustration; this is caused by other road users.

The problem now reads: if the ability to travel at your own speed results in the removal of driving frustration how can this freedom be achieved?

SEEING ROUND

The most important requirement in navigating a car is visibility. The *extent* of the need for forward vision is greater than common sense would believe. Where cars move at fifty, so that approaching lines of traffic have a closing speed of a hundred, the safe sight-distance for overtaking, for a car initially travelling at the speed of the vehicle baulking it, is reckoned to be one-third of a mile.* In order to overtake it is essential to have adequate visibility; in England with its winding, hilly roads this is the one thing lacking. But what is visibility? It is the evidence of one's eyes; if one can see that the road in front is effectively empty of on-coming traffic then it is safe to overtake. Is there a substitute for direct vision? Yes. And this is the nub of the proposition. The alternative to direct vision is the creation of priorities on the road so that hazards can be negotiated through faith in the priority. Through faith in the priority we can virtually straighten and level all the roads in Great Britain like pulling tight a piece of string.

Green for Go is a priority. It is one and one only of many that could be created with a little ingenuity. Suppose for example, instead of the current three-lanes-into-two at corners the road engineers made up their minds to do just the opposite—leave the straight to look after itself, provide three lanes at all corners on A-roads. English roads are made of corners. Suppose you could pass on a corner. Consider the revolution that would happen overnight to everyday motoring were it safe to pass a truck, a furniture van, a horse box on a corner. This could be done quite simply, as the pages which follow show, by creating a priority at all points on A-roads where direct vision is useless such as corners and undulations by writing on the road and in the central lane the word ON. Traffic approaching in the opposite direction will read this as NO. A priority is created.

NO STANDING

Another problem to be tackled is that of standing vehicles. Standing on A-roads should be illegal but to help the citizen to keep within the law there should be sufficient laybyes to cater for all needs, for caravans, picnics, punctures, for the sudden breath-taking view and for all the amenities such as pubs, cafes, AA and RAC boxes, petrol stations.

Given practical reforms of this sort, reforms which are not absurdly expensive, we can draw the sting out of driver's neurosis, that black frustration which not only takes away our pleasure in driving but causes accidents. And we may even come to think that the rolling English road is not so bad after all.

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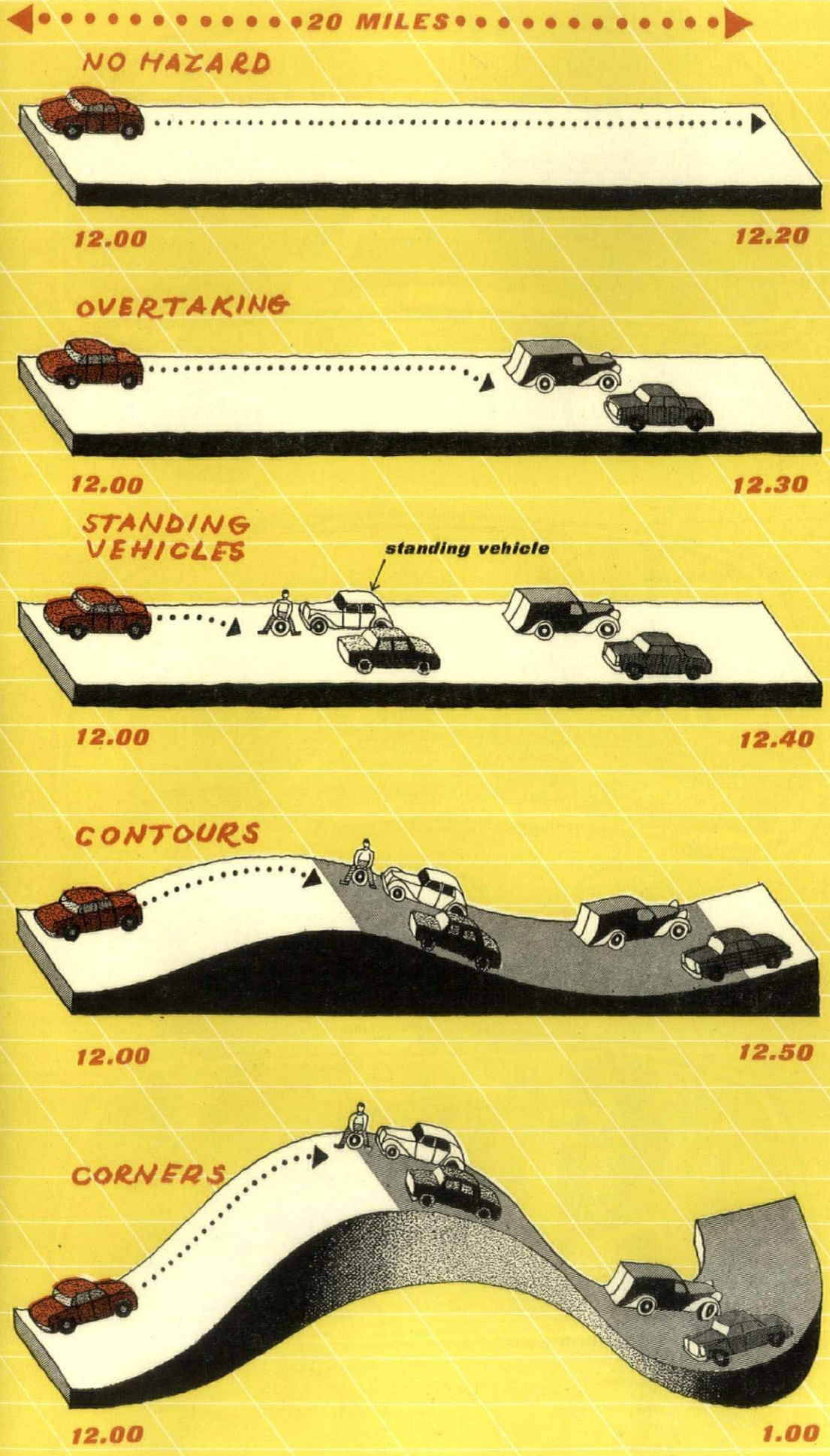
* Cf. *Highway Practice in the U.S.A.*, Public Roads Administration.

ROAD HAZARDS



NO HAZARD. A two-lane straight road empty of traffic except for yourself. The car performs to advantage and for you driving is a pleasure. If you so desire you can complete the 20 miles in as many minutes or less.

FIRST HAZARD. The first check to travelling at your own speed is the slow car in front which can only be passed when there is a sufficient gap (statistics say ⅓ of a mile) between oncoming traffic. If this is heavy there is a formidable build up of vehicles behind the slow car.

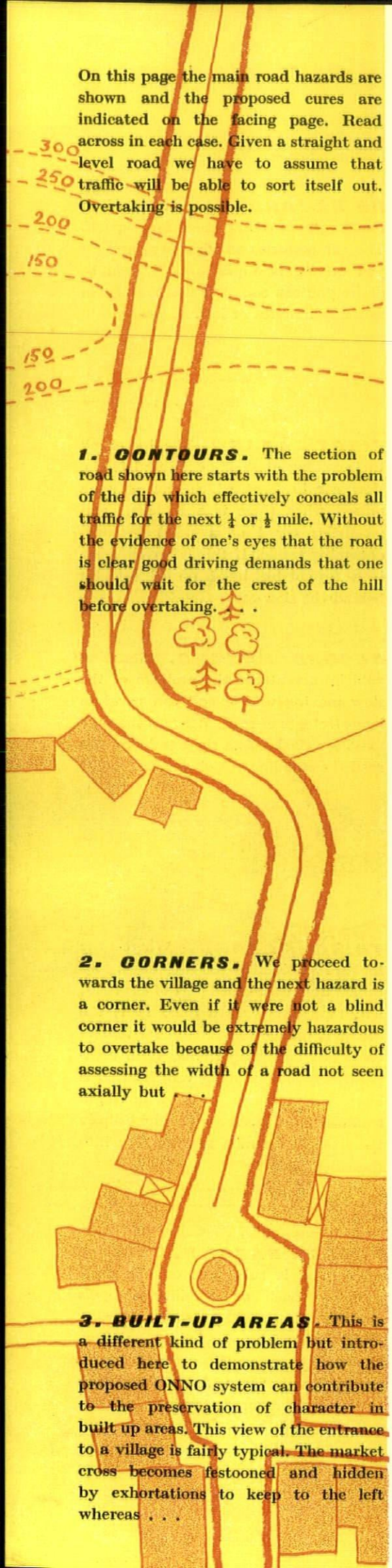
SECOND HAZARD. Standing vehicles accentuate the problem of the slow moving vehicle and can paralyse long stretches of road. Whereas the slow moving vehicle has a right to be on the road the standing vehicle has none.

THIRD HAZARD. Where the forward visibility is cut down by undulation (the shaded part of the road, left, represents such a blind spot) the driver is unable to overtake for fear of concealed oncoming traffic. With comparatively slow moving vehicles this is less of a nuisance than with rapid traffic since at speed even a slight dip in the road half a mile away enters into the calculation.

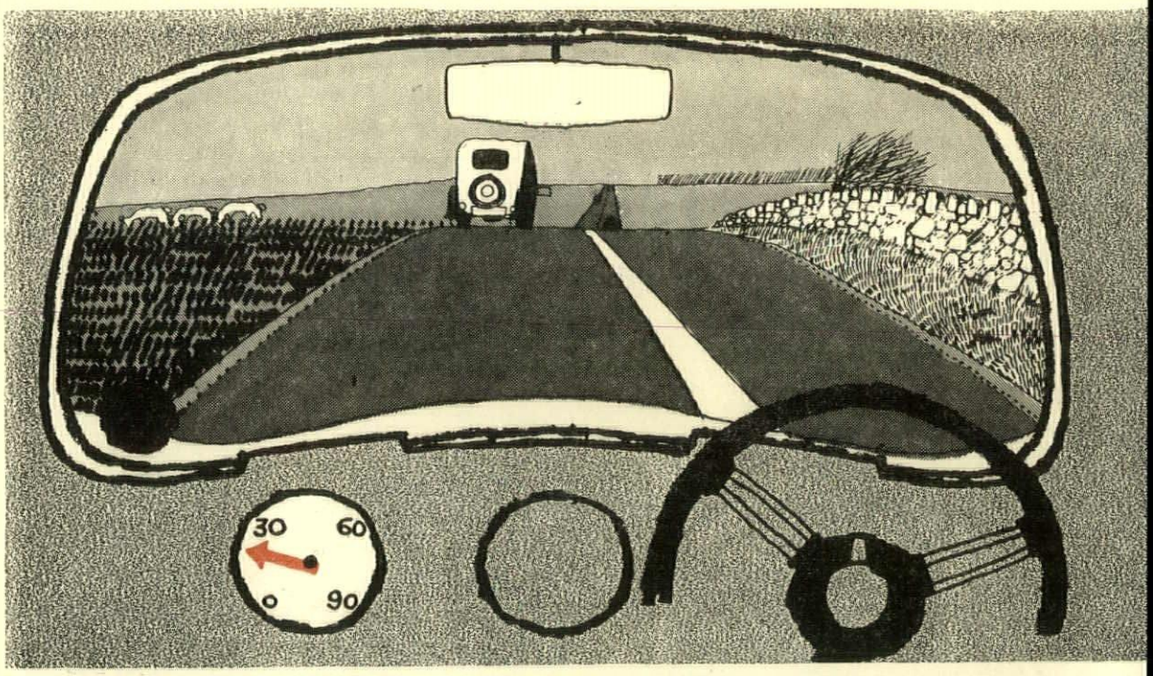
FOURTH HAZARD. Overtaking on corners is ruled out on the same grounds. Lack of visibility compels caution. Yet British roads consist, exclusively of corners, sharp or slow. Even a very gentle curve cuts off essential visibility and the faster the traffic the more forward vision is needed.

ROAD HAZARDS AND...

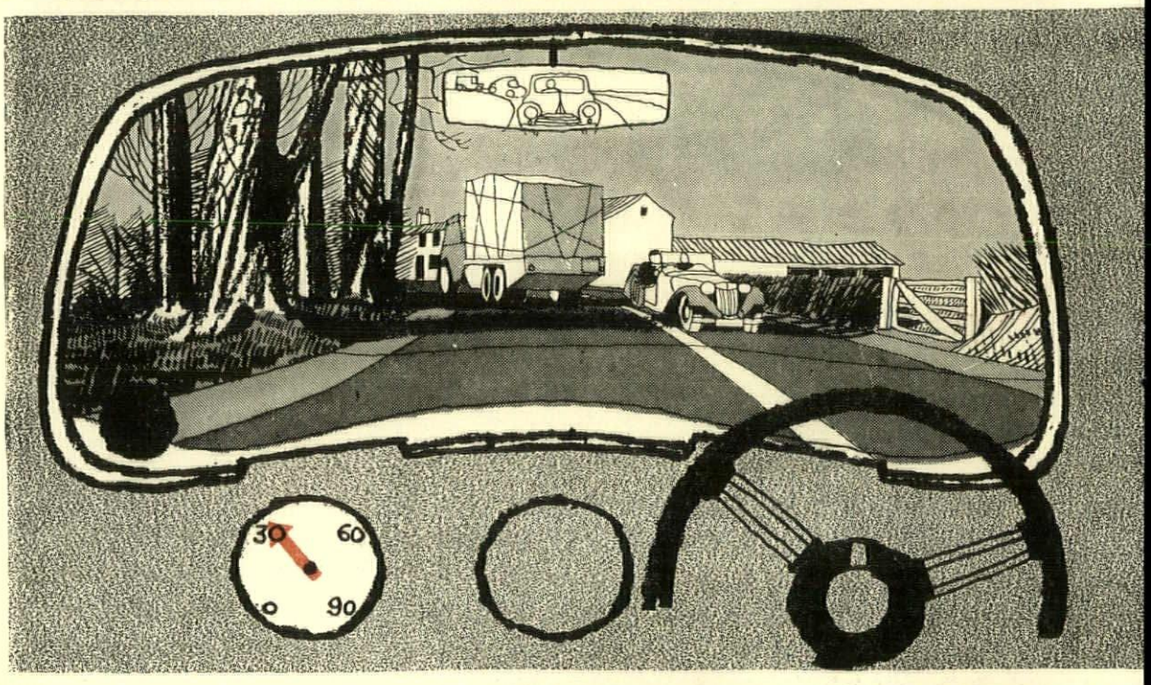
On this page the main road hazards are shown and the proposed cures are indicated on the facing page. Read across in each case. Given a straight and level road we have to assume that traffic will be able to sort itself out. Overtaking is possible.



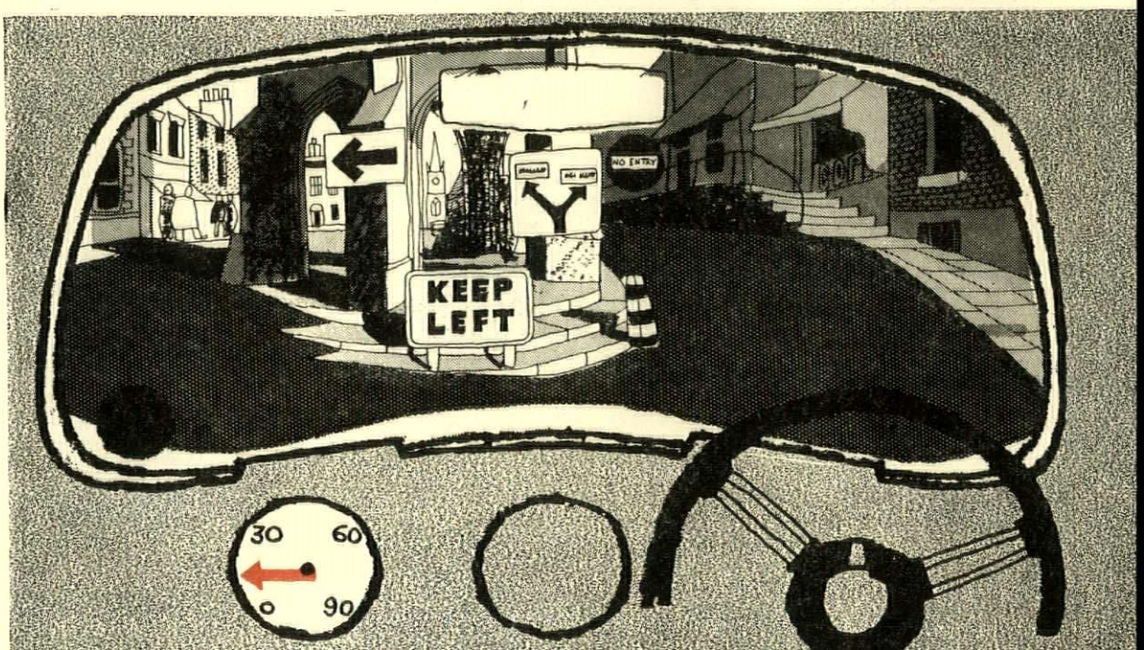
1. CONTOURS. The section of road shown here starts with the problem of the dip which effectively conceals all traffic for the next ¼ or ½ mile. Without the evidence of one's eyes that the road is clear good driving demands that one should wait for the crest of the hill before overtaking. . .



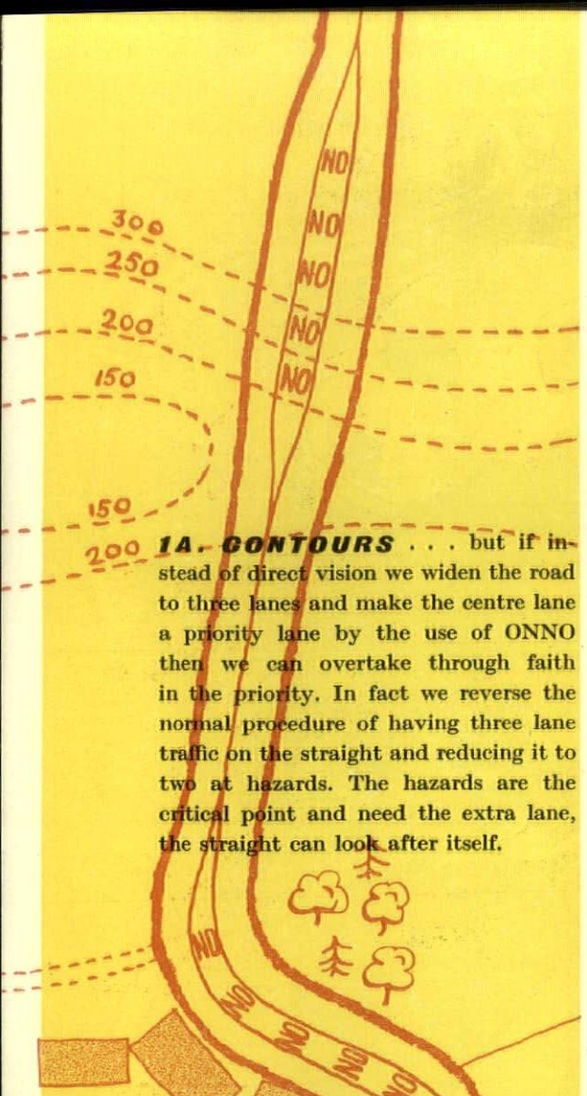
2. CORNERS. We proceed towards the village and the next hazard is a corner. Even if it were not a blind corner it would be extremely hazardous to overtake because of the difficulty of assessing the width of a road not seen axially but . . .



3. BUILT-UP AREAS. This is a different kind of problem but introduced here to demonstrate how the proposed ONNO system can contribute to the preservation of character in built up areas. This view of the entrance to a village is fairly typical. The market cross becomes festooned and hidden by exhortations to keep to the left whereas . . .



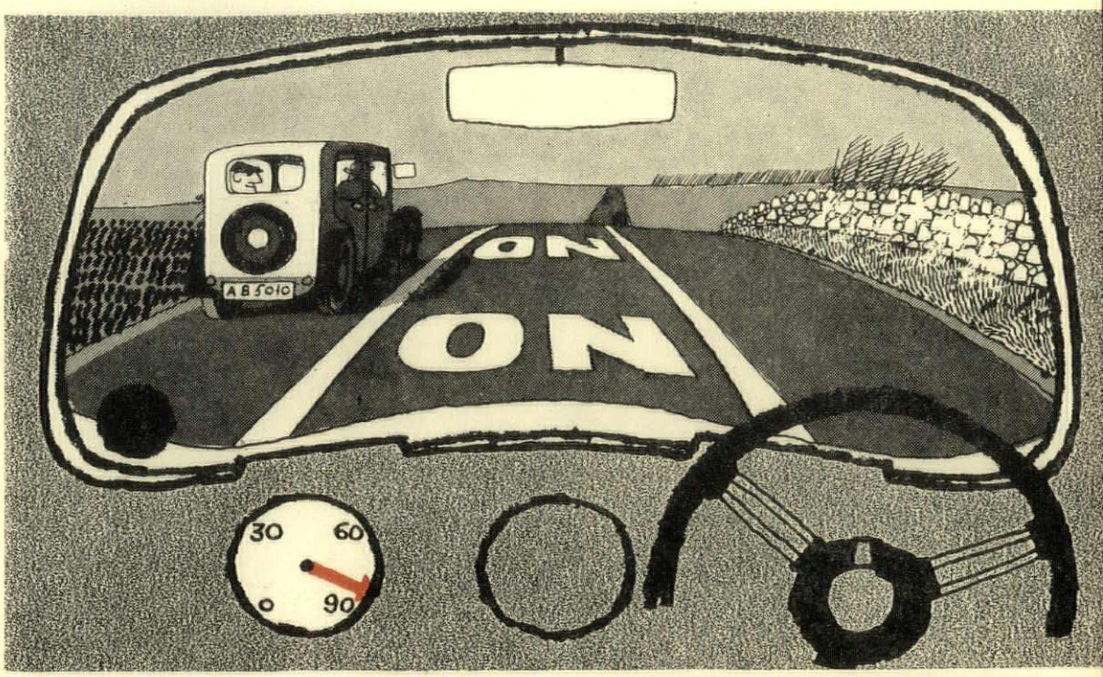
...THEIR CURE

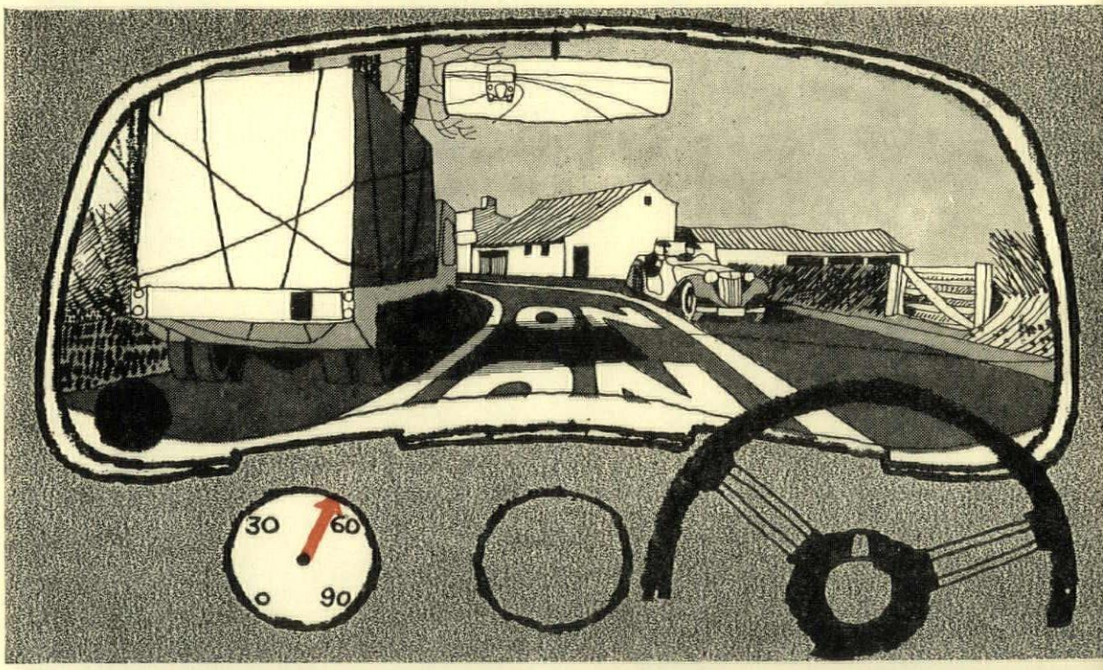


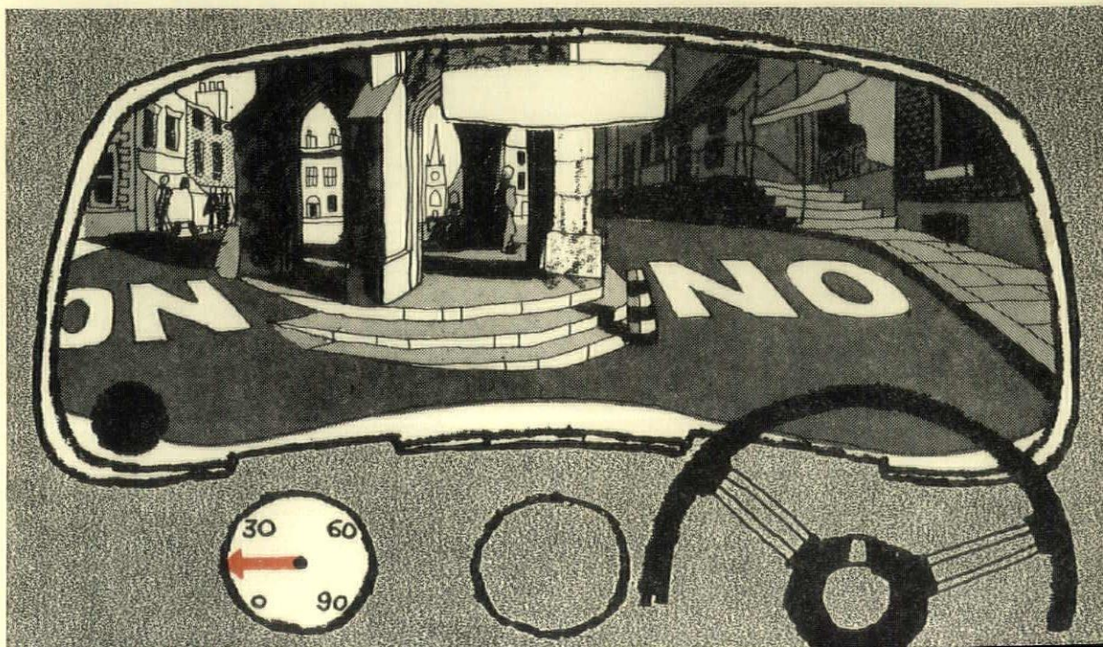
1A. CONTOURS . . . but if instead of direct vision we widen the road to three lanes and make the centre lane a priority lane by the use of ONNO then we can overtake through faith in the priority. In fact we reverse the normal procedure of having three lane traffic on the straight and reducing it to two at hazards. The hazards are the critical point and need the extra lane, the straight can look after itself.

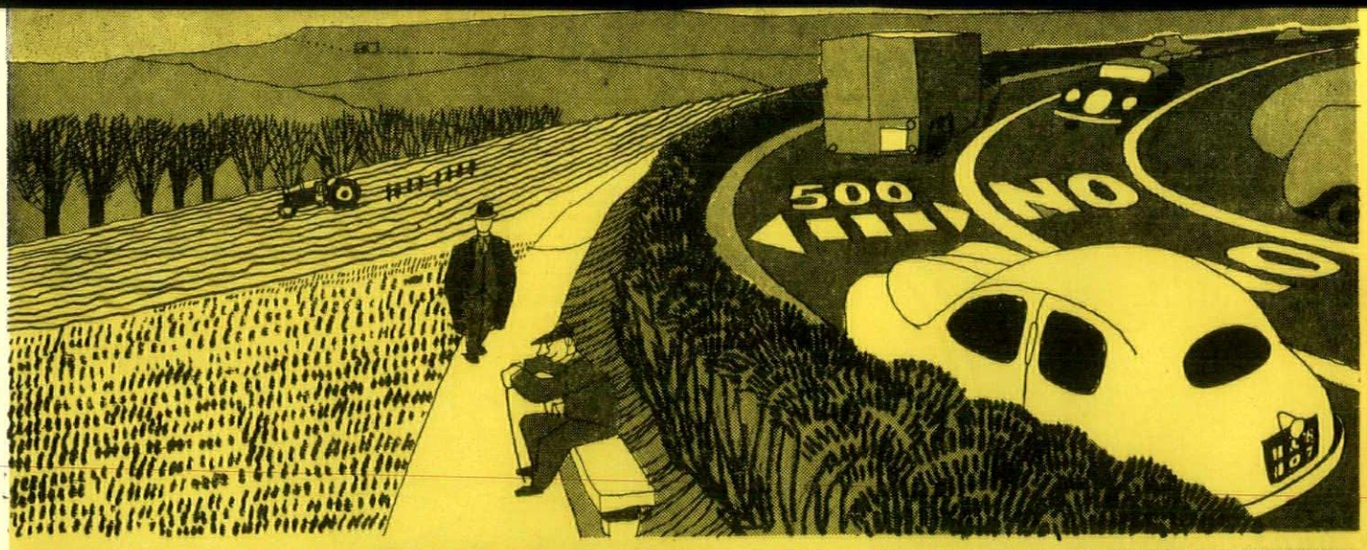
2A. CORNERS . . . by the same device of the priority the corner can be negotiated at whatever speed the curve will allow. Generally speaking a left hand bend will have the priority since traffic turning left generally clings to the kerb thus allowing maximum room for overtaking whereas if the priority were for traffic taking a right hand turn its use would be vitiated by slow moving traffic lazily cutting corners and blocking the centre lane. In the case of multiple bends one priority would have to serve throughout to avoid confusion.

3A. BUILT-UP AREAS . . . by simply using the ONNO instruction on the proper place, the road itself, traffic is given a clear directive and the village is preserved. Especially useful in the case where the traffic solution of towns and villages lies in the creation of a system of one way streets this method of instruction would eliminate the many vertical signs which bedevil the scene.

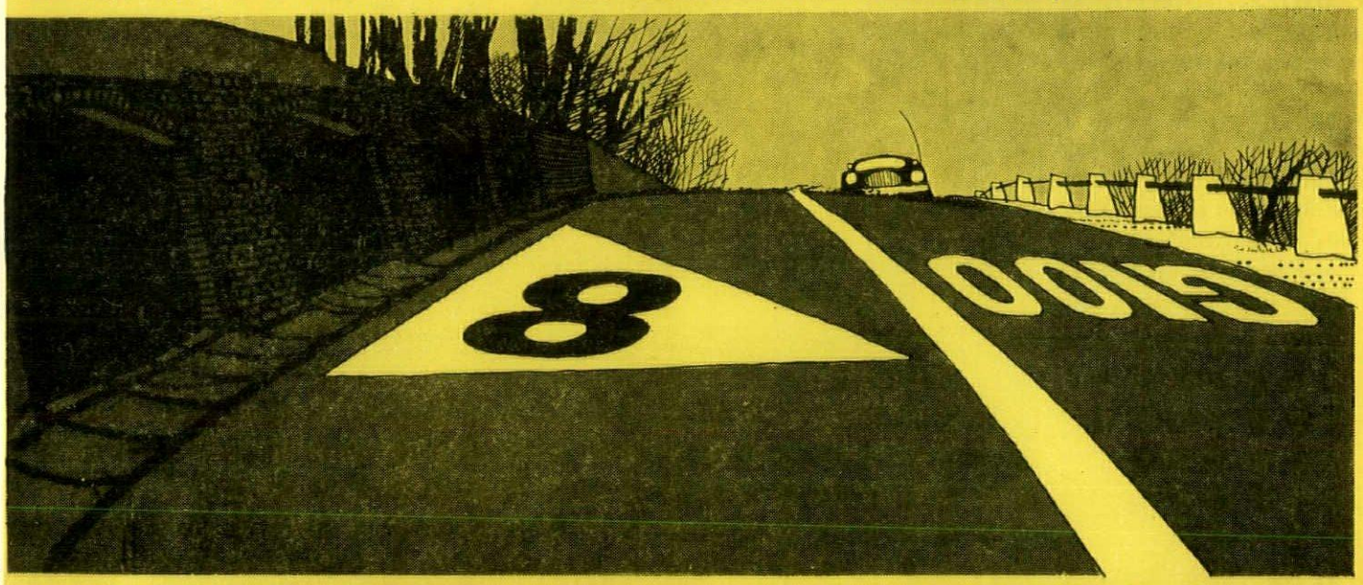








1



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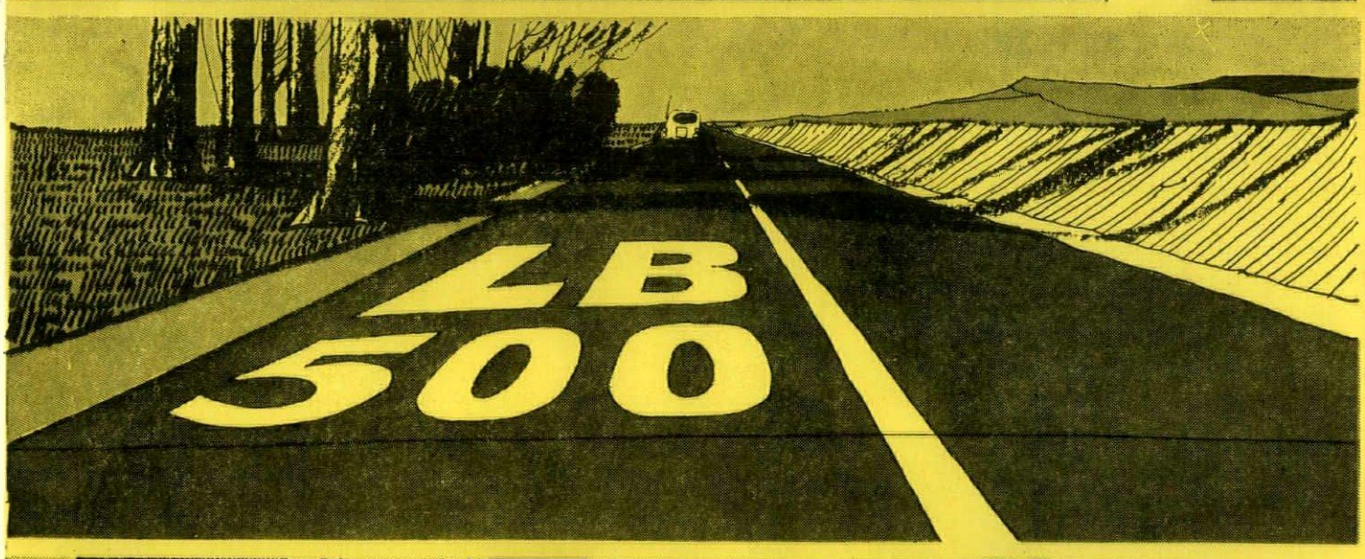

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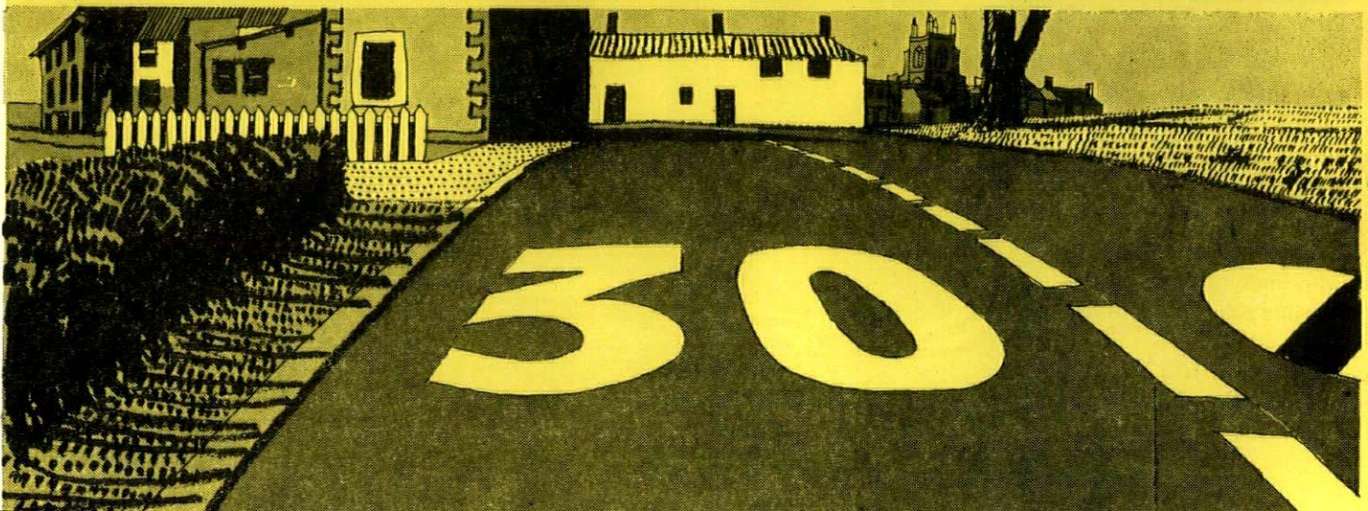


4

road signs shown on these pages

ON
ONNU priority

approaching non-priority crossroad

30
30 m.p.h. speed restriction

speed limit raised

approaching round-about

STOP

danger of skidding

8
steep hill gradient indicated

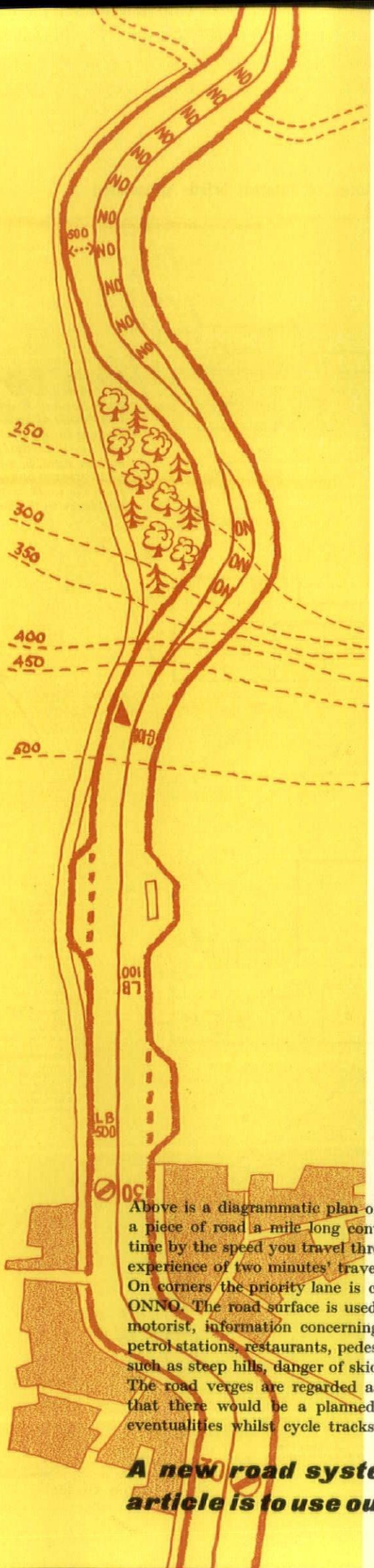
road narrows

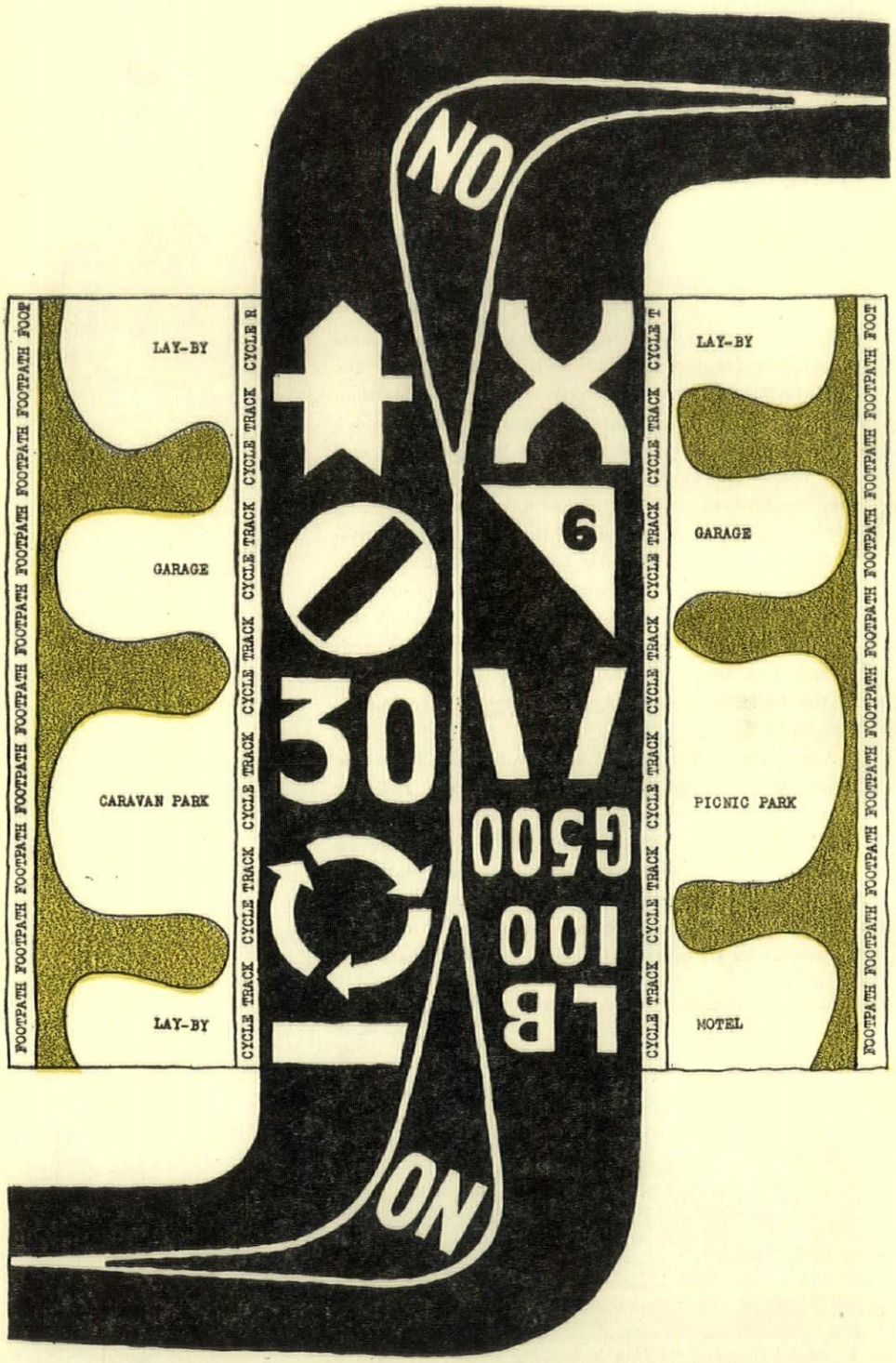
G500
garage 500 yards on

LB 100
lay-by 100 yards on

200
pedestrian crossing 200 yards on

THE SYSTEM AT WORK




NO
ONNO
30
LB
100
G500
6
FOOTPATH FOOTPATH FOOTPATH

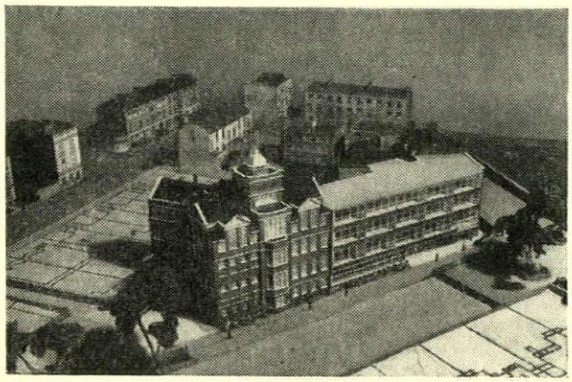
SCHOOL IN CAMDEN TOWN

ARCHITECTS:

STILLMAN AND EASTWICK-FIELD

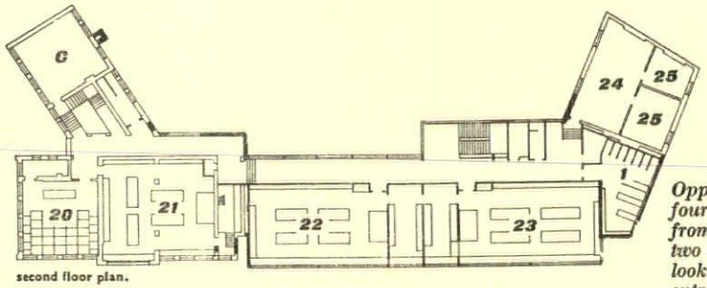
The Camden School for Girls is an aided grammar school responsible for providing its own buildings, with the help of a 50 per cent grant from the Ministry of Education. The site is at the intersection of Sandall Road and Camden Road, and the old school there was badly bombed and was below the current educational standards; at the same time cost made it essential to rebuild on the existing site and make use of as much of the existing structure—which was rather like a London Board School—as possible. The bombing had removed many of the bad features—for example, classrooms facing north, and the hall which was used as a corridor—and by adapting the original semi-basement as the new ground floor and enlarging the centre of the building the school was brought up to M.O.E. standards.

A new centre was grafted onto the old building whose rooms were altered and improved but not radically changed. The new work, providing entrance, dining room and hall on the ground floor and staff rooms, classrooms and laboratories above, is a mainly precast reinforced concrete frame, supporting prestressed reinforced concrete floors and roofs. The columns along the front of the building are at 22 ft. centres to coincide with the partitions

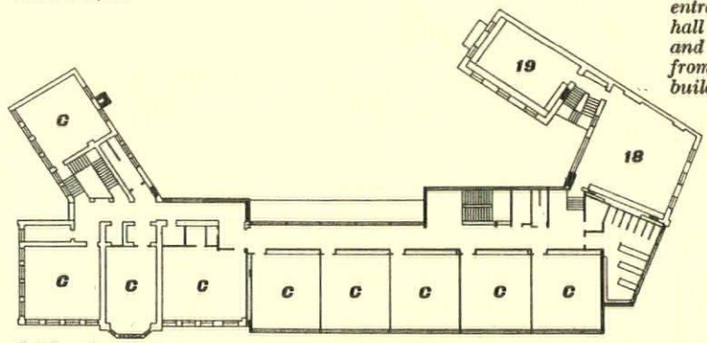


1, *model showing relation to existing school.*

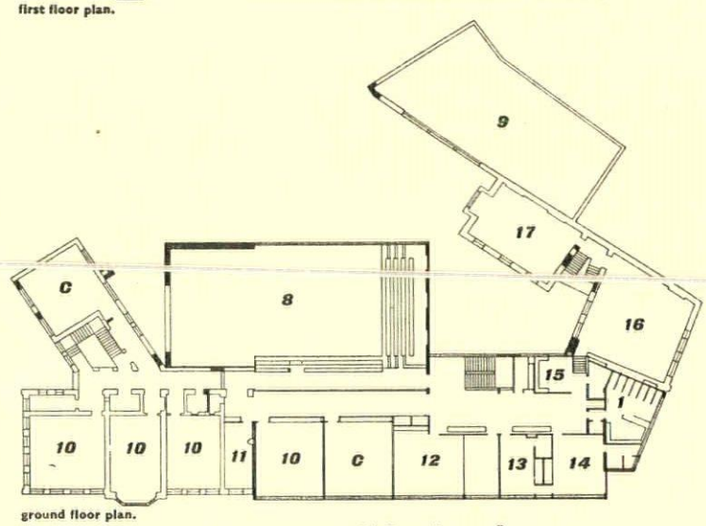
between classrooms, and precast concrete beams between them support the floor units, spanning 34 ft. across the building. The frame is exposed outside without any special treatment or painting, except that the beams forming the cill walls between the columns on the front have been precast with an exposed aggregate finish of calcined flint. Solid wall panels elsewhere are London stock bricks. Inside, the reinforced concrete columns and staircases are painted but not plastered. The entrance hall has Portland stone floor and asbestos faced ceiling tiles; the teaching rooms have linoleum floors and ceilings of predecorated fibreboard tiles. The hall has hardwood block floor plaster ceiling and walls lined with wood panelling and acoustic tiles. The associate-in-charge was Anthony Baynes.



second floor plan.

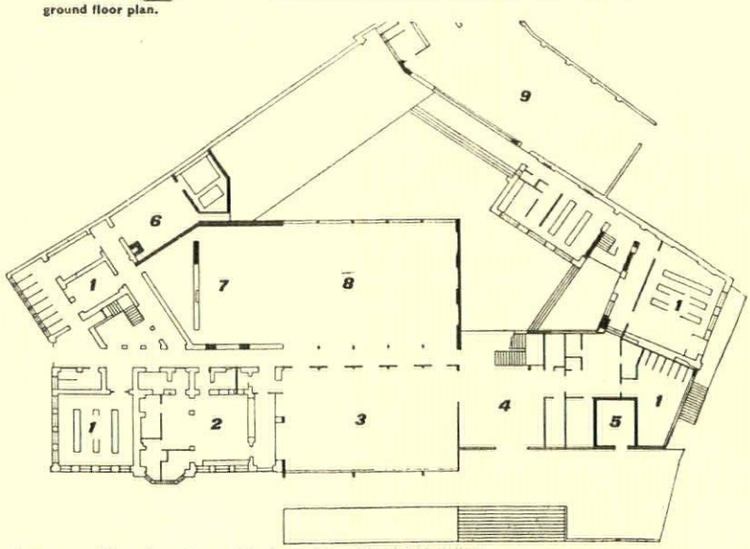


first floor plan.

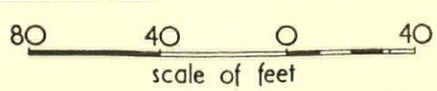


ground floor plan.

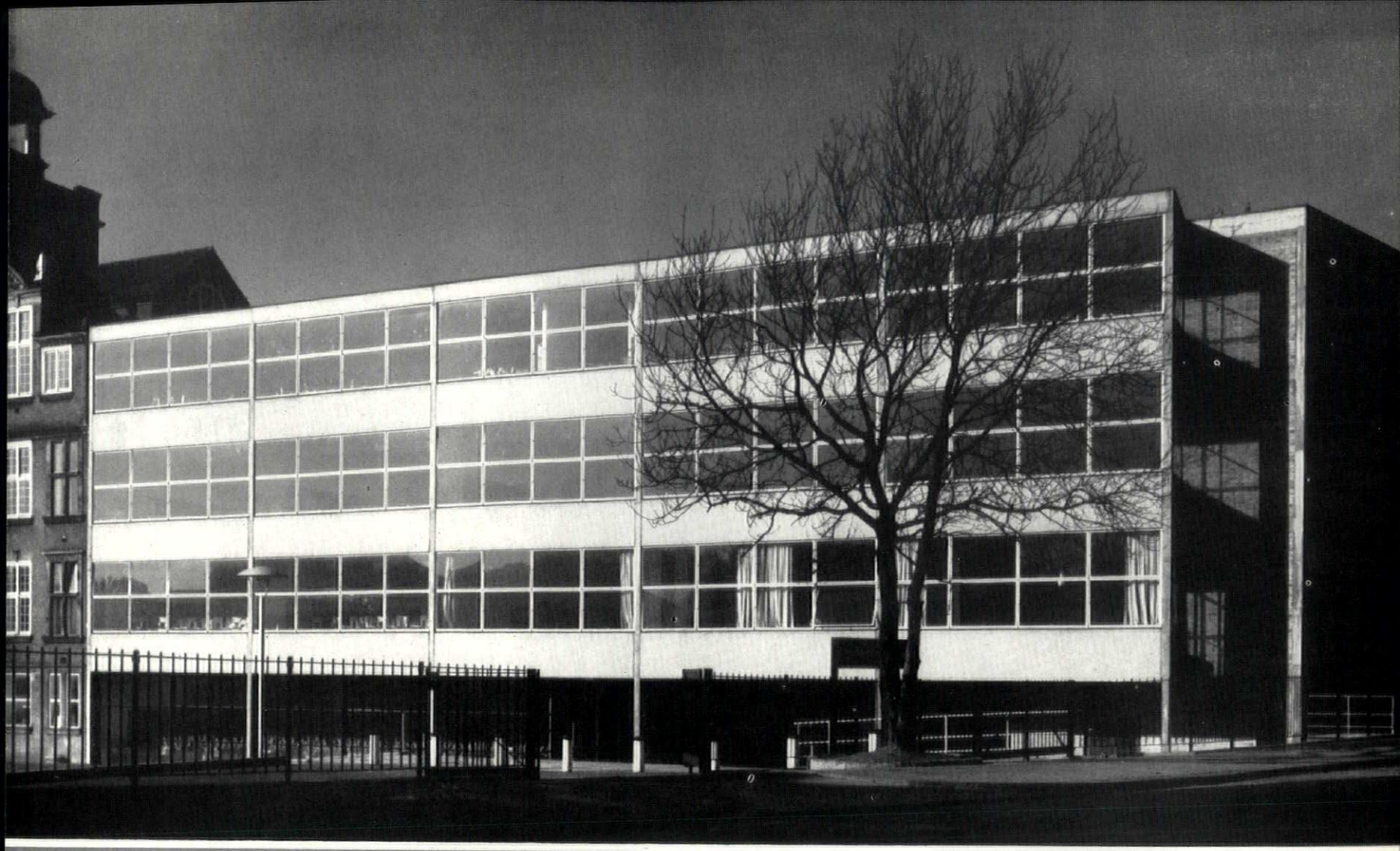
key
1. cloakroom.
2. kitchen.
3. dining space.
4. entrance hall.
5. transformer chamber.
6. boiler house.
7. stage.
8. assembly hall.
9. gymnasium.
c. classroom.
10. upper sixth.
11. prefects.
12. staff room.
13. secretary.
14. headmistress.
15. librarian.
16. library.
17. sixth form library.
18. arts and crafts.
19. domestic science.
20. lecture theatre.
21. biology lab.
22. physics lab.
23. chemistry lab.
24. orchestra room
25. practice room.



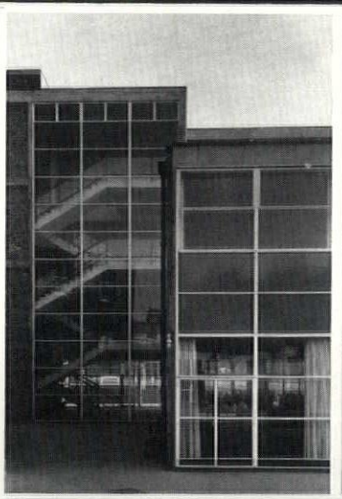
lower ground floor plan. New work is shown either with solid black lines (solid walls) or with thin open lines (windows or curtain walls).

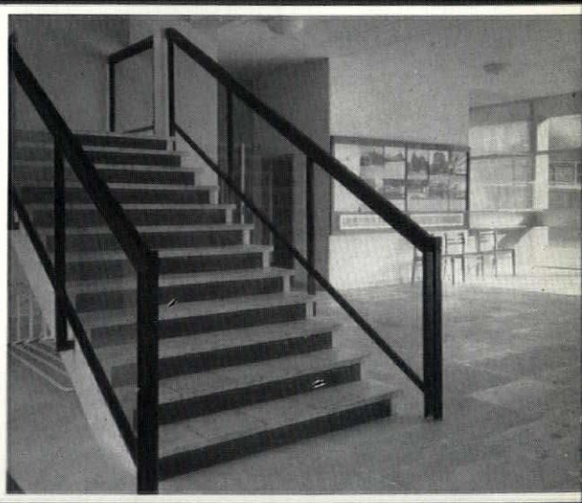


Opposite, 2, the new four-storey centre seen from Sandall Road. 3 and 4, two details of back of stairwell looking through to main entrance; two-storey assembly hall on right. 5, main staircase and entrance hall. 6, the school from the south, with the old buildings in the foreground.

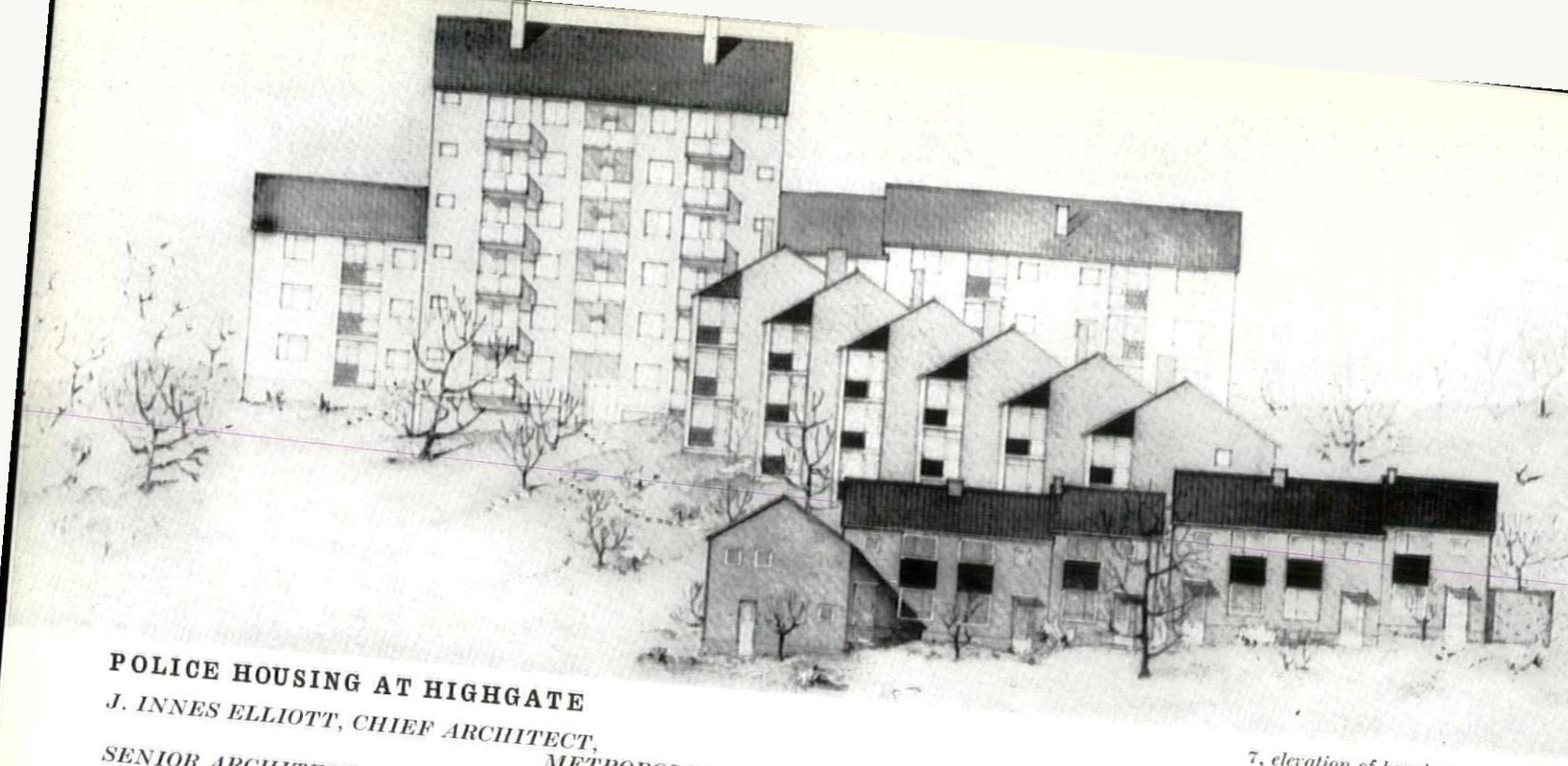












7, *elevation of housing as seen from*

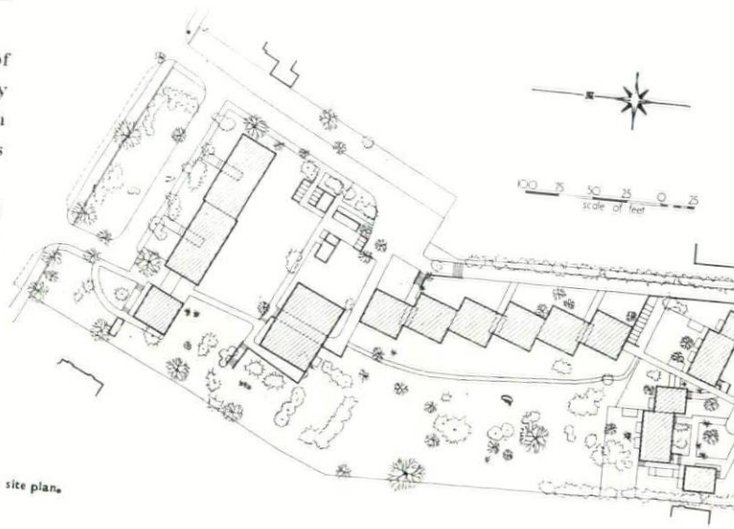
POLICE HOUSING AT HIGHGATE

J. INNES ELLIOTT, CHIEF ARCHITECT, METROPOLITAN POLICE
SENIOR ARCHITECT-IN-CHARGE: S. J. HANCHET

This housing scheme for the Metropolitan Police district* is half-mile north of Highgate village in the angle formed by the Great North Road (Finchley High Road) and the Barnet By-Pass (Aylmer Road) with frontages on both main roads, and a fall of 30 ft. from N.E. to S.W. The six-storey block is on the centre of the site with fine views south-west over Highgate Golf Course and three-storey blocks run downhill from the tall block, being staggered to give all living rooms the advantage of the view. Detached houses face Aylmer Road to 'harmonize with existing development' and keep the existing fully grown trees, and three-storey terraces front the Great North Road. A pedestrian way runs through the site, passing under the tall block.

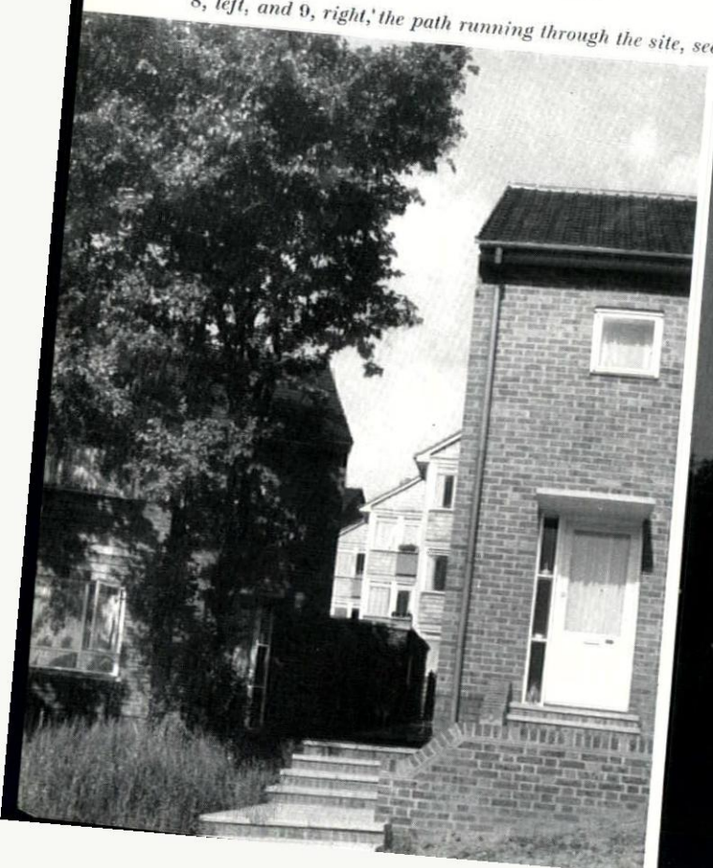
The scheme provides 52 married quarters; 45 flats and 7 houses. The six-storey block has a reinforced concrete frame and 11-in. cavity brickwork cladding with grey facing bricks. The three-storey flats and houses have 11-in. load-bearing cavity walls with golden brown stock brick facings. The panels below windows and on staircases are cedar shingles.

* Appeared as a preview, A.R. Jan. 1956, page 33.

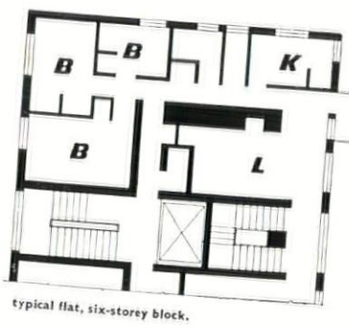


site plan.

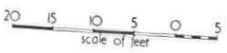
8, *left, and* 9, *right, the path running through the site, seen from Aylmer Road.* 9 *shows the six-storey block.*

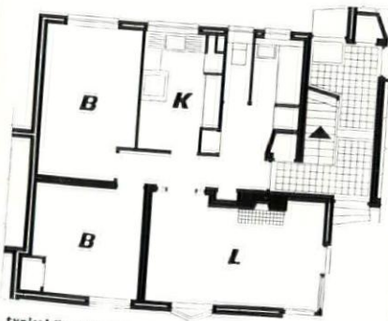




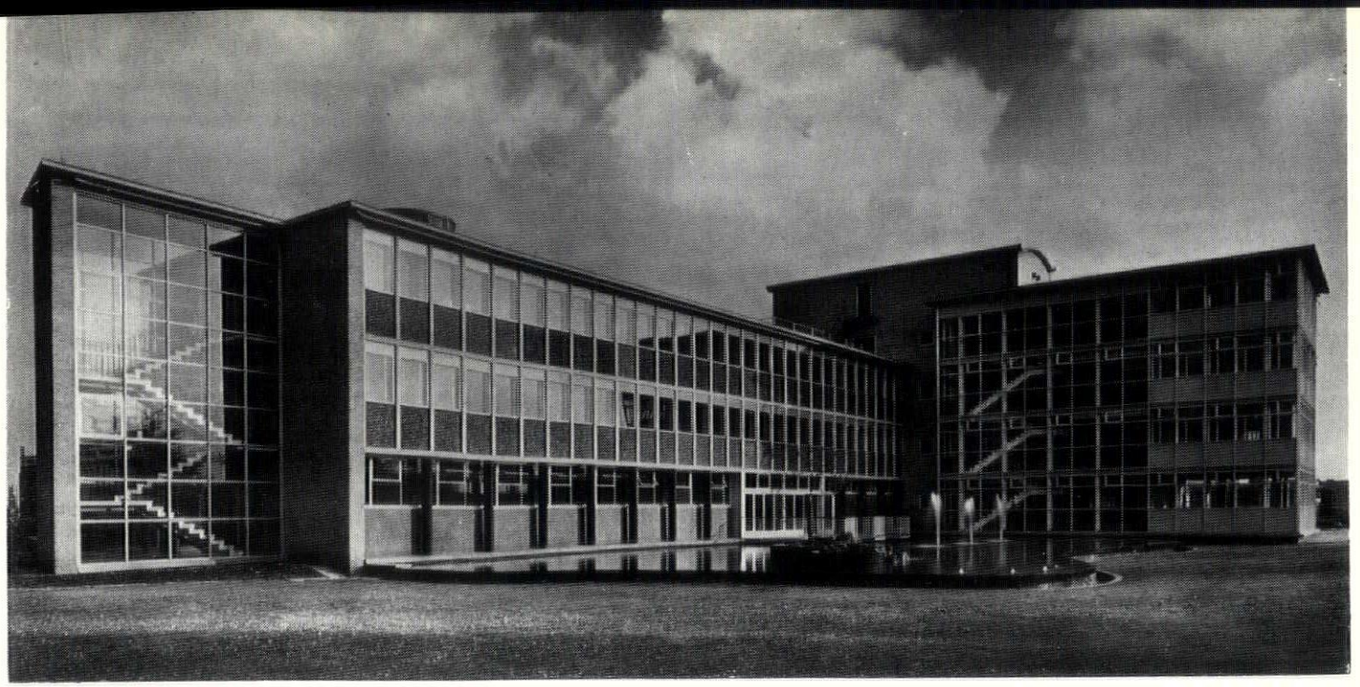


typical flat, six-storey block.





typical flat, three-storey staggered terrace.



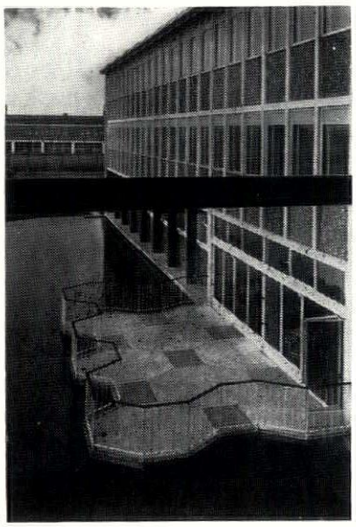
10, the block as seen from the road intersection: laboratories on the left and administrative offices on the right. 11, *the pool from one of the staircase landings, showing terrace (roofing the fountain pumps) which can be used as a tearoom extension.*

LABORATORIES AT ENFIELD

ARCHITECTS, G. A. JELLICOE AND PARTNERS
PARTNER-IN-CHARGE, ALAN BALLANTYNE

The Sylvania-Thorn Laboratories are the first to be built in Britain for research into colour television, and because the problems involved are unpredictable, all the laboratory space had to be completely flexible with demountable partitions. The site is at the junction of the Great Cambridge Road (A10) and A110, a mile east of Enfield, part of a large area being developed by Thorn Industries; fortunately so, for the M.O.T. did not permit vehicle access from either road and road access is from the S.E. corner of the site, as part of the permanent development scheme.

The building provides four-storey laboratories and three-storey office administrative offices forming an L-shaped block with a lift shaft between them. Construction throughout is reinforced concrete frame with hollow pot floors and roof (part of the laboratory roof is paved for outside experiments) on a 4-ft. module. In the offices the columns are set back from the floor slabs, resulting in a continuous curtain wall providing space in front of the columns for the pipes feeding the convectors; in the laboratories the module reads externally with reinforced concrete mullions faced with artificial



11

first and second floor plans.
scale: 1/32 in. = 1 ft.

ground floor plan.



12, *staircase in entrance hall, showing cranked-slab construction.*

Laboratories at Enfield

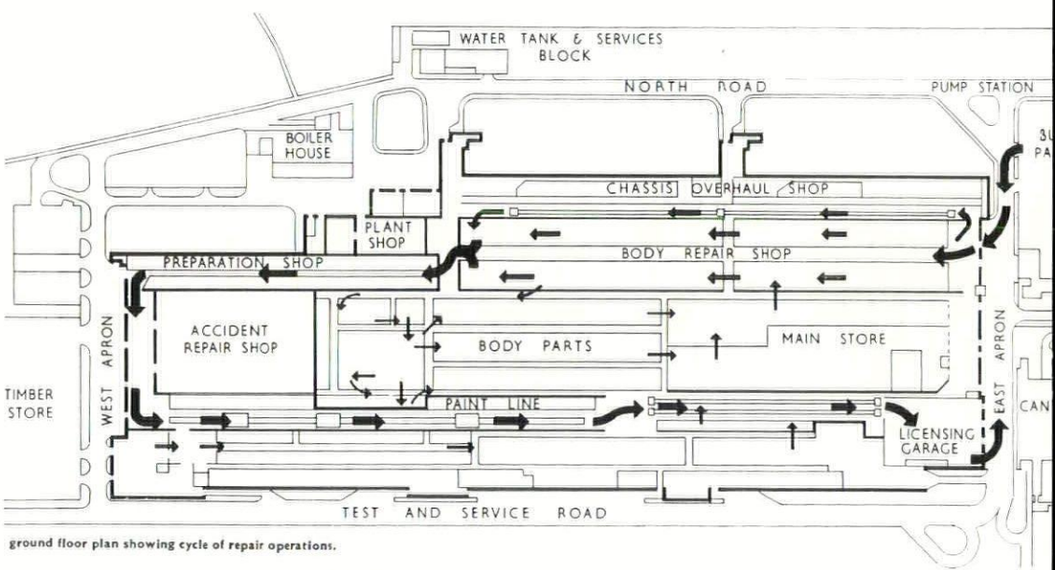
Portland stone caps. The demountable partitions are sheet steel with glass-wool filling; any unit can be removed in 7½ minutes without disturbing a run of partitioning. The machine shop on the ground floor of the laboratory block has a 9-in. concrete floor floating independently of the main structure to isolate machine vibrations; there is a six-hour firebreak between laboratories and lift shaft.

The pool in the angle of the L provides cooling water for the refrigeration plant and laboratories and low grade heat for the heat pump. The terrace projecting into it is a roof to pits housing the fountain pumps and the colour-change equipment for floodlighting; it has black and white granolithic slabs laid to form a pattern of squares and hexagons. The main staircase in the entrance hall is a double cranked reinforced concrete slab, with white terrazzo treads and black terrazzo risers. The hall itself has walls veneered with Indian silver-grey wood and a floor of Carrara and Sicilian marble chippings in a yellow matrix.

BUS GARAGE NEAR ELSTREE, HERTS

L.T.E. ARCHITECT, THOMAS BILBOW
ARCHITECT IN CHARGE, K. J. H. SEYMOUR

This is the largest bus repair works in the world—it will eventually employ 3,500 people—built to serve London Transport's 8,000 buses when the fleet outgrew the original works at Chiswick. It is built around a railway depot which was built before the war, covers seventeen acres, and is, unhappily and unjustifiably, in the middle of the London Green Belt, beside the Watford Bypass south-west of Elstree: special Parliamentary permission was needed for its construction. The circulation of buses under repair is shown on the plan; all the factory sheds are steel framed, clad with aluminium, patent glazing and an asbestos cement and glass fibre sandwich. The body repair house has a clear headroom of 50 ft., enabling any bus to be lifted by overhead crane and carried over others in the shop; the other shops have clear headroom of about 20 ft. The boiler house is steel framed and clad with brick, patent glazing and asbestos cement sheeting.



ground floor plan showing cycle of repair operations.

13, *high bay of main works from the east.*



BOOKS

COLLABORATIVE ARTS

ART IN EUROPEAN ARCHITECTURE *By Paul Damaz. Chapman and Hall (for Reinhold Publishing Corporation).* £5.

A companion volume to Eleanor Bittermann's *Art in Modern Architecture* (which dealt only with the USA) has been a piece of required publishing for some time now, and Paul Damaz's book has provided a full documentation on the more interesting European examples of buildings where painting and sculpture have been more extensively employed than usual. The works described and illustrated range from Priory Green to Ronchamp, from Hatfield Technical College to the MV *Andrea Doria*, from the Festival of Britain to the Triennale. If anything, the coverage tends to be unselective, and this is a little surprising since the book is subtitled *Synthèse des Arts* and the text appears to subscribe unreservedly to the dogmas of *Groupe Espace* aesthetics. Nevertheless, much of the art is far from abstract, much of the architecture far from International Style, and much of the mating of one with the other has the quality of a shot-gun wedding rather than a marriage of true minds. If synthesis is *ipso facto* a good thing, as M. Damaz and *Groupe Espace* appear to believe, then—on the evidence of this book—it is a virtue that escapes the collaborative team, for the most fully synthesized, most fully integrated buildings are both the virtuoso performances of single minds—Le Corbusier's *Nôtre Dame du Haut* at Ronchamp, and the Ideal Palace of *facteur* Cheval at Hauterives. On the other hand, the one building that catches the eye and sticks in the memory after the book is closed is *Nôtre Dame de Toute Grâce*, at Assy, presented in two fine colour-plates from *Life* magazine, that reveal just how magnificent a vehicle for the art of Leger, Matisse, Lurçat and Rouault this little church of Maurice Novarina has proved to be. But no one would pretend that it is great architecture, and it seems very much an open question still whether architecture of genius can tolerate applied arts of the same rating, or *vice versa*, or even whether it should. Q.S.C.

THE MYLNE DIARIES

ROBERT MYLNE, ARCHITECT AND ENGINEER, 1733-1811. *A. E. Richardson, PRA., FRIBA. Batsford.* 1955. 30*s*.

This is the first published monograph on Robert Mylne and as such ought to be greeted tenderly. Responsible for rescuing Mylne from oblivion when he purchased some folios of this architect's drawings many years ago, Professor Sir Albert Richardson deserves enormous credit.

It is, therefore, most disappointing that this book should be so unsatisfactory. Purporting to be a biography, from the jacket, it is nothing more than Mylne's entire diaries printed in full with an introduction that seems largely irrelevant and rather inaccurate. Surely, too, there should be some acknowledgment of the sources? Now, diaries can be fascinating to students of a particular subject or period, but to the general public—or even to the architecturally interested reader—they are desperately dull. The introduction is but a rehash of the sort of entry to be found in the DNB combined with the author's inimitable and all too familiar pæan to the Georgian life of two centuries back.

The opportunity to assess Mylne's valuable contribution to the architectural and engineering achievements of the second half of the eighteenth century has been misused tragically: one hopes not irredeemably. The author busily boosts Mylne's engineering faculties to the detriment of his architecture; he lays disproportionate stress on the superb draughtsmanship revealed in the folios and seems muddled in his views concerning Mylne's status alongside his colleagues. Why illustrate his buildings almost to the exclusion of his engineering works; why illustrate the quality of his draughtsmanship by perversely redrawing so many of his designs in a loose manner—the sketch of the Belfast hospital is lamentable—and why bother to present Mylne as a subject for study unless some assessment of his influence is attempted?

One example of inaccuracy is in the reference to the New River Offices. These were never situated at Clerkenwell but at Whitefriars. The elevation illustrated may be compared with the plan shown on Horwood's map of Blackfriars (1799). It is obvious that Mylne, in his capacity as town planner for that area, was instrumental in acquiring the site in Dorset Street for the New River Company, for whom he acted as Surveyor and Engineer.

All in all, despite its limited use, this volume does Mylne a disservice.

Christopher Gotch

Shorter Notices

SPECIFICATION 1956. *Edited by F. R. S. Yorke and Penelope Whiting. Architectural Press Ltd.* 30*s*.

The most important addition to this year's *Specification* is the rewriting and the insertion of twelve new editorial pages into the Concretor's Section. For this marks (a little belatedly perhaps) the transition of concreting from the slap-happy, spade-and-slosh period to scientific control. Another addition, in the Plumber and Sanitary Engineer's Section, summarizes what we know about single-stack plumbing, giving a useful LCC Information Sheet showing the setting out. This cost-saving system has for some time been *permissible* by all local authorities who have adopted the new Model Byelaws, and the indications are that most district surveyors in these areas will let it through. Among the many other minor revisions in this issue is that part of the Mason's Section which deals with the availability of building stones, and the quarries working them. Architects will lament the dropping out of Ham Hill and Hopton Wood, but will welcome Buckfastleigh, a 'hard blue mountain limestone,' and Blaxton, a 'cream coloured freestone' from Elsdon, Northumberland. Neither of these stones is 'new' (if a stone is ever such): they have been worked for years; but it is useful to architects to know that they are going strong. I.W.W.

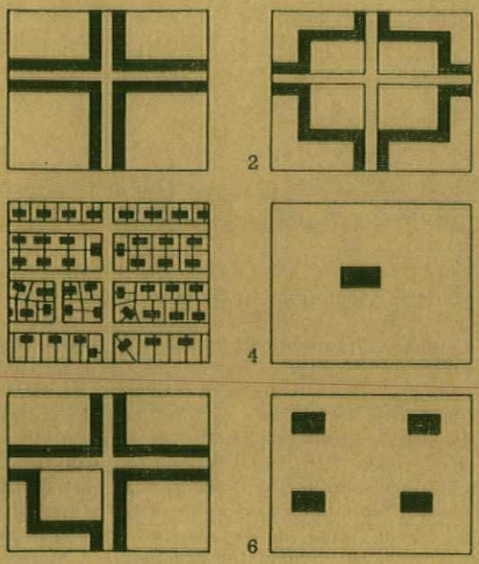
COUNTER-ATTACK

FAILURE OF THE NEW ANALYSIS

When THE ARCHITECTURAL REVIEW *announced the Failure of the New Densities as an explanation of the Failure of the New Towns (and incidentally of a lot besides), the analysis was made solely in terms of area-densities.* We were invited to distinguish between different kinds of measurements, but area-density—ratio of area and objects contained—was alone considered. The question remains unanswered whether with much higher density of this sort the new towns would be any more satisfactorily urban if the kind of planning involved remained substantially the same. If twice as many people lived in the area now covered by Crawley Garden City, would it be any the less a desert if the method of distributing house-units didn't alter?[1]

Of course one could claim immediately that it would take up less space; and so more of the country would remain. From the town's point of view, one might say that it had gained the advantage of being easier to get out of. But what of the town as town? Would it be any the less a collection of villas? Mr. Furneaux Jordan, calling Harlow a town of semi-dets, was corrected, and replied, 'Well they look

[1] It even appears that Letchworth has a higher area-density than most of the New Towns.



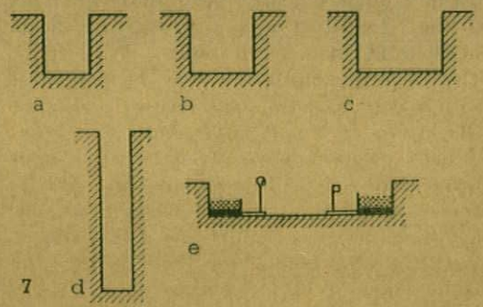
semi-dets.' And of course so they do: whether in fact they are seems strangely irrelevant.

Four ways of housing people at the same gross area-density are sketched in diagrams 1 to 4. 1 and 2 are old ways, 3 and 4 are new. 1 and 2 may well indicate a very low density over the whole area, lower perhaps than is claimed for the New Towns.[2] A very large amount of open space is available in *back* gardens, or it may become public in the front, 2. (2 may be regarded as a variation of 1, since the ratio of public to private space can clearly be varied—see 5.) Now see what happens when the terraces of 1 and 2 become semi-detached: the gardens are inevitably much smaller, because so much space has to be taken up by roads, edging, and gaps between houses, 3. The amount of usable space is far less. Hence the ironical fact that there is much more usable free space in a town built on closed planning principles than in one which follows the rule of open planning, even though the area-density of the former may be greater.

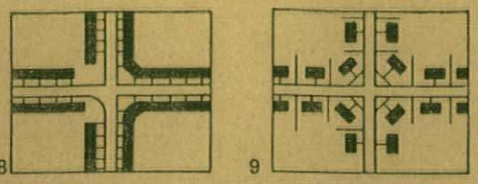
4 shows an *n*-storey block of flats: it obviously can't by itself constitute the centre of a town, and it has lots of air round it, so let's raise the density, 6. Result, four blocks of flats, no town. Or double the height of 100 semi-dets, producing 4-storey flats. Result, a density twice as high but still 100 semi-dets, no town. In fact, in the planning of a town one may stumble just as hard over the individually conceived block of flats as over the commercially engendered semi-detached. By far the most important virtue of the Powell and Moya flats in Pimlico is their ability to become part of a street (see especially Lupus St.), a success usually only achieved when a block is made to fill a gap in otherwise continuous building. What may happen when this is not the case is amply shown at Hallfield, where the idea of a street is nowhere, or on the Ackroyden estate, which is merely a loose collection of Things in Parks. (That they are big things doesn't prevent their remaining Things.) Of course many of the happiest effects of townscape are achieved by isolated buildings standing out from a street line, but the street must first be there to provide a contrast. Hallfield is just tolerable because there are streets round it, though it can hardly be claimed to be a distinguished element of townscape: but that kind of thing multiplied over and over results in the end in the absurdity of Corbusier's 'Voisin plan' for Paris, in which the city would be turned into a collection of very, very big individual units: for all the vast scale of his conceptions, Corbusier remains essentially a builder of villas. He depends on and claims only local success—each building to speak for itself alone. But it is not true that the bigger the individual units the more cohesion they have: a town is one unit, with parts designed in relation to one another and to the whole.

All this indicates that area-density, however measured, cannot constitute an accurate test of urbanity. Much more important are two forms of what I shall call street-density. Longitudinal street-density is the ratio of building frontage to total road length (excluding intersections). It can be briefly and roughly asserted that, as far as a town is concerned, the nearer this is to 1 the better. If it gets below a certain point, say 7/8, any further reduction will make no difference.

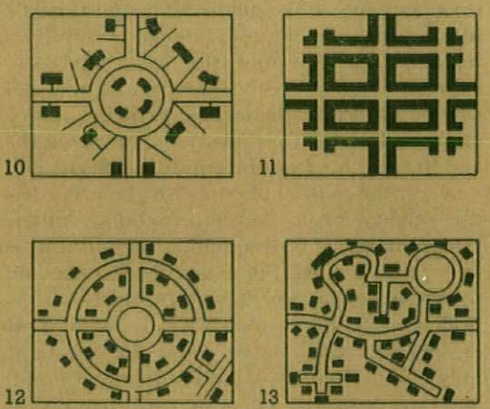
Transverse street-density is the ratio of height of buildings in a street to distance between them. Here it is obviously much more difficult to lay down rules, but a density of $\frac{3}{4}$ to 1 tends to be a good average,



7a, b and c; whereas something much higher produces the canyon of New York (7d) and something much lower the suburban desert in which houses are thrust apart and denied a proper public face, 7e.[3] The close connexion of the two forms of street-density is shown in the progression of diagrams, 1, 8, 9, 10. As soon as you begin putting houses well back from the road (and so reducing transverse density), 8, it is a small jump to splitting them up so that the longitudinal density also drops, 9; and the two processes then go hand in hand, 10. Moreover, while 1 leads to 11, 10 inevitably develops into the emaciation of 12. 11 and 12 again emphasize how a compact layout leaves more usable open space, even though the area-density may be higher.



It appears in fact that we need to revise our definition of sprawl, to re-examine how it arises. The important thing to see is that it does not depend on a low area-density alone (central Cambridge has a very low area-density but is compact and urbane, because the open space is intelligently organized), but on this *plus* low street-density. A close network of streets will make for urbanity only if the street-density is also high; otherwise we merely get the familiar whimsical effect of 13.



Of course low street-density tends to mean low area-density, and conversely; but the two are not *necessarily* connected, and it is street-density which is the determinant of urbanity. This explains how a New Town (and perhaps even some suburban housing estates) can apparently have a 'higher density' than many of our best towns, and yet as a town be an absolute farce. It's all a question, not of how much open space there is, but of how it is spent. Organize it into squares or in back gardens that can be used, and the result may be splendid; sprinkle it about in roads that are too wide, in useless front gardens and in idiotic scraps between every other house, and inevitably the end-product is subtopia.

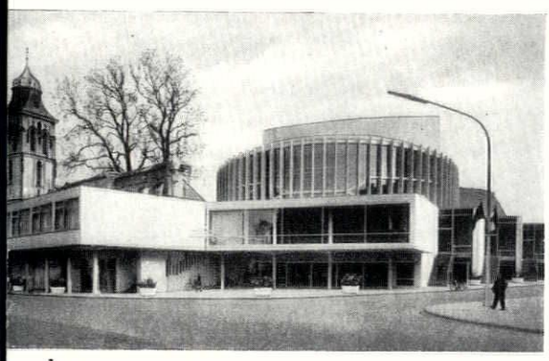
Ander Gomme

[2] The defenders of the New Towns point out that their gross over-all densities or their net average densities are higher than so-and-so: they do not explain how this makes them satisfactory towns.

[3] There are obviously many exceptions: streets can have much higher densities without becoming intolerable (Trinity Street, Cambridge, The Shambles, York, and the streets of most Italian towns which successfully manage a density of 3, 4 or even higher); or much lower (Beaconsfield and Thame High Streets, or any market place), though here, as the examples suggest, a definite feature must be established if the street is to remain a unit—compare the trees in Cheltenham Promenade or the grouping of buildings *round* market squares. Sometimes this feature will itself be an isolated building—Amersham Town Hall.

STADT THEATER, MUNSTER

Complex in its functional organization, resourceful in its aesthetic realization, the new civic theatre at Munster, West Germany, is one of the most sophisticated buildings erected in Europe since the War, Italy not excepted. The design—a competition winner by the team of Deilmann, von Hausen, Rahve and Runau—makes intricate use of a difficult site hemmed in by existing buildings of historic interest, and broken into by the ruins of another. These given factors, plus the unavoidable need for length on the axis of the stage and auditorium, favoured diagonal siting, a solution that is registered externally on one façade, with its saw-tooth plan to accommodate the exit stairs (see frontispiece, p. 154) but not on the other, 1,



1

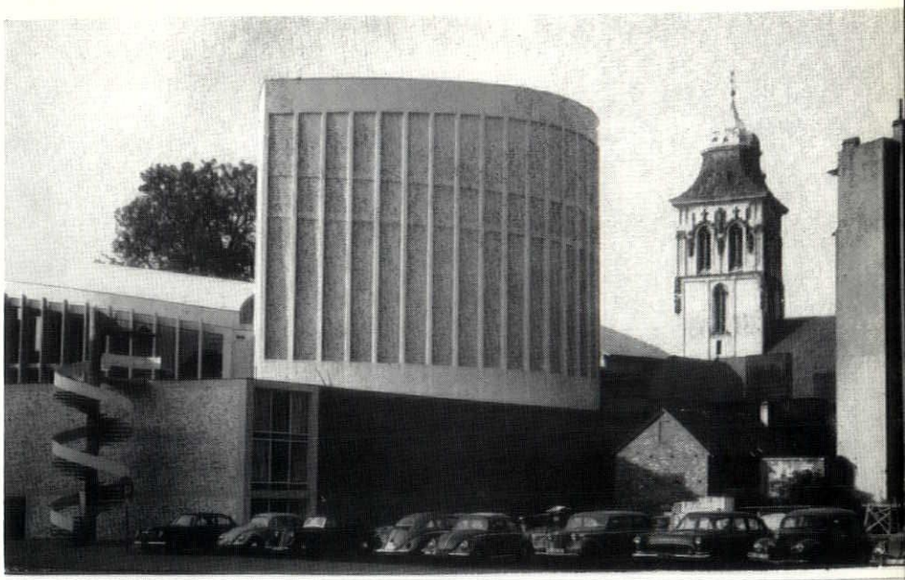
where the restaurant block is aligned with the pavement, leaving an open court at first-floor level, through which rise the ruins of the eighteenth century Romberger Hof, 2, which, with the adjoining Old



2

Town Hall and St. Martin's Church, is one of a series of foils, in form and feeling, to the new building.

The tower of St. Martin's, indeed, even obtrudes into views of the rear of the theatre, 3, in strong contrast to the two bold, curved solids, the one glazed, the other opaque, that house the upper parts of the auditorium and the stage, respectively. In spite of the irregularity of the outline of the composition, the planning of the entrance facilities at ground-floor level, **b**, and the foyer at first-floor level, **a**, is effectively symmetrical, and above this point the stairs and access corridors to the circles and boxes are housed between the outer glazed wall of the auditorium block, and the inner solid wall of the auditorium proper, **c**. Owing to the extremely steep rising rake of the stalls, and the fact that the circles are raked as well, these stairs and corridors have to accommodate a large number of different landing levels, and this gives the circulation great three-dimensional complexity and richness, **d**. Another kind of three-dimensional richness, 4,



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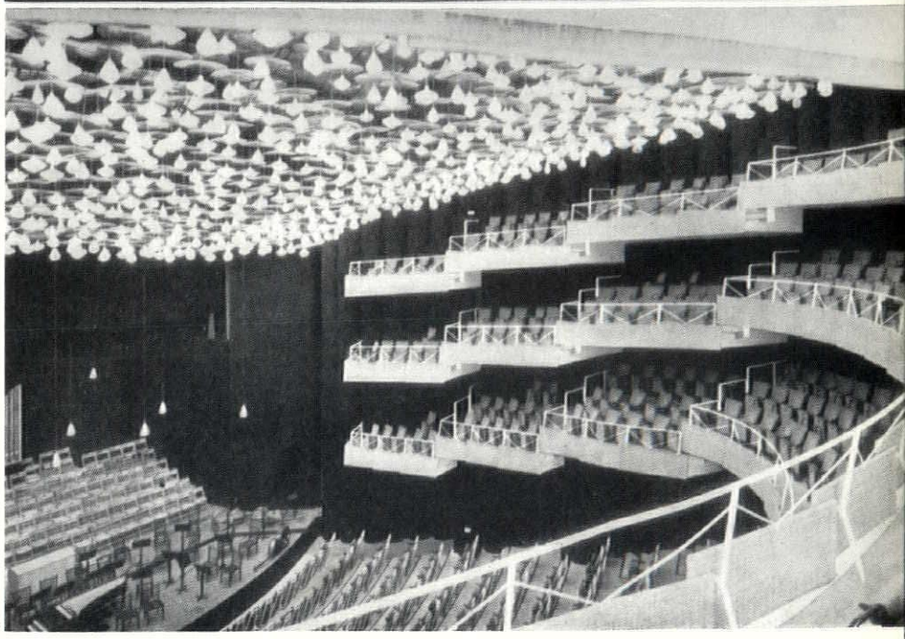

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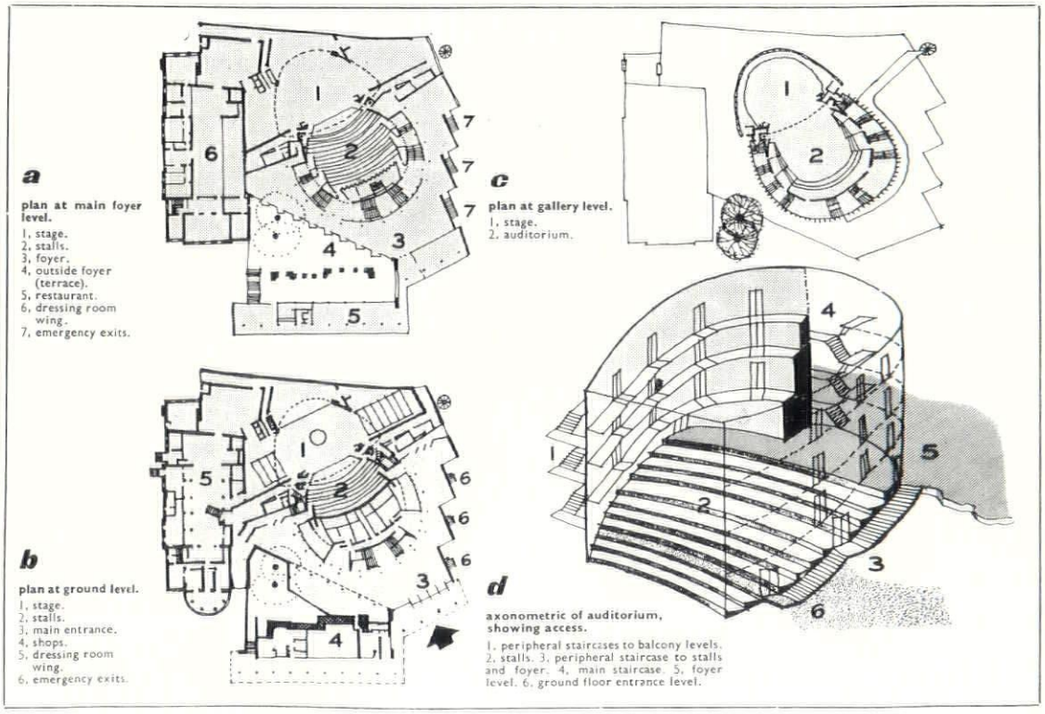


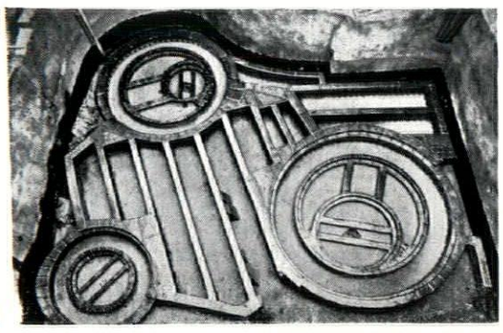
is seen in the overhead treatment of the auditorium, where there is no visible ceiling, but only innumerable discs of wire mesh, shimmering in the light from a galaxy of differently shaped lamps below —a bold attempt to use the possibilities of artificial illumination in the way they deserve to be used. P.R.B.

WORLD

TREASURY IN GENOA

A museum with permanent walls, not movable screens, and localized fenestration, not all-over lighting, is an almost shocking conception now that flexibility and standardized illumination have become unquestioned ideals. Yet Franco Albini in the Museo del Tesoro, *Genoa, has flouted this dogmatic approach* with a degree of success which is its own justification, and designed a museum of character—not an abstract exhibition-box.

The functional programme demanded a design of the utmost originality; it was required to house the treasures of the Cathedral of San Lorenzo in such a way that they might be seen by visitors, but were still readily accessible for liturgical purposes. Since some of the treasures are quite massive works of art, haulage distances and vertical lifting had to be kept to a minimum between treasury and sacristy, yet space adjacent to the cathedral floor was almost non-existent. The solution—something of a stroke of genius—was to excavate the treasury below the level of the minute courtyard between the apse of the cathedral and the archbishop's palace; and to use this space to the full, as a view of the foundations, 1, shows (apse at top, court wall of palace at the left). Even so, a high water-table (the



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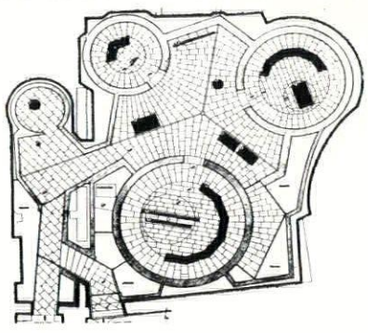

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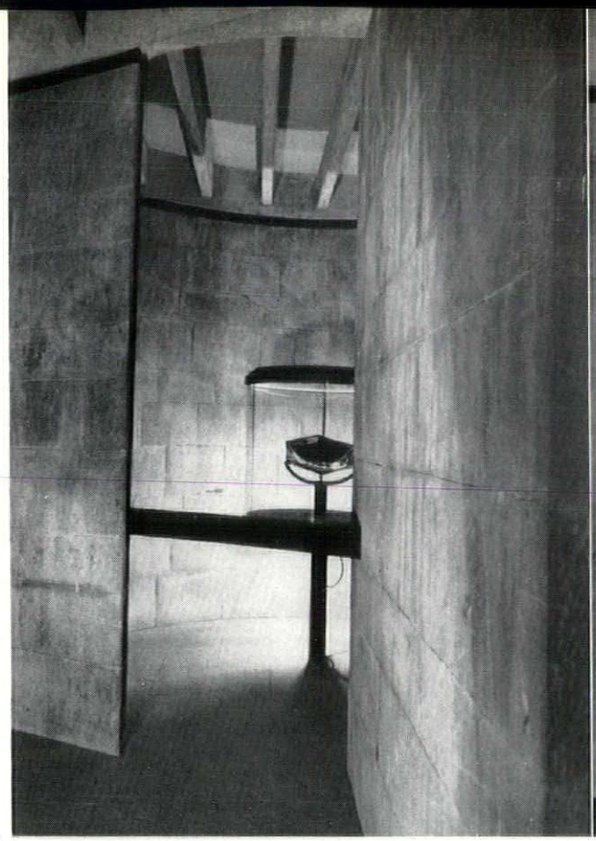

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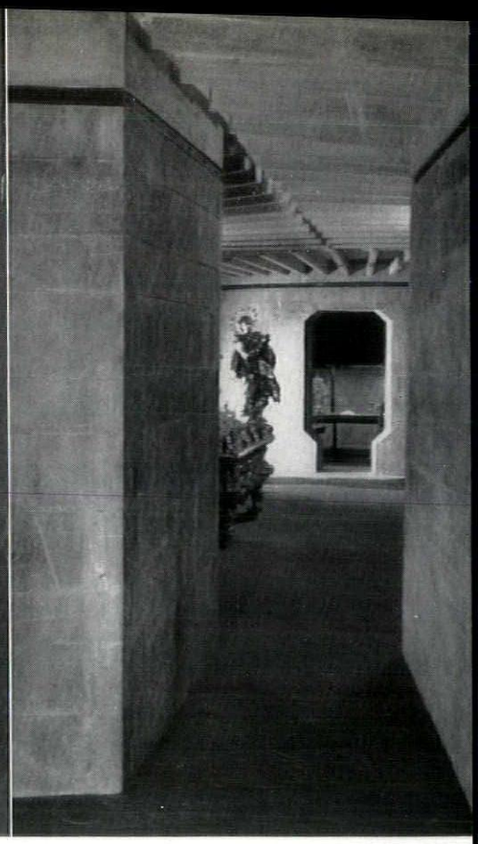
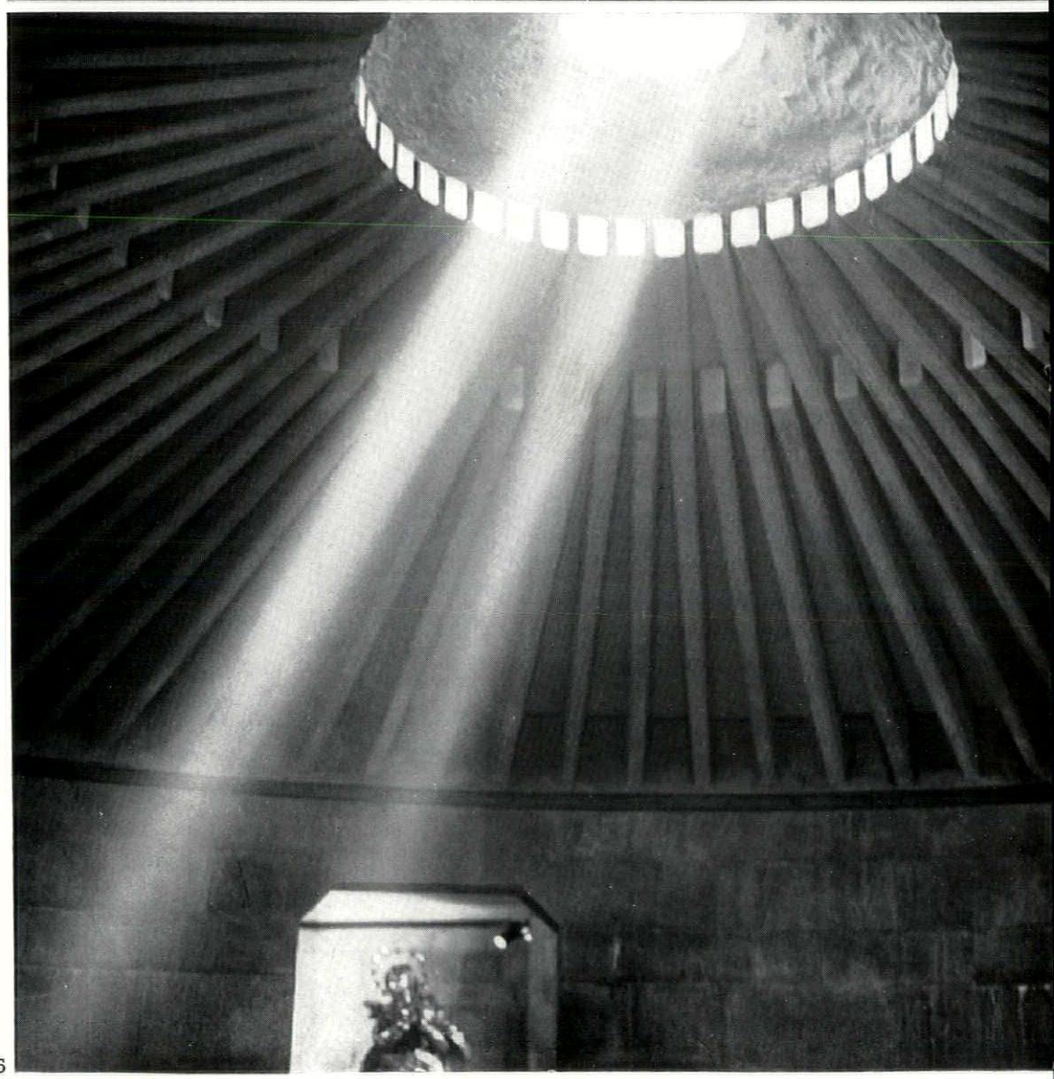
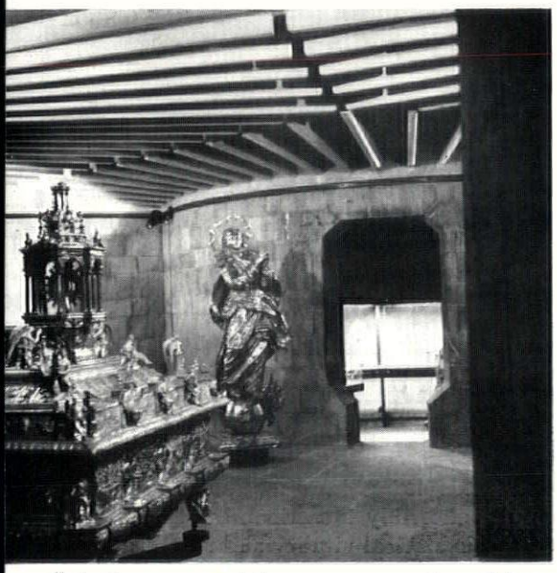




5

cathedral is not much above sea-level) and the established level of the paving of the court left a bare ten feet of depth in which to work, and to dispose the complex of circular cells and irregular halls that comprise the exhibition space, 2.

The visitor, entering by the dog-leg passage from the cathedral (the clergy have a straight hauling-way from the lower sacristy), finds himself first in a polygonal hall from which he can see, straight ahead, 3, the first circular cell, containing one of the greatest of the treasures, the chalice of the Holy Grail. To his right a passage leads into the main



6 hall, 4, containing, among other things, the chest of Corpus Domini and a Baroque silver statue of the Virgin, 6. Here, as will be seen, the pattern of the ceiling beams radiates from centres outside the hall itself, centres that are the *oculi* of the quasi-domes that cover the three circular cells that flank this hall, an effect that is echoed in the floor pattern, 2. These *oculi* serve their traditional purpose of admitting daylight, *via* glass ports in the pavement of the court, the light falling in exiguous and moving beams, 5, that introduce a random but 'lifelike' factor into the carefully controlled lighting of the exhibits, heightening the sense that this is not just a museum where unwanted masterpieces have come to rest, but a real and useful strong-room for priceless objects that are still in use, a stone-built and subterranean repository in a tradition that goes back to the Mycenean treasury of Atreus.

Michel Santiago

EXHIBITIONS

PAINTING AND SCULPTURE

Fast falls the eventide, and amid the encircling gloom of a country lane, a bent old man and his little grandchild have been subjected to a ruthless reduction in size to increase our enjoyment of their unprotectedness: a light is burning in the window of a cottage at the end of the lane, and the child raises a tiny arm to indicate to the old man that they are Nearing Home. But, according to my reckoning, their scale has been tampered with to such an extent that they will have to endure upwards of another hour of weary trudging before they reach the safety of the cottage. (The year is 1872, and the painter is Atkinson Grimshaw, an almost forgotten Victorian.) My own anxiety to see the door close behind the old man and the child is no doubt due in part to the fact that the picture would be better without them, but I remain quite genuinely apprehensive for their safety and have an uncomfortable feeling that I am more interested in them than the painter was. The painter's interest was concentrated entirely upon a nightpiece with distant lights and I think the figures were put in to assure his clients that he was not in love with the dark; but they have served their purpose and no longer have to earn him a living: it would be a service to his memory if they could now be painted out.

The fascinating exhibition of thirty or so of his works at the Arthur Jeffress gallery charted the progress of an obsession which turned him into an equivocal follower of Whistler. His misty, gaslit cities were sufficiently factual to escape the attentions of *Punch's* versifiers, and none ever became '—a tract of mud,

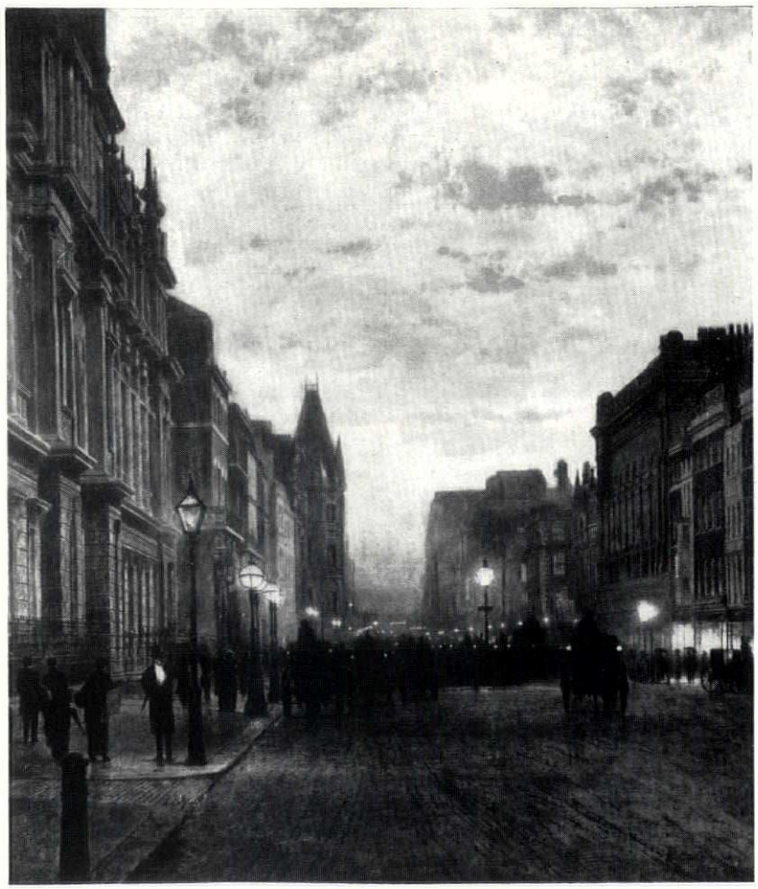
one gas-jet glimmering there alone;

Above, all fog; below, all inky, flood,'

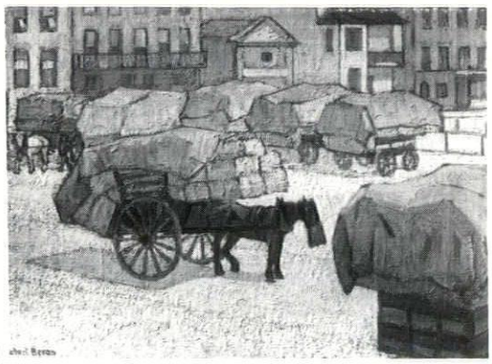
but he managed in his fashion to convey a sense of the enveloping atmosphere, and to expunge the anecdote from his work. Yet the distant figures remained signs for common sentiments: three of the pictures in the exhibition were of the same scene—a wet, moonlit road curving out of sight, with high walls on either side and a lighted house at the bend; the figure of a woman is 'nearing home' in two of them, but has been suppressed in the third, and suddenly the emptiness is fraught with disquiet; a meticulously painted scene becomes an image of a troubled and contradictory region of the spirit; and a nice piece of Victorian topography turns into a tract of the unknown, beyond rational justification.

There is a kind of no-man's-land of glittering, churned-up mud in the foreground of most of Grimshaw's pictures, and in the painting of Piccadilly, 1, with Burlington House on the left, the foreground has been emptied so abruptly that one can imagine for a moment that the traffic lights have switched to red. One would like to see what is going on beyond the sinister cluster of cabs that blocks the view of the Circus, and the clear stretch of road beckons one out of the Welfare State under a treacherously familiar sky.

There is little to arouse one's curiosity in the charming pictures by Robert Bevan recently exhibited at the Arts Council gallery. Bevan, who was a founder-member of the Camden Town Group, was possibly the first English artist to be influenced by Gauguin, and it is evident that he intended to organize colour in such a way that it would lend its own independent vitality to his subject matter, but he never quite pulled it off: his colour still looks mildly disconcerting in its irrelevance to the English scene, and its brightness and cleanliness filters the example of Gauguin through layer upon layer of diffidence, good taste and moral discipline. His hand-



ling of paint was not powerful enough to allow one to be indifferent to his choice of subject, and although Mr. Wood Palmer says in his preface that post-Impressionism provided Bevan with a 'technical screen behind which a private emotion could be indulged without fear of detection,' one doesn't have to be a Sherlock Holmes to discover that Bevan was a horse-lover, and that, when he painted a picture with a horse in it, it was livelier than one without. The picture of hay carts, for instance, painted in Cumberland Market in 1915, 2, would be a very dull affair



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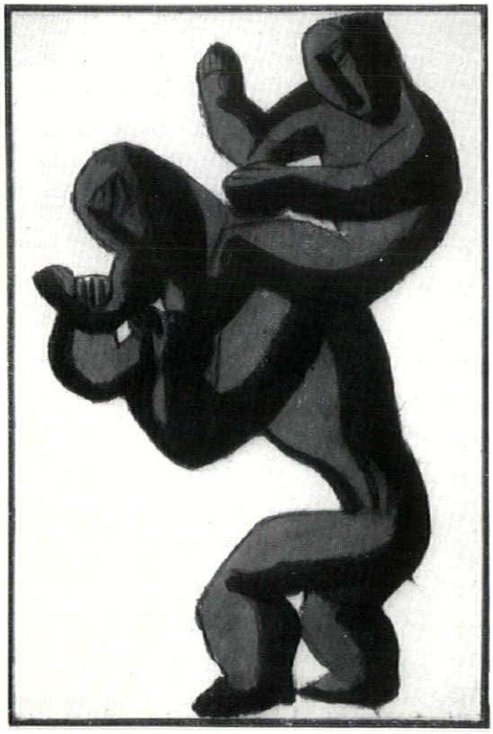
if the scruffy horse with its head in a nosebag were absent. Fortunately there were enough horses in his pictures of Cab Yards, Horse Sales and Markets in the Arts Council's thorough survey of Bevan's work to make it worthwhile.

The Gaudier-Brezska exhibition held at the Arts Council at the same time was a



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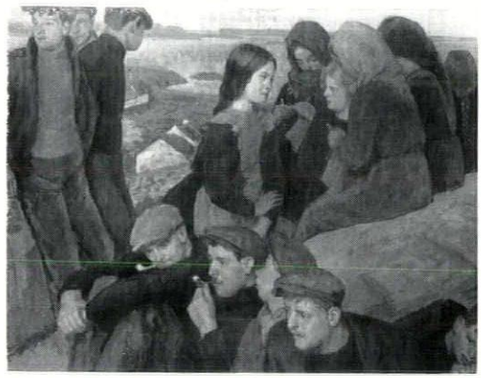
startling contrast to the Bevan show. On the one hand there was the sober yield of many years of concentrated effort maintained at a rather low temperature, and on the other hand, the flourish and scrappiness of the work of a brilliant young man intent upon making the sparks fly and seeming to promise everything. Gaudier was highly gifted, and what is perhaps even more important he had the right kind of vitality and shrewdness to have made something of his gifts if he had survived the first world war. As it is, the exhibition is a reminder that it was handsome of him to choose London as the stage for his gay, facile opening survey of Parisian researches into form and colour. The drawing called 'Wrestlers,' 3 (I thought it was maybe a 'Mother and Child' before consulting the catalogue), demonstrates his verve and humour and the naïvety of his response to African wood carving.

The Academician Henry Lamb recently exhibited some pictures in the Reynolds room at the Leicester Galleries which were intended, I think, to be contributions to the neglected art of *genre* painting, but they gave me the impression that the artist was ordering the 'natives' about



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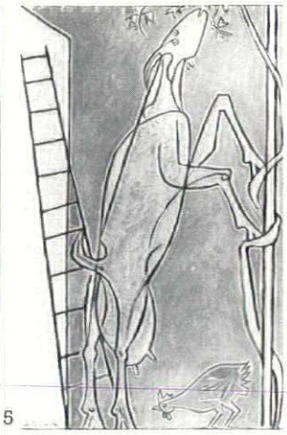
with the unimaginative self-assurance of the average English film director. Frith might not have disapproved of the pretty young leading lady in 'Island Parliament,' 4, but the chalky colour, dilatory finish and



5

general lack of animation should be enough to make him turn in his grave.

John Craxton, exhibiting even less appropriately in the Hogarth room, is a more baffling case. Year by year his Greek sailors and goats, 5, become a little more frigid and comic, and the latest set may be said to have brought fifteen years or so of promise to a close. If he is working on yet another set, he will surely become eligible for a place among the lesser English Eccentrics.

John Bratby is one of the few English artists who occasionally strike a balance between image and paint. He has little imagination outside the act of painting, and when he 'thinks up' a subject the result is horribly theatrical, but he has an almost hysterical vitality and is at his best when his paint can revel in a scene of confusion or squalor. One of his finest achievements to date is the large painting of a 'Courtyard with Washing,' 6, included in his recent show at the Beaux Arts. Nothing is mitigated, but everything assumes the life of the paint, and the sordidness acquires a kind of grandeur.

Robert Melville

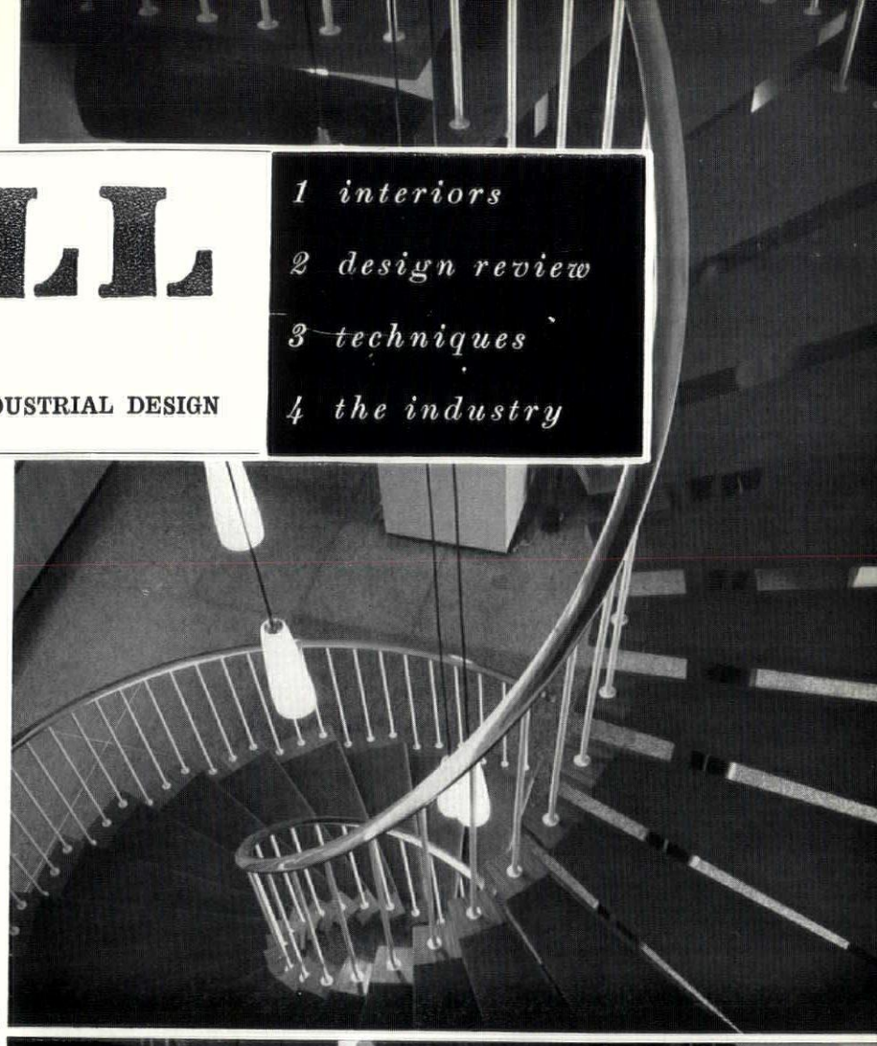


6

SKILL

A MONTHLY REVIEW
OF BUILDING TECHNIQUES & INDUSTRIAL DESIGN

1 interiors
2 design review
3 techniques
4 the industry



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1 INTERIORS

ENTRANCE HALL AT WITTON, BIRMINGHAM

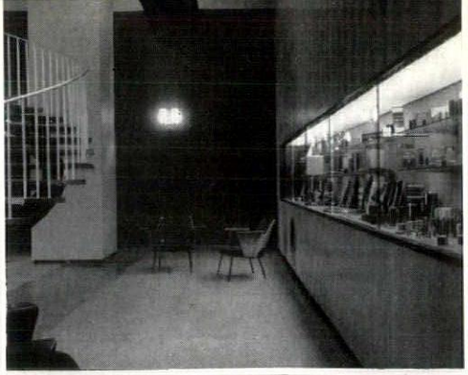
Architects, John and Sylvia Reid in association with Robin Day

Consulting Engineers, Clarke Nicholls and Marcel

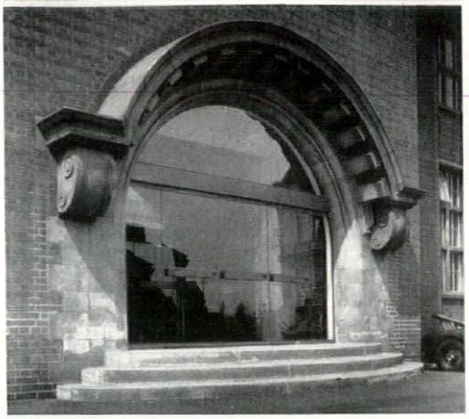
This is a remodelling of the existing entrance hall at the general offices of the Metals Division of ICI. It provides a new reception lobby and waiting space, and a new staircase to the directors' offices on the first floor (the previous staircase was small and wrapped around a lift-shaft). All the existing walls were retained and this made a spiral staircase the only practical method in the space available. The staircase is 16 ft. 6 in. high and turns through 360 degrees; it is entirely without external support, all weight taken by the

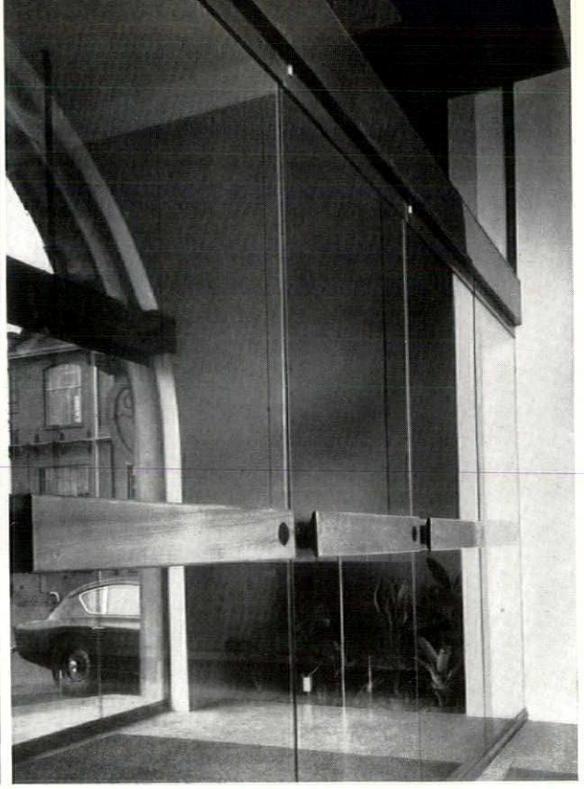
1 *and* 2, *the entirely free-standing staircase in the hall of the ICI Metals Division office, Witton.*

ENTRANCE HALL AT WITTON, BIRMINGHAM



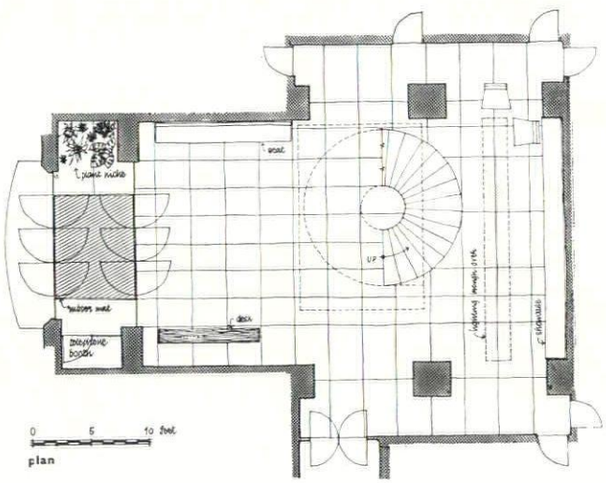
3, *the rear wall of the hall, which contains the showcases and is veneered in Japanese sen.* 4, *the new front doors of armourplate glass, and* 5, *the inner series of doors.*



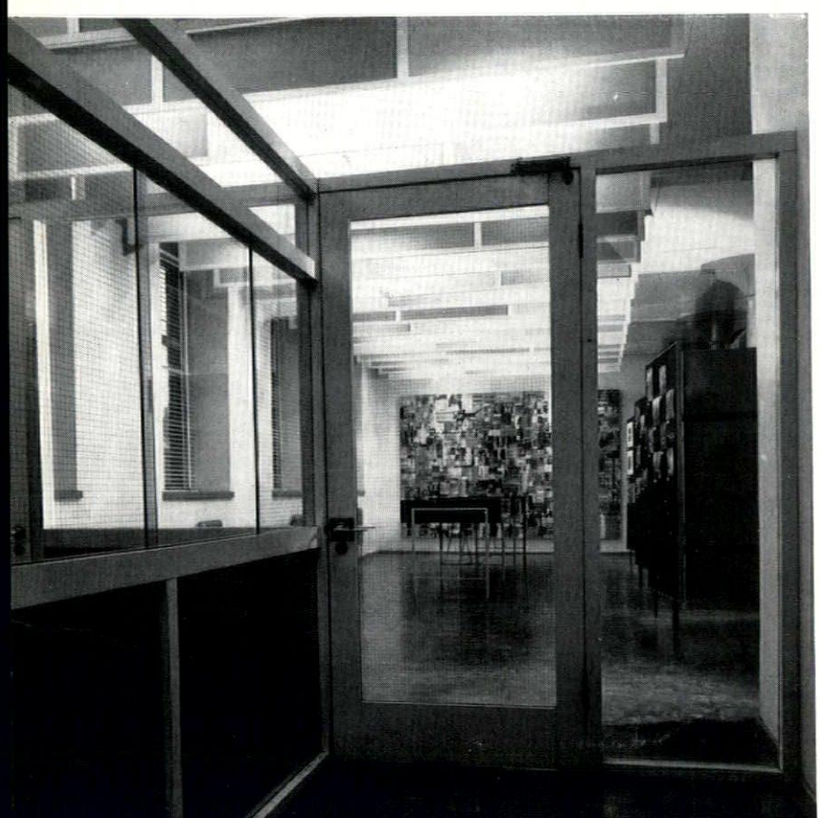


two 8½ in. diameter steel tubes of the staircase itself, a method which as far as is known has not been used on this scale before. The remodelling also included display cases and a selection of extruded sections made by the metals division which were set in one of the terrazzo slabs of the floor and ground off flat to form as it were a permanent catalogue page. Heating is by electric panels under the floor.

The panelled walls inside the entrance door are covered with grey vynide which is wrapped around each panel to leave a vertical joint between panels; the rear wall is veneered in Japanese sen and the flank walls are painted Vandyke brown. Ceilings are white; the lighting trough and all exposed steelwork is black. The stair treads are mahogany, grey-carpeted; the balusters are stove-enamelled white and the handrail is polished bronze. Sharp greens and blues have been used in the chair upholstery to contrast with the low-toned colour scheme used elsewhere.



plan



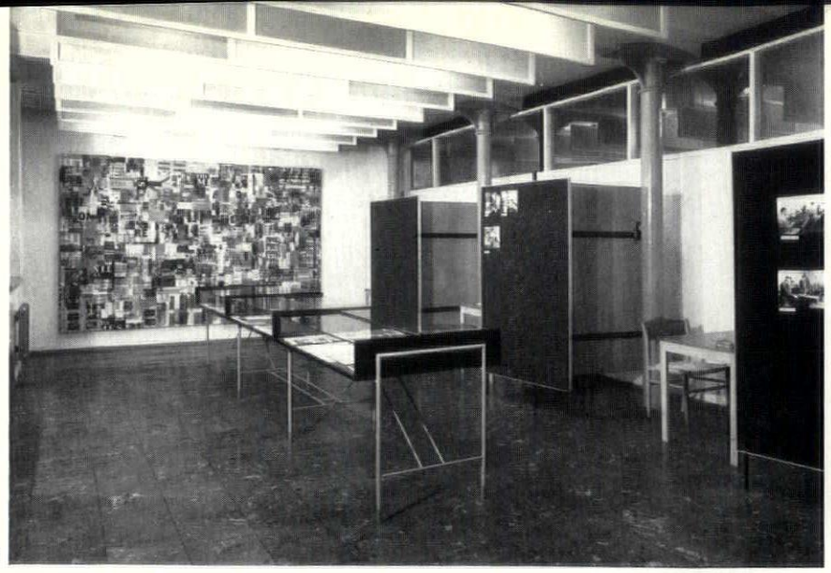
1, *the hall seen through the entrance lobby.*

ENTRANCE AND RECEPTION HALL AT BRADFORD

Architect: Trevor Dannatt

A part of the ground floor of the existing administration building (at one time a woollen mill with stone walls, timber floors and beams, and cast-iron columns) was required by Messrs. Lund Humphries as a new entrance with waiting space and screened bays for interviewing. More direct access from the street was required, together with new steps and a raised terrace, sheltered by a canopy.

The first entrance area is divided with door-height glazed screens into a lobby





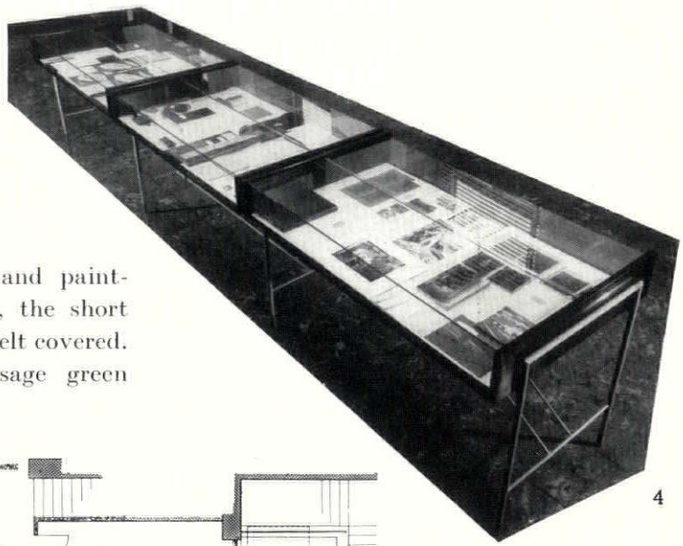
2, 3

2, from the waiting space, the end wall with collage by Eduardo Paolozzi composed of Lund Humphries printed material. 3, the hall looking back towards the entrance. On the left are the interviewing bays. The panels of the ceiling louvres are painted different colours. 4, the showcase is of three sections on a demountable undercarriage.

and into rooms for the commissionaire and telephone-receptionist. The main area comprises space for waiting, exhibitions space, and three interviewing bays corresponding to the structural grid and divided by L-shaped screens, the short arms of which, facing the main space, can be used for displays. Separation from the rest of the floor on the long side is by a solid wall up to 7 ft. high and a double glazed section above to the ceiling.

Artificial lighting is by 17 lines of ceiling lights each with a 5-foot fluorescent tube and a 60-watt tungsten, arranged alternately and screened by simple framed hanging louvres between each row and which give the effect of a lowered ceiling. The louvres are divided each into 3 sections painted different colours to an over-all rhythm, which are related to the richer colours in the collage by E. Paolozzi (constructed from miscellaneous Lund Humphries printed material) which forms a principal feature on the end wall. The specially designed showcase consists of three sections fixed on a demountable tubular undercarriage.

Walls are generally white and paintwork is light grey and white, the short panels to bays are 'rook-wing' felt covered. The flooring throughout is sage green marbled plastic tile.



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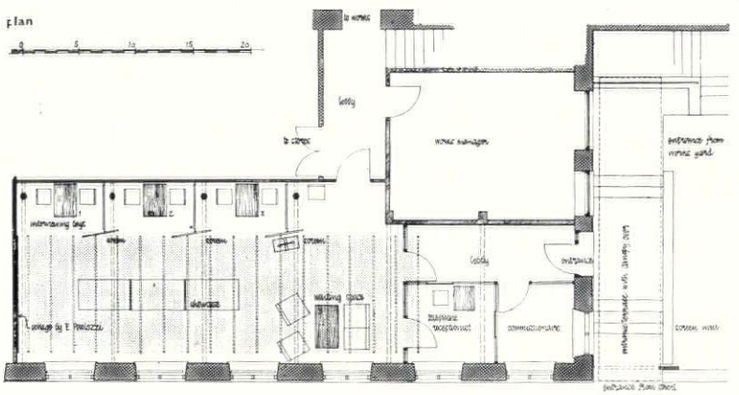


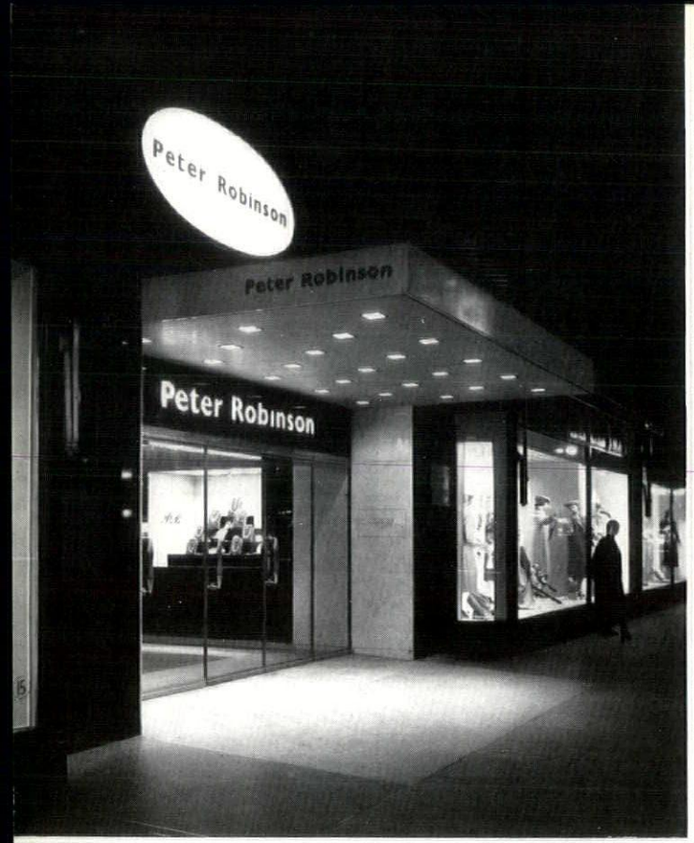
ENTRANCE LOBBY, CANOPY AND SIGN AT OXFORD CIRCUS

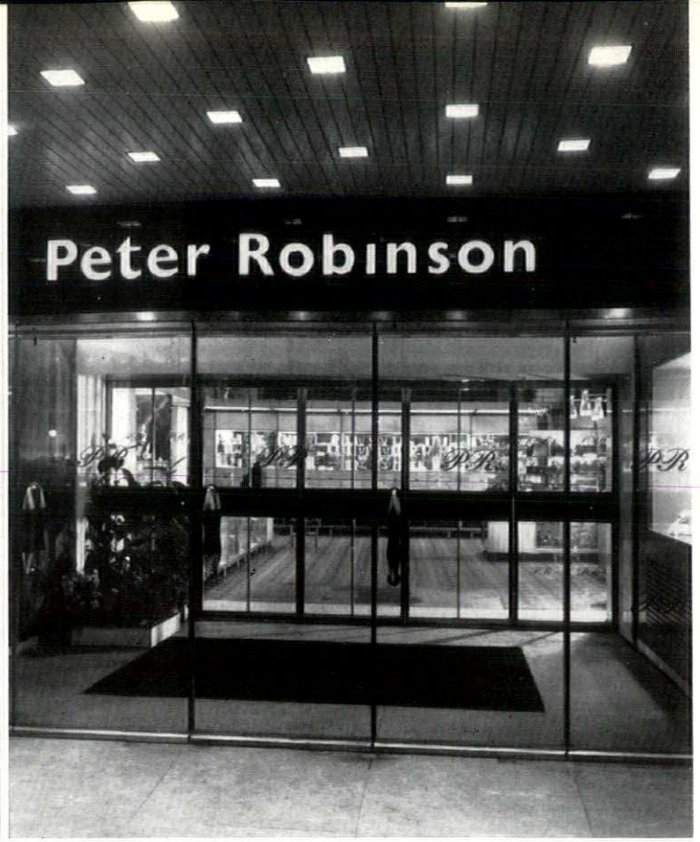
Designers: Misha Black and William Apps of Design Research Unit

The problem was to provide a new entrance lobby at Peter Robinson's store, with an inner and outer set of doors and to include a display window within the lobby. A new canopy projecting farther over the pavement than the old one and an illuminated sign above the entrance within the recessed arch of the main building were also required.

The lobby floor is of grey marble slabs with an inset mat of black rubber. The grey marble is carried through to the street to form a threshold. The ceiling is of suspended fibrous plaster, painted white and indirectly lit by cold cathode tubes. Outer doors and side screens are of armour-plate glass in stainless steel frames. The handles have teak grips and satin-chromium plated metal parts with the initials P.R. inscribed in gold leaf on the glass. The inner doors are of stainless steel with glazed areas of Georgian wired polished plate glass. The central horizontal band is polished black granite. Flanking the inner and outer sets of doors are areas of white Sicilian marble. Between these marble areas, on each side of the lobby, the wall finish is of teak veneer, $\frac{1}{8}$ in. thick on a solid hardwood core. The veneered area on the left of the lobby looking in from the street contains the escape doors and that on the right surrounds the display window, which is lined with natural-coloured leather panels and has a teak veneered floor and fibrous plaster ceiling.

The canopy consists of a steel frame fixed to existing steelwork above the entrance, and has a soffit of ribbed fibrous plaster painted pink with a series of spot lights set into it. The fascia is of white Sicilian marble, that above the outer entrance doors is of black granite. The





ENTRANCE LOBBY, CANOPY AND SIGN AT OXFORD CIRCUS

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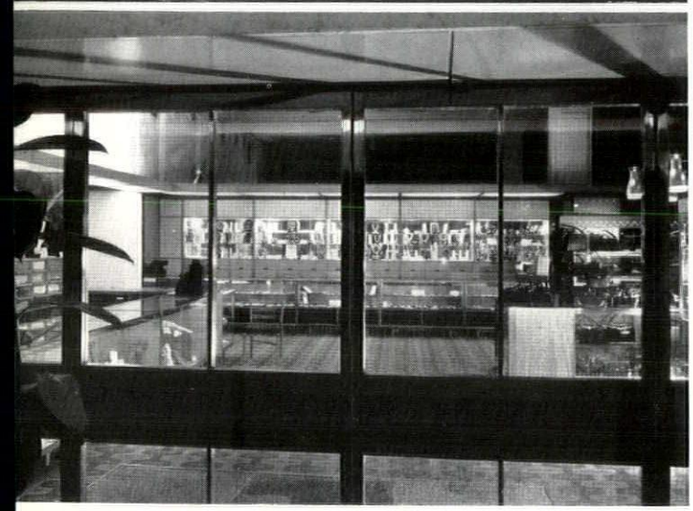
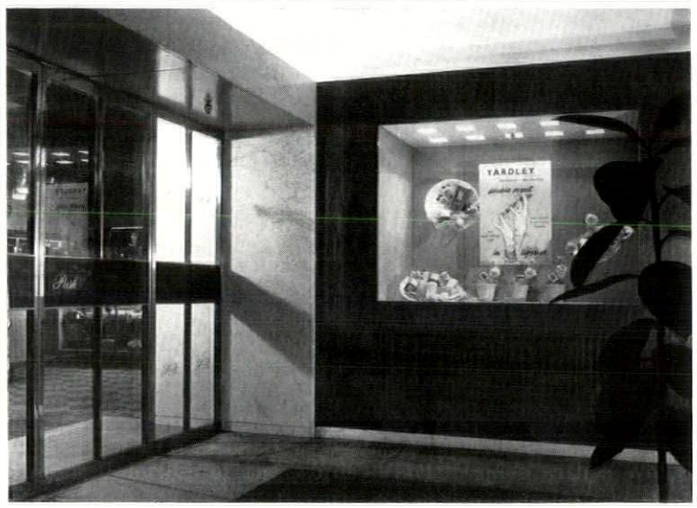
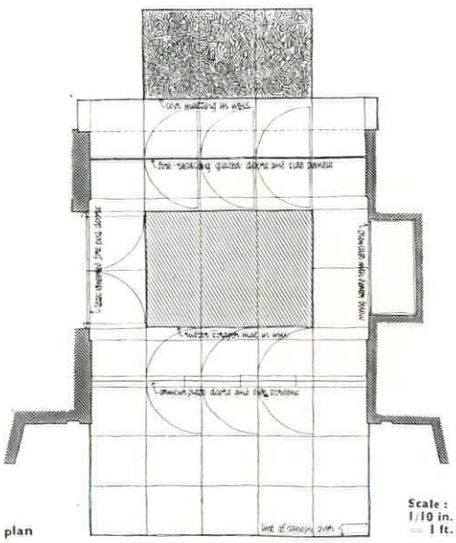




3, 4

1, the canopy and sign. 2, under the canopy, showing the soffit of ribbed fibrous plaster. The letters of the name are bronze-sided and backed, superimposed on black granite. 3, the inner doors of wired glass framed in stainless steel. 4, the lobby, showing display window with ceiling similar to soffit of canopy.



plan

Scale : 1/10 in. — 1 ft.

superimposed letters of the words 'Peter Robinson' are constructed with black bronze sides and backs and perspex fronts, and are internally illuminated. The new sign is an oval 'box' with stainless steel sides with a white perspex front and the wording 'Peter Robinson' superimposed in blue perspex, the whole being supported on a steel tube fixed between the base and apex of the existing recessed arch.

2 DESIGN REVIEW

KITCHEN STORAGE

Trends in kitchen design are towards a closer integration of storage and other equipment, but many British products lack the sophisticated feeling for style which is characteristic of advanced American work.

Since the war housewives have enjoyed the fruits of much common-sense thinking in kitchen design. In the New Towns and other recent housing schemes the incoming householder has few worries concerning the purchase of kitchen furniture—the essentials are provided as an integral part of the house. Very often, because of the functional considerations which have determined the form and character of these fully equipped kitchens, they are the only parts of a house which suggest that the occupants have come to terms with the

problem of living in a modern society. Sitting and bed rooms too frequently reveal indiscriminate purchases and thoughtless arrangements.

Much credit for comparatively widespread development of these fitted kitchens is due to the dimensional standardization created by EJMA whose purpose-made kitchen storage is available on order for new houses and conversions. The householder, however, who wishes, himself, to furnish the kitchen of an older house can turn to the wide range of free-standing and unit storage furniture available on the market. Here a few manufacturers have taken the opportunity to transcend the stark functional simplicity of most kitchen units to provide a warmth and humanity which will make the kitchen environment pleasant to be in and stimulating to the eye. The American trend towards naturally finished wood in kitchen storage (mostly, it is to be regretted, in Colonial imitations), as well as in copper finishes and removable decorated covers for major appliances, shows a general recognition of this need for richness of surface treatment which, in turn, has grown out of the tendency to combine the functions of kitchen and dining room. Unfortunately the majority of British designs lack refinements of detailing and finish. Few can compare with the 'Hygena' and Kandya cabinets where contrasting colours and textures—paint with natural wood, plastics with glass—have been used by their designers with sensitivity and skill.

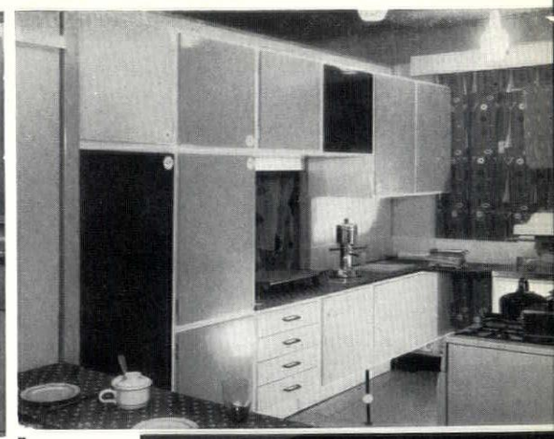
Storage in the kitchen is a composite problem and the jar that stands on the shelf is as important as the shelf itself. Plastics of all kinds have contributed to the design of food containers, while plastic covered wire has allowed an old material to be put to new uses in brightly coloured racks of many kinds. The refrigerator has become the most important single item, but even here its role as a free-standing box is likely to change so that it becomes more closely integrated with other storage units. Already several ranges of kitchen furniture provide for the inclusion of refrigerator units, although mostly the smaller capacity models. American appliance manufacturers have been working hard to make the kitchen the most attractive and lived-in part of the house. This is good sense in an increasingly servantless society.

Few free-standing kitchen cabinets produced since the war have been without faults which, for the housewife, cause constant irritation. Metal cabinets have rusted where the paint has chipped; drop fronts, when open, have cut off access to drawers placed immediately underneath. Even where function has been adequately studied, glass fronts have appeared with banal leaded or screen printed patterns. The 'Hygena', **1**, presents a contrast: the success of the design rests on the complex treatment of the front surface—the contrasts of colour and texture, the bas-relief effect resulting from the recessed ventilating panels, the drawers which appear unsupported from below—a complexity which is, however, contained and kept in order by the simple and well proportioned structural carcass. Similar disciplines have guided the design of the Kandya buffet, **2**, where the use of natural wood for the carcass suggests a link with dining-room standards.

Unit furniture which can be built up in various combinations is the solution to kitchen storage which most housewives wish for but cannot always afford. The fault of most is a dull uniformity lacking focus or the relief of colour change. Of the metal kitchen units, the 'English Rose' range, **3**, in aluminium, is one of the most comprehensive. Cookers, refrigerators, waste containers, sink units and so on are available, all with the characteristic inward slope at the top to allow adequate knee room. Like the aluminium 'Leisure' cabinets, **4**, they have an appearance of straightforward efficiency but lack variety. The Heals units, **5**, have an elegance which stems from the pattern of coloured doorfronts each isolated by the white painted carcass frame. Cupboards beneath the working top are well clear of the floor, maintaining a sense of spaciousness that would be denied by floor standing units. Doors have touch catches, leaving them clear of knobs, but the generous depth of the



3



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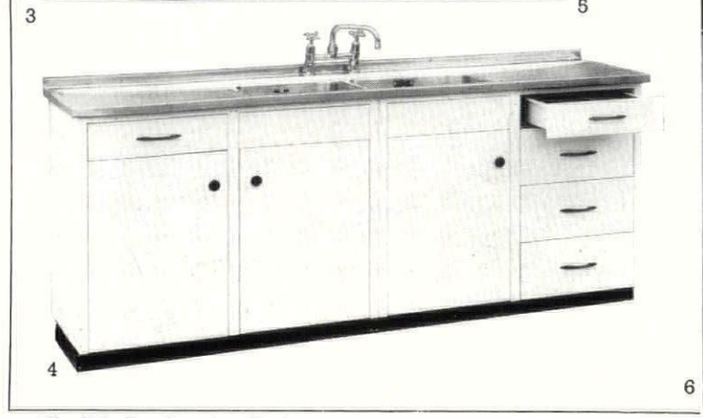

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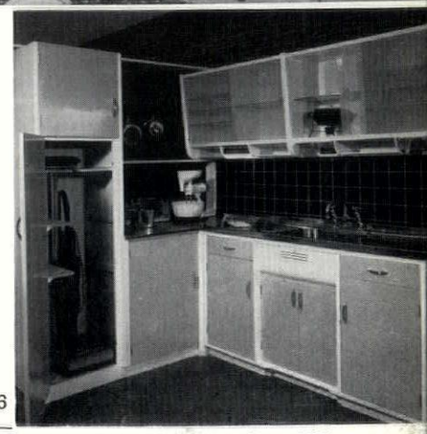
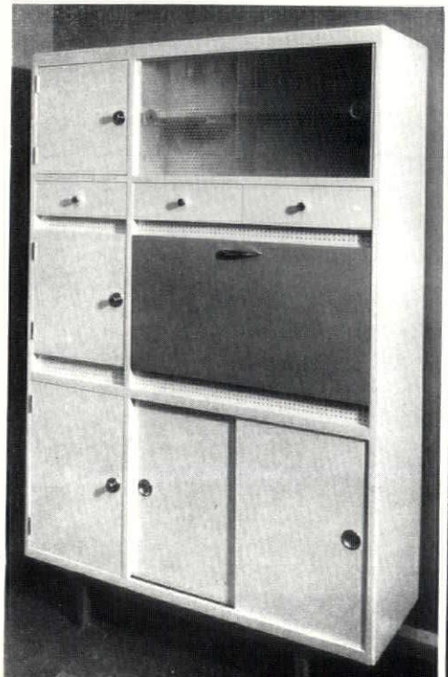


6

3, 'English Rose' units. Designer, F. G. Marshall. Maker, C. S. A. Industries Ltd. Height 3 ft.; width 1 ft. 9 in.; depth 22 in. 4, Double sink unit. Maker, Leisure Kitchen Equipment Ltd. Height 3 ft.; width 7 ft.; depth 1 ft. 9 in. £81 8s. 5, Storage units. Designer, J. Christopher Heal. Maker, Heal & Son Ltd. Height (basic units) 1 ft. 9 in.; depth 1 ft. 6 in.; width 1 ft. 9 in. £5 19s. 6d. 6, 'Hygena' units. Designer, George Féjer. Maker, Hygena Cabinets Liverpool Ltd. Work top height 3 ft.; widths 5 ft. 3 in. (sink); 3 ft. 6 in. (wall fitting); 1 ft. 9 in. (cupboard); depth 1 ft. 9 in. £46 17s. 6d. (sink unit); £8 4s. 4d. (wall fitting).

1, 'Hygena' cabinet. Designer, George Féjer. Maker, Hygena Cabinets Liverpool Ltd. Height 6 ft.; depth 1 ft. 3 in.; width 3 ft. 9 in. £26. 2, Buffet. Designer, Margaret Harvey. Maker, Kandya Ltd. Height 6 ft.; depth 1 ft. 4 in.; width 5 ft. £25 17s. 10d. (N.B. All prices mentioned include purchase tax.)





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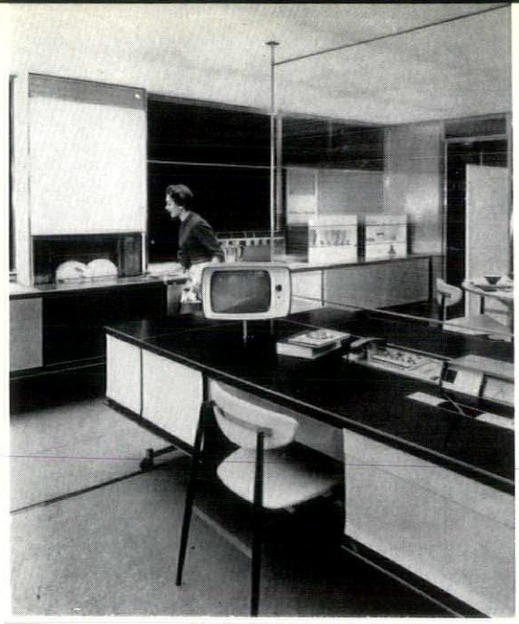
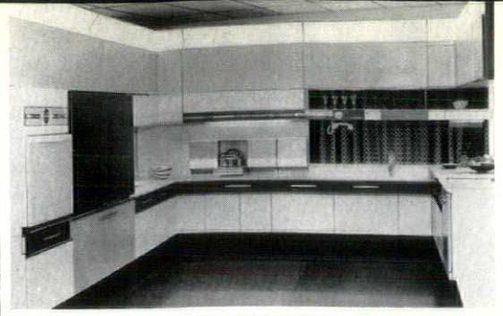
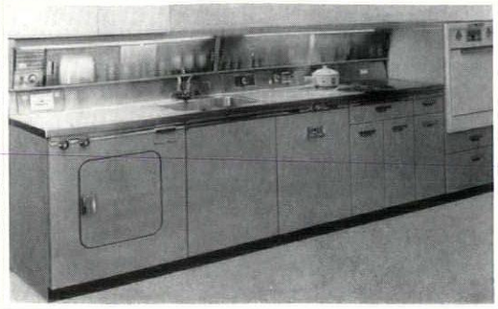
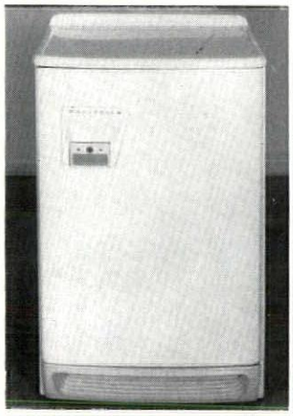


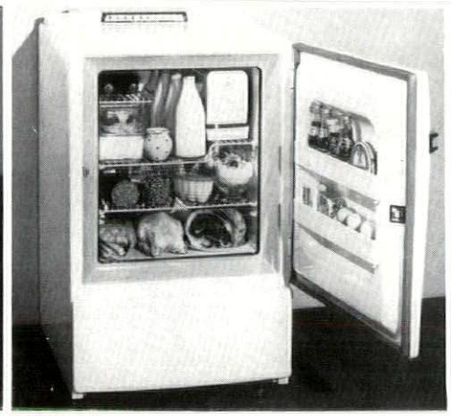


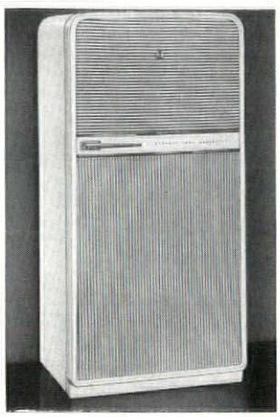


7, 8, 9

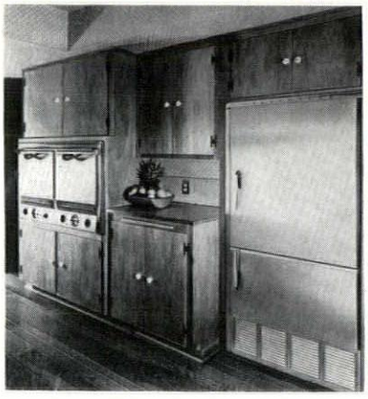
7, USA Experimental 'Kitchen of Tomorrow.' Maker, Frigidaire. 8, USA 'Holiday Kitchen.' Maker, Frigidaire. 9, USA 'Kitchen Centre.' Maker, General Electric. 10, refrigerator. Designer, Wilkes & Ashmore in conjunction with maker, Prestcold Refrigeration, Pressed Steel Co. Ltd. Height 3 ft. 1¼ in.; width 1 ft. 10¼ in.; depth 1 ft. 10 in. £74 13s. 5d. 11, Refrigerator. Maker, Electrolux. Height 3 ft. 0¼ in.; width 1 ft. 9¾ in.; depth 1 ft. 11¾ in.; capacity 2½ cu. ft. £41 18s. 3d. 12, USA refrigerator with removable door covers. Designer, Dave Chapman. Maker, International Harvester. 13, USA built-in refrigerator. Maker, Thermodor. 14, USA built-in refrigerator. Maker, Amana.







10, 11, 12





13, 14

upper cabinets makes them appear top-heavy as well as being awkward in use. One way of overcoming this problem can be seen in the 'Hygena' units, **6**, where the wall-hung cabinets slope in at the base where they are less likely to cause a bang on the head.

Compared with the approach of some American appliance manufacturers, British firms have still a long way to go. Experiments in kitchen planning such as the Frigidaire 'Kitchen of Tomorrow,' **7**, represent realistic research into possibilities for the future and, through their value as publicity, stimulate public demand for advanced design. One result of such experiments is the Frigidaire 'Holiday Kitchen,' **8**, where dream-world fantasies have been translated into a practical commercial product. Here all the diverse equipment of the American kitchen has been integrated within a common package ready to be installed against the rough, unsurfaced walls of the room. In the background can be seen the eye-level control panel with knobs for the fold-down cooking tops immediately below. The panel also includes built-in radio, memo-pad, telephone and inter-com. Oven, refrigerator and deep-freeze are on the left and all units (based on a 2 ft. module) have an appearance of refined, austerely classical elegance. Similar problems have been solved on a somewhat smaller scale in the American General Electric 'Kitchen Centre,' **9**, where storage cupboards, washers, cookers and so on are co-ordinated within a single unit with a splash-back incorporating a control panel, radio, pull-out flexes and glass-fronted cupboards.

Refrigerators in Great Britain are becoming a major element of kitchen storage. Unlike models in the USA, however, smaller versions remain the most popular. Although some attempt has been made to introduce colour, white and cream finishes still predominate. The new Prestcold, **10**, and the Electrolux, **11**, show thoughtful and sensitive designs in the unpretentious manner which is essentially British. More work has been done in the USA on models designed to be built into the house. The use of clip-on covers is a method of giving more visual interest to the refrigerator door which has been used by several American firms and can be seen in the International Harvester model, **12**. The Amana, **14**, and the Thermodor, **13**, have a crispness of form and richness of surface interest derived from the use of copper (Amana) and stainless steel (Thermodor).

3 TECHNIQUES

CLOTHES DRYING

by Mary Ward

Year by year, it seems, there is a greater need to augment the excellent qualities of breeze and sunlight by some other more certain means of clothes drying. In many homes, of course, natural open air clothes drying is quite impossible and the form and efficiency of the substitute is a matter of very great moment.

Owners of combined washing machine and tumbler dryers have no problem, but for others three methods are now available. First the most rapid acting and the smallest appliance, the spin dryer, which extracts water by centrifugal force created by rapidly spinning (on a vertical axis) a perforated drum containing the wet clothes. This process uses no heat and so produces no steam, a virtue where condensation must be avoided. The second and slower means is the separate tumbler dryer, which slowly turns the clothes over inside a perforated drum through which warm air is forced. Neither of these two types of appliance can be used for airing purposes, and there are two possible criticisms of the methods they employ, the wear and tear on the clothes and the crushing of the fabric making ironing more difficult. Lastly, there is the drying cupboard relying entirely on convected warm air currents induced by gas or electric heaters. This method of drying is a little slower than the tumbler dryer and requires more cubic space. It is, however, completely silent, requires very little maintenance and the cupboard may also be used for airing purposes.

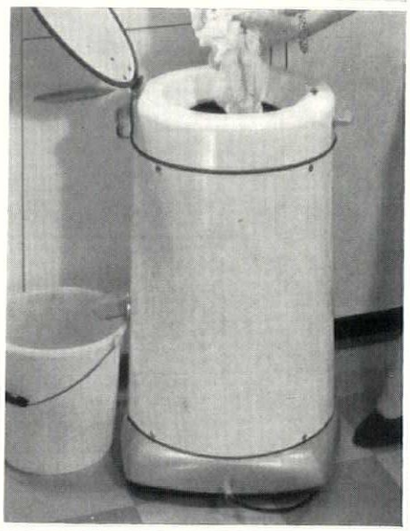
spin dryers

There is only one British made spin dryer on the market at the moment

1, *the Edy Minor.* 2, *the Creda 'Debonair.'* 3, *Morphy Richards spin dryer.* 4, *a Belgian spin dryer marketed by Chilton Electric Products.*



1



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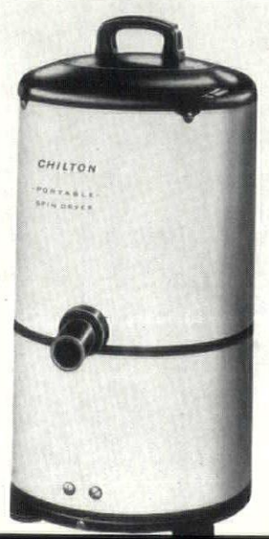


4

but several firms are importing machines.

1, the Edy Minor made in Holland and marketed by Edy (Great Britain) Ltd., is a spin dryer 19 in. high by 14 in. diameter, A.C. 220/250 volts, 100 watt induction motor, hand brake. Black and white vitreous enamelled steel interior and exterior. A load of 6 lb. dry weight of clothes can be dried at 1,460 revolutions per minute in about five minutes, a much faster method than the tumbler dryer. £29 17s. 1d.

2, the Creda 'Debonair' made by Simplex Electric Ltd., is a British made spin dryer, 28 in. high by $15\frac{3}{4}$ in. diameter, $18\frac{1}{2}$ in. overall diameter. For A.C. mains 200/210, 220/240 and 250 volts, 250 watt motor. Pressed steel case stove-enamelled white, with red trim, grey base. Pressed galvanized steel copper finished interior. The machine will dry a load of 6 lb. dry weight at 2,600 r.p.m. in 4 minutes. The raising and lowering of the lid controls the starting and braking. £37 16s. 0d.

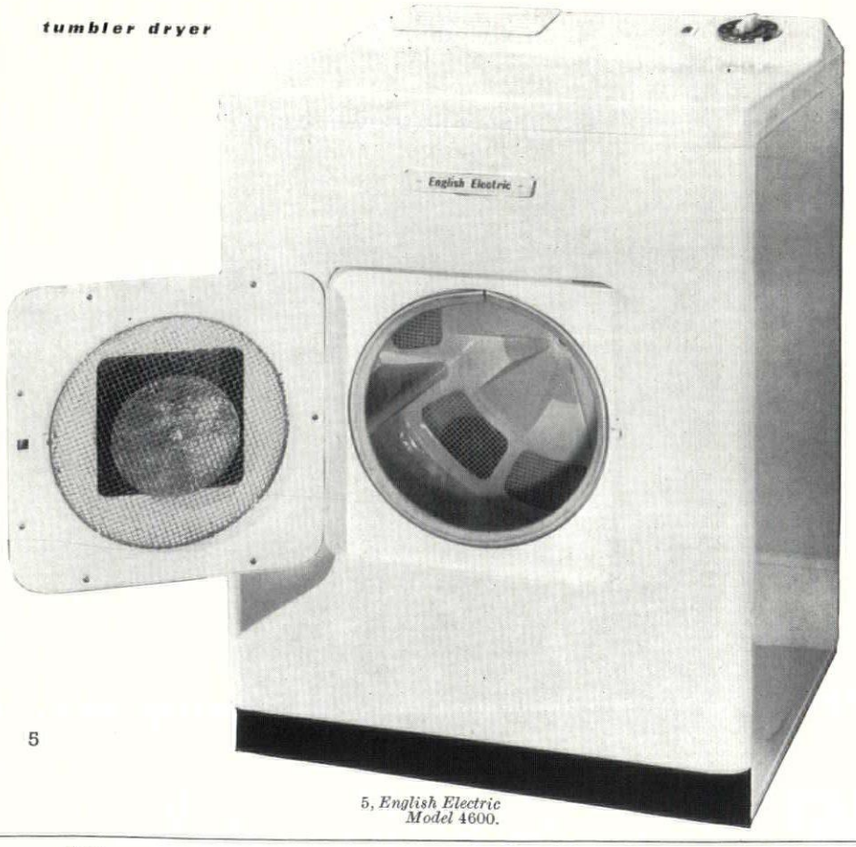
3, the Morphy Richards spin dryer made in Holland, 25 in. high by 17 in. diameter, for A.C. or D.C. mains, 200/220 or 230/250 volts, has a 350 watt motor controlled by a foot pedal. The steel case is white paint coated inside and stove enamelled outside. This machine gives about the same results as the Creda, that is a load of 22 lb. wet clothes (approximately the same as 6 lb. dry weight) is ironing dry in 4 minutes. £35 16s. 7d.

4, a Belgian spin dryer, marketed by Chilton Electric Products Ltd. is $24\frac{7}{8}$ in. high by $11\frac{7}{8}$ in. diameter, a smaller capacity model (6 shirts being a full load) for A.C. or D.C. mains, 210/250 volts, 80 watt motor, 2,100 r.p.m. The case is of steel, vitreous enamelled grey mottle internally and white externally, with black plastic top and lid. £27 6s. 0d.

tumbler dryer

5, the first British made tumbler dryer on the market (as distinct from combined washing machine and tumbler dryer) the English Electric Model 4600, 36 in. plus $1\frac{7}{8}$ in. high by $26\frac{1}{4}$ in. wide by $26\frac{1}{8}$ in. deep. 200/210, 220, 230/240, 250 volts, A.C. Finned pressed steel drum, welded sheet steel cabinet finished white or cream stove enamel with grey toe strip. The pressed steel worktop has an inclined control panel. Clothes are loaded through the front door which contains the air inlet and the $2\frac{3}{4}$ kW. heater protected by a wire mesh screen. The automatic timer on the control panel is pre-set for any period up to 90 minutes drying time. When the pointer returns to zero both motor and heater are switched off. A thermal cut-out switches off the heater if the temperature becomes too high. The warm air is drawn from the door vent through the drum by a fan mounted behind it. The exhaust passes out through the fluff filter seen at the left of the control panel. The machine will take 16 to 18 lb. of wet clothes per load. 45 minutes for cotton to 90 minutes for blankets are approximate drying times. £61 18s. 9d.

tumbler dryer



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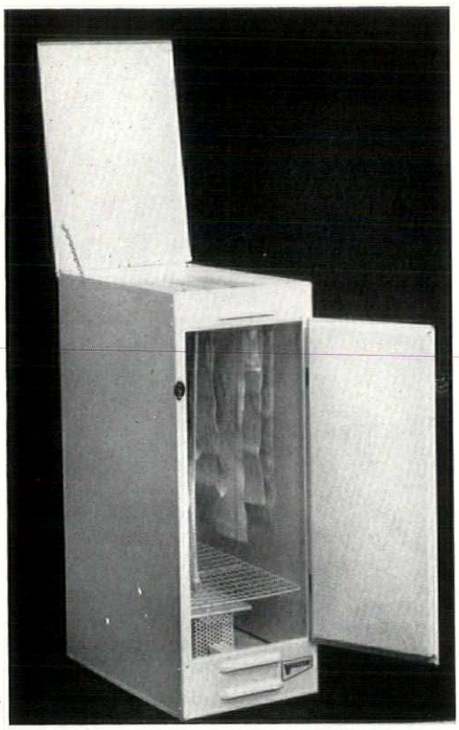
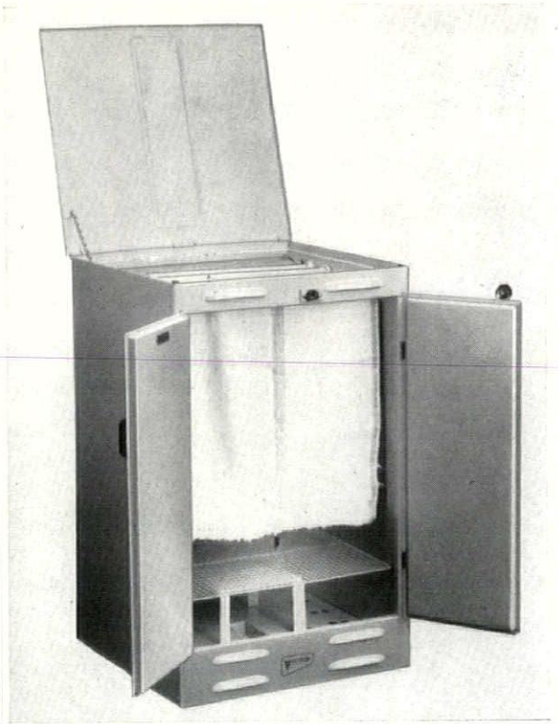
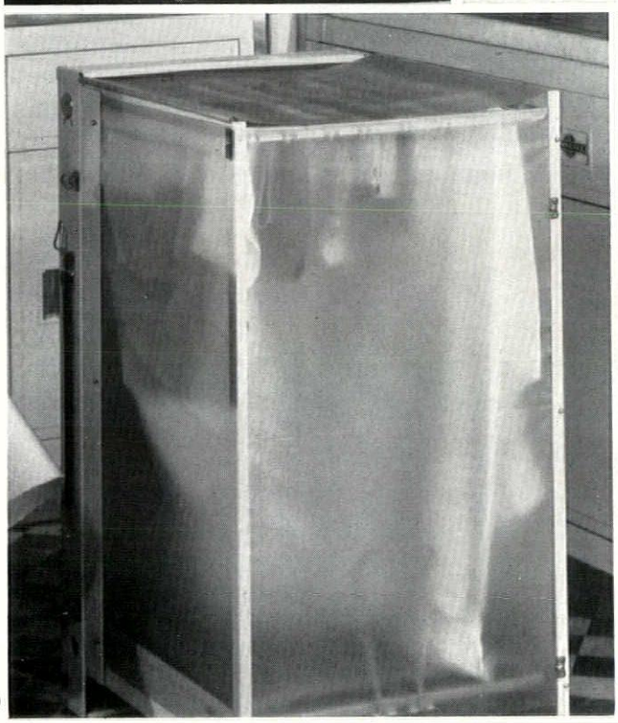
5, *English Electric Model* 4600.

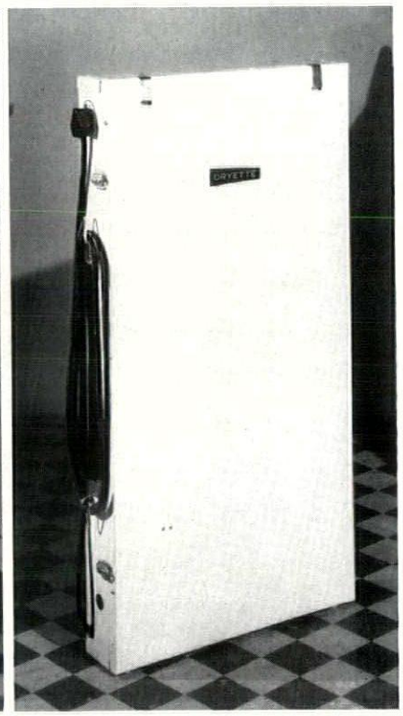




6, 7

6, *Victor Junior and* 7, *Victor standard model.* 8, 9, *Dryette.* 10, 11, *D.A.C. Drydenair.*





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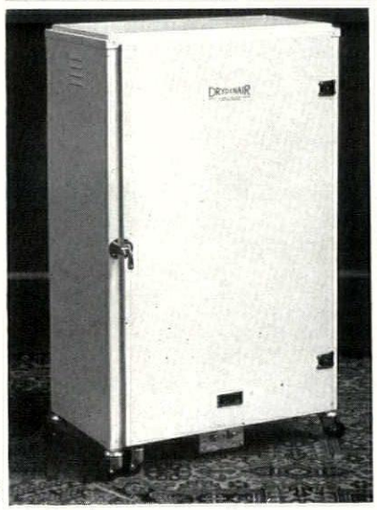
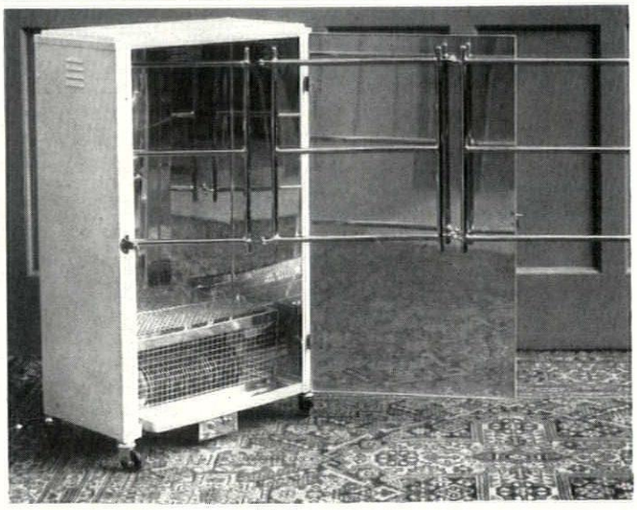




10, 11

cabinet drying cupboards

Several manufacturers are producing cabinet drying cupboards complete, thus involving no work on site, but the whole unit is subject to purchase tax and so the cost is relatively high. Two units are produced by Victor Manufacturing Co. Ltd. ***6,*** the Junior model, 36 in. high by 14 in. wide by 21 in. deep, fitted with four plastic rails, 1 kW. heater, £18 17s. 0d. Also available with gas heater at the same price.

7, the standard model, 36 in. high by 22½ in. wide by 21 in. deep is fitted with six rails and heated by two 750 watt elements independently switched, £29 or £32 16s. 9d. with stainless steel worktop. Gas heated model £27 8s. 1d. or £30 8s. 10d. with stainless steel worktop. These cabinets are sensibly designed to standard kitchen unit dimensions. They are double cased for insulation and stove enamelled cream or white or other colours to order. The electric models are available for A.C. or D.C. current, 200/250 volts.

8, 9, the Dryette, by the Coventry Radiator & Presswork Co. Ltd., is an interesting folding and portable cabinet, 36 in. by 3¾ in. wide by 18 in. deep when closed, 36 in. high by 21 in. wide by 18 in. deep when open. 1 kW. heater enclosed in spun glass sleeving, fitted with nine rails, eight of them removeable. Their position can be adjusted by sliding along the supporting frame. Slots are provided in the case for wall fixing. The folding panels are of pink, blue or green p.v.c. plastic sheet, metal parts of rust-proofed steel, enamelled cream. The cabinet is automatically switched off by closing and incorporates a pilot light. Mains supply A.C. 200/250 volts only, £21 10s. 0d.

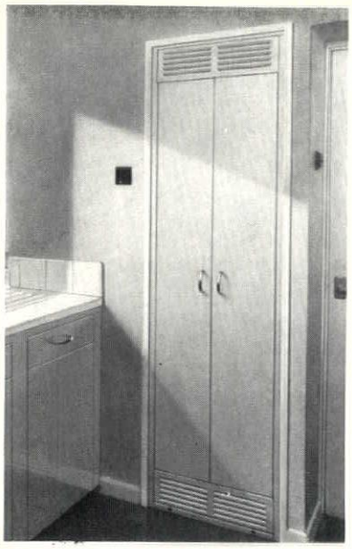
10, 11, Model D.A.C. Drydenair, by Thomas Dryden & Sons Ltd., 40 in. high by 22½ in. wide by 13 in. deep, 800 watts electric heater, A.C. or D.C. mains, all voltages, is fitted with an extendable rail frame of chromium plated brass giving easy access to any article. Cabinet is rustless metal hard gloss enamelled cream or white, incorporating pilot light, £32 6s. 0d.

(*shown on following page*)

12, 13, a gas-heated unit by Sidney Flavel & Co. Ltd. is available either as a complete, free-standing cabinet or as an assembly for building into a corner or recess. The free-standing model is 79 in. high by 23⅝ in. wide by 24 in. deep, constructed of zintec sheet steel, finished cream stove enamel and fitted with eleven tubular Bakelite rails, £50 approximately. Parts for building-in from £26 9s. 4d. upwards.

14, two cabinets, No. 107A, 36 in. high by 21 in. wide by 15 in. deep, 1 kW. single heat, £20 3s. 9d., and No. 108A, 69¾ in. high by 21¼ in. wide by 16 in. deep, 2 kW. three heat, £42 18s. 10d., made by Belling & Co. Ltd., of aluminium enamelled cream or white. The smaller model is also available in bronze finish. Both are supplied with removable wooden rods and fitted with pilot lights, A.C. or D.C. mains, all voltages.

15, Model F.54 in the Sno-white range made by J. Glover & Sons Ltd. for both domestic and institutional use. F.24, 72 in. high by 24 in. wide by



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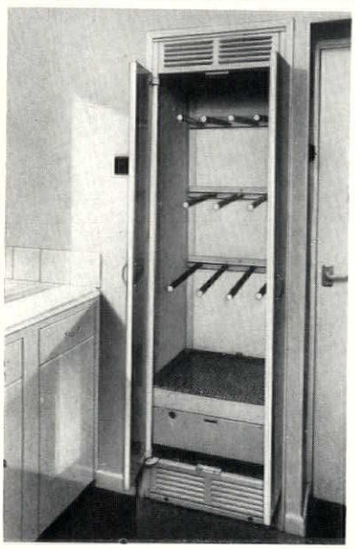

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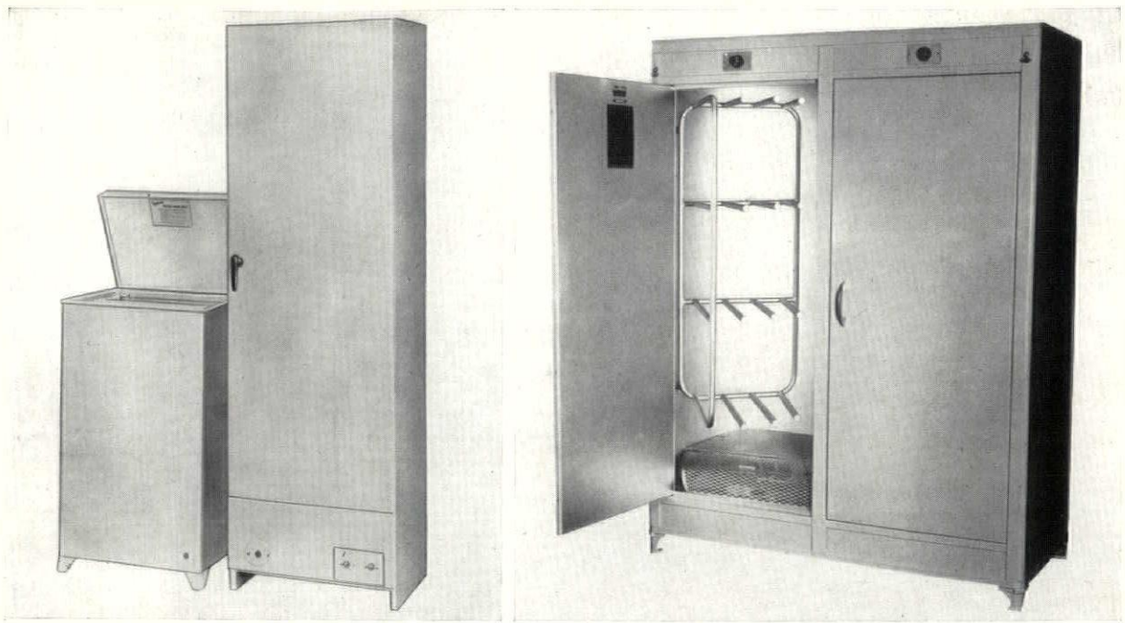
continued from page 212]

19 in. deep, 2.75 kW., £64 19s. 2d., gas £54 13s. 8d. F.27, 72 in. high by 27 in. wide by 25 in. deep, 3.5 kW., £73 0s. 8d., gas £61 13s. 2d. F.48, 72 in. high by 48 in. wide by 19 in. deep, 5.5 kW., £116 14s. 2d., gas £102 7s. 10d. F.5, 72 in. high by 54 in. wide by 25 in. deep, 7 kW., £138 14s. 6d., gas £119 12s. 10d. The last two are double cabinets which may be used half at a time. Electric models are for A.C. mains, 200/210, 220/230, 240/250 volts. All models are fitted with three heat switch and thermostatic control. Rustproof rails swing out, cabinets are double cased (airspace insulation) in zinc coated steel finished silver internally and stove enamelled eau-de-nil, cream or white externally.

16, Drying cabinet made by Creston Electric Ltd., 74 in. high by 20 in. by 20 in., 2¼ kW. Cream or white stove enamelled aluminium. Fitted with pilot light, A.C. or D.C. mains, 230/240 volts, £43 18s. 7d.

17, 18, a unit of the same type as 19 made by Clifford Products Ltd. Constructed in sheet metal with ground coat of grey enamel, 79 in. high by 26⅞ in. wide by 25⅜ in. deep, complete cabinet for fixing to wall, 9,900 B.Th.U./hour, £33 5s. 8d., 12,500 B.Th.U./hour, £34 3s. 4d. Minimum set of parts with metal door fitting in existing recess, 9,000 B.Th.U./hour, £25 0s. 5d., 12,500 B.Th.U./hour, £25 18s. 1d.



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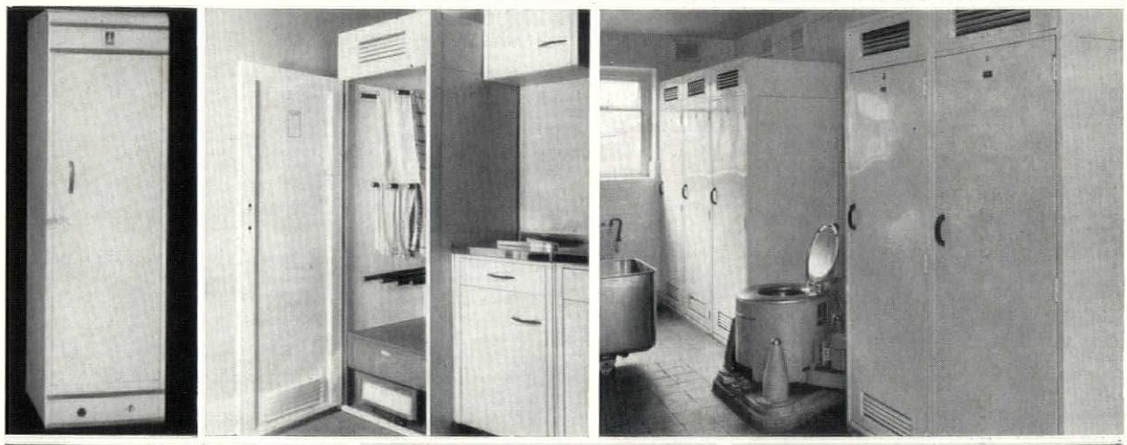

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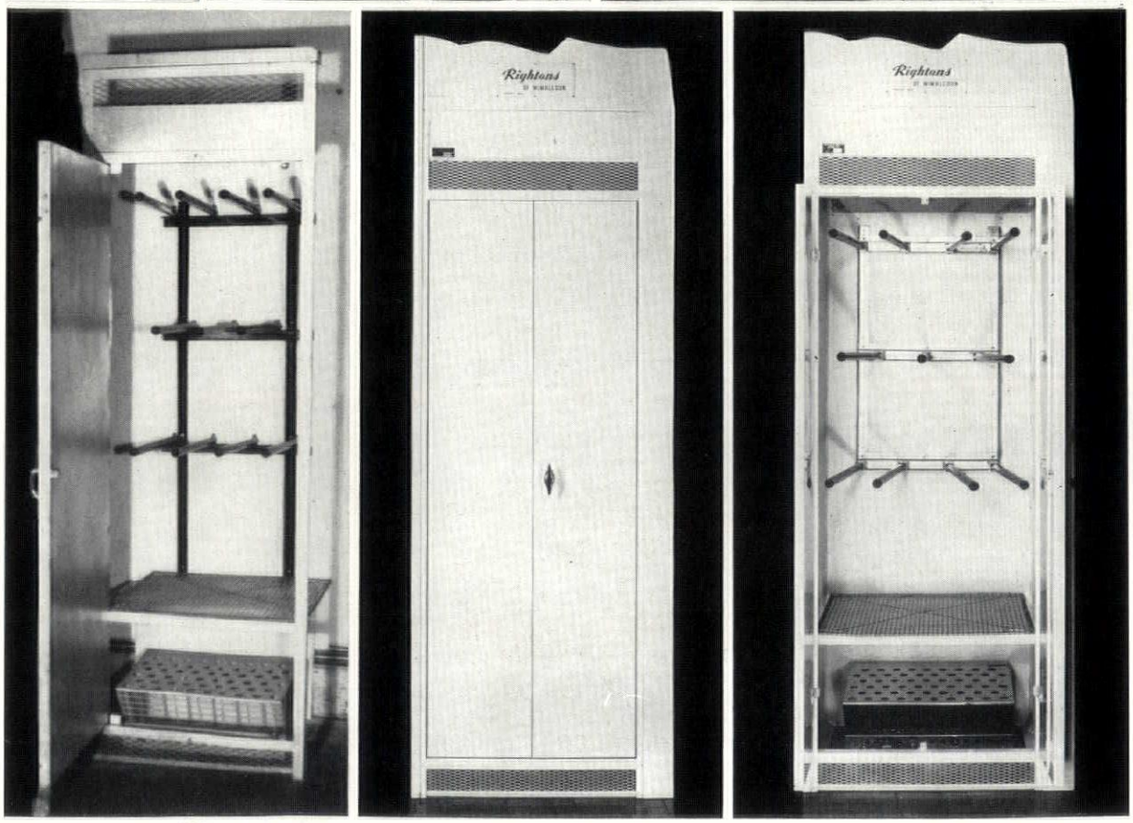
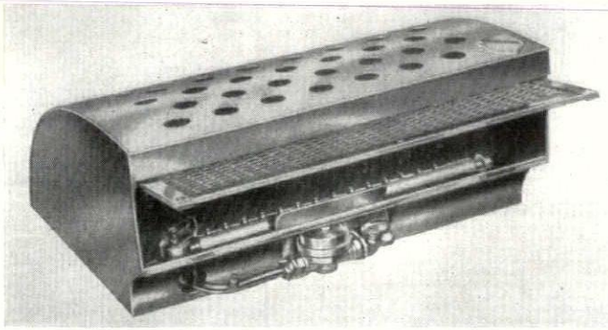


19, 20, 21

12, 13, *gas heated Flavel unit.* 14, *two cabinets by Belling & Co*
15, *Sno-white range, model F54, by J. Glover & Sons.*
16, *Creston Electric Co.* 17, 18, *Clifford Products Ltd.*
19, *Barralets Engineering Co.* 20, 21, *Righton & Sons Ltd.*



22



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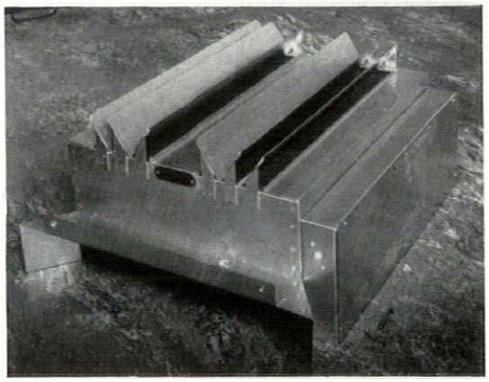

22, *Clifford Products Ltd. heating unit.* 23, *Ranalah unit by Coventry Chromium Plating Co.* 24, *Thermovent heater by E. K. Cole Ltd.* 25, *electric unit by Hobourn Domestic Appliances Ltd.*

24
25

(shown on previous page)

19, a similar gas-burning unit made by Barralets Engineering Co. Ltd., model C (20,000 B.Th.U/hour) for communal use and Model D (12,500 B.Th.U/hour) for domestic use. Constructed in angle and sheet iron, rust-proofed and finished in aluminium primer, supplied with eleven plastic covered steel rails independently swivelled. Designed to be installed in a cubicle of rendered 2½ in. breeze block or hollow pot if insulation is required, with floor of incombustible material ½ in. or thicker, 84 in. high by 26½ in. wide by 24 in. deep. A set of parts can be bought for use with own wood doors and side panels are available for corner positions. The prices are undergoing revision due to purchase tax changes.

20, 21, the same kind of unit made by Righton & Sons Ltd. constructed in sheet and angle steel primed one coat. Domestic model 12,500 B.Th.U. hour, communal model 20,000 B.Th.U./hour, standard size 82½ in. high by 25½ in. wide by 23 in. deep. Complete assembly including gas heater, approximate prices, £20 with single door, £21 with double doors, or all parts except heater approximately £13, for use with own electric heater.

If there is space available in a suitable position the built-in drying cupboard such as ***12, 13*** and ***16-21,*** has many advantages. Parts are manufactured ready for assembly and only the heater is subject to purchase tax. The effluent is best directed to the open-air particularly in the case of gas-heated units, though this is not essential provided the normal room ventilation is adequate to disperse the combustion products, and the decorative finish can withstand heavy moisture condensation, but it is often advisable where units of either cabinet or built-in types are used in banks, or where other gas-heated equipment is in operation at the same time as the cupboards. If ducted ventilation must be mechanically assisted the negative pressure must be carefully controlled and the manufacturers' recommendations should be sought.

separate heating units

If a specially designed drying cupboard is required, suitable heating units are obtainable separately. Examples include the following:

22, made by Clifford Products Ltd., 8½ in. high by 18 in. wide by 14 in. deep, 9,000 B.Th.U./hour supplied with inlet and outlet louvres 14 in. by 4½ in. and safety grid 24 in. by 24 in., £11 0s. 11d. Recommended cupboard size 19 in. to 22 in. wide by 18½ in. to 24 in. deep. 8½ in. high by 22 in. wide by 14 in. deep, 12,500 B.Th.U./hour, louvres 16 in. by 4½ in., safety grid 24 in. by 24 in., £11 18s. 7d. Recommended cupboard size 23 in. to 27 in. wide by 18½ in. to 24 in. deep.

23, the new Ranalah made by the Coventry Chromium Plating Co. Ltd. All units are 8½ in. high by 14½ in. deep. 18 in. wide unit supplied with louvres 14 in. by 4½ in. and safety grid 24 in. by 24 in. Recommended cupboard size 19 in. to 22 in. wide by 18½ in. to 24 in. deep, 9,000 B.Th.U./hour, £11 4s. 9d. 22 in. wide unit with louvres 16 in. by 4½ in., safety grid 28 in. by 24 in., 12,500 B.Th.U./hour, recommended cupboard size 23 in. to 27 in. wide by 18½ in. to 24 in. deep, £14 4s. 2d. 26 in. unit with louvres 20 in. by 4½ in., safety grid 36 in. by 24 in., recommended cupboard size 28 in. to 30 in. wide by 18½ in. to 24 in. deep, 15,000 B.Th.U./hour, £15 1s. 0d.

24, another electric unit, the Thermovent heater is made by E. K. Cole Ltd., 10 in. high by 17½ in. wide by 21 in. deep, for A.C. mains, 200/220 or 230/250 volts. A D.C. model is available to special order. The three heat switch gives 0.625, 1.25 or 2.5 kW. loadings, £10 9s. 8d.

25, an electric unit made by Hobourn Domestic Appliances Ltd., 10 in. high by 19 in. wide by 21 in. deep. Designed for operation in a cupboard approximately 24 in. by 24 in. by 72 in. high and suitable for installation in the Clifford, Flavel or Righton cupboards, 2½ kW., 230 volts, with single heat control £9 18s. 2d., or with three heat control £11 0s. 6d.

list of firms mentioned:—

English Electric Co. Ltd., Queens House, Kingsway, London, W.C.2. Edy (Great Britain) Ltd., 173 Sloane Street, London, S.W.1. Simplex Electric Co. Ltd., 26/28 Binney Street, London, W.1. Victor Manufacturing Co. (Greengates) Ltd., New Line Works, Greengates, Bradford. Coventry Radiator & Presswork Co. Ltd., Canley Works, Coventry. Thomas Dryden & Sons Ltd., Grimshaw Street Foundry, Preston. Belling & Co. Ltd., Bridge Works, Enfield, Middlesex. Creston Electric Ltd., 37-39 Thurloe Street, London, S.W.7. J. Glover & Sons Ltd., Groton Road, Earlsfield, London, S.W.18. Sidney Flavel & Co. Ltd., Eagle Foundry, Leamington Spa. Barralets Engineering Co. Ltd., Lee Church Street, London, S.E.13. Clifford Products Ltd., Imperial Works, Friar Street, Wednesbury, Staffs. Righton & Sons Ltd., Progress Works, Lombard Road, South Wimbledon, S.W.19. The Coventry Chromium Plating Co. Ltd., Godiva Street, Coventry. Hobourn Domestic Appliances Ltd., Strood, Rochester, Kent. Morphy Richards Ltd., 6 Conduit Street, London, W.1. Chilton Electric Products Ltd., 19 Old Queen Street, London, S.W.1. E. K. Cole Ltd., 5 Vigo Street, London, W.1.

4 THE INDUSTRY

Under-floor Electric Heating

Most architects are familiar with electrical under-floor heating in name, though few have experience of it. A fear many people have is that it will not prove sufficiently sensitive to our sudden changes of temperature; that the 'fly-wheel' effect of the high thermal capacity floor will leave you over-warm when the weather suddenly turns milder and—worse still—not warm enough when it does the other thing. Experience goes to show, however, that our temperature changes are seldom violent enough to make this disadvantage apparent, though it is probably wise to provide an alternative radiant heat source to give a flood of 'sensible' heat to people coming indoors on a very cold day. The other common objection is that electricity has the reputation of being an expensive medium for space heating and it is presumed that this—the most 'luxurious' form of it—must be more expensive than ever. Since under-floor heating takes current at 'off-peak' periods and since off-peak rates vary from one electricity board to another, the actual cost varies in different parts of the country, being least in the area of the South of Scotland Board. Nevertheless, a recent investigation published in *The Architects' Journal* (December 6, 1956), comparing the costs of heating a small house in the London area by five alternative methods, showed that though the running cost of electric under-floor heating was greater than any of the other four methods, the difference was not considerable and the installation cost was so much less than that of any other system giving a comparable service that, if you put running and first costs together, it proves the cheapest during the first twenty years—by which time, presumably, the balance of cost will have shifted in electricity's favour. Since this form of heating is feasible it is interesting to notice a new version which has been put on to the market by Thermodare, the firm which pioneered electrical storage heaters in this country. A characteristic of the Thermodare system is that the element is carried in a heavy p.v.c. sheath and is, therefore, easily withdrawn in the (unlikely) event of damage. It is also claimed to be considerably cheaper than other systems

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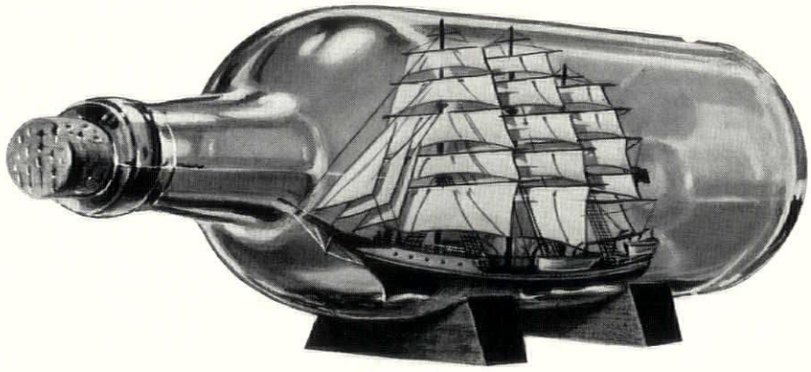

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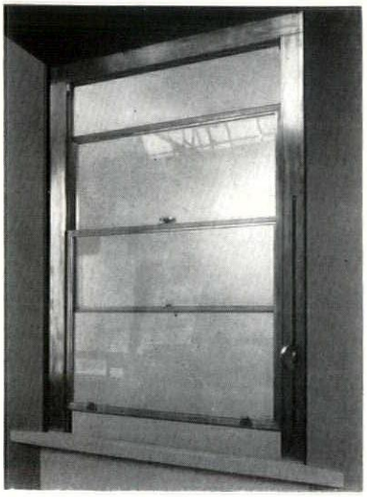
on the market, costing only about £12 per kilowatt.

Thermodare (*Great Britain*), *York Mansion*, 94-98 *Petty France*, *London*, *S.W.*1.

Aluminium sash windows

One of the latest additions to the architect's window repertoire is a range of vertical double hung sashes in aluminium by Crittalls. 'Range' is perhaps not quite the right word as the windows are made to dimensions specified by the architect. The windows are made in two types: the smaller sashes (up to 7 ft. by 4 ft.) may be hung on 'Unique' spiral balances, but larger sashes (up to 8 ft. by 5 ft.) are hung on cast-iron weights. The latter (which we illustrate in the photograph) are therefore very similar in general layout to the traditional wood sash. Notable differences are that access to the mechanism is by the removal of cover plates at head and jambs and the use of a sliding grip low down on the right hand jamb to control the upper sash. On both types the sashes are fully weatherproofed: with p.v.c. fillets on horizontal rails and spring guides in the vertical channels.

The Crittall Manufacturing Co. Ltd., *Braintree*, *Essex*.

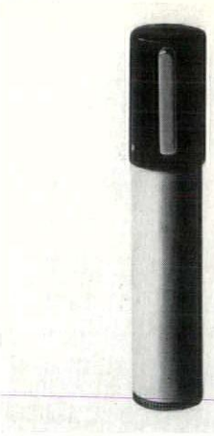


The Crittall Aluminium double-hung sash window.

Staff location

Architects who have been appalled (as all should be) at the obnoxious signals customary with staff location systems in this country will be interested to hear of an electronic system which has been developed by the Multitone Electric Co. Ltd. for St. Thomas's Hospital. Briefly, a wire loop is run round the outside of the building and all those liable to be called (up to 336 of them) carry a receiver in their pocket which is not unlike a fountain pen to look at, being 5⅜ in. long by 1⅛ in. diameter (see illustration). When anyone is wanted his receiver starts a discreet but unmistakable buzz. The cost of this system is described as competitive, and apart from its inherent neatness it has a pull over any visual system in that staff can still be located if they are just outside the building.

Multitone Electric Co. Ltd., 12-20, *Underwood Street*, *London*, *N.*1.



Multitone staff location receiver. 5⅜ ins. long, 1⅛ ins. diameter weight; 5oz.

Fluorescent light fittings

From the architect's point of view one of the troubles with fluorescent light fittings has always been to get reasonably continuous lighting, particularly in the long direction—each fitting has always required so much elbow room. Thorn Electric, aided by John Reid, A.R.I.B.A., have enormously reduced the hiatus between lamps in their Atlas Atlantic range by adopting a squarish section in the chassis (thus allowing the placing of lights close alongside one another) and by adopting a neat bi-pin lampholder at the ends, designed to allow fittings to be butted end to end with a hardly perceptible break in the line of light. Lamps can be lifted out by one man instead of two and a further visual refinement is the use of a black detachable end plate for use where the fitting stands alone or where a

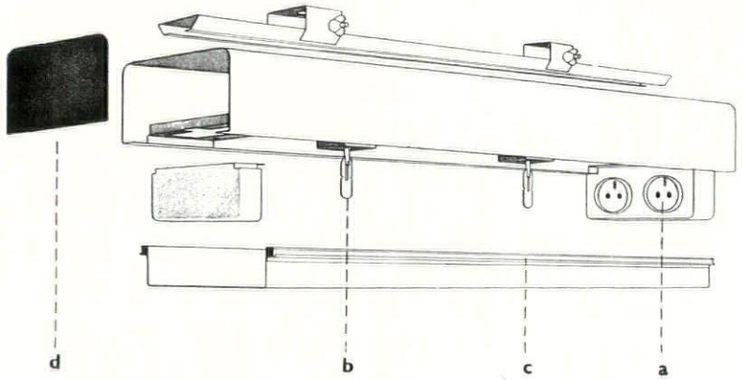


Diagram of the Atlas Atlantic chassis. a, spring loaded bi-pin lampholder; b, toggle for rapid fixing of reflectors, batten plates, etc.; c, snap-in perspex diffuser; d, detachable black plastic end plate.

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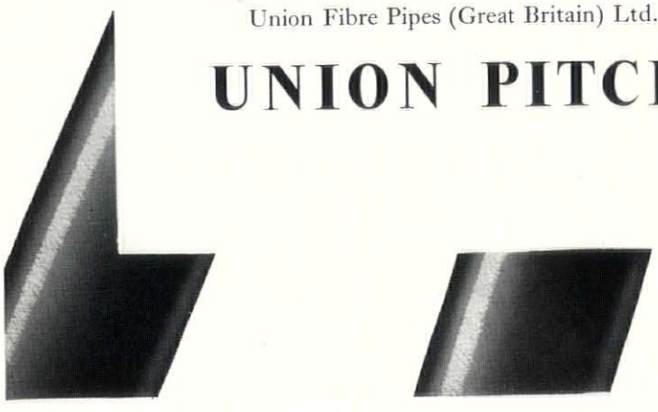

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continued from page 216]

line of fittings ends. This gives a positive visual stop and is much to be preferred to the equivocal shadowy forms with which fittings usually terminate.

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School at Camden Town. *Architects:* Stillman & Eastwick-Field. *General contractors:* G. E. Wallis & Sons. *Heating and hot water services:* Fred G. Alden Ltd. *Cold water and internal plumbing:* G. N. Haden & Sons. *Electrical installation:* Grierson Ltd. *Gas installation:* North Thames Gas Board. *Goods lift:* Hammond & Champness Ltd. *Asphalt roof and floors:* Val de Travers Asphalt Ltd. *Metal windows:* John Thompson Beacon Windows Ltd. *Terrazzo and concrete tile floors:* Art Pavements & Decorations Ltd. *Cork floor:* Armstrong Cork Co. *Linoleum floors:* The Lino Tile Co. *Wood block floors:* Horsley Smith & Co. (Hayes). *Fitted carpet:* Catesbys Ltd. *Portland stone floor:* Bath & Portland Stone Firms Ltd. *Cement glaze:* Robb's Cement Enamel Finishes Ltd. *Plasterings:* E. E. Cheeseman & Sons. *Polishings:* J. R. Beadon Ltd. *Sign writing:* The Lettering Centre. *Glazings:* Faulkner Green & Co. *Burglar alarm:* Burgot Rentalls Ltd. *Cloakroom fittings:* Comyn Ching & Co. *Blackout blinds:* Accordo Blinds Ltd. *Hall curtains:* F. O. Williams & Co. *Blackout curtains:* Tidmarsh & Sons. *Staircase H.S. balustrades:* S. W. Farmer & Son. *Staircase C.I. balustrades:* E. S. Margrie & Sons. *Concrete rooflights:* Luxfer Ltd. *Dry rot elimination:* Richardson & Starling Ltd. *Roller shutters:* Shutter Contractors Ltd. *Brick and stone cleaning:* Szerelmey Ltd. *Timber fencing:* W. A. Skinner & Co. *Chain link fencing:* Penfold Fencing & Engineering Ltd. *Galvanized H.S. railings:* Bayliss Jones & Bayliss Ltd. *Tar paving:* Wainwright Paving & Contracting Co. *Grass seeding and tree planting:* St. Mary's (Contractors) Ltd. *Precast concrete beams and columns:* Concrete Development Co. *Prestressed precast floor and roof beams:* Atlas Stone Co. *Precast exposed aggregate beams:* Mono Concrete Co. *Facing bricks:* Eastwoods Sales Ltd. *Slate cills:* Bow Slate & Enamel Co. *Sanitary fittings:* B. Finch & Co.; Adamsez Ltd. *'Celotex' highlight ceiling boards:* C. F. Anderson & Son. *Sectional water tank:* Frederick Braby & Co. *Galvanized steel cistern:* Richard Thomas & Baldwins Ltd. *Shower cubicle rails:* Stitsons Sanitary Fittings Ltd. *Paint:* Imperial Chemical Industries Ltd. *Acoustic tiles:* Uniton Ltd. *Ironmongery:* Yannedis & Co. *Aluminium louvred vent:* Greenwood & Airvac Ventilating Co. *Hall ventilation grilles:* Colt Ventilation Ltd. *Sliding door gear:* E. Hill Aldam & Co.; British Trolley Track Co. *Loudspeakers:* Goodman Industries Ltd. *School name board:* City Display Productions Ltd.

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Laboratories at Enfield, Middlesex. *Architects:* G. A. Jellicoe & Partners. *General contractors:* J. Jarvis & Partners Ltd. *Pilings:* Franki Compressed Pile Ltd. *Facing slabs:* Malacarp Terrazzo Co. *Floor finishes:* Marley Tile Co. *Linoleum:* C. M. Bennett & Sons. *Marble mosaic tiles, vitreous ceramic tiles, terrazzo:* Jaconello Ltd. *Woodstrip flooring:* Vigers Bros. *Quarry tile paving:* A. H. Herbert & Co. *External granolithic paving and precast steps of spiral staircase:* Stuart Granolithic Co. *Slate sills:* E. F. Williams & Co. *Wall cement glaze:* Robb's Cement Enamel Finishes Ltd. *Mineralite renderings:* Kendalls Flooring Ltd. *Terrazzo W.C. partition:* Diespeker & Co. *Acoustic ceilings:* Burgess Production Co. *Indian silver-grey wood panelling and hardwood handrail to main staircases:* D. Burkle & Sons. *Display cabinets:* Ace Associated Woodwork Cos. *Chemistry laboratory furniture and fittings:* Cygnet Joinery Co. *Ironmongery:* W. N. Froy & Sons.; A. J. Binns Ltd. *Soap pumps:* Waddington & Duval. *Gas incinerators:* Southall Ltd. *Vitroslab cladding:* Plyglass Ltd. *Heating and ventilation:* J. Jeffereys & Co. *Electric installation:* Phoenix Electrical Co. *Luminated plastic ceiling:* Lumenated Ceilings Ltd. *Flush doors and laboratory service duct panels:* Thames Plywood Co. *Labratory taps:* Donald Broom (Brownall) Ltd. *Lift installation:* Bennie Lifts Ltd. *Lightning conductors:* J. W. Gray Ltd. *Fire fighting equipment and hoses:* I.G. Fire Appliances Ltd.; Walter Kidd Ltd. *Refrigerator:* Electrolux Ltd. *Boiler:* Herbert Mander Ltd. *Duct covers:* Broads Manufacturing Co. *Fencing:* Bayliss, Jones & Bayliss Ltd. *Gates:* Clark Hunt & Co. *Landscaping:* Glevin Jones Nurseries Ltd. *Metal balustrading:* Clark Hunt & Co.; Light Steelwork (1925) Ltd. *Metal sliding folding doors:* Dennison Kett & Co. *Fire doors:* Mather & Platt Ltd. *Aluminium entrance doors:* Ajax Architectural Products. *Steel demountable partitions:* Ayrshire Dockyards & Co. *Plymax w.c. cubicles:* Venesta Ltd. *Metal windows and curtain walling:* Standard Metal Window Co. *Venetian blinds and concertina shutters:* J. Avery & Co. *Travelling cradle track:* Palmers Travelling Cradle Co. *Glazing:* F. Bowman Glassworks Ltd. *Plumbing:* Charles Thowerson (1934) Ltd. *Steelfixing:* George Nugent. *Sewer connections:* Edward H. Jackson Ltd. *Asphalt:* Natural Rock Asphalt Ltd. *Sanitary fittings:* W. N. Froy Ltd.; Adamsez Ltd. *Lettering:* The Lettering Centre. *Suspended ceilings:* Anderson Construction Co. *Sprayed asbestos:* C. & T. Contracts Ltd. *Signwriting:* John Edgington & Co. *Tarpaving, roof vents:* Paramount Asphalte Ltd. *Telephones, clocks, alarms, etc.:* Tele-

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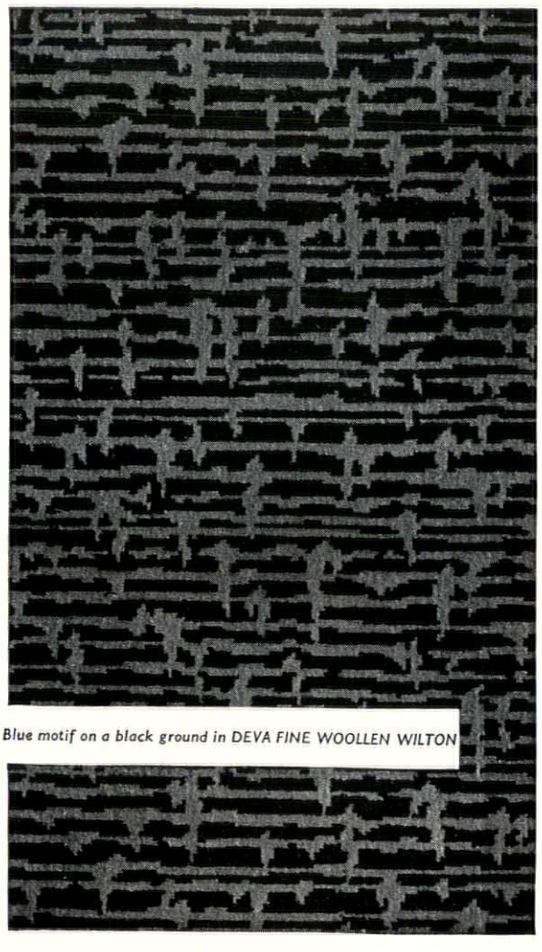

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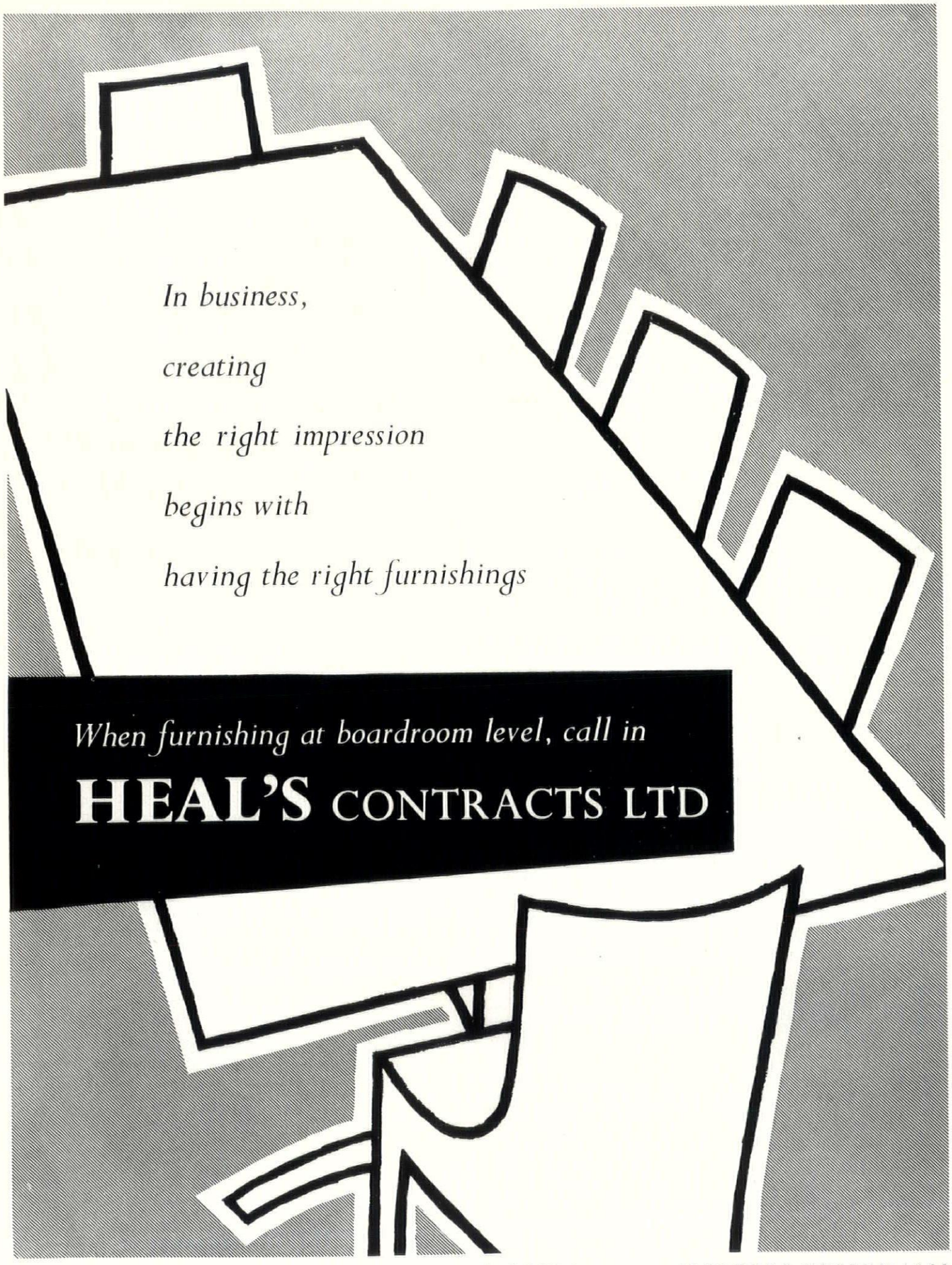
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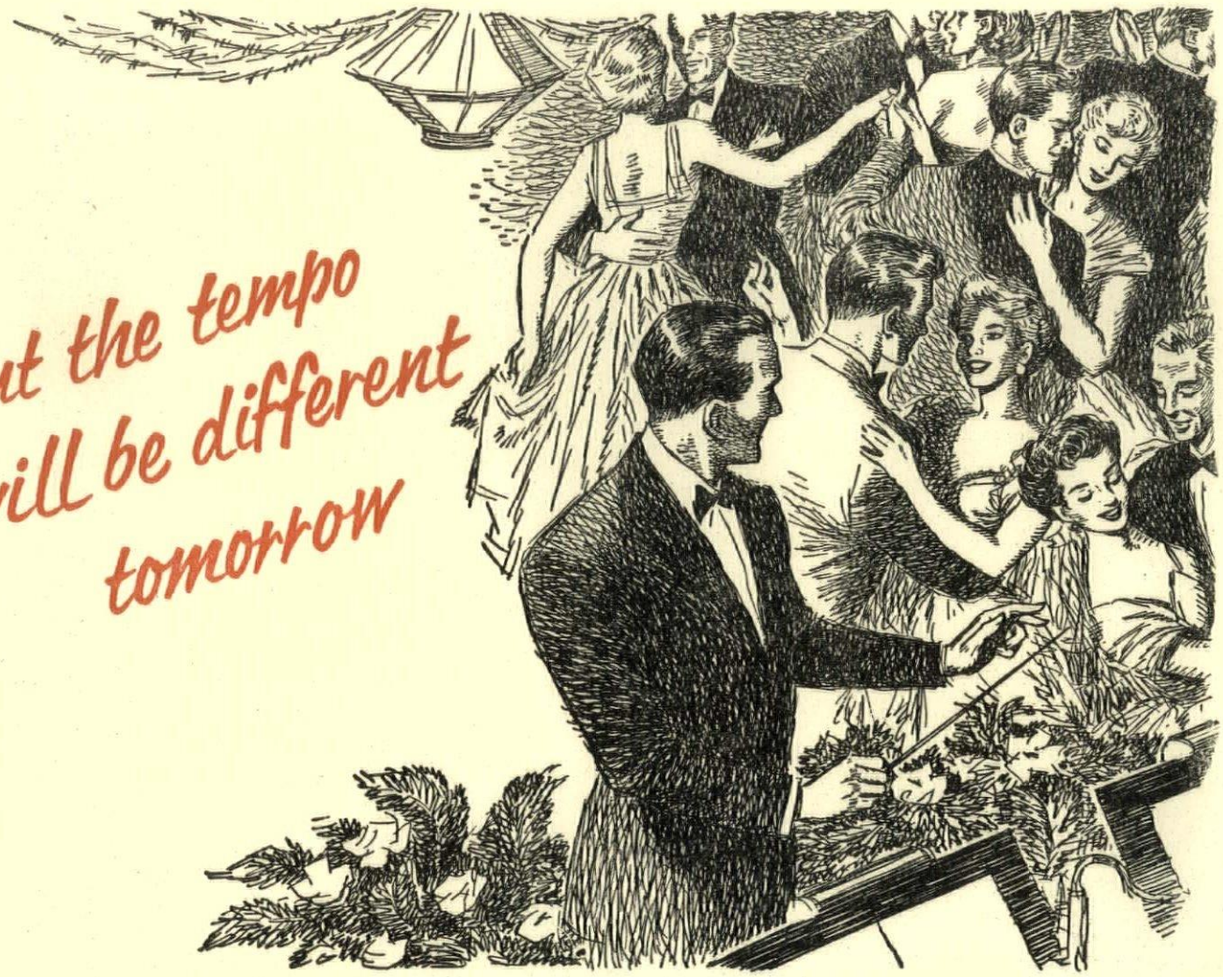

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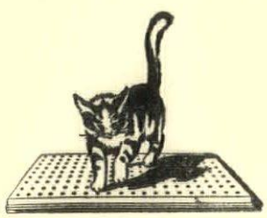

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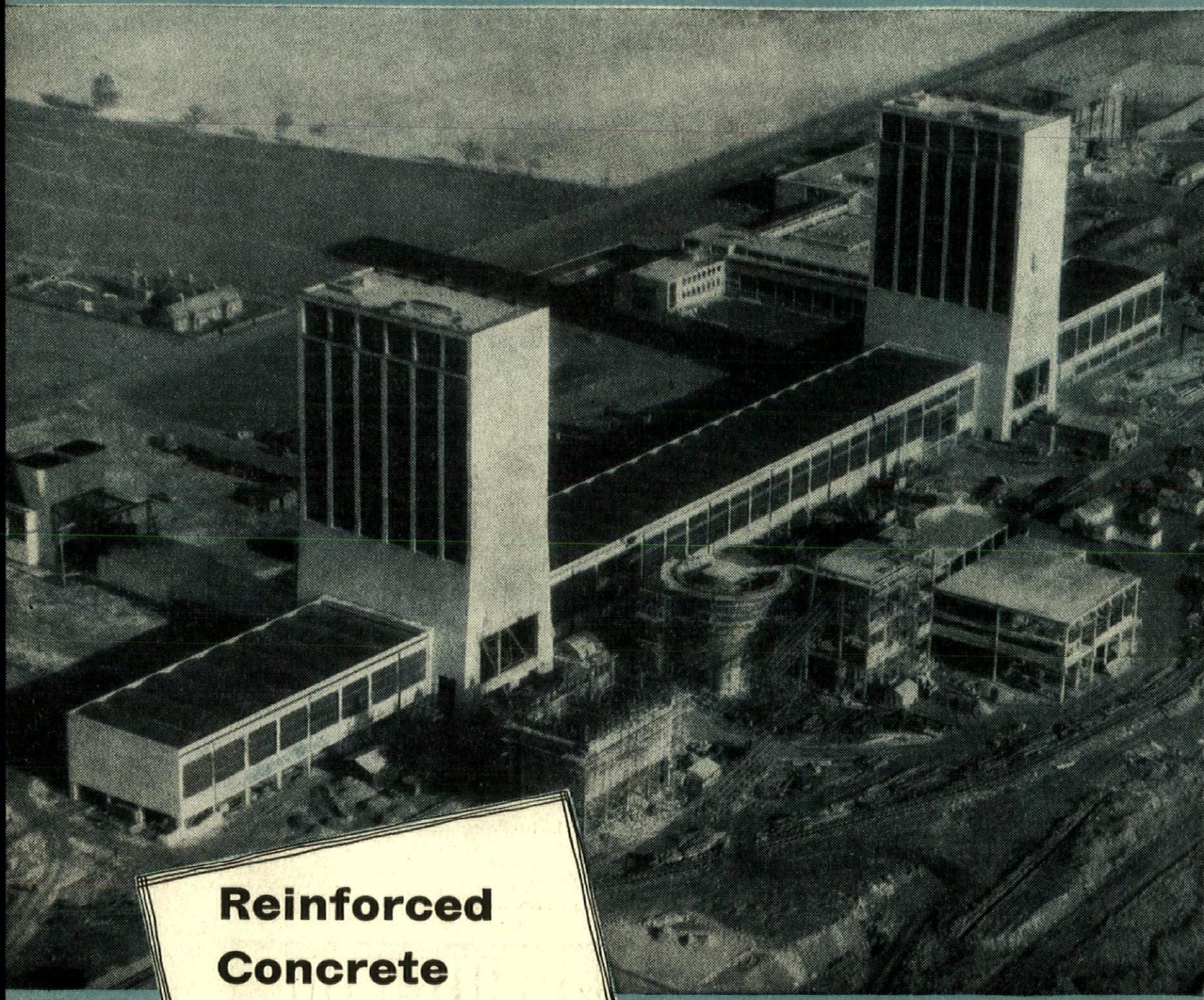

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THE ARCHITECTURAL REVIEW VOLUME CXXI NUMBER 723 APRIL 1957 FIVE SHILLINGS

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MARGINALIA

Research and Fantasy

The various projects sponsored by the Pilkington Glass Age Development Committee provide, more or less annually, an opportunity for an architect or group to go outside the limitations and routines of current practice, and exercise some controlled fantasy on the problems of the myth-hallowed year 2000. The 1957 project, designed by James Dartford, a helicopter station called Skyport One, on a site over St. George's Circus, Lambeth, runs true to the pattern these fantasies have shown so far, a mixture of solid research and not-too-drastic imaginings, resulting in a fairly routine star-plan building with three contiguous hexagonal landing platforms umbrella'd above it on cylindrical, lift-and-service-



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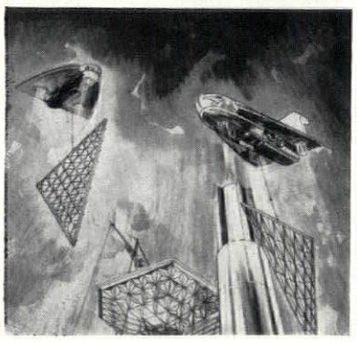

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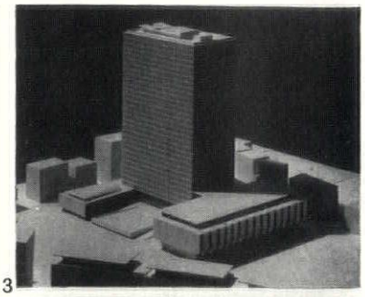
crammed shafts, five-hundred feet high, 1. The research behind this is backed by a massive bibliography of all the accepted, and most of the controversial, authorities on future heliports, but making no reference to at least two sources that have clearly, if subconsciously, been drawn upon—Buckminster Fuller, for the tetra-grid structures and their air-hoist delivery, and Wernher von Braun, whose manned satellite projects must have triggered the idea of assembling the platforms up in space.

Tall Slabs in Europe

From the bewildering array of European projects for giant office blocks—some no more than *ballons d'essai*, others surprisingly scheduled for immediate construction—two main types emerge as most likely to be of architectural interest. There are those where the architects have the space and opportunity to create



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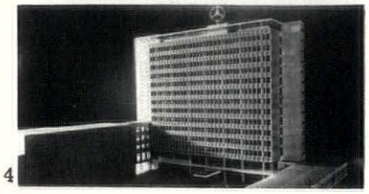

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a complete free-standing composition, as with the Palazzo Regione Siciliana project, 3, by Attilio and Emilio la Padula, an elegant sculptural disposition of parts, but not likely to be realized in any conceivable future. And there are those like the new Mercedes office block at Unterturkheim, which the Bavarian architect Rolf Gutbier has had to fit between two existing parts of the Mercedes factory, and spanning a street, 4. At first sight Gutbier's cramped site might appear a less happy one than the Padulas', but his opportunity and his solution are to produce a closer urban texture, not an exploded one, a naturally business-like scene, not an unnaturally monumental one.

Almshouses in Danger

The conflict between the letter and the spirit of byelaws is at its clearest and cruellest when local councils want to demolish 'sub-standard' almshouses against the wishes of the people who live in them, the Trustees of the almshouses and the Ministry of Housing's Historic Buildings division. Here are two cases pending:—

1. Countess of Derby's Almshouses, Harefield, Middlesex: built 1636, Grade II*, a product of the same munificence that makes the inside of Harefield church into one of the most rewarding in the Home Counties. The Trustees wish to improve the property; the Uxbridge Borough Council issued a closing order which was quashed by the County Court—ostensibly because the premises were unfit. The Trustees drew up a scheme to meet the Council requirements, asked for an improvement grant—and were refused! Now the Middlesex County Council have applied for the almshouses to be removed from the Ministry's Statutory list, have been refused permission and have, therefore, given two months' notice of demolition. That is to say—'We're going to demolish these because of x and y and z. If you improve x, y and z we are going to demolish anyway because we feel like it: and if you've spent money in producing a scheme, well it's hard luck, old boy.'

The real reason is apparently to aid projected road widening—and on a straight hill slope taking only local



Almshouses in danger: 5, left, at Harefield, Middlesex; 6, right, at Hereford.

traffic, which is absurd. This was only put forward at the very last minute, and the tactics used by the Council leave a nasty taste in the mouth. West Middlesex is hardly a rural idyll; the Council ought to fight for every bit of attractive building that can be preserved there.

2. Aubrey Almshouses, Berrington Street, Hereford, built 1630: half-timbered cottages, Grade II. Here the Trustees proposed an improvement scheme which was refused on three grounds—i, low ceiling heights; ii, two outer doors at the front and two staircases (!); and iii, the familiar zoning argument: the almshouses are surrounded by warehouses and a bakery. In fact, the people who live there—who are the ones that matter—find the ceiling heights cosy and the varied traffic outside interesting. As for clause ii, one can only point out that so has Selfridge's, and where does that get us? The Trustees revised their scheme to get rid of the offending second staircase and submitted it; the Council insisted that the houses were unfit and 'not capable at a reasonable expense of being rendered so fit'—an expense, incidentally, which the Trustees can in fact both meet and maintain—and issued a Closing Order which is at the moment being fought.

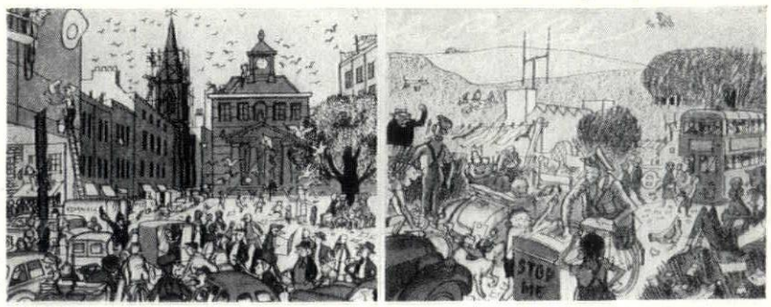
These two cases show a sorry state of affairs. In the first byelaws are being enforced to serve an overt purpose; in the second they are being enforced just for the hell of it, to satisfy a paper ruling: in both cases against the wishes of the inhabitants and of the reports of outside consultants. Byelaws were created to prevent abuses, not as instruments of power for its own sake: on this evidence local government is using the areas it governs as a punch-ball just to show how strong it is.

Counter-Attack

The December issue of the REVIEW, which is now available as a book at 12s. 6d., has attracted as much attention as did *Outrage*. *Punch* gave it six pages and produced a *Counter-Outrage*—or the manual the local authorities would put out to follow *Counter-Attack*, in order to whitewash each other and everything else in sight. It combined this with a skit on REVIEW typography and fell between two stools in doing so; for the satire had to be blunted because the article had a serious job to do as well. The drawings (Norman Mansbridge delt.) are delightful and we reproduce the *Counter-Outrage's* two extra stages to add on to *Counter-Attack's* Visual A.B.C. 7 and 8.

The *Cambridge Review* has transformed itself under this year's editor, Andor Gomme, into a lively and hard-hitting magazine especially on architecture and planning. *Counter-Attack* was reviewed in a leader which went straight to the fundamental human point at issue, implicit behind our creation of 'arcadia' as a category of landscape based on illusion. Is arcadia a legitimate category? The REVIEW believes that it is—that the urge to play at being in the country is as deep rooted and as justifiable as the urge to commune with nature in the raw, or to want to be at the heart of a city. It is an individual and partly sophisticated impulse, which is why it fails as an attempted solution for mass housing: and, in fact, the solutions for mass housing that we were proposing were very different. The REVIEW also explicitly stated that arcadia was not another

7 and 8, two extra stages added by Punch to our Visual A.B.C:
inserting the population . . .



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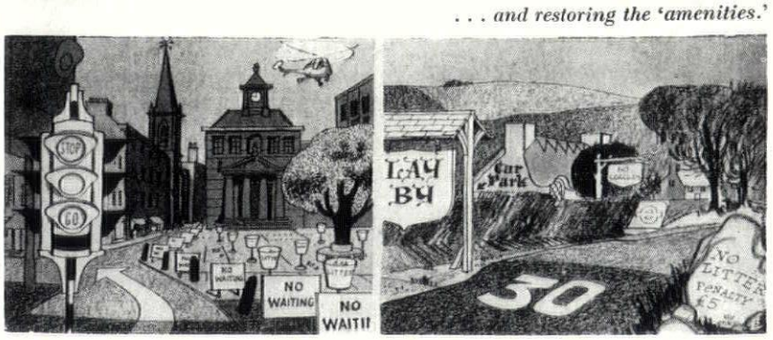
. . . and restoring the 'amenities.'



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name for a town's outskirts, but a distinct and separate area, sited where it can best fit into the landscape.

If you live in arcadia without recognizing the extent to which it is an illusion your life will become a ferocious farce. Equally, those who live in what purports to be arcadia without really wanting to—as we believe most council estate dwellers do, regretting the lost community spirit and urbanity around the houses they left behind—are laying up a store of neuroses for themselves.

In short, arcadia as a distinct type of landscape, yes (and yes at least as far back as Pope's villa at Twickenham, possibly as far as the Elizabethan hunting lodges); arcadia as a solution for mass rehousing, no, partly because it isn't a mass affair, and partly because the bulk of building and the bulk of people will make the illusion impossible.

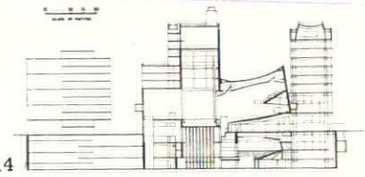
Welcome notice of another sort was given by the Kent County Council which issued a circular calling attention to *Counter-Attack* and the publicity given therein to the efforts of the Deal Council to tidy up the Borough, and urging similar action by other Kent towns. This is an admirable acceptance by a local authority of the book in the spirit in which it was published, and the REVIEW would be happy to give details of any action which Kent boroughs take in answer to this circular.

The Architecture of Bread

To raise funds for the relief of refugee children, 17 leading Swedish architects recently took part in a competition for the design of a ginger-bread house, working with their wives to produce models to the scale of one-twentieth. Curiously enough, the only notable excursion into the Hansel-and-Gretel country was Sven Markelius's random-Ronchamp affair, 9, and many of the designs were—in an elastic sense of the word—conventional, e.g. Bengt Lindroos's patio-house with plastic dome, 10, and Bengt Gate's 'dymaxion' structure with the furniture shown in diagrammatic form on the floor, 11. But it was Ralph Erskine, who is not a Swede, who struck the most completely liberated note of confectionery fancy, 12, with a Gaudiesque cross between a mast-church and a Polynesian hut.



13



14

Municipal Theatre in Buenos Aires. Typical of the massive capital investment in cultural buildings proceeding in most Latin American metropolises, the General San Martin Theatre, by Alvarez and Ruiz, in Buenos Aires, concentrates a number of cultural activities in a single complex building. The entry from the Avenida Corrientes is under a tower-block, 13, whose upper storeys contain a Museum of Modern Art, with a small cinema on the roof. Behind this, as is seen in the cross-section, 14, is the auditorium of the main theatre, for 1,150 persons, with an elaborately equipped stage. Below, at sub-basement level, is an experimental theatre of smaller size, and amphitheatre form. The second phase of construction will include a school of dramatic art, seen diagrammatically at the left of 14.

CORRESPONDENCE

Subtypographica

To the Editors,

SIRS,—I have read with strong approval and whole-hearted support your two issues, *Outrage* and *Counter-Attack*. I endorse with enthusiasm the principles on which your theses are based and wish you every success in forwarding them.

I believe, however, that the war against fussiness, unnecessary embellishment and aesthetic barbarism should not be confined solely to our towns and countryside. Their effects are noticeable everywhere, and nowhere more so than in the typography and layout employed in your publications.

The decaying layouts, pock-marked print and anonymous photographs with which you seek to advance your worthy cause combine to form a squalid mess which opens and hurts my eyes.

I recognize the mess. The question is—are *you* prepared to do something about it? If so, I commend to you, to quote further from your blurbs, the alliance of a sure eye to common sense in ridding your readers of the two-dimensional subtopianism to be found in such publications as *Counter-Attack*.

Here is the ammunition: will you finish the job?

Yours, etc.,
W. D. GARNER.

North Holmwood,
Surrey.

Intelligence

The P & O Company has ordered a new 45,000-ton passenger liner for the UK/Australian trade. The public rooms are being designed and decorated by a team consisting of Sir Hugh Casson and Messrs. McInnes, Gardner and partners.

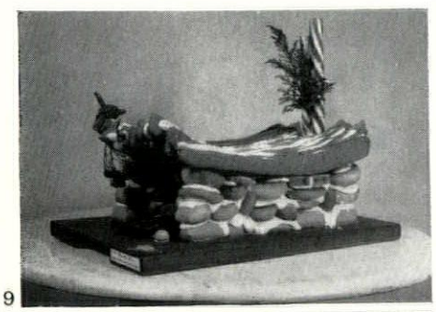
The result of the Sydney Opera House competition is as follows: first prize, Joern Utzon, Denmark. Second prize, a group of American architects: J. Marzella, L. Loschetter, W. Cunningham, W. Weissman, M. Brecher, R. Geddes and G. Qualls. Third prize, Boissevain & Osmond, London.

The University of London has appointed Professor J. L. Martin to prepare a comprehensive outline plan for the future development of the University Precinct in Bloomsbury.

Mr. George Williams, who has been in charge of the COID's Street Furniture Panel, has been appointed Design Officer to the British Transport Commission. He will administer the Design Panel which has been set up to advise the BTC on the appearance of new equipment.

An American Architecture by Frank Lloyd Wright, reviewed in AR, Oct., 1956, page 264, has been published in this country by The Architectural Press for Horizon Press, New York, price 84s.

The fourth open air sculpture exhibition to be arranged by the LCC will be held at Holland Park, Kensington, this year from the end of May until September. The theme of the 1957 exhibition will be the contrast between British sculpture of the mid-nineteenth and mid-twentieth centuries.



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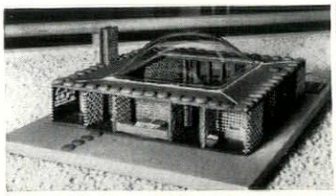

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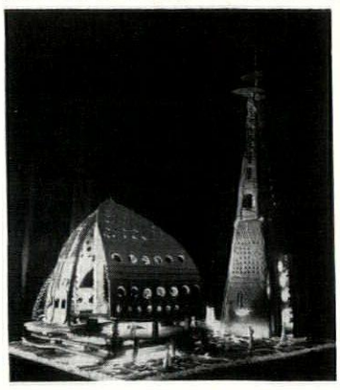

12

the architecture of bread: four designs from the recent Swedish competition. 9, *Sven Markelius.* 10, *Bengt Lindroos.* 11, *Bengt Gate.* 12, *Ralph Erskine.*

Architect of the Factory at Wallsend-on-Tyne (pages 233-235). **Stanley Milburn** was born in Sunderland and apprenticed to his father's and uncle's firm Wm. & T. R. Milburn. With his brother he became a partner in 1922. Designed the North East Coast Exhibition, Newcastle, Research and Design Building for Chas. Parsons, Newcastle, Poole Sanatorium, Middlesbrough and hospital developments in the Channel Islands and Northern Ireland. Awarded in 1955 the RIBA Bronze Medal for Architecture in the area of the NAA. An early success in the International Competition for Cairo Hospital led to many years of specialization in hospital work.



Considers that Europe (and this country in particular) has been slow to appreciate and encourage contemporary design and that much more rapid development would have taken place if Corbusier's designs had been awarded the first premiums in the competitions for the League of Nations Building at Geneva and the Palace of the Soviets in Moscow and if the Smithsons' design for Coventry Cathedral had been built. Strongly advocates that more freedom of expression in design in both public and private offices should be given to young architects and better facilities arranged for them to set up in private practice.

Sketching in the Highlands of Scotland is main recreation.

ACKNOWLEDGMENTS

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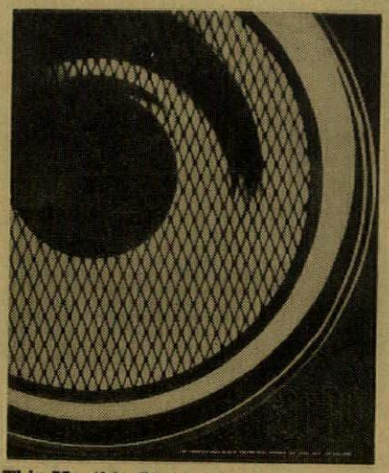
THE ARCHITECTURAL REVIEW

Volume 121 Number 723 April 1957



This Month's Cover shows, head on and full size, an electric bowl fire recently designed by Kenneth Browne for use in the offices of the Architectural Review and gives some idea of the actual glow produced by the original. Intended for wall-mounting above eye level it is designed to give the same sort of freedom of location as has now become customary in the distribution of light fittings, and something of the same freedom in aiming its rays in a variety of directions. A note and further illustrations of this possibly-revolutionary design are on page 282.

221 **Marginalia**

222 **Correspondence**

224 **Frontispiece**

225 **Street Lettering** *by Nicolete Gray* Beyond the fulfilment of its immediate purpose, which implies the ability to be seen, as well as the ability to be read, the street name-plate should be an ornament to its locality—as is the case with the almost vernacular traditions of Bath and Venice, with their marked local character. Though these two towns are special cases, Mrs. Gray nevertheless emphasizes that character is one of the qualities to be most earnestly sought in street lettering, and that character comes not only from the type-face, but also from the manner of presenting it, the size, material, background, colour effect obtained. The scope of this particular subject has been grealy extended recently by the growing tendency to name large blocks of offices and flats, for which a different character, and perhaps a bolder one, is required.

230 **Factory at Hemel Hempstead:** *Designers, Ove Arup and Partners*

234 **Factory at Wallsend-on-Tyne:** *Architects, S. W. Milburn and Partners*

237 **Plymouth Barbican** *by Gordon Cullen* The planners have been moralizing to us for years about neighbourhood centres. The Barbican at Plymouth, overlooking Sutton Harbour, is just such a neighbourhood centre, alive and vigorous in its own way—even to the extent of having its own Regatta, independent of Plymouth's—yet the local planning authorities seem set on eviscerating it and largely destroying both its special character and physical fabric. Gordon Cullen's report on the Barbican describes its human and architectural character, outlines the pressures and inertias that threaten it, their relation to the overall town plan, to the possible future of Plymouth as a living provincial metropolis, and to those who wish to do something constructive about the Barbican's future—as the Barbican, and not as a quarter of a square mile of sterile subtopia. The Barbican calls for radical and original thinking on a fairly sweeping scale, on the scale of a giant *Unité d'Habitation* and not as a statistical mess of condemned properties, broken byelaws and impending purchase orders, as a fundamentally sound structure that simply needs bringing up to date technically, and deserves that kind of renovation, rather than out of hand demolition, because it is that irreplaceable work of man, a live neighbourhood centre.

243 **The One and the Few** *by Reyner Banham* The world's view of two generations of Finnish architecture, and thus of the rise of modern architecture in Finland, has been focused on two dominant individuals, Eliel Saarinen and Alvar Aalto, at the expense of their contemporaries; the impression being that in each case, the One was superior to the Many. Mr. Banham suggests that there has never been a Many in Finland—the country is too small—and that the giant reputations of Saarinen and Aalto should be seen against a close background of the Few; so close in the case of Saarinen that he can hardly be called outstanding among contemporaries like Lindgren and Sonck, but in the case of Aalto, a background that has only become close since 1950. Before that time Aalto stood very much to the fore, a maker, not a follower of styles, leading the world at large away from the International style that his countrymen were accepting without question. The gradual comprehension and adoption by other Finns of Aalto's freedom, tough-mindedness and originality is the story of the rise of a truly Finnish contribution to the Modern Movement, and the article is followed by an extended survey of the most recent buildings that have added power and authority to that contribution.

249 **Recent Building fn Finland**

260 **Soane's Designs for a Triumphal Bridge** *by Dorothy Stroud* Among the themes that most persistently exercised the imagination of Sir John Soane was that of a Triumphal Bridge. It was with such a design, inspired by the work of Sandby, Piranesi and Peyre, that Soane won the Royal Academy's Gold Medal, another version he submitted as a testimony to the Academy of Parma during his Italian Journey, and other variants of this splendid vision adorn the rest of his career. However, as Miss Stroud points out, the only near-realization of this dream of his youth was a small and utilitarian bridge over the river Wensum in Norwich.

263 **Current Architecture**

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275 **Interiors: Directors' Dining Room in Leeds** *Architect, Derek Walker*

Tailor's Shops at Liverpool, Nottingham and Manchester *Architects, Westwood, Sons and Harrison*

280 **Design Review: Seating Fashions in Paris** *by Robert Browning*

Adjustable Electric Wall Fire *by John Carr*

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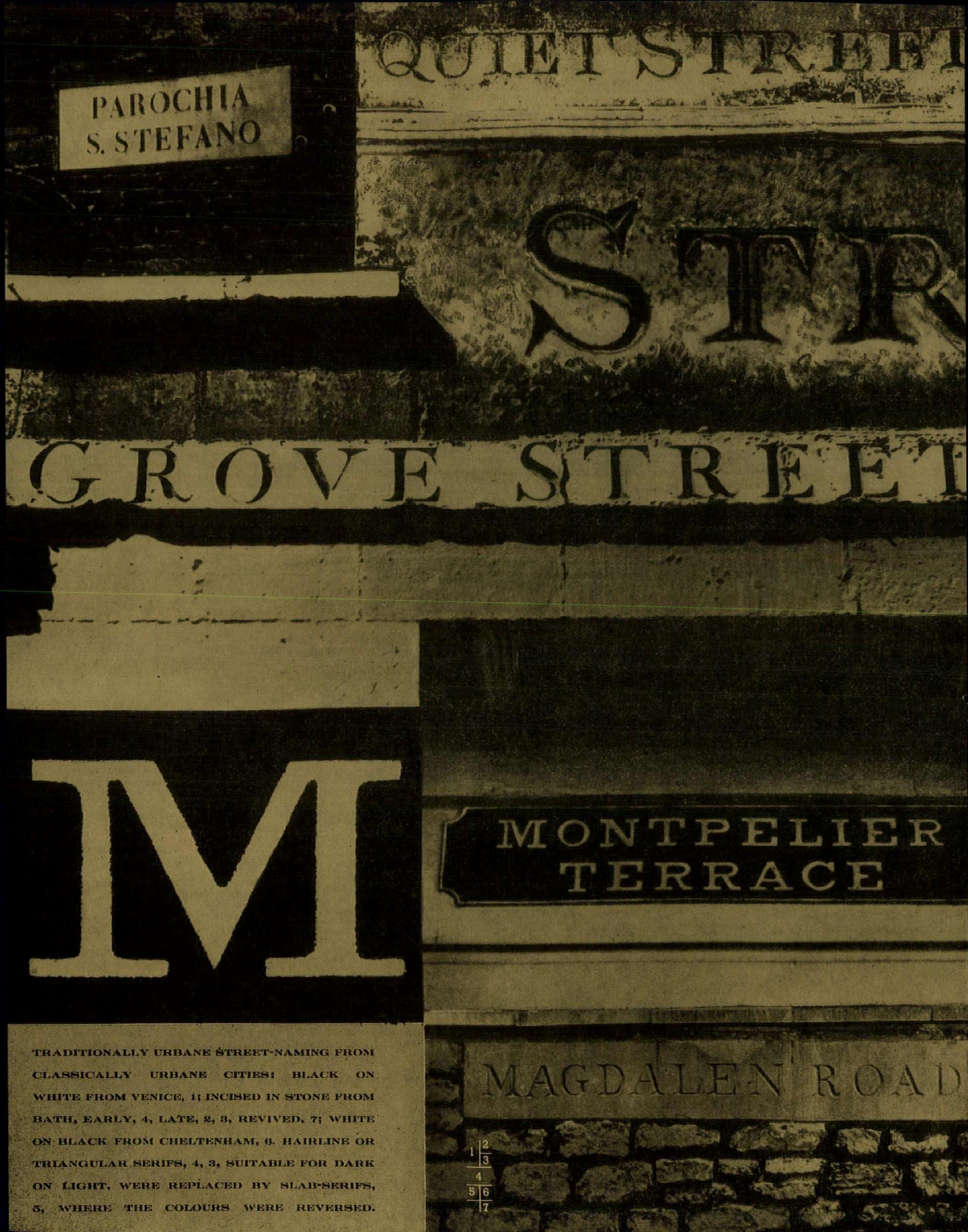


TRADITIONALLY URBANE STREET-NAMING FROM CLASSICALLY URBANE CITIES: BLACK ON WHITE FROM VENICE, 1; INCISED IN STONE FROM BATH, EARLY, 4, LATE, 2, 3, REVIVED, 7; WHITE ON BLACK FROM CHELTENHAM, 6. HAIRLINE OR TRIANGULAR SERIFS, 4, 3, SUITABLE FOR DARK ON LIGHT, WERE REPLACED BY SLAB-SERIFS, 5, WHERE THE COLOURS WERE REVERSED.

Nicolete Gray

STREET LETTERING

Without doubt the first consideration in the designing of street lettering should be to insure that it fulfils its *purpose*; that it should be immediately seen by anyone seeking it, and being found should be immediately legible. But, since it is a necessary adjunct to every town street—and indeed most streets are insufficiently labelled—it is also of importance that it should be an ornament to its locality, a pleasure to the inhabitant as well as a convenience to strangers.

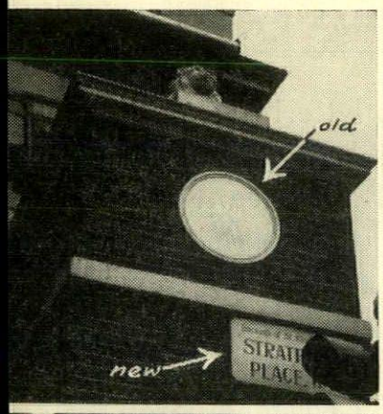
In order to examine the requirements and possibilities of this ubiquitous and therefore very important type of lettering I thought over those which I remembered seeing with pleasure, and the first quality which I came across was that of *uniformity* within a city or district. I associate with certain towns certain sorts of name plates, which in the pleasing cases (which are the ones which I remember) add something to the general character of the place, give it too a greater unity. The outstanding example is Bath, which can surely boast the best street lettering in Europe. Normally beautifully placed on the string course of each terrace, 4, it is carved in the stone of which the street is built, very deeply in the heavy strokes, creating rich shadows and contrasts, and painted. Its merit lies in its harmony with the architecture of the city, thereby enhancing one's pleasure in both arts; in its homogeneous style, increasing the unity of the city; and in the beauty and individuality of each example. As one walks about the city one can see not only the pleasure with which the masons carved each particular name but the changes in detail which mark successive generations from the late XVIIIth to early XIXth century—the lettering does not seem to be contemporary with the elder Wood's streets. One can compare the purity of style of Grove Street, 4, with the triangular serifs and flamboyance which

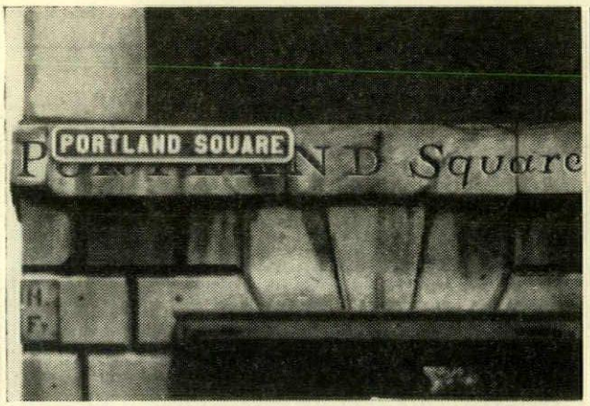
betray a later date in Quiet Street, 2, 3, and the last phase, when life has gone out of the tradition, in Railway Place. A praiseworthy attempt to revive it has recently been made by the children of the Art Secondary School who have been allowed to carve a number of new names, 7. The only comparable city lettering which I know is that of Venice, 1, it is neither so generous nor so individual, but the contrast of its painted black on white on the rich colour of Venetian walls is always pleasing, and reminds one that black and white are colours too, and that this is a positive element in street furnishing.

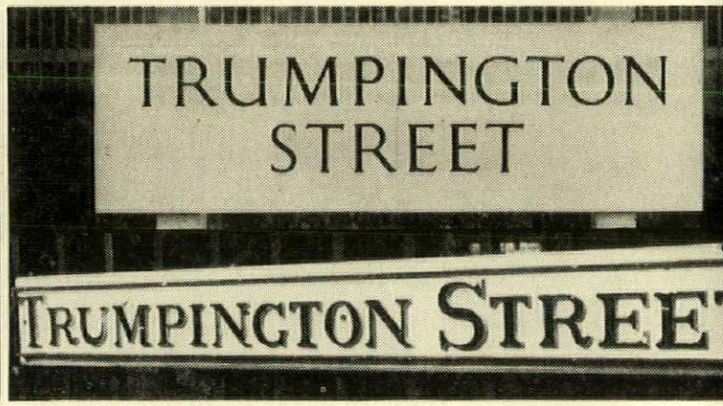
Clearly Bath and Venice are peculiar examples, being cities with a high degree of architectural unity; elsewhere there is often little with which lettering can hope to harmonize. There are, however, places where opportunities have been deliberately abandoned; in Bristol one may see the beautiful carved lettering in Portland Square covered over with a new label, 9. Would it not have been possible to have repainted the original Stratford Place, 8, instead of adding a new label with a total disregard for the pleasant little lodge? Such cases might surely override uniformity as a rigid principle. There is not even this excuse for the case of the Nash terraces of Regent's Park, for these do not come within the standard Marylebone system, but are all labelled alike in a painted sans character; obviously an unsuitable letter for buildings in classical style, and here also dreary in itself. Yet a model for congruous lettering is provided on a scale which one would have thought hard to miss in Chester Terrace, 12.

To return to the ordinary city with its hotch-potch of styles, one needs, I think, a label which has its own *character*; and that is made not only by the type of letter used but by the design of the whole; its size, material, border or absence of border, colour effect. I particularly like the border, and the post, of Uffmoor Lane, 15, and the modest Ionic seems admirably suited.

8, Stratford Place off Oxford Street, London, W.11. 9, Bath. 10, 11. Cambridge. 12, Regent's Park, N.W.1. 13, 14, Louth, Lincolnshire.



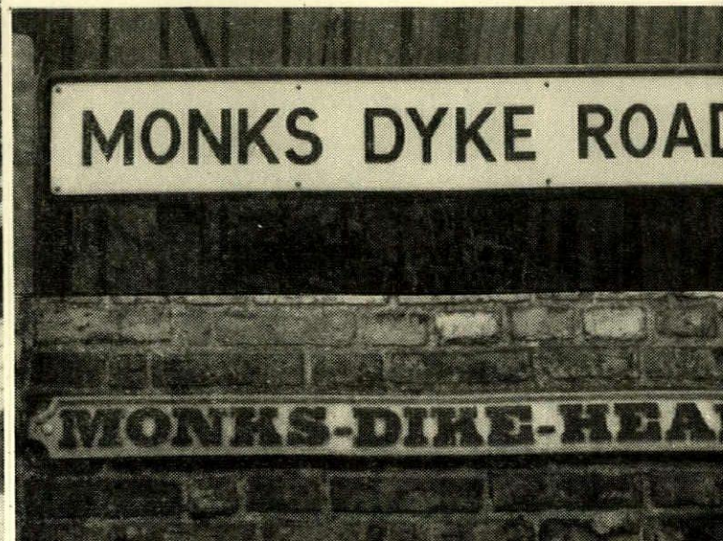






Abandoned opportunities: 8, *a new sign leaving the designed space meaningless.* 9, *new lettering obliterating beautiful old lettering.* 10, *letters with form but scarcely any substance replace* 11, *relief letters full of local character.* 12, *Regency lettering in Regent's Park; why not used for all the terraces?* 13, *standard utility lettering which could never be good, replaces* 14, *a good pattern for a small street.*

8	9	10	11
12		13	14

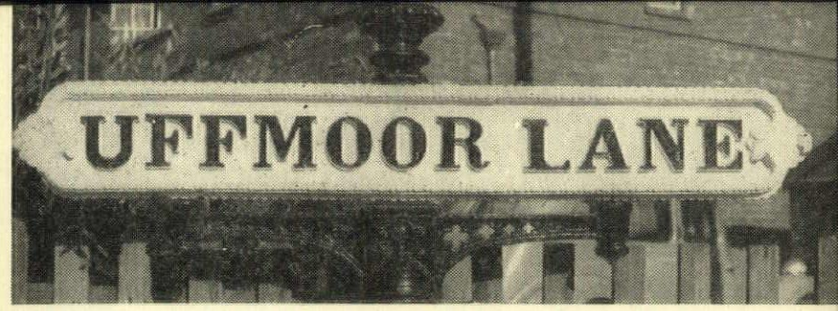


One sees a similar type of label in parts of Birmingham, also in Finchley (for one in Malmesbury v. AR, August, 1954). *Colour* is particularly important. It is, I should say, the primary fault of almost all modern labels that they lack colour, they seem designed on paper, *in vacuo*, as if they were not material in the same sense as the bricks and mortar to which they will be attached, they are afraid of substance and colour. As a type of letter Egyptians normally introduce a good deal of colour, but the examples I know at Liverpool and at Bristol (v. AR, June, 1954) and Exeter, though nice, are ill-spaced, crowded. More successful is the white letter on black to be seen in Cheltenham, 6. Indeed, I find a white letter almost always more attractive. How pretty it looks on painted stucco, 16; one sees the same sort of porcelain letters in Brighton, and Ionic examples in the city of London, which though they are too cramped in their frames (as are almost all these porcelain letters), and though many are damaged, are far the best of the miscellaneous labelling to be seen there. Very nice examples of metal labels with relief lettering painted white are those of Oxford, 17, using a charming unpretentious Roman. To sum up, compare these two examples from Cambridge. The virtue of the modern one, 10, lies entirely in the letter design, in this case it is good, but it is a norm to be seen all over the country, without personal character, and it is as near as it can be to being disembodied. 11, in contrast, is peculiar to Cambridge—I have never seen that N and U elsewhere, there is a curious L too—and it has entity, and body, and colour; it is part of the railings and of the stone curb, and of the city.

But there is a new type of street lettering which is appearing which offers far more interesting opportunities than the label, where modern designers are beginning to find all sorts of possibilities, the name lettering of blocks of flats or offices. Here the normal entity may be the housing authority; the LCC use a more or less standard tile lettering which is pleasant if uninteresting, though it is disappointing to see on one estate that the post-war is far less sensitive than the pre-war design, 30a. In some cases the entity is the estate, as at Pimlico, 24, where it is the style of the design and its repetition which is memorable, it has 'colour,' though the compressed Ionics lack emphasis and consequently rhythm in conjunction. The most

15, a pleasing type of letter suiting its background and post. 16, *porcelain tiles; the colour of the bold white on black suits the stucco street.* 17, *characteristic Oxford sign: pleasant well-spaced relief Ionics.* 18, *a successful Egyptian; note the variation of stroke width relieving the weight.* 19, *Bath again, incised and painted.* 20, *represents the industrial when compared with Bath.* 21, *compare with* 10; *the shading and confined space compensate for the thin line.* 22, *a nice compressed Egyptian, to which the border adds considerably.* 23, *enchanting in Violet St., though impossible in Cornhill.*

15, *Birmingham.* 16, *near Charing Cross, London.* 17, *Oxford.* 18, *Louth.* 19, *Bath.* 20, *Sunderland.* 21, *Berwick-on-Tweed.* 22, *Ludborough, Yorks.* 23, *Sunderland.*



15



16



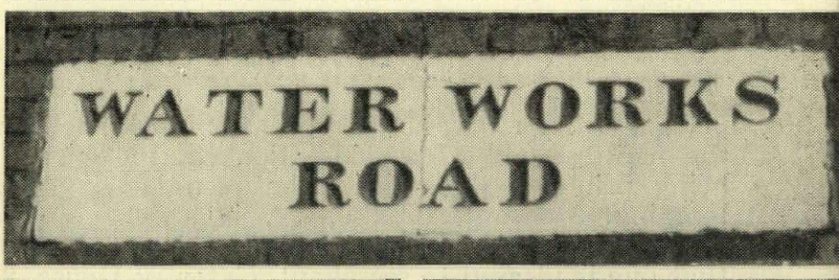
17



18



19



20



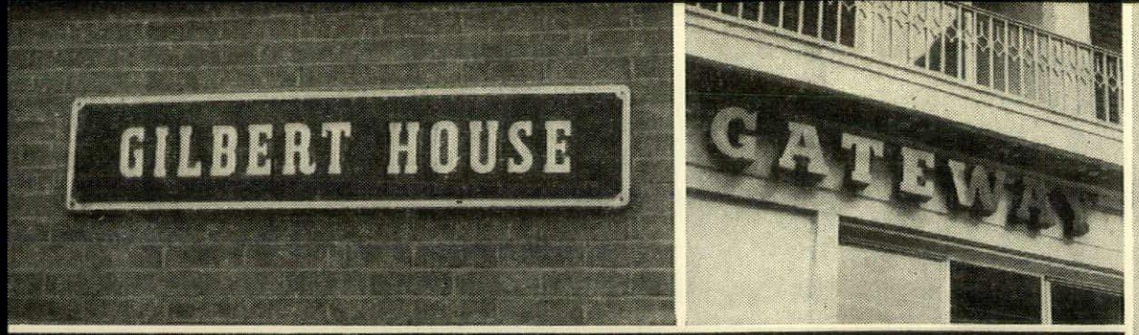
21

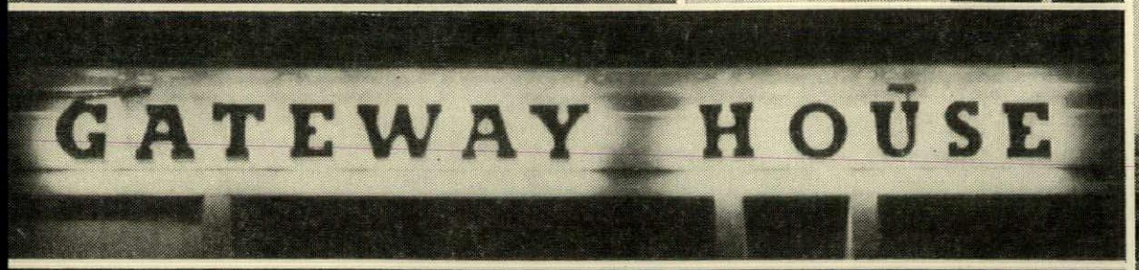


22



23

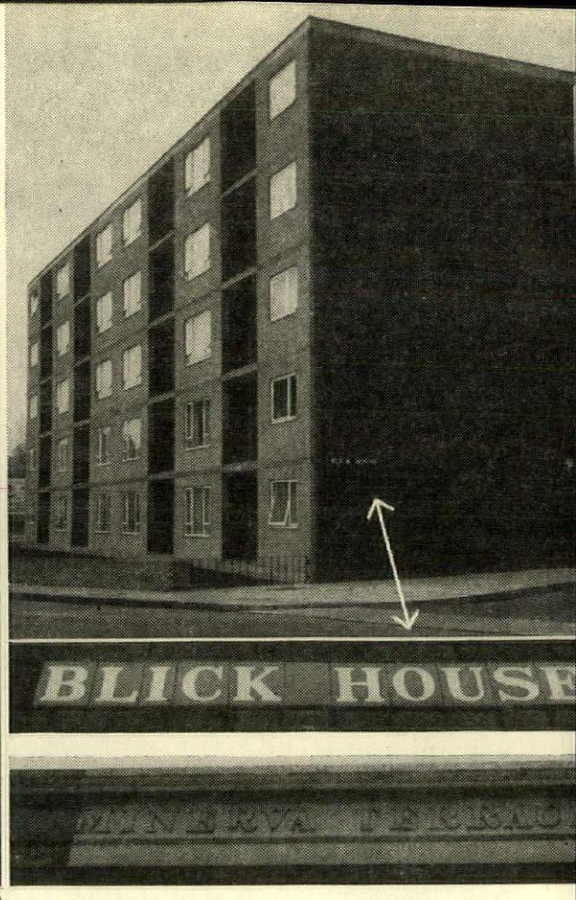


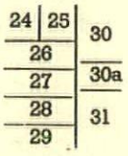












24, the whole makes a nice pattern. 25, quite good letters, but oppressed by the balcony shadow. 26, by night the light behind the letters makes a new and better pattern. 27, note the variation in stroke width. 28, good weight of letter, perhaps too large. 29, italic sans makes a good contrast to brickwork. 30, 30a, Ionics in tile beautifully placed on a blank wall. 31, early Victorian terrace naming: bold lettering running along the entablature and related to moulding and pilaster.

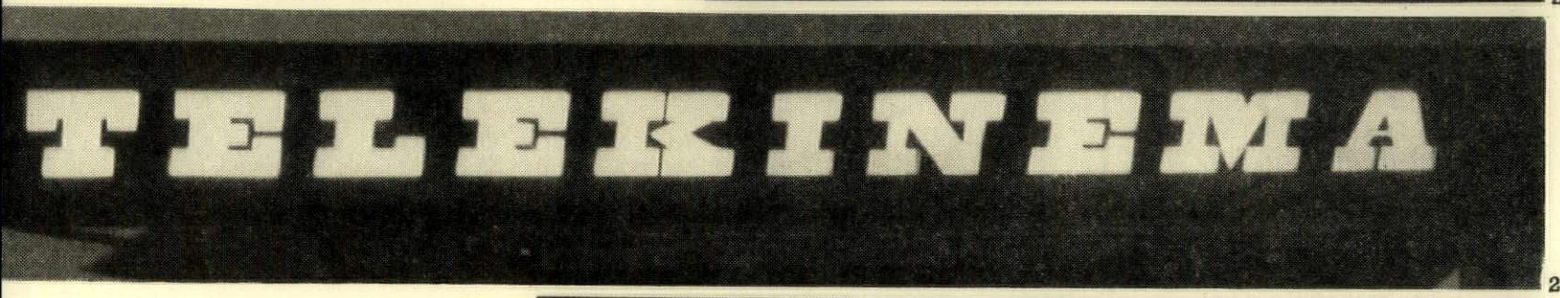
24, Pimlico housing, Westminster. 25, 26, Cannon Street, City of London. 27, Victoria Street, S.W.1. 28, Ebury Bridge, near Victoria Station. 29, Red Lion Square, W.C.1. 30, Bermondsey, S.E. 31, New Cross Road, S.E.

normal entity must, however, be the block itself and the main secondary consideration (that of purpose being primary) the relation between lettering and building. Monsanto House, 27, is an example of sophisticated classic design on a street front, Romans that one is pleased to see about. Gateway House, 26, is more interesting in that the letters are very deep in section which immediately puts them into relation with the architectural elements of the building; unfortunately this relationship does not seem to have been thought out and the letters look as if they had been stuck on as an afterthought. (Actually they look much better by night when the lighting inside the letters thrown against the wall behind creates a space round them.) Another example which suggests possibilities, though again itself unsuccessful, is Chetwynd House, in the City. I like the contrast between the flat sans, and the fluted background, and the wall, but the proportions are not happy. Less ambitious but better resolved are Sherborne House, 28, Blick House, 30, very nicely placed on the blank end wall, though not sensitive in actual letter design, and Tresham, 29, perhaps most successful of all. I like the contrast of the smooth surface and softened edges of the plastic against the texture of the brick, the slope of the italic against its pattern of verticals and horizontals. The size, too, is right. And here returning to the consideration of purpose one notes how seldom this is the case. A few are too large, many are hard to find, and many new blocks seem to have neither name nor number. Finally, I suggest we might still learn a good deal from the named Victorian terraces, of which many still exist here and there, such as 31 in New Cross Road; their problem was simpler in that they were working in terms of a symmetrical architecture, and a homogeneous surface material, stucco; their merit is that they are normally designed lettering and architecture together.





24,25



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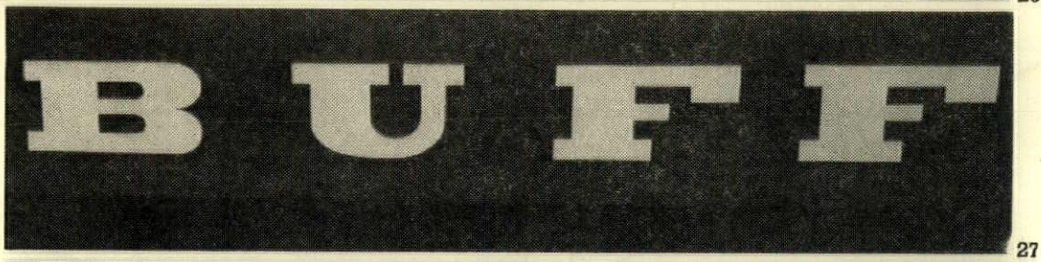


27

Besides the architectural typefaces discussed by Mrs. Gray in the foregoing article, there also exists a wide range of robust alternatives awaiting use where place and mood require; printers' wood-letter grotesques, new, 24, and old, 25; wide-setting Egyptians, Festival-proven, 26-29, 32; and Continental route-marking standards, crisp and characterful, from Spain, 30, and Italy, 31. These examples do not exhaust the possibilities, they simply suggest the width of choice available.



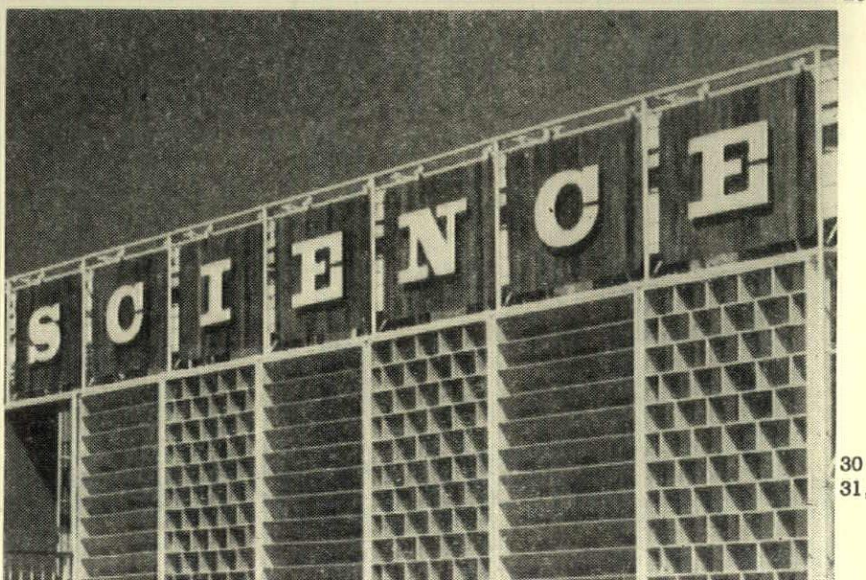
28



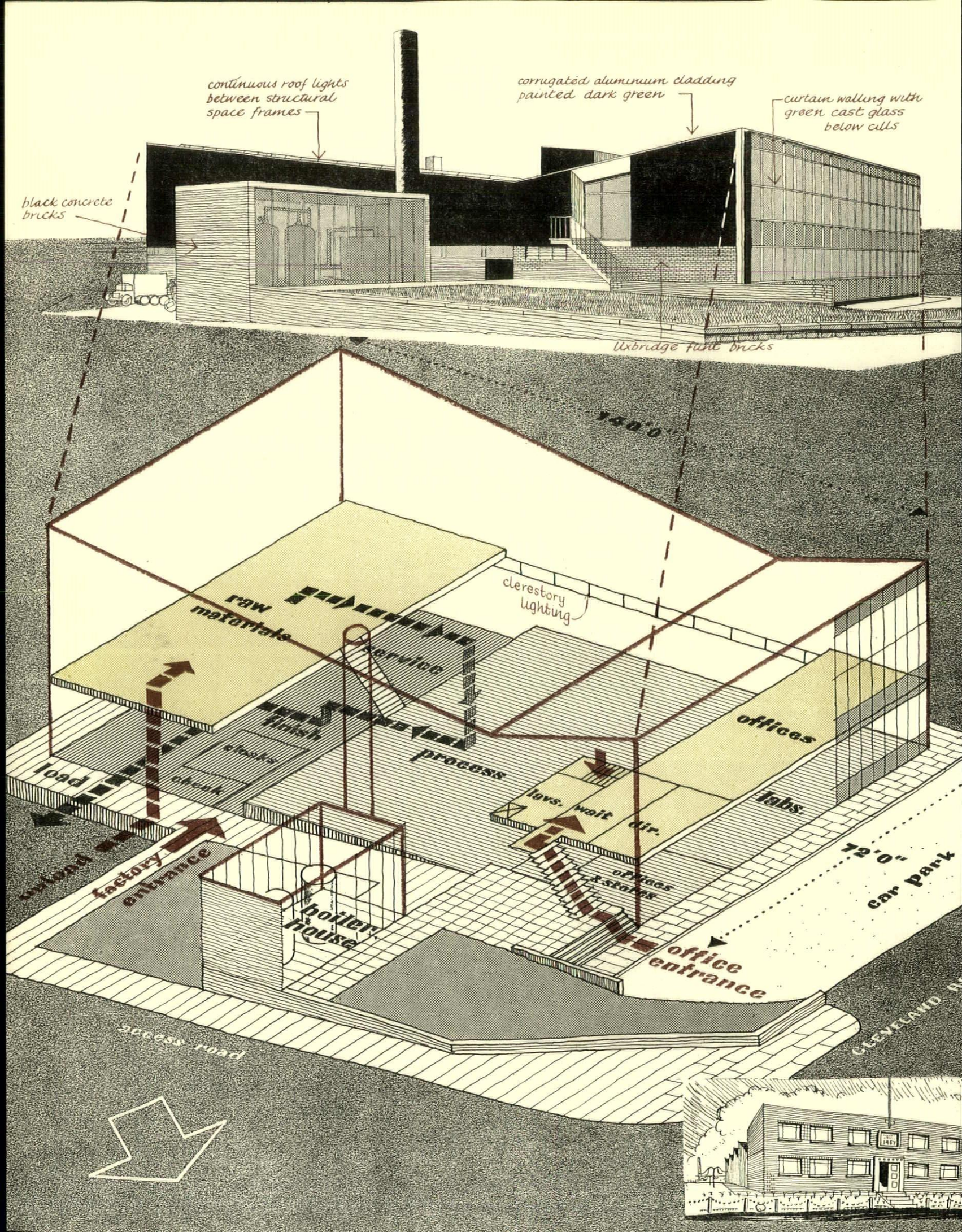
29







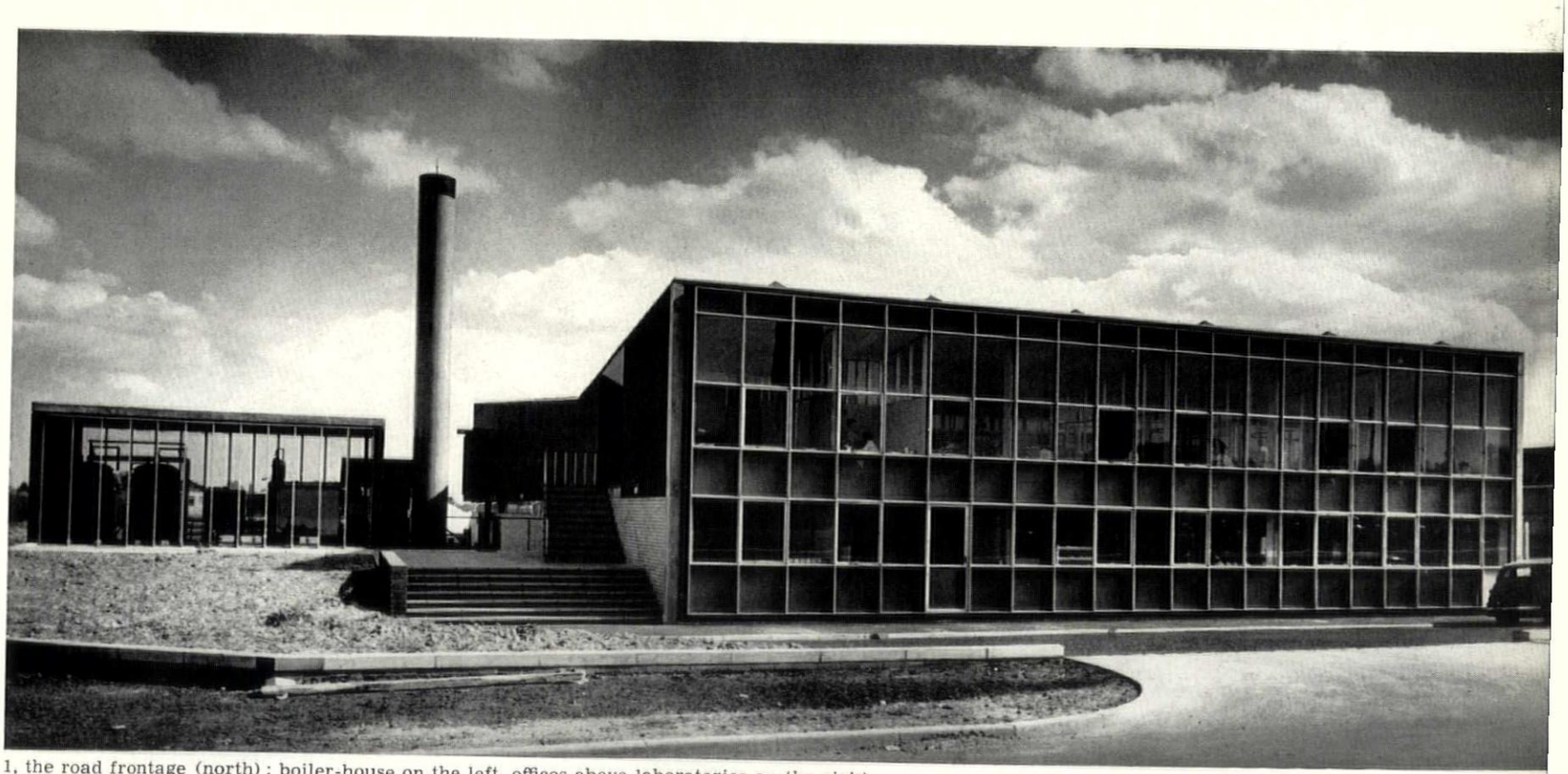
30
31,32


continuous roof lights between structural space frames
corrugated aluminium cladding painted dark green
curtain walling with green cast glass below cills
black concrete bricks
Uxbridge flint bricks
140'0"
clerestory lighting
raw materials
service
finish
closks
check
process
offices
labs.
lavs.
wait
dir.
offices & stores
load
unload
factory entrance
boiler house
office entrance
72'0"
car park
access road
CLEVELAND

The building described below and drawn by Kenneth Browne opposite could be a turning-point in re-establishing an industrial vernacular for the small factory in Britain. Here for the first time are genuinely modern and mass-produced industrial forms—curtain walls and aluminium sheeting—used without applied 'art' to give an elegant solution which comes directly from the functional needs. Ironically, this was only achieved in the teeth of New Town regulations which laid down that the road frontage should be a two-storey office block, as a screen, and that a particular facing brick be used on this front elevation and carried round to the sides. The architects overcame the two-storey screen by making the whole factory fit one butterfly-roofed unit, and overcame the rule about facing bricks by not having any brickwork at all. The usual result of truckling to the regulations is shown in the inset and can be seen ad nauseam *in the New Towns themselves.*

FACTORY AT HEMEL HEMPSTEAD

DESIGNERS	**OVE ARUP AND PARTNERS**
assistant architects	**Philip Dowson and Francis Pym**



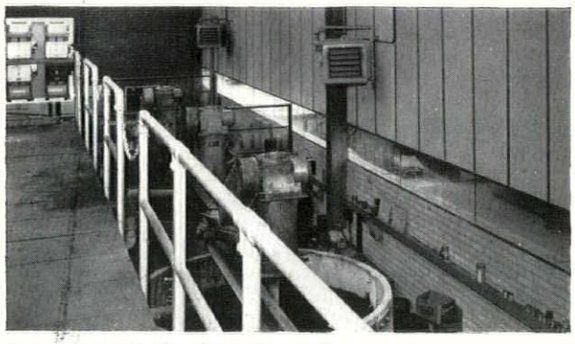
1, the road frontage (north); boiler-house on the left, offices above laboratories on the right.

This factory is on the New Town industrial estate and produces paints and concrete additives. There is 5-ft. fall from north to south, and consequently the process area in the centre of the block is at mezzanine level to the 2-storey south end (stores above, finished products below). An over-all flat roof would have been unnecessarily high over the process area; hence a butterfly roof was used. This also gives as much light as possible to the offices and laboratories—which faced north by request of the Development Corporation. Road access is from the north-east to a loading bay formed by continuing the lower floor level. Raw materials are unloaded by a jib crane through double doors into the storage on the upper floor. The building is r.c. framed with suspended floors of in-situ 12-in. thick continuous structural concrete slabs. Infilling between stanchions to form the external



2

2 and 3, two views of the raw materials store. 2 shows the process area with timber space-frame units spanning 35 ft. between the r.c. beams.

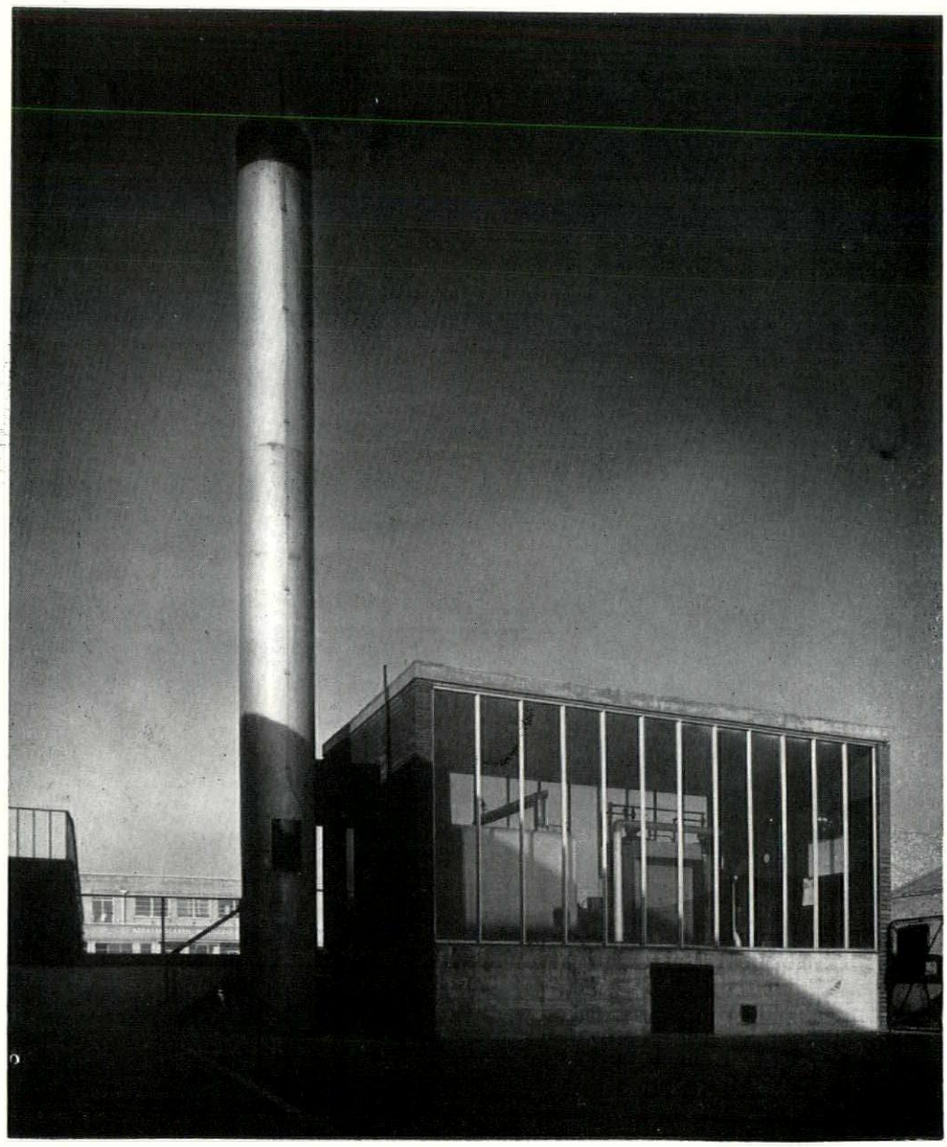


3

4 and 5, the boiler-house from the south ; the loading bay in the foreground of 5 is an extension of the main floor slab.

walls is Uxbridge flint bricks up to clerestory level. Above the clerestory the block is continuously clad on three sides with corrugated aluminium sheeting, painted dark green outside. The clerestory is glazed directly into the structure dispensing with window frames. The north front is entirely glass curtain walling in aluminium frame windows. The roof is a development of the Punt system with timber space-frame units spanning 35 ft. between beams. The frames are built up of light timber and steel sections fixed to $\frac{3}{8}$ in. plywood sheets. Rain water is drained off by a single gutter in the groove of the butterfly roof leading to a vertical duct, with the lavatories grouped around it on two floors.

The boiler-house is a separate building consisting of an in-situ concrete slab on brick end walls and patent glazing side walls ; the free-standing flue is constructed of in-situ r.c.



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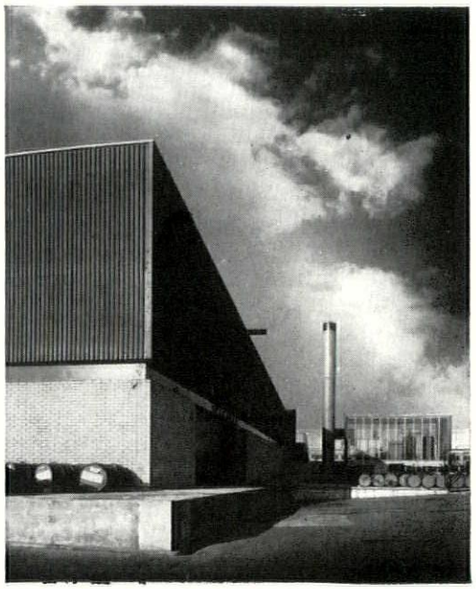
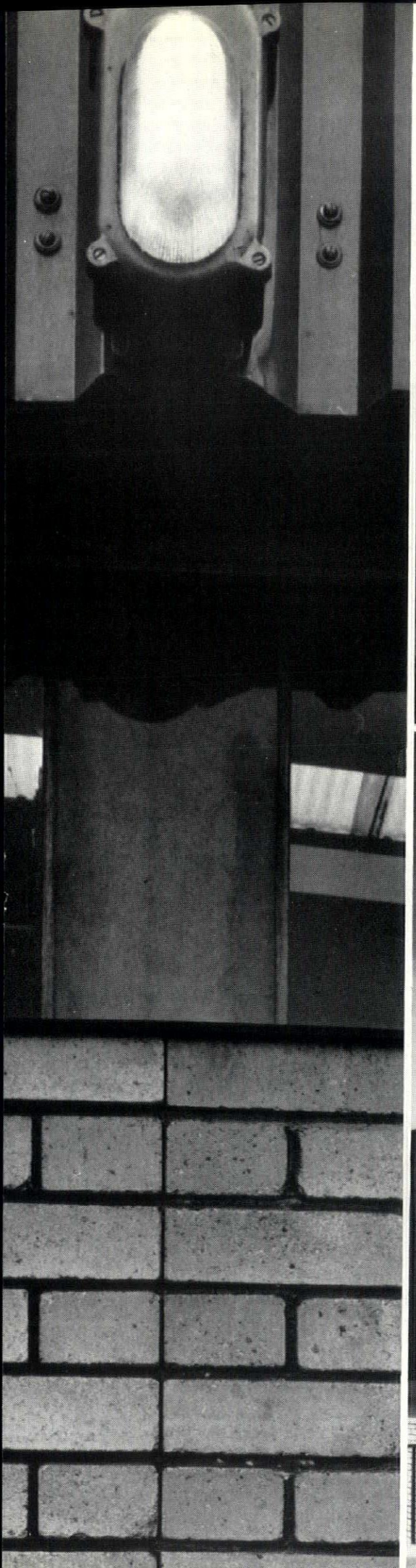


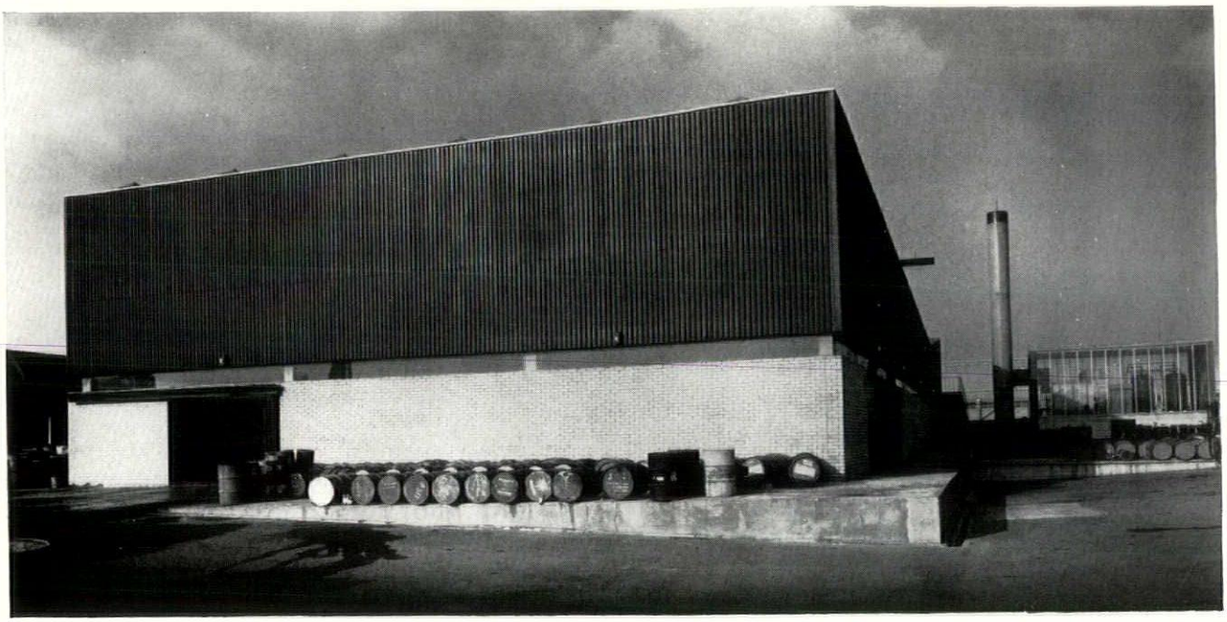
5

Opposite three detail views. 6, left, close up of the external cladding at one of the stanchions, showing glass clerestory, with aluminium sheet above it and the flint facing bricks with expansion joint below. 7, above right, the double doors and jib crane used to deliver raw materials to the store. 8, below right, the staircase to the offices on the east side, with slate treads on an r.c. frame.









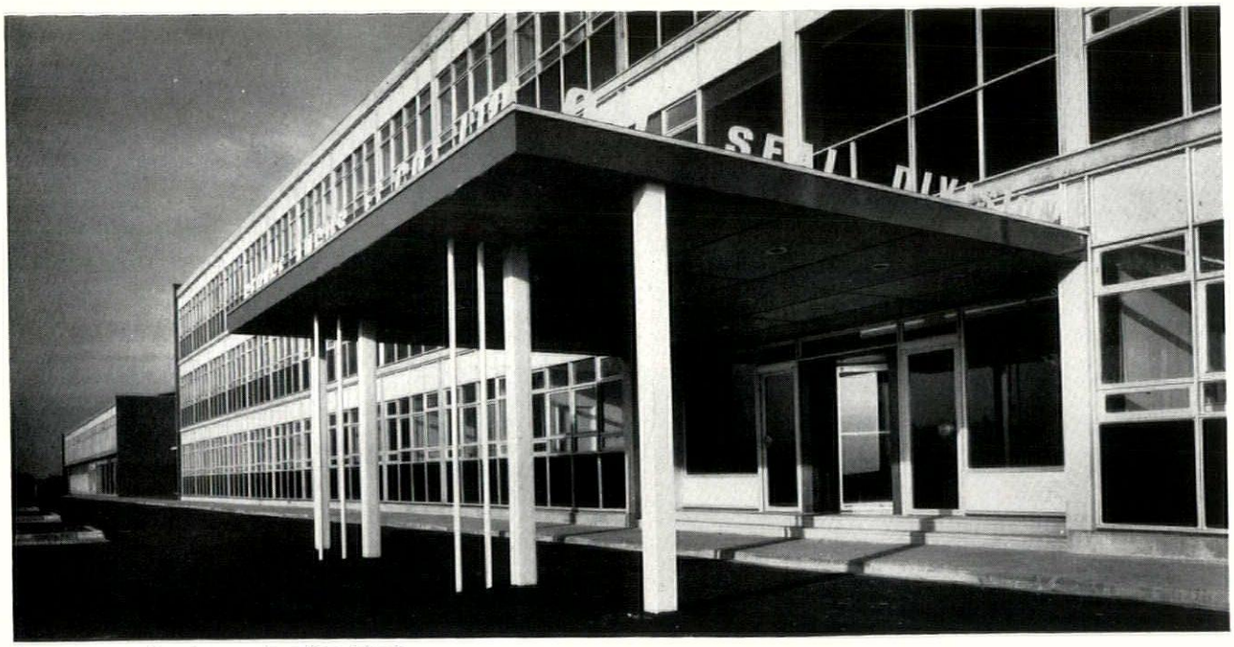
FACTORY AT HEMEL HEMPSTEAD

8, two-storey south elevation; raw materials store above, finished products below; sliding doors to servicing bay on left.

FACTORY AT WALLSEND-ON-TYNE

ARCHITECTS ***S. W. MILBURN & PARTNERS***

assistant architects ***James Hall (-in-charge), Robert Hanson, Denis Wilkinson and George Pennie***



1, canopy and entrance to office block.

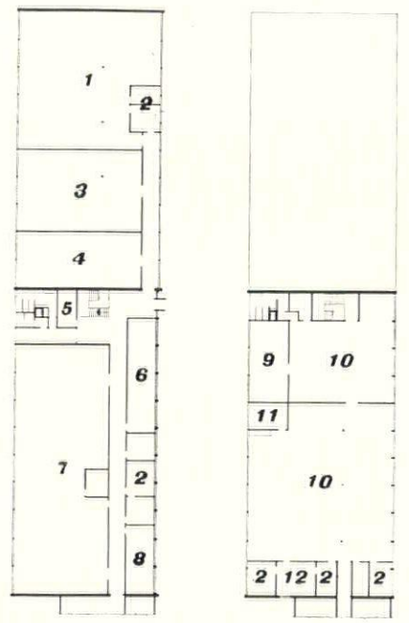
This factory is the oil seals division of George Angus & Co., on a 19-acre site beside the Newcastle-Tynemouth Coast Road north of Wallsend. The building line was fixed at 100 ft. back from the road, and all traffic access had to come from Middle Engine Lane on the west side: the factory was therefore planned on this side of the site allowing for 100 per cent eastwards and northwards expansion. Canteen, office block and laboratories run parallel to the Coast Road and can be expanded sideways and upwards.

The factory, boiler-house, offices and laboratories are steel framed, the smaller ancillary blocks are load-bearing brickwork; the other main building—the canteen—is r.c. framed to save steel and to aid the building pro-

[*Continued on page* 236

2, right, the entrance hall in the office block looking towards the pool behind the staircase. The enquiry desk and staircase risers are teak ; the frame for the revolving door is cherry mahogany ; and the walls are veneered in white oak.





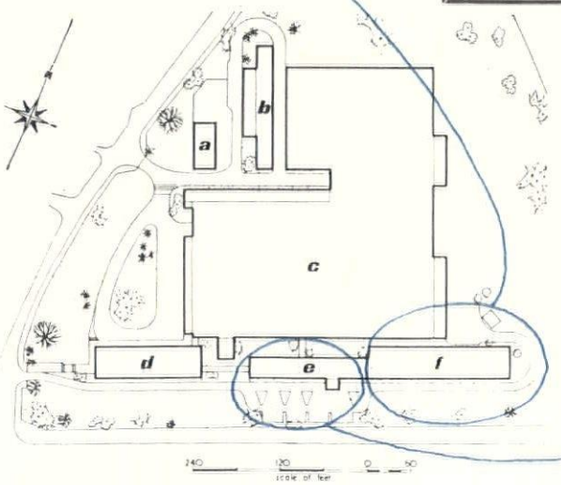
ground floor. first floor.

scale: 1/80 in. = 1 ft.

laboratories

key

1, pilot plant.
2, offices.
3, plant development.
4, textile lab.
5, dark room.
6, drawing office.
7, engineering lab.
8, technical office.
9, mill room.
10, chemistry labs.
11, store
12, library.



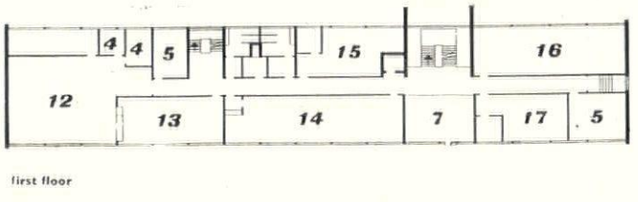
site plan

key. a, boiler house. b, chemical store, joiners' shop and garage. c, factory production area. d, canteen. e, offices. f, laboratories.

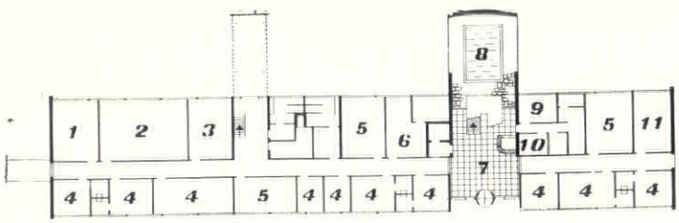
office block

key

1, works typists.
2, methods.
3, stationery store.
4, administrative offices.
5, spare rooms.
6, buying and stores records.
7, entrance hall.
8, pool.
9, telephone exchange.
10, waiting room.
11, dead file store.
12, production control.
13, central records.
14, wages.
15, general office.
16, computers
17, costing.



first floor



ground floor.

scale: 1/64 in. = 1 ft.



3, the canteen ; with offices and a lecture theatre on the ground floor. The panel in the centre contains coloured glass set in rough-textured concrete, and lit from behind ; this will be used as an advertising motif.

[*Continued from page* 234]

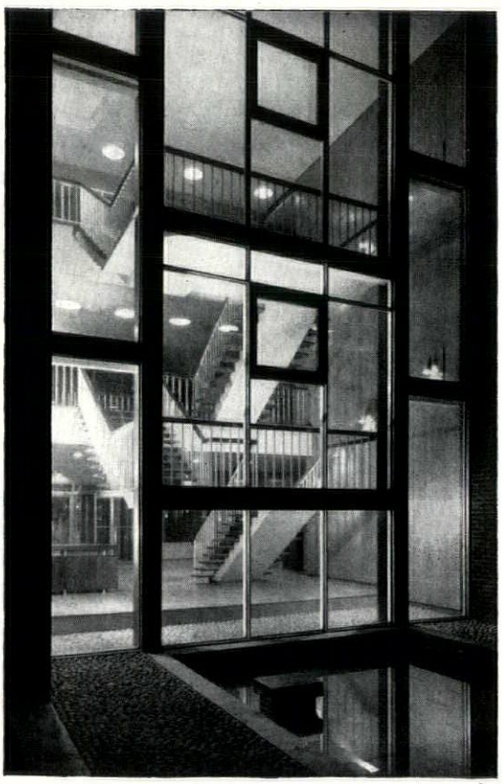
gramme which was very tight*. The factory is laid out on a 60-ft. grid, planned so that each department can expand laterally independent of the others ; the perimeter walls are aluminium cladding with an insulated backing and high level glazing ; the roof has monitor lighting and corrugated aluminium decking. Factory services have in most cases been ducted in the floor, giving ready supply to any machine points necessary : the ducts can be lengthened as required for future extensions. Heating pipes run at high level and serve space heaters.

*An 18-month schedule was maintained by closest possible liaison between architects and contractors, and by careful planning by the contractors themselves (Messrs. Bovis Ltd.), who were working on a contract fee basis.

The offices and laboratories are clad with curtain walling set forward of the main structure. In the offices this is broken at 12-ft. intervals with cover boards of Mansonia hardwood ; vertical services and rain-water pipes are housed between these and the main stanchions. On the south front aluminium curtain walling was used ; on the north 12 ft. by 11 ft. prefabricated timber frames were purpose made when it became clear that sufficient aluminium curtain walling could not be delivered in time. The laboratories are clad with vertical red cedar boarding and timber framed prefabricated windows. Horizontal services are run through castellated beams and concealed in a false ceiling : vertical services are housed in two ducts designed to have continuous access.



4



5

4, the laboratory block ; 5, the main staircase in the office block, from the rear.

Gordon Cullen

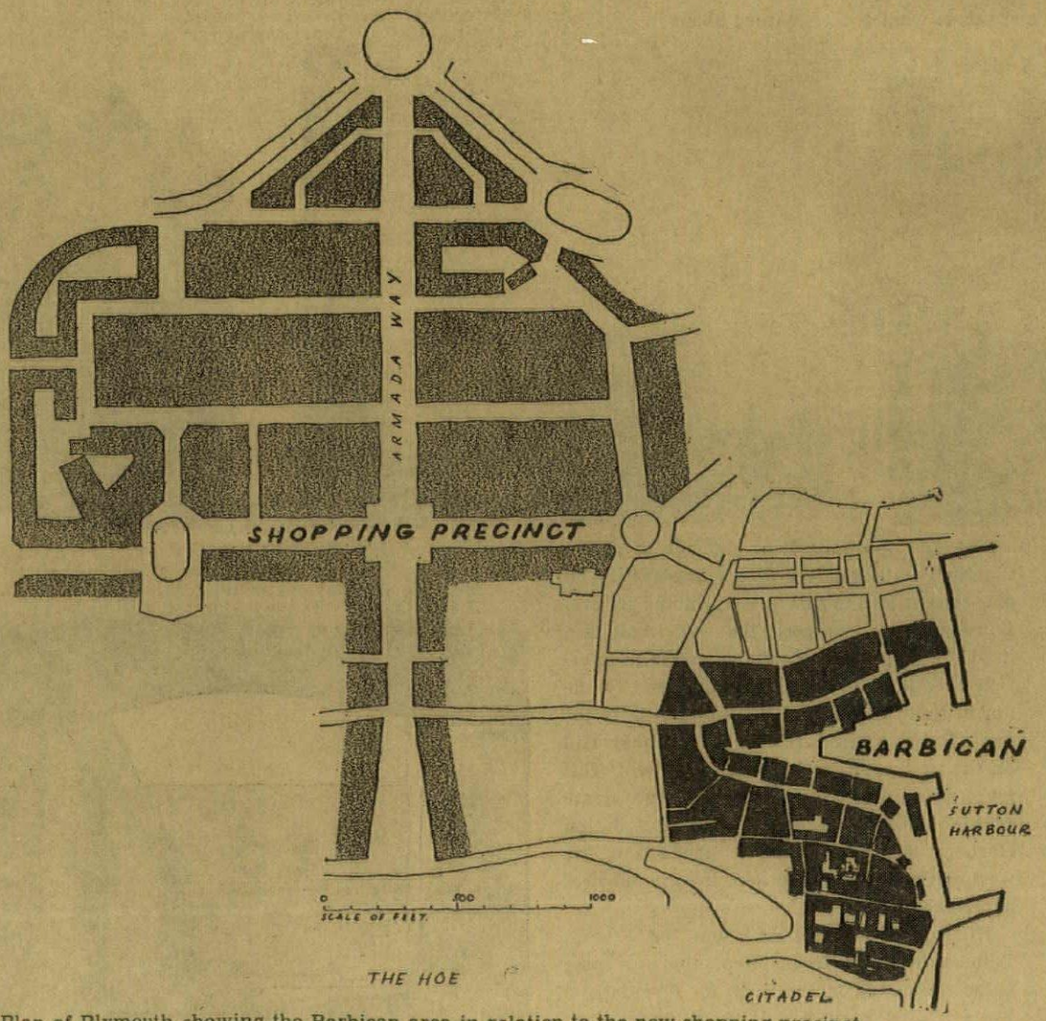
PLYMOUTH BARBICAN

In December 1956 the Reconstruction Committee of the Junior Chamber of Commerce of Plymouth wrote to the REVIEW expressing concern over developments in the Plymouth Barbican. With the publication of successive Compulsory Purchase Orders for land in the Barbican and the continued absence of any official plan for its future development, the Committee felt that the whole area stood in grave danger of obliteration. Consequently they stated their views to the REVIEW. It was a call for help, and as a result Gordon Cullen was sent to Plymouth to study the problem. His report, with its illustrations, is published 'straight' in the following pages. It is not a plan for the Barbican in the accepted sense. Recent events give no hint of a reprieve for the Barbican, in fact the threat has grown greater. So has confusion. The report attempts to specify the lasting values implicit in the problem and if these can be accepted as true then the considerations of finance, public health and zoning will at last find their correct level as aids to development, not as dictators.

The Junior Chamber of Commerce acts independently of the Senior Chamber and has an age limit of 40. Its interests are widespread, including industry, education, commerce and reconstruction and it acts as a sort of ginger group constantly seeking solutions to problems. Amongst its members are four city councillors, two J.P.s and principals of private businesses. I got the impression that the Reconstruction Committee was a sturdy group, enthusiastic but level headed, well informed and locally patriotic.

It appears that all energies have been pressed into the task of completing the shopping centre of Plymouth which is the apple of the eye of the engineer who, with Abercrombie, thought the thing up. The result is that other areas have been left to take pot luck and although everyone for one reason or another is concerned about the Barbican there is no comprehensive plan for it and consequently it stands in great danger of disappearing through the accidental erosion of day to day *ad hoc* decisions.

In order to make my point about the Barbican quarter I make a slight digression at this point. The shopping centre is really disappointing from the point of view of planning and architecture. Even I was surprised. But what is of equal importance is that it is a multiple store centre. When a local shop makes good it prefers to invest its profits rather than pay Income Tax. The investment takes the form of buying out competitors thus forming a chain of stores. But a multiple store operates differently to a locally established shop; its headquarters may be in London or Manchester and all the services that it needs are provided by salaried employees in London or Manchester. Thus we get the situation whereby



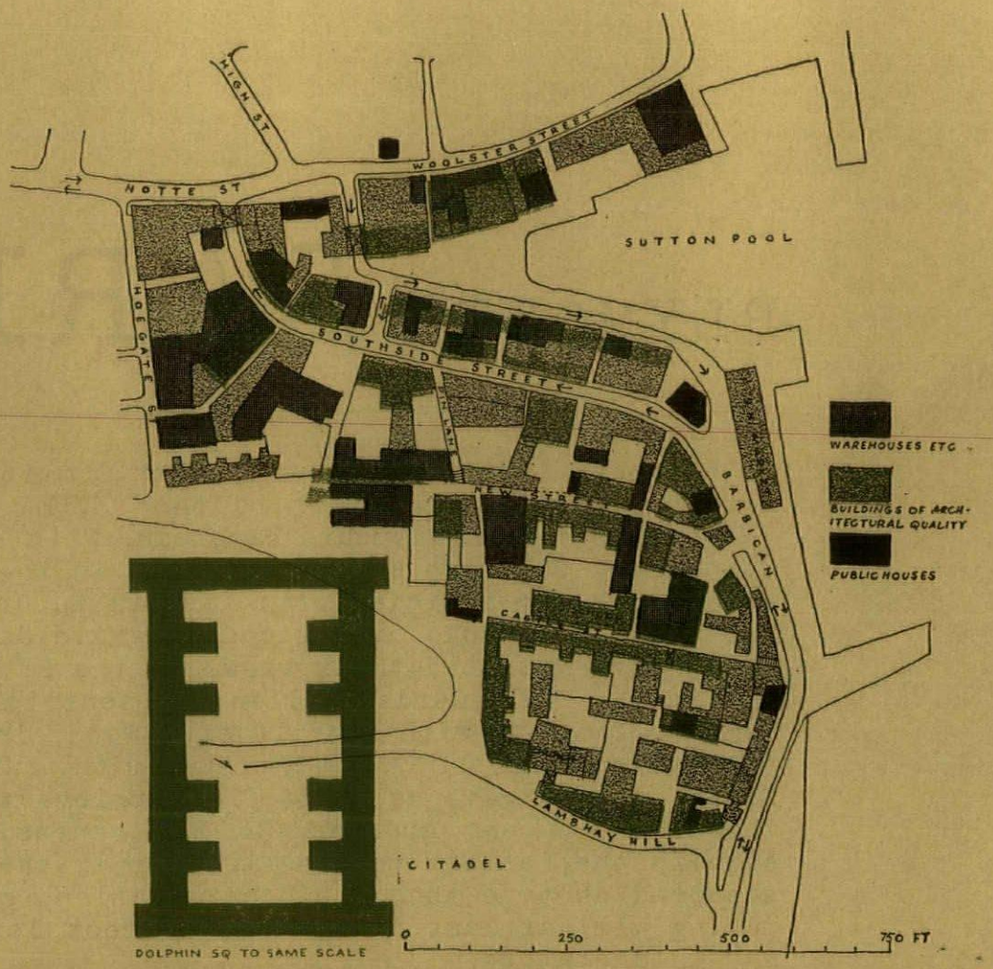
Plan of Plymouth showing the Barbican area in relation to the new shopping precinct.

the local lawyer and solicitor, the local accountant, the local builder, the local printer and the local signwriter find themselves out of a job. Gradually the local centre is abandoned by many professional people and many craftsmen and when these valuable stalwarts have gone the area becomes a wasteland; it is on the way to becoming a depressed area, a Dagenham. And since much of the new Plymouth seems to consist of multiple stores (as to date the relative foot frontages are as follows: multiple stores 6,300 ft.; local shops 1,900 ft.) one can draw one's own conclusions. As the chain stores come in so the cream of the local society must emigrate and the vitality of the town is correspondingly reduced. In a physical way too the centre of the town is dead after the shops shut. Of course the displaced people must go somewhere, they are still English, but they come to London and instead of leavening local society they take jobs which are less responsible than they are fitted for owing to competition at the centre.

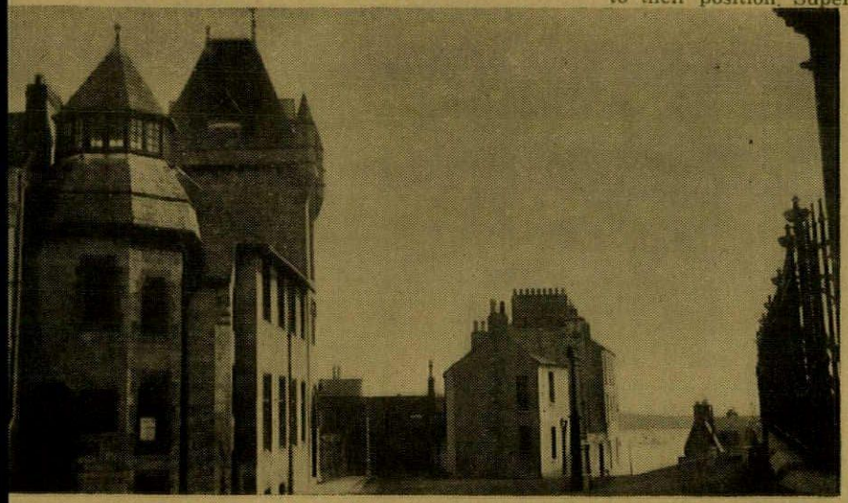
Against this background of sterility we must view the problem of the Barbican for although it is now only ¼ mile square it is, or could be, a rallying point for all those who want to arrest the devitalization of provincial England.

DESCRIPTION OF THE BARBICAN

Were it not for the singular fact that people still have to catch fish in the sea and sell them in the larger centres of the population it is probable that the vitality of the Barbican would have disappeared long ago. However it is still there and this is what I have learned about it.



Proposed redevelopment of the Barbican. Buildings shown in green are those worth preserving for architectural and historical reasons, and also for the reason that some buildings are important due to their position. Superimposed is a plan of Dolphin Square, London, to the same scale.



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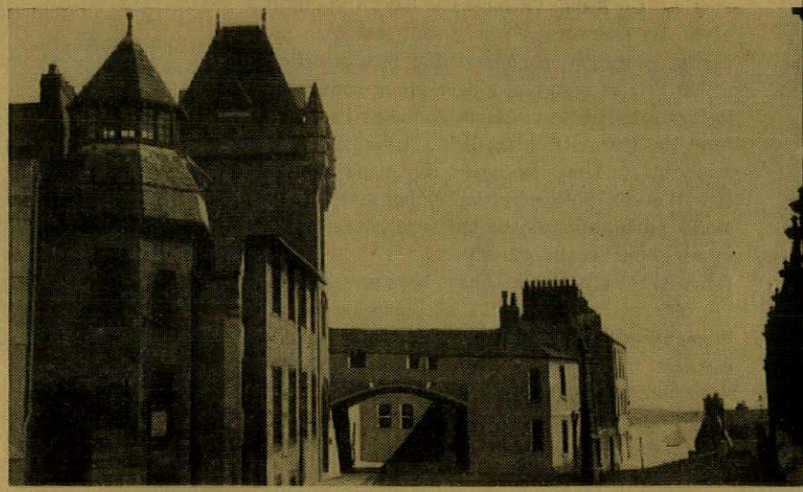
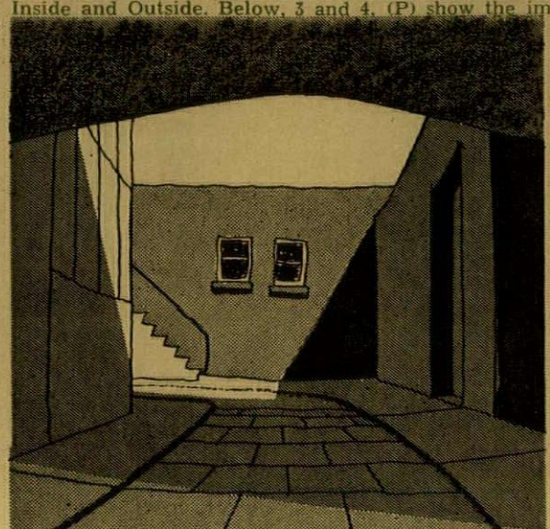


2

E means existing, P means proposal.
The boundary of the Barbican is clearly defined. 1, (E). It has an edge emphasized by the tower of the church hall. Beyond is the harbour. The entrance should be defined, 2 (P), to demonstrate Inside and Outside. Below, 3 and 4, (P) show the immediate impact of locality.

(a) Size and location. It is difficult to define exactly the boundaries of the Barbican. The one certain fact is that it is shrinking in size. Consequently I propose that an irreducible hardcore be adopted by the allies the penetration of which would mean extinction. To the north, Notte Street and Woolster Street, to the west Hoegate Street thence to Lambhay Hill on the south and the harbour to the east. This gives us an area approximately ¼ mile square of high density building overlooking Sutton Harbour. The bulk of the buildings is to the west of the harbour and here the ground rises appreciably.

(b) History. Trod by Drake and the Pilgrim Fathers the Barbican has been valued for these associations and in the 'Plan for Plymouth' it was proposed to put a wall round the area and



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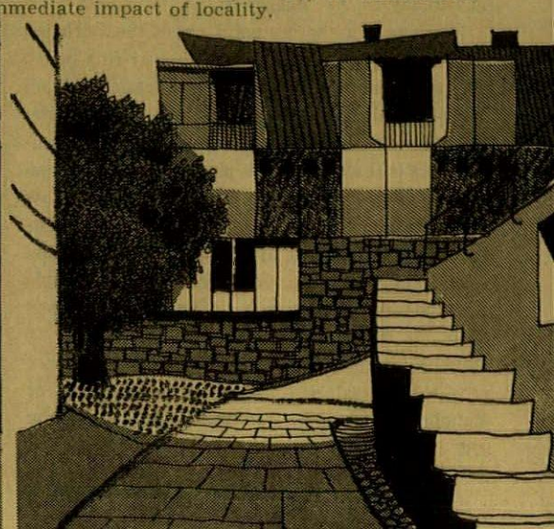
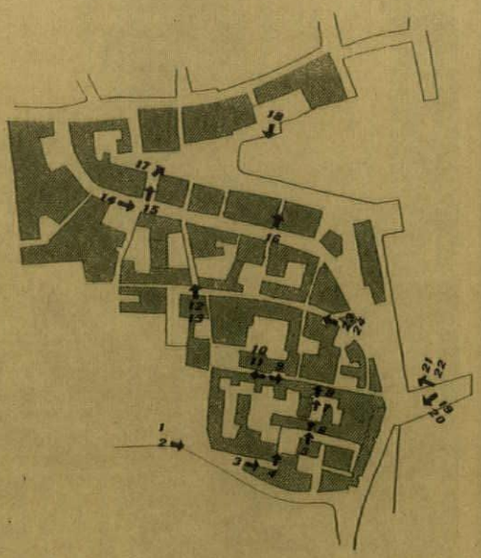




renovate the buildings to make an historic precinct which would nevertheless afford its occupants the benefits of modern civilization. It would be 'a fitting frame for the priceless antiquities which it contains'—Plymouth's oldest inn, the Old Ring o' Bells, in Woolster Street, was demolished in January of this year.

(c) Uses. There are four main uses.

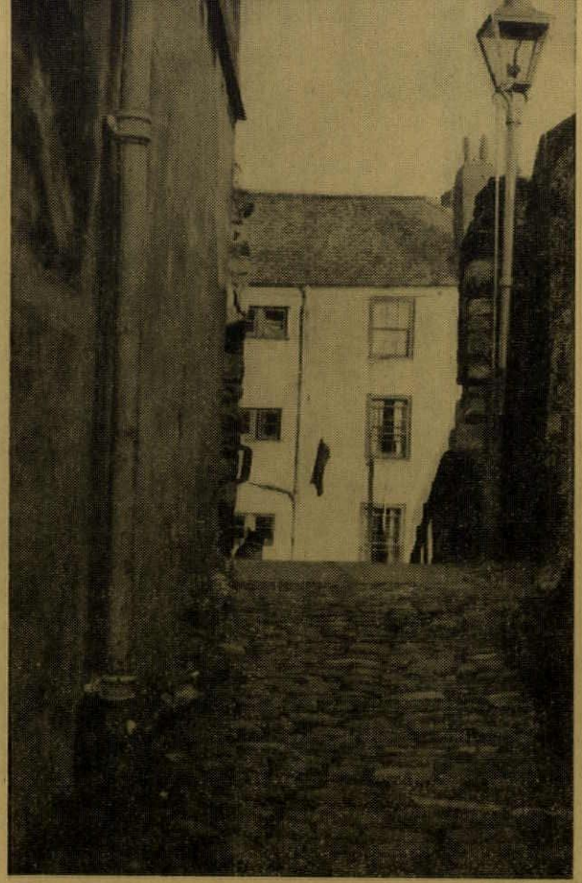
1. It is a fishing port and although at the moment not as busy as it could be owing to the mystery of the movements of shoals of fish it is the main source of employment for the Barbican population. (The Plan for Plymouth wanted to get rid of the smelly fish and lay the quayside out as a monumental garden.)

2. There are a number of bonded warehouses, the Custom House, ships' chandlers, a yachting centre and the manufacture of Coates' Plymouth Gin. Also several antique shops, bookshops and the like. There is a street of normal retail shops—butchers, bakers, etc.

3. Housing. High density housing forms the bulk of the building, little of which complies with the bye-laws in respect to angles of light, overcrowding and sanitation. Many of the streets and alleys are no more than 10 ft. wide. There are several blitzed areas. The population has something of a reputation in Plymouth. Not exactly a dangerous quarter but a bit independent and full blooded. Families have lived there for many generations and are firmly attached to their own place. Although Plymouth has its Regatta, Sutton Harbour has its own, there is a fair held once a year and various junketings such as pram races, etc., etc. (Outside one pub I read the notice "Licensed for singing and dancing and entertainments of a like kind.")

4. Tourism. The quarter is well patronized by our American cousins since it was from here that the Pilgrim Fathers sailed (and to which two Tolpuddle martyrs returned after a lengthy stay in the Antipodes). This accounts for the antique shops, some of which seem good.

(d) Visual impressions. The atmosphere is reminiscent of St. Malo or some small French town and I kept catching the echo of a whiff of Gauloise cigarettes. There is an unbroken thread of architectural style from Elizabethan to modern including Renaissance, Georgian, Victorian industrial and Art Nouveau all inter-



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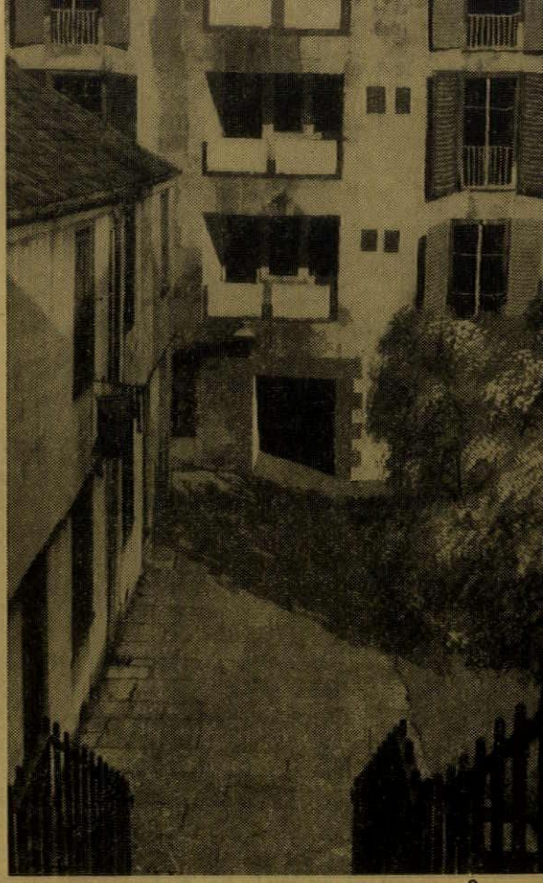

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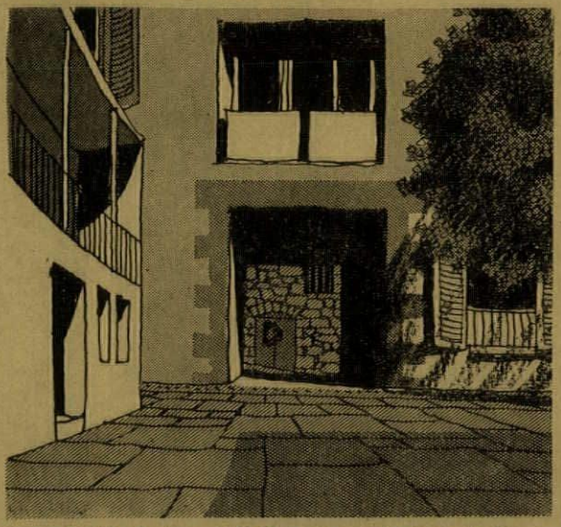
The approach to a typical courtyard, 5 (E), hidden from view by the change of level. At present it is squalid but this is not the fault of the planning as is shown in the adjoining picture, 6 (P), the pedestrian way continues . . .



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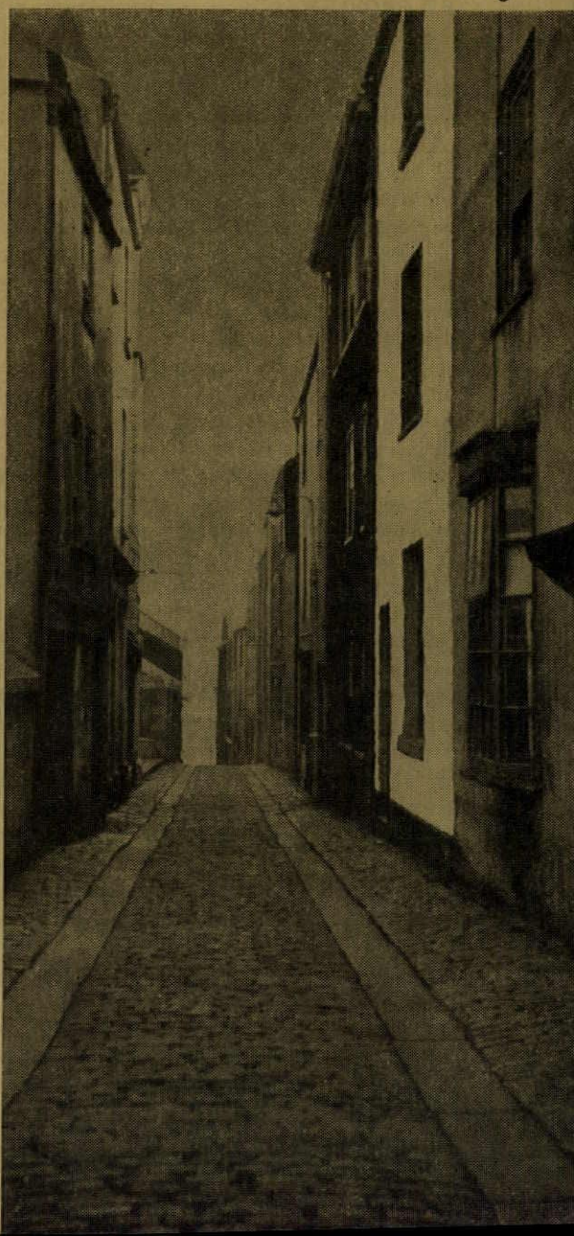

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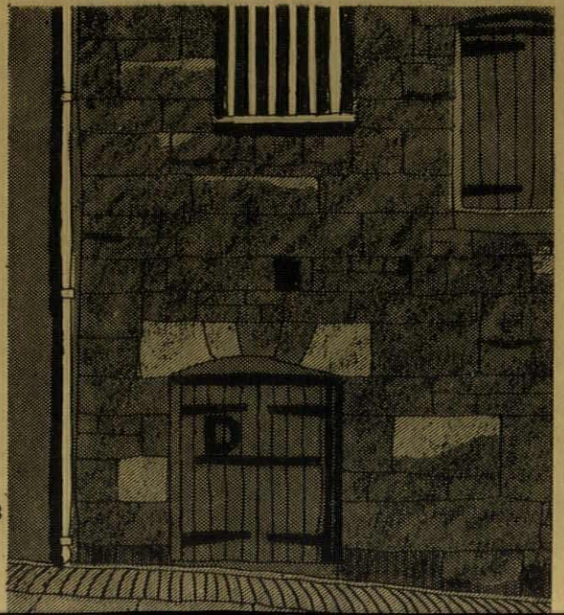
. . . public but essentially personal through the undercroft, 7 (P), to Castle Street, 8 (E and OE) where the warehouse acts as an alterative to housing. Turning to the right, 9 (E), a great, contrasting slit takes the eye right down to the harbour.



8



woven together in this microcosm. Courtyards, alleys, steps, small streets and a quayside form a living 'neighbourhood centre.' You turn off the road through an arch and find yourself in a courtyard overlooked by houses; at the far end are stone steps leading out to a higher alley. Although it is a public right of way one has the feeling of being an intruder. It is this sort of personal, almost possessive, planning which pervades the quarter.

THE PROBLEM

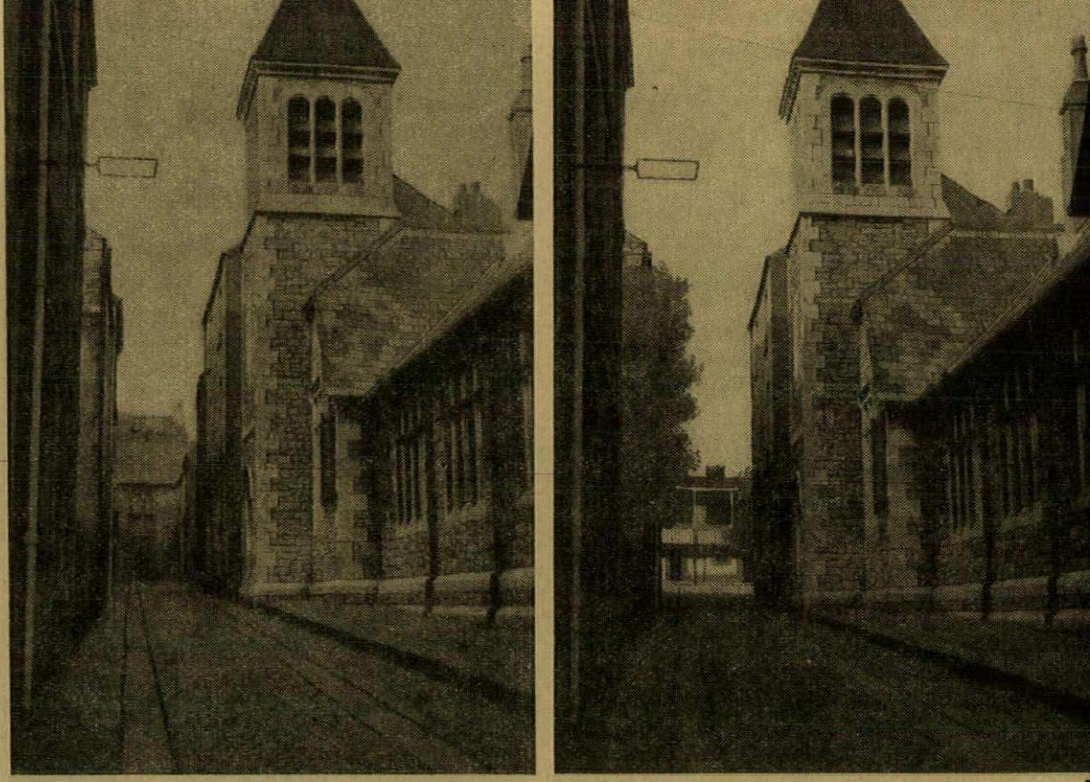
It seems that after a long period of ambivalency during which the architectural and historic values tugged against the squalor of the housing, Plymouth has decided to sweep the lot away, and pick out a few items from the debris for museums. The Barbican is being treated as a slum clearance area. 'The well-being of human beings must come before the value of historical precincts.' The effect of this is to split local opinion and precipitate a battle, for there is a strong and vigorous desire in Plymouth to retain the Barbican in a recognizable form. The solution put forward is one of reconditioning and the formation of enclaves by the demolition of derelict property for light and air and in which children can play.

I hope I have made it clear that in this quarter we have something unique. Not only is it a continuous growth as an architectural style, not only is the planning both intimate and exciting, not only is it an area of mixed and complementary uses but it is lived in by people who are firmly attached to it. This has to be seen as one thing, a sort of style-plan-use-population construction. You cannot destroy one element and retain the symmetry of the whole. It is my view that unless we can present the Barbican in this way, unless we can make it dramatically clear and obvious to all that by some miracle Plymouth possesses this unique asset, then we shall not succeed.

The actual solution of the problem of what to do to make the area sanitary, etc., is comparatively simple.

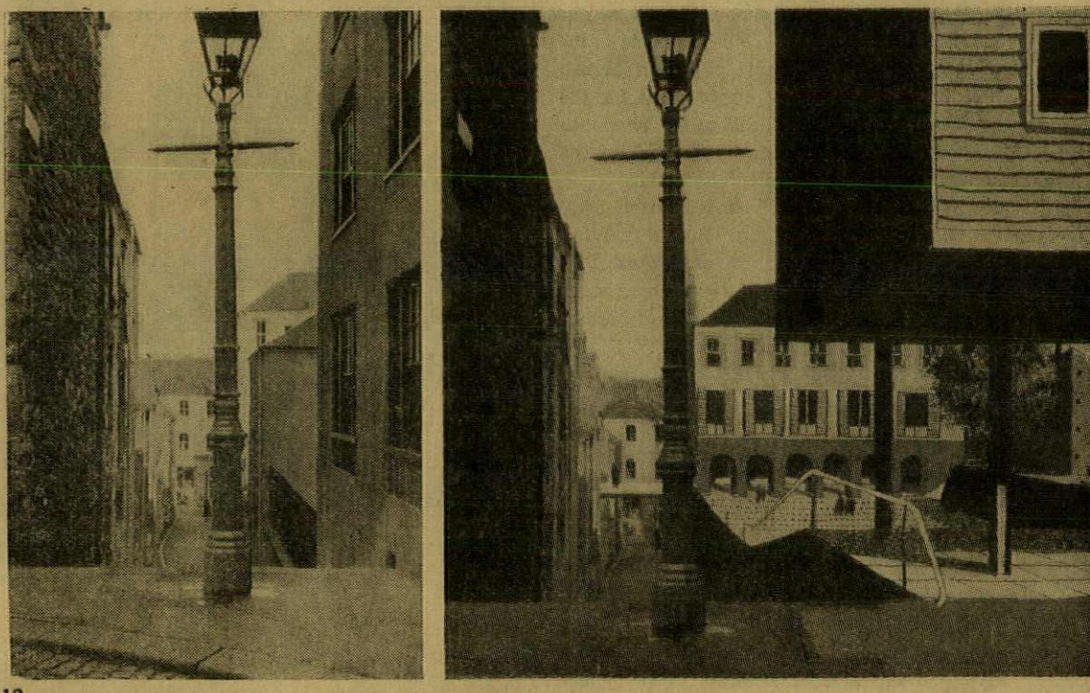
There appear to be four forms of blindness we shall have to cure.

1. Blindness caused by antiquarianism. The twentieth century respects the sixteenth century but knocks down the nineteenth. Even the eighteenth.



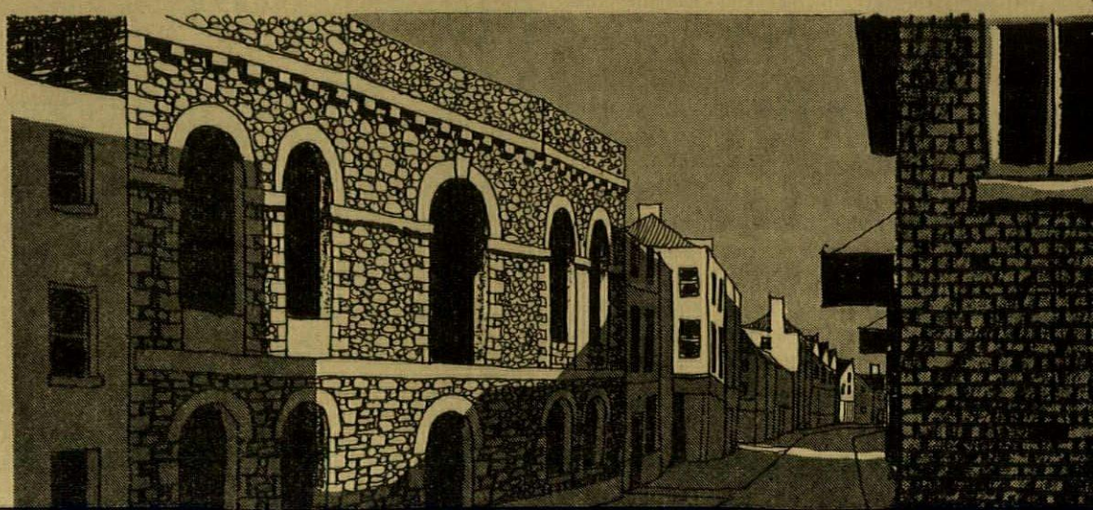
10

Looking uphill from the same point, 10 (E), the perspective is terminated in darkness and squalor. Without altering the identity of the place this can be redeemed by forming a new courtyard and tree planting, 11 (P).



12

Continuing along the pedestrian network Pin Lane in New Street is reached overlooking Southside Street, 12 (E). Here the opportunity is taken to propose a new, small piazza visible from New Street, so creating a sense of spaciousness, 13 (P). Below, 14 (E and OE) is Southside Street.



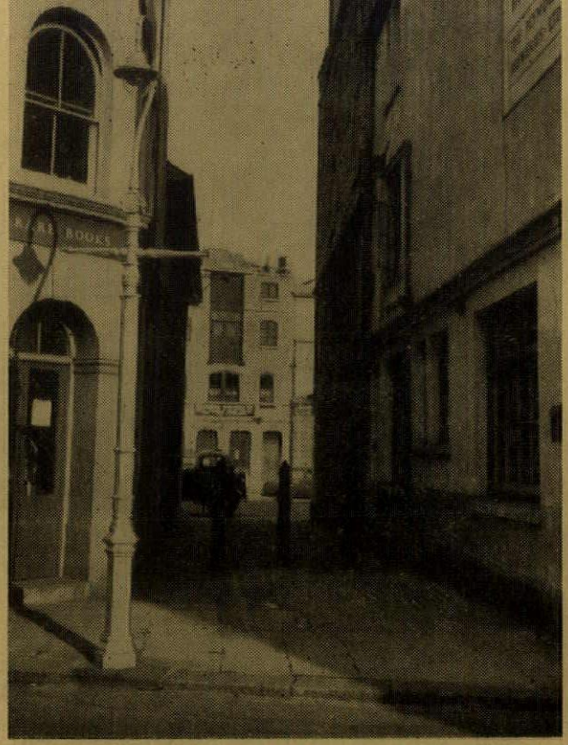
2. Blindness caused by an unwavering faith in bye-laws concerning angles of light, etc. Science is given us to try to make things work, not to destroy them if they offend. To knock down the Barbican because it offends the bye-laws is like shooting all people with stomach ulcers.

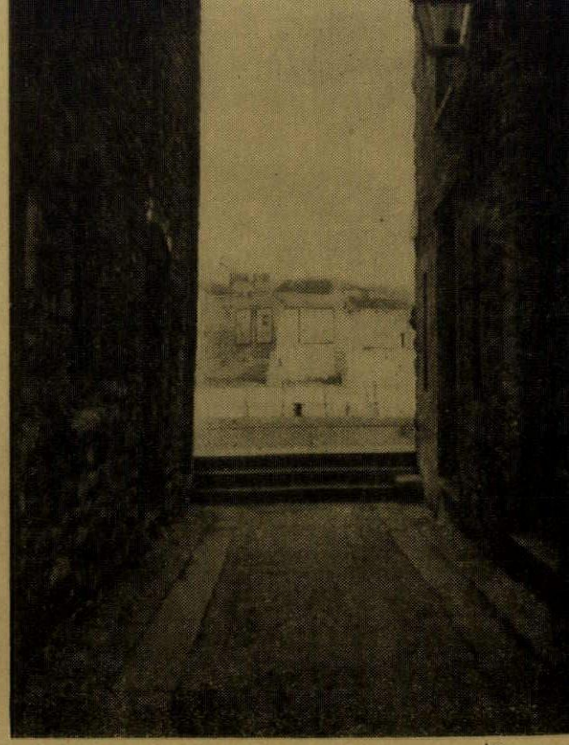
3. Blindness caused by aesthetic orthodoxy. Why is the Commercial Inn to be pulled down? Because they wish to build flats behind it and the Commercial would block the view out to the harbour. So it is to be demolished. This is an intriguing argument. On this basis the flats themselves are due to be knocked down as soon as built in order to let the people behind them have a view of the sea. Where does it all end? If you want a view of the sea the best place to go is to the edge of the sea or exploit change of level. Here is an example of the enforcement of an aesthetic gambit which is quite out of keeping with the spirit of the quarter which is centripetal.

4. Blindness caused by convention. Looking at the plan we see a typical hugger-mugger of streets with here and there a public building and an inn. We tend to regard it as just a bit more of that obsolete, outdated city pattern which makes us yawn and turn to Progress and Modernization.

Yet the piece we are looking at is not all that large. Compare it with Dolphin Square and you get a shock. That is the point I am coming to. If you think of the Barbican as you would think of a block of flats you begin to get somewhere. Instead of corridors and access balconies there are streets and lanes, instead of balconies there are courtyards. It is as though Dolphin Square had been taken to pieces and re-assembled on a hillside overlooking a small harbour. The flats are stacked at different heights, some two storey, some six and, I propose, some ten.

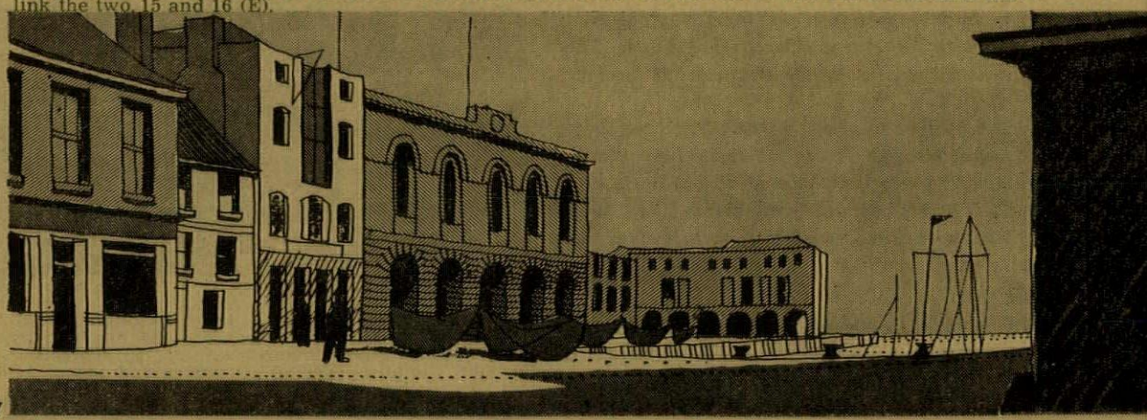
There is a convention that housing falls into categories, bungalows, houses, flats, etc., and that these buildings are placed on the ground separately. Here we see the convention broken and instead there is a flux. The monolithic block of flats has been loosened and stretched. The hard, compact, crystalline structure of a block of flats has been prised open but the spaces thus created are not filled with the desolate prairie, they remain integral with the structure, they become *localities*. Seen in this way the Barbican takes on a new significance, it suddenly becomes a Unité d'Habitation in a very real sense for by this 'all-in' arrangement the isolation and placelessness of conventional housing has been replaced by a sense of locality. Compare the arid mono-scenery of a block of flats or a housing estate with the rich variety of this loosened crystal. In 50 yards you move from one *place* to





15 16

Two entirely different kinds of locality intermingle in Southside Street. It is a shopping street but lying parallel is the harbour and one is continually aware of this due to the numerous slits that link the two. 15 and 16 (E).



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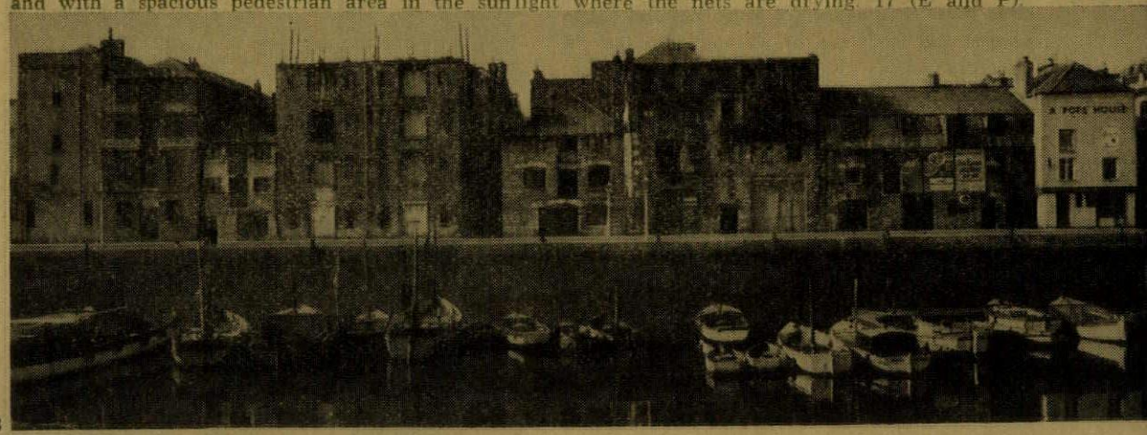
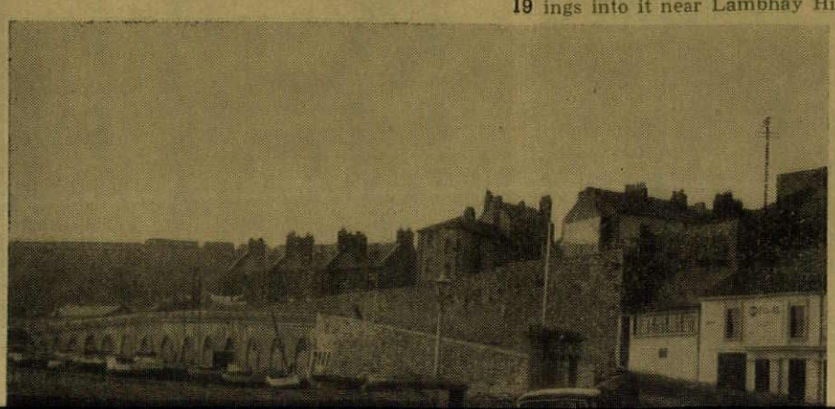
The friendly cosiness of the shopping street is left behind as the harbour is reached, broad and salty and with a spacious pedestrian area in the sunlight where the nets are drying. 17 (E and P).

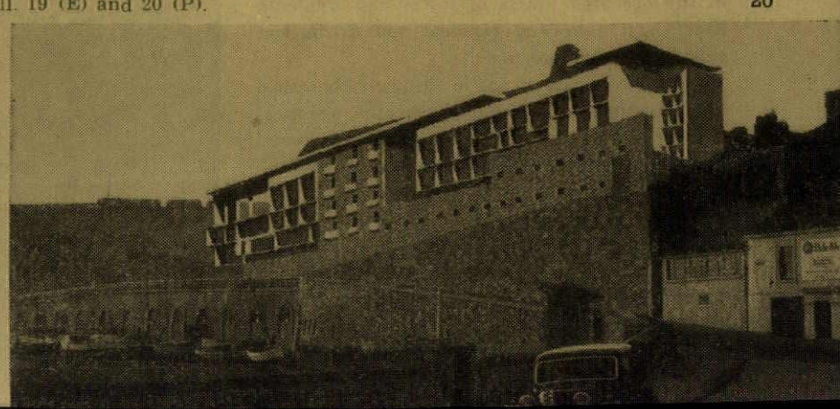


18

Now the seaward wall, the Barbican itself. From across the harbour the severe limestone warehouses form a noble boundary to the microcosm. 18 (E). This wall is reinforced by building dwellings into it near Lambhay Hill. 19 (E) and 20 (P).

19





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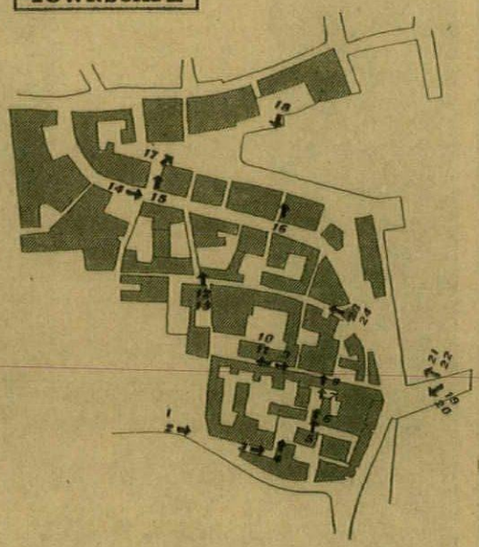


another, almost from one society to another. Within the overall unity style, colour and character modulate and change.

It is this insistence upon *place* and *locality* of a scale capable of being grasped which is the really significant lesson of the Barbican. Once we have reached this point then the problem of what to do with the Barbican is simple. The essential pattern exists; all it needs is bringing up to date.

The planner has been moralizing to us about neighbourhood centres for years. Here is one, alive and vigorous. What do the planners do ? They knock it down. Perhaps they don't know what a neighbourhood is just as so many pub designers don't know what a pub is.

ACTION

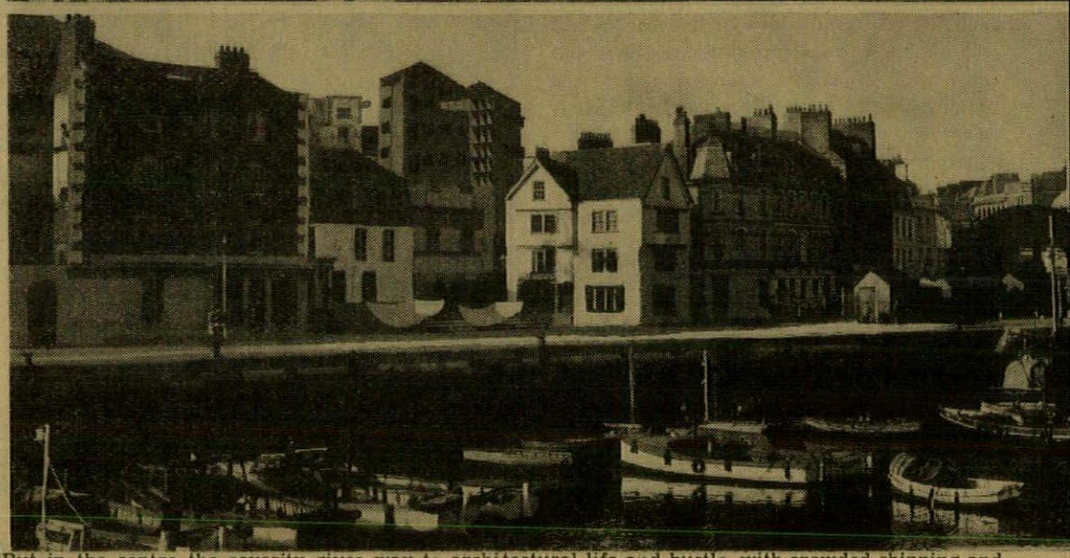
The situation is one of great urgency. At all costs the C.P.O.s now in operation must be suspended and a comprehensive plan for the area produced so that the erosion is stopped.

Our part in this would be (1) to make crystal clear what is in danger of being lost and (2) to suggest the technique of weaving into the old structure those essentials of modern living, sanitation, fresh air, district heating, etc., without delivering a mortal blow to the Barbican. It is not necessary to do the whole thing, the drift of the argument could be demonstrated in perhaps three examples. We are up against one difficulty and that is that the operation of conversion will be more expensive and require more application of the brain than knocking down and rebuilding. We must also take the greatest care to avoid the impression that we are solely interested in the quaint and are simply putting the whole thing into deep freeze. The lay public will understand our point of view and even see a lot of sense in it because it will guarantee the tourist industry. In fact what we are doing is tackling the problem of the decaying hearts of towns and trying to keep them alive and personal and urban, not suburban and anonymous.

The Barbican case is not in the least concerned with creating an artificial picturesque historical enclave full of arty ne'er do wells. It is a living, developing organism of ordinary hard working folk. Far from being obsolete and at the end of its life, it points the way to the town of the future and to destroy it would be another vote cast in favour of the technological wilderness we call Subtopia.



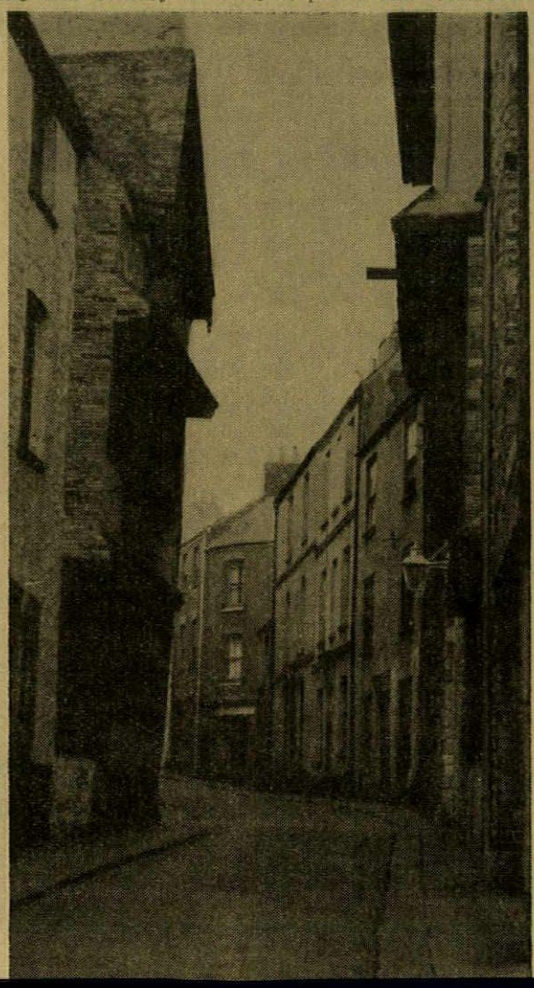
21



22

But in the centre the severity gives way to architectural life and bustle, with crowded shipping and the fish market. 21 (E). This should not be steamrollered and sterilized by a formal garden. Just leave the thing alone and add to its character. 22 (P).

Finally we turn inland, back into the precinct, past the Elizabethan houses in New Street, 23 (E). Here a new square is proposed, 24 (P). This is the way forward. It can be done. Why should the 20th Century with all its power and recourses drop the baton ?





23, 24

Reyner Banham

THE ONE AND THE FEW

THE RISE OF MODERN ARCHITECTURE IN FINLAND

'De Finsche architectuur is bekend door den genialen Finschen architect Prof. Eliel Saarinen, en met name door diens statige en voornaam gedetailleerde stationsgebouw te Helsingfors'.

The situation thus summed up by Professor J. G. Wattjes in 1925 seems to have repeated itself, *mutatis mutandis*, in the nineteen-fifties. When Wattjes wrote, Finnish architecture was indeed known only for the genius of the elder Saarinen, and only by the reputation of his gravely and distinguishedly detailed station in Helsinki, 1: and at the present moment Finnish architecture is again known for one man, Alvar Aalto, and one building, his sanatorium at Paimio—reading, as befits the changed climate of opinion, *structure* for *detailing*. But how justified then, and how justified now, is world architectural opinion in concentrating its esteem on one man?

As Wattjes went on to point out, Saarinen did not stand alone, nor was his station the only Finnish building of consequence erected in the first quarter of the century. The station itself was designed in collaboration with Gesellius and Lindgren, and the three of them were to produce an even more nobly-designed station at Viipuri* in 1910, while Armas Lindgren had to his personal credit two curious, craggy and strongly characterized office blocks in Helsinki. Quite independent of the three collaborators, Lars Sonck, who died only last year, was pursuing some aspects of Gothic Revival to a point almost as extreme and impressive as Gaudi, in his cathedral at Tampere, 2, and his later Bryghalls church, while his Telephone Building in Helsinki strikes another independent note. Four men do not make a school, and it is hardly to be expected that a country as small as Finland should produce many strong architectural personalities at any one time, yet it is difficult to see Saarinen as so conspicuously greater than the other three that he should be singled out. Rather, one feels, the few should have been seen as standing a little ahead of

* It now appears that the detailing of Helsinki station may be less to the credit of Saarinen than to the public uproar created by the 'rationalist' Sigurd Forestus when the competition-winning design was published.

a few others—who did not add up to a 'many', however one rated their abilities.

It is equally difficult, nowadays, to see how that one building, the station, should have given him so massive an international reputation. Conceivably Wattjes, as a leader of the romantic and eclectic trend in Holland, might have some special sympathy with its late Art Nouveau handling of forms, but it was a building that was held in esteem by more than just Romantics and Eclectics. Yet if one compares it with, say, the *Jahrhunderthalle* at Breslau, which in 1913 established the one-building reputation of Max Berg, the *Hille-huis* which in 1911 opened the short, brilliant career of de Klerk, or Bruno Taut's Glass Pavilion of 1914, one cannot but wonder that its reputation survived the First War even in Romantic and Expressionist circles, while its manner of 'losing' the train-sheds behind a frontage of 'Art-architecture' would make it rank, in the eyes of Functionalists, below the same team's Viipuri station, which exhibits its functional forms much more clearly. All this is not to question the quality of Helsinki station architecturally, but simply to call in question the unexpectedly high level of esteem that it commanded internationally.

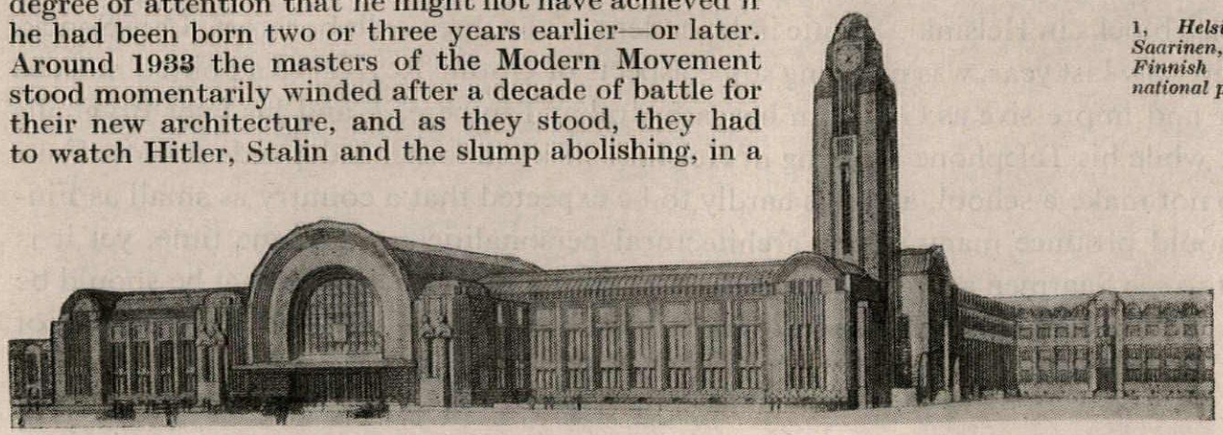
One cannot ask the same questions about the reputation of Alvar Aalto, for the mechanisms on which it was built are perfectly clear, even if they have not so far been analysed. The questions surrounding Aalto's position, at home and abroad, are of quite a different order. However one arranges the factors under review, whatever the viewpoint one adopts, it is clear that at home he stands immensely alone, as alone as Le Corbusier in France.

Furthermore, his unquestioned right to a position of international eminence is not justified merely by the opinion of the present writer, nor by the award of the RIBA's Royal Gold Medal, but most conspicuously by the way in which his achievement has earned him a place in the pages of Professor Giedion's *Space, Time and Architecture* alongside Le Corbusier, Gropius and Mies van der Rohe, and quite against the grain of the book's argument. He was missing from the first and second editions, but rated forty pages to himself in the third edition, as against twenty-three for Mies, thirty-one for Le Corbusier, and thirty-five for Gropius. That the official guardian of the CIAM tradition should have taken Aalto so much to heart as to make him one of the Big Four of the Modern Movement is a measure of the man we are dealing with—no one would have rated Saarinen with, say, Behrens and Perret.

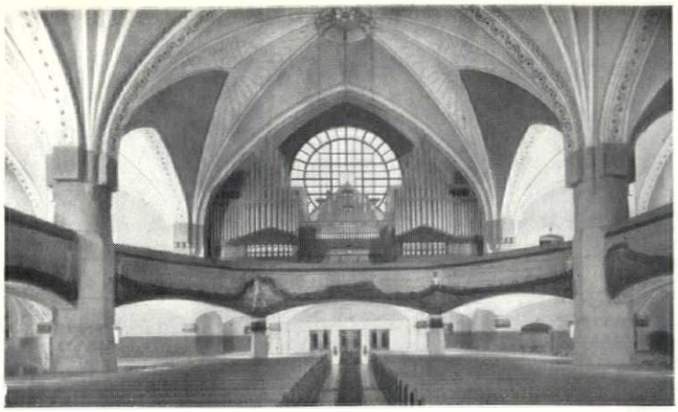
But it is also a measure of something that happened to the Modern Movement and guaranteed Aalto a degree of attention that he might not have achieved if he had been born two or three years earlier—or later. Around 1933 the masters of the Modern Movement stood momentarily winded after a decade of battle for their new architecture, and as they stood, they had to watch Hitler, Stalin and the slump abolishing, in a matter of months, the basic social assumptions and political affiliations that had supported them. In this low point of architectural hopes, the publication of Aalto's *Turun Sanomat* building, and his sanatorium (and the rumour of his Viipuri library) must have given everyone's spirits a tremendous boost. Certainly, in a decade when the hopes of the International Style —so completely European in conception and development—tended to be pinned more and more on exotics like Junzu Sakakura and Lucio Costa, Aalto was the most hopeful newcomer, and the least exotic.

But, effectively, he had not come to save the International Style, but to finish it. His apparent affiliation to its formal usages and structural methods was coincidental; one might say, with literal accuracy, superficial. The undercroft of *Turun Sanomat*, with its rounded, tapered legs belongs to a different world from the undercroft of Le Corbusier's *Cité de Refuge*, with its prim, cylindrical pilotis. The back of the sanatorium belongs to a different world to the constructivist framing of the side that is so familiar, 3. The interior spaces of the Viipuri library, and particularly the undulating ceiling of its lecture hall, were to be at impressive variance with its superficially boxy exterior. The International Style is only a phase, a phase that does not even comprehend the whole of his activity at any particular moment, in Aalto's personal development.

[*continued on page 247*

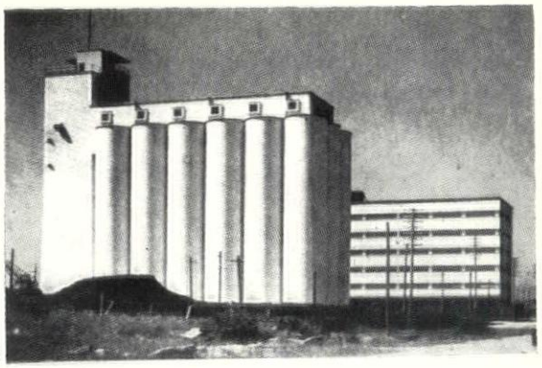


1, *Helsinki station, 1906–1914, by Saarinen, Gesellius and Lindgren, the first Finnish building to attract wide international praise.*



2

2, *Tampere Cathedral*, 1908, *Lars Sonck's late exploration of the structural possibilities of Gothic, and one of the beginnings of that tradition of structural boldness that runs through the best Finnish modern architecture.*

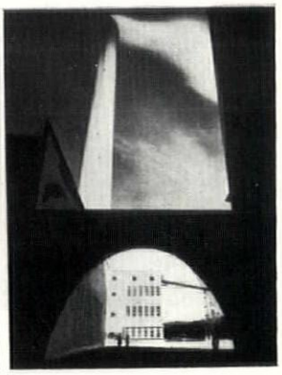


5

Finnish factory buildings of the 'thirties not only adhered to established International Style procedures, as in Erik Huttunen's silos at Viipuri (1930), 5, *but also gave signs that the more adventurous pre-*1914 *tradition was still at work, for instance, in the plant at Kaukopää* (1936) *by Väino Vähäkallio,* 6 *and* 7.



6



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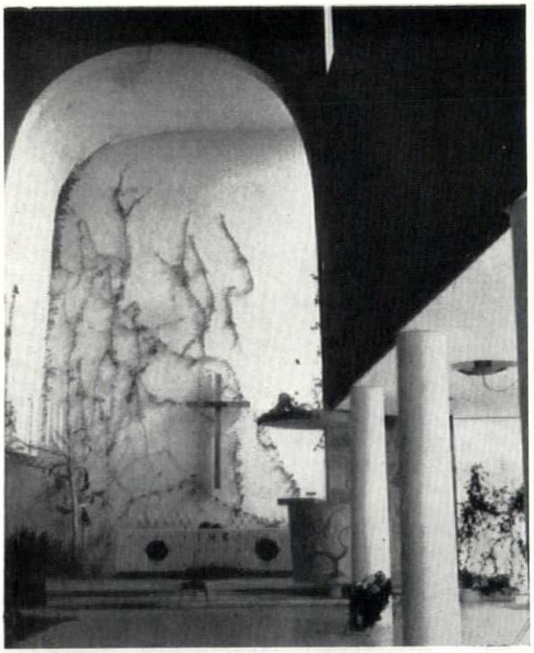
3

By the end of the 'thirties, Aalto's bold independence in the handling of form and structure was spreading, as Erik Bryggman's famous chapel at Turku, 8, *shows; but after the war some deviation is apparent, in Aarne Ervi's conventional but monumental power-station at Pyhäkoski,* 9, *and Pauli Salomaa's Swedish - Empirical* Domus Academica, 10.

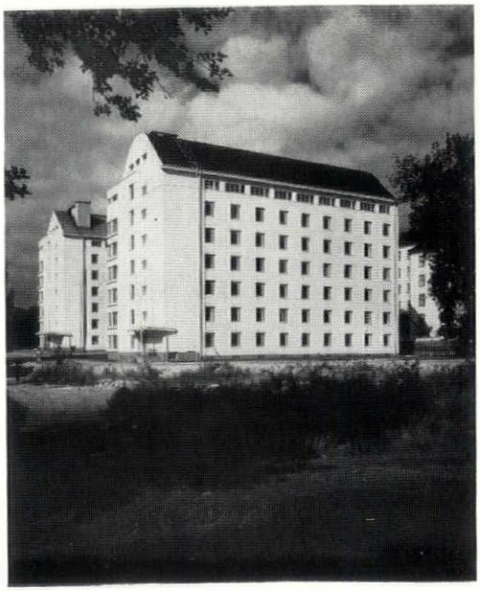


8



4

Paimio sanatorium, 3, *is one of three masterworks (the others are Turun Sanomat and the Viipuri Library) that Alvar Aalto had in hand around* 1930. *Yet at that time he had left behind him the 'stripped neo-classicism' that was then the routine in Finland—his office block in Turku,* 4, *is as late as* 1928.



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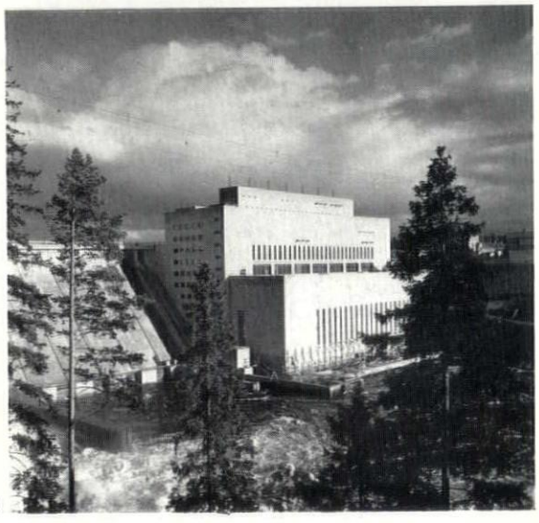

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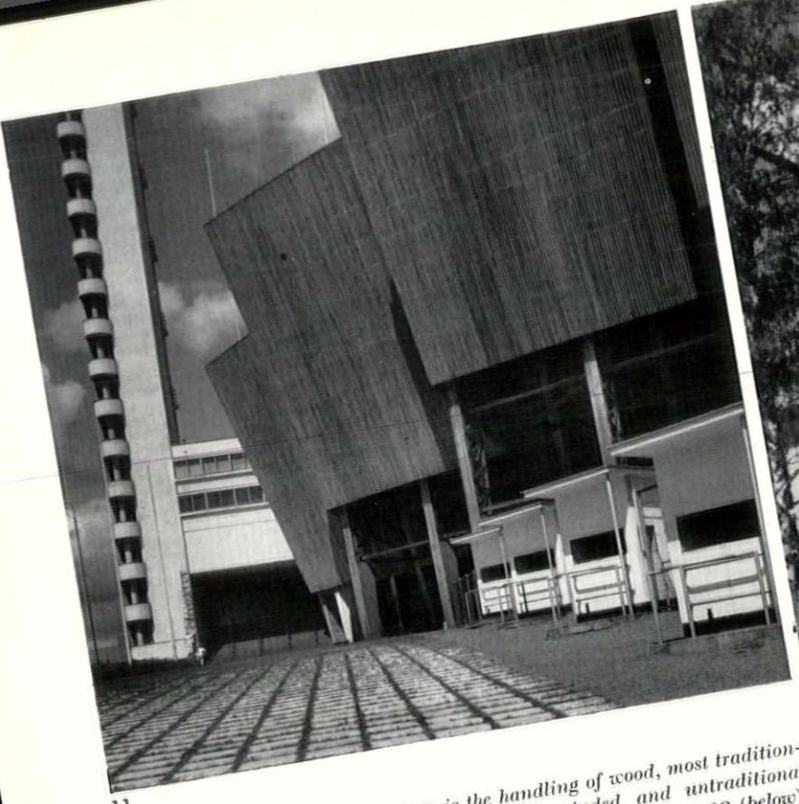
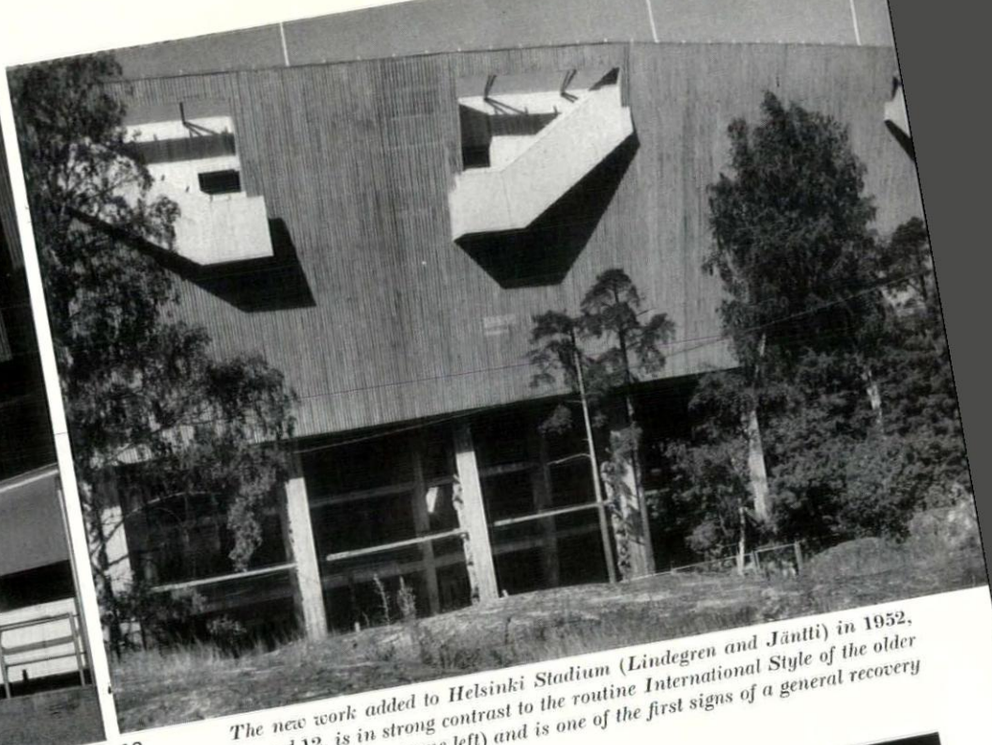


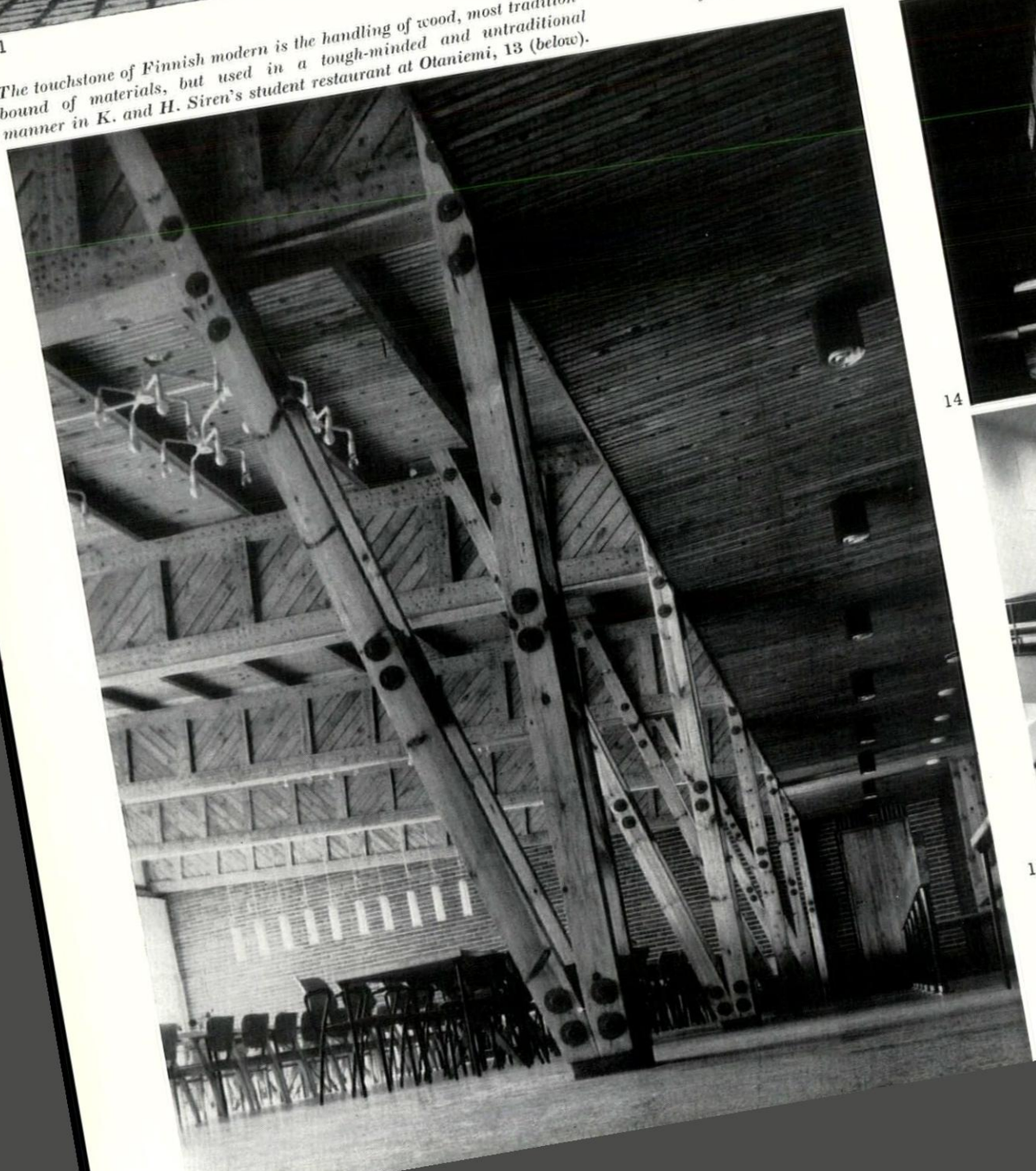
11

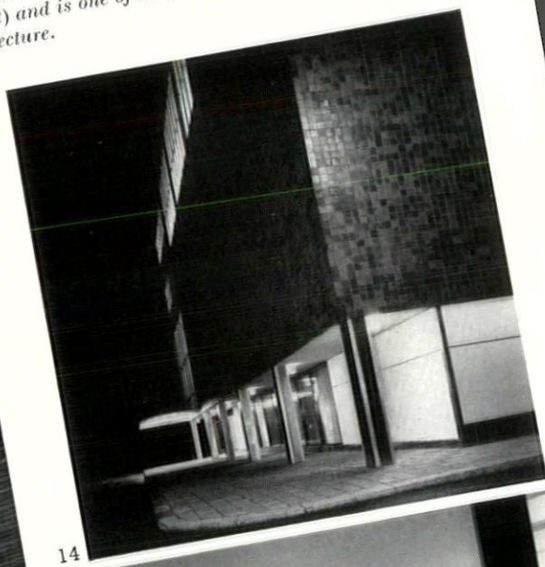
The touchstone of Finnish modern is the handling of wood, most tradition-bound of materials, but used in a tough-minded and untraditional manner in K. and H. Siren's student restaurant at Otaniemi, 13 (below).



12

The new work added to Helsinki Stadium (Lindegren and Jäntti) in 1952, 11 and 12, is in strong contrast to the routine International Style of the older parts (visible at extreme left) and is one of the first signs of a general recovery of nerve in Finnish architecture.





14



15

Even the glossy rectangular style that des
the recent work of Mies takes on a distin
in Finland, as is seen from the e
ticularly of another building from the
the new studio theatre in Helsinki, 14.

Outside the workings of Aalto's own genius, the reasons for this are probably to be found in the nature and progress of the Finnish architectural tradition itself. Not—and this must be firmly said—in some vague, autochthonous peasant tradition such as sentimentalists have lately indicated as Aalto's inspiration (which, indeed, it may be, in some marginal way) but in the live professional tradition of building-design, backed by a vigorous Polytechnic training. That tradition, in about 1930, was in a condition that could not be paralleled in Europe at the time, though one can find parallels of a sort in Germany in 1910, or Italy in 1945. That is to say, a neo-classical tradition that, however crusty, was still a going concern, was just beginning to be scraped down from without, and undermined from within.

Aalto's and Bryggman's work of around 1928, 4, is as truly a scraped neo-classicism as some Milanese work of the immediately post-second-war years—even the shape and disposition of the windows is very similar, not to mention the axial, block-like planning. It is, in fact, the Finnish neo-classicism of the 'twenties deprived of its detailing. Something similar is true of Asplund's work, just across the Baltic, in the 'twenties. But whereas it took Asplund a whole decade to progress from the stripped classicism of Stockholm library to the papery modernism of the Stockholm exhibition of 1930, Aalto and Bryggman took the same stride in a bare six months, and produced a very similar style for their Turku exhibition buildings, notably the restaurant, as early as 1929.

But at least one building for that exhibition in Turku gives a hint of the way beyond the International Style, that more humane or organic mode of design that Aalto has been correctly honoured for pioneering. This was the orchestra platform, a wooden structure with a sloping apron in front and a curved baffle wall rising behind, rising and nodding forward at its head. Across the baffle wall at various heights there ran parallel horizontal ridges, giving at once an out-of-period air. If it were not known that this was a work of Aalto's one would be forced to suppose it the design of a German expressionist of about 1920, or an American 'Borax' designer of about 1940. It draws attention very forcibly to the advantages that Aalto, Bryggman and their generation could derive from the unusual state of Finnish architecture at that time, with its surviving neo-classic and gothicist traditions.

What it amounted to was this: that Aalto's generation were free to make a set of decisions that had been closed to architects nearer the centre of Europe for almost a decade. Before them still stood the possibilities that had faced Gropius or Le Corbusier in 1910; the choice, crudely phrased, between classicism and expressionism. Before them still stood the possibilities that had faced Gropius and Mendelsohn in 1920; the choice, roughly, between synthetic and natural materials. Before them stood an open door that the masters of the International Style had slammed behind them, and through it they took with them possibilities that those masters had left behind. Though these particular possibilities were to be most fully explicit only in the 'fifties, in Aalto's work at Säynätsalo, his long reach back into the potentialities of pre-1914 Werkbund expressionism shows itself in the water-tower and the flake-bins of his 1933 factory at Toppila.

That this appreciation of forgotten possibilities was not a private fancy of Aalto's one can see from Vähäkallio's nearly contemporary factory at Kaukopää, 6, 7, where such Werkbund-expressionist themes as the parabolic arch are given new life. Kaukopää, indeed, shows how nearly Aalto did not stand alone, but (as it turned out) he and Vähäkallio failed to take the rest of the profession with them—for the moment at least. For the rest of the Finnish Modern Movement became as much an orthodox or academic province of the International Style as the Modern Movement in England or Italy in the 'thirties. Not that great things could not still be achieved within the formal limitations and structural rigours of the Grand Old Style, as Impington and the *Casa del Fascio* bear witness, and in Finland Erik Huttunen, probably the first architect to be invited to design a grain-silo, not admire it, built from 1929 onwards a set of silos and other plant for SOK (Finnish Co-operative Societies) at Viipuri, 5, Rajamaki and elsewhere, that are pure International Style, spare and regular, and among the best things done in the decade.

This was the direction in which the few were now mostly headed. Bryggman's independent works are as orthodoxly modern as Huttunen's in the early 'thirties, and where an architect like Blomstedt 'crosses the floor' to modernism, as in his bank at Kotka, it is usually straight into the idiom of the International Style. Meanwhile, Aalto continued on his own line of development, and shook the world at the end of the decade with his Finnish Pavilion at the New York World's Fair in 1939. No other architect in the world, let alone Finland, could have produced at that moment anything quite so spectacular, so appropriate, and so completely original as that great disquieting, irregularly planked wall of wood sagging wavily out over the visitors to the pavilion. No-one, in fact, was to do anything like it for another fifteen years or so—the free-form ground plans of the Brazilian school result in an entirely different architecture, and it is only with Le Corbusier's Ronchamp that the other members of the Big Four have shown any signs of wishing to emulate him.

But in Finland, just as the second World War was about to boil up, it was clear that his example was beginning to be heeded, even if his forms were not copied. Bryggman's famous chapel at Turku, 8, Huttunen's churches at Nakkilan and Ragamäen are steps towards enjoyment of the formal freedom in which he worked. But they were only steps, and the two Finnish wars and their painful aftermath prevented any further steps being taken for practically a decade. And at the end of that decade one might have been excused for wondering if Finland's architectural nerve had not been permanently shattered. When Huttunen built at Nokia the replacements for the SOK silos at Viipuri, damaged in the fighting like Aalto's library (and both now behind the Russian frontier anyhow) he returned to his old International Style manner. Whatever excuses can be made for him on account of the nature of the functional programme, as they can also be made for Aarne Ervi's power-station at Pyhäkoski (1949), 9, no equivalent excuses

can now be found for Pauli Salomaa's *Domus Academica* hostel in Helsinki, 9, Finland's one conspicuous contribution to Scandinavian empiricism.

However cogent the reasons for its quasi-traditional elevations and pretty detailing may have been,* *Domus Academica* represents a deviation from the real Finnish tradition, which is one of tough-mindedness and structural adventure, and has been so since the earliest works of Sonck. But subsequent events have made it look even more out of step with the rest of Finnish tradition. Not only Aalto's tough-mindedness, but his independence, too, has spread to the Few. He may still be an isolated figure in some ways, but his background is no longer a province of some imported style. The other leaders of the profession have also acquired his ability to be very Finnish, and yet quite unprovincial.

This again is in marked contrast to Sweden. An empiricist, who settles, by definition, for a second-hand type of inspiration, also settles for provincialism. Further, empiricist and peasant alike use traditional, known materials, to produce known solutions to known problems. Aalto has always used peasant materials in a manner that is beyond the scope of a peasant mind, even if not always beyond the reach of peasant technology, and once this aspect of his work began to be understood in Finland, the foundations were laid for a state of mind that made the equally circumscribed mentality of empiricism impossible. Nothing could show this more dramatically than the use made by Finnish architects of the most 'traditional' or 'peasant' of all materials, wood.

In fact, the recovery of nerve among Finnish architects is most clearly marked by the wooden structures added in 1951–2 to Lindegren and Jäntti's Olympic stadium in Helsinki, 11, 12. Designed as far back as 1934, the earlier parts of the structure are orthodoxly modern in form, even in such elements as the tower that were primarily intended as eye-catchers. The extensions are wooden in structure and wood-clad, and though they are not particularly monumental, which would hardly be in character for such a building, they are not merely pretty or frivolous, and the use made of the material, though distantly Aalto-inspired, is in no sense a copy of anything he has done. One or two direct confrontations of Aalto's use of wooden structure, and that of other architects in the post-war period are possible—and instructive—because they show how often a superficial similarity of form can disguise a radically different approach to construction. On examination it will be found that the roof-trusses of Aalto's council-chamber at Säynätsalo, and those of Jorma Järvi's school hall at Kulosaari (page 254), do resemble one another only in the device that immediately takes the eye—the mode of threading two beams through three—and that the structural conceptions are utterly different. Again, the bolted wooden roof-trusses of the Sirens' students' restaurant at Otaniemi, 13, somewhat Brutalist in its use of materials and fixings are only superficially like any work by Aalto. By and large, it is Aalto's freedoms that have been learned, not his forms or his methods.

The work of the Sirens' office brings up another problem of Aalto's relation to current Finnish architecture—the curious and highly characteristic twist that the Finns contrive to give to that smooth, rectangular, mechanistic elegance, inspired by Mies van der Rohe, that is about all that now survives of the International Style. The inside of the Sirens' Studio-Theatre, 14, 15, an extension to the National Theatre in Helsinki, has this kind of elegance as near as any building in Finland has it, but the exterior, which is as smooth and shiny and rectangular as the mode requires, wears its elegance with a difference that is hard to pin down—but has most to do with the use of cladding materials and the management of window-grids. However, this particular problem refers chiefly to the work of Viljo Rewell (and his various partners). In 1952 his Palace Hotel and office block (page 255) began to raise the problem distinctly, for the elements in hand—a large regular building-envelope with uniform fenestration, raised on pilotis—would seem to promise an almost Hiltonian lushness and smoothness. Instead, the building has a rather stern and hard-faced quality that well suits a fellow-countryman of Sonck. Or, to come at the problem from another side, the office and reception suite of Rewell's factory at Hanko would seem, from a mere verbal description, to be only a variant of General Motors Technical Centre, but the effect is, in visual fact, surprisingly different. Here one can point at a particular cause besides the wooden ceiling, and that is the dark-finished pilotis standing obtrusively about the room-space, something which does not happen in equivalent US buildings.

All of which suggests that Finland's connection with this international elegance is not by the direct line, through the younger Saarinen, but more deviously and—most probably—through Aalto's own, very personal, version of it. For those who incline to think of Aalto only in terms of Paimio, or only in terms of free forms and wooden walls, should also remember that he is a master, too, of window-grids and of engineering brick, with all that that implies. The fenestration of his steel industry offices in Helsinki (page 256) is unmistakably of the 'fifties, and yet notably at variance with the international norms of patent glazing; and one would be hard put to it to find any contemporary comparison for the very contemporary handling of some of the parts of the insurance office building he has just completed in Helsinki (page 250)—should it be to some aspects of the New Brutalism, or to such tough-guys of the 'twenties as Korn and Weitzmann?

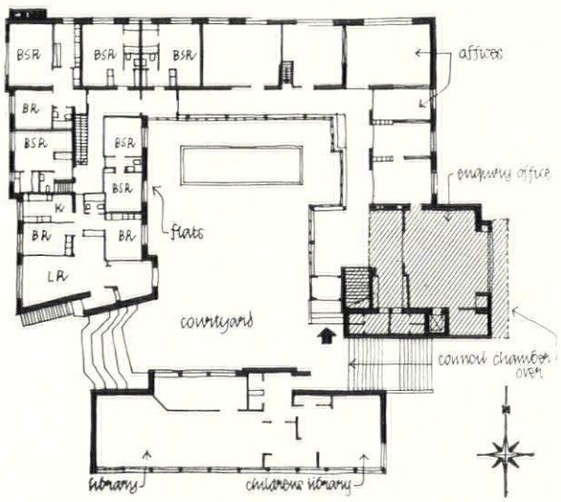
For here again one has that sense of Aalto's ability to tap the very sources of the Modern Movement, an ability that seems to have fed a real and fundamental strength into Finnish architecture of the post-war years, so that it has been able to stand on its own feet, find its own solutions, in spite of its influential neighbours. It would be absurd to suggest that some continuing Swedish influence is not still visible—as in some of the housing at Tapiola new town—but the Swedish can hardly be said to represent anything like a major influence. For the most part, the Few—Ervi, Rewell, Järvi, the Sirens—have fully reaped the lesson of the One. They have Aalto's ability to be regional without being provincial, to command an international esteem while using a national idiom—and that is a practically unique achievement in this century.

* cf. Architectural Review, Jan., 1949, p. 57.

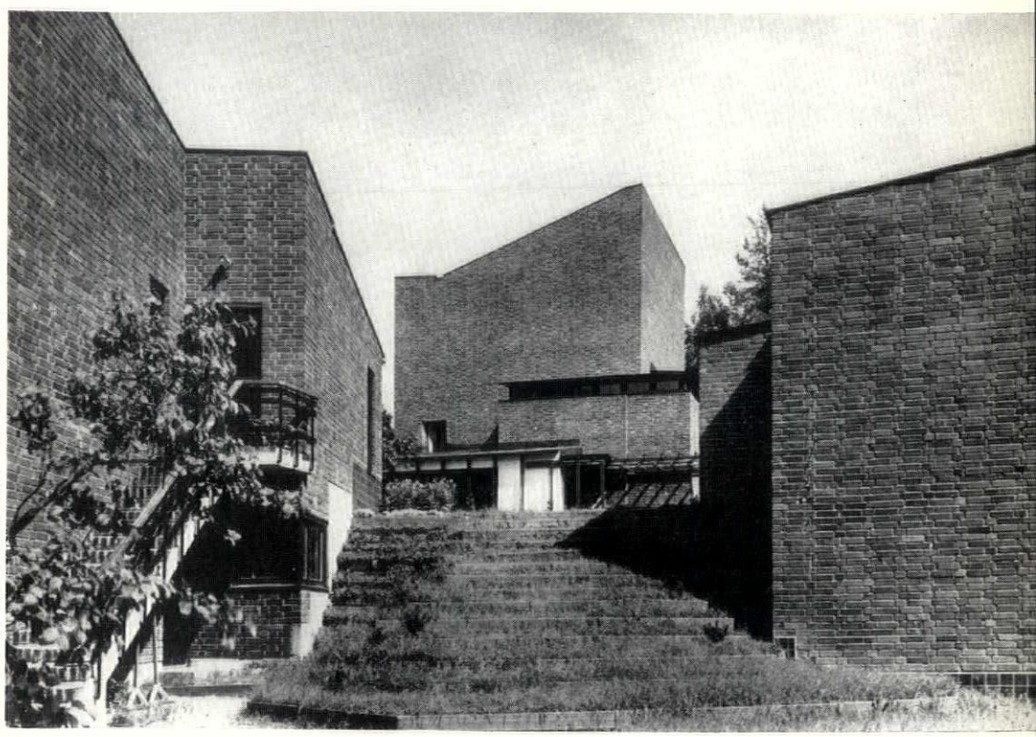
PUBLIC BUILDINGS

CIVIC GROUP, SÄYNÄTSALO
ARCHITECT: ALVAR AALTO

Säynätsalo is a small town about 200 miles north of Helsinki, and this group of civic buildings (the outcome of a competition), built in 1951, is intended to be the first stage of a long-term plan for developing the centre. It is placed on a small plateau and consists of a library, municipal offices, a council chamber and two flats for municipal officials, all planned round a courtyard, from which the buildings are entered and which is reached by steps. These enter the courtyard on the south-east corner; an opening on the opposite side of



the courtyard, between the library and the flats, allows a view over the country and the entrance of the low westerly sun. At the lower level of the surrounding streets are shops along two sides (beneath the library and offices). The council chamber is on an upper floor, reached from the entrance hall serving the offices. The walls are load-bearing brick of a dark red colour, with copper trim.



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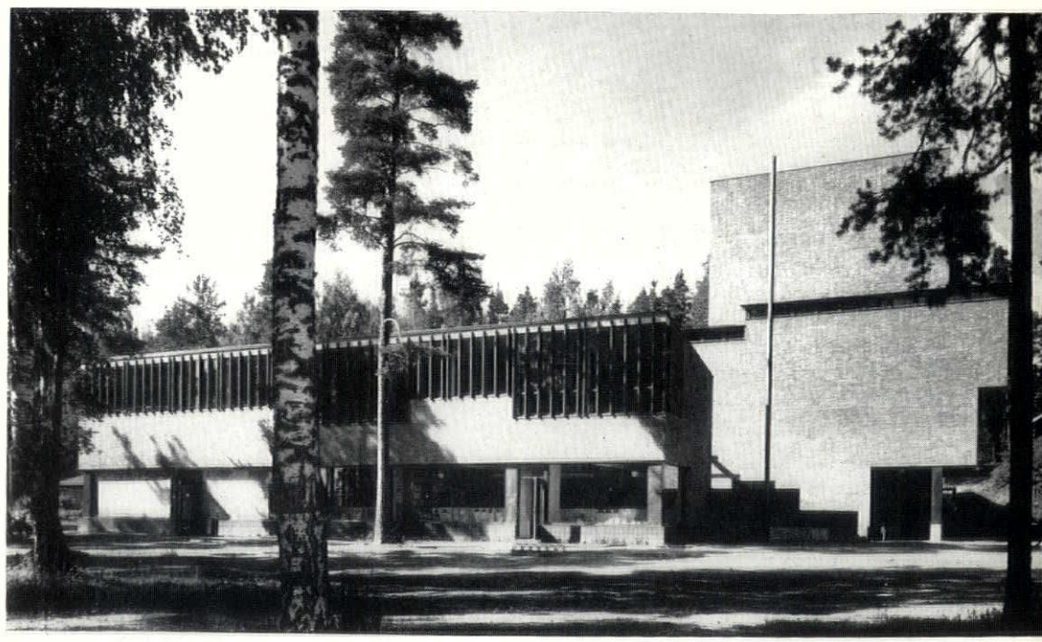

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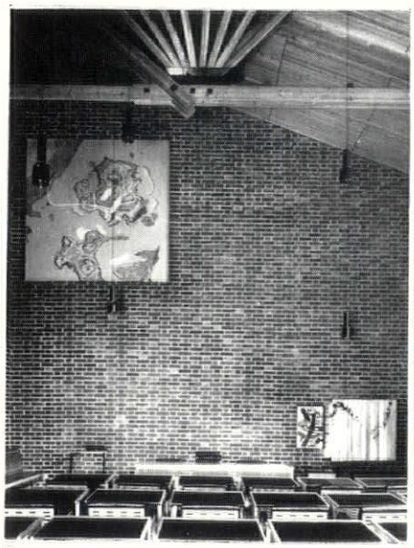

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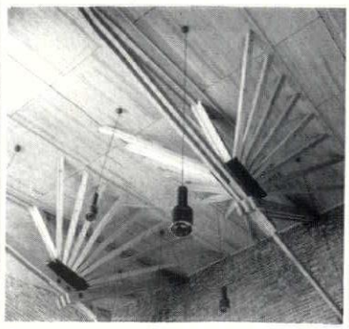

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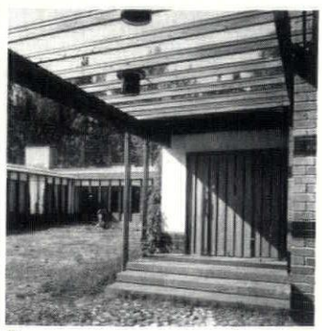


5

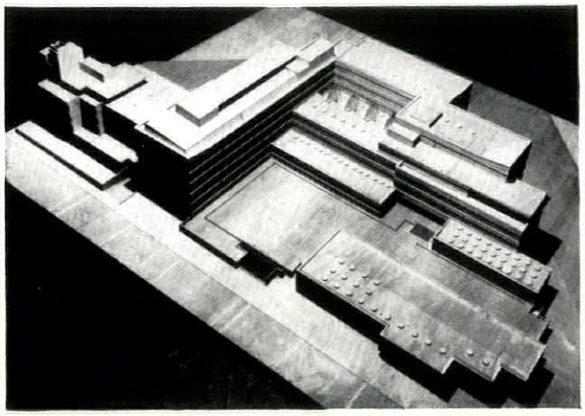
1, from the west, showing the sloping bank up to the level of the courtyard. 2, from the south, with the timber louvres screening the library windows above, and shops below. On the right are the steps leading up to the courtyard. The council chamber is beyond. 3, inside the council chamber. 4, detail of its open timber roof. 5, entrance to the offices (at top of steps): courtyard on left.



6, *flank view of office wing, with power-house and garage entrance on right.*

INSURANCE OFFICE, HELSINKI
ARCHITECT: ALVAR AALTO

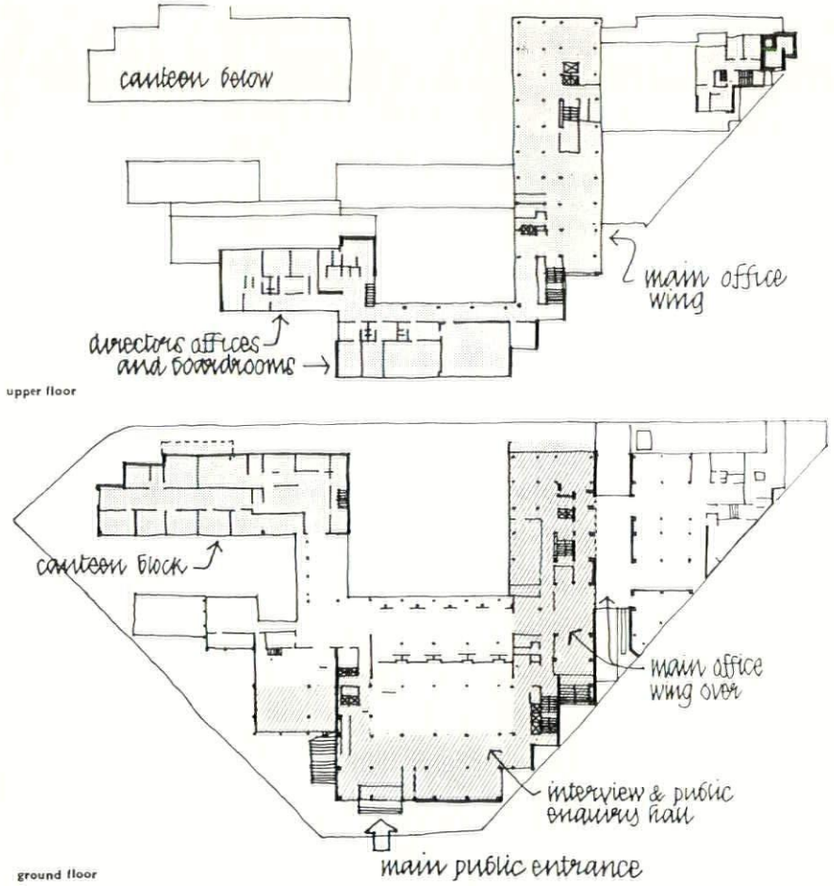
This office building, completed in 1956, houses the government departments dealing with pensions and other aspects of social security. In the centre is a top-lighted public enquiry hall, subdivided by screens into interviewing cubicles. A number of offices are reached from balconies accessible directly from the hall, but the main office

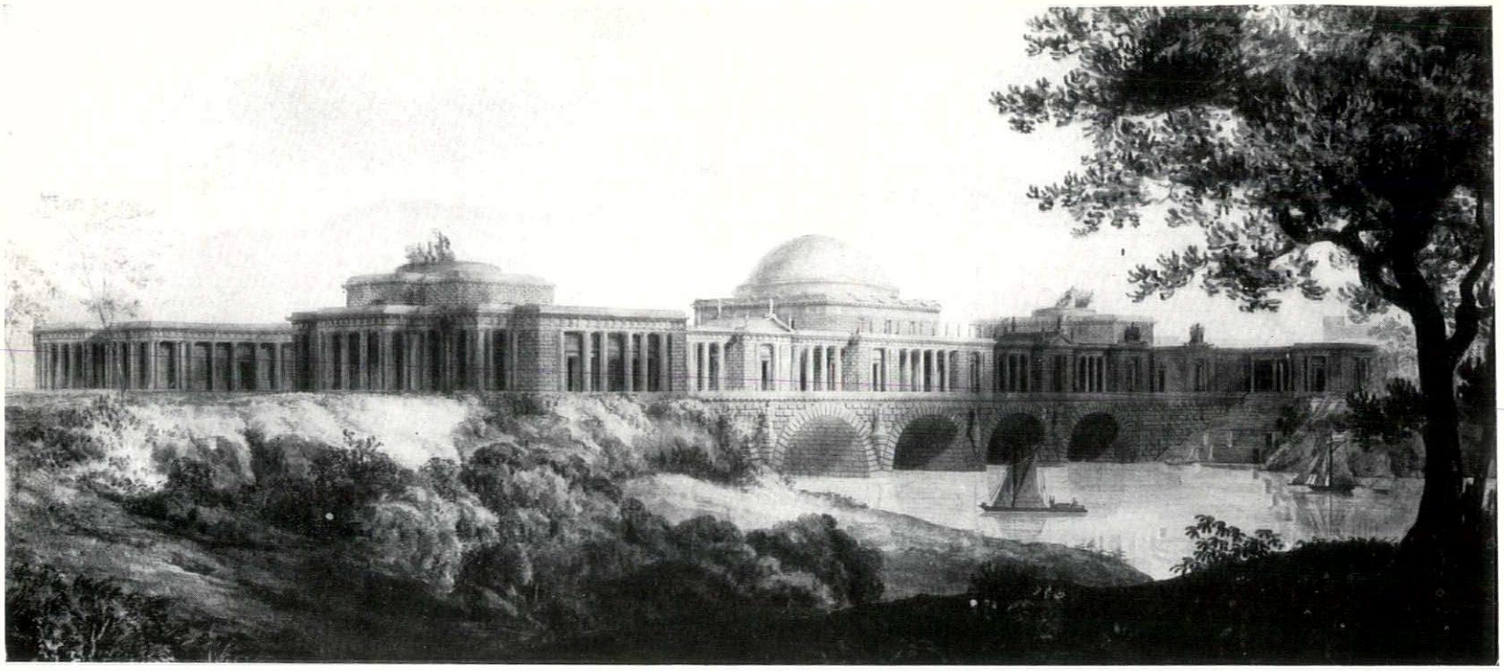


7, *block model. The separate canteen wing is in the bottom right-hand corner.*

accommodation is in a six-storey wing running at right angles to it with a separate entrance. The hall is entered through a waiting vestibule, above which are committee rooms and board rooms. These and the directors' offices alongside are reached from a lift and staircase hall beside the public entrance.

The building is exceptionally well provided with recreation and other facilities for the staff, which include a library and a large canteen. The latter, with its kitchens, is contained in a single-storey wing at the back, separated from the main building by a courtyard. This is on a higher level than the ground floor of the main building owing to a rise





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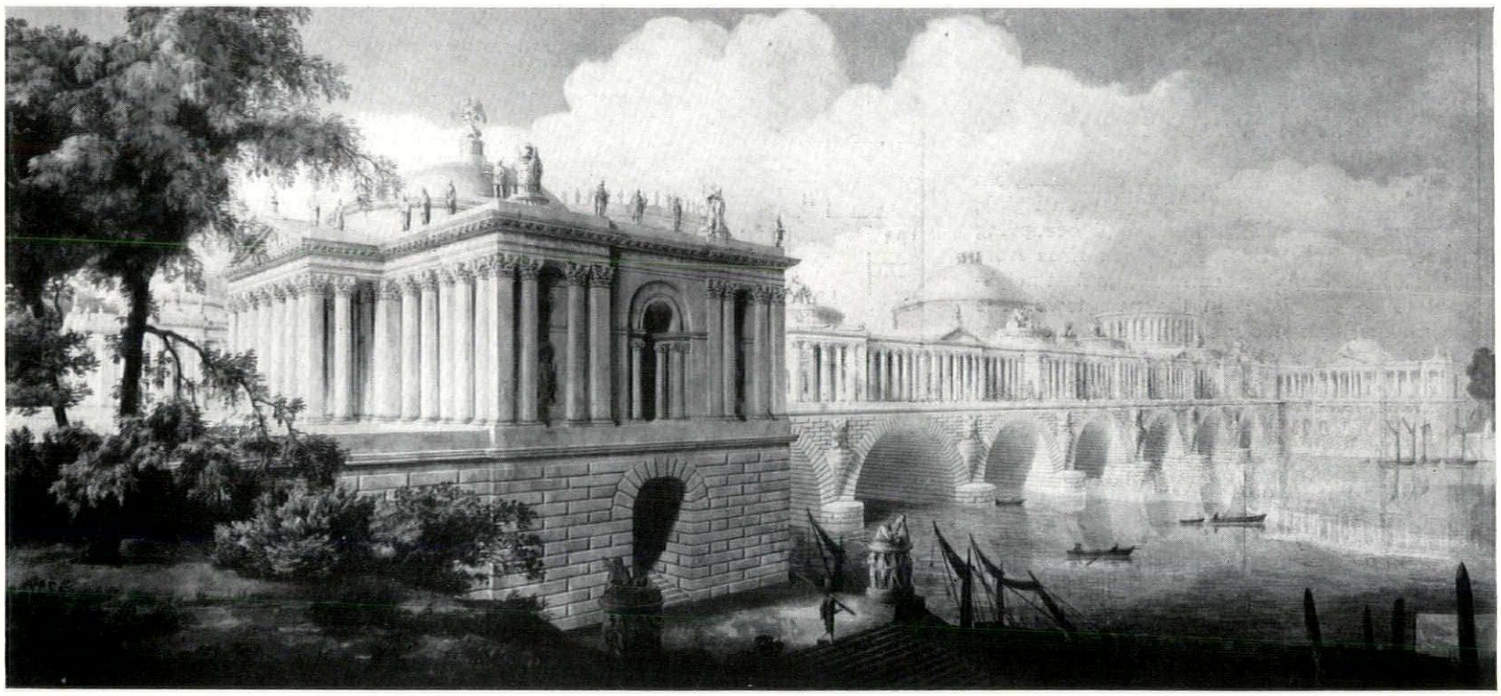

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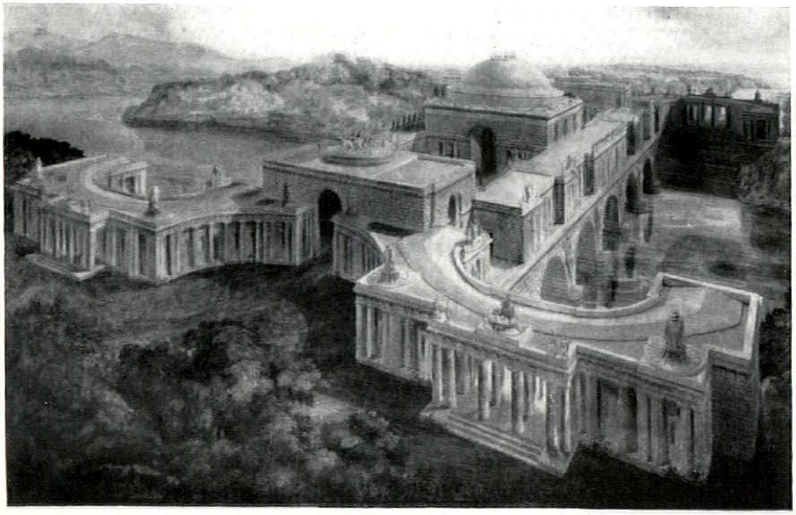

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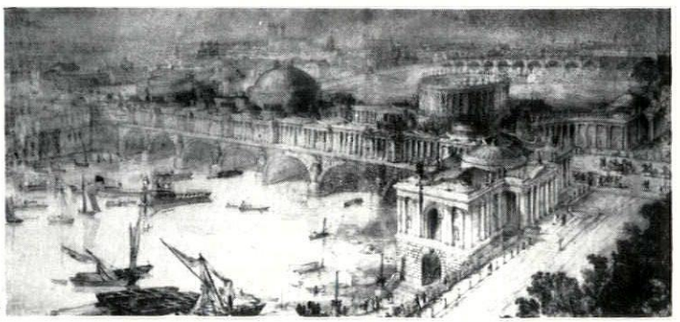

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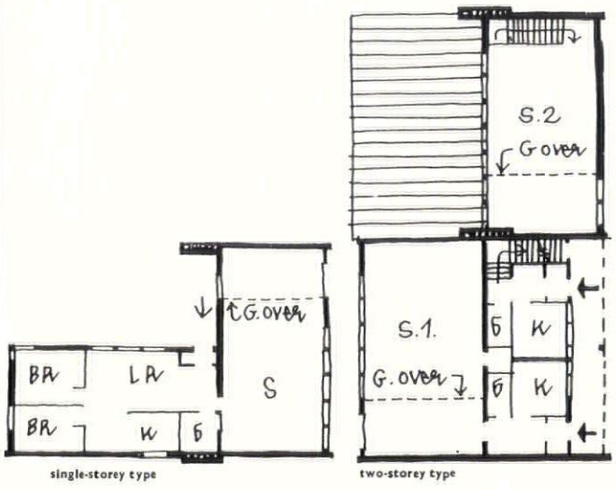
1, *Soane's Greek Doric triumphal bridge design submitted to the Academy of Parma in* 1779; *he had visited Paestum earlier the same year.* 2, *a Corinthian version shown in the Royal Academy of* 1799. 3, *a perspective of the Parma design dated* 1813, *probably drawn by Basevi and used to illustrate Soane's Academy lectures.* 4, *a bird's-eye view of the Corinthian bridge spanning the Thames from Lambeth to Westminster, by J. M. Gandy. On the facing page,* 5, *a bridge design by G. B. Piranesi, engraved for* Opere Varie, 1750.

ARCHITECT: A. BLOMSTEDT





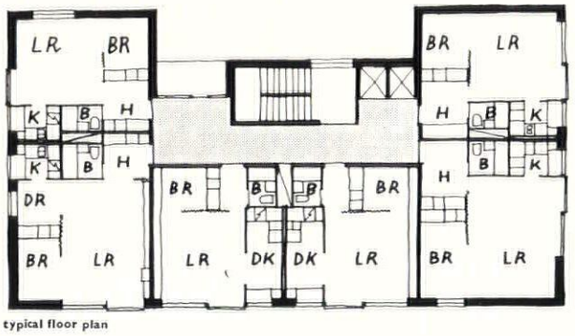
32

A terrace of artists' residential studios, completed in 1954. The scheme comprises two types, each with a double-height studio with a gallery across one end. The single-storey type (plan far left) has the residential accommodation in a wing at right angles. In the two-storey type (lower floor plan, left) it occupies the angle between two studios.

32, the single-storey studios from the south; one studio of the two-storey type can be seen on the left.

ARCHITECT: AARNE ERVI

A point block, completed in 1954, containing six flats on each floor (see typical floor plan on right), reached from a staircase and lift hall occupying the centre of the east side. The block rises from the middle of the shopping centre in the first neighbourhood to be completed in the new town. The centre contains single-storey shops, a café, a cinema, and a service station with garages.

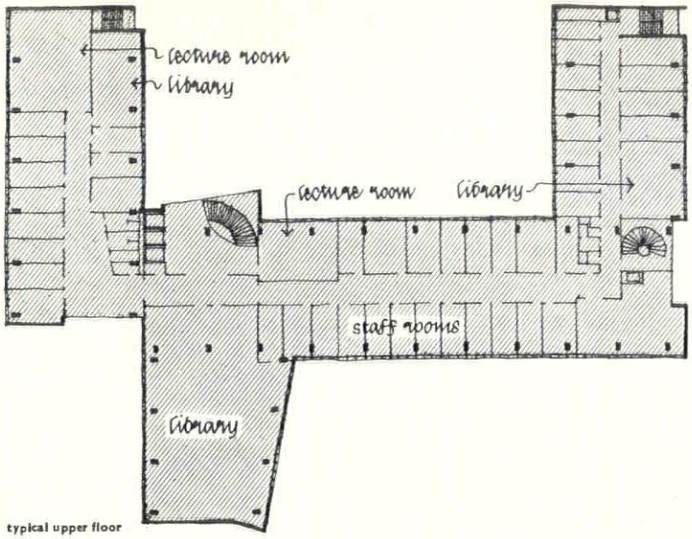


typical floor plan

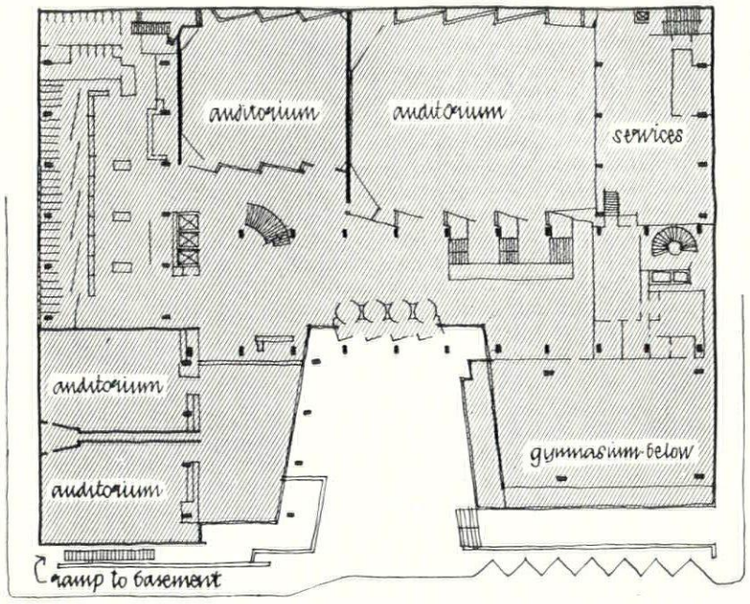
33, the point-block with a terrace of shops and a cinema in the foreground.



33



typical upper floor



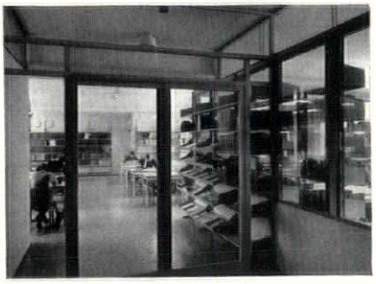
ground floor



14



15



16

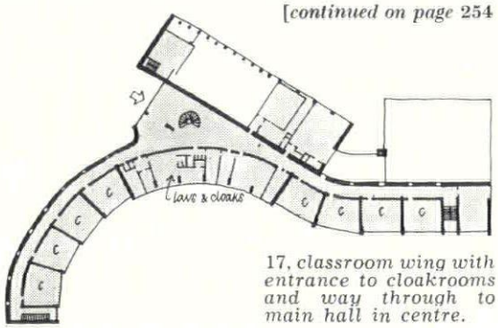
14, the main stair at foyer level with lifts and cloakrooms in background. Treads are precast and prestressed. The glass-brick wall, right, continues the full height of the stair well. This picture also shows the form of the main structural beams, columns and floor units, which are left as they come from the shuttering and colour-washed. Attached to the columns are insulated pipes carrying hot water to the floor heating panels. The floor is north Finnish dolomite. 15, stair at basement (gymnasium) level. The panelling on the left is red pine. 16, looking into one of the specialist libraries. Partitions are timber framed and double glazed to reduce sound transmission.

SCHOOLS

ARCHITECTS: VILJO REWELL AND OSMO SIPARI

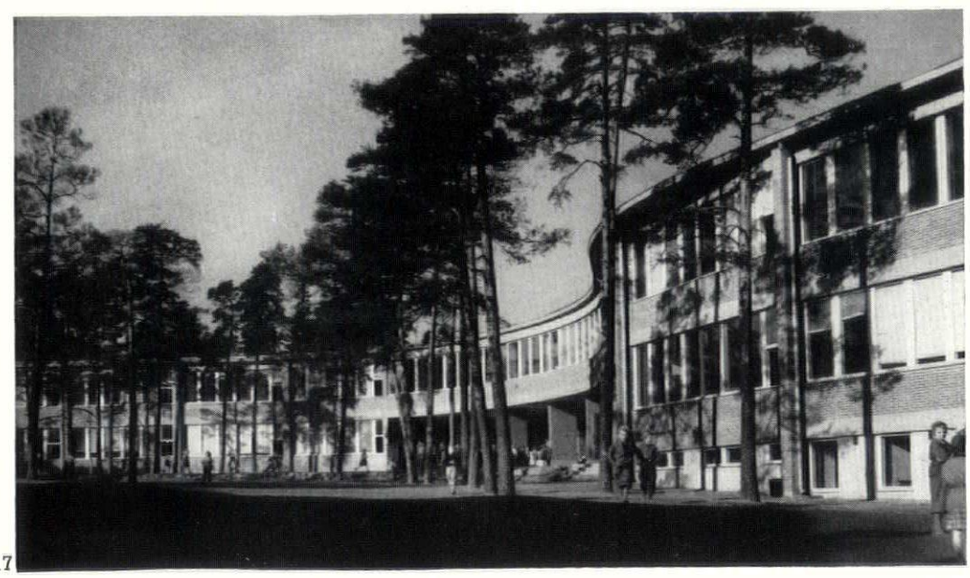
An elementary school at Meilahti, a suburb of Helsinki, completed in 1952. A two-storey wing, undulating in plan, contains the classrooms. It is separated from the assembly hall block by a

[*continued on page* 254



ground floor

17, classroom wing with entrance to cloakrooms and way through to main hall in centre.



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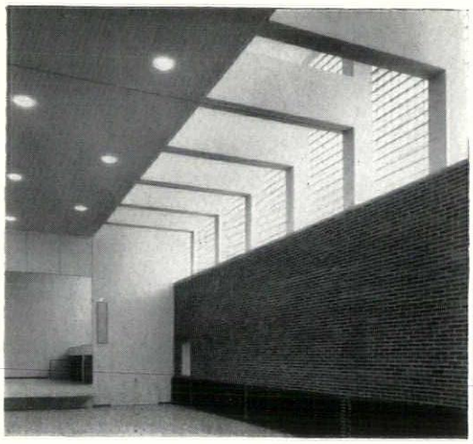


18

18, *interior of the assembly hall in the school at Meilahti by Rewell and Sipari, showing clerestory lighting by means of a continuous glass brick wall spanning between the structural framework. The beams support an upper floor over part of the hall.*

continued from page 253]

triangular entrance and staircase hall. Cloakrooms, etc., are in the centre of the classroom wing, and are reached both from the entrance hall and from the playground outside. Construction is a reinforced concrete frame with panel infilling of brick.

ARCHITECT: JORMA JÄRVI

A high school at Kulosaari, Helsinki, completed in 1955. The assembly hall, with fixed seats and raking floor, is in the centre of the building and has a dining room at one end at its upper level (see section below). At the lower end is a gymnasium, raised on columns to provide a cloister round two sides. Beneath the gymnasium is a large entrance hall the full width of the assembly

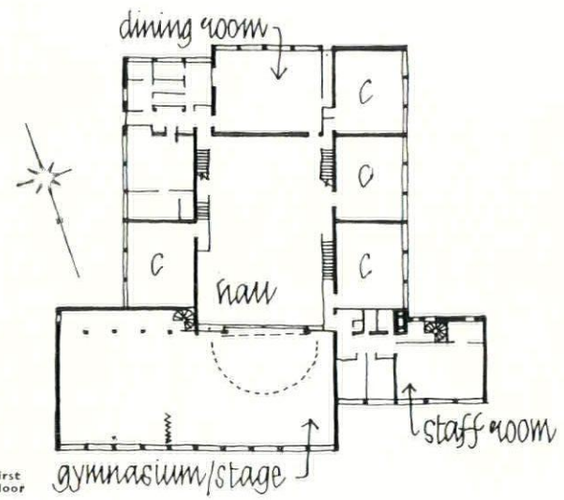


19

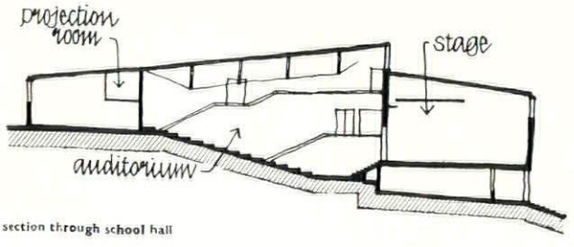
hall and cloakrooms, changing rooms, etc. On the other side of the entrance are laboratories and staff rooms. Classrooms are in two tiers on either side of the central hall, the upper tier being reached by staircases inside the hall. Construction is reinforced concrete and brick.



20



first floor



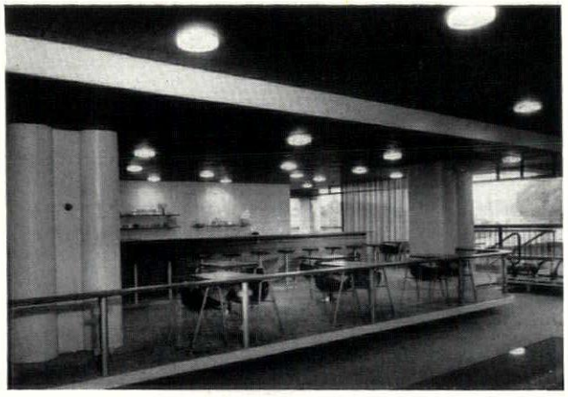
section through school hall

19, *from the south-west, showing gymnasium block with entrance beneath.* 20, *the central hall with open timber roof and cantilevered stairs leading to upper classrooms.*

COMMERCIAL BUILDINGS

HOTEL AND OFFICES, HELSINKI
ARCHITECTS: VILJO REWELL AND KEIJO PETÄJÄ

Overlooking the waterfront, this combined hotel and office building was completed in 1952 to serve as the headquarters of the Olympic games. It was the outcome of a competition, and has an H-shaped plan. On the ground floor are shops and the entrance foyer of the Palace Hotel. From this foyer lifts serve direct to the hotel proper, which occupies the whole of the eighth floor. Here are bedrooms (with internal bathrooms), service rooms and a small breakfast room, but no other public rooms. On the first floor is a café and grill room and on the ninth and tenth floors a restaurant and Finnish baths. The intermediate floor contain offices with separate entrance lobbies. The building has a reinforced concrete frame. The external wall surface is composed of slabs of reconstructed stone.



21



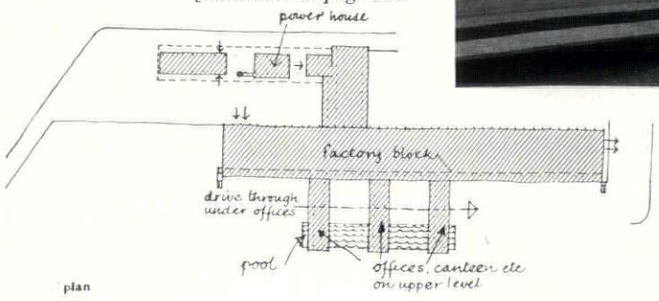
22

21, the bar adjoining the top-floor restaurant. 22, the main front facing the harbour.

FACTORY, HANKO
ARCHITECT: VILJO REWELL

A clothing factory, completed in 1956 and said to be the most up to date, in plant and lay-out, in Finland. At present it employs 250 people, but it will be expanded later. Hanko lies at the end of a peninsula at the extreme south-west corner of the country, and the factory occupies an open, well planted site where it is intended later to build a house for the owner and terrace housing for

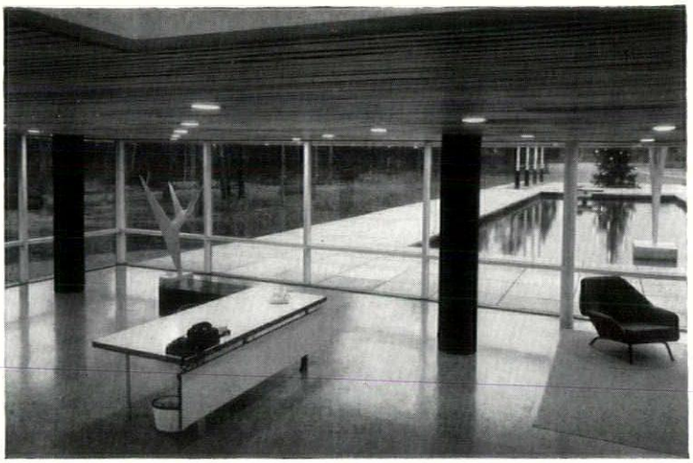
[*continued on page* 256



plan



23, one of the office wings, with part of the machine-hall of the factory on the left.



24

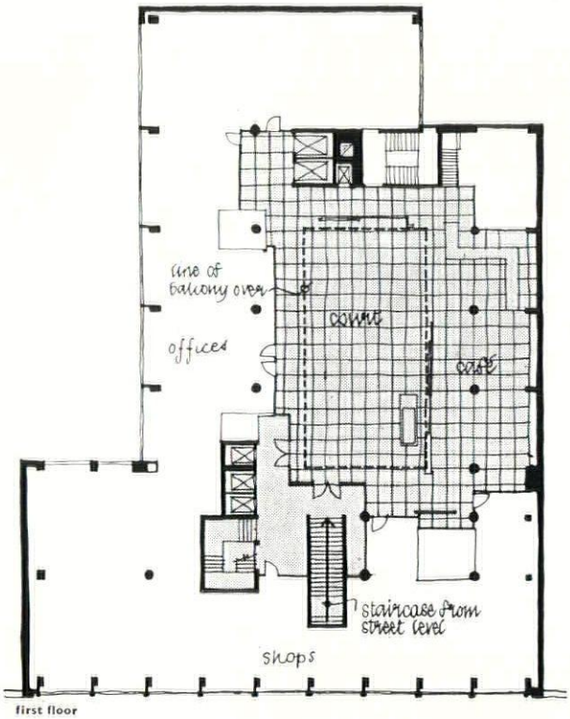
continued from page 255]

employees. The machine hall is built along the top of a steep slope, so that the wings at right angles to it, containing offices, locker-rooms, canteen, etc., although on the same internal floor level, are raised above the ground with a drive-away beneath them. The entrance for office staff is at the lower level, through a vestibule on the ground floor of one of the wings. Factory workers enter direct at the upper level. The machine hall consists of a single space, uninterrupted by columns ; along one side is a gallery off which open control rooms, ventilation plant, etc. The walls are clad in aluminium.

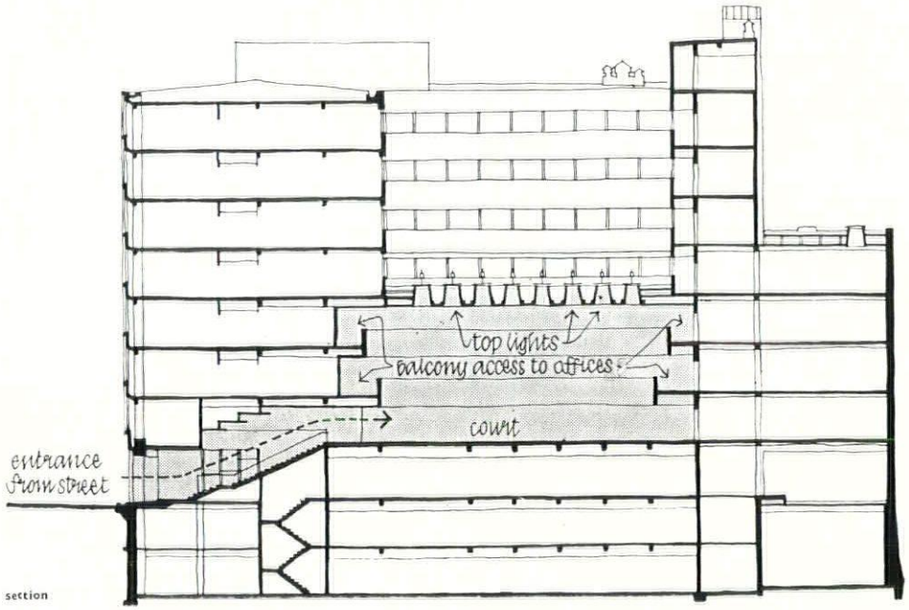
24, the reception office in the factory at Hanko. It occupies the ground floor of one of the wings spanning the drive-way (see plan on previous page).

OFFICE BUILDING, HELSINKI
ARCHITECT: ALVAR AALTO

In one of the main shopping streets of Helsinki : an office building put up for a steel corporation and completed in 1955. There are shops on the ground floor, one of them being occupied as show-rooms by Artek, the firm that manufactures and markets most of the furniture, ceramics, glass and textiles designed by Alvar Aalto and other leading Finnish designers. In the centre of the fairly

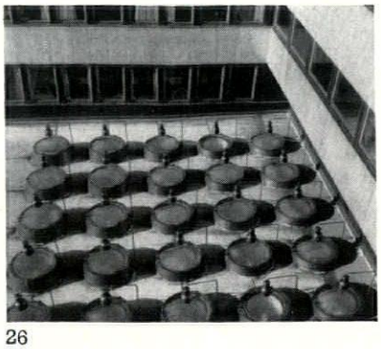


first floor



section

25, looking into the internal court from the top of the stairs leading up from the street. The café is on the right ; the far wall is faced with fluted ceramic panels.
26, the glass domes that light the court, seen from above.



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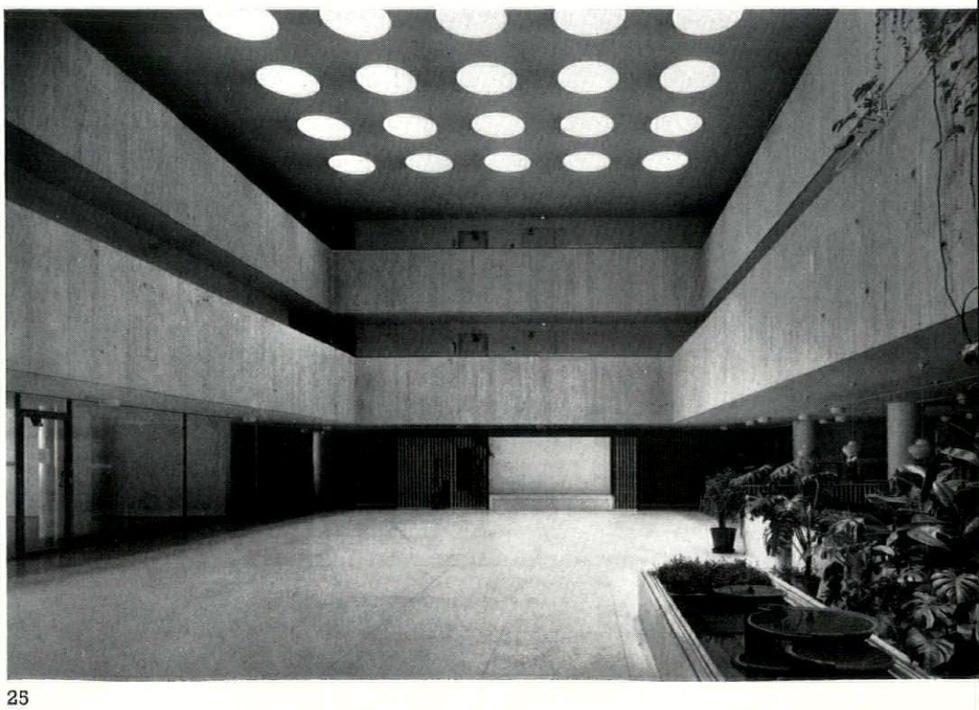


25



27



28



29

27, *the street front.* 28, *inside the Artek showroom, at the foot of the building to the left of the entrance.* 29, *a detail of the handles on the glass doors between the staircase leading up from the street and the court.*

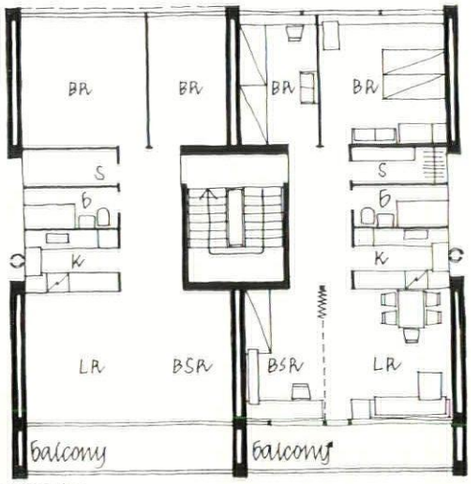
narrow front a wide flight of steps leads up and through double glass doors into a large top-lit central court. Along one side of this, partly screened by fountains and indoor plants, is a pavement café ; from the other side there is direct access to the mezzanine level of the shops, which are designed on two levels. The court is surrounded by two tiers of balconies, from which some of the offices are reached, the majority of the offices being reached in the usual way from lift and staircase lobbies, one at either end of the court (see plan). The top lighting of the court consists of a pattern of shallow glass domes, set in a flat concrete pavement, with lights above. The warmth of these lights (and in daytime the warmth of the air in the court below) melts any snow that falls on them sufficiently to make it slide off into the spaces between the metal cylinders into which the glass is fixed. The paving of the court and the facing of the balconies is Travertine.

HOUSING

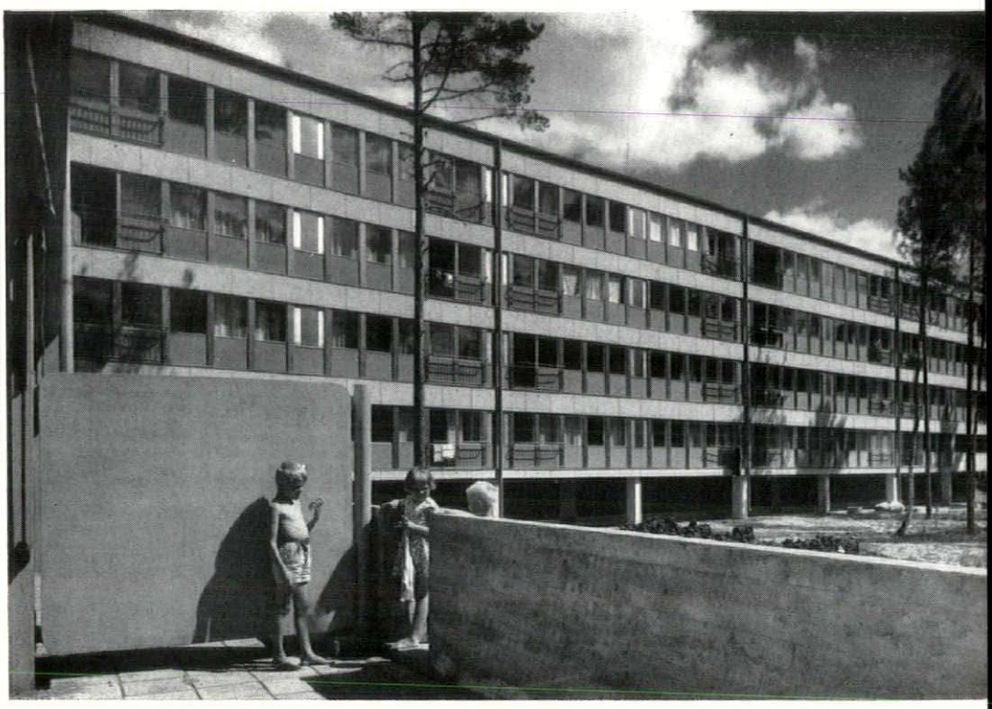
All the housing illustrated on these pages is at Tapiola, the new town now under construction about five miles south-west of Helsinki. At present it is largely a dormitory town but it will later become a partly self-contained satellite. Its eventual population (in six years' time) will be 15,000; it has now reached about 3,000. It was begun in 1953. Aarne Ervi is planning adviser.

ARCHITECT: VILJO REWELL

A four-storey block of flats, raised on pilotis and constructed wholly from prefabricated reinforced concrete elements. It was completed in 1955. Services are grouped around ducts separating each pair of flats. The large living-rooms can be sub-divided by a folding partition, as shown in the plan of two typical flats, below.



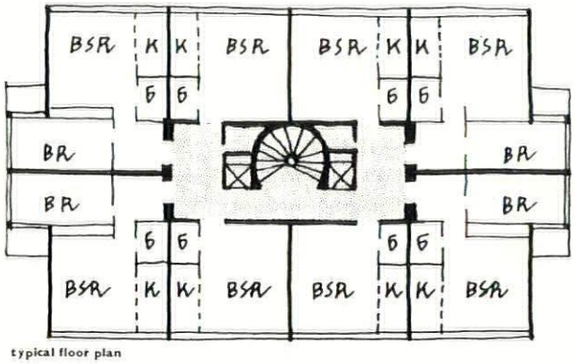
typical plans



30, *the flats from the bedroom side.*

ARCHITECT: VILJO REWELL

A point block, completed in 1955. It is one of three identical blocks sited in a row at the top of a ridge, well planted with trees. As the plan, below, of a typical floor shows, each floor contains four one-room flats and four two-room flats, all served from a central staircase hall. The semi-circular staircase is flanked by lifts. The long sides of the block face east and west.

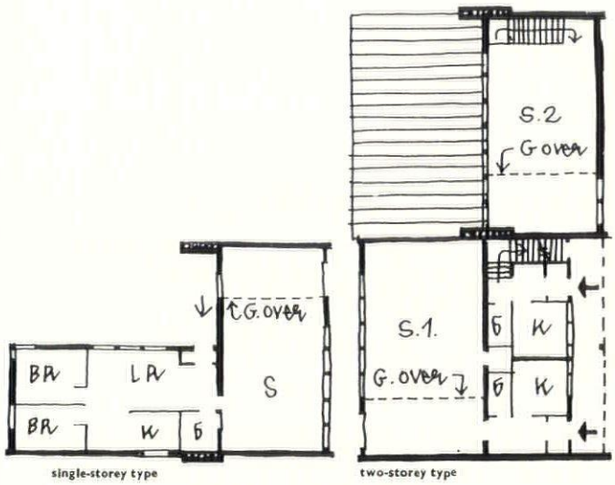


typical floor plan



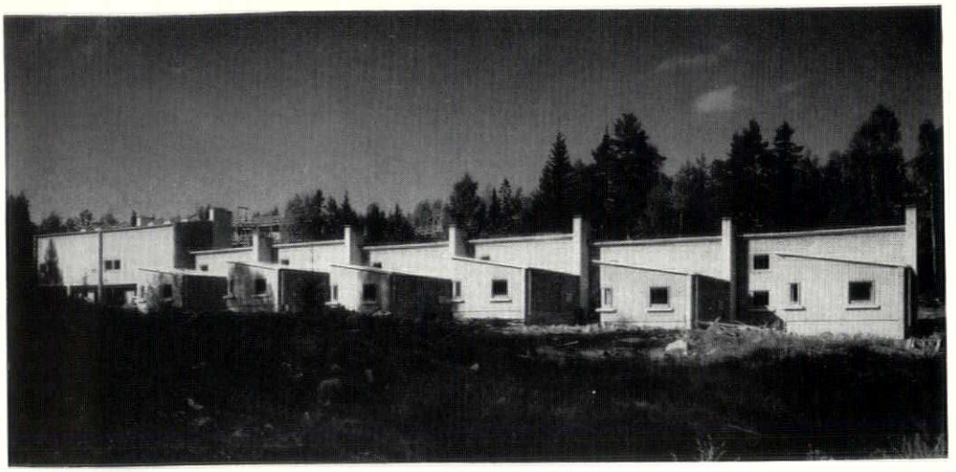
31, *the eastern face of the block, from below.*

ARCHITECT: A. BLOMSTEDT



single-storey type

two-storey type



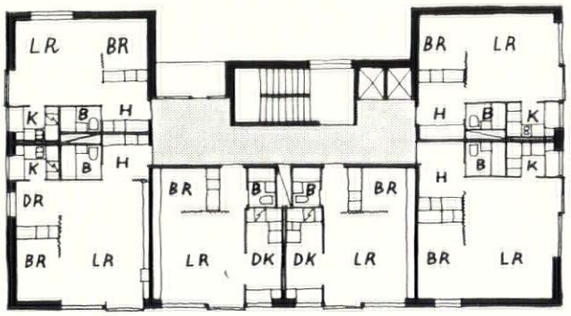
32

A terrace of artists' residential studios, completed in 1954. The scheme comprises two types, each with a double-height studio with a gallery across one end. The single-storey type (plan far left) has the residential accommodation in a wing at right angles. In the two-storey type (lower floor plan, left) it occupies the angle between two studios.

32, the single-storey studios from the south; one studio of the two-storey type can be seen on the left.

ARCHITECT: AARNE ERVI

A point block, completed in 1954, containing six flats on each floor (see typical floor plan on right), reached from a staircase and lift hall occupying the centre of the east side. The block rises from the middle of the shopping centre in the first neighbourhood to be completed in the new town. The centre contains single-storey shops, a café, a cinema, and a service station with garages.

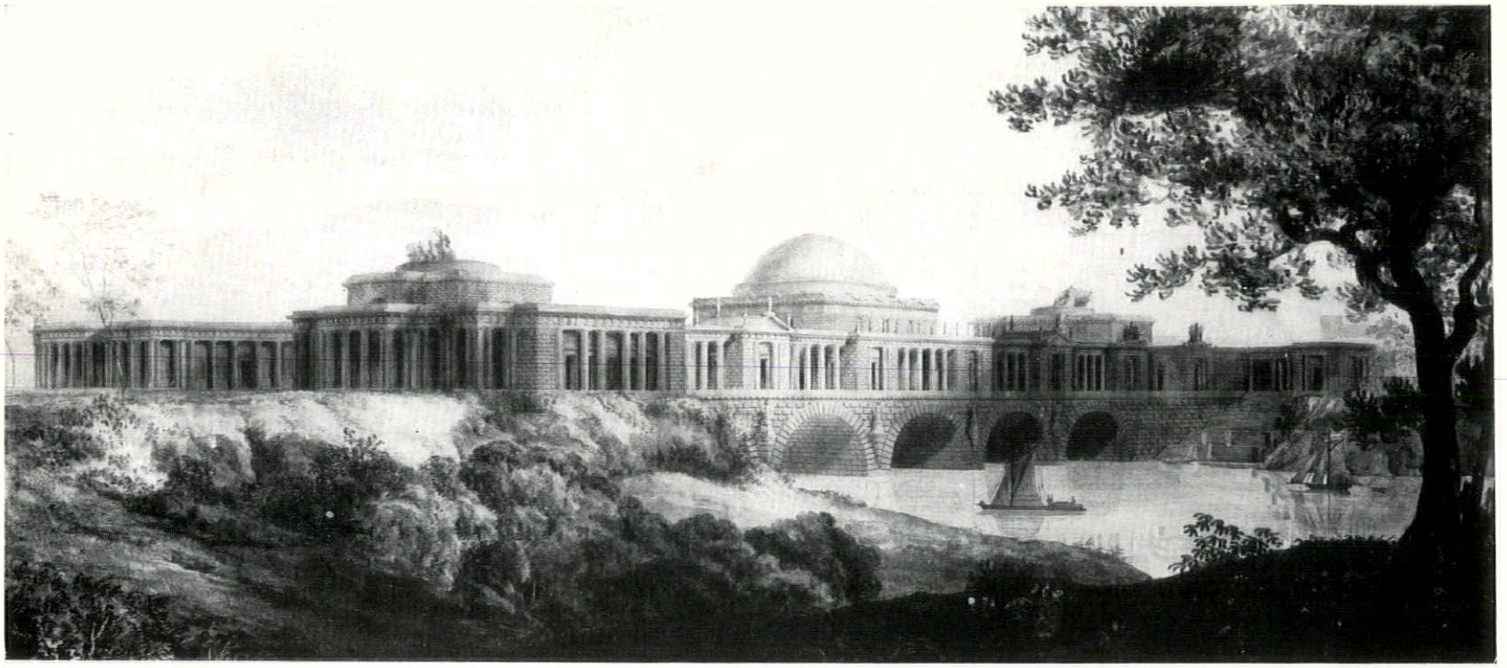


typical floor plan

33, the point-block with a terrace of shops and a cinema in the foreground.



33



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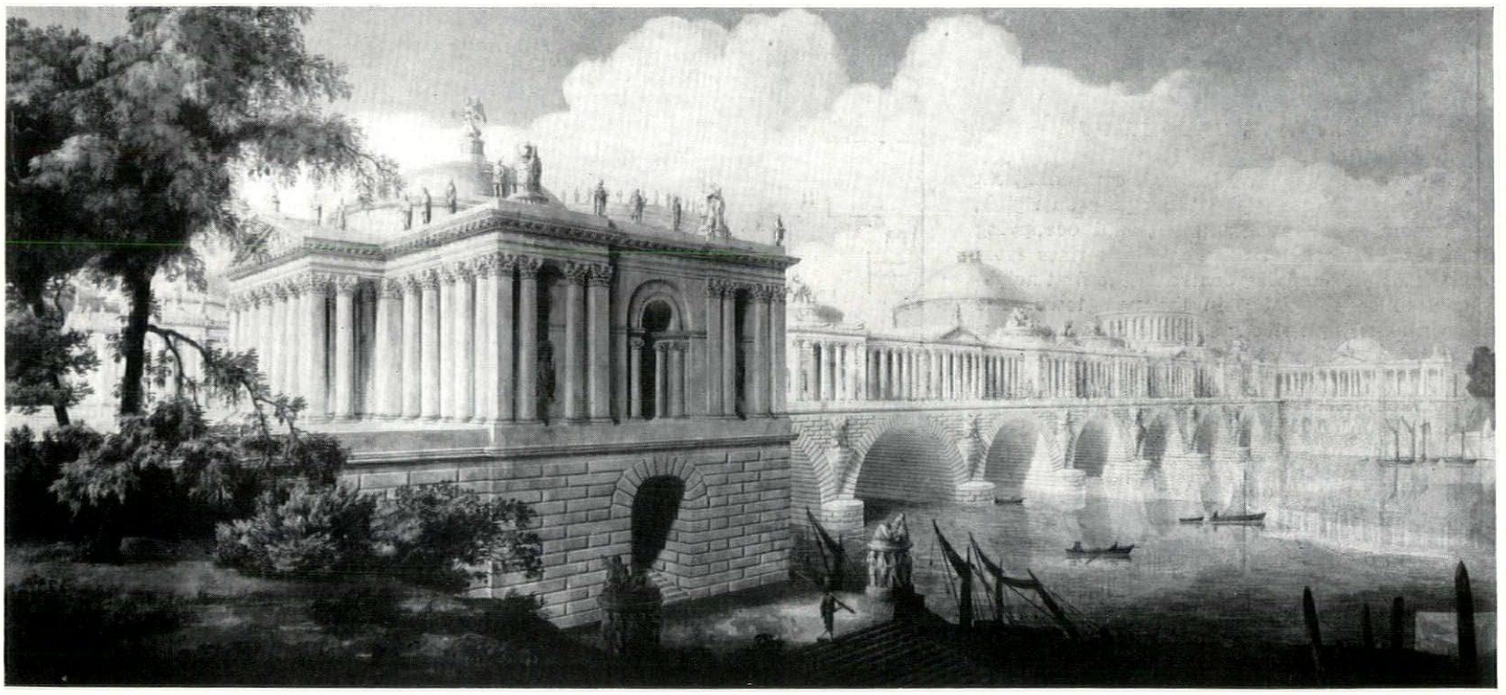

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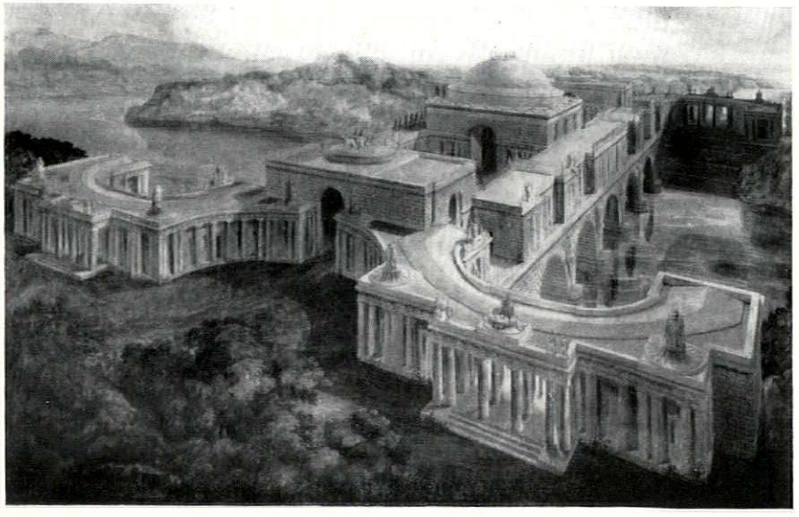

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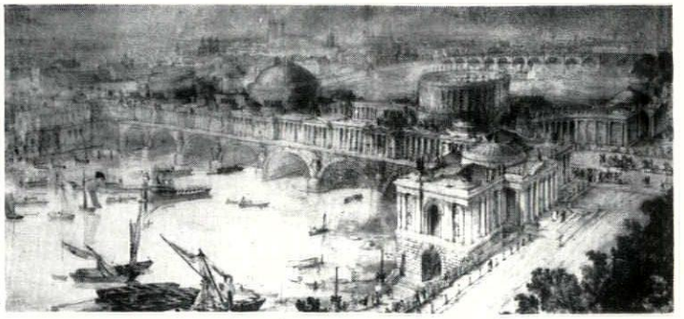
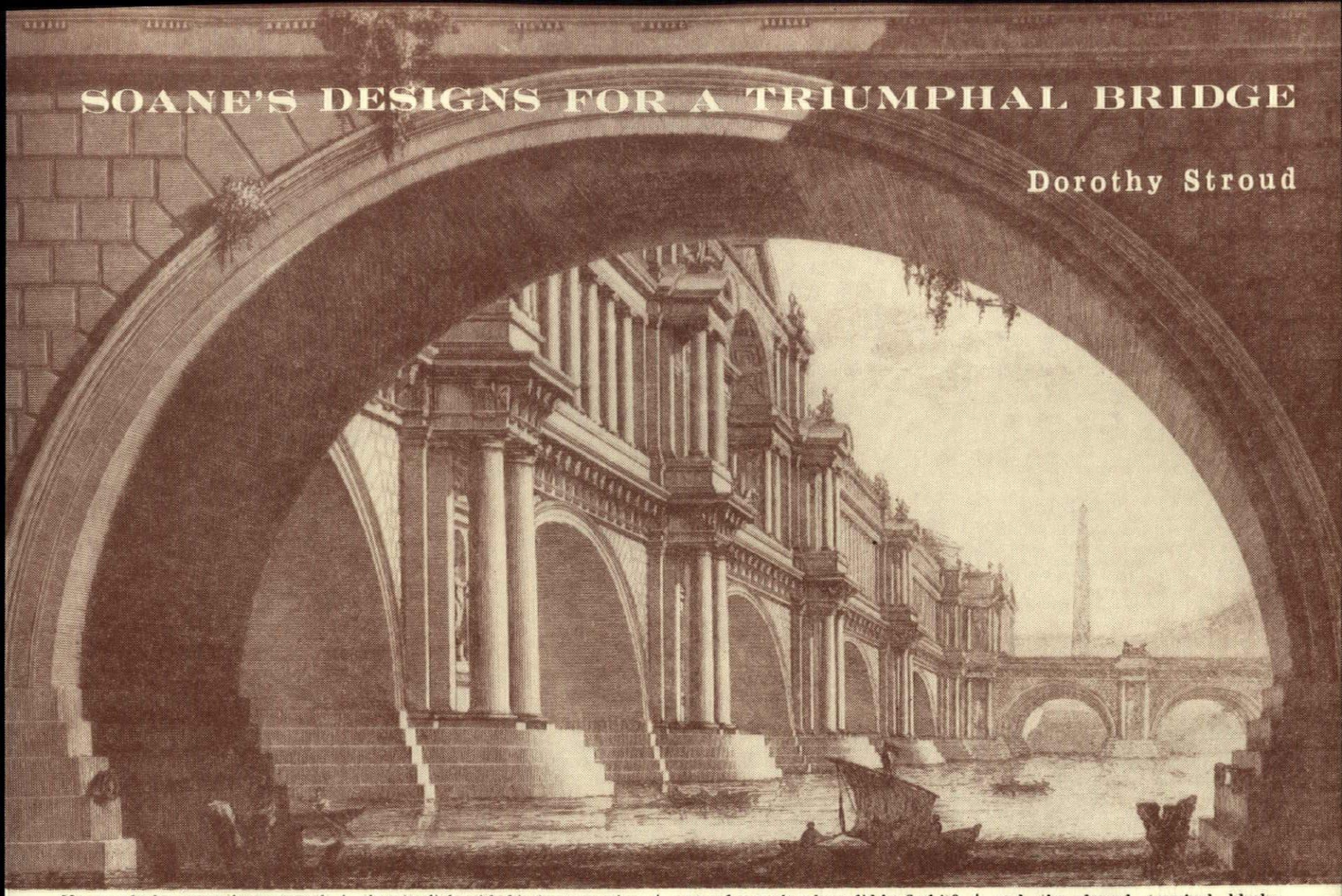


4

1, *Soane's Greek Doric triumphal bridge design submitted to the Academy of Parma in* 1779; *he had visited Paestum earlier the same year.* 2, *a Corinthian version shown in the Royal Academy of* 1799. 3, *a perspective of the Parma design dated* 1813, *probably drawn by Basevi and used to illustrate Soane's Academy lectures.* 4, *a bird's-eye view of the Corinthian bridge spanning the Thames from Lambeth to Westminster, by J. M. Gandy. On the facing page,* 5, *a bridge design by G. B. Piranesi, engraved for* Opere Varie, 1750.

SOANE'S DESIGNS FOR A TRIUMPHAL BRIDGE

Dorothy Stroud



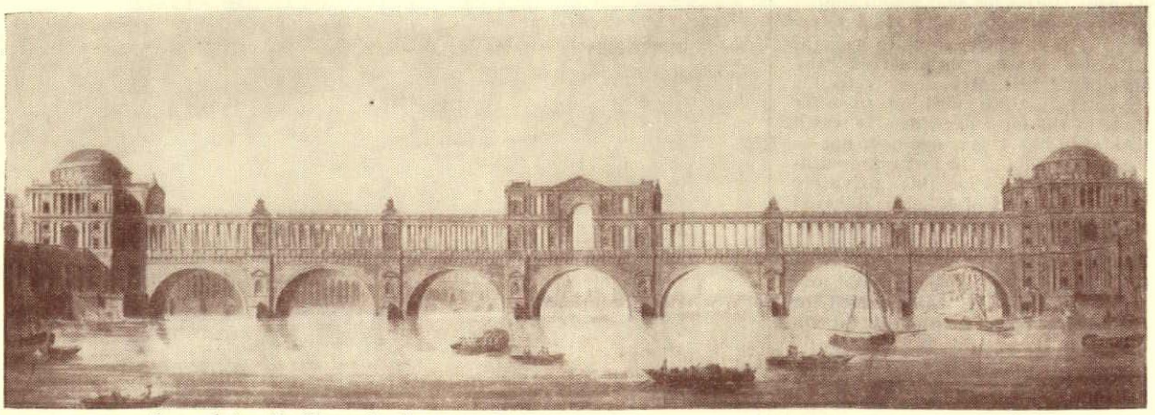
No one who has more than a casual acquaintance with Sir John Soane's designs can fail to notice how often and how strongly his imagination was drawn to certain subjects—usually monumental in character, and beyond any hope of realization. Designs for a British Senate House, for a Royal Palace, and for a Grand Entrance to the Metropolis were three of the themes on which, during his long life, he based a number of imposing variations. But his favourite was the Triumphal Bridge, of which six framed versions adorn the walls of his Museum, while others, drawn by himself or redrawn by his pupils, are to be found in books and portfolios. The Bridge also features in a splendid fantasy in which all Soane's more important executed designs are grouped together with the pensive title 'Architectural visions in the gay morning of youth and dreams in the evening of life.' There is no doubt that its link with his 'gay morning of youth' explains much of the fascination which the Bridge held for Soane. Moreover, through endeavouring to complete his first drawings for it, he refrained from joining two friends on a river expedition, and thereby escaped drowning when their boat met with disaster, an incident which he never ceased to remember.

During the 1770's Soane was working as a junior assistant in the office of Henry Holland, augmenting this practical experience by attending lectures at the Royal Academy Schools, and competing for that body's annual awards. On February 5, 1776, the President and Council of the Academy decided that the architectural subject for that year's Gold Medal should be 'a triumphal bridge with its plan, elevation and sections.' Soane, then aged twenty-three, resolved to compete. That he should look around for inspiration was natural enough: where did he find it? Although he has left no comments of his own on this particular point, the resulting drawings point to three main sources—Thomas Sandby's bridge design of 1760, a published engraving of a bridge by G. B. Piranesi, and a book of designs by the French architect M. J. Peyre.

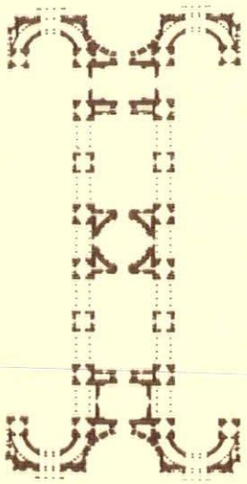
Thomas Sandby had been appointed Professor of Architecture to the Royal Academy at its foundation in 1768, and two years later began the series of six lectures which he was thereafter to deliver annually until his death. The sixth lecture was accompanied by the display of a large number of drawings, including Sandby's design for a 'Bridge of Magnificence.' This imposing structure of seven arches, with colonnades running its full length, was envisaged as spanning the Thames from Lambeth to Somerset House. In the arched central feature of two storeys, and the domed terminal blocks, Sandby was clearly influenced by Piranesi's design of 1750, and it is not surprising to find that the latter's engraved works were in his library; a set, incidentally, which had originally been given by the Pope to the Duke of Gloucester. To delve into the origins of Piranesi's bridge would probably produce enough material for an article on its own, but one obvious prototype is to be found in Palladio's *Third Book of Architecture* where that author reconstructs the ancient Ponte Elio in Rome, with its loggias of bronze columns, statues, and many ornaments.

In addition to illustrating his lectures, Sandby's bridge was shown at the Academy Exhibition of 1781, where it aroused considerable interest. Upon Soane it made so deep and lasting an impression that thirty-six years later, when he had been appointed Professor of Architecture, he referred to it in his own addresses. 'Among the drawings with which my predecessor enriched his lectures,' he told his students, 'was a Design for a magnificent Bridge. . . . Recollecting the powerful impression the sight of that beautiful work produced on myself and on many of the young Artists of those days, I am happy in this opportunity of exhibiting a copy of the Drawing.'

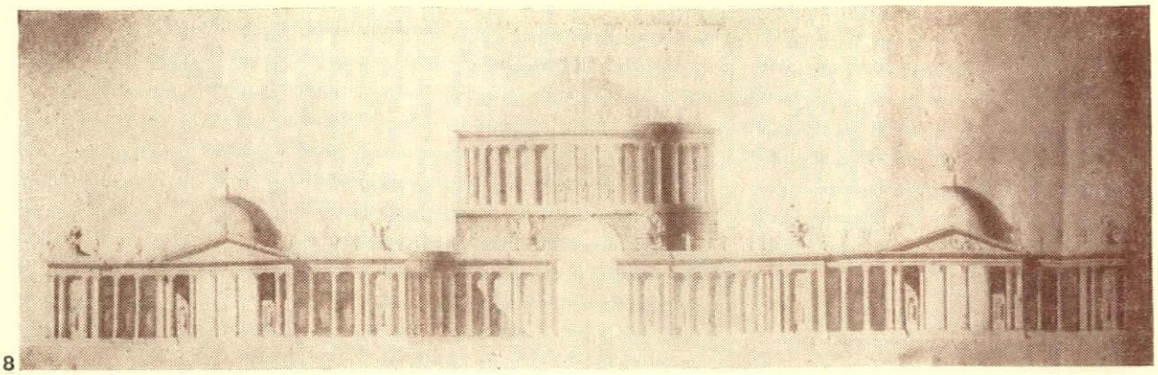
Sandby's bridge and that engraved by Piranesi were, then, the two obvious models which Soane would study when embarking on his competition drawings in 1776, and on these he based his ideas for a continuous range of columns, punctuated with small pavilions. But neither the Sandby nor the Piranesi designs engendered those curious curved wings which appear at either end of



6, *a Bridge of Magnificence, designed by Thomas Sandby*, 1760.



7, *the plan,* 8, *frontal elevation and* 9, *side elevation of Soane's triumphal bridge design which won the Royal Academy's Gold Medal in* 1776.



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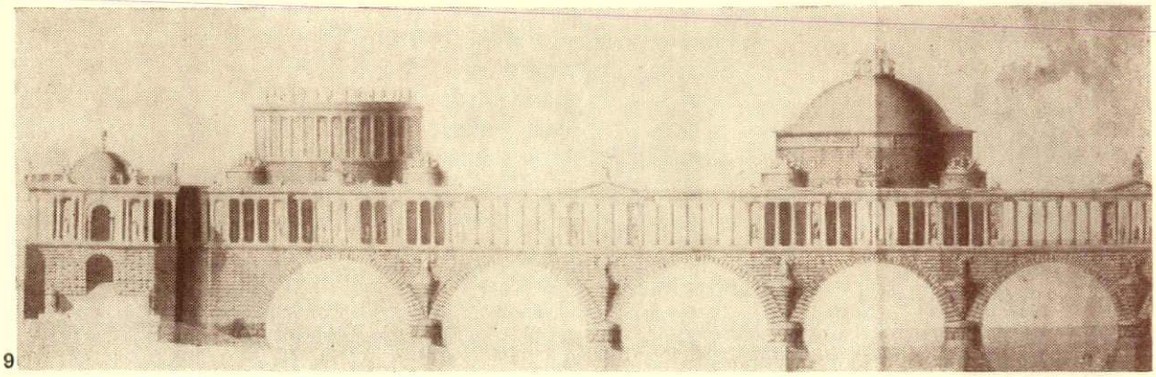


9

Soane's bridge, and which, in plan, seem to be hooking it to *terra firma*. For these, it would seem, he went to the illustrations of M. J. Peyre's *Oeuvres d'Architecture*, published in 1765. To Peyre's elevation for a corps de logis Soane is particularly indebted for the treatment of the approaches to his bridge.

When in due course his design appeared, it was envisaged as a composition of seven arches, with the colonnades already mentioned. But whereas Piranesi and Sandby gave their bridges a pedimented, two-storey, central feature, and placed large domed structures over the abutments, Soane emphasized the centre of his bridge with a 'pantheon'; and in addition to smaller domes over each of the four terminal wings he placed a high columned drum over the first and seventh arches—a treatment which in the light of experience he came to recognize as a serious error, and used as a warning to his Academy students. 'These three large features,' he told them, 'not assimilating with each other, nor sufficiently connected with the intermediate parts look more like so many distinct masses than one great building. The whole design thus becomes deficient in the Continuity and Harmony so happily preserved by Mr. Sandby.'

Fortunately for Soane, the assessors of 1776 were in a less critical mood. In their eyes the drawings possessed considerable merit, and Soane was duly awarded the Gold Medal. This was presented to him on December 7, the occasion of Sir Joshua Reynolds's Seventh Discourse, when the President gave high praise to his work. This initial success was soon followed by another, when Sir William Chambers, the Surveyor General, and Treasurer to the Academy, introduced Soane to George III, who nominated him for a travelling studentship with an allowance of £60 a year. The young architect set out on March 18, 1778, in Robert Brettingham's company, for two happy years of study in Italy.

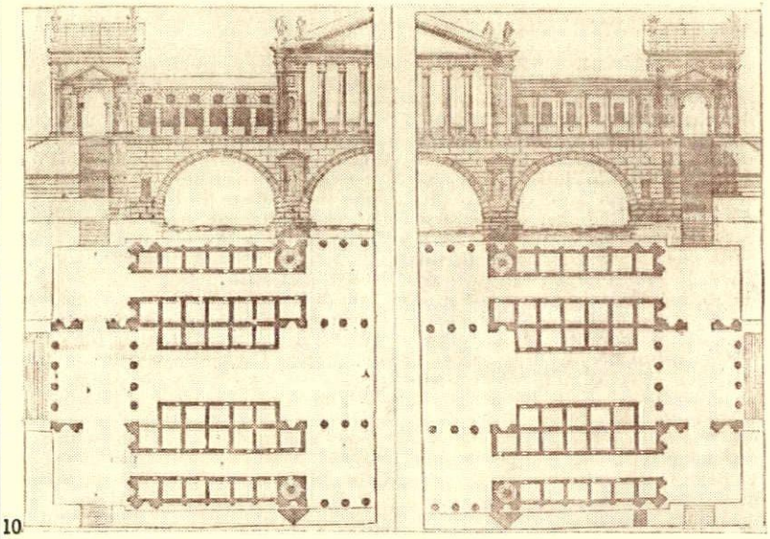
Towards the end of his time abroad, Soane submitted drawings for a *Castello d'Acqua* to the Academy at Parma, and also prepared for that institution a copy of his Triumphal Bridge design; or, to be precise, another version. For, although the composition was the same as in his earlier essay, it now emerged not in Roman but in Greek Doric dress. This transformation can be accounted for by Soane's visit to Paestum, made at the beginning of 1779. From a small notebook which has survived it is evident that he was there in January of that year, and again on February 14 and 15, when he 'measured the three Temples.' Although he added in his notes that he thought the temples had 'all the particulars of the Greek Doric, but not the elegance and taste,' there is no doubt that they made a profound impression on him. Not only the new Triumphal Bridge drawing, but his Canine Residence designed for the Bishop of Derry, show that for a time he was under the spell of Greek architecture, and he was keenly disappointed when plans for proceeding to Athens had to be abandoned.

In the Parma version of the Bridge design some of the superstructure is eliminated; the colonnaded drums are replaced by groups of statuary on low circular pedestals, and the central dome is flatter so that a more serene skyline is achieved. Moreover, there are five arches instead of seven, the weight of the buildings at either end resting on a solid base.

Twenty years later, Soane again fetched the Triumphal Bridge from his storehouse of ideas and sent drawings of both the Corinthian and the Greek Doric designs to the Royal Academy of 1799 (he was by now an Associate). Yet another version was exhibited in 1806, probably the oblique view seen through the columns of one of the approaches, now hanging in the Picture Room of his Museum. George Basevi, then one of his draughtsmen, is most likely to have drawn out the fine perspective of the Parma version dated 1813 for use as an illustration to Soane's Academy lectures. This was followed by a bird's-eye view by J. M. Gandy showing the bridge as it would appear if spanning the Thames from Lambeth to Westminster. Oddly enough, although Soane emphasized the defects of his early designs to his students, he did nothing to alter these in the later drawings. It was a case of 'do as I say, my boy, not as I do,' and even in the last representation, engraved for his privately printed *Memoirs* of 1835, he adhered to those faults which he had himself condemned.

There are few obvious connections between the Bridge designs and any of Soane's executed works except for one curious feature: in every version the space between each arch and its neighbour is occupied by a pedestal shaped like an inverted cone. In 1803 two of these strange objects were to materialize at the Bank of England, this time set between the arches which supported a loggia to the Governor's Court (now destroyed). They did not occur in any other of his works, and their source now seems as obscure as their function.

The Triumphal Bridge was the first of Soane's architectural visions, and a bridge was to be one of his first commissions. Not a bridge of magnificence, but a single span of barely twenty yards over the river Wensum at Norwich. Such is the gulf between aspiration and attainment.



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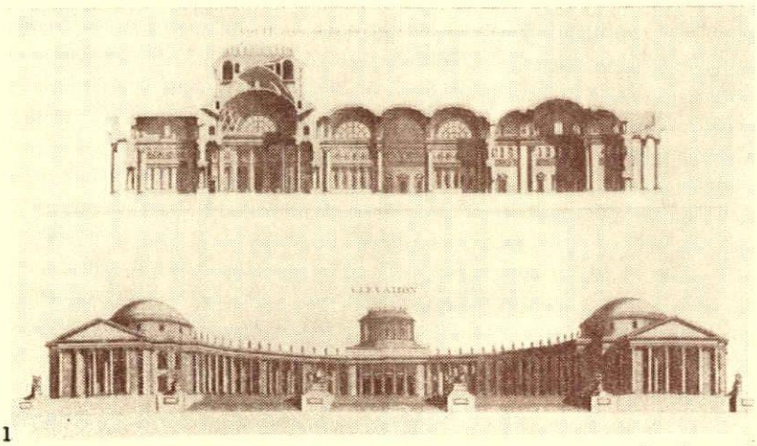
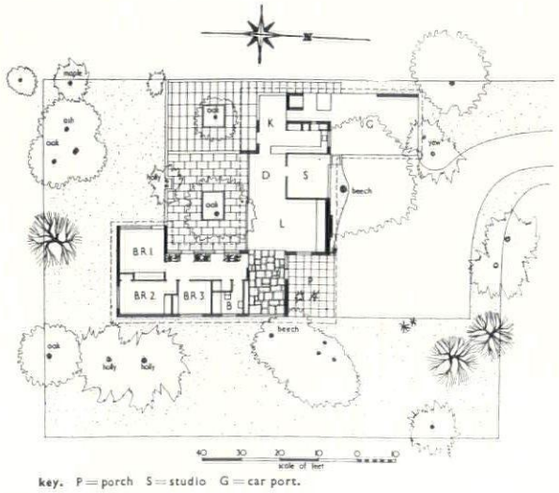


11

10, *Palladio's reconstruction of the Ponte Elio, Rome, in his* Third Book. 11, *M. J. Peyre's* corps de logis *from his* Oeuvres d'Architecture, 1765, *almost certainly Soane's prototype for the semi-circular approaches to his bridge.*



1, *the paved terrace from the south; bedroom wing on the right. Trees are left, holly and right, oak.*



key. P = porch S = studio G = car port.

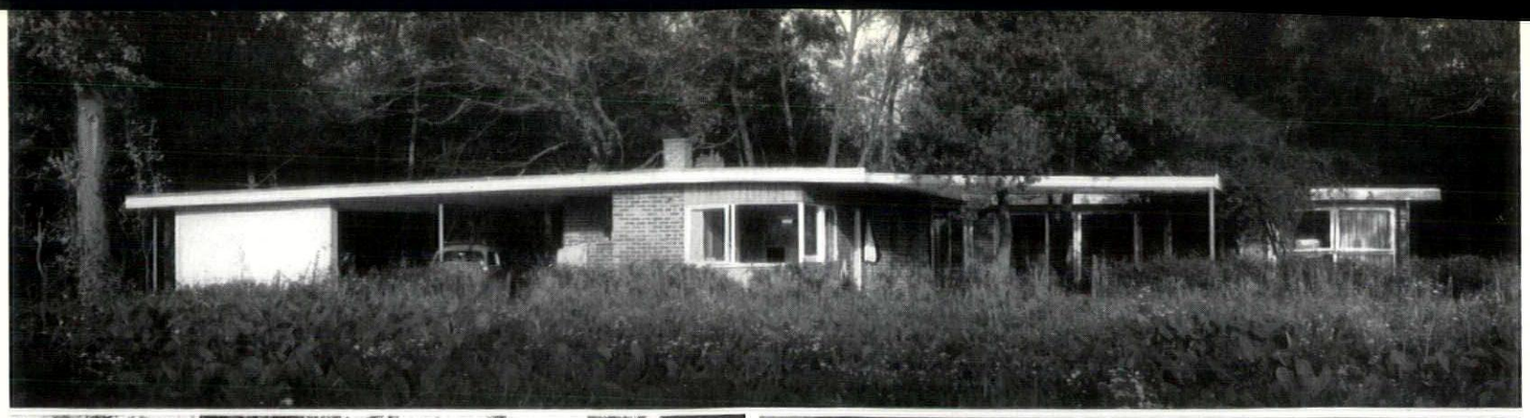
HOUSE AT AKELEY, BUCKS

ARCHITECT, H. J. RICHARDS

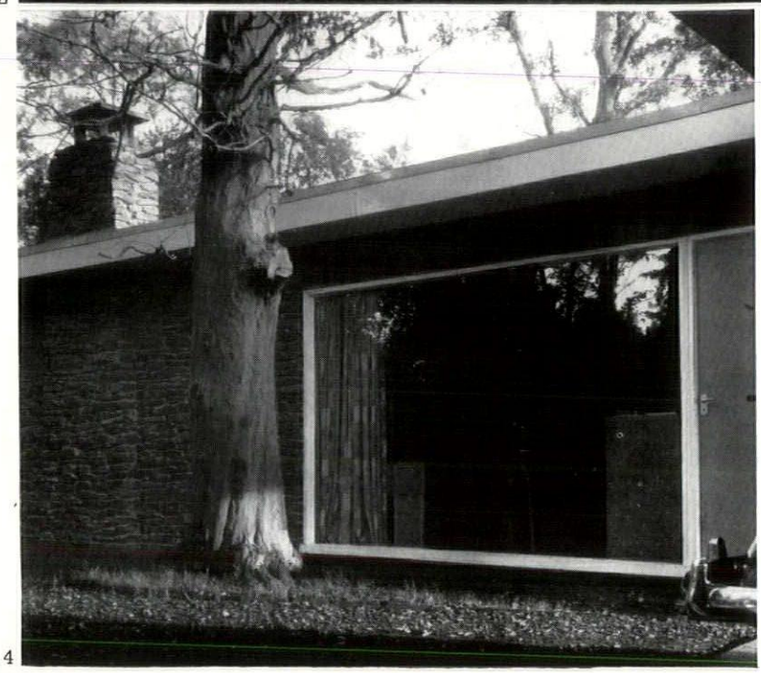
The house is between Buckingham and Towcester, sited in a Rectory garden 150 ft. from the main road with an unobstructed south view across a valley. The need to keep the trees and have a paved terrace largely dictated the plan; all rooms communicate directly with the living area, avoiding corridors. The various areas have been defined by the floor finishes and ceiling colours and by changing levels. Two sliding glass panels each 8 ft. by 13 ft. enable the entire south side of the living or dining area to be opened to the terrace.

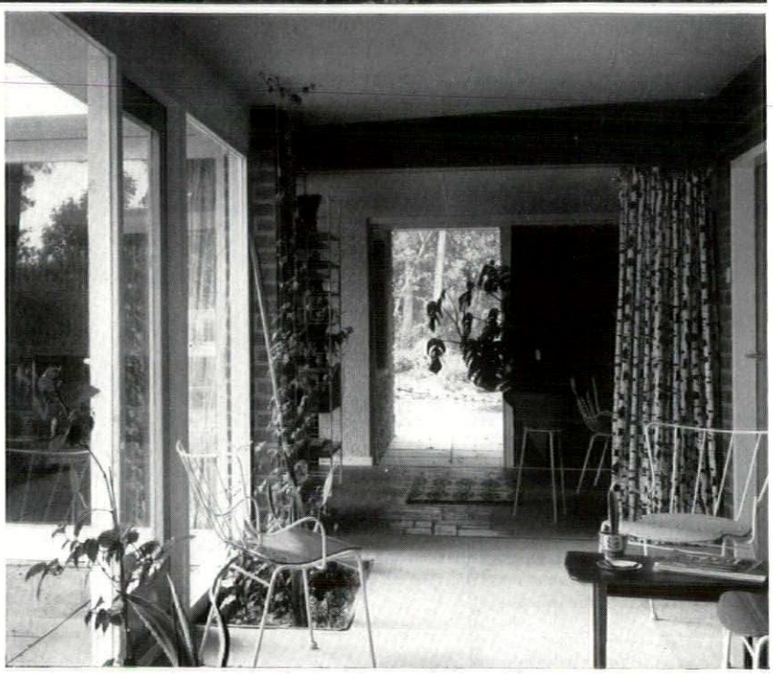
Walls are of cavity construction; the inner skin of dry plaster partitioning, the outer skin of silver grey facing bricks, local limestone and cedar wood. Floors are solid concrete finished with Hornton stone, plastic tiles and fitted carpets; the riser between the living area and hall is faced with coloured tiles. Roofs are of timber construction faced with stramit and three layers of patent roof finish with white spar chippings. Ceilings are finished with $\frac{3}{4}$ in. insulating boards, and with acoustic tiles over the music area. Plastering was omitted by using facing bricks and cedar wood internally; the dry partitions were wall-papered. Heating is by ducted hot air from the unit in the kitchen.

2



3, 4





2, the house from the west, with kitchen in the centre. 3, the north-facing studio window with a beech tree in front of it; the rubble limestone wall beyond is the back of the living room. 4, looking out of bedroom wing to the main entrance across the hall.

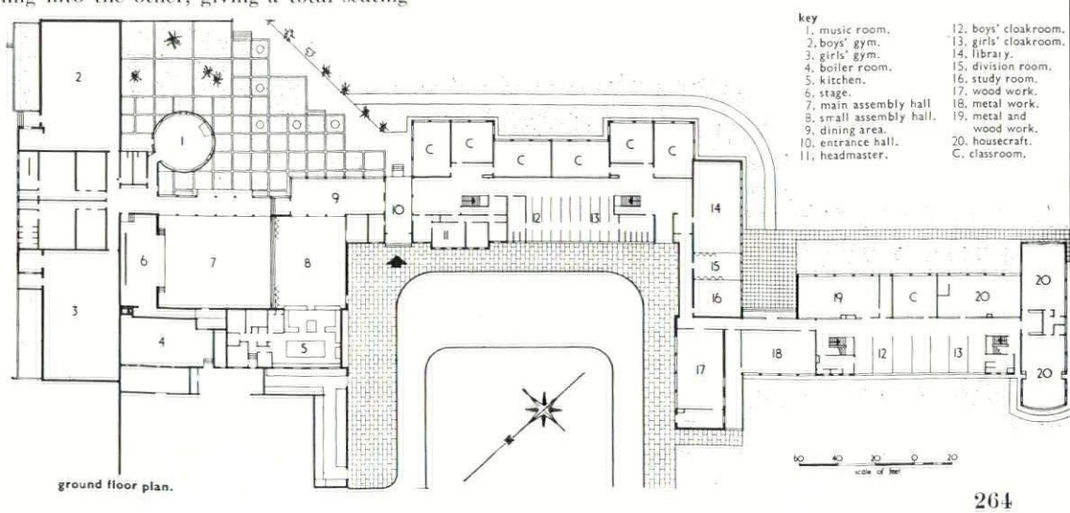
SCHOOL AT HARLOW NEW TOWN

ARCHITECTS, HENING & CHITTY, in collaboration with the Essex County Architect; ARCHITECT-IN-CHARGE, MICHAEL G. MURRAY

This 1,024-place school in the Netteswell area of Harlow New Town is one of the first to combine the grammar and modern streams. The building is divided into three blocks—practical and science, classrooms, and gymnasia and assembly halls. The area and entrance form one link and library and staff rooms another. Cross-ventilation to all classrooms was a major factor in planning the two teaching blocks, *vide* the cantilevered corridors in each block. Some sections are designed flexibly; e.g. the cloakroom space can suit variations in the numbers of boys or girls, and the dining space can be used for further classes or assembly purposes. Two assembly halls are provided, one opening into the other, giving a total seating of about 1,500. The house spotlights are concealed by flush trapdoors in the Hall ceilings when not in use, and the loudspeakers and heaters are recessed behind flush grills on the walls.

The building is steelframed (on a 10 ft. grid) with pot floors and facing brick panels, though in the teaching blocks the remaining wall areas of the window walls are filled with timber cladding and tiles. The hall roof is copper covered. All finishes are especially durable; granwood for corridor floors, hardwood blocks in all teaching and assembly areas, and plastic glaze finish on walls. Inside, the music room is twelve-sided, and is constructed to minimize sound transmission. The roof is a 31 ft. diameter concrete dome $2\frac{3}{8}$ in. thick, starred with 1,500 glass lenses.

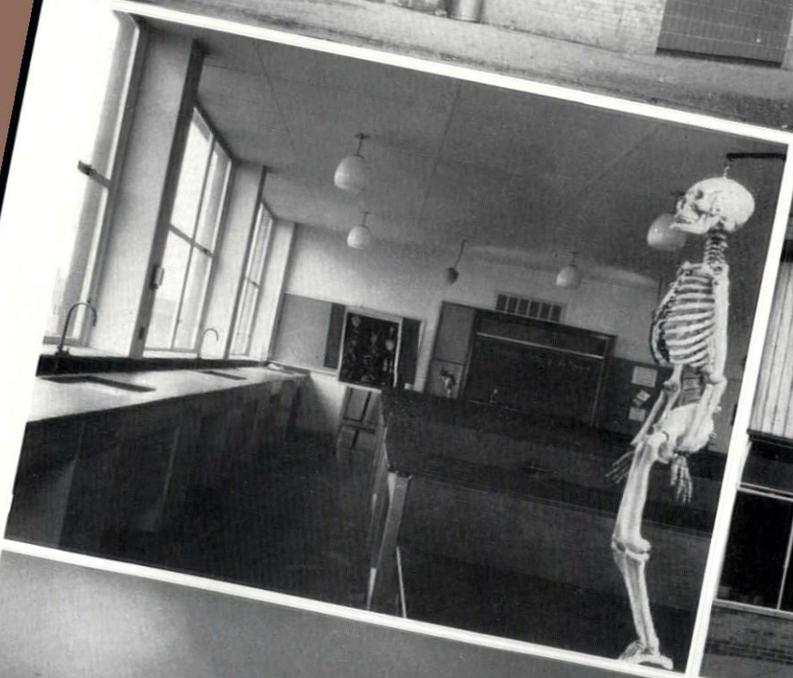
opposite, 5, the western end of the school, with practical and science block in foreground. The first floor balcony belongs to the geography room. 6, biology laboratory on the second floor. 7, main entrance and end gable of small assembly hall. 8, the music room—circular outside, twelve-sided inside—covered with a concrete dome starred with 1,500 glass lenses, shown in 9.



ground floor plan.



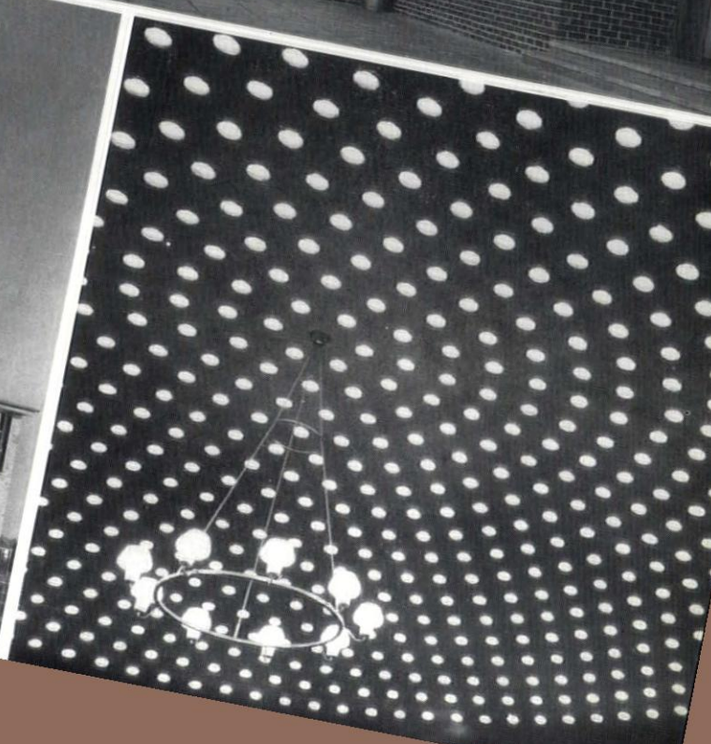
5



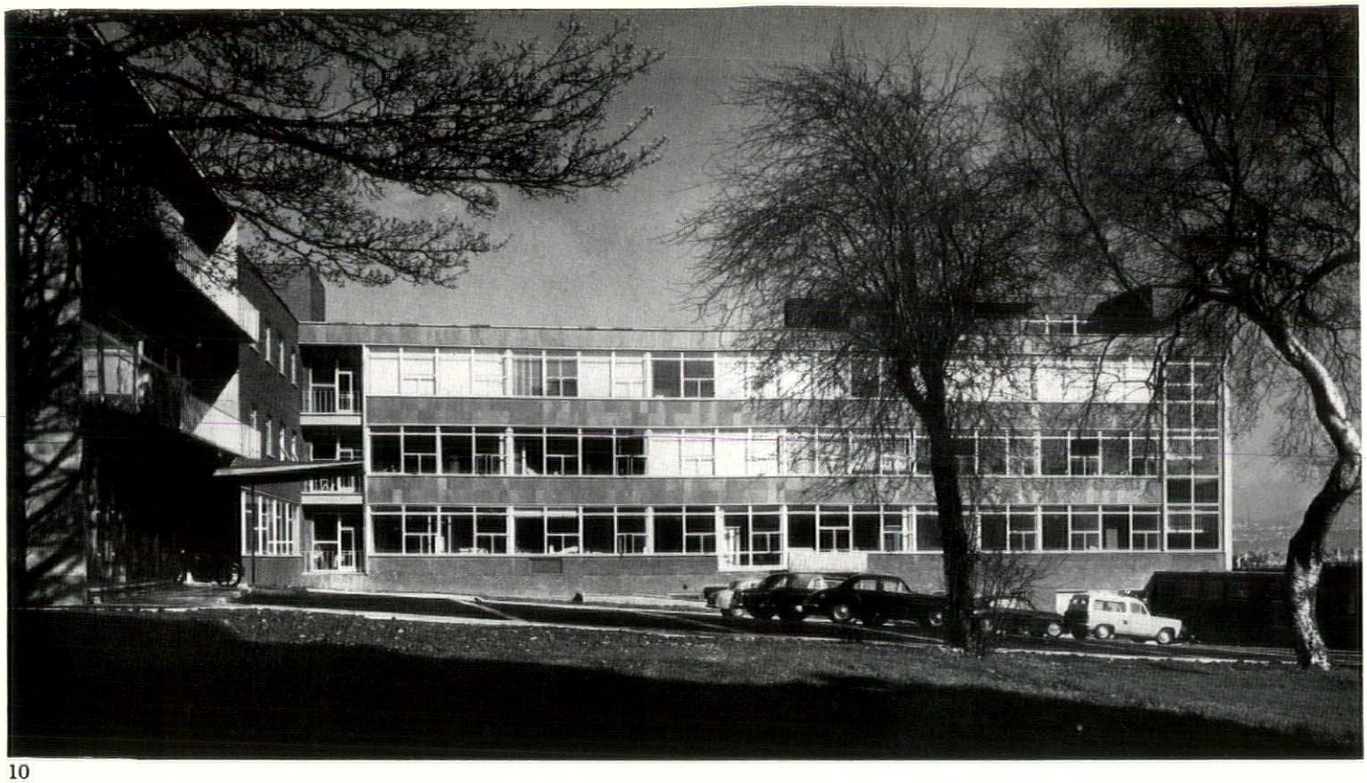


6, 7





8, 9



10

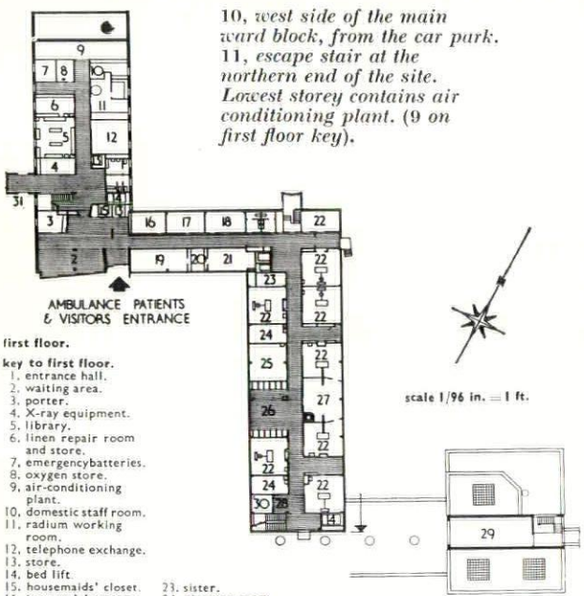
10, west side of the main ward block, from the car park. 11, escape stair at the northern end of the site. Lowest storey contains air conditioning plant. (9 on first floor key).

HOSPITAL EXTENSION IN EDINBURGH

ARCHITECT, JOHN HOLT

ARCHITECT-IN-CHARGE, WILLIAM WELLWOOD

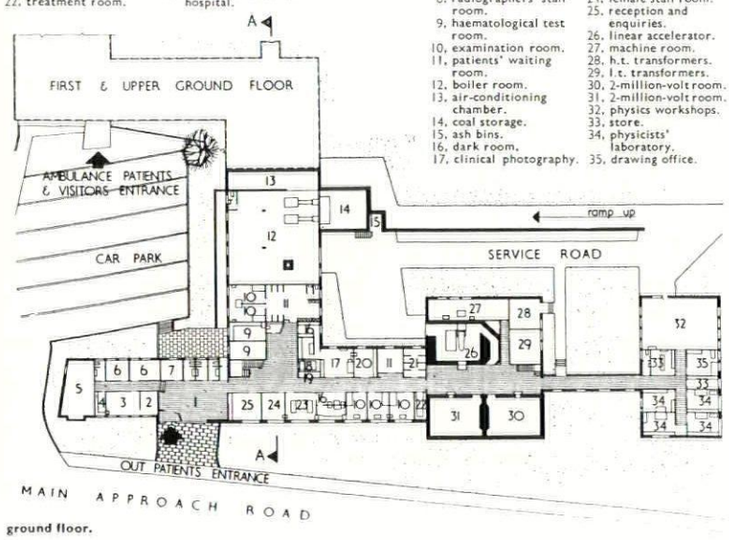
The new radiotherapy building for the Western General Hospital, Edinburgh, is designed to accommodate about 100 cancer patients, a range of X-ray diagnostic and therapeutic treatment, an operating theatre for radium application, and research laboratories. The main ward block has 4 storeys and a ward plan of 4-bed wards on both sides of a corridor. This block has a reinforced concrete frame; the floors above and below the treatment level are solid reinforced concrete slabs, the remaining upper floors being hollow tile, set in reinforced concrete rib panels. Load-bearing cavity construction is only used in the outpatients' departments and workshops. The roof is of precast concrete slabs; the walls of the high voltage treatment block are 24 in. to 64 in. thick concrete. The spandrel panels of the main block are faced with Westmoreland green slate slabs and the lower walls are finished in plum-coloured facing bricks. The south gable wall of the block is finished with Blaxter stone slabs.



first floor.

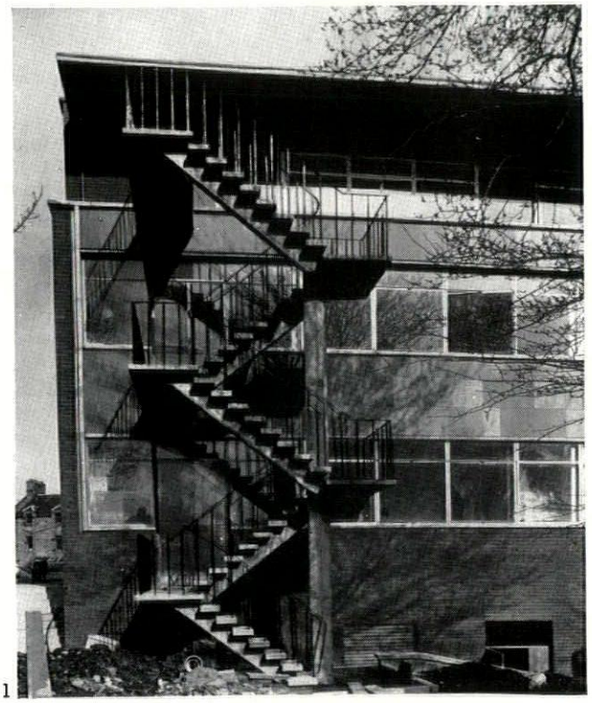
scale 1/96 in. = 1 ft.

key to first floor.
1. entrance hall.
2. waiting area.
3. porter.
4. X-ray equipment.
5. library.
6. linen repair room and store.
7. emergencybatteries.
8. oxygen store.
9. air-conditioning plant.
10. domestic staff room.
11. radium working room.
12. telephone exchange.
13. store.
14. bed lift.
15. housemaids' closet.
16. isotope laboratory.
17. radiographers' staff room.
18. lecture room.
19. patients' dining room.
20. servery.
21. patients' dining room.
22. treatment room.
23. sister.
24. planning room.
25. examination.
26. patients' waiting area.
27. generators.
28. trolley parking area.
29. ventilation plant.
30. equipment store.
31. link with existing hospital.



ground floor.

key to ground floor.
1. entrance hall.
2. secretary.
3. professors' room.
4. still room.
5. medical staff room.
6. medical study room.
7. sisters' room.
8. radiographers' staff room.
9. haematological test room.
10. examination room.
11. patients' waiting room.
12. boiler room.
13. air-conditioning chamber.
14. coal storage.
15. ash bins.
16. dark room.
17. clinical photography.
18. bed lift.
19. services.
20. planning and records.
21. changing cubicles.
22. linen store.
23. radiographic room.
24. female staff room.
25. reception and enquiries.
26. linear accelerator.
27. machine room.
28. h.t. transformers.
29. l.t. transformers.
30. 2-million-volt room.
31. 2-million-volt room.
32. physics workshops.
33. store.
34. physicists' laboratory.
35. drawing office.



11

BOOKS

MORE ABOUT WREN

THE ARCHITECTURE OF SIR CHRISTOPHER WREN. *By V. Fuerst. Lund Humphries, 63s.*

WREN AND HIS PLACE IN EUROPEAN ARCHITECTURE. *By E. Sekler. Faber, 63s.*

'An architect ought, above all things, to be skilled in Perspective; for, everything that appears well in the Orthography, may not be good in the Model, ...; and everything that is good in the Model, may not be so when built.'

Sir Christopher Wren's statement (*Parentalia*, Tract I) must be well known to both the authors, for they have clearly devoted much time to an exhaustive scrutiny of Wren's writings and drawings. Only Dr. Sekler, however, appears to have realized that for Wren the final test of his work lay, not in its evolution but in its appearance. He therefore illustrates his book with a series of fine photographs, finely chosen (and also finely printed) to which he adds a considerable number of relevant drawings and engravings, both English and foreign, and many good plans. This is by far the most useful and intelligent collection of material on Wren which has yet appeared within the covers of a single book.

Mr. Fuerst, on the other hand, is so deeply concerned with 'the Orthography and the Model' that he does not think it necessary to use any photograph of an existing building. The exterior of St. Paul's appears only in an engraving in true elevation (a notably misleading form of representation); the executed design of Greenwich is not illustrated at all. No idea can therefore be obtained from this book of the quality of Wren's architecture: the one hundred and fifty-seven plates are entirely of drawings or engravings. But, unfortunately, owing to the method of reproduction, they give little idea of the widely varying quality of the originals. Wren's early autograph designs for the Pre-Fire Scheme for St. Paul's (No. 32) are drawn in a pale bistre with a very fine pen-line and pale blue wash, whereas the first Hampton Court designs (No. 90) are in pencil, but both look here as if they were drawn in Indian ink; while the pen and wash drawing for Greenwich (Fig. 107) is masked in a London fog! All this is the more strange since, judging from the title page, Mr. Fuerst's professional qualifications appear to be those of a photographer. In may cases there is no figure reference in the text, none of the plans have a scale, and the method of bleeding has left far too many pages without numbers. Moreover, since Mr. Fuerst is incapable of concise statement (on p. 61 he needs sixty-six words to say that most of Wren's ecclesiastical buildings are before 1688, and his secular buildings are later) the arrangement of two columns of small print to a page makes his cumbersome sentences no easier to read.

It is, indeed extremely hard to know for whom this book was written. Its choice of illustration and its detailed analysis of drawings is only intelligible to scholars who are already familiar with and able to consult the much better reproductions in the Wren Society's volumes; and even they would need on occasions to turn to the photographs in Dr. Sekler's book. But if Mr. Fuerst is writing for scholars it is surprising that he should have given so much space to the rejection of views dating from the early nineteenth century onwards, to which no serious architectural historian would now give a moment's thought. On the other hand Mr. John Summerson's book on Wren, published in 1953, is not even included in the bibliography, and Mr. Howard Colvin's *Dictionary of British Architects* (1954) is not mentioned and does not seem to have been consulted. Moreover, though there can be no drawing by or attributed to Wren at which the author has not looked, he appears to be ignorant of other seventeenth century drawings. Had he looked at the Burlington-Devonshire Collection at the RIBA he would have known that the palace at Greenwich was not built for Charles I, since there are many dated drawings by John Webb of the mid-1660's; and the Chatsworth drawings for Whitehall Palace (many of which have been published) would have shown him that Wren's designs for Charles II and the smaller design for William III were based on Webb's post-Restoration projects. Many other errors could be listed, for instance: Gibbons (not Gibbon) was not 'Wren's Flemish collaborator,' but an Englishman born in Rotterdam, and the drawing for Queen Mary's monument made almost certainly by Gibbons the year after he had been created Master Sculptor to the Crown does not necessarily reveal anything about Wren's reaction to the Berninesque; Wren could easily have known of Vignola's design for the façade of the Gesù, for it was engraved by 1573; Serlio's book was not 'published in Venice, 1537–40' —only the third and fourth Books then appeared, the first, second and fifth Books were unpublished at Serlio's death in 1551; the title page of *Parentalia* states that it was written by Christopher and not Stephen Wren (but Mr. Fuerst's dislike of this work seems almost pathological).

These defects are all the more lamentable since there are sections of considerable interest in the book. Mr. Fuerst seems to prove beyond question that three and not only the two known models were made for St. Paul's, and though his suggestions as to the form of the lost model are highly controversial (and do not appear to be supported by the drawings he illustrates) this part of the book is new, and cannot be neglected by scholars. He has also something of interest to say about the plans and exterior elevations of the City Churches, though he is strangely silent about the spatial qualities of the interiors. Indeed his neglect of the appearance of Wren's buildings is such that he does not even mention the raising of the screen walls above the aisles of St. Paul's which are so important a factor in the effect of the exterior.

Dr. Sekler's book is much shorter, and he makes it clearer in his introduction that much help was given to him in England. His main aim is to relate Wren's architecture to the European tradition, and though he is perhaps too much concerned with source-hunting he proves that more was borrowed from France than has always been supposed. His book, though a little dry, should provide a most useful survey of Wren's work for scholars outside this country.

Both authors are, in their different ways, concerned with the placing of Wren in the history of European architecture and with an attempt to assess the theoretical basis of his style. Both are, perhaps, slightly misled by their own Continental bias towards theory. The Royal Society background of empirical science which was the foundation of Wren's career produced an attitude to his art which was essentially flexible and experimental, and the quotation with which this review opens would seem to suggest that to Wren himself the result rather than the means, was of prime importance.

(*Written July*, 1956) **Margaret Whinney**

COMPONENTS

BUILDING ELEMENTS. *By Richard Llewelyn Davies and D. J. Petty. Architectural Press.* 37*s.* 6*d.*

This is a book which promotes the subject of 'building construction' from the familiar repetition of traditional patterns to one requiring critical judgment—and how much more interesting it makes it.

It was inevitable that sooner or later books should be written which would embody the findings of the scientific investigations which have taken place in England during the last thirty years, and that they would replace the older books. The first important book of this kind appeared in August, 1938, *The Principles of Modern Building* by R. Fitzmaurice, but its scope was not in any sense comprehensive. It was limited to walls, partitions and chimneys, with the promise of further volumes which unfortunately never materialized. Its impact was nevertheless great and, with the Post War Building Studies, influenced and helped to improve construction in the post-war period. Together they imparted new knowledge about materials and created quantitative standards of performance. They were addressed in the main, however, to practising architects, and there remained a lack of any equivalent teaching books. The need for such books was recognized by the R.I.B.A. which through its Committee for Text and Reference Books initiated a series of three books to make good the deficiency. The first two of

these to appear, Handisyde's *Building Materials* and Cassie and Napper's *Structure in Building* (both also published by the Architectural Press), are already well known, and the volume under review is the third.

The aim of these three books was declared to be to 'cover the whole subject of building Construction in a Comprehensive Manner.' Perhaps the most difficult task fell to the authors of 'Building Elements,' since they had supposedly to express the whole of building *Construction* in relation to new scientific knowledge, in one volume. In fact the authors do not claim in this respect to do more than describe the principal ' elements ' in common use; that is, walls, floors, roofs, flues and fireplaces, windows and doors, and to show in what way each fulfills the functions required of it. This they do very well, but to satisfy the aim that the three books should be *comprehensive* there should be another volume dealing with the problems of assembling the various elements to form complete buildings.

The descriptions of the elements comprise Part 2 of the book; Part 1 deals with the functional requirements of these elements, under the headings of weather exclusion, thermal insulation, sound insulation and fire protection; also design and expression. Design and expression are not normally dealt with in a book on construction, but, brief as is the summary given here, it usefully reminds us that for a building to have a particular character is as much a requirement as that it should withstand the weather, and that the architect has it in his power to choose between one form of construction or another for its appearance as well as for its other qualities.

Being more than a mere ' pattern book,' this book encourages the student to assess the functional requirements of each element in a particular building by reference to the information given in the first part, and then to choose from the second part the kind of construction which matches these requirements. This is such an ambitious undertaking that it is not surprising that there are gaps in the information. Indeed, it is difficult to see how any single book could describe and illustrate in sufficient detail to be useful the enormous number of permutations of materials that are possible to make up walls, floors, roofs, etc. It would furthermore be almost impossible to include all the specialized products such as curtain walling, roof decking, patent glazing and so on, which today are increasingly used in building and the designs of which are constantly being changed.

The book has a number of photographs and there are many line drawings, most of them illustrating some point of detail: the drawings do not, however, show the elements in their contexts in buildings. This the student must still learn from observation of actual buildings, from lectures, or, failing these, from other books. Nevertheless, this is the only book which will give him a critical evaluation of the alternative forms of construction which are open to him to use. It is a book which can be read with interest, it does not underestimate students' intelligence, and it is authoritative.

John Eastwick-Field

SOUTH AMERICA BUILDS

LATIN AMERICAN ARCHITECTURE SINCE 1945. *By Henry-Russell Hitchcock. New York, The Museum of Modern Art,* $6.50.

Professor Hitchcock's new book is not an extended survey of the new architecture of what he terms 'a continent and a half,' nor is it a definitive essay upon the nature of that architecture. It is one of those catalogues *de luxe*, neither one thing nor the other, with which the Museum of Modern Art persistently tantalizes the enquiring scholar, an occasional work to accompany one of the Museum's exhibitions.

Having said so much, it is imperative that one should also say at once that this is a very handsome book in its format and photographs; a very salutary book, in that it shifts attention from too exclusive a concentration on Brazil and Mexico; a very well-informed book, in that it is based upon an extended tour of Latin America made by Professor Hitchcock—and for this reason also a very Hitchcockian book, since both the selection and the evaluation of the buildings illustrated depends upon his own personal observations made on the spot. If one were to treat it as a permanent record of an illustrated lecture given by him, that would identify both its flavour and its value. A long lecture admittedly, but so packed with illustrations, and revealing comments, with well-known buildings (like O'Gorman's library) revalued, inaccessible ones (like Le Corbusier's Curuchet House) displayed, and unknown ones (like the Edificio Polar) discovered, that one would gladly go to hear it a second time, and almost equally gladly pay the usual sky-high Museum of Modern Art price to possess it in letter-press.

Michel Santiago

MOORE: 1949-54

HENRY MOORE: *Volume 2. With an Introduction by Herbert Read. Lund Humphries.* £3 3*s*.

Starting with the magnificent 'Family Group' commissioned by Barclay School, Stevenage, and completed in 1949, this volume gives a full photographic record of Henry Moore's work up to 1954. As almost all the photographs were taken by the sculptor himself they give an authoritative view of his work, which a professional photographer might very well miss. Compared to the period covered by the first volume, the years represented seem to be marked by various attempts to find a starting point from which to develop something of the stature of the Northampton 'Madonna and Child' or the 'Three Standing Figures' of Battersea. But such works as the 'Rocking Chairs,' which are hardly more than ingenious ways of solving the problem of mobility in sculpture, the very open and confusingly bony form of the 1951 South Bank 'Reclining Figure' with its legs awkwardly cut short, even the life-size 'King and Queen,' which in spite of its remote presence has several weak sculptural views (particularly the back), and the completely impassive Time-Life 'Screen' in which it is so difficult to feel that a sculptor has been at work, are all surprisingly different in approach and none comes up to the masterpieces of the earlier years. On the other hand, the 'Draped Figure,' also done for the Time-Life Building, but for which the architectural problem was not so considerable, is one of Moore's most moving pieces. This very human figure has, like the companion 'Draped Torso,' a wrinkled surface which expresses the contours of the bulky form beneath, and is at the same time distinct from it. Both the massiveness and the use of drapery are plainly Greek in inspiration (after Moore's first visit to that country in the previous year, 1951), although the 'Leaf Figures' done at the same time have a somewhat similar creased surface. It is these draped pieces which stand out as an innovation of real possibilities after a number of rather tentative starts. The other outstanding work of the years covered in this interim report is the series of 'Internal and External Forms' embodying a tender and particularly contemporary image of a figure sheltering within a cocoon-shaped case.

John Curtis

Books Received

ANCIENT MONUMENTS OPEN TO THE PUBLIC. Country Life. 7*s*. 6*d*.
STUDIES IN ARCHITECTURAL HISTORY, Vol. II. Ed. Wm. A. Singleton. St. Anthony's Press. 17*s*. 6*d*.
LICHT ARCHITEKTUR. By Walter Köhler.
FARM BUILDINGS, CONVERSIONS AND IMPROVEMENTS. By W. G. Benoy. Crosby Lockwood. 28*s*.
DECORATIVE ART, 1956-1957. Studio. 35*s*.
LA PLUS GRANDE AVENTURE DU MONDE. By François Cali. Arthaud. 4,500 frs.
BEN NICHOLSON, Vol. II (works since 1948). Intro. by Herbert Read. Lund Humphries. 3 gns.
PATTERN AND TEXTURE. By J. A. Dunkin Wedd. Studio. 25*s*.
SCHOOL PLANNING AND BUILDING HANDBOOK. By Engelhardt and Leggett. F. W. Dodge. $12.75.
ERECTION OF CONSTRUCTIONAL STEELWORK. By Thomas Barron. Iliffe. 15*s*.

EXHIBITIONS

Nearly fifty years ago, a German critic declared that Monet's last series of lily pools, painted at Giverny, reduced the impressionist principle to absurdity, and as recently as 1946, John Rewald, in his *History of Impressionism*, quoted with approval Guil-



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laumin's objection to their 'total lack of construction,' and added by way of explanation that Monet's eyes, 'straining to observe minute transformations, were apt to lose the perception of the whole.' The first two statements are understandable and can be turned into compliments, but Rewald's remark has become totally inexplicable because we now see that Monet's sheets of space flickering with light identify the total animation of the picture surface as the final objective of painting.

It's as well to remember, however, that few of us were in a position to challenge Rewald's criticism of the late Monets before Jackson Pollock's focusless canvases conceptualized the fruits of Monet's staring.

After the power and authority of Pollock's suave tumults of light and space, it was only to be expected that much of what



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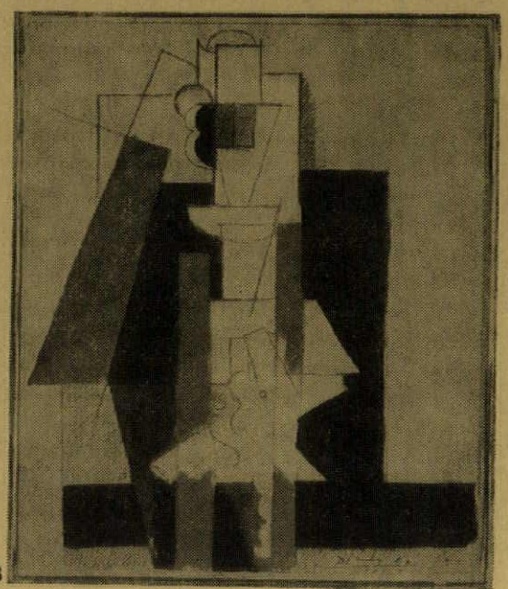
followed would be anti-climax, but there have been few serious attempts to consolidate his victory, and it would seem that his brilliant clarification of the problem of what Clement Greenberg calls 'maximum saturation' has had less influence on other painters than the rumour of his violence and anarchy, and a large proportion of the pictures made under the name of tachism or action painting can be called documents of the desire to be a rebel without a cause. This was particularly evident in the work of several painters who contributed to the ICA exhibition called 'Statements,' which might have been more suitably named 'Confusions.' One end of the show, with an elegant Pasmore construction as its centrepiece, demonstrated the simple charms of elementary geometry: the other end was devoted to an arbitrary selection from English and Cornish attempts to make a contribution to the art of the impassioned brush stroke. The best things in this section were a luxuriously painted Kinley containing a dilatorily conceived nude which had less 'presence' than the paint, and one of those sultry masses of pigment into which Alan Davie, fishing for revelations, lowers a thick black line and brings up disappointing catches of banal symbols. There was also a professional-looking tachist painting by Rodrigo Moynihan, 1, which nevertheless conveyed the impression that the concentration of strokes down the middle covered one of his portraits. Among the least satisfactory works were passionless pastiches of Franz Klein by two painters who are so remote from the spirit of that remarkable painter that they could have been pastiches of Robert Motherwell's pastiches of Klein. Another and somewhat different effect of double-pastiche was obtained in a canvas which, before being crossed out by sweeps of dark grey paint, appears to have been a pastiche of Sam Francis: it was understandable that the artist should want to cross it out, but it was evident that he was not in a temper when he defaced it and could only simulate 'angry' brush strokes by doing a pastiche of Soulages.

Lawrence Alloway, defending an exhibition at Arthur Tooth & Sons of the kind of painting that some of the ICA exhibitors would like to be able to emulate, implied that the kind of painting achieved by Monet in one way and Pollock in another—the kind, that is, which maintains an even fire from edge to edge of the canvas—represents an extreme situation which cannot be kept up. Yet Sam Francis, working, it is true, at a very much lower temperature and without embarking upon the 'co-ordination in separation' of multiple layers of space, managed by reason of the purity of his vision and the subtlety of his understanding of the principle of the total animation of the picture surface, to dominate the show at Tooth's, in spite of



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the fact that his four competitors—Jean Dubuffet, Jean-Paul Riopelle, Karel Appel and Paul Jenkins—gave a more demonstrative display of vitality and virtuosity. Earlier works by Francis have seemed to me to be lovely in colour but somewhat opaque and impenetrable; but the two large oils at Tooth's trapped light and space, and the clean, firm turns of the brush, the trickles from the thin, wet paint groping through the surface like the roots of Monet's lily-pads, and the pools of lighter colour like a thinning of the clouds which presages golden shafts of sunlight, gave them a quality which makes him the Mallarmé of painters, 2.

I do not find that the imagery of Appel or Jenkins is of much interest. They are better employed when slapping the paint down than when searching like children staring into a coal fire for faces and landscapes in the wake of their brush-strokes. Appel sees faces, and is an incipient expressionist, 3; Jenkins sees fantastic landscapes, and is an incipient surrealist. The yawning gap in the middle of his 'Estuary,' 4, discloses an insensitiveness to the picture surface which is quite inexplicable in an artist connected with action painting.

After showing so much concern with oils, to attempt to do more than nod my approval of the fine selection of modern drawings recently shown at the Hanover Gallery would be rather like abandoning a plump girl friend to follow a thin one, and Picasso's cubist drawing, 5, has to assume the role here of someone walking rapidly in the opposite direction on the other side of the street.

Hubert Dalwood's recent bronze, 6, on the other hand, might serve as a personification of the art of the overloaded brush-stroke. If a short, heavy girl with a large, protruding stomach should happen to be chosen as Miss Universe in 1958, it will be a triumph indeed for those who claim that art influences the people, and Dalwood's solemn series of variations on a paleolithic theme will be highly prized by the Musée d'Homme 20,000 years hence: but I must confess that although I found Dalwood's exhibition at Gimpel's extremely entertaining, it struck me as a kind of mirage, and gave me the idea that Dalwood is probably dreamy, sensitive and slightly built.

Robert Melville

HISTORY

RICKMAN AND THE FITZWILLIAM COMPETITION*

'Buildings of every description altered into Gothic or Grecian' ran one of the mock advertisements which Pugin included in his 'contrasts' of 1836 as a comment on the eclecticism of the time. Architecture was entering a period when the selection of a style for new buildings was more a matter of arbitrary choice than it had ever been before. The limitations of an existing and still lively tradition no longer held good, while the great theorists and apologists of the nineteenth century had not yet established new principles to replace them. The Gothic revival was gathering momentum, but classicism was by no means exhausted; meanwhile considerations of ethics, convenience of efficiency gained little weight. Circumstances combined, therefore, to leave the architect unusually free to please himself and to exploit his knowledge of the historical styles.

Designs prepared for competitions illustrate the phenomenon particularly well—call it either architectural versatility or vacillation—for these show how even a slight building could be conceived in two or even three distinct guises. The drawings illustrated here must be among the earliest to demonstrate this architectural dilemma. They were submitted in the competition of 1834 for the Fitzwilliam Museum in Cambridge, and are all the more remarkable because they are all the work of an early champion of Gothic, Thomas Rickman. Today he is remembered chiefly as an historian of the Gothic, and his prolific architectural work was also chiefly in that style, his best known building being the new Court of St. John's College, Cambridge. However, his career had begun in the neo-classical years before 1820 (actually with a design for his sister's sweet-shop based on the choragic monument of Thrasyllus) and throughout his life he found occasional inspiration in Greece and Rome.

The Fitzwilliam Museum drawings are not the first instance of his providing alternatives for the same building. In 1823 he made both Gothic and classical designs for a church at Dale End in Birmingham, and later, for another Cambridge competition—that for the University library of 1829—he again submitted designs in alternative styles. Nor was he the only competitor to do so. Cockerell sent in two, and so (according to the entry in Rickman's diary for December 10, 1829) did Decimus Burton, who offered 'a jumble of bad Gothic and a poor tame Roman one.'

In the Museum competition Rickman was one of four architects to submit three designs each, while one—Vulliamy—sent in four. Entrants were surprisingly unrestricted by the conditions of the competition, for 'no precise instructions, as in the case of the Library, were drawn up, the style, the arrangement, and the extent, of the proposed buildings being left to the judgement of the competitors.'*

Some more emphatic reminder that the building was to provide for the display of pictures and the storage of books might in Rickman's case at least have been timely, for both Gothic and classical 'Interiors of the Library' are innocent of bookshelves, and the attenuated Gothic tower is hardly adapted for use as a Museum.

Unfortunately the plans themselves do not survive, but the perspective drawings at the Library of the R.I.B.A. give a remarkable impression of Rickman's three conceptions of the building; the Gothic one is as romantic and picturesque as anything since Fonthill. It stands between the flimsy, meagre Gothic of the earliest revival and the more rubust—and often less delicate or sensitive—products of the Victorian era. The exploitation of an open timber roof to such effect was probably unprecedented in the revival. Plaster or occasionally stone vaulting had been most usual. The classical versions are both undeniably impressive, particularly the third design, with its magnificent rotunda. There seems to be no precedent for the use of a feature of this kind without a surmounting dome, or at least a conical roof, either in ancient or in Renaissance architecture. For structural reasons alone such a roof is preferable, and Rickman did not dispense with it, but his dome is only visible from inside.

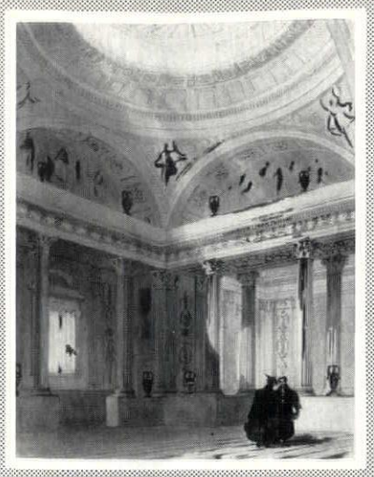
* This article is based on a thesis presented at Cambridge University. Neither the drawings nor the quotations from Rickman have been published before.

* Willis and Clark 'Architectural History of the University of Cambridge,' 1886.

The three alternative designs submitted by Thomas Rickman (a notable champion of Gothic and the designer of the new court at St. John's College, Cambridge) in the Fitzwilliam Museum Competition of 1834.

Fitzwilliam Museum

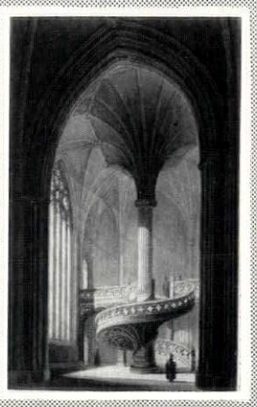


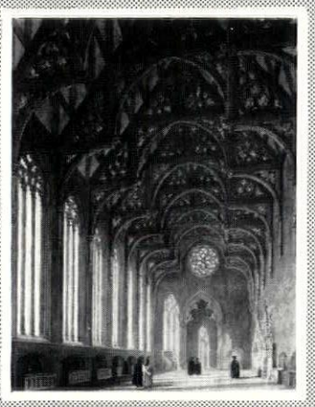




design 1







design 2





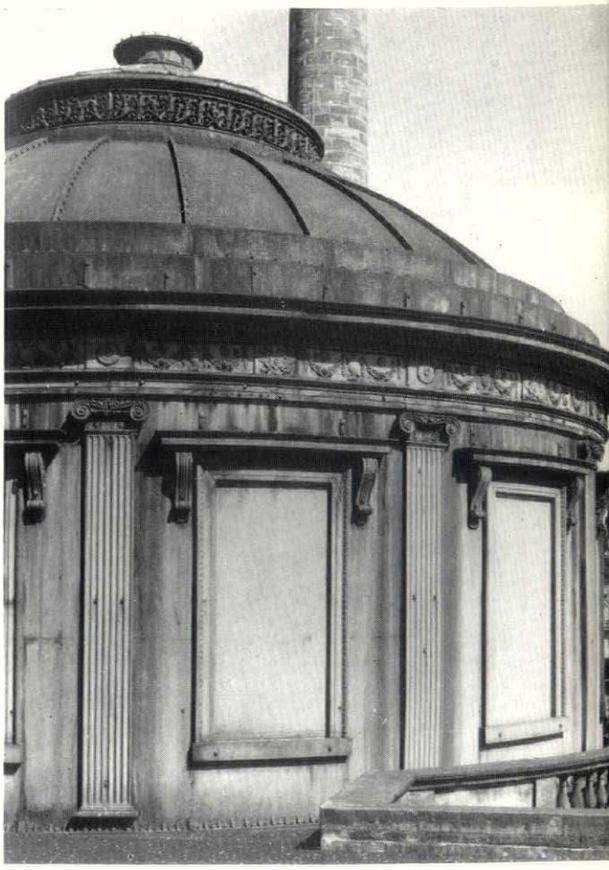
design 3

It is doubtful if Rickman—then elderly and often ill—made the drawings himself; he was never much of a draughtsman and his office was well staffed at the time with J. A. Bell, recently returned from Rome, in charge. However, Rickman had no partner in 1834 who could share the credit for these designs; they are certainly his achievement. Baseri's winning design, which stands today, is too much of a success to be regretted; but among his rivals Rickman should be remembered as the author of designs like these rather than the Commissioners' Churches which, unfortunately, formed the bulk of his work. They prove him not only versatile but an architect of imagination.

Ann James

PROPRIETY AT PERTH WATERWORKS

In 1832, *the Perth Water Commissioners were confronted with the curious situation of providing a water supply for the town and, in doing so, of retaining the approval of the townspeople by showing a proper respect for their dead.* Adam Anderson, LL.D., F.R.S.L. and E., Rector of Perth Academy, asked to submit a scheme for the new waterworks, accepted the commission and gave his clients at first, as he called it, 'A plain building.' What transpired is best described by



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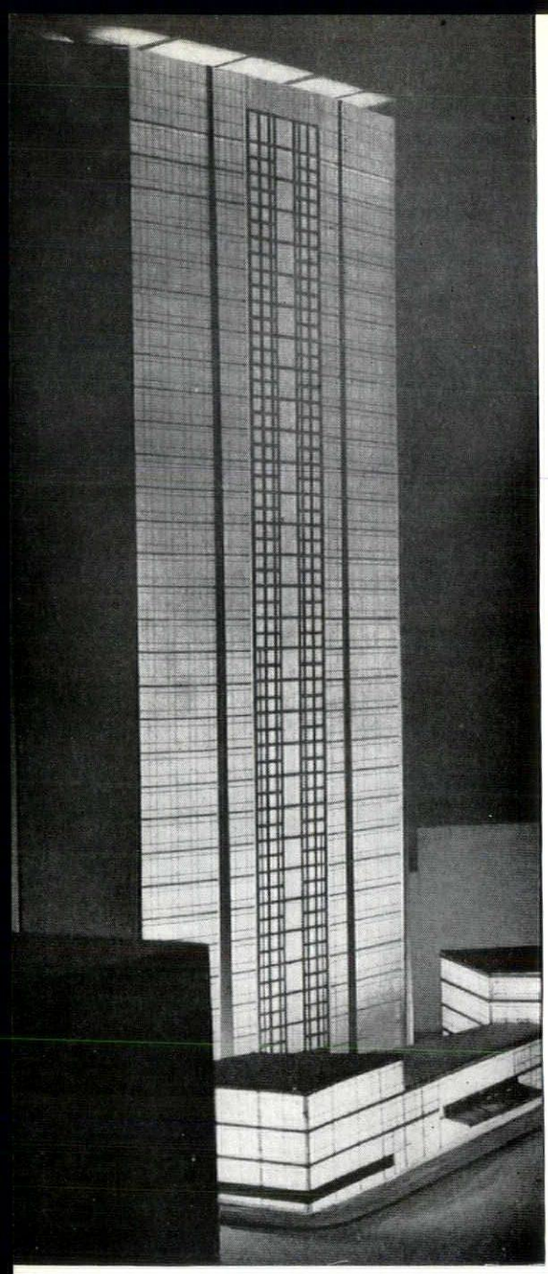

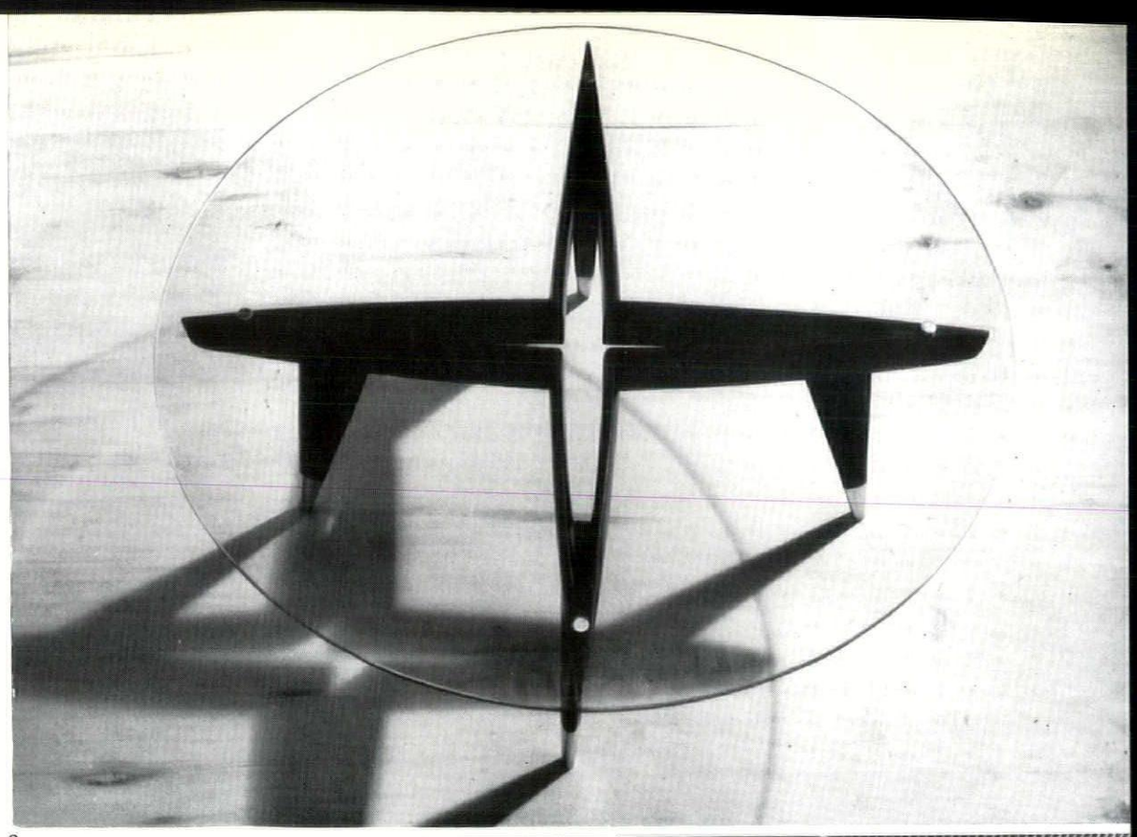

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uomo universale

The enormous range of Gio Ponti, the Italian designer, gives him as much right as any living architect to the title of Universal Man. Here on this page are individual pieces of furniture, a table, 2, *and a chair,* 3, *both very characteristic of his style; furnishings ranging from cutlery,* 4, *to ship interiors,* 5; *and current architectural projects—a house in Caracas,* 6, *and the Pirelli Tower in Milan (in collaboration with Nervi and others), now in its final form,* 7.

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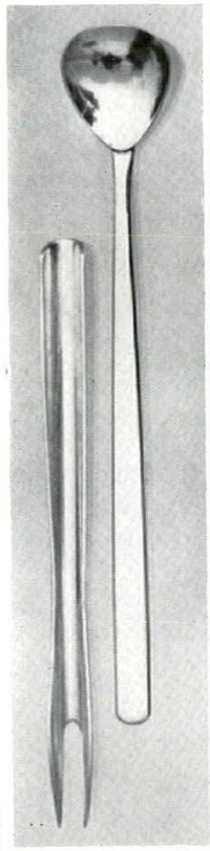

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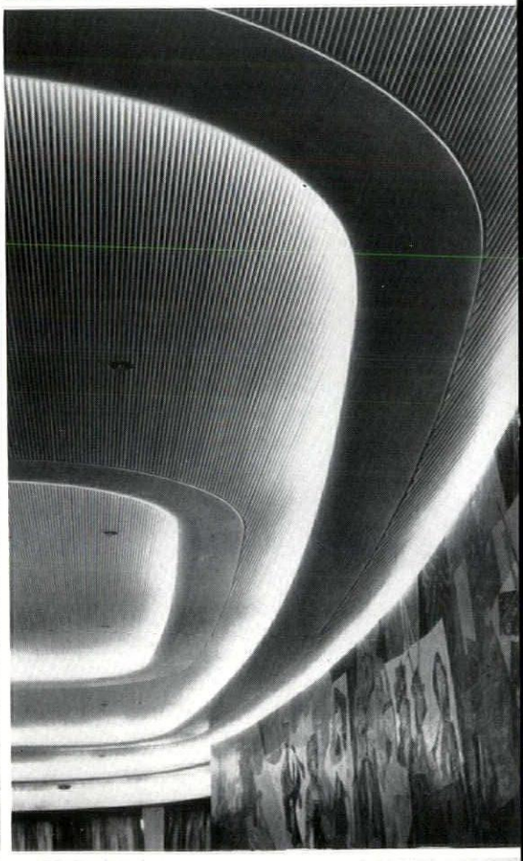

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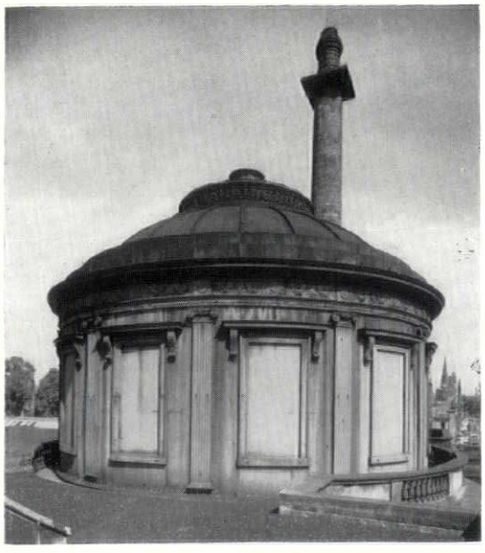
quoting his own 'Report to the Commissioners' dated November 24, 1834:

> 'As the site of the Reservoir was originally proposed to be in one of the Coal Yards, adjoining the Grey Friars Burying Ground, the Masonry for supporting the Tank, as well as the Tank itself, was intended to be of the plainest description; and the requisite plans were accordingly completed, in conformity with that intention. But some scruples having arisen in the public mind respecting the propriety of placing the Receiving Wells so near the mansions of the dead, the Commissioners, with a proper deference to the feelings of Inhabitants, endeavoured to find a less exceptionable situation, and ultimately succeeded in obtaining from the Magistrates, the piece of Ground on which the Reservoir is erected. But as they were of opinion that the more conspicuous situation, in which that structure was now to be placed, demanded a more ornamental style of architecture than the plain building, for the purpose, which I had previously designed and sketched, I furnished a plan of an erection in the Doric order, which was agreed to be adopted. In consequence, however, of this alteration in the architectural character of the edifice for supporting the Tank, it became necessary to adapt the form and ornaments of the Tank itself to the Building of which it was to constitute an essential part; and I accordingly recommended to the Commissioners to construct the Tank with its Dome, of Cast-iron, in the Ionic Order, having the frieze adorned with the City Arms. Of the entire structure I trust I may be permitted to say, that while Utility was the principal object I had in view, in every part of the structure, the ornaments and proportions of the various parts of it will be found to be in strict accordance with the most approved models, in similar erections.'

Thus the Scottish ingrained reverence for burying grounds led to the City of Perth's acquiring an interesting and unusual group of buildings for its waterworks. The main part consists of a pilastered rotunda built of ashlar and surmounted by a richly ornamented drum and dome, 1 and 2. That the superstructure which formed the reservoir is constructed of cast iron is not readily detected at street level, so delicate is the detailing of the work. Of the rotunda, and in particular, of the



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cistern which measures 42 feet in diameter and 31½ feet from the floor to the top of the dome, Dr. Anderson writes:

> 'The immense weight which the edifice for supporting the cistern was designed to bear, amounting upwards to 900 tons; and the great height to which the Chimney of the Engine House required to be carried [110 feet] rendered it absolutely necessary to secure both from the risk of the slightest yielding of the masonry; and I have now much satisfaction in reporting that from the precautions that were employed, to obtain a proper foundation, in neither of these Buildings has the slightest crack or flaw been hitherto perceived . . . . With regard to the Cast Iron Cistern, it may be sufficient to state that the structure, is, in every respect conformable to the specifications; and, that in point of workmanship, and the execution of the architectural ornaments, it is not surpassed by any thing of a similar nature in this country. The style in which it has been finished, is highly creditable to the Dundee Foundry Co., and more especially to Mr. Stirling, their Manager, to whose ingenuity and professional skill, I have much pleasure in bearing my humble testimony.'

Dr. Anderson's pride in his work was justified, as the buildings, though slightly altered, are still in use to-day. After 1862, when a new reservoir was constructed on more elevated ground to the west of the city, the internal masonry of the Rotunda or 'Round House' was removed along with the cistern floor, and the space thus provided, became part of the Pump Room.

'*Aquam Igne et Aqua Haurio.*' Such was the proud statement incised on the Rotunda in 1832. There is every reason to believe that the Council of the City of Perth will take steps to ensure that its veracity will endure. Situated, as the waterworks are, on a commanding site on the banks of the River Tay, overlooking the South Inch, one of the City's several extensive public open spaces, they are a gracious reminder of how a past age tried to solve the ever-present problem of amenity and function.

R. J. and A. S. Naismith

DESIGNER

UOMO UNIVERSALE

The current exhibition of work by Gio Ponti at Liberty's emphasises the unusually wide scope of his practice as a designer. While many architects feel that they could design almost anything if they were given a chance, Ponti has, in fact, designed almost everything that can be drawn out on paper in plan, section and elevation, and—in addition—is also directing editor of *Domus*. His pre-war reputation depended on such works in architecture as his famous Montecatini building in Milan, 1, but after the war, in the period when the Anglo-Saxon world was beginning to rediscover Italian Modern, he featured, with Carlo Mollino, as one of the stars of the new Italian furniture, with its curved and tapered forms, its brass-ferruled legs, 2, or with bold, exaggerated polygonal forms, and equally bold patterns, 3. His other work in furnishing ranges—in scale, not quality—down to cutlery, 4, and up to large-scale interiors for ships such as the



1

Giulio Cesare, 5. Nevertheless his architectural career continues, and among projects he has currently in hand are a house in Caracas, 6, which exemplifies his present tendency toward semi-regular polygonal plans and canted walls, and the Pirelli office block in Milan, 7, a design that is now undergoing extensive revision. Such extreme generalization in design, though it fulfils widely-held Modern Movement tenets against specialization, is unequalled at present outside the work of Alvar Aalto, but Ponti, of course, inherits a native Italian tradition of the *Uomo Universale*, the designer whose talent embraces all branches of design. **Q.S.C.**

COUNTER-ATTACK

Ever since the publication of Outrage there has been a steady flow of letters asking for help. This year, after Counter Attack had proved that there were solutions to what people often wrote off as insoluble, the flow is getting to be a torrent. The REVIEW can no longer simply reply with encouraging words and nothing else, and is therefore publishing in Miscellany the most urgent and distressing of these cases as news items. They show that outrage is continuing unabated, despite attempts to pooh-pooh the whole idea by those most concerned; but public opinion has now reached boiling-point, and few outragers can now hope to get away scot-free. In each case we are publishing constructive suggestions together with details of the outrage; and some of the

items are not outrages at all but ideas called up by reports of future development while there is still time to influence it. We will also include examples of planning ideas from home and abroad, and examples of good planning or of outrages combated.

1. Uxbridge Market Hall, Middlesex. The Borough Council propose demolishing the late eighteenth-century market hall—jammed up in front of the church on a unique island site in the middle of the town—to 'widen the footpath and lay out the remainder as an ornamental garden.' This is absurd—the copybook case of a projected town improvement putting an end to the town centre. What Uxbridge needs is not less market space but more (other suburban market stalls, like Kingston, do a roaring trade) and a scheme for this will be given in a later issue of the REVIEW. But in any case the market hall must be preserved.

2. Kew Green, Surrey. Concrete lamp standards are replacing the Victorian standards on Kew Green: the photograph, 1, shows the very moment of outrage. Why? There is no through traffic here, and the old standards could be converted to fluorescent lighting if need be. At Strand-on-the Green, Chiswick, this has just been done; conversion costs £18, new lamps cost £22. Is it just another case of slavish adherence to the book of rules?—with nobody having the elementary common sense to see that Kew Green is worth more to the borough (Richmond) than bureaucratic accuracy.



1

3. Edmondbyers, Co. Durham. Sunderland and S. Shields Water Company are said to have rejected the county planner's suggestion that a landscape consultant be used for the proposed reservoir between Edmondbyers and Blanchland. The area is both beautiful in itself and a vital breathing space for Tyneside. It could be enhanced by a well landscaped reservoir: but it could be ruined by a cumbersome Leviathan with imported municipal detailing.

4. Penrith, Cumberland. This is a photograph of a newly completed U.D.C. housing estate on a hilltop site near the town, 2. It is hideous, and hideously visible from the town itself



2



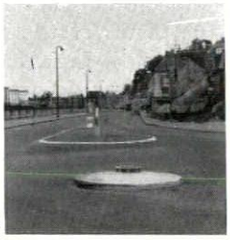
3

and from the countryside around. A close up, 3, shows the appalling frame two of the houses make for an existing Gothick farmhouse, Scaws farm. There are far better estates near at hand at Ambleside or in the North Riding. Why wasn't their example followed?

5. Portsmouth, Hants. The City Council propose big boundary extensions, including 1,750 acres of unspoilt countryside around Droxford. This can only be for housing—there is no sense in taking over the land otherwise—so it looks as though Portsmouth doesn't believe in Green Belts. That is evident from the quality of the post-war housing, lapping the south slopes of Portsdown like a weary flood, and the decentralization beyond Havant, with the resulting traffic congestion along the one road back into Portsmouth. Portsdown is a natural boundary which is still intact north-west of Portsmouth and which must not be leaped, and the way out of Portsmouth's difficulties—if they are really genuine—is through the Town Development Act. The boundary proposals are still tentative and are to come before the Boundaries Commission, but now is the time to protest.

6. Whitehall S.W.1. A recent Ministry of Housing circular urges the retention and re-use of temporary prefabs, saying complacently that 'most of them can continue to provide very useful accommodation for a good many years.' This, of course, breaks the promise that they were to last for ten years only, but what is worse is the way in which the Ministry is drifting along where it ought to lead. Obviously some prefabs will have to stay until permanent houses are built, but the proper attitude is to acknowledge the fact with regret, not to welcome it—and then to give as many examples as possible of what can be done with prefabs (as at Canterbury, for example) by colour washing and landscaping. To approve of their re-use is just adding one more straw to the load on the backs of the long-suffering local planners; in fact counties which are prepared to do some real planning, like Kent, have already officially discouraged this. The relevant phrase in the Ministry circular, saying 'with care in grouping and layout, there will be many sites where no objection need be taken to these houses,' could well be an epitaph for all the countryside lost since the war through lack of visual thinking.

Planners' Casebook: Pontoise, Ile-de-France. A new roundabout, made up of a winking light set flush with the ground, 4. It has obvious applications where the traffic is light or has been pre-directed already; the English solution is usually a tiny island and four Keep Lefts, shoulder to shoulder.



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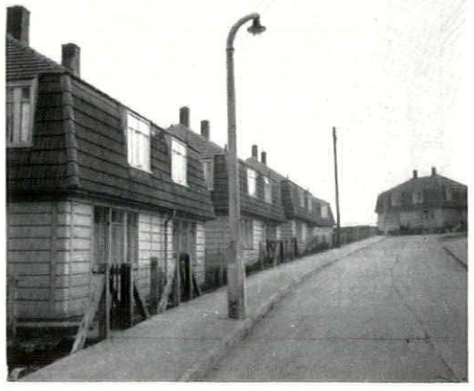
PRINCETOWN HOUSING

In some cases the genius loci *is a matter for argument: in others there may only be one type of solution for a given bit of 'development' if it isn't to make nonsense of the site.* The clearest case of this is building in a wild area, where one false note will stick in the mind even when it is far out of sight.

That is why the fate of Woodville Terrace at Princetown is so much more than a local affair. The terrace is Dartmoor granite, 5, a simple expression of 'wild' in what is one of the wildest places in Britain, with its rough granite-and-slate houses and its shaggy impromptu market place. The Prison Commissioners want to demolish it and leave the site empty, rehousing with Cornish Units behind the street-line behind some ornamental planting. There are already Cornish Units in Princetown, 6, but they are out of sight of the main road and hence don't invade the shape of the village as a whole. The National Parks Commission have agreed to the houses, led astray by promises of shrubs and stone walls, which will only make a bad job look worse: in fact the Prison Commissioners form a Crown department and can



5



6

do what they like—one more example of the absurdity exposed on page 421 of *Counter-Attack*.

What ought to be done? There are two alternatives: conversion, or replacement by a terrace on the street-line. And in this case common sense and common economy dictate conversion. A double Cornish Unit costs about £3,000: half of that spent on each of these terrace houses would build in all the labour-saving devices any housewife could want. If the reason is social, an attempt to soften the grimness for suburb-bred warders and their wives (they come on a three-year rota), then the answer is still conversion; the insides could be done up gaily to become oases of brightness and comfort (and that means bright wallpapers and contemporary furniture, not Civil Service colours and Chairs, Windsor, two dozen).

It is unfair to expect non-Moor people to do a grim job and come home to a grimly primitive house; equally it is absurd to spoil Princetown permanently for the sake of two or three three-year tenants with jobs in a gaol which should have been closed in 1945, and certainly will be as soon as more prisons are built. This compromise could satisfy both: would the Prison Commission consider it? The fate of a very individual part of England is entirely in their hands—wrongly, as we think: are they prepared to give it a life sentence?

Ian Nairn

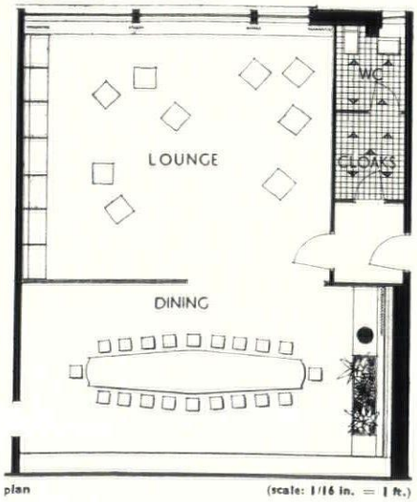
SKILL

A MONTHLY REVIEW
OF BUILDING TECHNIQUES & INDUSTRIAL DESIGN

1 interiors
2 design review
3 techniques
4 the industry



1, *looking up the dining table, which is made of two kinds of mahogany, towards the photo mural of Rievaulx Abbey. The veins of the leaf pattern on the table are picked out in brass.*



plan (scale: 1/16 in. = 1 ft.)

1 INTERIORS

DIRECTORS' DINING ROOM AT LEEDS

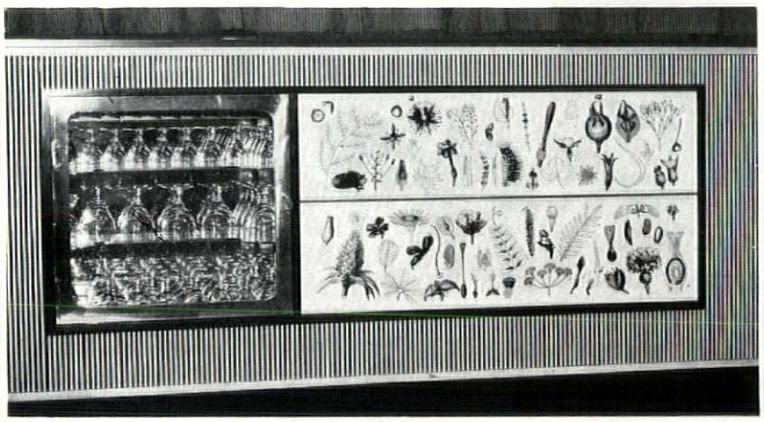
Architect: Derek Walker

A new suite was required at Montague Burton's works at Leeds for the reception of important guests by the board of directors; for the purpose a former staff dining room was entirely reconstructed. The lounge and dining room are parts of one room. All along the window wall of the lounge runs a low unit comprising a cocktail cabinet, two heaters and a glass display case. The window frames are painted white, the curtains are of a heavy wool fabric, striped orange and red, and the pelmet is pierced sheet metal, lit by cold cathode tubes. The wall opposite the entrance is papered (the colours are grey, blue and white) and bench seating runs about half-way along, terminating in a low screen which projects at right angles. The back wall has a storage unit in the centre with areas covered in cedar boarding on either side, in each of which is an illuminated niche, one horizontal and one vertical; in one stands a sculpture of a young girl holding a bird, by Jill

Messenger. The lounge armchairs are covered in citron, black, oatmeal colour and the same orange and red fabric used for the curtains; the dining chairs are mahogany and follow a design by Robin Day. The occasional tables are in jacaranda wood; the circular card-table has a macassar ebony top, inlaid with a pattern in ash, defined by brass, and mild steel legs. The dining table is in two shades of mahogany, dark and light, the long leaf shape down the centre of the top being in the lighter wood, and the veins of the leaf picked out in brass. The leaf motif is expressed more naturalistically in the mural facing the display niches. The tables and most of the other furnishings were designed by the architect.



2



3



4

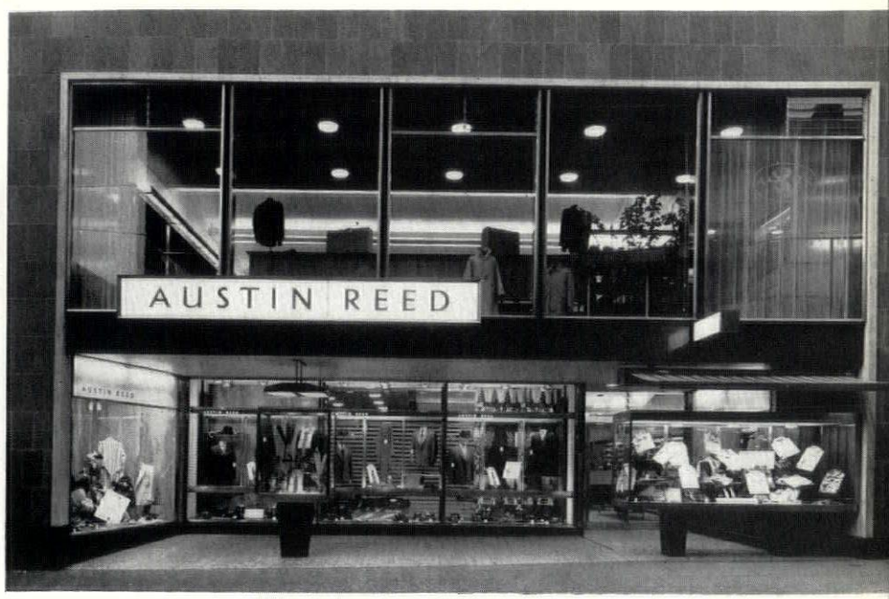


5

DIRECTORS' DINING ROOM AT LEEDS

2, a card table topped mainly with macassar ebony; the star inlay and the edge are in ash, with brass inserts. The carpet is green and black. 3, the cocktail cabinet under the window; the frame to the glazed portion is brass; the casing is white and grey. 4, looking from the window end to the dining space; the low dividing screen is black leather on a metal frame with a brass studded ebony handrail. 5, the dining table; the suspended ceiling in which the lights are fitted is black leather. The lights over the mural are Swedish.





1, 2

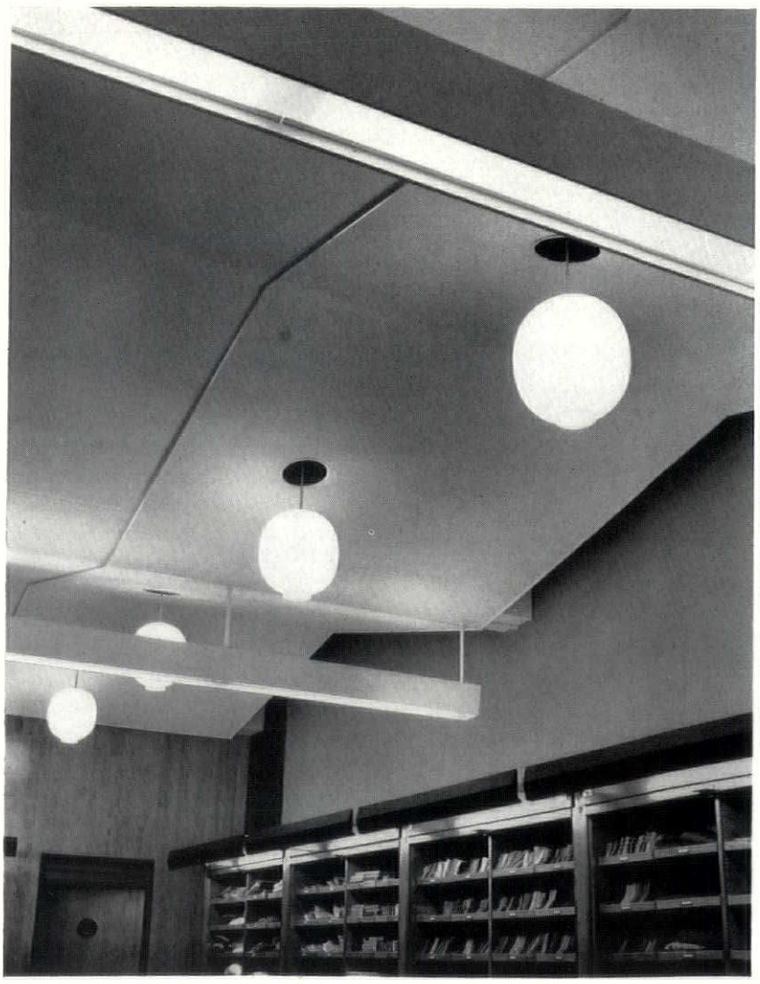
LIVERPOOL 1, *the chromium-plated entrance doors.* 2, *the entrance elevation.*

TAILORS' SHOPS IN LIVERPOOL, NOTTINGHAM AND MANCHESTER

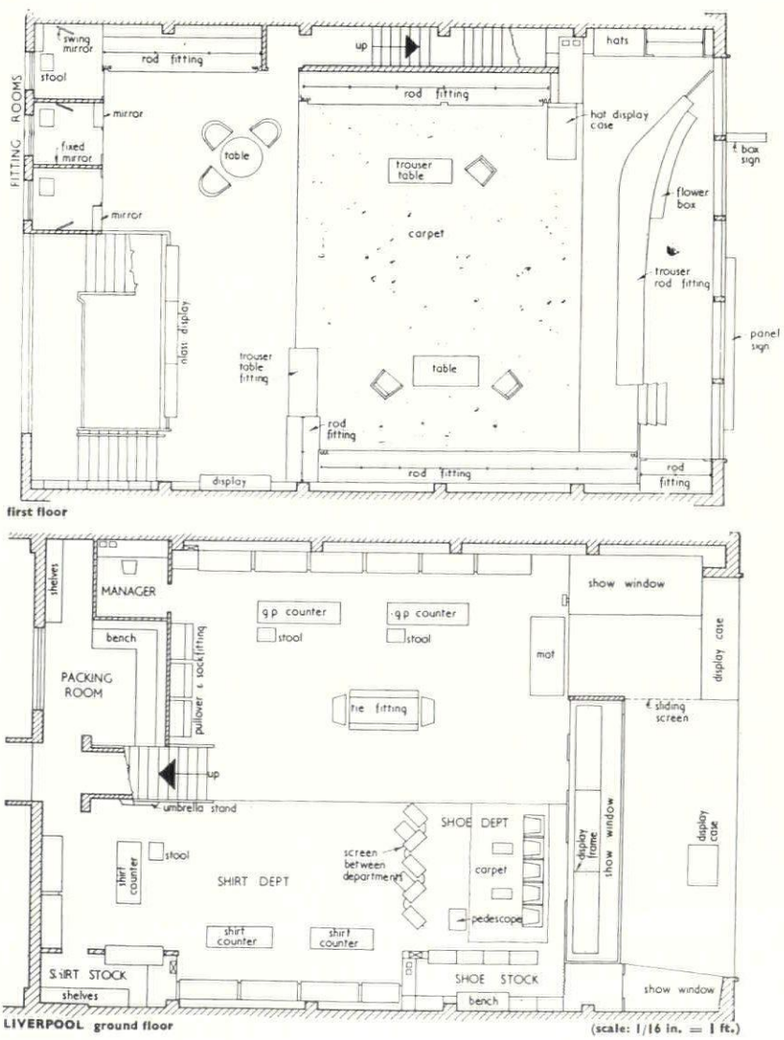
Architects: Westwood Sons & Harrison. Partner in Charge: Norman Westwood. Assistant Architects: (Liverpool): Z. Fleszar; (Nottingham): Peter Watson & Jan Piet; (Manchester): R. Stokes.

The requirements of this kind of tailoring shop are simple: a façade which will not be ignored; good display windows of various sizes and enough floor space inside.

LIVERPOOL The building for Austin Reed's shop in Bold Street, Liverpool, had only just been completed and the façade was very suitable in character; however, the shop front was carried up two floors, an additional large window had to be formed at the rear and modifications made to the existing staircase. The front is recessed to obtain a much greater window length within the street frontage, and two isolated showcases are incorporated for displaying shirts and small articles. A



LIVERPOOL 3, *the ground floor ceiling of ribbed asbestos sheeting, formed to mask projecting beams.*





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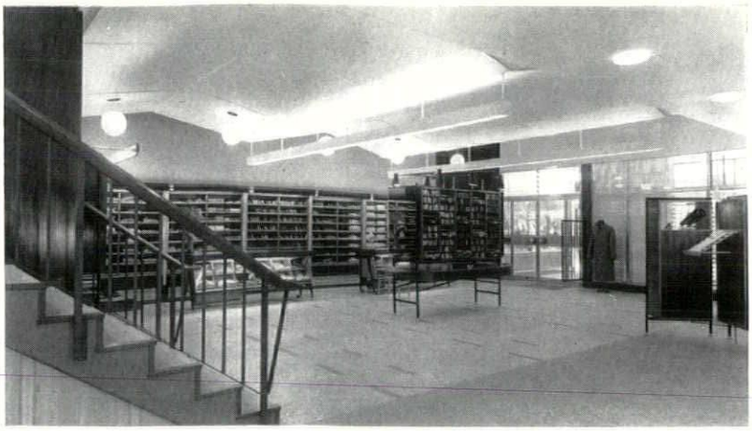

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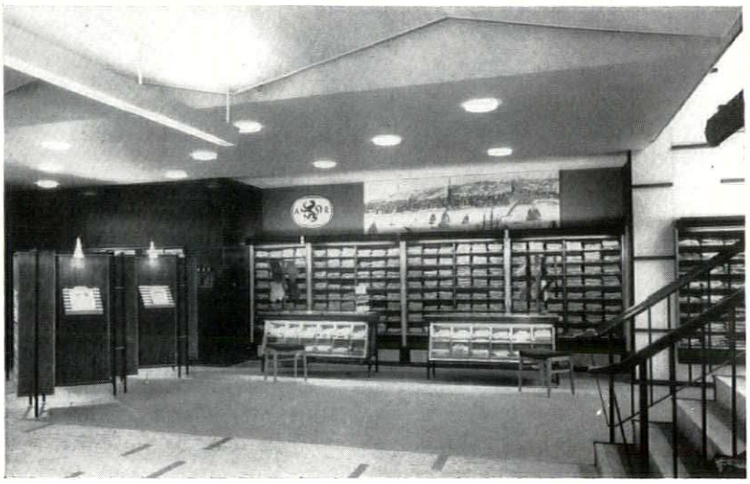


6

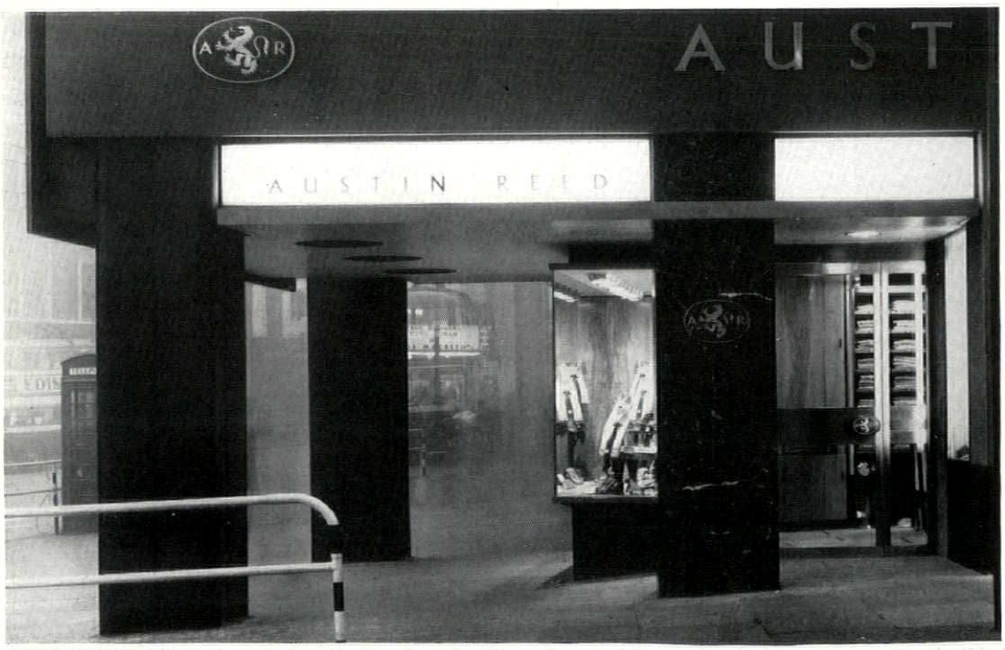
TAILORS' SHOPS IN LIVERPOOL, NOTTINGHAM AND MANCHESTER

LIVERPOOL 4, *the dropped front of the first floor which can be used when required as a show-window.* 5, *the ground floor looking towards the entrance.* 6, *another view of the ground floor, showing the simultaneous division in ceiling types and floor finishes.*

sliding screen which disappears within the double skinned end of the long window cuts off the entrance lobby at night, and does not, when closed, obstruct the view of the windows. The stallriser at the front is black granite and the fascia is serpentine marble. The entrance doors are satin chromium plate, with vitreous enamelled pad handles with dark mahogany backs. Inside, the floor and ceiling are used to emphasize the different sales divisions. The stair is lit by a specially designed pendant fitting; slabs on the staircase wall are finished with spar, and on one wall there is an enlargement of an eighteenth-century engraving of Liverpool.

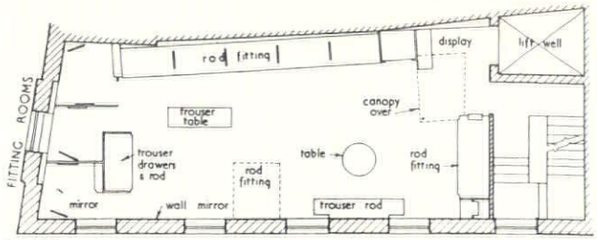
One half of the landing and the right-hand upper flight of the staircase have been re-used—the landing as a gallery for window display fittings, etc.; the space originally occupied by the upper flight of stairs and half the stairwell has been added to the area of the first floor. A large window, mostly of glass bricks (used for their insulating qualities), lights the back of the shop. At the front of the first floor the floor level is dropped and large plate glass windows run from floor to ceiling; the dropped area can be used as an extra show window.

The fittings and panelling of both floors are generally constructed with block board or ply veneered with mahogany, wych elm, rosewood or yew. The floor finishes on the ground floor are unstopped travertine with Westmorland green slate insets to the right of the entrance, and maize marble korkoid to the left; on the first floor there is korkoid and a grey worsted carpet with yellow and blue spots. The ceilings are of ribbed asbestos sheeting in saw-tooth form with aluminium edges, masking the projecting beams, and light from continuous troughs below emphasizes the ribbing. All these portions of the ceiling are painted white, and only the flat portions of the ceiling are painted blue; in these flat portions, the light fittings are recessed to give a limited spill of light on to the ceiling. All heating is electrical: tubular heaters are placed below the ground floor wall fittings and thermostat heaters are built in elsewhere. The front of the ground floor is part heated by a fan-operated convector.

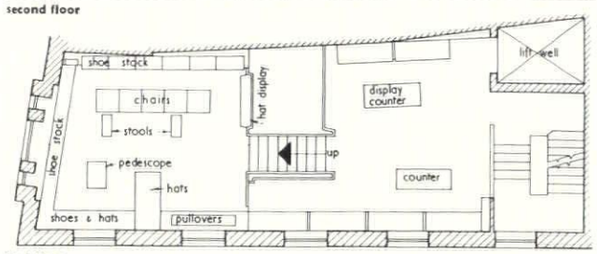


NOTTINGHAM 7, *the exterior: the two free-standing columns, left, are faced with terrazzo units; the third with Rosso Levanto marble.*

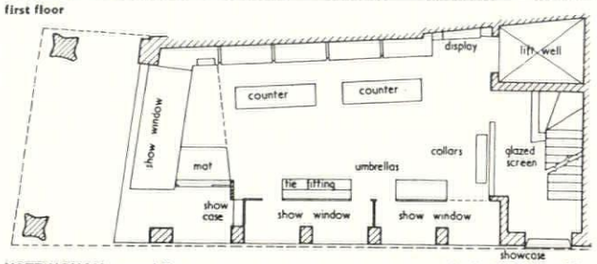
NOTTINGHAM The Nottingham premises (completed before those at Liverpool) occupy a corner site overlooking the Market Square. Austin Reed required a new shop front and the second floor (not before used as a showroom), the first and the ground floors completely rearranged. The



second floor



first floor



NOTTINGHAM ground floor (scale: 1/16 in. = 1 ft.)



8

TAILORS' SHOPS IN LIVERPOOL, NOTTINGHAM AND MANCHESTER

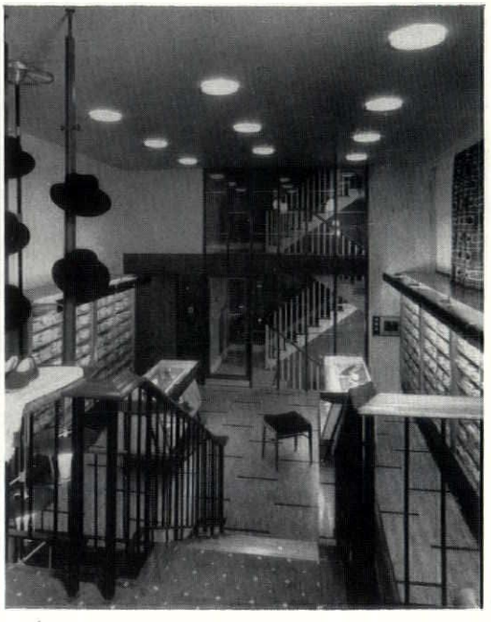
NOTTINGHAM 8, *the pendant light fitting which hangs down the well created by the change in level on the first floor; it is stove enamelled matt black, the supports are polished lacquered brass. Below:* 9, *on the first floor, looking from the main staircase across the well to the shoe and hat department;* 10, *from the same to the staircase.*

third floor converted into a cash office, canteen, manager's office and stock room, etc., and the basement was to remain a stock room. To use the second floor a passenger lift was installed and a completely new staircase constructed within a fire-resisting glazed screen. As the ground floor is very small a well was formed in the first floor to link the two floors; the rear part of the first floor was lowered 4 ft. to make a small well more effective, and as at Liverpool, a special light cluster was hung down the well.

The main features of the entrance exterior are two free standing columns faced with black terrazzo units and one faced in Rosso Levanto marble, with the firm's monogram sand-blasted into it and gilded. The fascia is mahogany veneered, edged with bronze and the illuminated name panels are plyglass with the name in black enamel. The counters have slanting legs of stove enamelled mild steel with brass adjustable feet; the collar boxes have formica fronts with pictures of sporting dogs impregnated on to them. The wall above the entrance door is completely covered by a photo-enlarged eighteenth-century print of Nottingham and the panelling at this end is wych elm. The unpanelled walls here and on the first floor are white and the ceilings saxe blue.

MANCHESTER The shop in Exchange Street, Manchester, the last completed of the three, occupies a large first floor and a small ground floor; hence the placing of the stairwell was a crucial factor in the design. The entrance door and display unit to the left of it are the same as at Liverpool: the ribbed panelling in the interior is also as used at Liverpool. The ground floor finish is travertine and Westmorland slate; the stairs are finished in terrazzo; the balustrade is rosewood and brass. The shop is briefly illustrated on page 280.





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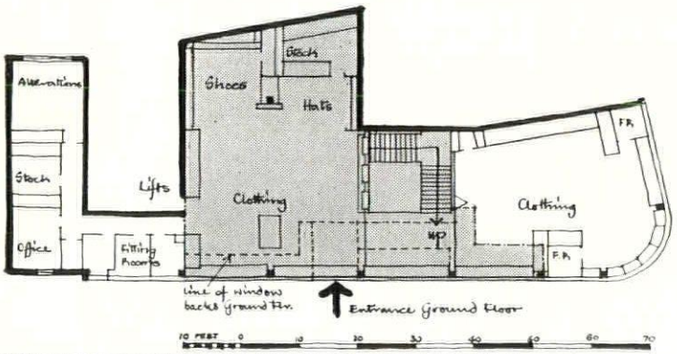
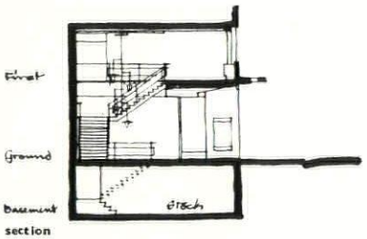


MANCHESTER plan of first floor (shaded area indicates extent of ground floor)



section

MANCHESTER 11, *first floor looking across stairwell. The continuous light fitting is seen, right, running the full length of the floor. The ceiling is fibrous plaster; the pendant light fitting is the same as those used for the stairwells at Liverpool and Nottingham.* 12, *the stairwell; the wall covering is a German washable plastic, in green, beige and black, framed in mahogany.*



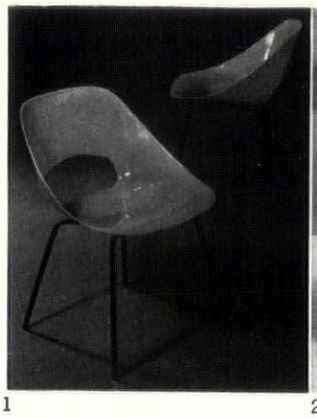
12

2 DESIGN REVIEW

NEW SEATING FASHIONS IN PARIS

by Robert Browning

French taste in furnishings and interiors is notoriously conservative—or, rather, has been conservative, for there are signs now of a growing revolution in the influential sectors of popular taste, just as there was a revolution in similar sectors of opinion in England between Britain Can Make It *and the* Festival. *However, the swing in French taste cannot be dated by officially-sponsored exhibitions, but rather by the entry of foreign commercial enterprises into the French furniture market.* One of the first noted events in the Paris furniture revolution was the opening in the Rue de L'Abbaye, Saint Germain-des-Près, of a very small showroom by Knoll International. From this beginning good contemporary furniture design has caught on surprisingly with the general public and at the last 'Salon des Arts Ménagers' (the French Ideal Home Exhibition), the furniture section reflected how far the mode had progressed, despite many corruptions and misused clichés. Texture and colour are now replacing the 'Borax' ornaments and gilt trimmings which were the stock-in-trade of the immediate post-



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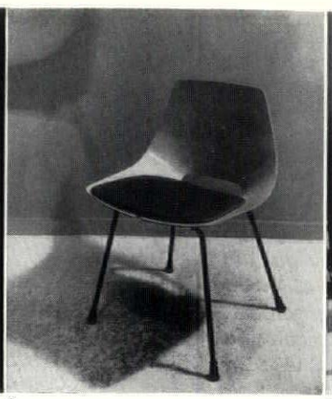

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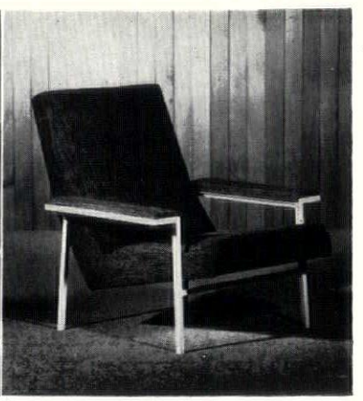

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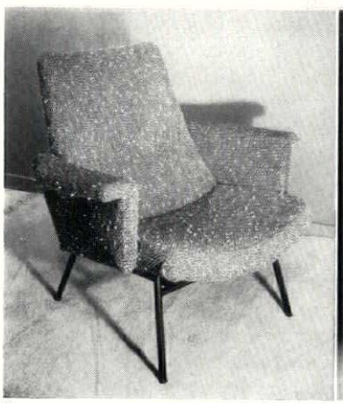
By Steiner: 1, *chair 'Tulipe'; seat of moulded stratified polyester fibre, legs black satin-finished m/s tube.* 2, *'T.C.'; seat moulded silver birch, legs as* 1. 3, 4, *foam rubber cushions on cloth-covered springs, square section metal frame and legs.* 5, *upholstered dunlopillo on steel frame. Arflex chairs:* 6, *'Delfino,' designer E. Carboni.* 7, *'Lady,' designer Zanuso.* 8, *'Elettra' I & II, designers Belgioioso, Peressutti and Rogers. Knoll chairs:* 9, *dining and* 10, *armchairs; welded metal frames and detachable legs satin-finished black or white, with or without foam rubber overlay upholstered in woven or linen materials.*

new seating fashions in Paris



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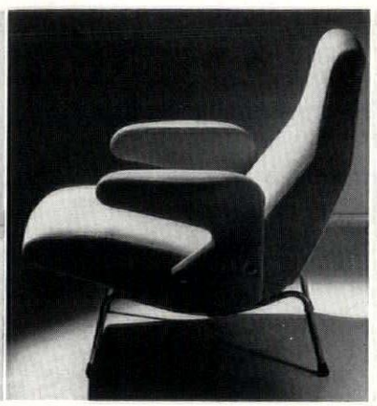

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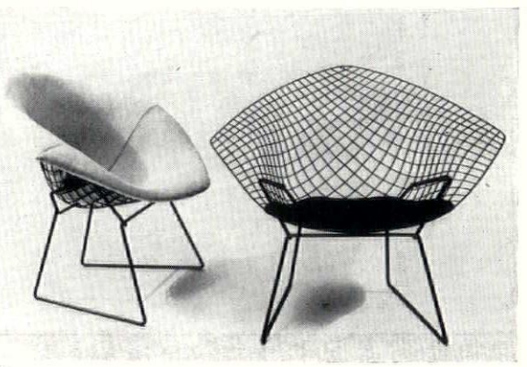


10

war French modern rococo furniture designers. Ornate drawer pulls and cupboard handles have been replaced by simple D handles, and legs have become practically standardized round or square-section metal, usually painted black. Only television and radio cabinets seem to have been left untouched by the contemporary designers.

In 1955 the big store 'Au Printemps' ran a large and well presented exhibition of Knoll furniture, and since then have kept the Knoll range on permanent display, **9, 10.** Last year 'Au Printemps' had another special exhibition, devoted to modern seating. The influence of Knoll's designers, Kurt Norstrom, Saarinen and Bertoia, was to be seen everywhere, but somehow the imitations were not up to the standard of design of the originals. It seemed that most of the chairs were designed by the very same people who were guilty of creating the last decade's over-ornamented monstrosities. One notable exception was a group of chairs designed by Steiner, who has produced some straightforward moulded plastic seats with metal legs, **1, 2,** and comfortable, upholstered armchairs in simple textured hardwearing materials, **3, 4, 5.**

Another exhibition of chairs being put on the French market was held last summer by Arflex-France, sister company to Arflex-Milano. Though most of these chairs have been on the market for some time in Italy, in Paris they are being received as something really new and exciting. A point stressed by the organizers of this exhibition was that all the chairs were designed by *architects*, and one wonders what would happen if a British firm of furniture manufacturers commissioned a dozen well-known British architects to create a range of furniture to fulfil all their needs.

The chairs on view were designed by the following architects, F. Albini, L. Belgioioso, G. Calza Bini, E. Carboni, G. De Carlo, R. Menghi, C. Pagani, E. Peressutti, E. Rogers, M. Zanuso, most of whom are better known for their architecture than for their furniture. One felt immediately that each chair had been carefully studied from both structural and aesthetic points of view. In addition they all had the appearance of being as comfortable as they really were; this is often a deceptive point with contemporary seating.

Particularly interesting were the armchair 'Delfino' by Carboni, **6,** upholstered in foam rubber, the armchair 'Lady' by Zanuso, **7,** and the office chairs 'Elettra 1 and 2, **8,** and 'Urania' by Belgioioso, Peressutti and Rogers. The latter seemed the right sort of furniture to go with Olivetti typewriters.

A practical feature of this range of furniture is the ease with which the upholstery covers can be removed, either for cleaning or renewal. All cushion covers had concealed zip-fasteners at the back, and the arm and back covers were invisibly hooked to the underside of the seats. The materials used were plain, unpatterned felts, nylons and tweeds in bright chromatic colours. Checks are also available but were not on show. The general standard of finishes for details such as metal legs was excellent; even the packing cases for these chairs have been carefully studied. Based on their experience of this furniture in Italy, Arflex give a 10 years' guarantee with every model. Their prices, £45, approximately, for the model 'Delfino' and £12, approximately, for the 'Elettra 1,' are high but compare favourably with similar quality furniture on the French market. It is high time that an enterprising British furniture manufacturer entered the international field with the right models. At the moment one can buy well designed Scandinavian, German, American, Italian and home produced French furniture in the Paris shops, but no British.

ADJUSTABLE ELECTRIC WALL FIRE

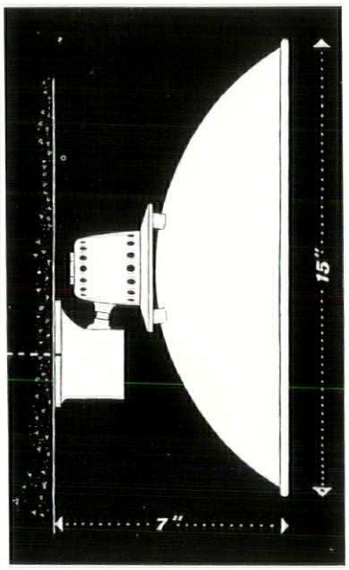
by John Carr

It is strange that up to now industrial designers have failed to produce more than one or two electric fires which could be said to make an honest visual contribution to interior design. Whilst there seems to be no good reason why the electric fire should not contribute in its own individual way, even as the traditional coal fire has done, this has not happened so far.

At present the fires available on the market fall into two categories; the portable which can be kicked around the floor as required, or the fixed type which is positioned on the main wall, usually in an existing fireplace opening as the focal point of the room in imitation of a coal fire. From a practical aspect the former is a source of danger due to trailing flex and the ease with which you can knock it over or stand too close, especially when it is in an unfamiliar position. The latter, whilst obviating these risks has the disadvantage of providing heat from one direction only whilst being visually only a poor substitute for the open fire. This surely suggests it is time we started using electric fires in a freer manner even as we do electric light fittings (we no longer think in terms of the light in the centre of the room); by making the fires adjustable in direction of heat throw and fixing them on walls where convenient. However, this approach does require a rethinking of the form the fitting will take for the traditional rectangular shape of most fires is too directional for free use in the room.

In this connection the appearance of the new fitting illustrated here (and on the cover), which was specially designed for use in the offices of THE ARCHITECTURAL REVIEW by Kenneth Browne, A.R.I.B.A., is of particular interest. It is essentially a high level wall fire which can be tilted by slight hand pressure on the rim (this does not burn the hand) to point in any direction desired and it was decided evidently that a circular shape was the most satisfactory for such flexible use. By keeping the reflector shallow, with slight projection from the wall, a feeling of extreme lightness has been obtained and there is no doubt that this fire, especially when lit, does make a very definite contribution to interior design and is an honest expression of an electric fire as opposed to any other type. (Several could be used at a time.) It is finished in chromium for maximum reflection and is protected by an expanded metal safety guard which, instead of looking like an afterthought, is an essential part of the design. A flat boss conceals the element from direct view and only the reflection in the bowl is seen. It was essential for flexible use that the direction of heat throw should be adjustable and, by means of a special balljoint mounting, which incidentally completely avoids the sagging common to most such joints, the bowl has a range of movement of 30° downwards and 35° to either side. The base fastens direct to a recessed junction box; all wiring is concealed.







[*Note: The fitting was designed in conjunction with Messrs. Allen-Bowden Ltd. and Messrs. H. Frost & Co. Ltd., Walsall, the makers. It is understood the fitting will be in production shortly; enquiries should be made to Messrs. Frost.*]

3 TECHNIQUES

EXTERNAL PAVINGS 2

by Robert Maguire

This is the second of two articles by Robert Maguire on external paving methods and their comparative costs. In the first article the author divided pedestrian pavings into five types—flags, tiles, blocks, in situ and loose materials—and dealt with the first three of these. He continues here with the remainder, and adds some notes on the ways in which the cost of paving is affected by departures from standard practice.*

In Situ Materials

Concrete, asphalt and coated macadam are not materials which immediately bring inspiration. They are three of the cheapest paving materials and because of this have been used wherever low cost has been considered the main criterion; this, unfortunately, means almost everywhere. One immediately thinks of those dreary waste spaces between the blocks of council flats of the inter-war years, and macadam in particular now forms the covering of such large areas of our towns that some relief from it is always welcome.

In the case of concrete, however, the amount of research carried out in the last ten years has produced such good results that in situ concrete paving need no longer be characterless. The others—'black tops'—will continue to be used for pedestrian areas whether we like it or nor, and more widespread knowledge of their possibilities and limitations may help to encourage their better use.

In situ concrete. Any large concrete slab requires dividing up into sections in order to avoid cracking due to thermal movement or uneven subsidence. The simplest (but not in itself the most rewarding) method of relieving concrete paving is to make use of the joints to provide a pattern. The joints will then, of course, be closer together than is really necessary. Wide joints are often made by means of the wooden boards which serve for retaining and levelling the concrete; the boards are removed and the space filled with bitumen emulsion, a weak concrete mix, or sifted soil. Sometimes the boards are left, which is bad practice, as they may rot. This method of making the joints restricts the possibility of using only the joint-pattern to the formation of large-scale units of a simple pattern, unless the cost is much increased.

A product developed for 'reinforcing' concrete industrial floors, 1, shows an interesting approach to the problem of providing joints in concrete, and the same principle might with advantage be taken up by a manufacturer for use in pedestrian paving work. The steel hexagon grille does not in fact reinforce the floor, but provides complete flexibility by pre-cracking. The mesh is rather small (4 in. is the largest) and the amount of steel unnecessarily high for ordinary paving work; a slightly larger hexagon made in lighter gauge metal or plastic would be a valuable addition to paving technique.

A machine has been invented in the United States for *cutting* joints in concrete slabs as soon as the concrete has set. It resembles a large portable circular saw, with a special blade. There is a small number of them in this country, but their use is unlikely to be economical yet except perhaps on large projects.

Changing the colour of alternate slabs is a simple method of patterning areas of in situ concrete, 2. The cheapest way is to use unpigmented concrete in juxtaposition with concrete of one other colour, obtained by mixing in one of the pigments recommended in BS 1014. Care should be taken to specify the exact amount of added pigment, as too much tends to weaken the mix. All the slabs of one colour are cast first, using timber shuttering around the edges; the timber is then removed and the other colour is cast using the first slabs for 'shuttering' and levelling. The joint between the two can be prevented from bonding by either a strip of building paper or by brushing with mould-oil before casting the second series of slabs.

There are two kinds of surface texture which can be applied to in situ concrete paving; mechanical and aggregate textures. A similar distinction was made, in the first article on paving, for the texturing of precast concrete flags, and a number of examples were given of the two types. The same textures cannot all be applied to in situ concrete as many of them are dependent on the flag being cast face down.

* AR, February 1957

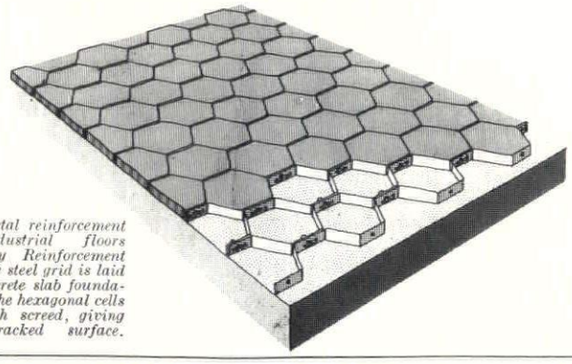
Mechanical textures particularly are very limited; profiled mould linings obviously cannot be used and so the possibilities are restricted to scoring or denting the surface before the concrete has completely set. Lines or shallow V-grooves can be quite easily made but are not particularly effective. A simple device known as a crimping roller, 3, can be used for producing a texture of small pyramidal depressions, 4. It is, unfortunately, only made in this one design and in practice the roller must be used very carefully for the texture not to look a mess. The idea may, nevertheless, have some possibilities as there is obviously much room for improvement in the design of the roller. Another technique which does not seem to have been developed at all is the use of profiled tamping boards. The author has seen a small footbridge (at Salisbury) cast by amateur labour, where this has been used with some success.

Exposed aggregate finishes have been used with great success in paving work as in the cladding of buildings. This is, in fact, the field in which most research work has been carried out. The technique for texturing in situ paving is very similar to that described in the first article for precast flags. Cheap aggregates such as flint ballast, which are normally used throughout the whole slab, are exposed by spraying and brushing soon after the concrete has set. This type of aggregate, however, is not very attractive exposed in large unbroken surfaces, and so it is more rewarding to use a more expensive stone, with a good colour or mixture of colours, applied to the surface and tamped in. The stones are spread over the concrete a few hours after casting—a great deal depends on the efficiency and care of the man with the shovel—and a vibrated tamper should be used, for preference. To obtain an even effect, the paved area should be divided up into manageable sections of a maximum width of ten feet, and the joints between sections accepted as part of the general pattern. An excellent example of the use of this technique is the Market Square and Bus Station at Corby New Town, 6. Here the joints between sections are wide, and paved with precast flags, so that a large-scale pattern results. Some of the flags are of shallow channel section to act as rainwater runaways, and all buried services run beneath the flags to allow access without hacking up the in situ paving.

Large 'aggregates' such as cobbles are not suitable for applying in this way, and must be hand-pressed into a screed as described in the first article. A different effect can be obtained by using a medium-sized aggregate scattered sparsely over the surface and tamped in, 6. Great care has to be taken to get an even distribution.

Research is at the moment being carried out on the spraying of coloured screeds on to concrete slabs, primarily for use on zebra crossings. Boards are laid down to mask out areas of one colour while the other colour is being sprayed; the masking is then put on top of the sprayed areas and the process repeated for the second colour. To be most economical the sections of each colour should be of the same size and shape so that the same masks can be used. The screed should be about 1 in. thick.

Hot asphalt. The type of asphalt used for paving work is mastic asphalt, which is a mixture of very fine aggregate and asphaltic cement. The work is carried out by specialist contractors who have their own specifications for every traffic condition. 'Medium duty' grade should be used for pedestrian paving (see also BSS 1410 and 1076); the material is applied hot and is spread with a hand-float. This is important since it



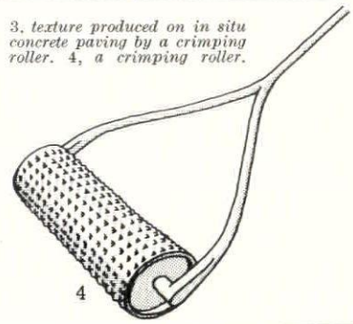
1, Hexmetal reinforcement for industrial floors (Causeway Reinforcement Ltd.). The steel grid is laid on a concrete slab foundation and the hexagonal cells filled with screed, giving a pre-cracked surface.



2, large (9 ft.) squares of in situ concrete at the F.O.B South Bank Exhibition. Alternate squares were coloured red by adding pigment to the concrete. The joints were 1 in. wide and filled with bituminous emulsion.



3

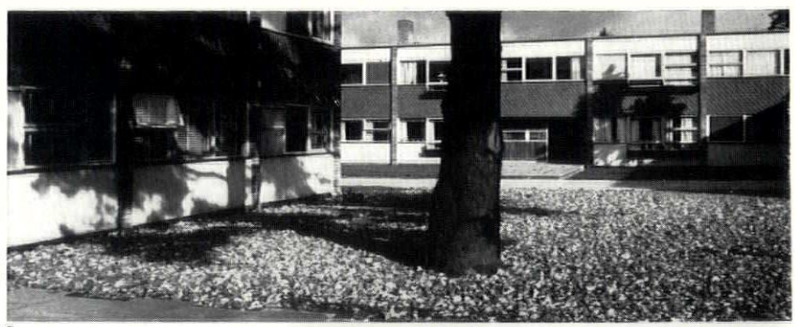


4

3, texture produced on in situ concrete paving by a crimping roller. 4, a crimping roller.



7



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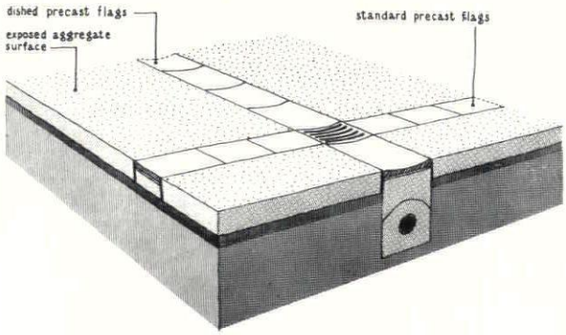
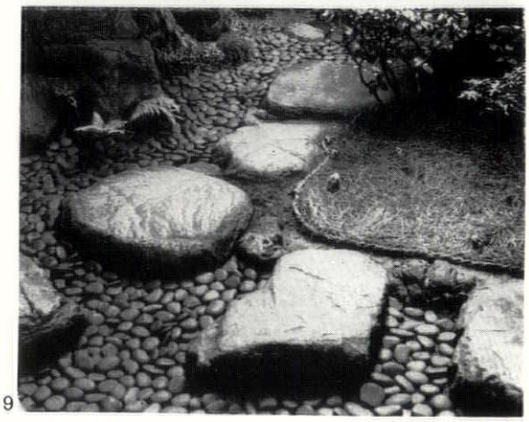


5, section of the Market Square paving at Corby. The in situ concrete slab is 8 in. thick and lightly reinforced; although normally a pedestrian area the Square is used by vehicular traffic on occasions for servicing. The drains and other services are situated below the precast flag dividing strips; some of the latter are of channel section to collect rainwater and direct it to catchpits at the crossings of the dividing strips.



6, in situ concrete paving at Tavistock. A medium-sized aggregate has been scattered sparsely over the surface and tamped in.



9

7, gravel surfacing with precast flag paths at Fountain Court, Temple, London. The gravel is brought right up to the trunks of the trees. 8, loose cobbles providing a hazard at Ham Common; they prevent pedestrians cutting across in front of the living room windows, left (Architect, Eric Lyons). 9, loose cobbles used to fill between stepping-stones in a Japanese garden.

means that hot asphalt, unlike coated macadams which have to be rake-spread and rolled, can be used where considerable butting-up to other paving materials is involved.

Hot asphalt in its natural state is dark grey, but pigments can be added to produce colours; dark red and brown are the only really practicable colours, as the natural blackness of the material is difficult and expensive to overcome. A good solid foundation is necessary for hot asphalt paving, since any subsidence will cause cracking of the asphalt; frost action will then take place and the surface craze and lift. A concrete slab foundation is the best, but on good ground hardcore and ashes, well consolidated with a 2½-ton roller, is quite sufficient. The asphalt itself is laid in one coat about 1 in. thick on concrete, and preferably rather thicker in two coats on hardcore and ashes.

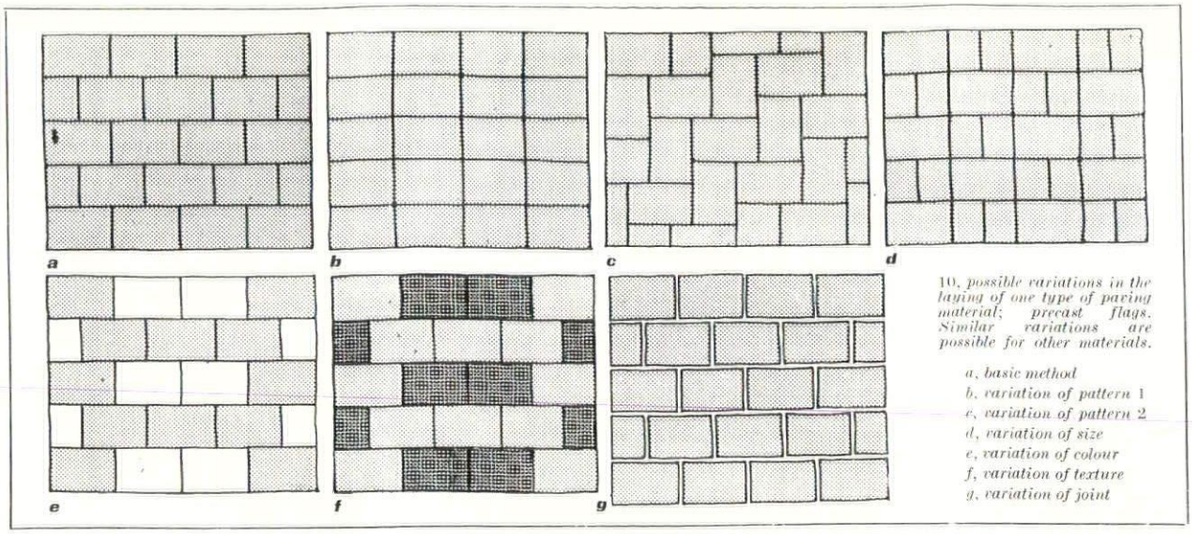
The surface left from the trowel is smooth and slightly slippery in wet weather. A crimping roller, 3, may be used to apply a texture, as for in situ concrete.

Coated macadams. There are three forms of coated macadam; tar macadam (slag or stone aggregate coated with tar, BS 1242), bitumen macadam (similar aggregate coated with bitumen, BS 1621), and 'cold asphalt,' which is really a very fine-textured bitumen macadam, BS 1690. The material is laid in two coats; a 1½ in. thick base course, which may be of either tar or bitumen macadam, and a wearing course, ½ in. to 1 in. thick. The base course is not intended to be impervious, owing to the large size of aggregate used. It is, therefore, essential that the wearing course should be completely impervious, to prevent frost action. For pedestrian paving work the choice is between a fine grade (¼ in. aggregate) bitumen macadam and cold asphalt. The former is more flexible and less likely to crack, but the latter cheap enough to compete in price with hot asphalt. The decision will depend on the condition of the ground and the strength of the foundation.

Coated macadam is applied cold, or slightly heated, and requires rolling with as heavy a roller as the foundation will take. Since the foundation would be rolled with the same roller, usually 2½ tons, this is a fair guarantee against failure. The foundation itself should be of hardcore well rolled and blinded with ashes. The thickness of this will again depend on the condition of the ground; 4 in. is sufficient for good ground and pedestrian traffic. A layer of clinker should be put down first if the subsoil is of clay.

The necessity of rolling restricts the use of this type of paving to large, more or less unbroken areas. Corners, and sometimes edges, cannot be rolled and hand compaction with a punner has to be resorted to. This does not produce adequate compaction and tends also to be expensive.

Bitumen macadam and cold asphalt can be pigmented dark red (a good example is The Mall, Westminster) but this is an expensive process. The colour of the aggregate also affects the appearance once the surface has worn slightly. Lastly, it should be said that cost varies according to the location of the job, areas in which a local aggregate is obtainable being the cheapest. In this respect, London is fairly expensive.



10, possible variations in the laying of one type of paving material; precast flags. Similar variations are possible for other materials.

a, basic method
b, variation of pattern 1
c, variation of pattern 2
d, variation of size
e, variation of colour
f, variation of texture
g, variation of joint

material	finish: colour texture pattern	thickness	sizes	cost of raw material	pattern of laying	foundation type	total cost per yard super
concrete slab	natural grey, tamped	4 in.	6 ft. squares	cement 104s. 6d. per ton sand 24s. 5d. per cu. yard aggregate 23s. 11d. per cu. yard	square grid; 1 in. joints filled with bitumen	hardcore	17s. 5d.
concrete slab	natural grey and pink pigmented, tamped	4 in.	6 ft. squares	cement 104s. 6d. per ton coloured cement 200s. 0d. per ton sand 24s. 5d. per cu. yard aggregate 23s. 11d. per cu. yard	square grid; grey and pink chequerboard	hardcore	16s. 9d.
concrete slab	pink pigmented, textured with crimping roller	4 in.	—	coloured cement 200s. 0d. per ton sand 24s. 5d. per cu. yard aggregate 23s. 11d. per cu. yard	—	hardcore	17s. 10½d.
concrete slab	flint ballast aggregate exposed on surface	4 in.	10 ft. × 15 ft. panels	cement 104s. 6d. per ton sand 24s. 5d. per cu. yard aggregate 23s. 11d. per cu. yard	rectangular grid	hardcore	16s. 5d.
concrete slab	Mountsorrel granite aggregate tamped into surface and exposed	4 in.	10 ft. × 15 ft. panels	cement 104s. 6d. per ton sand 24s. 5d. per cu. yard aggregate 23s. 11d. per cu. yard Mountsorrel granite 45s. 0d. per ton	rectangular grid	hardcore	18s. 5½d.
sprayed concrete screed	natural grey and pink pigmented	1 in.	4 ft. squares	—	square grid; grey and pink chequerboard	4 in. concrete on hardcore	29s. 0d.
hot asphalt, medium duty	black, smooth from hand float	1½ in.	—	—	—	well-consolidated hardcore and ashes	30s. 9d.
hot asphalt, medium duty	black, smooth from hand float	1 in.	—	—	—	4 in. concrete on hardcore	35s. 0d.
hot asphalt, medium duty	red pigmented; smooth from hand float	1 in.	—	—	—	4 in. concrete on hardcore	40s. 3d.
bitumen macadam, two courses	black, fine grade top course, rolled	2½ in.	—	—	—	well-consolidated hardcore and ashes	25s. 6d.
bitumen macadam, two courses	fine grade top course pigmented red; rolled	2½ in.	—	—	—	well-consolidated hardcore and ashes	26s. 9d.
'cold asphalt' on bitumen macadam	black, smooth, rolled	2 in.	—	—	—	well-consolidated hardcore and ashes	23s. 5d.
gravel	1 in. fine grade top layer with shell	total 3 in.	—	gravel (coarse) 27s. 6d. per cu. yard gravel (fine) 43s. 0d. per cu. yard cockleshell 9s. 0d. per cwt.	—	well-consolidoted hardcore	11s. 8d.
cobbles	round, smooth	single layer	3 in.	Essex grey cobbles 120s. 0d. per ton	laid loose on top soil	—	25s. 4d.

Table of comparative costs of various paving materials, methods and patterns of laying, based on quantities of 100 yards super or more, executed as part of a larger building contract in the London area. The prices for raw materials include haulage, which is sometimes considerable. Allowance should be made for this when considering conditions in other areas.

loose materials

Gravel. The choice of gravel as a paving material should depend a great deal on the particular character required; perhaps more so than with most other pavings. It almost invariably produces the character associated with precincts, 7, rural market-places or village greens; it is, in fact, particularly suitable for providing hard ground around trees in places where grass is unsuitable owing to heavy pedestrian traffic. It may be taken right up to the trunks since it allows the roots to 'breathe.'

The success of a gravel surface depends on adequate heavy rolling at all stages of the work. A foundation of sound hardcore or large clinker is required, rolled to a finished thickness of 4 in. Next a layer of large gravel (2 in. screen) is laid and rolled to 2 in. thick, and the surface finished with fine gravel with sufficient hoggin for binding, again rolled to 1 in. thickness, with fine grit or shell spread over it, rolled once more. It will be seen that a simple edge layout with a minimum of corners is essential in view of all this rolling.

On no account should gravel surfacing be regarded as something to be done 'on the cheap'; although not intrinsically expensive, it must be done thoroughly, otherwise a mud-patch will result.

Cobbles. Large cobbles laid loose on the surface of the ground are useful as a hazard rather than as a normal paving, 8 and 9. Otherwise they should be bedded in a screed as described in the first article. If seat-

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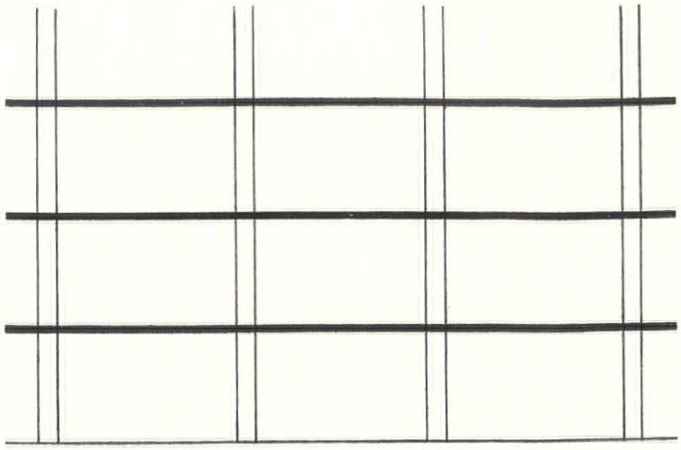

Structure q.p.

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tered fairly thinly, i.e., a layer one stone thick, grass will probably grow between the cobbles; the ground may even be specially seeded to encourage this, so that a 'hard grass' effect is obtained; it will still be difficult to walk on.

the effects on cost of variations in laying

These articles have dealt so far with each type of paving material considered on its own. Quite often it is desired to use a material in a slightly different way than is usual, or to mix two or more materials. The comparative prices given here in the tables do not take this into account, and have to be adjusted according to the complexity of the variation.

There are several ways in which the laying of even a standard unit may be varied. The illustrations, 10, show these in the case of precast concrete flags. Similar examples can be thought of for other materials.

Basic method. The way in which the material is laid when no extra factors are involved may be called the basic method. In the case of standard precast concrete flags this is in courses with staggered joints; for paving bricks, stretcher bond; for coated macadam, large areas with a simple outline, uncoloured, and so on. It is always bound to be the cheapest method—that is why it has become 'standard practice.'

Variation of pattern. This is the most frequent variation, and one which may have no effect on cost, or a great one. The two factors to be taken into account are setting out and alignment. In laying flags in courses, 10a, no setting out is required, except a straight line to start on and a check every fourth course or so. Similarly the staggered joints in the other direction do not require aligning because slight errors do not notice. A rectangular pattern, 10b, requires little setting out, but careful alignment in both directions is necessary. No extra charge is made for this. But a herringbone pattern, 10c, requires both elaborate setting out and constant checks on alignment, and is likely to increase considerably the cost of laying.

Variation of size. If several different sizes of unit are used, 10d, it is important to make sure that the sizes are either standard (in the case of mass-produced units) or practicable (as, for example, with stone flags). Cutting of units on site is expensive. The example shows two sizes of precast concrete flag, 3 ft. and 1 ft. 6 in. long; both are BS sizes and so the only increase in cost is that caused by the smaller flags being slightly more expensive area for area than the larger. If 2 ft. and 1 ft. units were to be used, the 1 ft. units would have to be cut on site as they are not a standard size.

Variation of colour. The example shown, 10e, would not incur any extra cost (beyond that due to the slightly higher price of the coloured flags) if the coloured units were a standard product. But in the case of, say, coloured hot asphalt, alternate bands of different colours would prevent the material being laid in a 'clean sweep' from one end of the paved area to the other. Work would be interrupted at each change, and a large amount of edging work would be involved where the colours meet. The increase in cost would then be considerable.

Variation of texture. The same applies, with the example shown, 10f, as for variation of colour. An example of where increased cost may be caused by varying a texture is where two different colours of exposed aggregate are required on in situ concrete paving. There would have to be a considerable time-lag between the casting of the two sections of concrete, in order not to get stray aggregate tamped into the wrong section. Whether or not this would increase the cost appreciably would depend on the contractor's site organization.

Variation of joint. The joints between units, or sections, can be emphasized by laying the units wider apart than usual and filling with another material, 10g. This will often increase the cost. If, for example, precast concrete flags were to be laid with 2 in. wide joints filled with sifted earth, the cost of filling would increase the total price; if, on the other hand, the wide joints were grouted up, there would be little difference in cost between this and grouting up narrow joints, which would probably be done in any case.

The examples mentioned here are not, of course, intended to be

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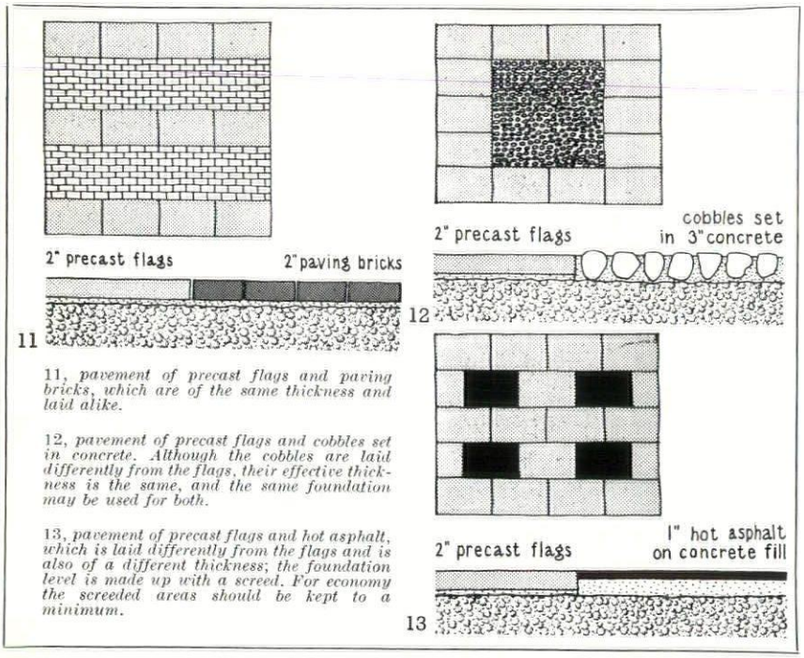
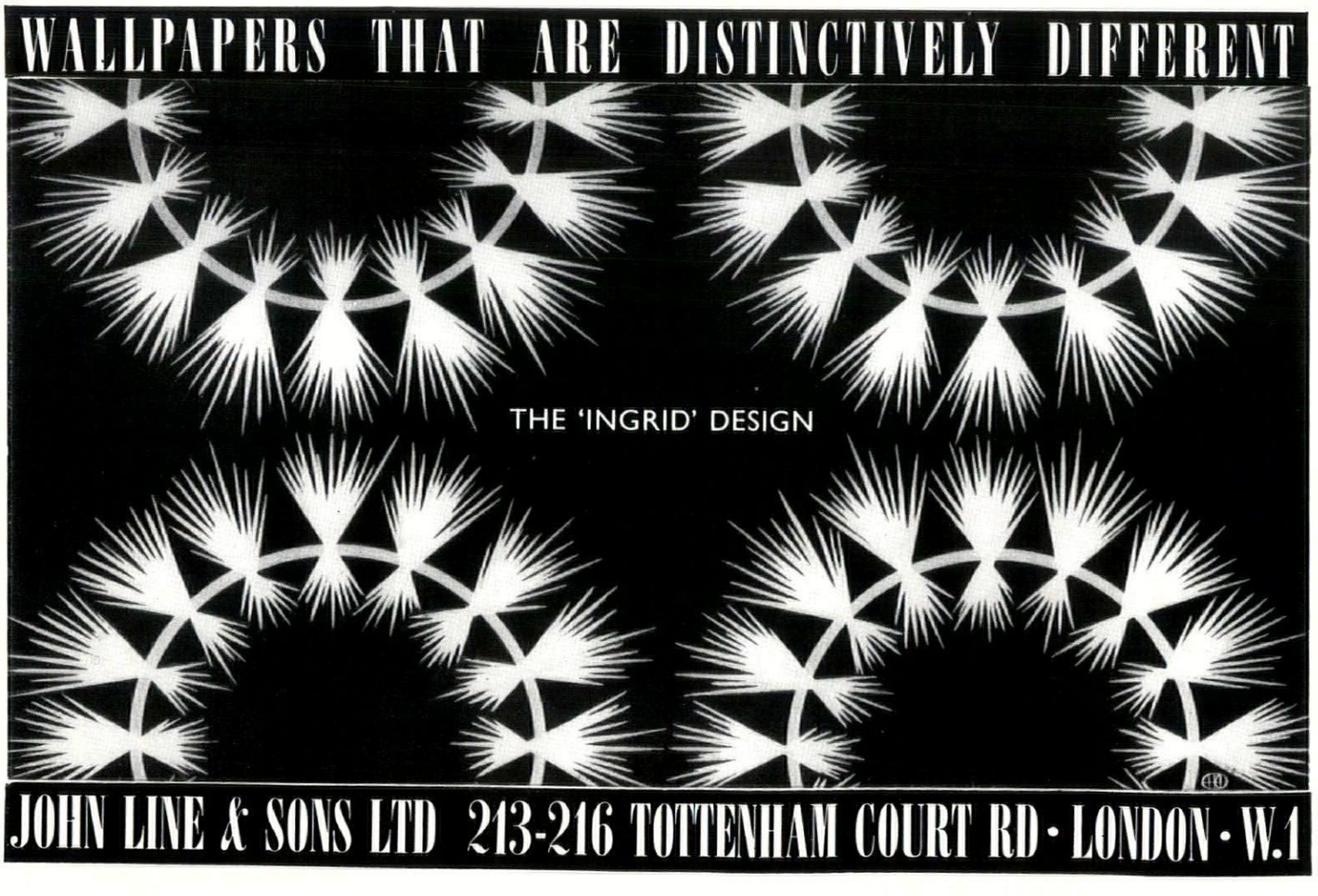


11, *pavement of precast flags and paving bricks, which are of the same thickness and laid alike.*

12, *pavement of precast flags and cobbles set in concrete. Although the cobbles are laid differently from the flags, their effective thickness is the same, and the same foundation may be used for both.*

13, *pavement of precast flags and hot asphalt, which is laid differently from the flags and is also of a different thickness; the foundation level is made up with a screed. For economy the screeded areas should be kept to a minimum.*



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exhaustive, and it is hoped that, by describing techniques on the one hand, and giving examples of typical variations on the other, a greater feeling for the way design decisions influence costs may be encouraged.

the effects on cost of mixing materials

This is a more difficult subject than that of varying the laying of the same material, firstly because the number of combinations is very great and each one is a separate case.

One of the main considerations is the degree of complexity; close and frequent changes from one material to another (even if alternate areas of only two materials) will almost invariably cause the cost to rise. This need not be so, however, if the two materials are of similar natures; that is to say, if they are of approximately the same thickness and laid in the same manner, e.g., 2 in. concrete flags and 2 in. paving bricks, 11.

The thicknesses of adjoining materials, if not laid in the same manner, should preferably be the same. For this purpose the thickness is taken from the top of the foundation to the finished surface; one foundation can then be prepared for the two materials, 12. It is difficult for an extra thickness of hardcore foundation to be compacted in isolated areas here and there. A screed would be used to make up the difference, adding to the cost.

If two materials of unequal thickness are to be used, the thinner material should cover the smaller area if cost is to be kept down, 13.

Some materials are almost incompatible. Lines of concrete or stone flags, for example, should not be used to divide up areas of coated macadams. The heavy roller needed to compact the macadam would fracture the flags if it had to cross them. On the other hand, granite setts can be (and are, in fact, frequently) used for such a purpose; they can take the weight of the roller and can be disregarded by the driver, who will roll the whole area as one. Hand compaction of the macadam along the edges adjoining the setts is then unnecessary.

acknowledgment

The prices given in this article were prepared by Lemon and Blizard, Chartered Civil Engineers. Surveyors.

4 THE INDUSTRY

small house domestic boiler

We illustrate above the new Crane 20 Domestic Boiler, the latest addition to a long line of reliable and comparatively inexpensive water heaters. Rated at 20,000 Btu (and, therefore, large enough for most of today's small houses) it costs only £25, which is, after all, half the price of some other boilers which do not look very different and do not undertake much more. The Crane 20 burns any form of smokeless fuel and only needs refuelling night and morning.

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The Crane 20 Domestic Boiler.



Tomo pleated blinds in position.

pleated blinds

One perhaps rather unexpected function of the pleated blind is that it not only diffuses light but cuts down the transference of heat. It has been shown by the Swedish Royal Institute of Technology that pleated blinds of chlorine-bleached cellulose fibre (similar to those in the illustration) reduce heat loss by 23 per cent. Blinds of this pattern were formerly only made for use between the panes of double windows, but they are now available for single glazing. They are also remarkably cheap: a 4 ft. wide blind with a 4 ft. 6 in. drop costing only 48s. complete, including purchase tax.

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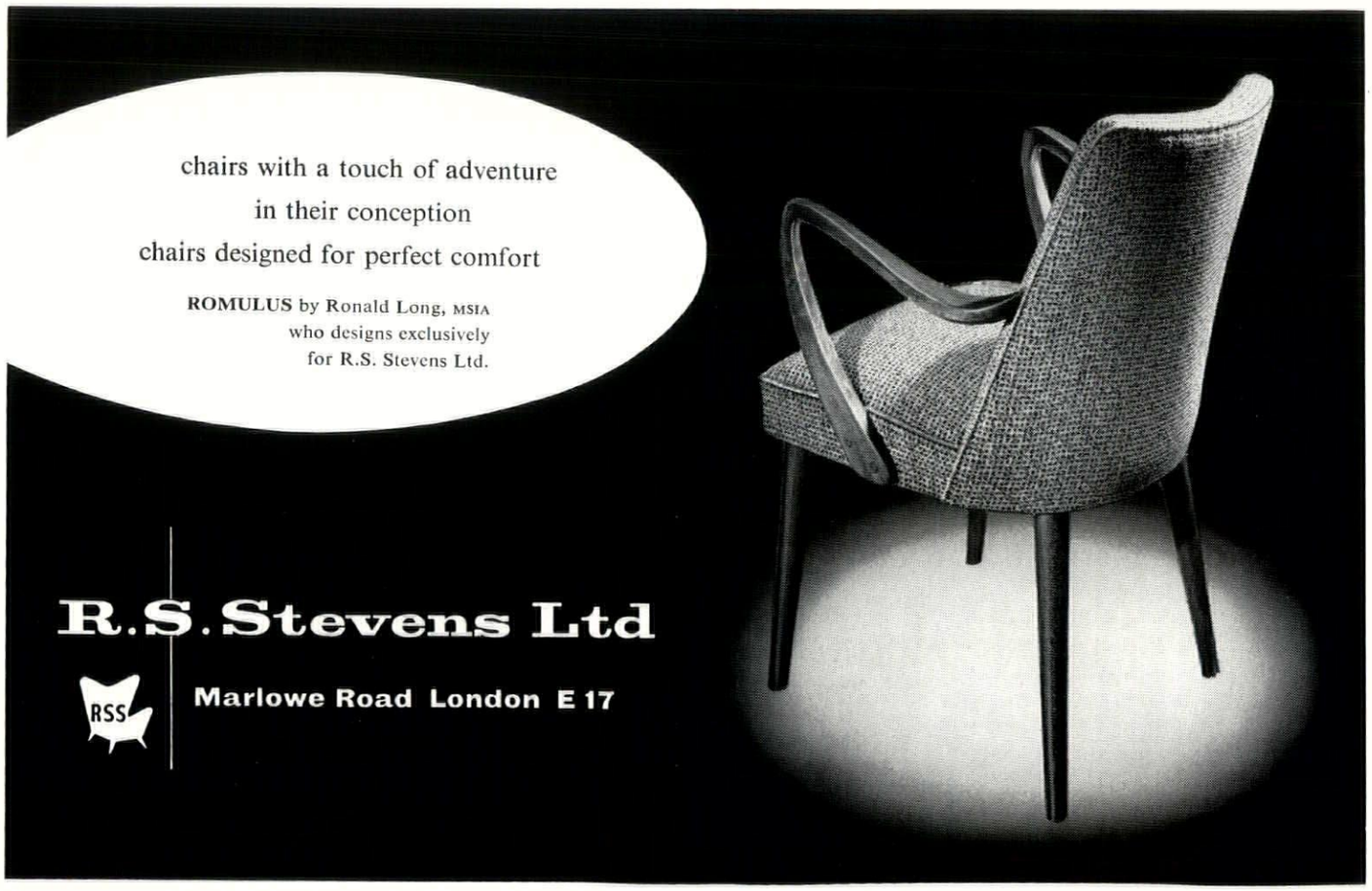
CONTRACTORS etc

Factory at Hemel Hempstead. *Designers:* Ove Arup & Partners. *General contractors:* David Chaston Ltd. *Sub-contractors: Heating:* G. N. Haden & Sons. *Electricity:* Electrical Installations Ltd. *Wallspan:* Williams & Williams Ltd. *Steelwork cladding:* Carter Horseley Ltd. *Internal glazed partitions:* Triplewood Ltd. *Stairs and hand rails:* Grill Floors Ltd. *Roofing felt:* Ruberoid Co.

Factory at Wallsend-on-Tyne. *Architects:* S. W. Milburn & Partners. *Main contractor:* Bovis Ltd. *Sub-contractors: Asphalte roofing:* Asphaltic Roadways Ltd. *Venetian blinds:* J. Avery & Co. *Weighbridge:* W. & T.

[continued on page 290





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continued from page 288]

Avery Ltd. *Kitchen equipment:* Benham & Sons. *Joinery:* Bovis Joinery Works. *Metal windows:* Fredk. Braby & Co. *Roofing, factory:* Wm. Briggs & Son. *Paint:* British Paints Ltd. *Concrete reinforcement:* British Reinforced Concrete Eng. Co. *Plumbing:* Cairns (Newcastle) Ltd. *Piling:* The Cementation Co. *Hardwood curtain walling:* Construction Units Ltd. *Prestressed beams:* Concrete Ltd. *Panelling:* Coutts & Findlater Ltd. *Site work:* Dowsett Engineering Construction. *Structural steel:* J. W. Ellis & Co. *Goods and passenger lifts:* Express Lift Co. *Flooring:* Granwood Flooring Co.; Greengate & Irwell Rubber Co. *Heating and ventilation:* G. N. Haden & Son. *Refrigerator:* J. & E. Hall Ltd. *Linoleum:* W. E. Harker Ltd. *Kitchen equipment:* Hobart Manufacturing Co. *Metal W.C. partitions and boiler house windows:* Henry Hope & Son. *Vinyl flooring:* N. Jack & Co. *Steel platform:* Allan Kennedy & Co. *Concrete rooflights:* J. A. King & Co. *Balustrading, gates and fencing:* F. Kirkup & Co. *Sprinklers:* Mather & Platt Ltd. *Metal rooflights:* Mellowes & Co. *Shuttering to shell roof:* Mills Scaffold Co. *Laboratory furnishings:* Mordue Bros. Ltd. *Osco sign:* Nova Sign Co. *Foundation stone:* C. S. Ormerod Ltd. *Granolithic flooring:* Pollock Bros. (London) Ltd. *Roller shutters:* Potter Rax Ltd. *Glazing:* Reed Millican & Co. *Switchgear:* A. Reyrolle & Co. *Vertical cladding, factory:* Robertson Thain Ltd. *Furnishings:* Robson & Sons Ltd. *Sanitary fittings:* Shanks & Co. *Kitchen equipment:* Stott & Co. (Engineers). *False ceilings:* Sundeala Board Co. *Wall and floor tiling:* Summers & Co. *Road surfacing:* Tarslag Ltd. *Copings, kerbs, flagstone:* S. Tyzack & Co. *Ironmongery:* D. A. Thomas & Co. *R.C. chimney:* Tileman & Co. *Terrazzo:* Toffolo Jackson & Co. *Plastering and floor screeds:* Webster Davidson & Co. *Wallspan:* Williams & Williams Ltd.

House at Akeley, Bucks. *Architect:* H. J. Richards. *General contractors:* Smith Bros. (Bletchley) Ltd. *Subcontractors: Roofing specialist:* F. McNeill & Co. *Heating:* Radiation Ltd. *Lighting fittings:* Merchant Adventurers Ltd.; Cone Fittings Ltd. *Sanitary ware:* Adamsez Ltd. *Sliding windows:* P. C. Henderson Ltd. *Tiling:* A. R. & W. Cleaver Ltd. *Paint:* International Paints Ltd.

School at Harlow. *Architects:* Hening & Chitty. *General contractor:* Kirk & Kirk Ltd. *Sub-contractors: Steel:* Dorman Long & Co. *Reinforced concrete:* Caxton Floors Ltd.; Concrete Ltd. *Bricks:* London Brick Co.; Proctor & Lavender Ltd. *Music room dome:* Lenscrete Ltd. *Flooring:* Vigers Bros. Ltd.; Granwood Flooring Co.; Marley Tile Co.; Hollis Bros. Ltd. *Roofing:* William Briggs & Son; Ragusa Asphalte Paving Co. *Suspended ceilings:* Gyproc Products Ltd.; Expanded Metal Co. *Doors:* Esavian Ltd.; Jayanbee Joinery Ltd. *Cloak fittings:* Mountford Brothers. *Ironmongery:* Walker & Wood Ltd. *Paint:* Lantham Brown Ltd. *W.C. partitions:* Flexo Plywood Ltd. *Laboratory fittings:* J. Cannon & Son. *Gymnasium fittings:* Olympic Gym Co. *Library fittings:* Libraco Ltd. *Sanitary fittings:* Edward Marshall Ltd. *Sanitary fittings (showers):* Walker Crosweller & Co. *Blackboards:* Wilson & Garden Ltd. *Stage lighting:* W. J. Furse & Co.; Falk Stadelmann & Co. *Windows and doorframes:* Henry Hope & Sons Ltd. *Balustrading:* Hotchkiss (Engineers) Ltd. *Lantern and rooflights:* Aygee Ltd.; T. & W. Ide Ltd. *Tiling:* Parkinsons (Wall Tiles) Ltd. *Painting:* Christophers Ltd.; Clark & Fenn Ltd. *Plastering:* Milne Ltd. *Signboards, etc.:* F. B. Hall Ltd.; Comyn Ching Ltd. *Timber window frames and cladding:* Simms, Sons & Cooke Ltd. *Electrical installation:* Eastern Electricity Board. *Heating, hot water and gas installation:* Engineering Service Installation Ltd. *Plumbing:* Matthew Hall Ltd. *Acoustic treatment:* Campbell Denis Ltd.; Newalls Insulation Co. *Tarmac, etc.:* Constable Hart & Co. *Shutters:* Shutter Contractors Ltd. *Blackouts:* London Blinds Ltd.

Hospital near Edinburgh *Architect:* John Holt. *General contractors:* W. & J. R. Watson. *Sub-contractors: Bricks:* Scottish Dunbrik Ltd. *Stone:* Blaxter Quarries. *Special roofings:* J. A. King & Co. *Roofing felt:* Wm. Briggs & Sons. *Tiles:* Toffolo Jackson & Co. *Slate:* Broughton Moor Green Slate Quarries Ltd.; G. S. Ormerod Ltd. *Lead-core plywood partitions:* Bakers of Wycombe Ltd. *Glass domelights and lead glass:* James Thow Ltd. *Wood block flooring:* A. M. MacDougall & Son. *Glass domelights and lead glass:* T. & W. Ide Ltd. *Coppersmith work:* Archibald McMillan & Co. *Patent flooring:* Concrete Ltd. *Smith work and balustrading:* H. Gibson's Heirs. *Ventilation and boilers:* Brightside Foundry & Engineering Co. *Incinerators:* Wm. Sugg & Co. *Gas fitting, mains:* Scottish Gas Board. *Electric wiring:* James Kilpatrick & Sons. *Electric light fixtures:* Merchant Adventurers Ltd. *Metal staircases:* MacKenzie & Moneur Ltd. *Casements:* Frederick Braby & Co. *Sanitary fittings:* Shanks & Co.; J. & R. Howie Ltd. *X-ray protective doors:* Adrian Stokes Ltd. *Oxygen and nitrous oxide installation:* The British Oxygen Co. *Plaster:* D. & J. Borthwick Ltd. *Textiles and Sunway blinds:* Findlater Smith Ltd. *Wallpaper:* T. W. Scott Ltd. *Floor finishes:* Korkoid Decorative Floors Ltd. *Light-proof blinds:* Douglas & Bryden Ltd. *Lifts:* Pickerings Ltd. *Paint:* The Walpamur Co. *Fire equipment:* Pyrene Co.

Directors' Dining Room at Leeds. *Architect:* Derek Walker. *Shopfitters:* A. C. Fuller and H. Briggs. *Metalwork, engineering and ventilation:* J. Stephenson and J. Edwards. *Photomural:* J. Shaw. *Furniture:* Wolfson, Leeds; Woollands, Knightsbridge.

Shop in Liverpool. *Architects:* Westwood, Sons & Harrison. *General contractor for building, also false ceilings and decoration:* George Platt & Sons. *Shopfitters:* Harris & Sheldon. *Marble and granite:* John Stubbs. *Special light fittings:* Venreco Ltd. *Korkoid:* Korkoid Decorative Floors Ltd. *Chairs and carpets:* Heal's Contracts Ltd. *Illuminated signs:* Pearce Signs Ltd. *Cash installation:* The Lamson Engineering Co. *Ironmongery:* Messrs Yannedis & Co.

Shop in Nottingham. *Architects:* Westwood, Sons & Harrison. *Builders:* John Cawley Ltd. *Shopfitters:* Harris & Sheldon Ltd. *Carpets:* Heal's Contracts Ltd. *Cash system:* Lamson Engineering Co. *Flooring:* Korkoid Decorative Floors. *Ironmongery:* Yannedis & Co. *Chairs:* Heal's Contracts Ltd.; Hill & Co. (Tub). *Lift:* W. J. Furse & Co. *Light fittings:* Troughton & Young (Lighting) Ltd.; Venreco Ltd. *Stone:* Hornton Quarries Ltd. *Terrazzo:* Malacarp Terrazzo Co. *Signs:* Pearce Signs Ltd.



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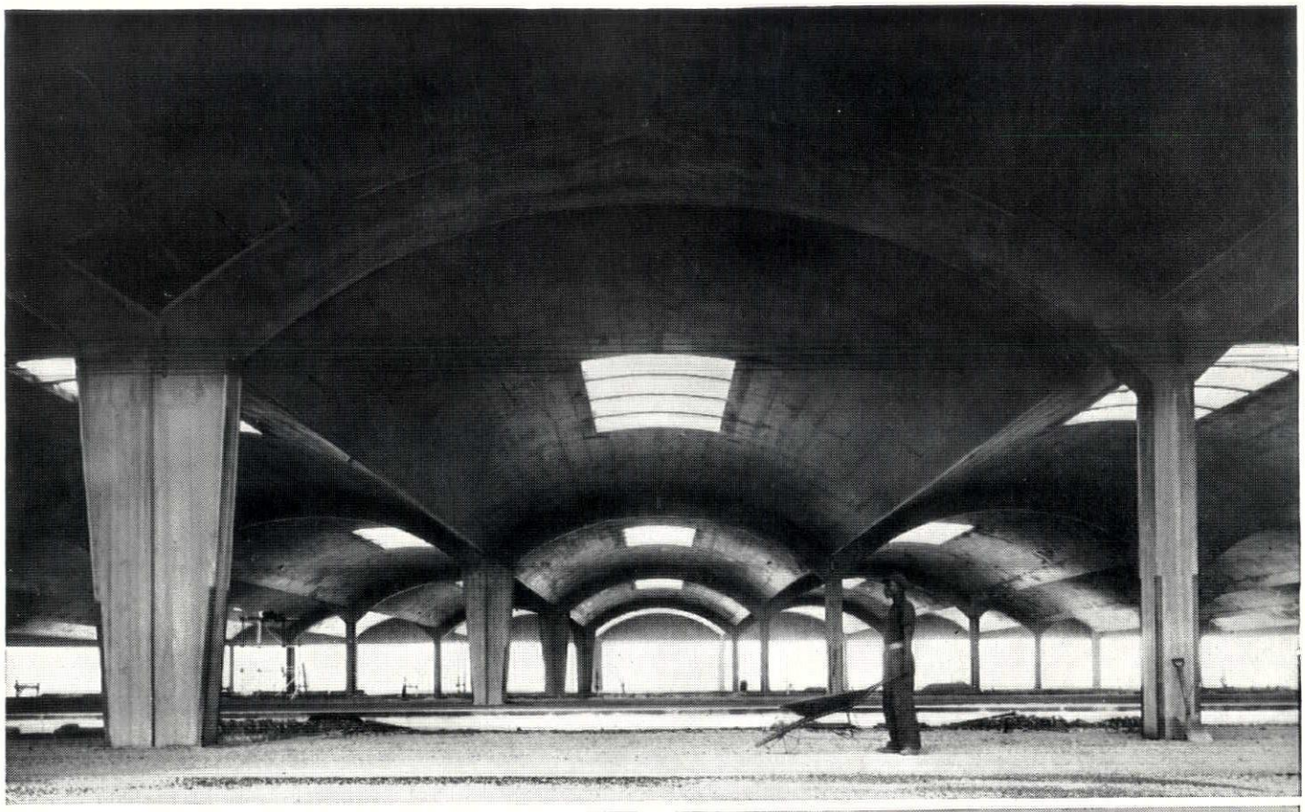

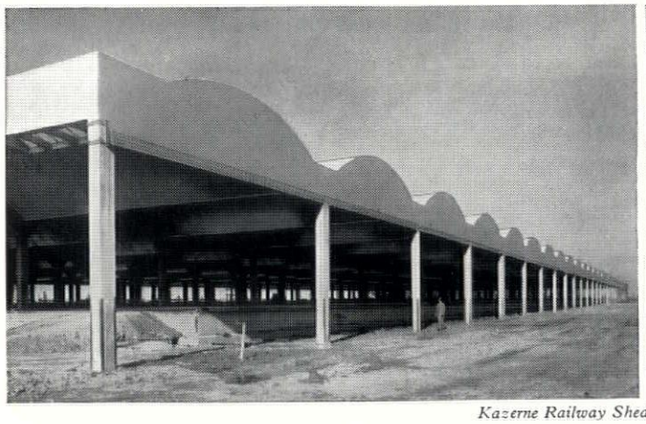

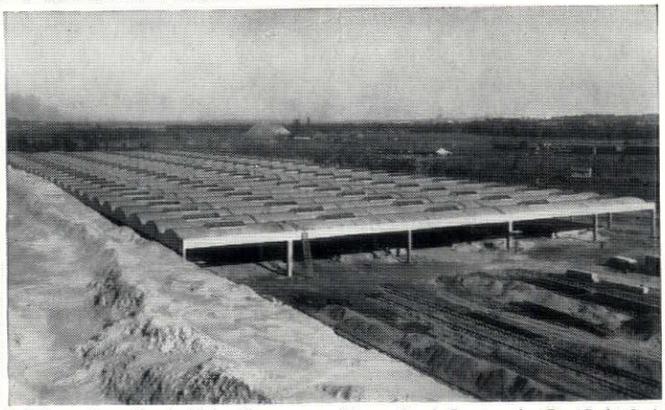

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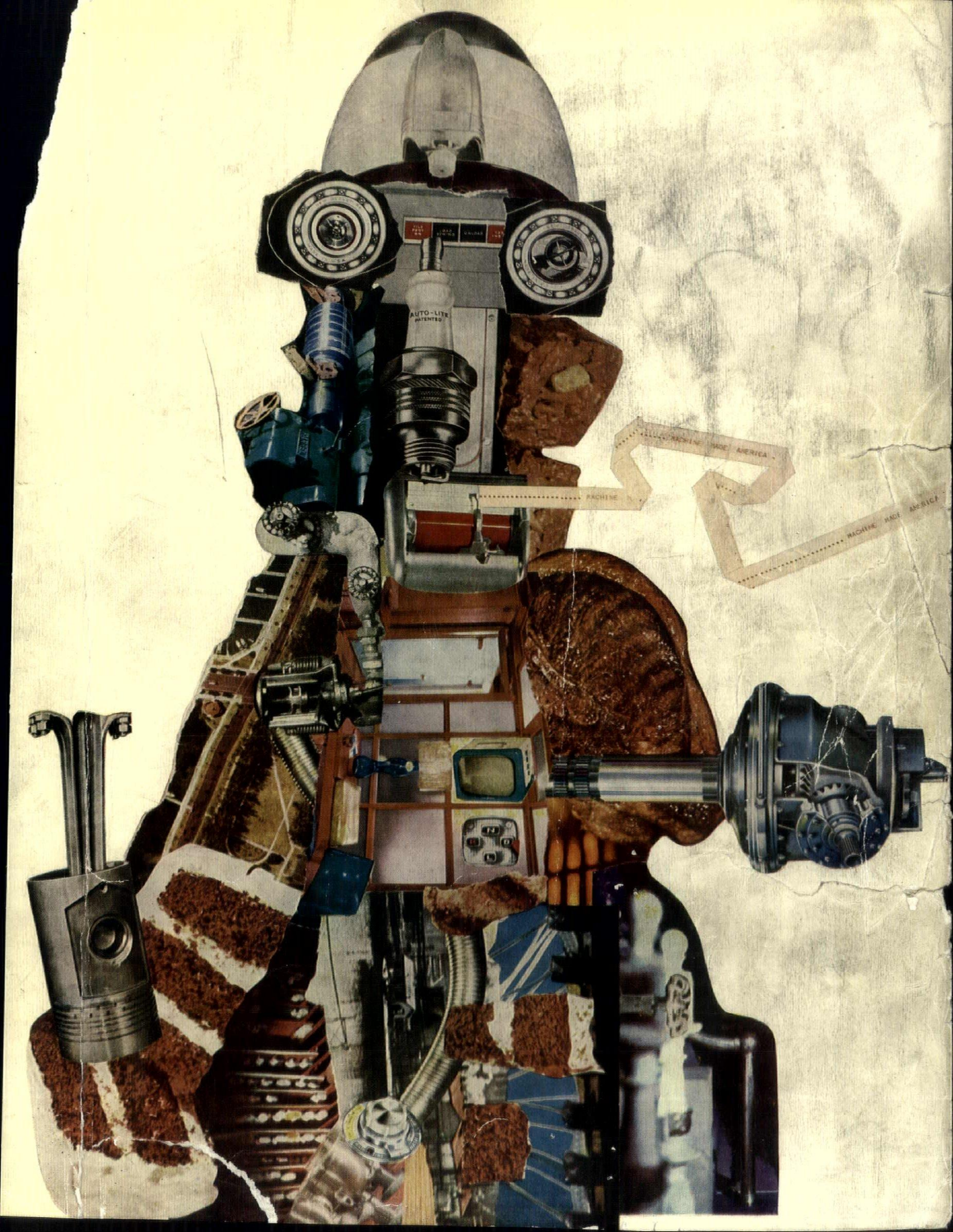
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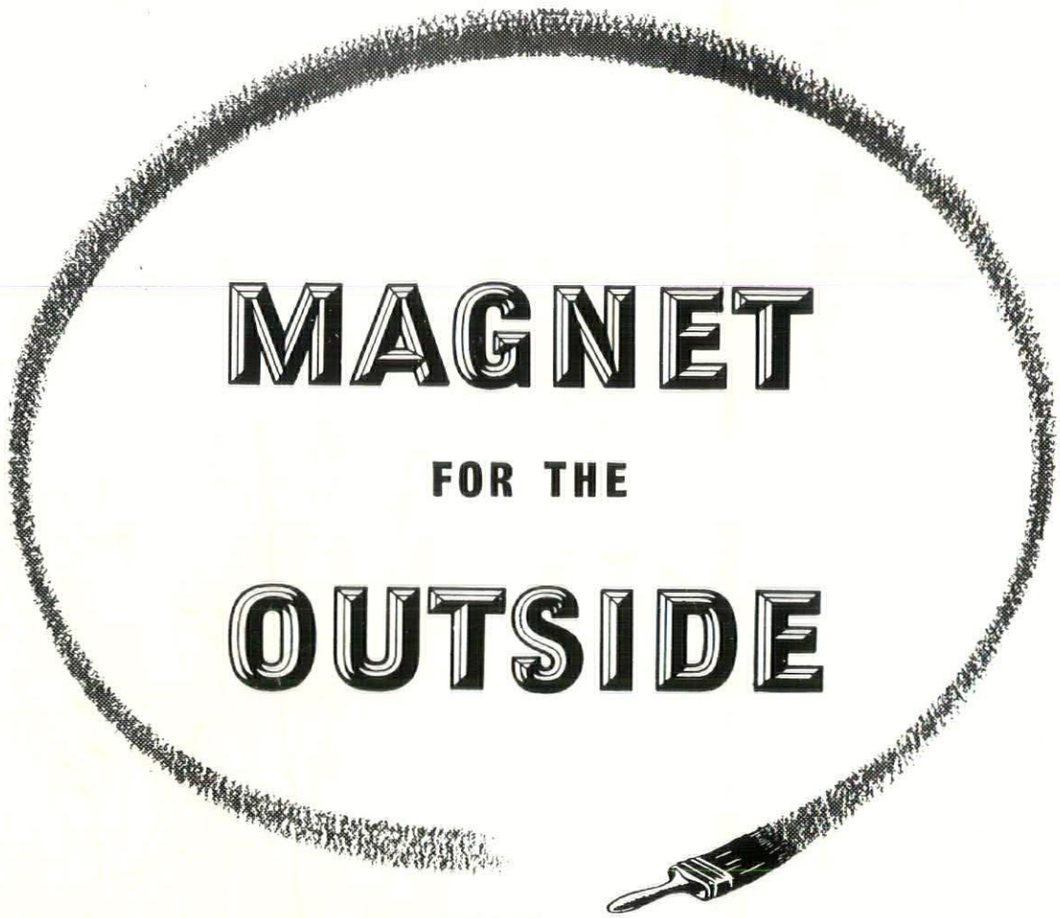

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MARGINALIA

Marginalia, like this month's cover, and his own spare head (right, a collage sculpture of beer-packs and string) has been assembled from machine-made Americana by John McHale, Glasgow-born collagist, biographer of Buckminster Fuller (AR, July, 1956) and recent special student under Josef Albers at Yale.





1

Eames: catalogue building

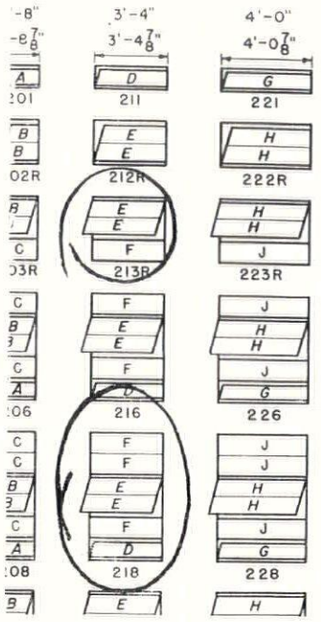
At this time distant, it seems remarkable that no sharp West Coast speculator has yet emulated the enterprise of Charles Eames, and produced a 'U-bild-it' kit for a full sized house, or perhaps, at lesser remove, something on the lines of the 'customizing' items, advertised in U.S. car magazines, for giving that personal touch to the family auto. But, no doubt, even given such acu-



2

men, the Eames 'Catalogue' house would still stand as an unique and completely individual essay in meccano aesthetics. The view of the house shown here 1, is of the living room end, where the bedrooms occupy the second storey; the overprinted numbers on the window elements are the types, chosen by the architect, from the catalogue of the Truscon Steel Co. 3, gives a detail of the actual page section of the company's 'Architectural Projected Windows' with Eames' own notations.

In between extracting components from catalogues, and seeing their own designs get into catalogues, Charles and Ray Eames have contributed a chair to one generation, produced toys to confound the next, and turned out a series of original essays in film. Contrary to rumour, the sequel to 'A Communications Primer,' one of the latter, is not, Eames says, 'to be called "Son of Communications" or "Communications Rides Again"—but "Theory of Feedback".' Although the relationship of these film projects to architectural and other designing may seem tenuous, Eames does emphasize its relevance. His point becomes clearer when one considers the way in which I.B.M. have used Eames as a consultant—not on the design of actual products—but charged with carrying the designer's attitude into other management areas. His latest design is in

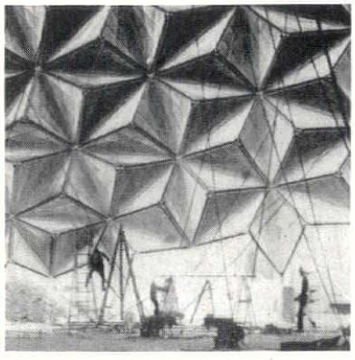


3

the same territory of Communications—a loudspeaker enclosure 2, the 'Quadreflex,' designed in collaboration with Stephens Tru-sonic engineering staff.

Fuller: global encirclement

Though more amenable to catalogue treatment, and mass production, than the traditional building, the geodesic dome is still, generally, on a one-off basis, individually tailored to specific requirements. But the recent licensing, by Fuller, of commercial fabricators to produce domes, may change the situation. The biggest dome yet 4,—all aluminium, 144 ft. diameter and 57 ft. high—has been turned out by Kaiser Aluminium Co. This was erected in 20 hours by 38 men for a resort auditorium in Honolulu to seat 1,800 people. With locations such as this, Fuller domes grow more geographically widespread; radomes in the Arctic, a concert hall in the South Seas and the recent one in Kabul, Afghanistan. This latter, the Kabul Dome, 100 ft. diameter, of aluminium tube and nylon skin, was designed for the U.S. pavilion in the International Trade

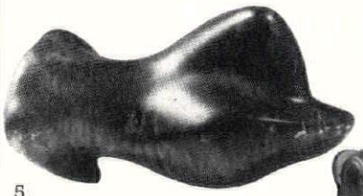


4

Fair held there, and housed, among other items, an 80-ft. Cinemascope screen. From initial inquiry by the client, through designing, fabrication, transport, to final erecting on the site, took around 8 weeks. After Kabul, it is touring the Far East, and will eventually come to Europe this year.

'Good to look at, pleasant to hold'

From General Motors pop. book on styling, the above quote refers to an example of hand sculpture from Pratt Institute 5, which shares page honours



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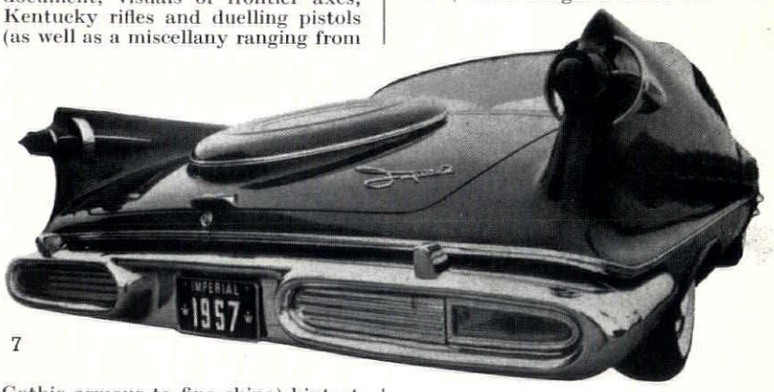
6

with a vacuum-type coffee machine, fender detail from a Pontiac dream car—and an egg. Earlier in the same document, visuals of frontier axes, Kentucky rifles and duelling pistols (as well as a miscellany ranging from Gothic armour to fine china) hint at a lineage for auto styling via the American tool-making tradition. Superficial visual parallels might be drawn when one compares a particularly over-bred match rifle 6, the Hammerli MJ 452, with 7, the rear end of the 'Flight Sweep Year' Chrysler '57, but the real case for the curvy plastic buildup is implicit in current consumer preference, and thence more directly original to car styling itself, as source, than the ergonomic hand tool. (These issues were fully discussed in AR April 1955, *Machine Aesthetic*, Reyner Banham.) Essentially the point, nowadays, about the auto is, that you don't handle it, but, see 9, Plymouth Pushbutton Powerflite ad., get in and push the button. With G.M. Tech. Center interior detailing, the car industry, as consumer, shows the same capacity, as above, for the all-in, both-and, stance in styling. Prestige type, permanent rectangular aesthetics, with a Miesian flavour, are duly given their operational sphere, but when it comes to a desk 8, for king-pin of the styling section, Harley Earl, his staff turn out a patiently hand-crafted cherrywood monument—with a difference! Its sleek curvaceous bulk is of the same sandwich construction as, now obsolete, wood moulds used in forming auto bodies. A neat way of including tradition in and incidentally producing a particularly impressive, and 'new,' desk design. Besides the hand



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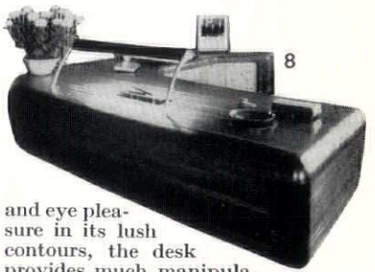

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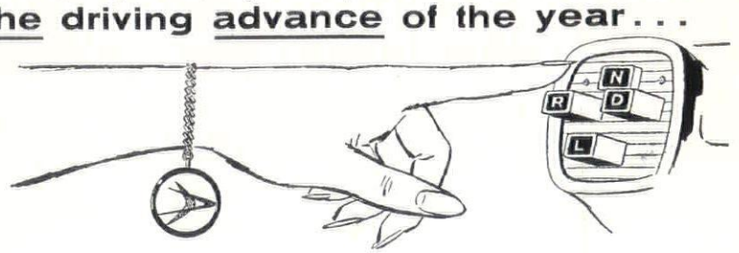
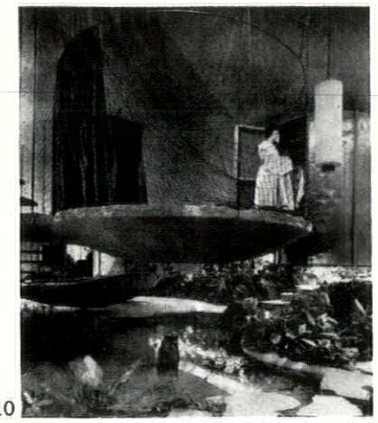
and eye pleasure in its lush contours, the desk provides much manipulative therapy for the active executive by way of pushbutton panels for lighting, temperature and TV control, as well as a built-in waste basket.



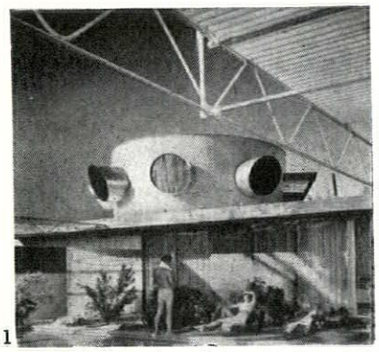
9

Dream House Dept.

If the dream car, with its clear relationship to production forecasts, plays a recognizable role in determining the shape of things to come, where, in the adjacent field of architecture, does this place the dream house as augur? Is the rectangle out—the curvy plastic, the circle and dome in—as would appear from a cursory glance at the recent crop. The most spectacular of these is the 'Saucer House,' 10, designed for Gene Bavinger, by Bruce Goff. The latter is noted for the unconventional look of many of his structures; see his house at Aurora, Illinois, on page 353 of this issue. The Bavinger essay is a series of five suspended saucers, with a common spiral roof, mast hung from a central tower whose core is a 55 ft. oil well pipe. The concrete saucers, with circular tracked curtaining, provide living spaces overhanging the sheltered ground floor, which functions flexibly as a dining, leisure and general living area, and also accommodate swimming pool.


10

Air-cooling, through the use of natural air movement where it is briskest, some way off ground level, as in the 'Saucer House,' is also employed by architect Albert Frey for a dream house in Palm Springs. 11, shows a view of the air control turret, whose ports open to catch the wind from any direction in which it blows. Ideas like these are reminiscent of Buckminster Fuller's early Dymaxion and Wichita houses, which almost always figure as obvious sources for many dream house ideas since their time. Eagle's Nest 12, a Californian project, by Joseph Wythe, uses a similar range of devices—suspended circular form, clear plexiglass outer walls—but hangs his house, in emulation of 'nature's engineer, the spider,' between two canyon walls, with access by a bridge. Novel features of this egghouse are, the ballast compartments in the under section for keeping horizontal trim, and the waste disposal umbilical tube hanging from the bottom centre.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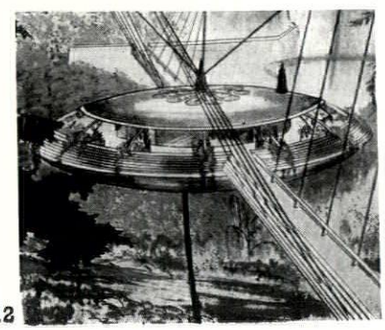
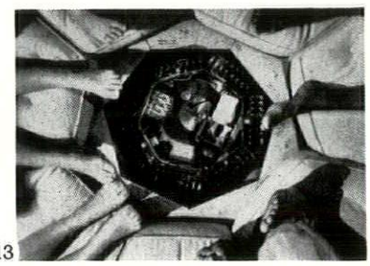
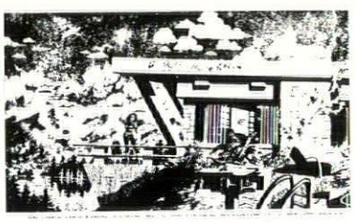

12

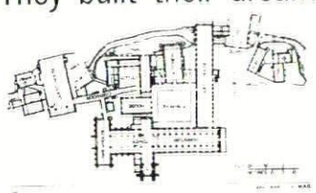
To come down from the rarefied air of the Eagle's Nest to the more workaday dream; R. McCulloch, Californian millionaire's new home, costing three quarters of a million dollars, is a gadgeteer's nirvana. Getting up in the morning, from the 'mechanical bed,' is taken care of by an alarm system which renders the world fit for occupancy by, switching on soft music, pulling the curtains, filling the bath, and ordering up the coffee. But the one distinguishing feature, of the house, which really ranks in the indispensable dream class—with revolving honeymoon suites in dream hotels—is the human Lazy Susan 13, which enables seven reclining passengers to broil evenly all over as it steadily revolves them in the sun.


13

Though 'Mad Magazine's' exact location between dream and nightmare might often be in doubt, it was obviously only a matter of time till they covered the dream house. Mad's subtitle, 'Humor in a jugular "vein" ' points up the dada quality of their recent dream house feature, whose ground plan 14, is, appropriately, that of Fountains Abbey.



They built their dream-


14

Arcturus IV

Designing for the hand, as touched on in an earlier section, depends very much on whose hand, how many, and which kind you are thinking of! Illustration 15, of an extra-terrestrial appendage, comes from 'Case Study: Arcturus IV,' a brilliant framing of a design problem series, initiated by John E. Arnold at M.I.T. some time ago. For the purpose of a fresh perspective on engineering design, the date is assumed to be 2951. This study is comprised of a series of communications supposedly exchanged between Massachusetts Intergalactic Traders Inc., Terran Exporting Counsel HQ. and various design consultants, on the discovery of an intelligent life form on Arcturus IV, in the α Bootis system. Conditions are set, in detail, of a methane atmosphere, high gravity and extremely cold world, which has ammonia seas, lakes of tetrasilicate, and on which plants grow upside down. Its inhabitants, called Methanians, are evolved from birds, with a similar light hollow boned structure. They have three eyes, one of the X-ray kind, two legs and two long spindly arms, vestigial wings, terminating in a three fingered claw-like hand. Reproduction is through eggs; their growth is stunted from a low energy diet and reflexes very slow. The Culture level is assumed to be around that of early 20 C. Earth, and the problem that of bringing technologically backward Methanians up to the Mid 20 C. Earth level. When the full background has been elicited, a programme is laid down and specific design problems come in from the Arcturus base. Equipment tackled ranges from, the initial base building, to house personnel in an alien environment, through farming tools, cable cars, food preparation appliances, etc., up to an 'Eggomobile' for individual Methanian transport. The latter, a particularly shrewd piece of design symbolism, in its context, is egg-shaped—to be reminiscent of pre-hatching comfort and security! Work in the reports is not entirely technical. Much is made of the Psychological Division's findings on the philosophy, history and general mores of the people, and it is demonstrated how these factors are integrated into the whole design problem. Authenticity throughout the study is kept up by the use of printed letterheadings of the various organizations, and official looking stampings of 'confidential,' etc. Enthusiam generated in the project shows in the imaginative details of the correspondence. These include personal reactions to alien diet, asides on business and friends, and incidents as in 15, where a petrified Methanian hand is concealed, with rather macabre humour, in a soil sample sent to Earth for analysis!

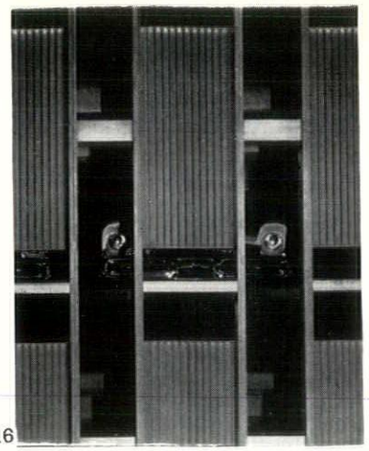


15

This study's lesson in the imaginative use of extrapolation in the setting of design problems deserves wider attention.

The auto and its environment

The more obvious zoomorphic features of the car have been belaboured, but 16, deserves a second glance, as this one peers out of a solution to the parking muddle. The whole of the bottom slab of the Medical Towers* building, by Golemon and Rolfe, at Houston, Texas, is given over to a multi-storied car cupboard. 17, of Dallas Central Expressway makes a comment on the number of subsidiary curves, and wiggles, necessary nowadays, to make even the simple straight road the shortest distance between two points.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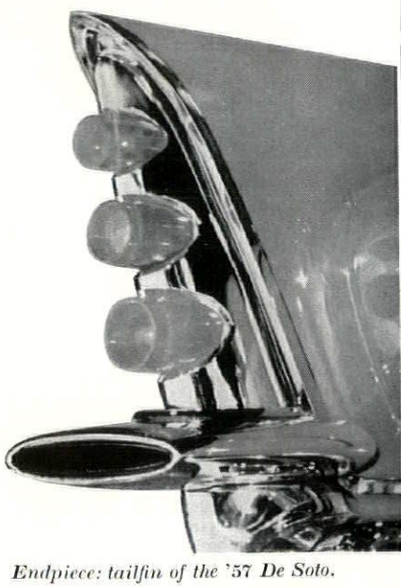

Endpiece: tailfin of the '57 De Soto.

* See pages 330 and 332.

MACHINE MADE AMERICA

edited by Ian McCallum



The cover personage, by John McHale with the tetragram of power—Neutral, Drive, Low, Reverse—graven on his heart, was assembled from typical fragments of the cultural complex that he also symbolizes; Machine Made America. The source of material was one of America's favourite flattering mirrors, coloured magazine illustrations, and reflects a world of infra-grilled steak, pre-mixed cake, dream-kitchens, dream-cars, machine-tools, power-mixers, parkways, harbours, ticker-tape, spark-plugs and electronics. Further aspects of this world are contemplated by John McHale in Marginalia on pages 291-292, *and its impact on the world of architecture is the concern of the first part of this issue.*

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THE ARCHITECTURAL REVIEW

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

FIVE SHILLINGS

page **295** . . . . . *foreword* The previous special number of the ARCHITECTURAL REVIEW concerned with the USA was a record of sprawl and visual squalor (*Man Made America*, Dec., 1950), the record of a failure. The present issue, compiled, written and annotated by the executive Editor, Ian McCallum, is a success story—the story of how America is adding sheer quantity to the pre-existing qualities of modern architecture. In terms of quantity, the US is now the homeland of the modern movement, and quantity, backed by wealth, industry and technical skill, is the prerequisite of architectural quality today. The volume of American building has quadrupled in a decade, and in its wake two generations of architects have experienced a surge of creative ability, while industry has responded, in barely half a decade, with the industrialization of the curtain wall. Beyond the sheer bulk of building now in hand, other causes for these radically new developments include the presence of some of the great European masters, and the increasing influence of brilliant structural engineers. US architecture has shown remarkable humility in learning lessons, and accepting masters from wherever they come, and it has benefited enormously from both.

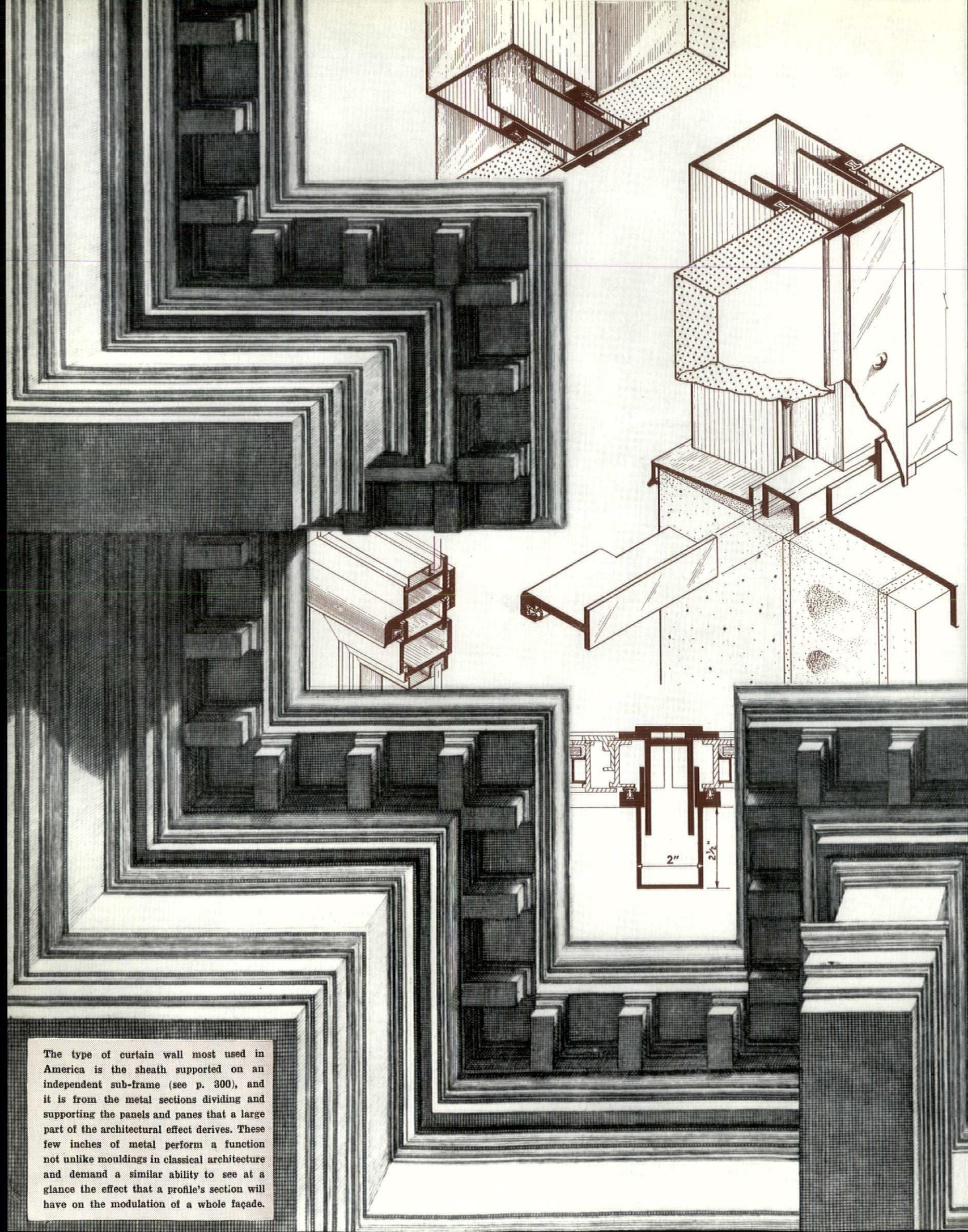
page **298** . . . . . 1 *Syntax* The curtain wall is transforming the urban environment of America, replacing masonry and mass with glittering glass and diagrammatic transparency. The idea of the curtain wall is as old as Modern Architecture, but only in 1956 did it establish itself as a commercially available catalogued product. However much the product in use may differ from the hopes of the Pioneers, however low its emotional content, however far behind the custom-made versions the catalogue types may lag aesthetically, the curtain wall, understood and exploited intelligently, is still the most promising basis for a new vernacular architecture, providing a *syntax* of design as useful to the prose-builder as to the poet-architect.

page **337** . . . . . 2 *Genetrix* In phase with the growth of industrialization in US architecture, there has been a surge of creativity on the part of individual American architects, working outside the field of industrialized structure, or occasionally making non-catalogue use of catalogue components. The contributions of these individuals and individualists varies in intention from self-effacement to self-assertion, from Ivy League restraint to Grass-root exuberance. These individual contributions are the product of men whose individuality matters, and for that reason their lives and opinions are included in this section, as well as a survey of their works.

page **387** . . . . . 3 *Matrix* The individual and collective achievements of US architects must be seen against the double background of the international Modern Movement, and of American culture in the middle of the technological century, as an effort towards the 'discovery of an entire universe and a complete language' for the world at large, as well as America in particular. Most of the world is committed to mechanization and its consequences, but it is in America that these have been most enthusiastically received, their excitement most keenly felt, and it is this that has made American the first country to pioneer industrialized building on a large scale, while the concomitant atmosphere of confidence and excitement stimulates the creative endeavours of individuals. When these divergent but interdependent trends are plotted on the *matrix* of world-culture and world-history, it will be seen that the American contribution is most American when it gives most to the common, international cause of a new universe and language of architecture.

page **393** . . . . . *acknowledgments*

A SPECIAL NUMBER OF THE ARCHITECTURAL REVIEW FOR MAY 1957



The type of curtain wall most used in America is the sheath supported on an independent sub-frame (see p. 300), and it is from the metal sections dividing and supporting the panels and panes that a large part of the architectural effect derives. These few inches of metal perform a function not unlike mouldings in classical architecture and demand a similar ability to see at a glance the effect that a profile's section will have on the modulation of a whole façade.

foreword

In December, 1950, The Architectural Review published a survey of the American scene under the title *Man-Made America*. Its aim was to call attention to the malignant growth of unplanned sprawl across the face of a formerly fair country. The picture was not a pretty one—neither was it unfamiliar (except in detail) for the disease is common to all highly industrialized societies of which England is an early example with, as the AR unremittingly shows, distressingly advanced symptoms. Action is, at last, being taken in both countries, if too little and extremely late. In the US there are plans for Washington, Fort Worth*, Pittsburgh, Philadelphia and Detroit, to mention only a few which, even if (or because) their objectives are limited, seem to fit current American political and economic attitudes, and therefore show promise of realization, where they are not already being realized. However, still both countries seem stunned by the magnitude of the problem they've created for themselves. Part of the trouble comes from lack of aim and expertise in face of a situation that demands a visual accounting of the whole physical environment. Architecture is an important part of the problem, but it is only a part; fortunately it, at least, has some clear-cut objectives and some people trained to reach them; as a result its gains, nowhere more evident in recent years than in America, have saved us from total visual bankruptcy. *Machine-Made America* presents, therefore, a very different picture from *Man-Made America*. The latter charted a great failure of nerve, *Machine-Made America* charts a success-story deriving from self-confidence and conviction.

In the first decade of the twentieth-century's second half, the United States of America is emerging as a leader in the art and practice of architecture. One or two other countries can boast geniuses and without their example and inspiration US architecture would be the poorer, but a corpus of architecture they lack. It is a measure of US vitality (and humility)

*See pages 350 and 377.

that it is prepared not only to learn the relevant lesson from whatever quarter it comes, but also to accept the masters from wherever they come, and greatly and deservedly has it benefited from this.

Other countries have their highlights—one or two something more—but the US by adding to generosity and a willingness to learn, wealth, industrial potential and technological skill is beginning to add a new dimension to the adventure of today's architecture —quantity.

In architecture quality derives from quantity. In music, painting and sculpture materials may be re-used or thrown away — the finished product is often the result of numerous discarded prototypes which are never seen, but buildings are scarred and bemedalled with the architects' failures and successes, and though it may be an expensive way of learning, in the end it's the only way. Architecture, then, cannot prosper without building, and building in vast quantity has been going on all over the US during the last ten years. Work put in hand annually nearly quadrupled between 1946-56, the estimate for 1956 being the enormous figure of $44,100,000,000.†

The purpose of this issue is to take stock of that expenditure in terms of the art of architecture; to assess it against the aims and ideals of the modern movement and in the perspective of current architectural achievement in the western world. Naturally the US makes its own periodic assessments, but there may be some value in a European analysis, taken as far as it can be within the covers of one issue of a magazine.

The picture of ten years of post-war reconstruction in Europe (AR March 1957) proved to be a gloomy one, but it must be remembered that it was a picture in the realist manner, a snapshot album with commentary, of what average post-war architecture in Europe is really like. The viewpoints on America in this issue have been selected to make up a picture of a very different kind, focussing not on the average but on the best.

The European picture was subtitled 'What has happened to the Modern Movement?' This survey of US architecture would seem to suggest that 'the Modern Movement has moved across the Atlantic.' But that would not be strictly fair. Had the average American architecture been illustrated a very different print would have been exposed, for though the recent American achievement is indeed formidable, it is hardly to be expected that it could leap into another dimension from Europe in the course of a few years.

It is in two respects particularly that the American picture has undergone a radical change since *Man-Made America*—both of them in the narrower field of architecture. The first is in prefabrication, where the rapid development of the curtain wall is giving partial realization to the dreams of the pioneers of the modern movement, though in circumstances and with results quite different from those they imagined—yet another example of the history of revolutions repeating itself. The second change has been brought about by a surge of creative vitality in the middle and younger generation of American architects. The basic reasons for such a phenomenon as this lie, as always, deep in the national history and psyche; on the surface one can distinguish certain contributing influences. To the ones already enumerated—the presence of some of the great European masters, both as builders and educators, the quantity of construction and rapid developments in technology—can be added the inspiration provided by engineers such as Weidlinger, Salvadori and Wachsmann and by the eternally fresh genius of Buckminster Fuller.

†1940 $8,682,000,000; 1946 $12,000,000,000; 1950 $28,454,000,000; 1954 $37,577,000,000; 1955 $41,800,000,000: US Department of Commerce figures.

From all of this, American architecture is now beginning to draw full benefit.

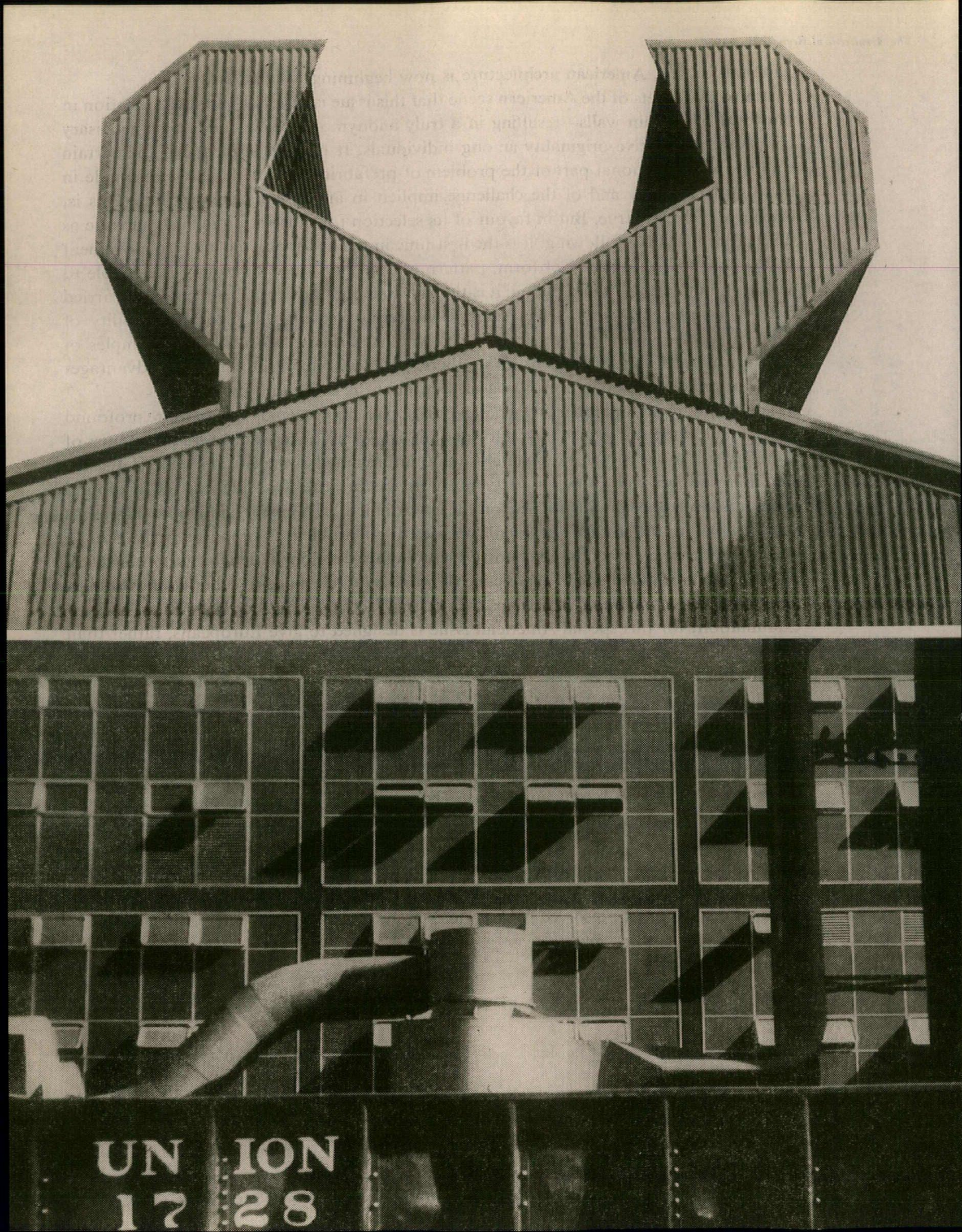
It is to two facets of the American scene that this issue is devoted—to prefabrication in the form of curtain walls—resulting in a truly anonymous idiom—and to its necessary complement, creative originality among individuals. It may be argued that the curtain wall is only a fractional part of the problem of prefabrication, of the advances made in building technology and of the challenge implicit in anonymous architecture. This is, of course, perfectly true. But in favour of its selection for illustration in such an issue as this can be listed the following: it is the first time in the history of the modern movement that a common vocabulary of form, pattern and proportion is becoming acceptable to architect, builder, client and public; it is the first time that prefabrication has been carried out on a sufficiently wide scale for it to be seen, through the incontrovertibility of balance sheets, to bring clear economic advantages. There are no other examples of prefabrication in building where, on aesthetic and economic grounds, these advantages have been made so evident to so broad a section of the community.

To the argument that other advances in building technology may have a more profound effect on architecture as a social factor and an art form, it can be answered that most of them are still in the future, however close that future may be; the curtain wall, as the survey that follows will show, is very much in the present. Considering the profound effect it is already beginning to have on the environment, not nearly enough attention has yet been paid to the aesthetic problems it raises. It is a problem common also to England‡, and will soon be common to all countries with highly-developed metallurgical industries.

Here, then, is an American experience of immediate relevance to other countries, particularly this one. And that is perhaps the decisive factor in choosing the curtain wall for examination; for this special American issue is designed to give Europeans, rather than Americans, an insight into American architecture and to present problems that are common to both, and capable of solution with available resources and within present terms of reference.

The second part of the issue—biographies illustrated by selected works of contemporary American architects—is, or should be, a challenge to Europe. The flexibility, variety and originality it shows are surely unique in the world today and, what is more, a phenomenon of relatively recent appearance. To quote 'Man-Made America': '. . . where other nations have produced out of the melting-pot some sort of shape which can be called a culture, the US melting-pot continues to seethe, its steam rising to form that eternally fascinating symbol of promise, the question mark.' Though the work shown here is an interim and inevitably incomplete selection, it is enough to suggest that the great question mark is beginning to be resolved by America's architects into a very interesting answer.

‡A survey of English curtain wall systems will be published in August.


UN ION
17 28

The industrial ancestor of all claddings is corrugated iron, still current in architecture, as in the rooftop ventilators of the Corning Glass Works, Corning, NY, ☞ *opposite, top. But the degree of sophistication now possible with industrially produced cladding systems after nearly a century of development is pointed up by the black steel structure, aluminium subframes and tinted glass of the Heinz Vinegar Plant, below, in Pittsburgh, by Skidmore, Owings and Merrill.*

1

THE CONTRIBUTION OF THE CURTAIN WALL TO A NEW VERNACULAR

SYNTAX

The pioneers of the modern movement saw the industrialization of architecture as the concomitant of a planned economy, but the curtain wall is the product of industrialization in a free one. It offers the promise—and the problems—of a new architectural vernacular; its mullions, transoms and spandrels could be the syntax of a common mode of expression that was neither bombastic nor inarticulate, and might occasionally rise to eloquence, as the 'classic' examples already do (*pages* 309-316).

It is no exaggeration to say that the curtain wall[1] is transforming the urban environment of America. The regular grids of metal mullion and transom, empanelled with steel, glass and porcelain enamel, glitter from a thousand chasms formerly veneered with brick and stone; through the suburbs and into the countryside, too, the new architecture is spreading its regulated pattern.

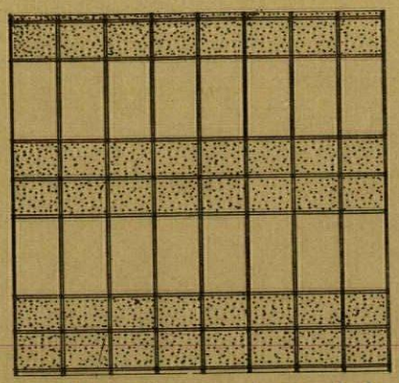
Though the idea and use of curtain walls can be traced to the beginnings of the modern movement—in the sketch schemes for all-glass towers of Mies van der Rohe and in buildings by Gropius, Behrens, Dudok and many others[2]—their development as a marketed building product has taken place within the last ten

[*continued on page* 301

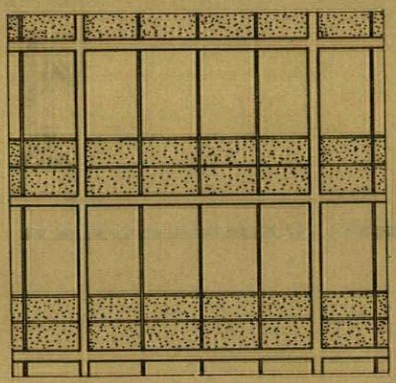
marginal

1. In 1955 a report, 'Curtain Walls of Stainless Steel,' was published by the School of Architecture of Princeton University. It was prepared in response to a request from the Committee of Stainless Steel Producers of the American Iron and Steel Institute, and was the first detailed study of the subject to appear: the definition of the curtain wall formulated in the Princeton Report was further developed at the Workshop Conference held last October under the auspices of the American Building Research Institute, and although the present article is concerned mainly with the 'sheath' type of curtain wall, since there is still much confusion over terminology, the definition is reprinted in full. (It should be emphasized that the Conference's Sub-committee on Nomenclature insisted that there is still much work to be done in drawing up an accurate nomenclature.)

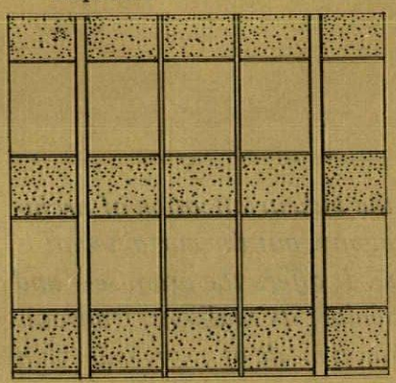
'It is believed that the first classification of curtain walls should be based on appearance. Almost any system of construction can be used to achieve any one of the common curtain wall appearances. The sub-committee believes that there are four basic *visual characteristics* of curtain wall appearance:



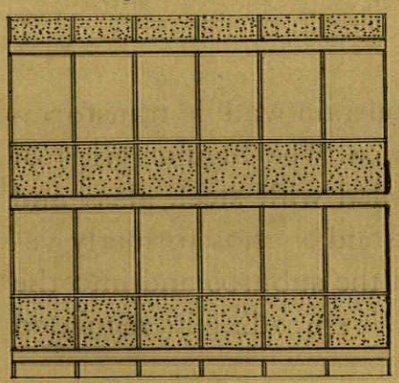
a *sheath* where no structural elements are indicated.



b *grid* where horizontal and vertical structural elements are expressed with equal emphasis.

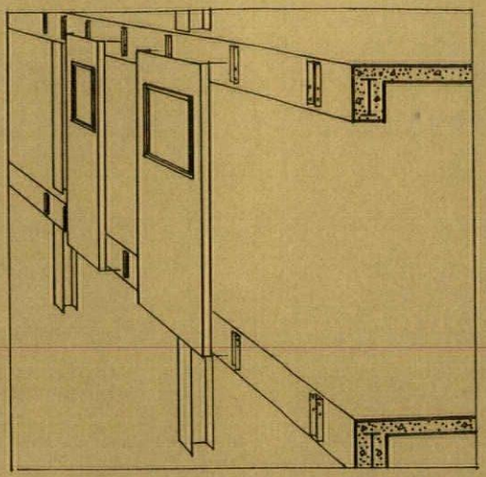


c *mullion* where vertical structural elements are emphasized.

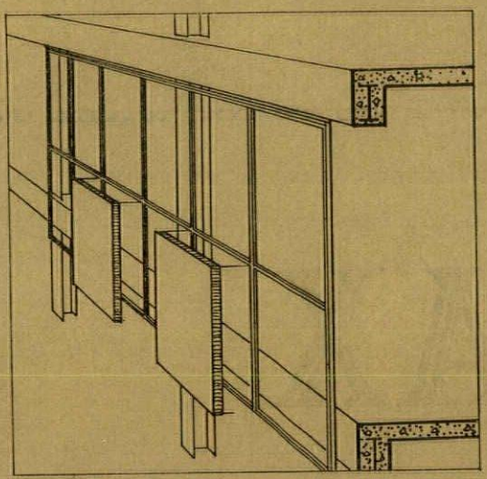


d *spandrel* where horizontal structural elements are emphasized.

The second classification of curtain walls should be made by *supporting* method. The two basic supporting methods which may be employed to achieve any of the above four designs are:

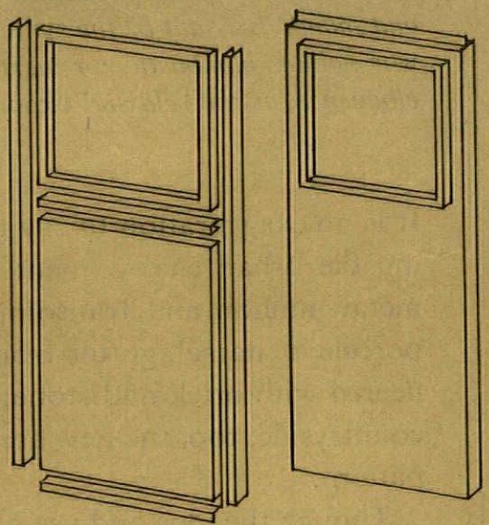


a Supporting elements integral with panel construction.



b Supporting elements as a sub-frame erected independent of the panel construction.

The *assembling* methods which may be employed by any of the design or support methods are:



a Assembly by parts *b* Assembly by units.

The Nomenclature Sub-committee believes that any curtain wall construction may be generally described by the use of the above system. For example, design *d*, support *b*, assembly *b*, will describe a curtain wall with emphasized spandrel elements, supported on an independent sub-frame and assembled as units for erection.

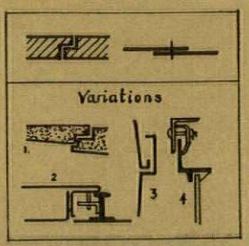
The next step was to apply a system of classification to the various joint types and sealants now in use: this classification consists of two elements:

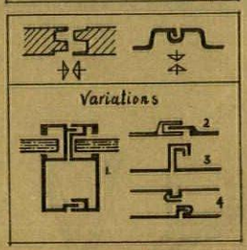
The Joint Type.

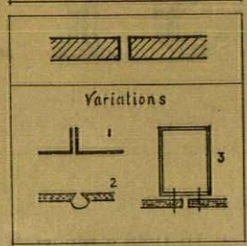
The Joint Seal.

Joint types can be correctly classified by form and, in this respect, may be identified by the mechanical types. This involves two broad categories:

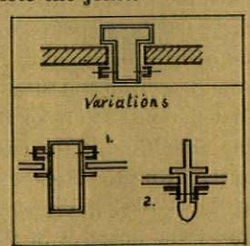
a INTEGRAL, in which the panel edges form the complete joint.

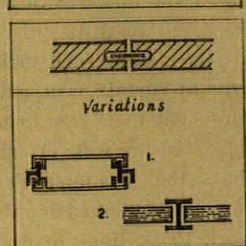


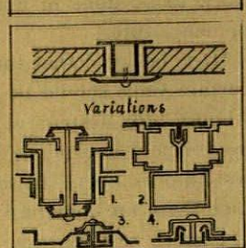




b ACCESSORY, in which extra pieces are required to complete the joint.







Joint seals may be broadly classified into Non-Rigid and Rigid types. Under the Non-Rigid type, we have:

Mastic fillers, which may be site or shop applied.

Gaskets, which may be of the mastic or resilient types such as the polymers, felt, pile.

Cover tapes.

Metallic strips, spring or interlocking.

And under the Rigid type we have:

Bonded—with two classifications: metallic or non-metallic.

Metallic would be welded: non-metallic a chemical adhesive or chemical bond.

From the *Architectural Metal Curtain Wall Workshop-Conference:* October 1956—Building Research Institute, National Research Council, Washington, D.C.

2. Most of the early examples of the sheath curtain wall are, in fact, all-glass walls, though the spandrel (a term not used for this unit in England, where it is usually described as the under-cill or cladding, panel), was sometimes backed-up internally by an independent inner wall (Peter Jones, Sloane Square, London) and this is sometimes still unavoidable (Lever Building, New York) for the reasons given in (4) below. However, the tendency is for curtain walls to incorporate factory-made spandrel panels, with exterior and interior finish and insulation, built-in (General Motors Technical Centre, Warren, Michigan).

3. The comprehensive and unique catalogue service which was started fifty-two years ago by the F. W. Dodge Corporation. Almost fifty-four million catalogues connected with products and services of the building and industrial markets were classified and distributed this year in standard bindings to selected individuals and firms. The Architectural File was of invaluable help in assembling the material for this article.

4. At the present moment in America a number of advantages of the curtain wall are offset by building codes (particularly those connected with fire hazard) that require back-up walls behind the spandrel, of more solid construction than the sandwich panel.

5. A performance specification for the ideal curtain wall was proposed in the Princeton report (see 1) and is reprinted below (values less than ideal which would be acceptable in most cases are given in parentheses):

Durability life 100 years (minimum 40).
Thickness 2 in. (maximum 5 in.)
Weight 5 psf (maximum 15).
Insulation U = 0.05 Btu (maximum 0.15).
Fire Resistance incombustible (2 hours where required).
Strength resist 150 mph wind (minimum 100 mph).
Weatherproof on outer face.
Vapour proof on inner face.
Ventilated and drained for control of internal moisture, whether from condensation or from wind-driven rain.
Ventilated for summer cooling.
Flexible provide for expansion and contraction and building movement.
Removable panels easily removable for repair or replacement.
Sound Transmission reduction 50 db (minimum 25).
Sound-deadened against impact of rain and wind.
Size large units, 25 to 100 sq. ft. (minimum 10 sq. ft.).
Adaptable to all types of building framing—steel or reinforced concrete simple or cantilevered.
Erection installed from inside the building—no outside scaffolding required.

continued from page 299]

years, and it was not until 1956 that they achieved a separate category of their own in Sweet's catalogues.[3]

So far they have commended themselves to their users on grounds of lightness (by comparison with masonry and brick), thinness (providing extra usable floor space) and economy (in the cost of the wall and in the speed of erection).[4] Their chief drawbacks, now being gradually overcome, are the complexities involved in making allowance for expansion and contraction, weatherproofing of joints and the experimental nature of some of the infill panels used.[5]

The aesthetic of the curtain wall holds both a threat and a promise. The threat derives from the extraordinary speed of its development. The necessity for such an application of technology to building was continually canvassed by the pioneers of the modern movement,[6] and they can hardly be blamed for failing to envisage exactly what aesthetic problems commercialized prefabrication would bring; they were not to know how, when and where it was to come about; they were not to know it would be the external envelope that would first receive attention on a large scale. They hoped, presumably, that it would come about rather earlier than it has, and with their direct participation. However, the first stages of commercialization have taken place largely without the close participation of architects, and, as a result, many of the designs lack finesse. The threat lies in accepting this uncritically, and permitting such designs to achieve the status of the standardized before they deserve to.

In England precisely the same danger threatens, though the situation is to some extent ameliorated by post-war experiments in prefabrication initiated by architects, and carried through with the closest collaboration between them and the manufacturers. The Hertfordshire experiment has provided case-studies in prefabrication which will be of value for many years to come. But most of the Hertfordshire schools were single-storey and like the Ministry of Education multi-storey schools, house the structural frame in the external wall; they are not curtain walls of the sheath type with which we are mainly concerned here. The London County Council has used a standard sheath curtain wall for some of its schools (e.g. Catford) which has a remarkable degree of elegance and refinement. The type used at Catford, in company with other standard English curtain walls, is of much lighter construction than the American counterpart. Several reasons have been proposed for this, (a) that many standard American curtain walls are designed to be prefabricated in larger units; (b) that the American walls are designed

for greater maximum wind stresses,[7] and (c) that there is more concern in America for saving on labour costs than on cost of materials. Nevertheless, both here and in America, the best looking curtain walls, whether heavy or light, would seem to be those (one-off and standard) designed by architects working in close collaboration with engineers and technicians, or those standard ones which have most closely followed their lead.

In America the curtain wall has a more directly industrial parentage. The urgent need for economy and increased speed of erection of buildings producing, storing and housing the second world war effort encouraged mammoth firms of architects and architect-engineers like Albert Kahn, Austins, and Giffels and Vallet to exploit the advantages of dry construction. In big factories, storehouses and hangars corrugated metal sheeting was extensively used for external walls, entirely sheathing the often windowless buildings. After the war detailed analyses of these systems[8] led to improvements and launched their application not only to the industrial but also to commercial buildings, finally leading to the framed metal curtain wall.[9]

It is unlikely that the popularity of the curtain wall in America would have been so sudden but for the operation of other factors than the technical and economic. It is hard, so near in time, to detect the decisive factors. There were, of course, many practising architects well aware that the logical enclosure of the skeleton frame was a light envelope, and well aware also that the technical difficulties in its way were gradually being overcome. But, as ever, developments awaited the added stimulus which comes from that imponderable factor, popular aesthetic

[*continued on page* 307

Attachment to building simple and positive—adjustable in 3 dimensions.
Handling easy, preferably by manpower only.
Shipping easy, by standard transportation.
Fabrication simple—can be done in any reasonably well equipped fabricating shop.
Appearance attractive—no waviness, not too reflective, wide variety of textures and colours, weathers uniformly, self-cleaning.
Maintenance none required—no painting, caulking or refinishing—cleaning not required for durability or appearance—cleaning easy if desired.
Cost moderate—competitive with conventional construction—maximum $5 per square foot in place.

6. See pages 302 and 307.

7. American walls (see 5) are designed for 150 m.p.h. wind loads, while, in England, the figure seldom exceeds 75 m.p.h.

8. The following account given at a conference on Metal Curtain Walls organized by the American Building Research Institute, and held in Washington on September 28 and 29, 1955, is by John O. Blair, Division Architect of the Detroit Edison Company, and describes a study made after the war, of the comparative costs of masonry and metal curtain walls:

'. . . 30 types of 8 in. and 12 in. masonry curtain wall sections were developed, . . . Two types of field or shop fabricated metal panel units were investigated . . .

'The total unit costs per sq. ft. of wall surface . . . for masonry curtain walls varied from $3.39 to $7.69, . . . The total unit cost for metal panel construction using electro-galvanized steel for the inside face, 1½ in. fibreglass insulation and fluted aluminium for the outside face was estimated at $2.75 per sq. ft. of wall surface. Using stainless steel in the same section, in place of aluminium, our estimate was $3.85.'

9. The following comment on the use of the framed metal curtain wall is contributed by Angus McCallum of Kivett and Myers and McCallum: architects Kansas City:

'We have employed "window wall" construction in quite a wide variety of buildings for the past ten years. The cost of the insulated panel portion is greater than that of the more conventional masonry wall with simple interior finish, but the saving in space (approximately three inches overall wall thickness, against eight to twelve inches), the

[*continued on page* 307

manifesto

"It would seem as if in our day, when machinery and manufacturers supply every want, town building ought to be erected without occasioning any inconvenience... and with the precision which modern mechanical appliances insure. It is evident that very much still remains to be done if we would derive from these mechanical agencies all the advantages the public have the right to expect....
"As machinery is now so extensively applied in the manufacture of large rolled iron, what should be avoided is the multiplication of patterns, which necessitates frequent changes in the operations of the workshop. A smith will make fifty pieces to the same pattern more cheaply and rapidly than if each piece required a special pattern: and when it comes to the fixing there is less chance of the work not fitting, or of mistakes in it." *VIOLLET-LE-DUC 1864*

"If we are to make iron our main constructive element we must break with the old traditions of brick and stone, and adopt a method of design more suitable to the new material. It has often struck me that the half-timber work of the fifteenth and sixteenth centuries contains many suggestions for this new way of building. In the first place it is a ***trabeated*** style in the literal sense of the word, a style of posts and beams....
"Why should not the superstructure of the shop-front be framed with a skeleton of iron filled in with nogging or thin hollow walls, faced perhaps with glazed bricks in colour, for enclosing the habitable part of the house." *T. G. JACKSON 1906*

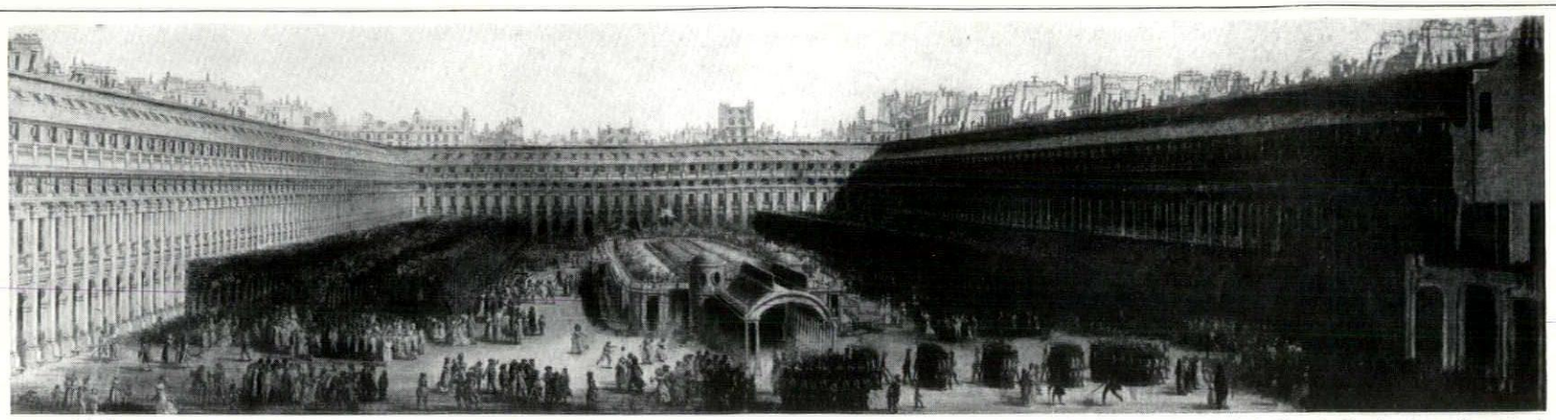
Industrially, the frame-and-fill construction that opened the way for curtain-walls is as old as the Functional Tradition, and survived the change from wooden construction to iron frames in the



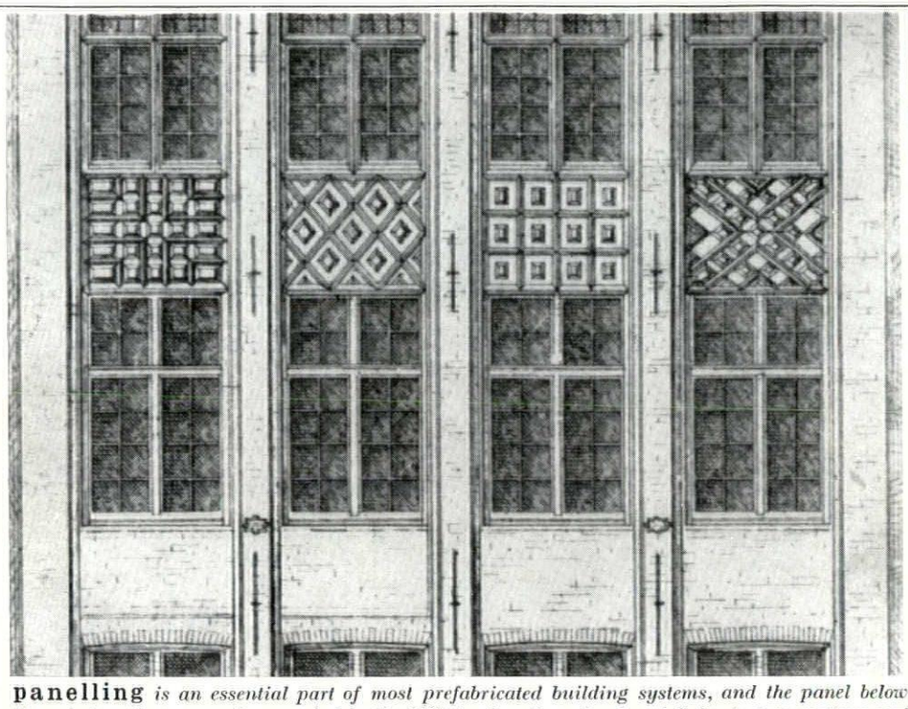
middle of the last century—the old Chatham Dockyard Museum above, 1867, and the Sheerness Boathouse below, 1861, both cast iron, show frame-and-fill on the threshold of industrialisation.



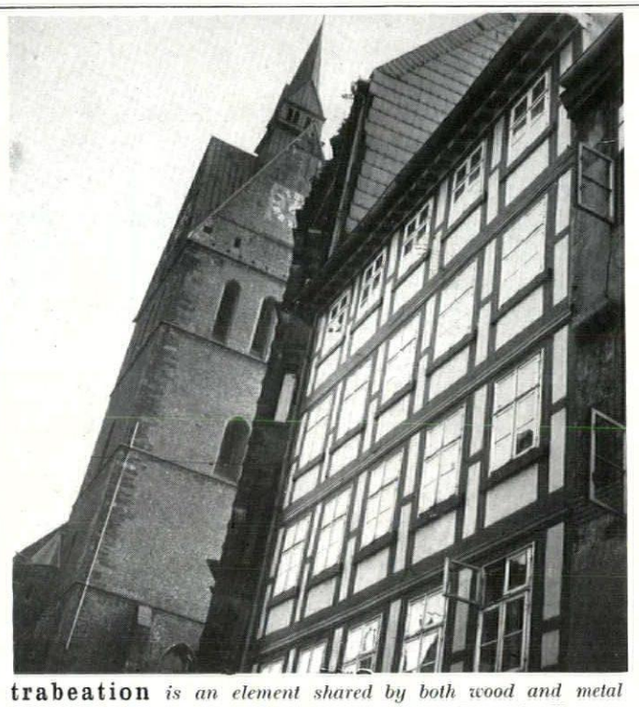
elements of curtain wall design abstracted from the past



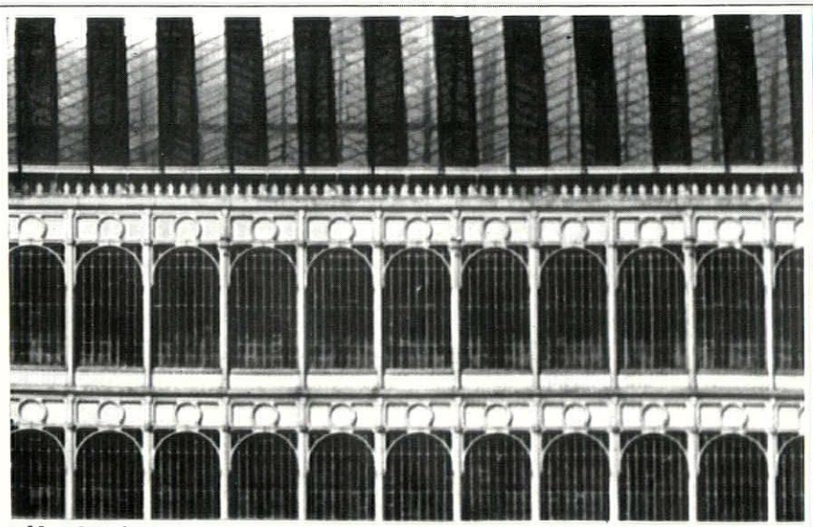
repetition, *inseparable from standardization, is often castigated on grounds of monotony in theoretical discussions about architecture, although in practice it often proves a highly admired attribute. The Palais Royal, Paris, above, is a standing example of the contribution that repetition can make to a sense of urbanity.*



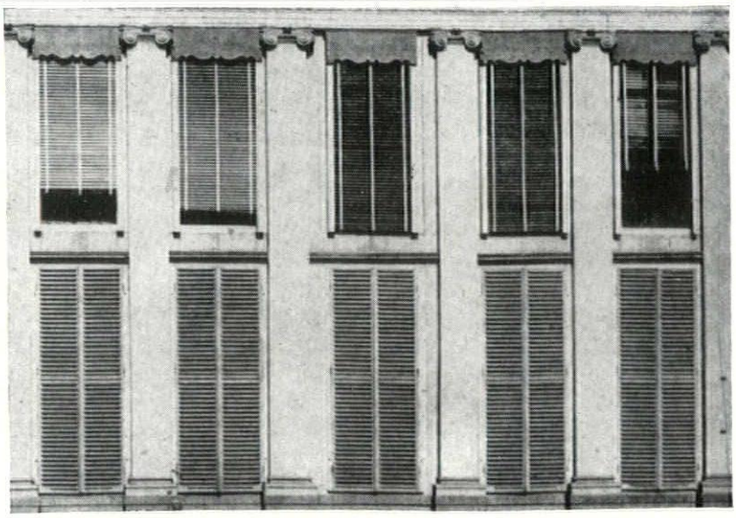
panelling *is an essential part of most prefabricated building systems, and the panel below the window (known as the spandrel in the US) is often the only place left for texture, pattern and colour; the consequent temptation to elaborate this space (as in the Dutch sixteenth-century example above) is particularly harmful to a style which derives its qualities from restraint and simplicity.*



trabeation *is an element shared by both wood and metal systems of construction. This sixteenth-century house in Hanover shows an affinity with contemporary curtain wall construction not only in the rectilinear pattern but also in the flush surfaces.*



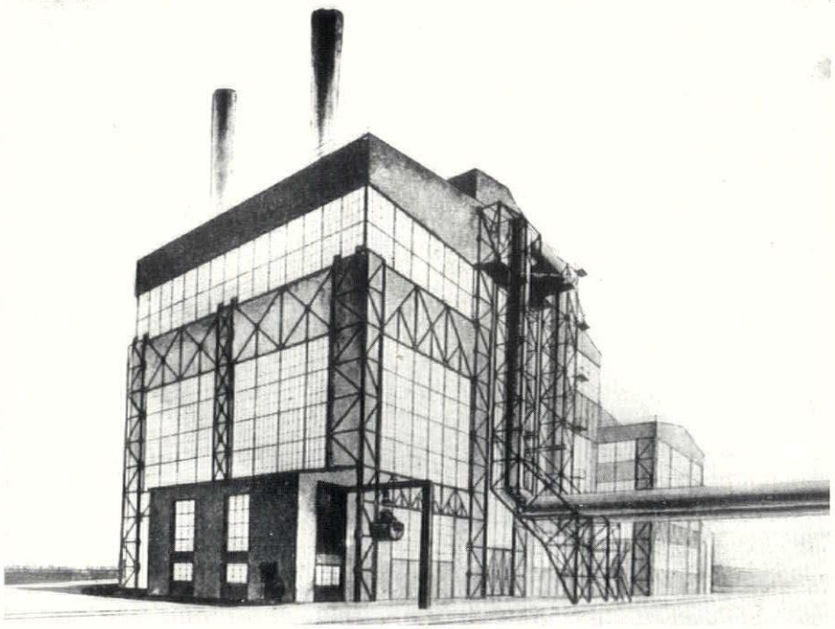
all-glazing *is not by any means universal in curtain wall construction, and it can raise serious insulation problems, although, as the examples on the next two pages show, it was the most influential single element in popularizing the idea. The Crystal Palace, 1851, above, based its glazing technique directly on greenhouse precedent; the curtain wall generally derives from the metal window manufacturer.*



profiling *is one of the least studied and most important elements in the design of curtain walls. Wherever architecture depends for its effect on plain surfaces and shallow relief (as does this seventeenth-century Dutch house), the depth and profiling of what projections there are is of first importance; in the handling of light and shade contemporary designers still have much to learn.*

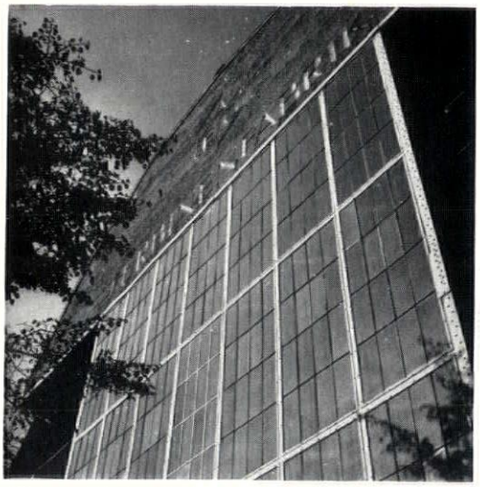
antecedents of the curtain wall from Viollet-le-Duc to Mies

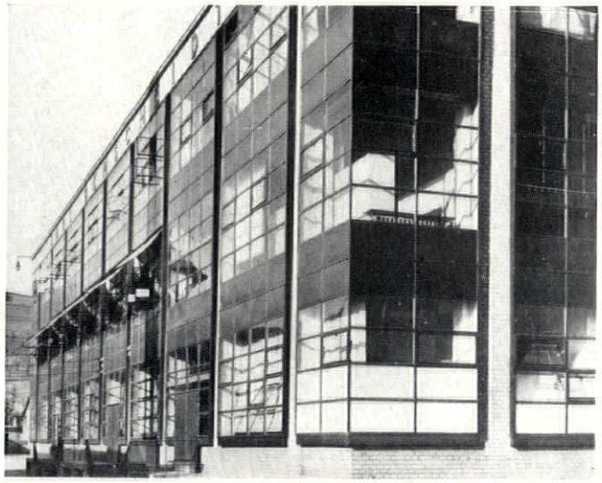


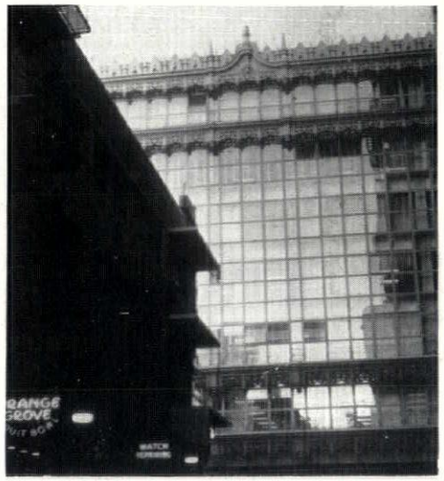


10, 11

Viollet-le-Duc, taking mediaeval timber framing as his point of departure, visualized diagonal bracers across the faience filled panels of his iron-frame design of 1864, 10. *The idea has not prospered, and its reappearance in Dmitriev's Don Basin Power-station,* 11, *of* 1926–27, *is rare in this century.*

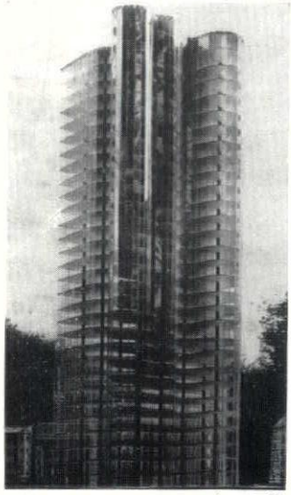


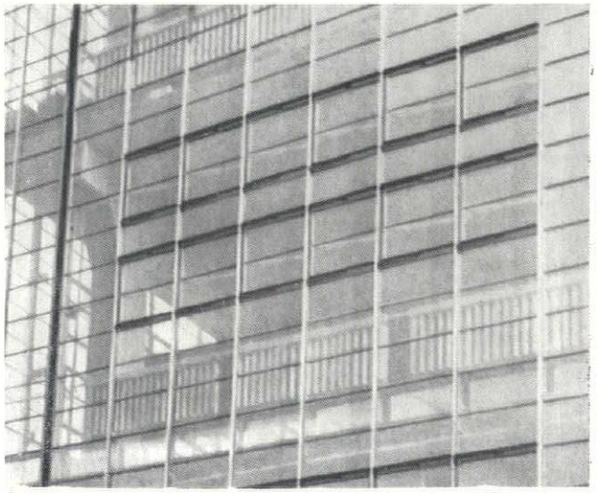


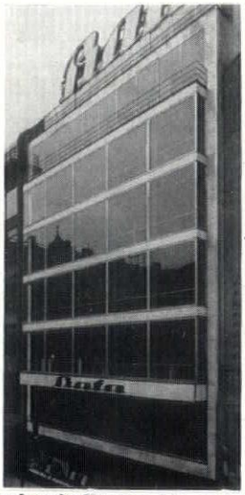


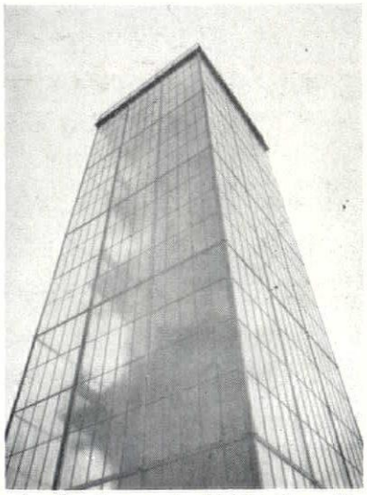
12, 13, 14

The architectural approaches to the all-glass curtain were made in the first twenty years of the century, in Behrens's Turbinenfabrik *of* 1909 *in Berlin,* 12, *and in the Fagus Factory at Aalfeld,* 13, 1911–13, *by Gropius and Meyer. In both of these, the glazing appears as discontinuous inserts between the structural members, but a true curtain had already appeared in Willis Polk's Halliday building in San Francisco in* 1915, *the prime US pioneer work,* 14.







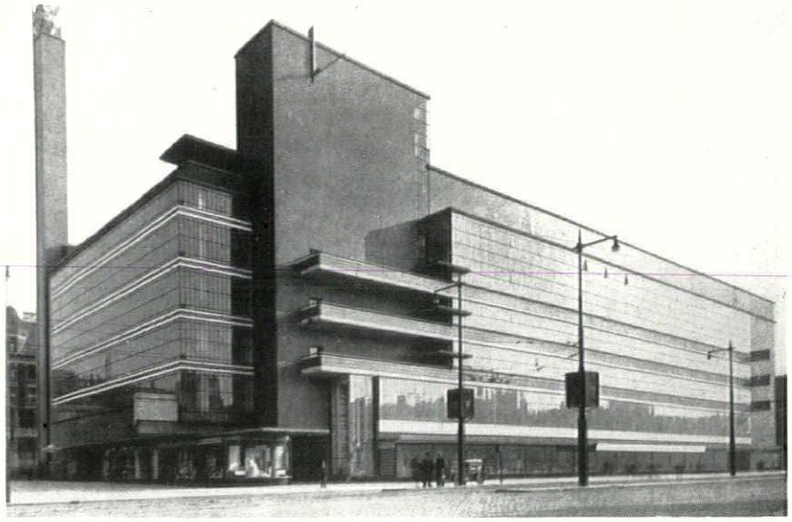


15, 16
17, 18

After 1918, *true curtain walls of continuous glazing proliferated in advanced architectural circles, Mies leading the way with his glass tower project of* 1926, 15, *Gropius following with the Bauhaus machine shop,* 16, *in* 1926, *and then Kysela's Bata shop in Prague,* 17, *and another Czech example of* 1928, *Cermak's tower for the Brno exhibition,* 18, *a very pure use of the glazed curtain, and one that anticipated very closely the solutions evolved by Mies.*

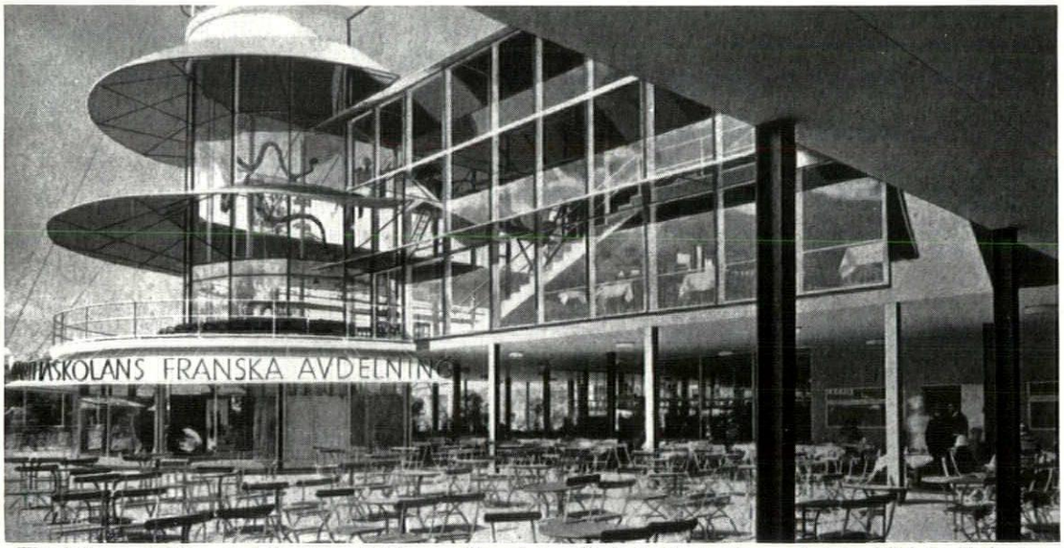
antecedents of the curtain wall from van Nelle to Peter Jones

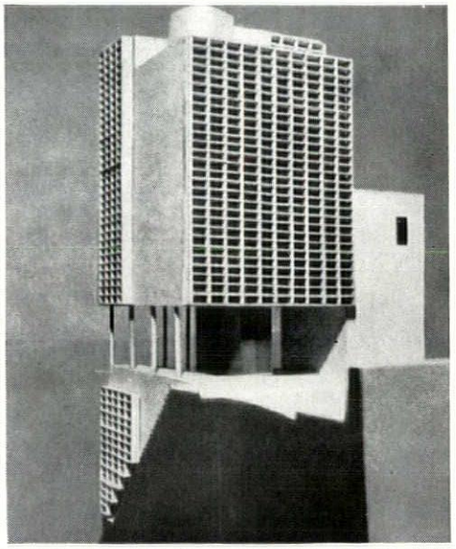




19, 20

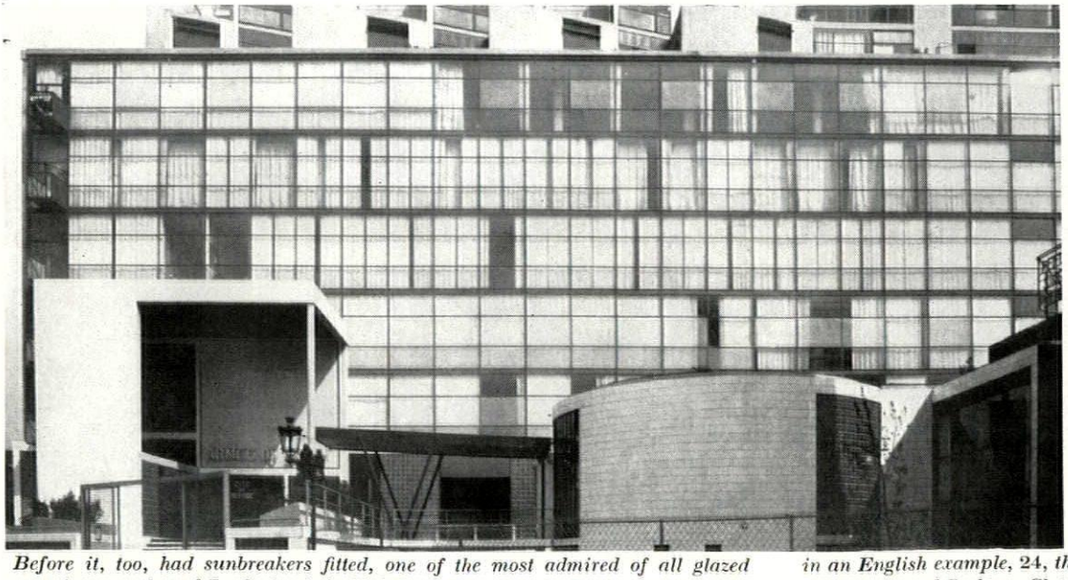
It is often overlooked that the pioneer work in glazing-over really large building surfaces was done in and around Rotterdam; Brinkmann and van der Vlugt's van Nelle factory, 19, *dates back to* 1924, *while Dudok's* de Bijenkorf *store of* 1929–30 *offered greater areas of glazing,* 20, *than had been achieved even by Erich Mendelsohn up to that time, even though Dudok only uses them to skin over projecting elements, not to wrap the entire visible volume of the building.*

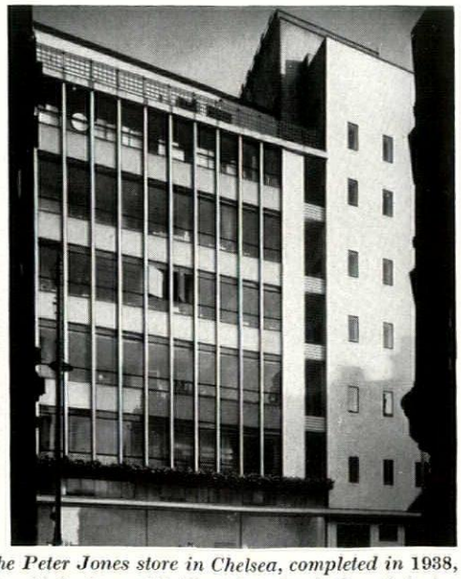




21, 22

The full possibilities, and the unavoidable penalties of overall glazing began to be appreciated in the early Thirties—the decade opened with maximum exploitation of the light glazed box, 21, *in Asplund's Stockholm Exhibition buildings, but by* 1932 *Le Corbusier was having to face the insolation problems of the* pan-de-verre *and fit* brise-soleils, 22, *to his project for a dwelling block in Algiers, thus producing one of the earliest emphasized facade grids.*





23, 24

Before it, too, had sunbreakers fitted, one of the most admired of all glazed curtains was that of Le Corbusier's Cité de Refuge, 23, *in Paris, completed in* 1933. *But the truest anticipation of the industrialized curtain wall is to be seen in an English example,* 24, *the Peter Jones store in Chelsea, completed in* 1938, *to the designs of Crabtree, Slater, Moberley and Reilly, where the rhythm of glazing and spandrel is close to the industrial versions of the Fifties.*

manifesto

"A type can originate everywhere when identical needs exist....When a population has identical needs it stands to reason that types develop."

OSTHAUS 1912

"We can see the new structural principles most clearly when we use glass in place of the outer walls, which is feasible today since in a skeleton building these outer walls do not actually carry weight. The use of glass imposes new solutions."

MIES VAN DER ROHE 1922

"Industrialization of the processes of construction is a question of materials. Our first consideration, therefore, must be to find a new building material. Our technologists must and will succeed in inventing a material which can be industrially manufactured and processed and which will be weatherproof, soundproof and insulating. It must be a light material which not only permits but requires industrial production."

MIES VAN DER ROHE 1924

"The creation of standard types for everyday goods is a social necessity. The standard product is by no means an invention of our own era. It is only the methods of producing it which have changed. It still implies the highest level of civilization, the seeking out of the best, the separation of the essential and super-personal from the personal and accidental."

WALTER GROPIUS 1935

continued from page 302]

reduction of weight of exterior wall construction and consequent saving in structural members, relative speed of field erection as against masonry, the fact that enclosure of the building can proceed in temperatures unsuitable for masonry work—all these are factors affecting our use of this construction.'

10. 'A vast marble frame for two enormous windows . . . a mosaic reflecting the sky from a thousand facets.' *The Magazine of Building*, June, 1949.

11. 'The . . . imaginative and public-spirited Lever House whose slim office tower of glass and steel . . . is raised on a table of restaurants under whose legs New Yorkers may pass the time of day, to the sound of splashing water and traffic in one of the densest and most expensive districts in the city,' F. Atkinson in *The Listener*, March 13, 1952.

12. Below are two examples of Lever's impact on Europe. First, a design for an office building in the City of London.





Second, offices for the Kaufhof Company in Cologne, Germany.

continued from page 302]

appreciation. Without doubt, a powerful influence was the completion of the United Nations Secretariat; here for the first time was an all-glass curtain wall on the American scale, and it made a powerful impact on public, critics,[10] architects and manufacturers. Architect's visions are all very well for other architects, but, for the man in the street and the man in the executive suite, architecture has to rear its head before their pulses quicken. With the completion of the Lever building two years later their pulses began to race. Few buildings of the twentieth century have drawn so ardent a response from all sections of a community and few have so acted upon visitors of the most diverse interests and backgrounds, from other communities.[11] Where the Lakeshore Drive apartments with their subtleties of modelling and historical associations can make an immediate appeal to architects but demand an effort from the public they do not always get, the Lever building seems to offer a direct line of communication. This may be an explanation of why most of the marketed curtain walls strive for an effect of flatness rather than relief in the façade, and why in so many of them the scale and proportions of the frames and panels seem to relate to the Lever prototype rather than to any of the earlier experiments or other current models.[12] Already the effect of flatness is receiving criticism from some quarters[13] and it will be interesting to see whether the Miesian modelling of the façade or the more pronounced effect of some type of sun-shading will be developed next by the manufacturers, or whether the glittering effect of the sheath-like envelope will win over its critics. This depends, to a large extent, upon the success achieved in raising the standard of appearance in scale, proportion and modelling of many of the current marketed walls.

So far we have considered only the history and the present problems of the curtain wall, but there are implications for the immediate future, even more interesting. It sometimes happens that when an idea, for long subscribed to in theory, proves itself workable in practice, a number of other ideas suddenly fall into place alongside it: the development of the curtain wall holds just such a promise.

It is an awkward but inescapable truth that the architecture of an age is judged by its weak as well as its strong links. Ever since the breakdown of classical discipline in the romantic movement and right up to the present, architecture's weak links have been very weak indeed. An age or a nation may or may not produce its geniuses, there is nothing at all you can do about it, but if the average man is left without terms of reference, codes of practice, vocabulary or pattern book, he flounders. And the average man, architect, builder, handyman and client has been left to flounder now for nearly a hundred and fifty years without any clear architectural terms of reference. No evidence is needed to support this; it lies all around us. Loud has been the complaining by those who think they know better, and ludicrous the attempts to redress it by forms of aesthetic control, nearly always rebounding on to those who least require it. Yet, surely, if it is to succeed, aesthetic discipline, like all other kinds, must be accepted willingly.

The curtain wall is the first sign of such a discipline presenting itself to modern architecture and being generally accepted. It has been observed that it has a 'low emotional content'. Is this a matter, though, for complaint? One of the most unpleasant aspects of our environment today is the litter of buildings attempting to express an emotional content that their designers were neither capable of feeling nor understanding. There is a saying "An artist is not a special kind of man, every man is a special kind of artist." This may well be true if you broaden the definition of artist until it becomes almost meaningless. But if you mean an original creator, a frontier pusher of the intellect and imagination or, in architecture, the man with the 'plastic eye' who can conjure with space, then surely the gift is rarely given.[14] To a slightly larger number is given the ability to take a lead and make something of their own out of it; to the rest is given the ability to acquire all kinds of skills of inestimable use, whether in research, manufacture, assembly, organization or a thousand other essential parts of the building operation.[15]

In the *Lamp of Sacrifice* Ruskin said "It is very necessary . . .

[*continued on page* 317

13. '. . . the single plane is the type of most of the curtain-wall buildings in this country, and it is our own belief that over the coming years we will see a marked departure from this fetish for flatness. This will happen not only on aesthetic grounds, because there is certainly a dreariness in flatness when repeated without relief, but also on human grounds, since the flat walls do not accomplish as filters the best results in filtering in and out desirable and undesirable environmental factors.

'The economic factors are strong. The Olgyays have demonstrated that . . . an expenditure of from $4.00 to $9.00 per square foot for shading devices will pay its way through savings in air-conditioning costs alone. It is our conviction that we will be building many more buildings having façades with depth than we did in the past, with of course a great effect on curtain-wall design and fabrication.'

Robert W. McLaughlin, Director of the School of Architecture, Princeton University, speaking at the Conference referred to (in 8) above.

14. It can honestly be said that this rarity is a blessing. An environment made up of masterworks would be tedious and chaotic: submission to the kind of aesthetic discipline that standardization provides would be just as much of a necessity in such a hypothetical situation as it is in our own chaos of 'minor and minus works.'

15. '. . . the historical mission of the architect has always been to achieve the complete coordination of all efforts in building up man's physical surroundings. If he wants to be faithful to this high mission, he must train the rising generation in conformity with the new means of industrial production instead of confining them to a training at the platonic drafting board, isolated from making and building. . . .

'. . . to be honest with ourselves, we must admit that only relatively few of us architects have directly taken part in influencing and performing this great change, or in designing those component parts which we all use in building. It is the engineer and the scientist who have been instrumental in this development. That is why we have to speed up to regain lost ground by training our young generation of architects for their twofold task: 1, to join the building industry and to take active part in developing and forming all those component parts for building, and 2, to learn how to compose beautiful buildings from these industrialized parts. This presupposes, in my opinion, much more direct participation and experience in the workshop and in the field in contact with industry and builders than our usual training provides.'

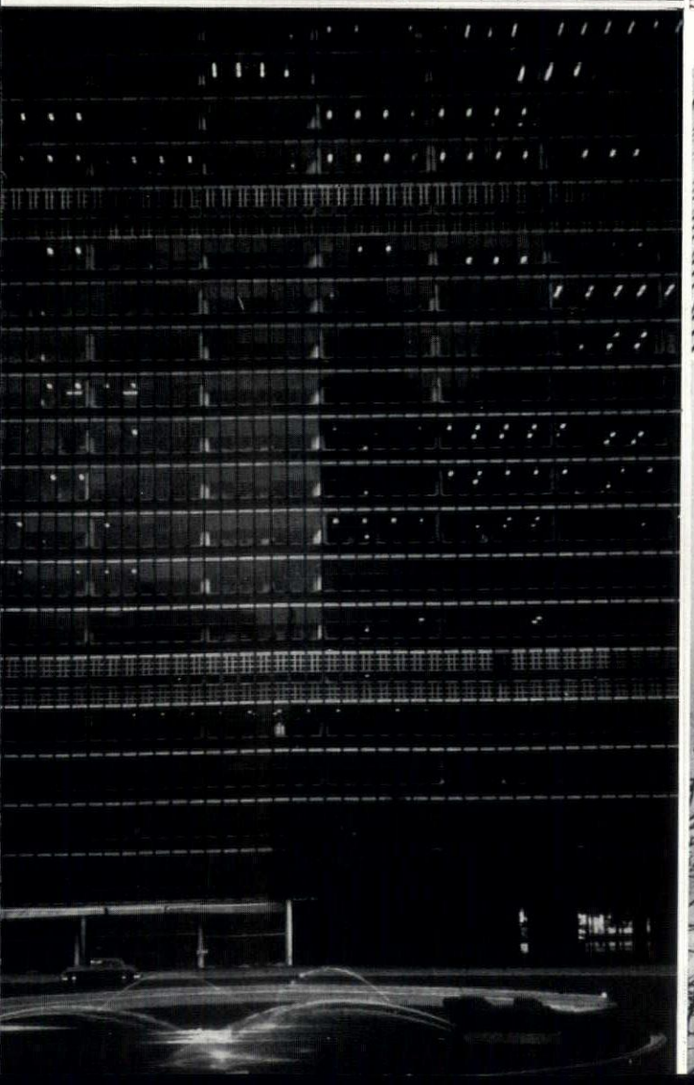
Scope of Total Architecture, by Walter Gropius. George Allen & Unwin, 1956.

[*continued on page* 317



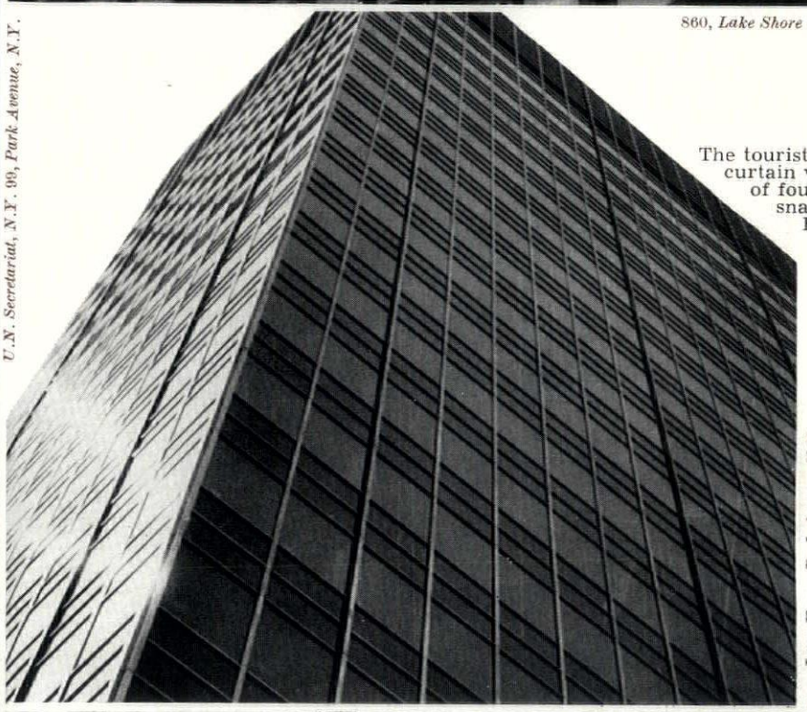


860, *Lake Shore Drive, Chicago*



U.N. Secretariat, N.Y. 99, *Park Avenue, N.Y.*

The tourist's view of US curtain walls: five shots of four buildings snapped by visiting British architects.



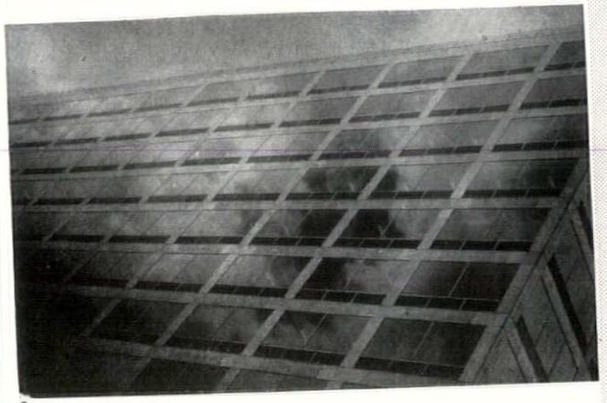
Lever House, Park Avenue, N.Y.

U.N. Secretariat, N.Y.



grid walls.....

EQUITABLE SAVINGS AND LOAN BUILDING, PORTLAND, OREGON. *ARCHITECT: PIETRO BELLUSCHI.*



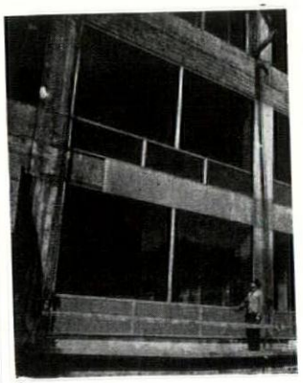
6

An early example in American office buildings (1948) of the reflecting surface. As in the Mile High Centre, opposite, the structural frame is housed in the external wall; here, by bringing glass, mullions, transoms and spandrel panels into the same plane as the polished metal facing of structural columns and beams, the architect has given his building some of the characteristics of the sheath-type curtain wall, though the introduction of structural members into the façade creates more complex rhythms. This type of wall is not always defined as a curtain wall, though authoritative American sources (see page 300) do so define it.



7

Floors	13.
Floor to floor	12 ft. 3in.
Column spacing	27 ft.
Glazing mullions	aluminium.
Facing	
columns and beams	sheet aluminium.
Panel infill	
windows	fixed double glazing.
spandrels	cast aluminium panels—three under each window.
back-up walls	5 in. concrete.



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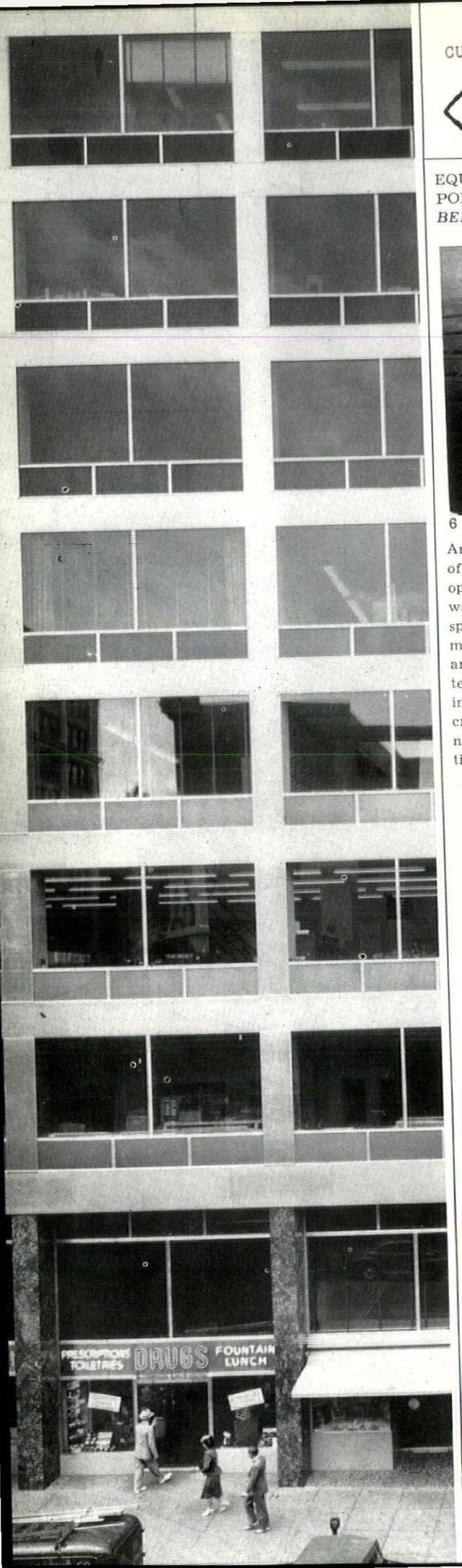
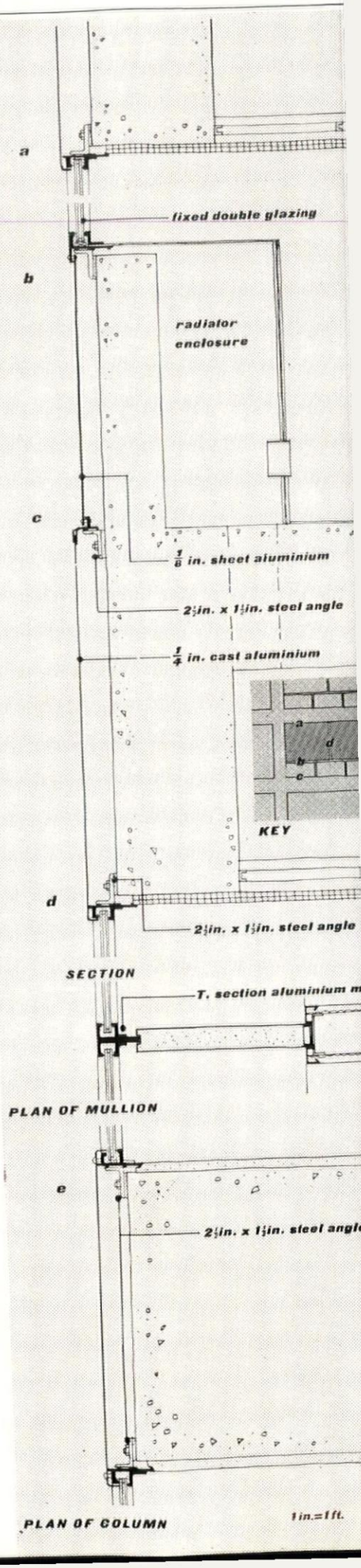
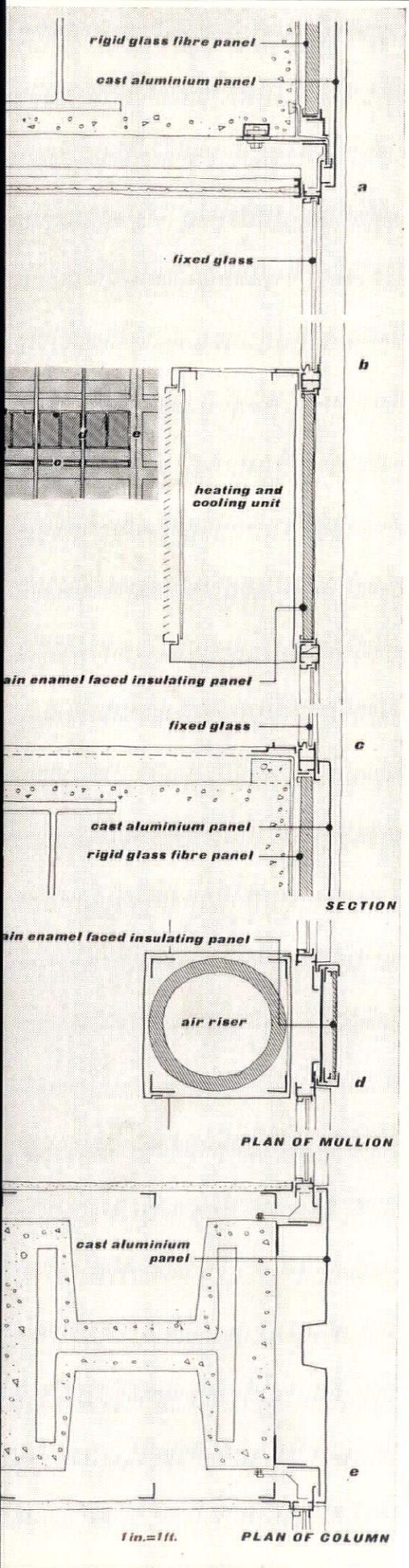
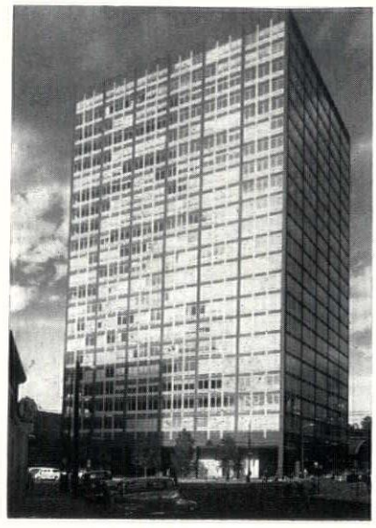




..... shallow relief

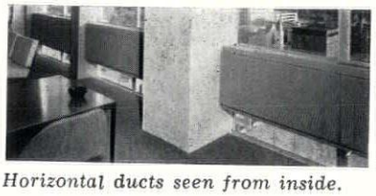


MILE HIGH CENTRE, DENVER, COLORADO.
ARCHITECT : I. M. PEI.



9

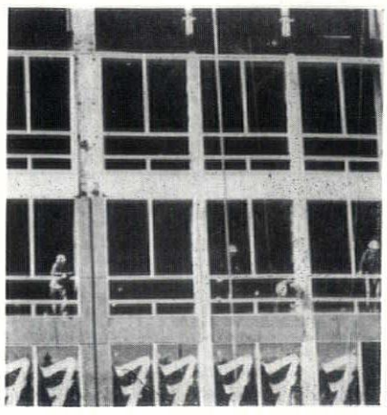
A sophisticated and complex wall pattern deriving from the interplay of structural beams and columns (dark tone), horizontal air-conditioning ducts, vertical hollow mullions used as ducts and intervening narrow mullions (all light tone). Here the surface relief is more pronounced than in the Equitable Building, opposite, though the effect is still 'curtain-like', though the 'weave' is more richly-textured. Where relief of this kind destroys the effect of the wall as a mirror, surface modulation becomes of primary importance.



10

Horizontal ducts seen from inside.

Floors	27.
Floor to floor	12 ft.
Column spacing	25 ft.
Mullion spacing	8 ft. (plus intermediate glazing mullions).
Facing columns and beams	dark-grey cast aluminium panels.
Mullions and transoms	porcelain enamel; colour, bistre.
Panel infill	
windows	fixed glazing, tinted blue.
spandrels	porcelain enamel panels; colour bistre.

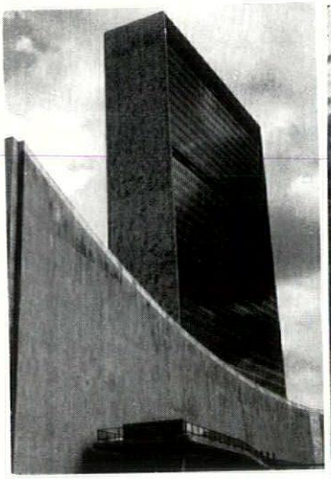


11

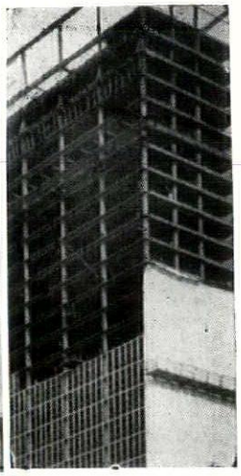


sheath walls.....

U.N. SECRETARIAT, NEW YORK. *ARCHITECTS: WALLACE K. HARRISON AND AN INTERNATIONAL BOARD OF DESIGN.*

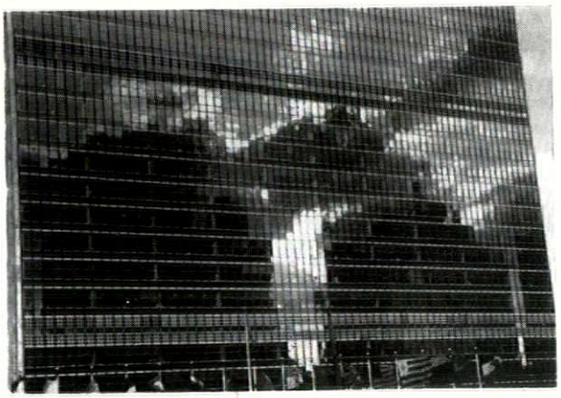


12



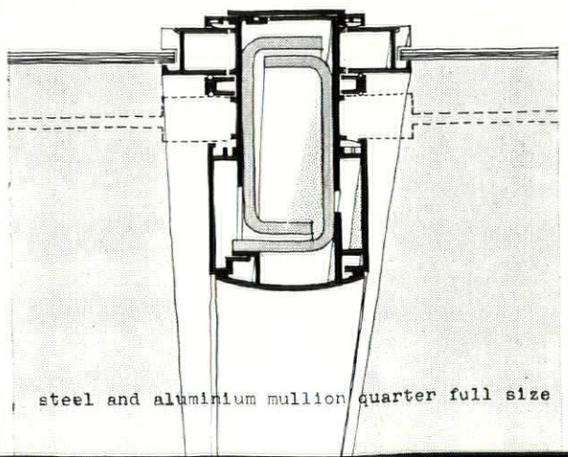
13

The first big-scale curtain wall of the sheath type to be used on a public building. The all-glass structure-free wall holds a 'mirror up to nature' with breath-taking results that are a special contribution of the twentieth century. A glass-roofed building like the Crystal Palace, for instance, did not give this effect because of insufficient contrast between the intensity of light within and without the building. In addition to their qualities as reflectors the UN walls also read as a glass and metal grid (interrupted at intervals by the smaller-scale grid of the service floors), as a light-metal network, and as a filmy, translucent membrane (for the last two see page 309) according to the time of day and the angle of vision.

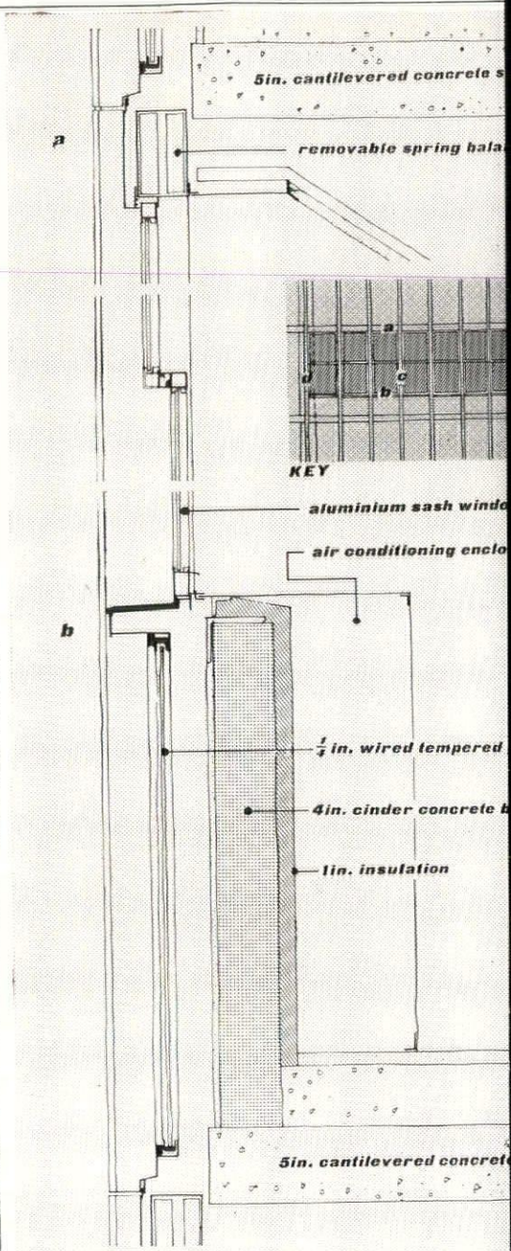


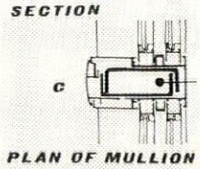
14

Floors	40.
Floor to floor	12 ft.
Column spacing	28 ft.
Mullion spacing	4 ft.
Mullions and transoms	
sub-frames	steel channels.
cover	extruded aluminium.
Panel infill	
windows	double-hung sashes.
spandrels	¼ in. tempered wire glass.
back-up walls	1 in. asbestos, 4 in. cinder-block.

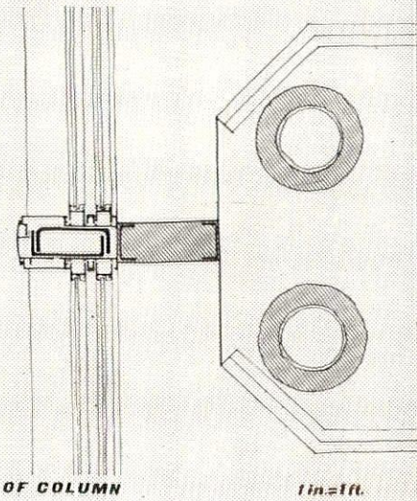


steel and aluminium mullion quarter full size





PLAN OF MULLION

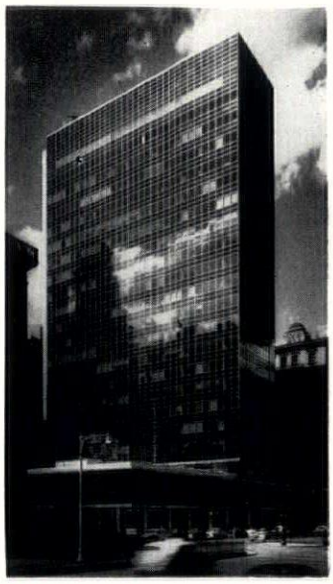


PLAN OF COLUMN

1in.=1ft.

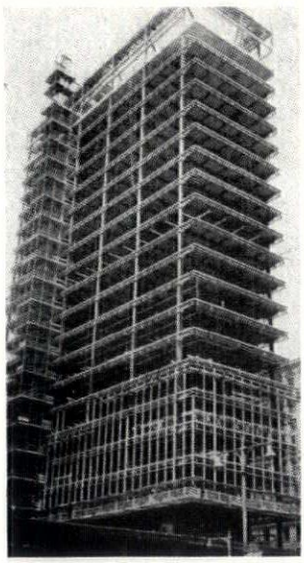
.....all glass

LEVER HOUSE, PARK AVENUE, NEW YORK. *ARCHITECTS: SKIDMORE, OWINGS AND MERRILL: design chief, GORDON BUNSHAFT.*

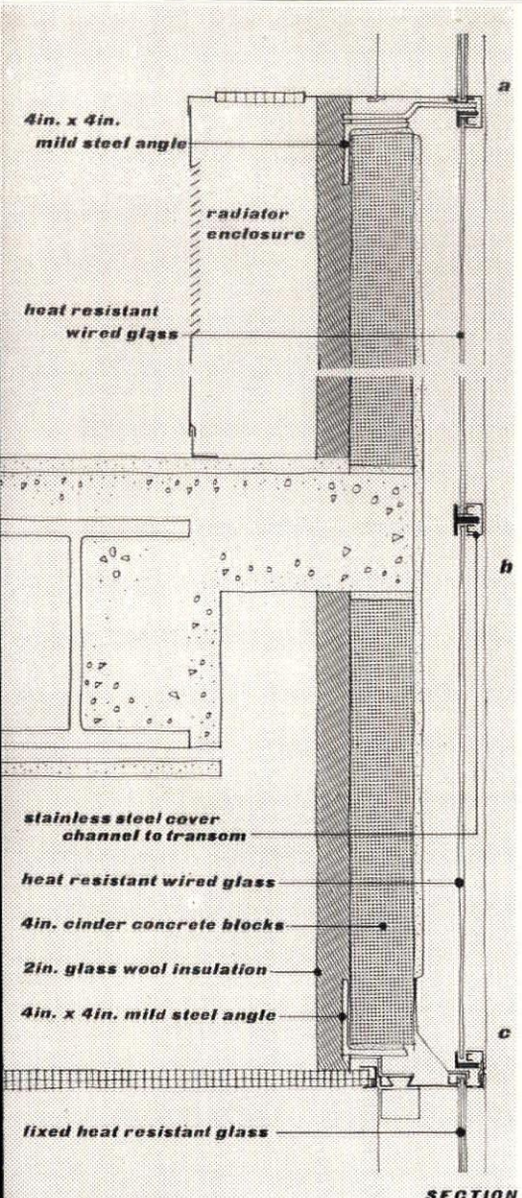


This has been the most influential* and widely-admired curtain wall to date. Its shimmering silver and blue reflecting surface and the extreme simplicity of its form and pattern coupled with its skilfully-handled relationship to a famous thoroughfare (Park Avenue), suggest that it may well come to be considered (to use Dr. Giedion's term) a 'constituent' building of the twentieth century. Both the Lever and the UN building reveal that the æsthetic effect of the curtain wall hangs as much on the profiling of a few inches of metal (see detail below and frontispiece, page 294) as it does on the proportioning of windows and spandrel panels.

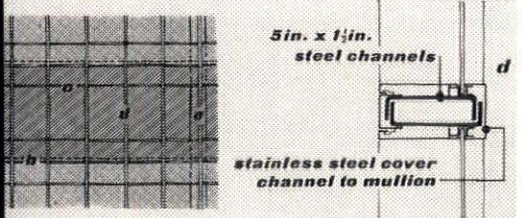
*For foreign examples based on the Lever precedent see page 321.



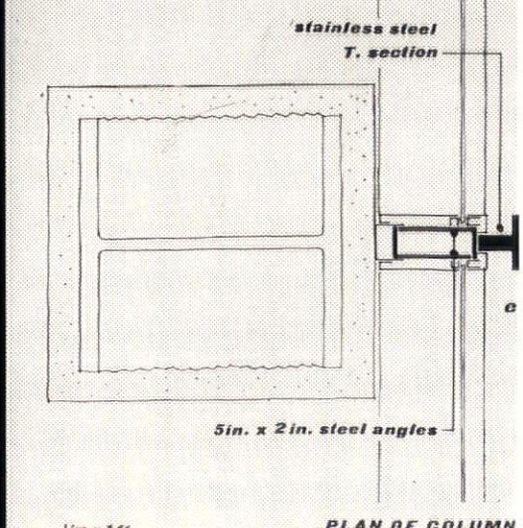
Floors 21.
Floor to floor 12 ft. 6 in.
Column spacing 28 ft.
Mullion spacing 4 ft. 8 in.
Mullions and transoms
sub-frames steel.
cover stainless steel.
Panel infill
windows fixed glazing, single-sheet blue-tinted glass.
spandrels fixed glazing, single-sheet wired glass.
back-up walls 4 in. cinder blocks, 2 in. insulation.



SECTION

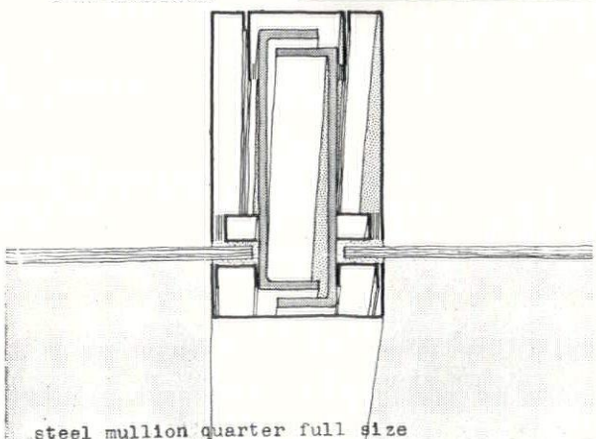


PLAN OF MULLION

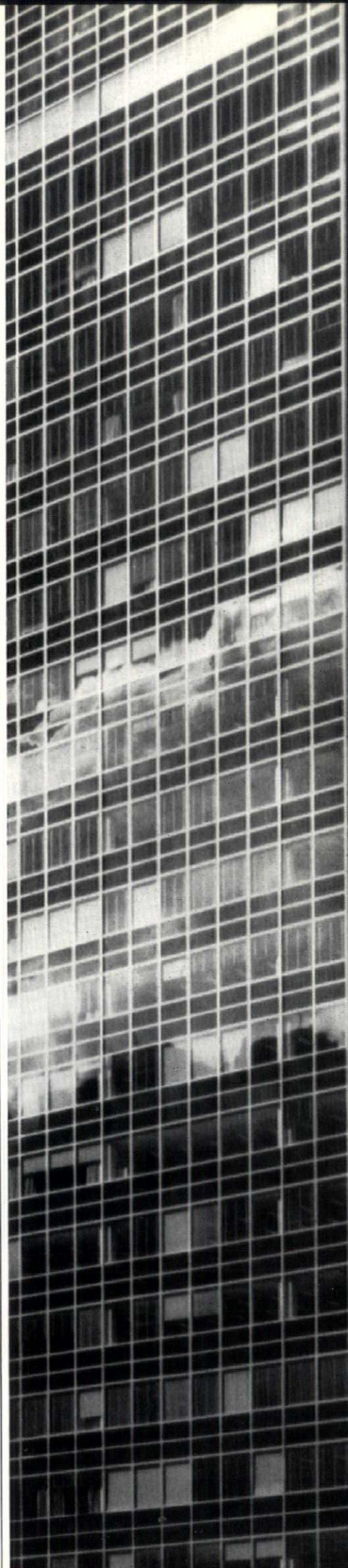


1in.=1ft.

PLAN OF COLUMN



steel mullion quarter full size



sheath walls.....

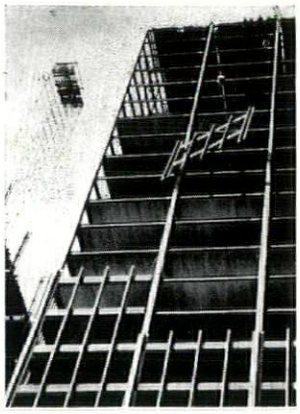
860, LAKE SHORE DRIVE, CHICAGO. *ARCHITECT: MIES VAN DER ROHE.*



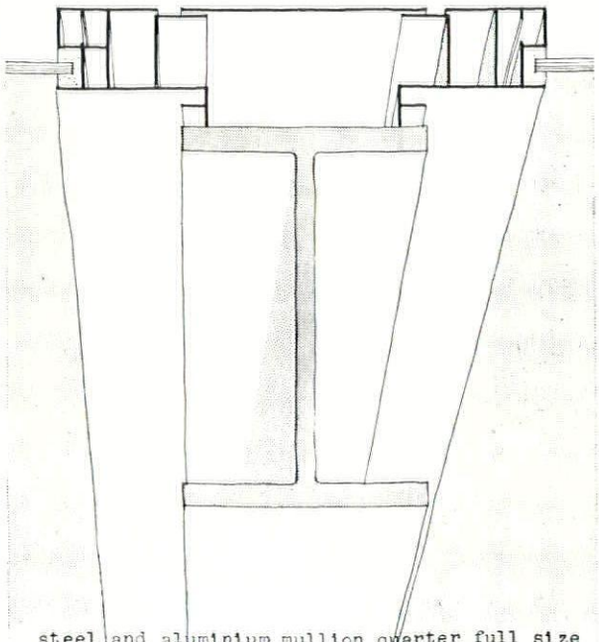
17

A monument by a prophet and the acknowledged master (see pages 338-339) of machine-made architecture. This pair of buildings incorporates more subtleties of modelling, proportion and rhythm than any of the previous examples, which may be one reason why its impact on the public has been less powerful than that of the Lever building. The projecting mullions welded on to the face of steel-clad columns and beams can be considered to bring this wall into the sheath category, though by strict definition it is a grid wall like those shown on pages 310 and 311.

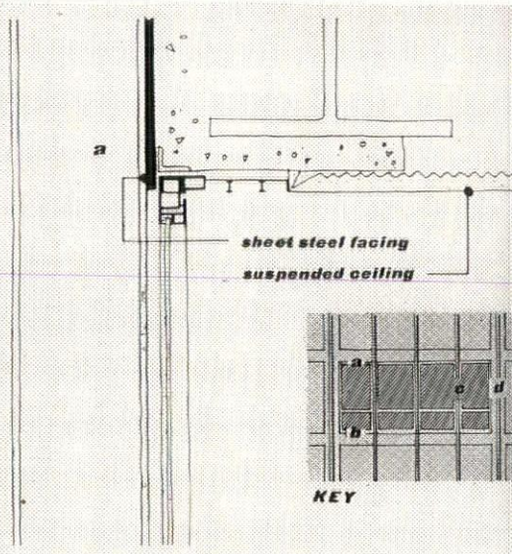
Floors 26.
Floor to floor 10 ft. 6 in.
Column spacing 21 ft.
Mullion spacing 5 ft. 3 in.
Facing materials
columns and beams ¼ in. sheet steel, painted black, with 17 coats of bituminous paint.
Mullions and transoms rolled steel I-sections painted black.
Panel infill
windows fixed, single-glazing.

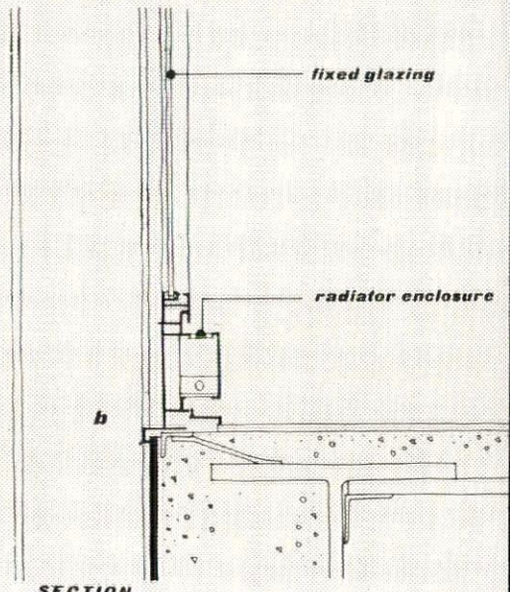


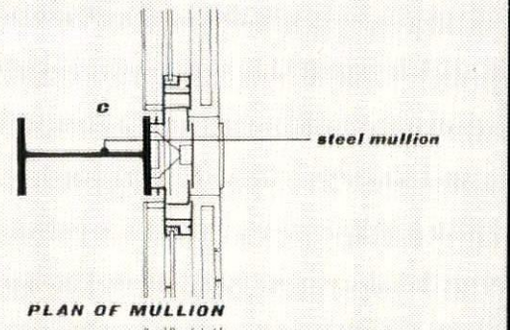
18

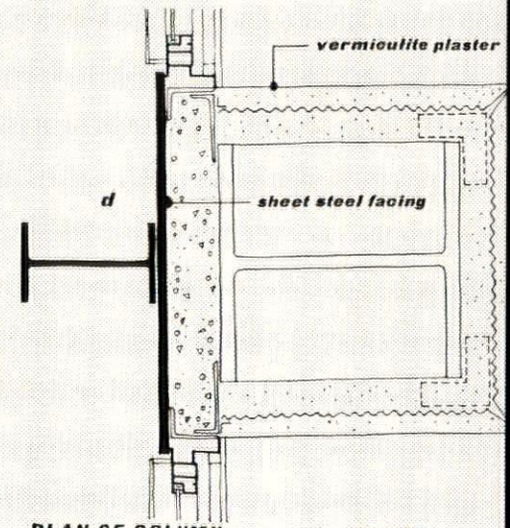


steel and aluminium mullion quarter full size

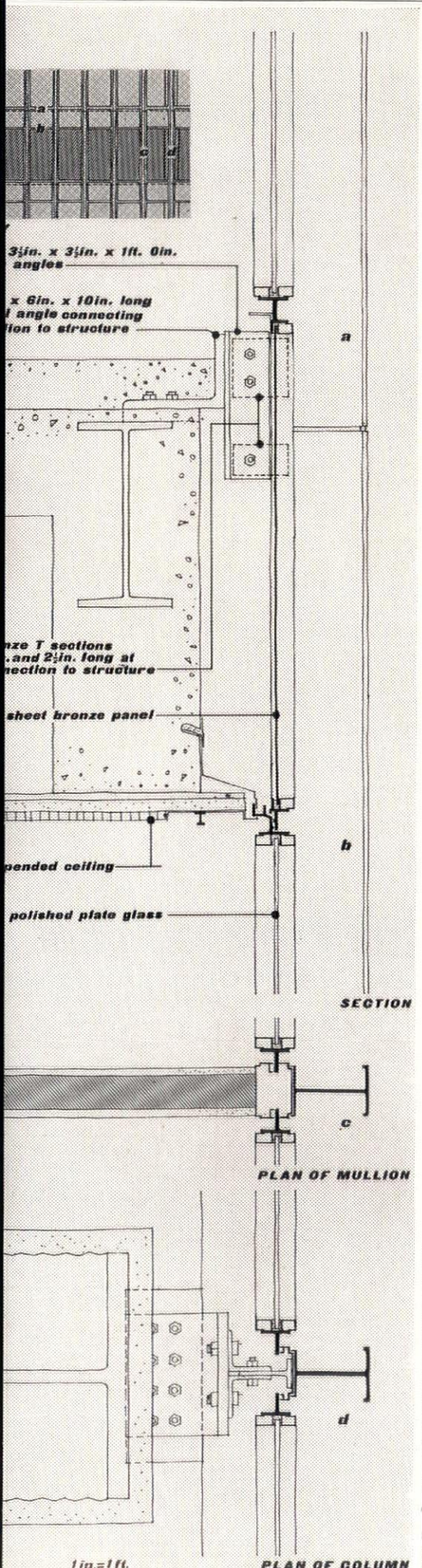








.....projecting mullions ⇨



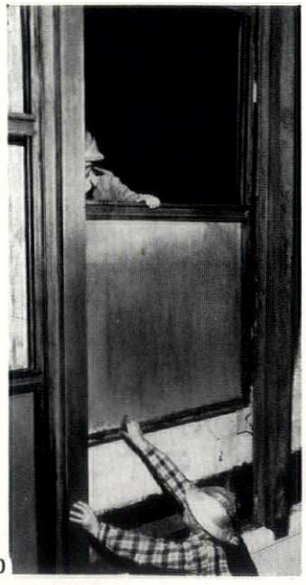
SEAGRAM BUILDING, PARK AVENUE, NEW YORK. *ARCHITECTS: MIES VAN DER ROHE AND PHILIP JOHNSON.*



19

The latest (still uncompleted) major American building to use a curtain wall. But for the grey-tinted glass the whole wall—mullions, window frames and spandrel panels—is of bronze. Like Lake Shore Drive raised mullions, though of smaller section (see detail below), are welded to the surface of the wall. Unlike Lake Shore Drive the structural frame is entirely concealed behind the external envelope. This building has an elaborate system of artificial lighting designed by Richard Kelly (see page 322) to be an integral part of the architectural effect (as well as to provide good conditions for work).

Floors 42.
Floor to floor 12 ft.
Column spacing 27 ft. 9 in.
Mullion spacing 4 ft. 7½ in.
Mullions and transoms extruded bronze
Panel infill
windows fixed glazing: single sheet grey-tinted glass.
spandrels rolled sheet bronze panels.



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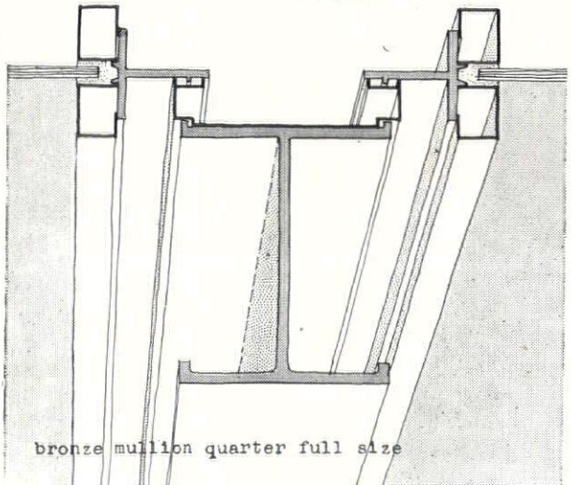
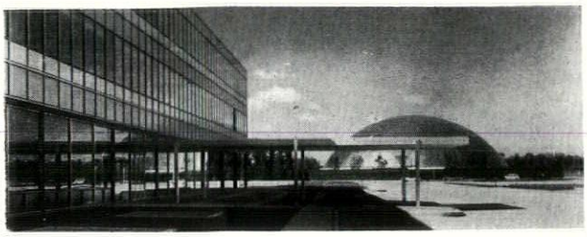


bronze mullion quarter full size



⇦ all-in-one wall.....

GENERAL MOTORS TECHNICAL CENTRE, WARREN, MICHIGAN. *ARCHITECTS: EERO SAARINEN AND ASSOCIATES.*



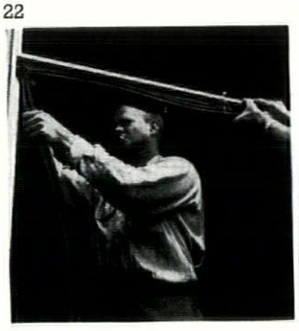
21

This is the only example illustrated here under the heading 'curtain wall classics" that is entirely prefabricated. In most of the urban office buildings (this one is in the country) fire regulations insist on a back-up wall behind the spandrel panel*; here the infill is a (two inch) sandwich panel delivered to the site finished on both sides and ready for assembly; it is also the only example under 'classics' of a low building (three storeys); it has already begun to make its influence felt abroad (see Rodovre Town Hall, Denmark, by Arne Jacobsen, AR, March, 1957, p. 151).

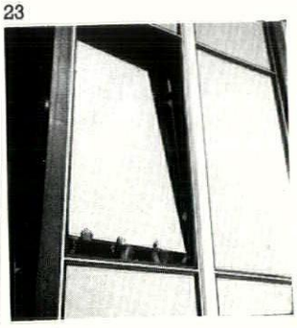
*An exception is the Peachtree-Baker Building, Atlanta, Georgia, by Flatow, Moore, Bryan and Fairburn, page 326.

Floors	3.
Floor to floor	12 ft.
Column spacing	10 ft.
Column facing	sheet aluminium channels.
Mullion spacing	1 per bay.
Mullions and transoms	extruded aluminium sections.
Panel infill	
windows	fixed double glazed.
spandrels	2 in. heat insulating grey porcelain enamel faced.

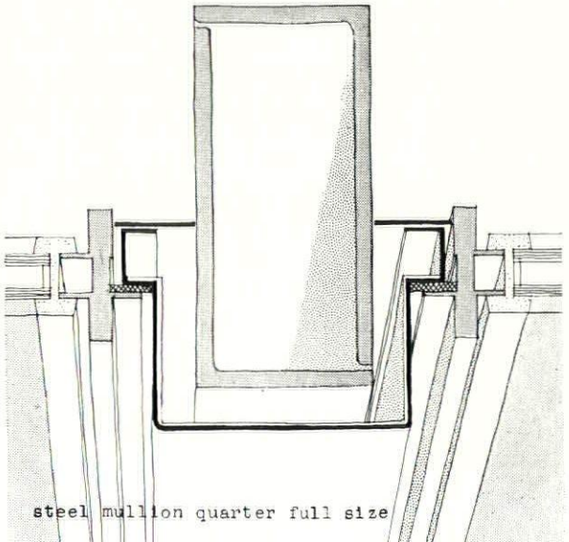
22



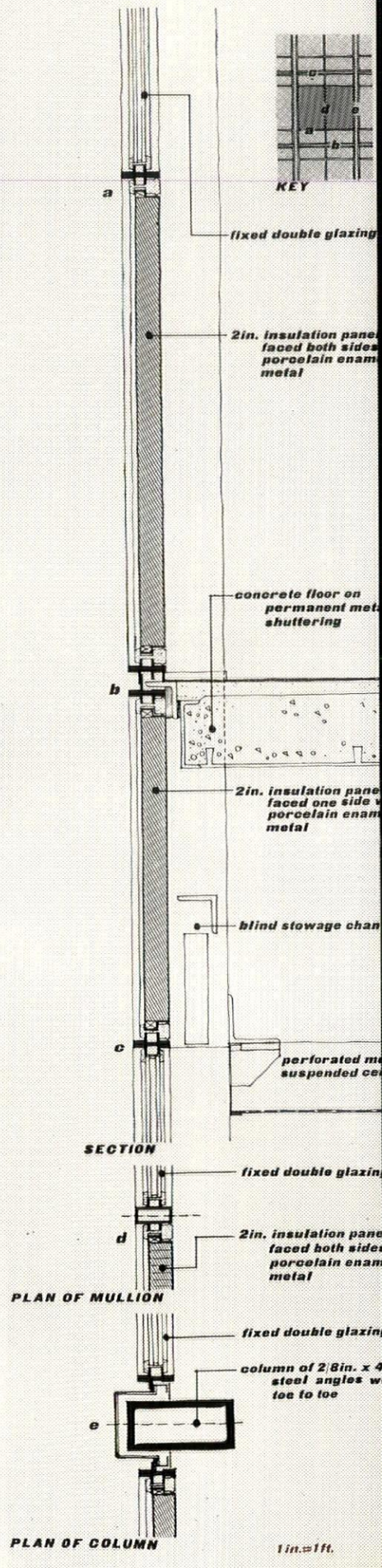
23



Installation of neoprene gasket round glazed panels.



steel mullion quarter full size



continued from page 308]

16. Specialization in building techniques does not cover all the needs. THE ARCHITECTURAL REVIEW has pleaded many times for architects trained to specialize, for instance, in the art of town design—a complicated matter of visual co-ordination for which no adequate courses exist. In addition there are the various branches of town planning as well as building research and even journalism.

17. 'For good or for evil specialism is the order of the times. We employ a specialist to operate upon us for appendicitis just as naturally as we employ a specialist to build a racing yacht or a suit of court clothes. This being so, it becomes necessary to consider also specialism in art, and in particular in architecture. How far, that is to say, can a single man plan and carry out all the details of a modern building? At what point must the recognized axioms about the division of labour come into force if the building is to be carried through to its best possible completion. America, at any rate, seems to have decided in favour of the specialist . . . Americans, however, are not infallible, and the question is still open to discussion.'

THE ARCHITECTURAL REVIEW, pages 258–259, June, 1905, Volume XVII, No. 103.

18. *Charles Eames* and his wife, Ray, were studying architecture at Cranbrook Academy of Art, Michigan, when in 1945, in collaboration with Eero Saarinen, they started investigating the applications of new techniques (some of them developed by motor engineers in nearby Detroit) to furniture. The result has set the form for, up till now, *the* twentieth century chair. *Richard Kelly* is a Yale-trained architect with earlier training in illuminating engineering who became a specialist lighting consultant; he has worked with numerous architects—the best known collaboration being with Philip Johnson, out of which have come new concepts of lighting so much a part of the building that they can, without exaggeration, be called new concepts of architecture. *Robert B. Newman* is Vice-President of Bolt, Beranek and Newman Inc., a firm of acoustical consultants in Cambridge, Mass. Newman has a B.A. and an M.A. in Physics from the University of Texas, and a Master Degree in Architecture from M.I.T., where he is an assistant professor. The firm works closely with architects on the scientific and aesthetic aspects of acoustics; they were acoustic consultants for the United Nations Headquarters.

19. 'More than 80 per cent of all US buildings are being built without an architect.

'Average income of the architect is less than a bricklayer in the east.'

Gropius Appraises Today's Architect, Architectural Forum, New York, May, 1952.

20. '. . . it has become generally recognized in recent years that the cost of buildings, in terms of human effort, has not been reduced

continued from page 308]

to distinguish carefully between Architecture and Building. To build—literally, to confirm, is by common understanding to put together and adjust the several pieces of any edifice or receptacle of a considerable size". What Ruskin intended, of course, was to put building (as distinct from architecture) on a lower plane in the hierarchy of things; to distinguish the fine art from the mere piece of engineering, and it was in this distinction that nineteenth-century architecture foundered, and out of a branch of engineering that the modern movement arose. Nevertheless Ruskin's definition of building (once the 'b' is made small) serves very well to describe an important part of the whole architectural endeavour . . . "the putting together and adjusting the several pieces of an edifice". Today this has become a matter of immense complexity involving innumerable specializations, but it is not the architects who are being trained to specialize in them; specialization has not yet been accepted by the majority of architects. They still think of themselves as Architects with Ruskin's capital 'A'. How is it that this nineteenth-century attitude has been able to linger so long into the twentieth century? Largely, I believe, because of the attitude to training.

Nearly all the schools of architecture in the western world still base their training on the renaissance ideal of the complete man and the nineteenth-century ideal of the gentleman architect. Both ideals have admirable and necessary elements in them, but neither are in tune with twentieth-century needs and possibilities. Though a general grounding in the arts and sciences is essential, the education of most architects today is concerned entirely with generalities. That would be fine if those who are not gifted as creative artists were able to undertake post-graduate studies in specialized subjects and if, during their training, some attempt was made to discover their aptitudes for specialization and relate them to estimated needs; this does not happen.[16] It is generally agreed that building technology is making and is likely to continue to make rapid advances. Is it wise, therefore, to train a large number of men as all-round artist-architects, most of whom are not and never can be creative artists, when there is an urgent need for specialists, with a background that combines the scientific approach with experience in design, who can speak to the all-round architect in his own language?[17] There must be many men leading lives of quiet frustration due to the uncomfortable feeling that they have failed to find the right niche, though their training gave them the impression that it would be there at the end, ready-made; whereas, had their skill

been developed as organizers, lighting, acoustical, engineering experts and so on, much pent-up energy and ingenuity might have been released. It is a matter of happy accident if an Eames gets together with chairs, a Kelly with lights or a Newman with acoustics,[18] and what a contribution an architectural background can make when this happens!

It is not possible to do more than broach this subject here, since the information on which further suggestions could be made, doesn't exist. It is clear only that architects are not adequately fulfilling all the functions demanded of them. We are surrounded by architect-designed buildings that give aesthetic satisfaction to no one, that are often too cold or too hot, too noisy, too leaky, too inflexible and much too expensive. It is little wonder that architects are responsible for only a minor proportion of all the building carried out.[19] People cannot help noticing that something somewhere doesn't add up. What doesn't add up are the kind of things they are beginning to take for granted like cars,[20] television sets, refrigerators and washing machines, when set beside their buildings. They have heard, because architects, among others, have never stopped telling them, of the great advantages to be gained from prefabrication, standardization, modular planning and so on; but architecture, it seems, still fails to benefit. All the arguments of the architects and builders as to why architecture cannot compete don't quite avail against such standing comparisons as the refrigerator and the washing machine.[21] Indeed, at a price, architecture nearly can compete in finish, glitter and efficiency, but at what a price! And lowering of costs with the perfecting of techniques is something the public has been led to expect from efficient industrialization. It is often suggested that the responsibility for this state of affairs rests more with the building industry than with the architect, who is not in a position sufficiently to influence this conservative mammoth. Certainly the drag of time-honoured methods on builders is a powerful one but so, to be honest, is it with architects too.

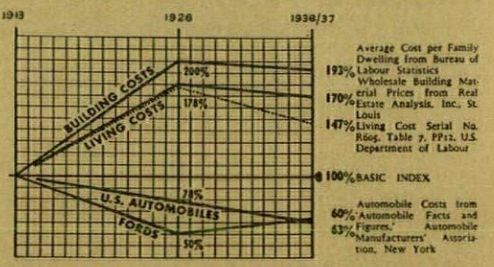
Now that both of them have caught the popular imagination with the curtain wall the benefits of rational prefabrication and perhaps even mass-production may not be far away.[22] If mass-production is to come, it is of vital importance that the elements produced should be as good in design as well as performance as we can possibly make them. However, due to the absence of specialists among architects who can speak to the engineers in their own language and conversely of engineers who can speak to architects in their own language, the best in design

[*continued on page* 321

at anything like the rate of reduction in cost of food, clothing, toys, and adult luxuries . . . Meeting increased space requirements is straining our capacity, but, if we add to that the increased quality and reduction in cost and construction time which we have learned to demand, new building units and production methods must be devised.'

Edward X. Tuttle, Vice-President, Giffels and Vallet, Inc., speaking at the B.R.I. 1955 Conference referred to (in 8) above.

'In 1928, I found in the U.S.A. a most illuminating diagram, roughly comparing the trend of prices for building and for automobiles between 1913 and 1926. It shows the remarkable fact that within the same period the average costs of building increased the price in accordance with the increasing labour costs. Refinement of mass production methods, on the other hand, considerably lowered the price of automobiles. A decent dwelling became unattainable for the low-income class, yet the car became an everyman's tool. The up-to-date completion of the diagram (to



1936 when this was written. Ed.) shows that the price of the average car has steadily declined, whereas the cost of the average dwelling has been only slightly lowered since 1926. This diagram reveals that our building methods, being far behind the times, are not yet fit to solve the problem.'

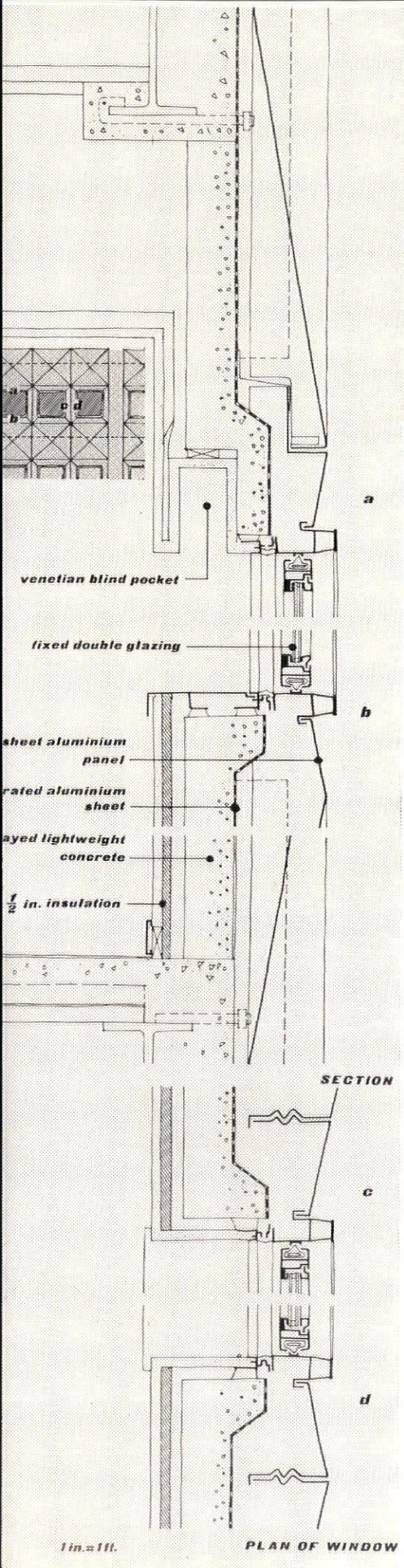
From *Scope of Total Architecture* by Walter Gropius. George Allen & Unwin, London, 1956.

21. Some consider it unfair to make comparisons between industries that produce goods like refrigerators and those that produce components for buildings; certainly there are basic differences between them. It is unlikely, for instance, that building can ever be an all-dry technique, nor is it likely that large buildings will be entirely prefabricated. Nevertheless, the tendency towards dry-construction and shop-assembly with the varying degrees of standardization, mass-production and modular co-ordination that follow, has already brought benefits to building and is often the result of experience gained from a study of the consumer goods industries; it is very probable these still have much to teach us.

22. 'Although some architects maintain that stock sizes cannot adequately meet varying needs of different building types. . . . Opinions [*from a questionnaire investigating the demand for stock exterior metal building panels sent to* 711 *architects*] indicate most needed panel would be a 4 ft. by 8 ft. module

[*continued on page* 321

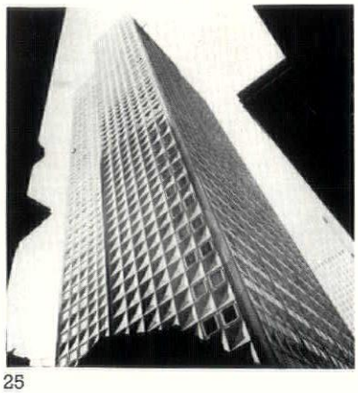
.....aluminium wall



ALCOA BUILDING, PITTSBURGH, PENNSYLVANIA. *ARCHITECTS: HARRISON AND ABRAMOVITZ.*



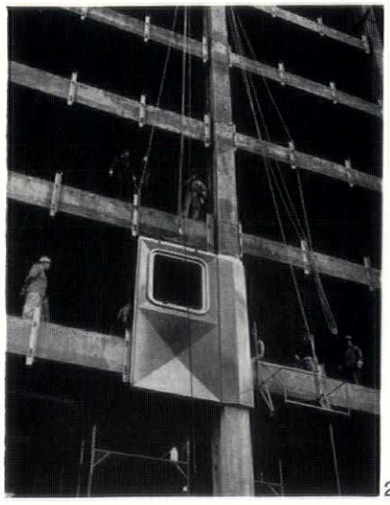
24



25

The æsthetic effect of thin-gauge metal prefabricated in floor-to-ceiling units and with concealed horizontal and vertical joints, is radically different from the previous examples, which all employ one form or another of exposed sub-frame, with panels inserted into it either on-site or off. The Alcoa building is an aluminium envelope, and it shows very clearly the fresh set of problems that such a system raises; with virtually no trabeation, with vertical structural members encased in a slightly V-projecting sheath, with spandrel panels having a dished indent for stiffness and with the rounded corners of the pneumatically-sealed windows, the whole effect is to blur and 'soft-focus' the precision-made look which has been one of the chief qualities of the curtain wall. The kind of pattern-making that the use of thin-gauge metal invites, opens up pitfalls for the designer that it is going to take all his skill to avoid, and a great deal more than skill to exploit.

Floors	31.
Floor to floor	12 ft.
Column spacing	c. 20 ft.
Facing materials	columns faced with aluminium sheet. Prefabricated concave panels of pressed ⅛ in. aluminium sheet—bolted to metal angles connecting to structure, complete with double-glazed windows fixed except for cleaning.
Back-up walls	1½ in. cavity, 4 in. perlite 'blown-on' concrete on expanded aluminium.



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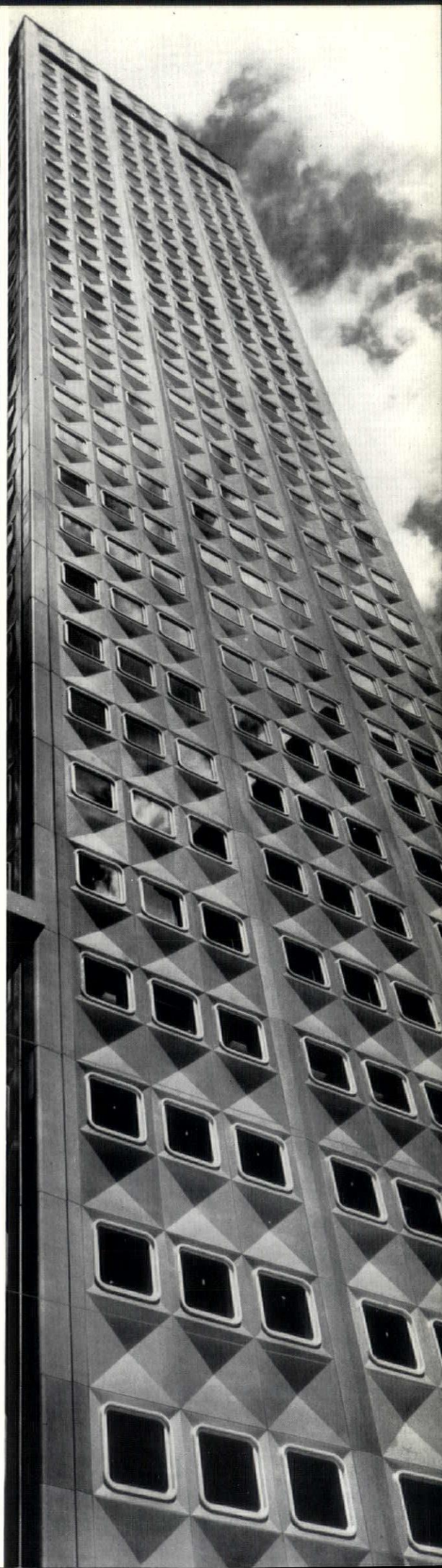


steel wall.....

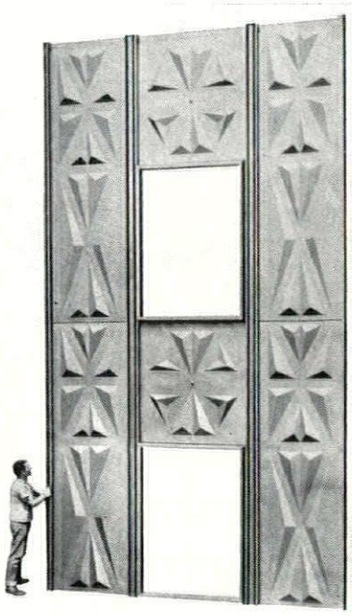
SOCONY MOBIL BUILDING, NEW YORK.
ARCHITECTS: HARRISON AND ABRAMOVITZ.



27

A further use of thin-gauge metal (stainless steel) in large prefabricated panels (see below). This time the pattern is raised not only for stiffness but also to cut down glare. The effect of the pattern, when seen from a distance, coupled with the absence of a sharply-profiled sub-frame, again gives a 'soft-focus' effect (see preceding page); here, the wall texture and the spacing of the square-cornered windows are reminiscent of the masonry-clad skyscraper of the past, though, in technique, the metal sheath walls with solid back-up relate to the industrial buildings which were the precursors of the contemporary curtain wall.

Floors	42.
Floor to floor	12 ft.
Column spacing	20 ft.-25 ft.
Facing materials	prefabricated 20 SWG stainless steel pressed panels with fixed single glazed windows.
Back-up walls	floor to floor 4 in. cinder concrete, 1 in. insulation.



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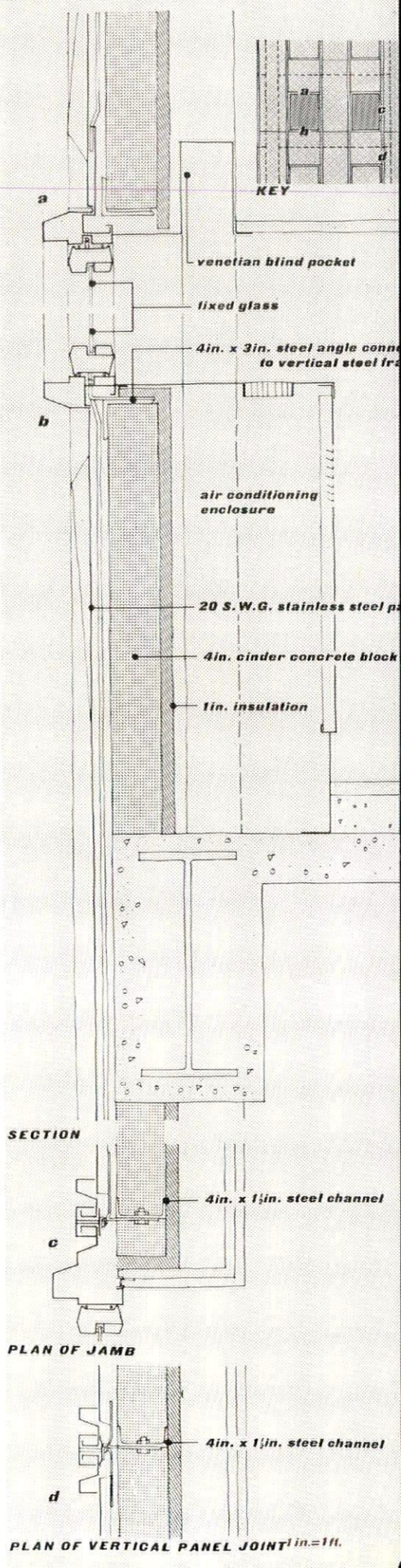

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with additional sizes to satisfy more specific needs.'

From a survey conducted by the research advisory service of the American Institute of Architects, A.I.A. Bulletin, July-August, 1955.

23. The A.I.A. survey of architects' opinions carried out in 1954 and published in 1955 (see 22) was paralleled by a survey of building owners and building contractors conducted by the Building Research Advisory Board, reported at the Metal Curtain Wall conference held in 1955 (see 8). This conference and the surveys taken together with the 1956 Workshop Conference (see 1) and the Princeton report of Stainless Steel curtain walls (see also 1) have aired very usefully opinions of manufacturers, architects and clients on the curtain wall problem and possibilities. So far there have been no similar surveys or conferences in England, but the Building Research Station has made its own study, which will shortly be published as two Building Research Digests under the title *Light Cladding*.

24. 'Pliny the younger (Ep. 39 to Mustius) proposing to repair and enlarge by the addition of a portico, an old Temple of Ceres, that stood upon his estate in Tuscany, directs his architect immediately to buy four marble columns of any sort he pleased. By this method of purchasing, at any time, columns of all orders and proportions, ready formed at the quarries, as goods in a shop, or warehouse, the ancients had an advantage of erecting porticoes . . . of any grandeur or extent, in a very short time.'

Sir Christopher Wren: "*Tract on Architecture III.*"

25. 'It is believed that one of the most important things to be done for walls at the present time is to develop testing procedures that are realistic and can be standardized. These are essential to assure the designers, the construction industry, and the financing or underwriting agencies that the building will have the full life for which it is designed, without excessive maintenance.'

Elmer R. Queer, Director and Professor of Engineering Research, The Pennsylvania State University, speaking at the conference referred to (in 8) above.

26. 'It is ridiculous to accept without complaint that today it takes 9 months to a year to create a substantial building, with its hundreds of drawings for plans and details. The span of 2 to 2½ years from conception to execution is too much of one's life to devote to one building. If we can discover how to shorten that substantially it will give us all an opportunity to do more exciting things and provide more shelter for all. Perhaps then some of us could more easily solve the greater problems of our country and build or rebuild more rapidly to make life in our cities, towns, suburbs and rural areas more comfortable and joyful.'

Max Abramovitz (Harrison and Abramovitz) speaking at the conference referred to (in 8).

continued from page 318]

may be hard to get and even harder to agree upon. Fortunately there are signs of the two getting together and making a start.[23]

Arguments are being raised again, as they have been through the years, that prefabrication, standardization and mass-production will lead to unending monotony and the levelling down of the man-made environment. The only answer to this is to ask ourselves if we are really proud of the environment we have created without such methods? Do we, for instance, consider it preferable to the standardized urban environment of the eighteenth century? To the further argument that such methods are putting architectural invention into a strait-jacket, one can point out, again, that eighteenth-century standardization did not have this effect on the creative architects of the time, and is unlikely to have on those of our, or any other, time.[24] The difference is that in our day those who are not gifted with creative originality have, for some of the reasons given above, been persuaded to attempt the impossible—with disastrous results, while in the eighteenth century their equivalents were happy to have well-designed pieces to 'put together and adjust'.

Standardization in our day will bring benefits immeasurably greater than it did to the eighteenth century. Quite apart from savings to client and builder, in cost and time, it could free numbers of architects from the necessity for each to make of his office a separate research organization and filing bureau. When some agreement is reached on standards, and when materials and components are tested by agreed methods and the results made freely available,[25] much of the experimental aspect of the architect's job, wasteful both to his client and himself, will be over.[26] The whole process should, of course, be subject to constant study and improvement; but this should be the job of the architect-engineer, specializing in such matters, in close contact with what the creative thinkers are doing and with the factory. The organizing-architect who makes use of the new standards will be able to devote himself more thoroughly to carrying the job through efficiently and on time, an aspect of architecture about which the client feels particularly keenly. Estimates of cost will be more easily and accurately made and variations during building progress less likely.

None of this can be fully efficient while we still lack agreement on measurements. Until there is an extensive use of modular co-ordination by manufacturers of building components, arrived at through consultation with architects, most of the advantages that modern methods of building can bring to us all will go by default.

Much of the internal equipment of the building sheathed with curtain walls is standardized also (some mass-produced); but, as yet, without any relationship in scale, proportion, colour and detail to the other, particularly the external, standard parts. It would seem to be self-evident that an architecture based on such principles should carry a modular relationship consistently through doors, windows, walls, floors, ceilings, services, built-in furniture and equipment. Not only would this provide a unifying factor in a variety of shapes, colours, textures and patterns that at present borders on anarchy, but it would bring with it economic advantages that are too obvious to need describing. This is beginning to be more generally realized and both in Europe and America extensive research has been carried out in recent years; thirteen countries are now taking part in a two-year construction programme in which a number of experimental buildings will be used to test the principles laid down in the European Productivity Agency's report on the subject.[27]

There can be nothing set and inflexible about the application of modern industrial methods to rectilinear systems of building. Apart from improvements and discoveries which will certainly be made, research is already under way into the problems of mass-producing moulded plastic buildings, and success in this could have a profound effect on all branches of building.[28] It is unlikely, however, that such materials and methods will replace present systems of rectilinear construction, particularly for multi-storey structures. Nevertheless, one can look to moulded systems, which include reinforced concrete poured or sprayed, to provide foils to the rectilinear backdrop, and expect them also to be used in close conjunction to, or within, the framework.[29]

The paraphernalia of urban existence has proliferated to such an extent in recent years that it is often impossible to see the building for the advertisement, the advertisement for the sign, the sign for the traffic, the traffic for the speed. The curtain wall will not solve all of this, but it can help. A diagrammatic backdrop instead of a series of competing scenes could provide a frame of reference. The sense of orderliness it imparted might even encourage those responsible to do something about the rest of the mess. Not that everything should be regulated and standardized, quite the contrary. The point of having the backdrop is for it to be just that; a background to a drama. The very essence of the dramatic lies in the unexpected; people provide part of that, but so also do the signs of their existence and the marks they make. They make a mess now, but that is no reason why they should always make a mess, or at least not a dirty one. Ex-

[*continued on page* 335

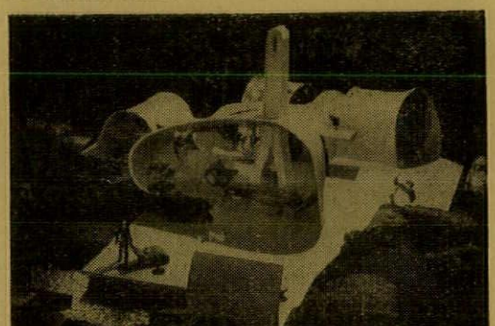
27. This—Phase II—of E.P.A.'s work on modular co-ordination was reported by Bruce Martin at a meeting of the Modular Society at the Royal Society of Arts, October 15, 1956. *Modular Quarterly*, Autumn, 1956.

28. An example of recent research into the possible uses of plastics in building is the Monsanto House; a research project sponsored by the chemical company of the same name and carried out at M.I.T. The house is designed to a moulded module 8 ft. by 16 ft. bent to form ceiling, walls and floor. The model shown

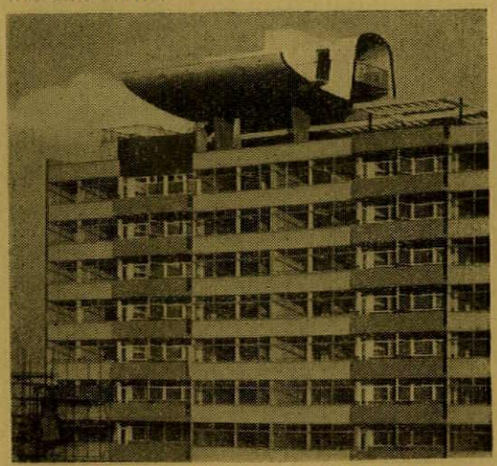


here comprises eight modules cantilevered in pairs from a central utility core to form four 16 ft. square rooms.

29. Below are three illustrations of moulded forms of the kind which provide, or might be used to provide, a foil to the rectilinear grid of curtain walls:



A house designed by John McL. Johansen for the Atlas Cement Co. The structure is concrete sprayed on to an armature of steel pipe, rod and fabric.



The reinforced concrete roof structure on the fourteen-storey block at Golden Lane, City of London, by Chamberlin, Powell & Bon.

[*continued on page* 335

CURTAIN WALLS: TOWARDS A VERNACULAR

The standardization of the external envelope in the form of curtain walls is beginning to bring a degree of order to much that, since the breakdown of architectural discipline in the romantic movement, has been merely chaotic. At present, this standardization is piecemeal, experimental and sometimes ill-considered in design, but, as the following pages show, its acceptance in America is beginning to give promise that a vernacular of modern architecture may be developing. Far from the results proving monotonous, there is surprising, and somewhat excessive, visual variety. This may well calm down as production increases and the system is rationalized: the present period may then be considered as merely a first stage in which prototypes were produced and studied on their merits, and when variants were evolved for different types of buildings. From this brief American survey it would seem that there are few types of building considered unsuitable for enveloping with one form or another of curtain wall.

offices



29, Enterprise Building, Tulsa, Oklahoma, with infill of glass and porcelain enamel panels. Architect, Walter Aschlager; completed 1955.


MENS
COMPANY

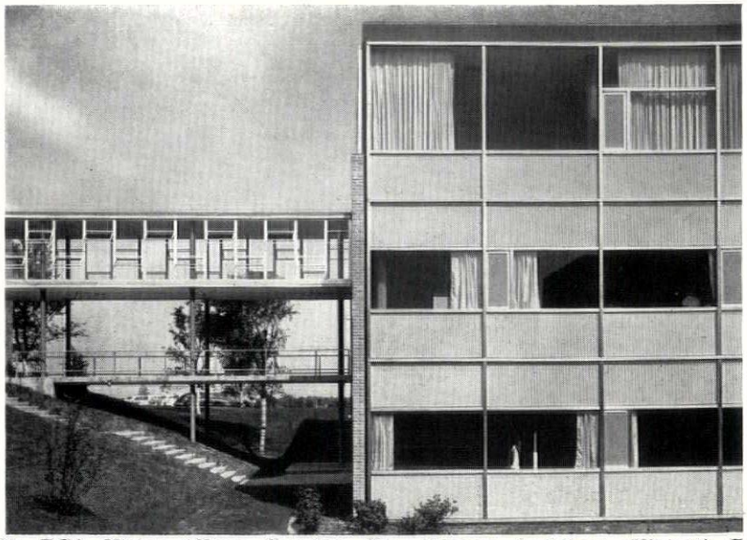

DALLAS FEDERAL SAVINGS


Sunny Brook

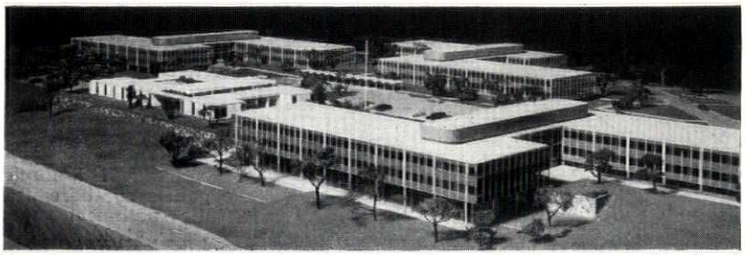

BARTH & CO.

30 and 31, two buildings typical of many now being faced with standard curtain walls; 30, in Chestnut Street, Philadelphia, and 31, an office building on the outskirts of Denver, Colorado. 32, offices with a bank on the ground floor, in Dallas, Texas; the porcelain enamel panels are in two colours, the flat ones blue and the embossed grey. Architect, George L. Dahl. 33 and 34, the Tishman building, Wilshire Boulevard, Los Angeles. Architects, Victor Gruen and Associates. 33 shows the horizontal fixed aluminium sun-shades (north and south façades) and the adjustable vertical louvres (east and west), shown in detail in 34.

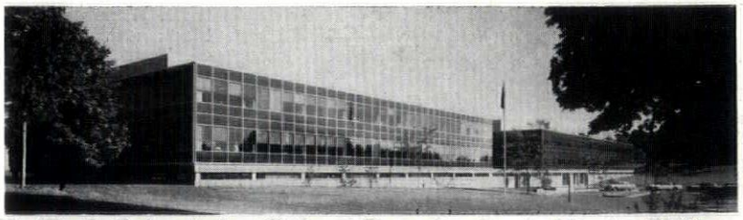
offices in the country



35, RCA Victor offices, Camden, New Jersey. Architect, Vincent G. Kling; sandwich panels faced with yellow corrugated porcelain enamel in a stainless steel frame.



36, offices under construction for the Monsanto Company, St. Louis County, Missouri. Architect, Vincent G. Kling; sandwich panels with a corrugated porcelain enamel external surface, foam glass insulation and stainless steel inner surface will be set in stainless steel frames.



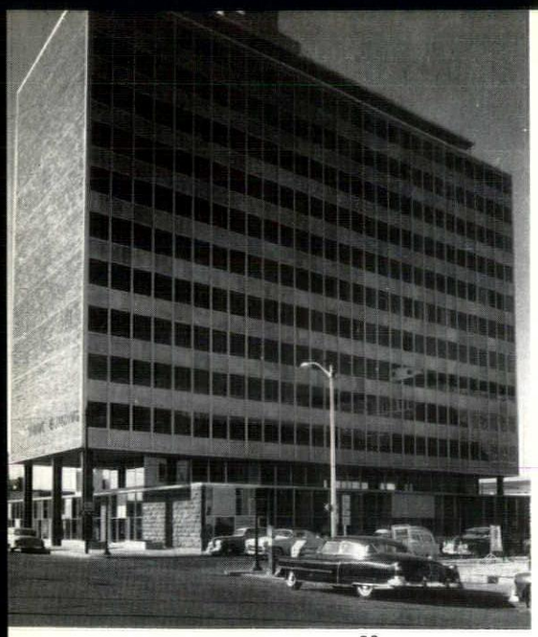
37, Wyeth Laboratories, Radnor, Pennsylvania. Architects, Skidmore, Owings and Merrill; green porcelain enamel panels in steel frames.



38, Ford Motor Co. offices, Dearborn, Michigan. Architects, Skidmore, Owings and Merrill; blue-green porcelain enamel honeycomb panels in a stainless steel frame.

offices

39. Simms Building, Albuquerque, New Mexico. Architects, Flatow, Moore, Bryan and Fairburn; porcelain enamel panels in an anodized aluminium frame. 40, Peachtree-Baker Building, Atlanta (part of a larger scheme), Georgia. Architects, Alexander and Rothschild; porcelain enamel panels are here used for the first time in the south-east of the US without back-up walls. 41, Redding-Miller Building, Denver, Colorado. Architect, T. J. Moore, Jnr.; multi-coloured porcelain enamel panels in an aluminium frame. Projects by three of the largest architectural firms in the US: 42, CIT Building, New York City. Architects, Harrison and Abramovitz; polished black granite in a stainless steel frame. 43, Texaco Building, Los Angeles. Architects, Welton Becket and Associates. 44, offices nearing completion for Inland Steel, Chicago. Architects, Skidmore, Owings and Merrill; stainless steel and glass, with structural columns outside curtain wall.



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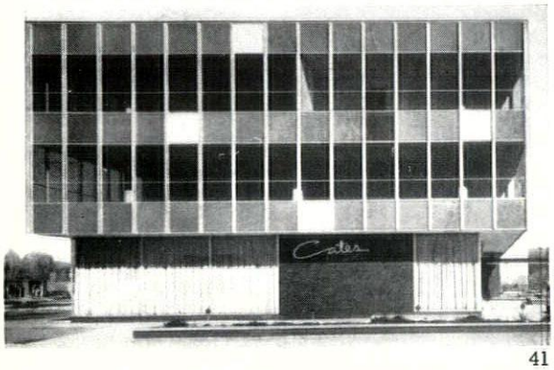

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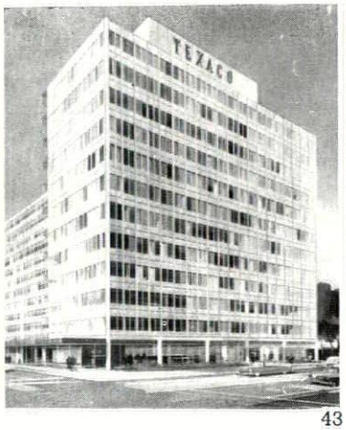

43



44

banks



45



46



47

45, First Security Bank, Salt Lake City, Utah. Architects, W. Sarmiento; H. S. Mayer; S. W. Winburn: rust-red porcelain enamel panels in an aluminium frame. 46, Standard Federal Savings and Loan Building, Los Angeles. Architects, Welton Becket and Associates, and 47, City National Bank, Beverly Hills, California, by the same architects; panels are mosaic-faced and sun-breakers tie into the metal frame over the windows. 48, proposed Chase Manhattan Bank, New York City. Architects, Skidmore, Owings and Merrill; stainless steel and glass with the structural columns outside the curtain wall (see also 44). 49, Republic National Bank, Dallas, Texas. Architects, Harrison and Abramovitz; embossed, square aluminium panels. 50, Wachovia Bank and Trust Co., Charlotte North Carolina. Architects, Harrison and Abramovitz; prismatic-shaped, precast, coloured concrete panels.



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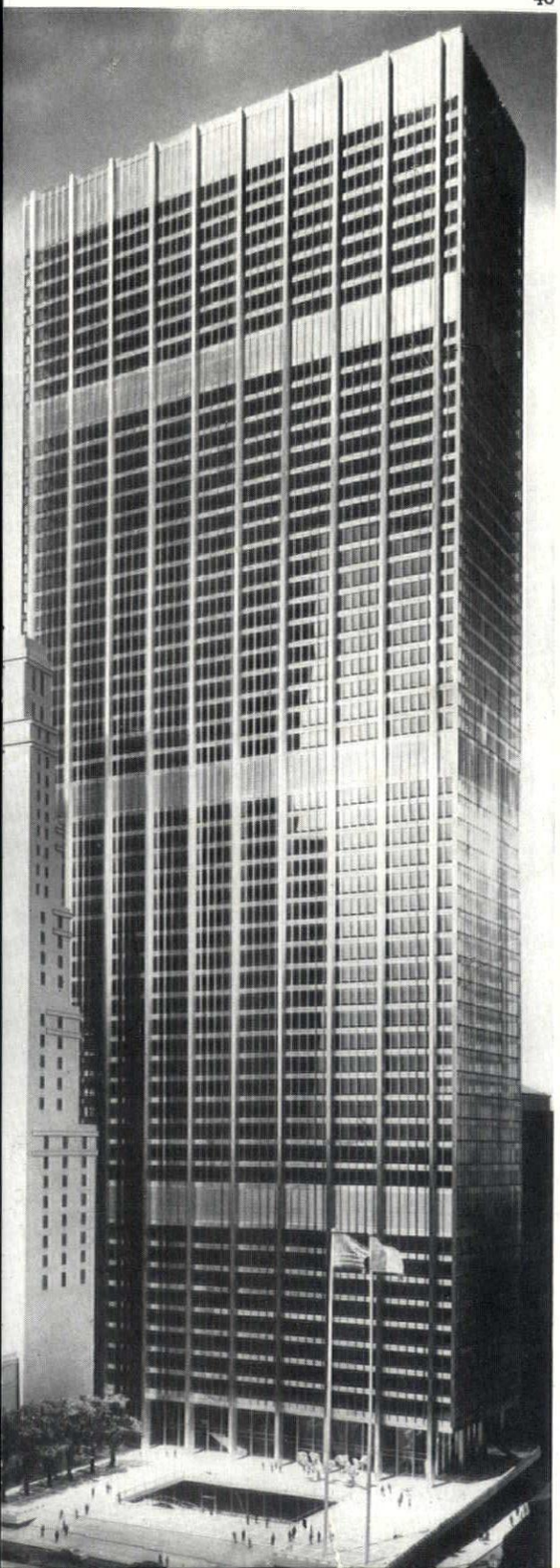
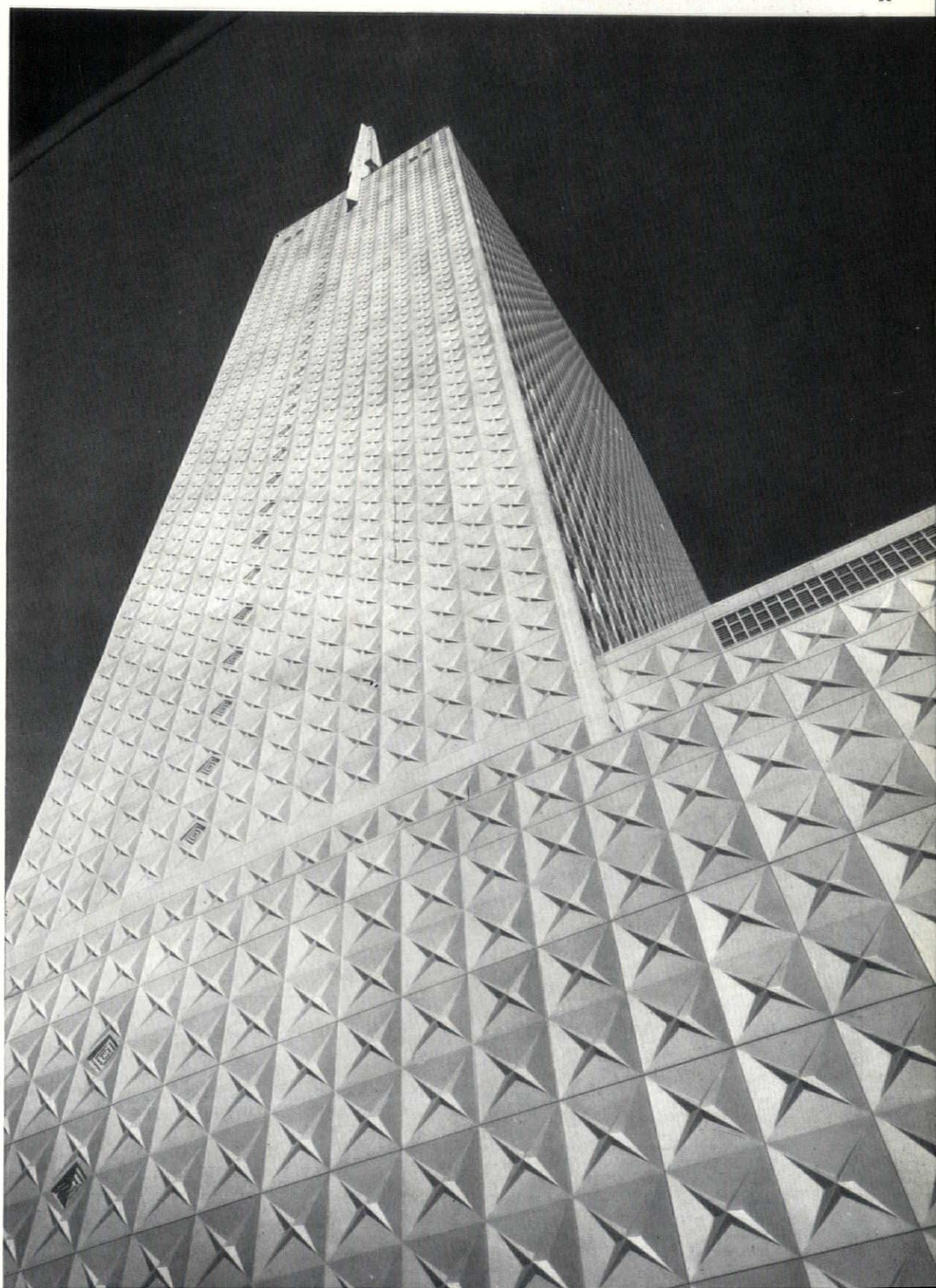
48





schools

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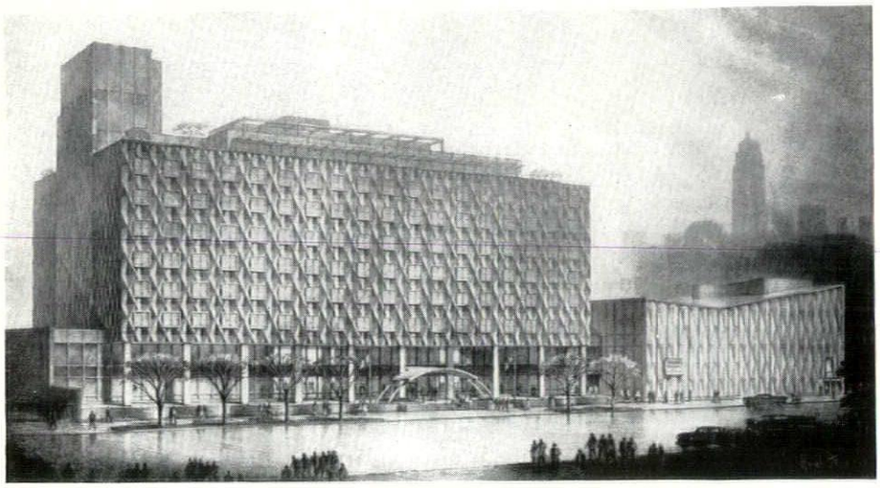

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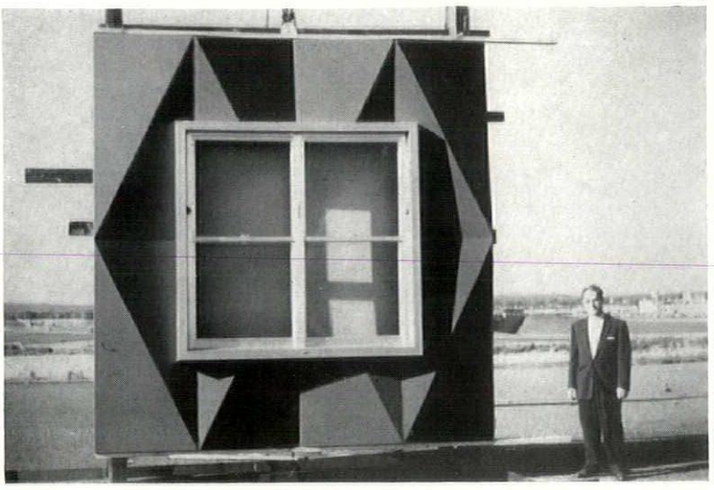
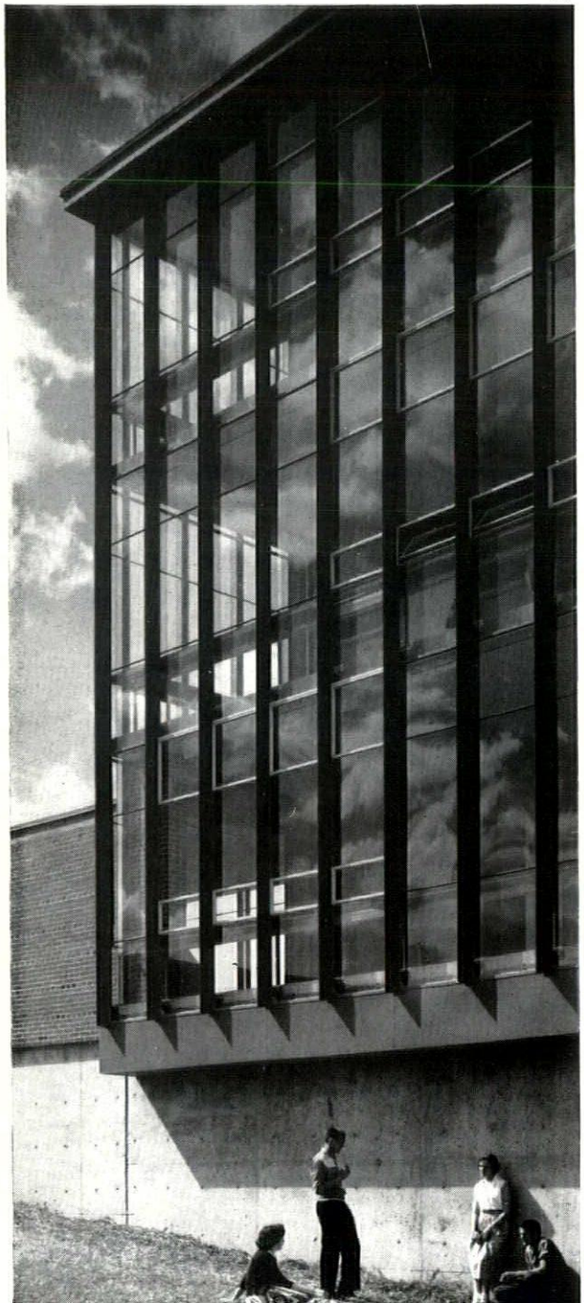


51, proposed Fashion Institute of Technology (providing accommodation for 1,250 full-time and 3,000 part-time students, with laboratories, auditorium, gymnasium and library), New York City. Architects, de Young, Moscowitz and Rosenberg; 52, test panel for the building's external sheath of blue, patterned aluminium; the window frame is gold-coloured metal alloy.

53



54



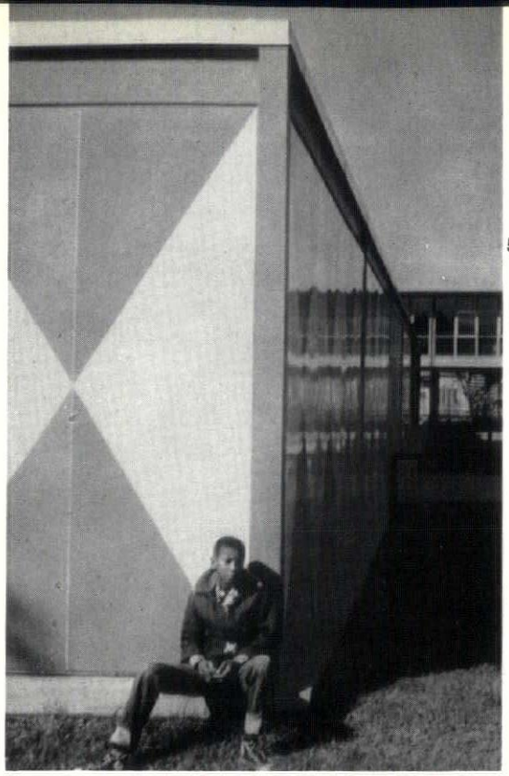
55



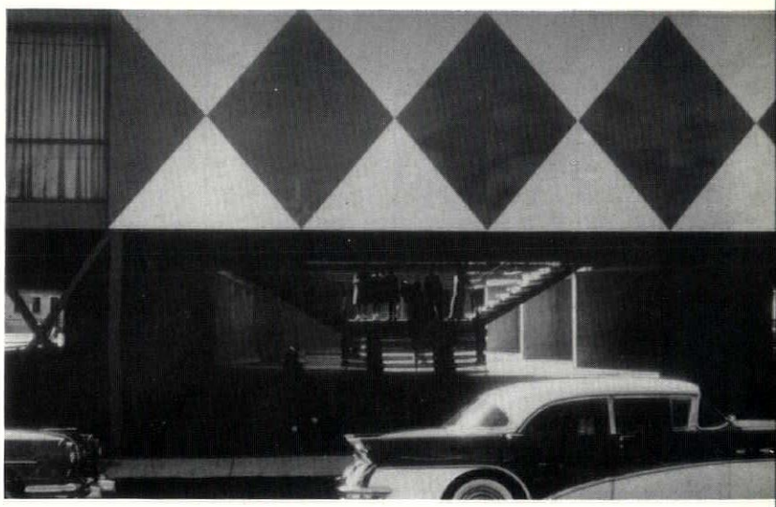
56



55, Douglas Elementary School, Kansas City, Architects, Kivett, Myers and McCallum; panels are yellow, porcelain enamel. 56, North Penn Senior High School, Lansdale, Pennsylvania. Architects, H. L. Shay and Associates.



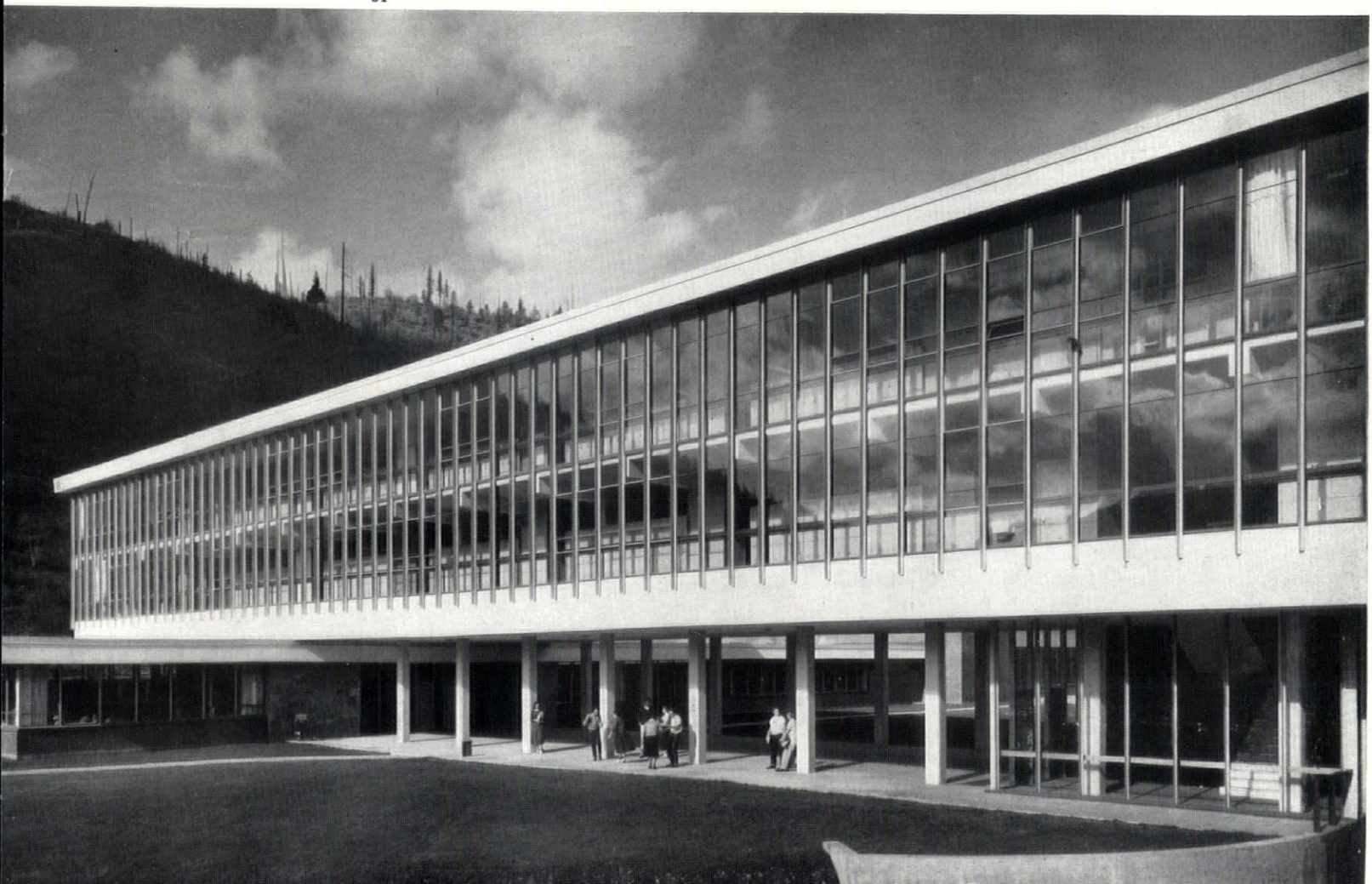
58, 59

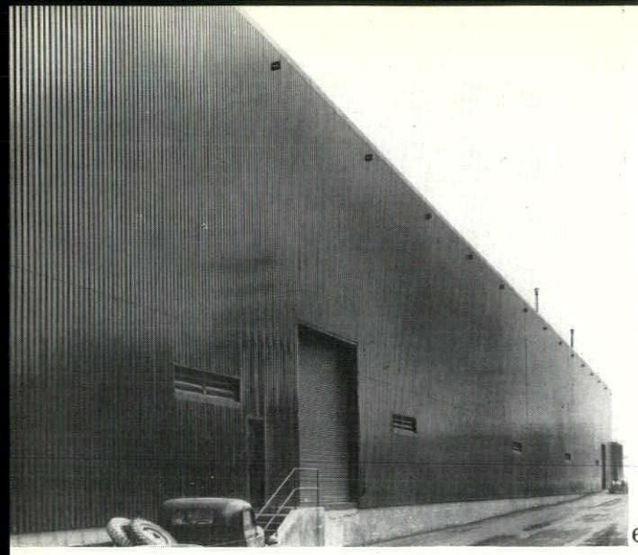


58 and 59, the Phyllis Wheatley Junior School, New Orleans. Architects, Colbert and Lowrey; the porcelain enamel panels were made by a local stove-enamel firm and are blue and white in 58; magenta and white in 59.

53, 54 and 57, two schools employing the same type of steel and glass curtain wall. 53, Keokuk High School, Idaho. Architects, Perkins and Will; the mullions project 6 in. from the glazing and are painted red; frames to window openings are yellow. 54 and 57, Kellogg High School, Idaho, by the same architects in association with Culler, Gale, Martell and Norrie; mullions here are painted yellow.

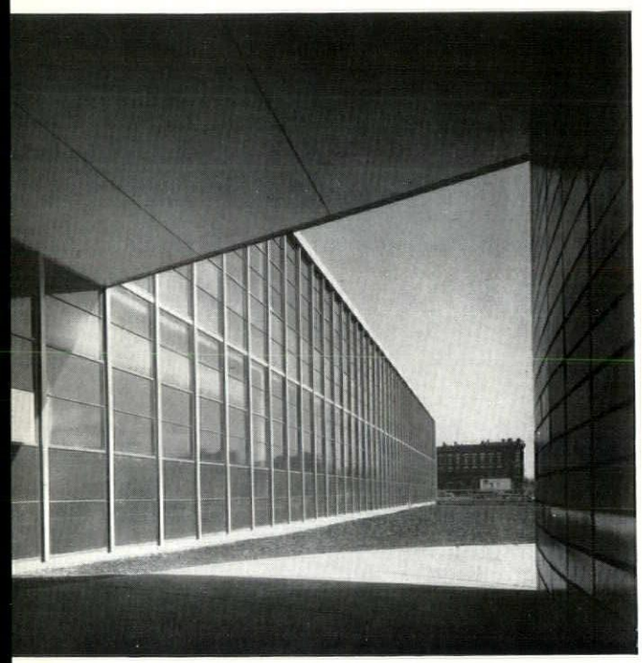
57





60

60, external facing of galvanized and painted steel at the Weirton Steel Co., Weirton, West Virginia. 61, Chicago Workshop for the Blind, Chicago, Illinois. Architects, Shaw,

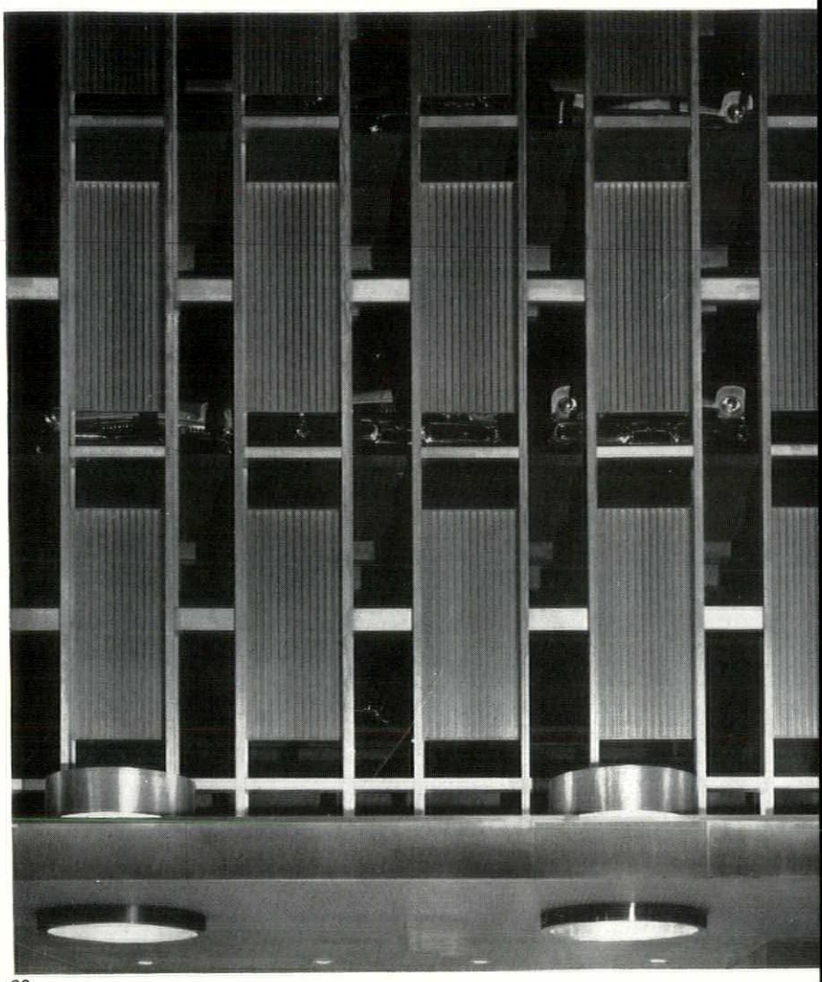


61

Metz and Dolio. 62, building for Lockheed Aircraft, Burbank, California. Architects, Welton Becket and Associates ; walls above ground level of glass and corrugated aluminium.

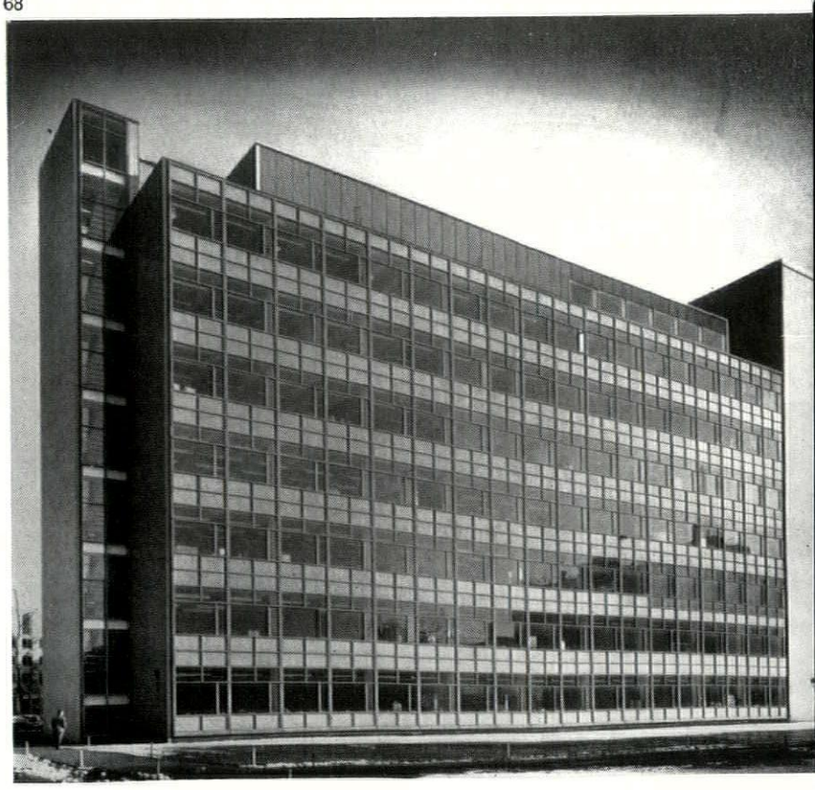


62



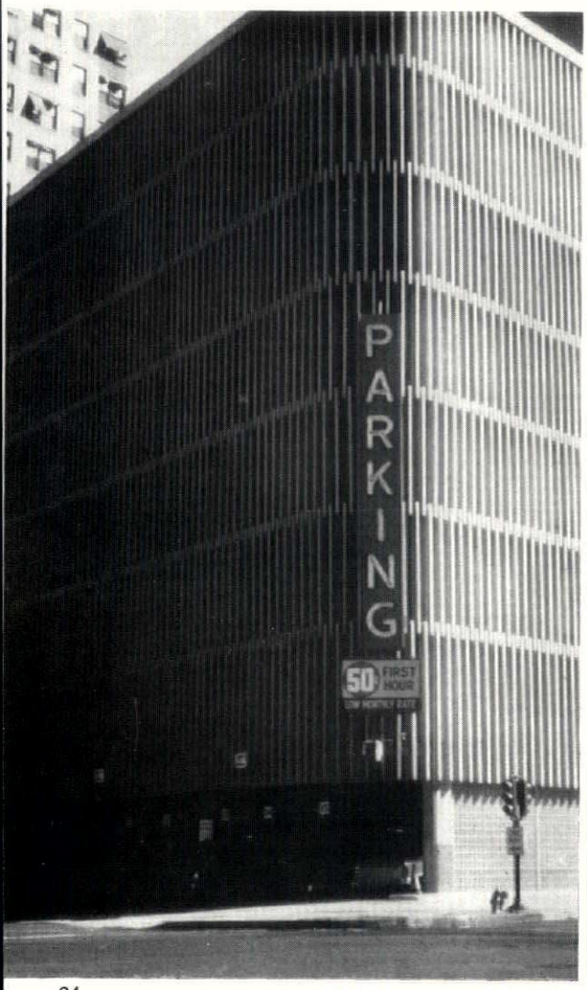
63

68



and laboratories

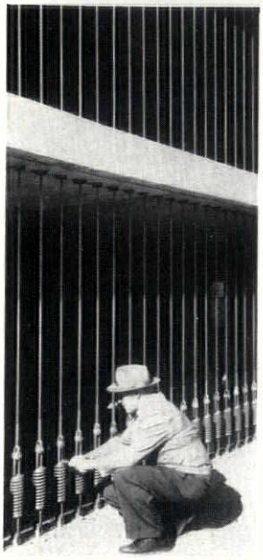
63, multi-level car park, Medical Towers (see also **70**, page 332). Houston, Texas. Architects, Goleman and Rolfe, in association with Skidmore, Owings and Merrill; the aluminium frame and panel walls serve as a buffer for, and, partially, to screen, the cars. 64, Chicago garage with screen of precast concrete fins. 65, garage at Salt Lake City, Utah, with walls of vertical steel rods. 66 and 67, garage in Chicago by Shaw, Metz and Dolio. The wall consists entirely of

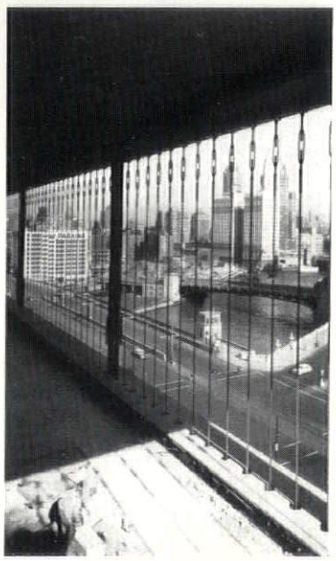


64



65

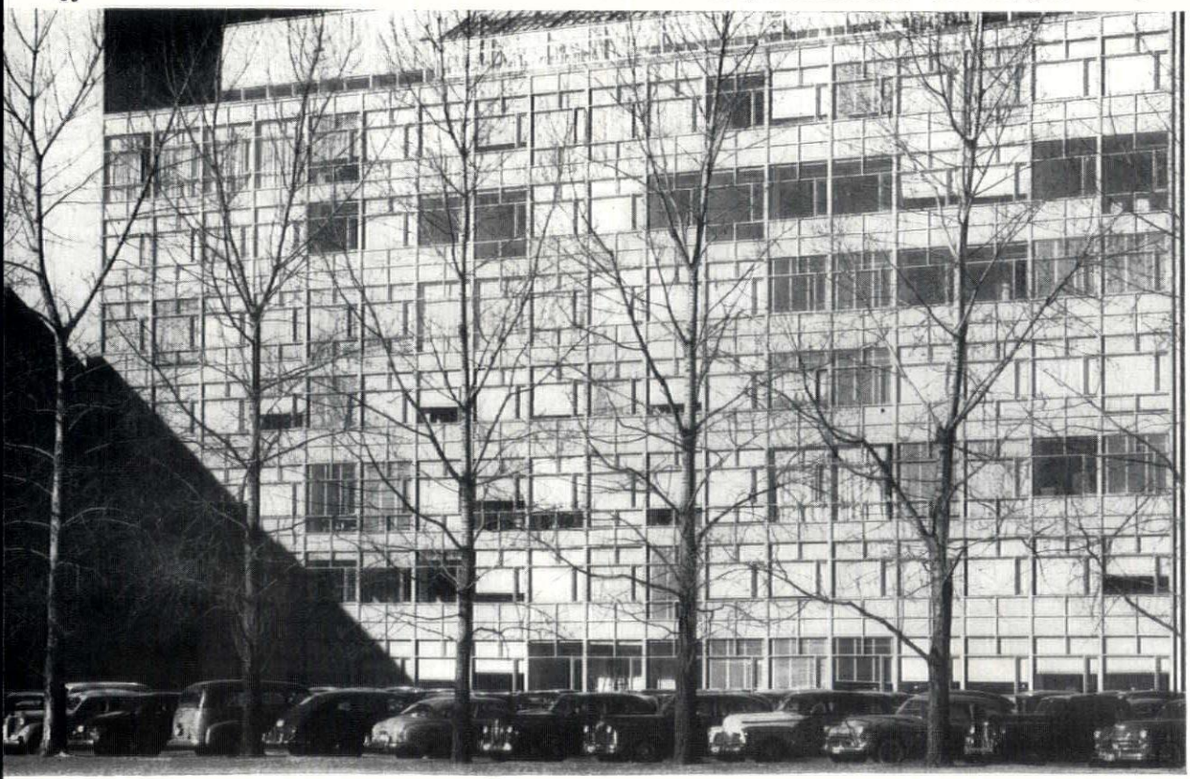




66, 67

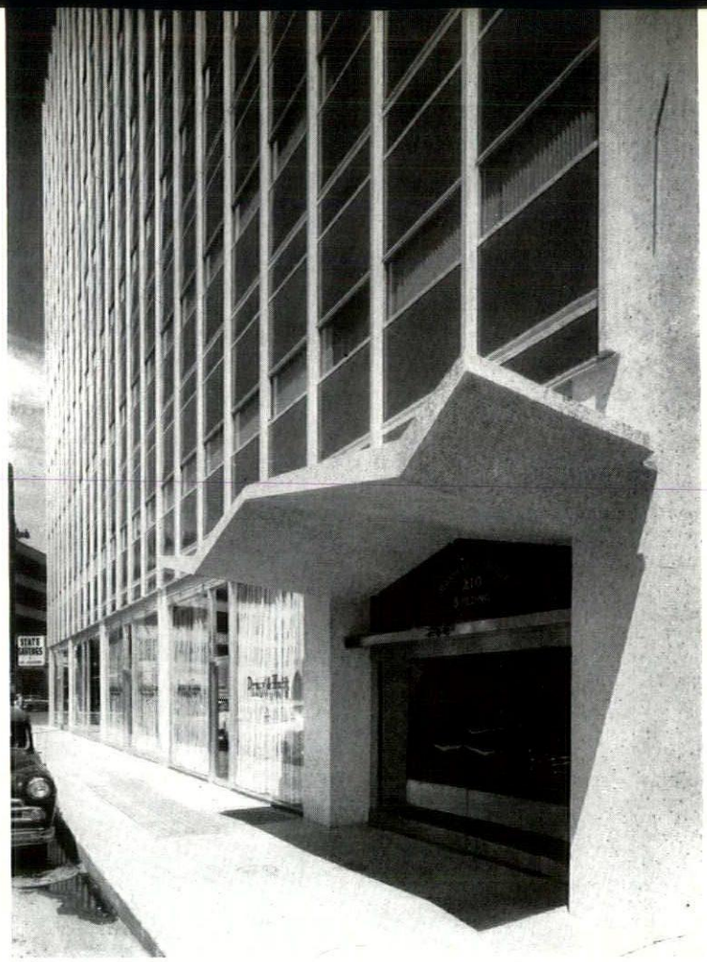
stainless steel wires $\frac{3}{8}$ in. It is estimated they would stop a car travelling at 40 m.p.h. 68 and 69, north and south elevations of the John Thompson Dorrance Laboratories, Cambridge, Massachusetts. Architects, Anderson and Beckwith; glass and porcelain enamel panels in a steel frame.

69





70



71

70, Medical Towers, Houston, Texas (see also 63, page 330). Architects, Goleman and Rolfe, in association with Skidmore, Owings and Merrill; curtain walls to the main façades of the slab block are of glass and blue porcelain enamel panels in an aluminium frame. 71, Maryland Casualty Building, New Orleans. Architects, Curtis and Davis; porcelain enamel sandwich panels in an aluminium frame. 72, Mt. Sinai Hospital. Los Angeles. Architects, Welton Becket and Associates. 73, Pottstown Hospital, Pennsylvania. Architect, Vincent G. Kling.

religious buildings



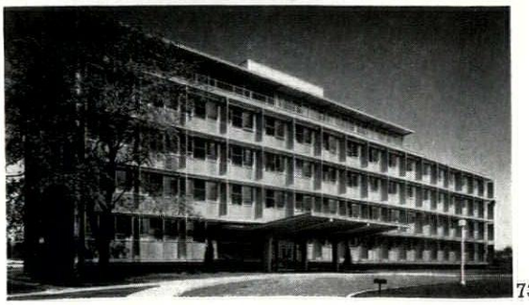
74, Lutheran Brotherhood building, Minneapolis, Minnesota. Architects, Perkins and Will; blue-tinted glass and blue-green porcelain enamel panels in an aluminium frame; this must be the first time that curtain-wall transoms have been used purely for symbolism.

hospitals

and medical buildings

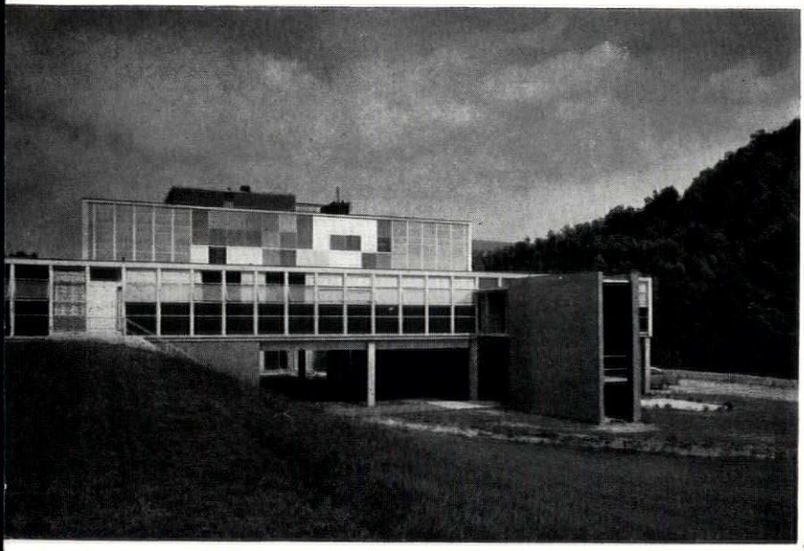


72

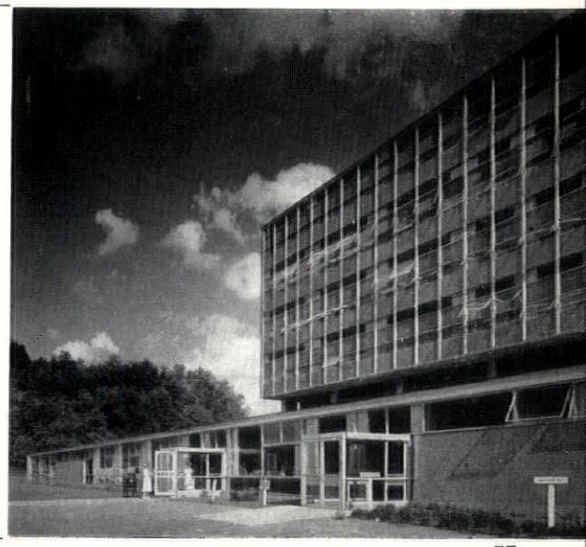


73

75 to 78, two of ten hospitals built for the Miners' Memorial Association. Architects, Sherlock, Smith and Adams. 75 and 76, at Whitesburg, Georgia.



'The window wall used on these hospitals was developed by a research team made up of representatives from the three architectural firms involved in the M.H.A. programme, together with experts from two steel companies. . . . in this sense, the walls were specially designed: since their use on these hospitals, however, they have become a standard product of the manufacturer and are readily available commercially. . . . The principal thought going into the development of these walls was devoted to providing a substantial mullion that would carry eyebrow sunshades (omitted in budgetary cutbacks, but subsequently restored) and to producing a porcelain enamel steel panel with sufficient insulation to equal that provided by masonry. The exterior panel face is separated from the inner by means of a vinyl gasket, to prevent temperature transmission. The outer plate is separated from the insulation by an air space to provide escape of condensation moisture from the assembled panel by means of drainage vents. The standard modular frame takes fixed glass, operating sash or the panel. The back of the window wall finishes flush, obviating the necessity for offsets in piping, etc., a particular convenience in these buildings which have a high velocity air distribution system.'



77 and 78, Miners' hospital at Harlan, Kentucky. Both hospitals illustrated employ specially designed curtain walls (for architect's comment see inset).

77
^
v
78





79

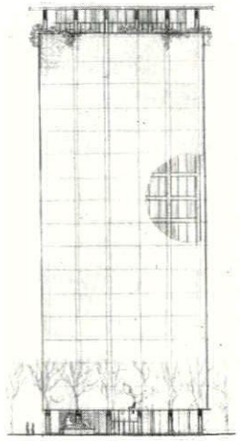
79, Statler Hilton Hotel, Dallas Texas. Architect, William B. Tabler ; curtain

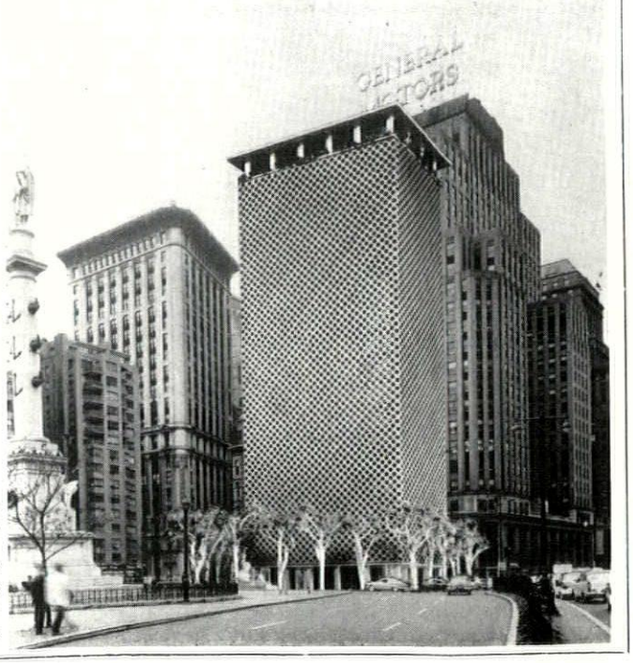


80

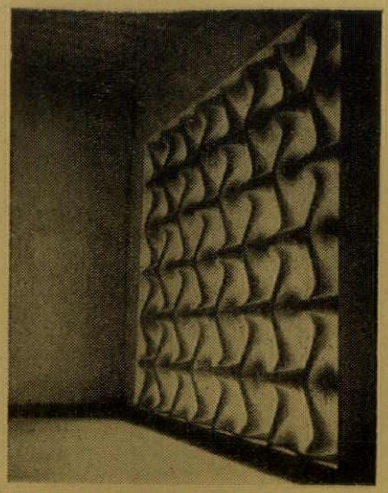
wall of blue-green glass and blue-green porcelain enamel in an aluminium frame. 80, proposed Sheraton Hotel, Philadelphia, Pennsylvania. Architects. Perry, Shaw, Hepburn and Dean ; porcelain enamel panels in an aluminium frame.

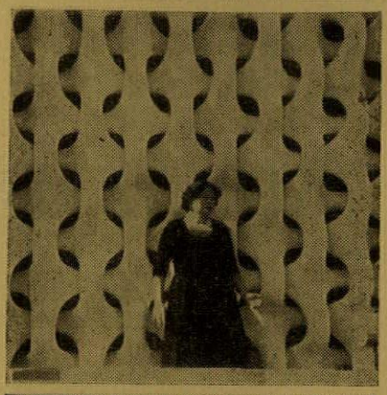
museum 81, 82

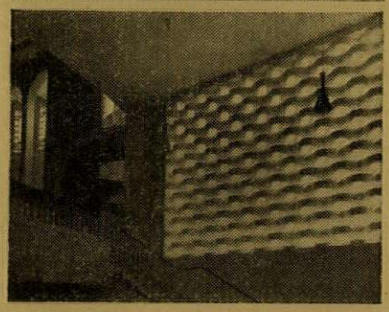




Proposed Huntingdon Hartford Museum, New York City. Architect Edward D. Stone ; 82 shows pierced bronze screen ; 81, cutaway showing the windows.

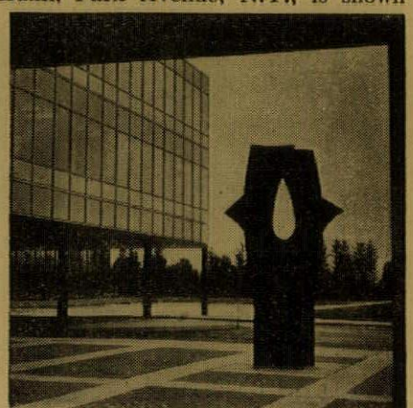






Concrete trellises designed by an Austrian sculptor Erwin Hauer.
Though all these examples use reinforced concrete in one way or another it is obvious that the use of plastics, either wholly or partially shop-fabricated, offer many possibilities in this direction.

30. The bronze screen by Bertoia in Skidmore, Owings and Merrill's Manufacturers Trust Bank, Park Avenue, N.Y., is shown



on page 359. The sculptural form above, in silhouette, was made by Pevsner for General Motors Technical Centre, Warren, Michigan.

continued from page 322]

perience with slum-dwellers who first use the bath in a new house for coals and then learn to bathe in it, suggests that a better environment can gradually teach better habits.

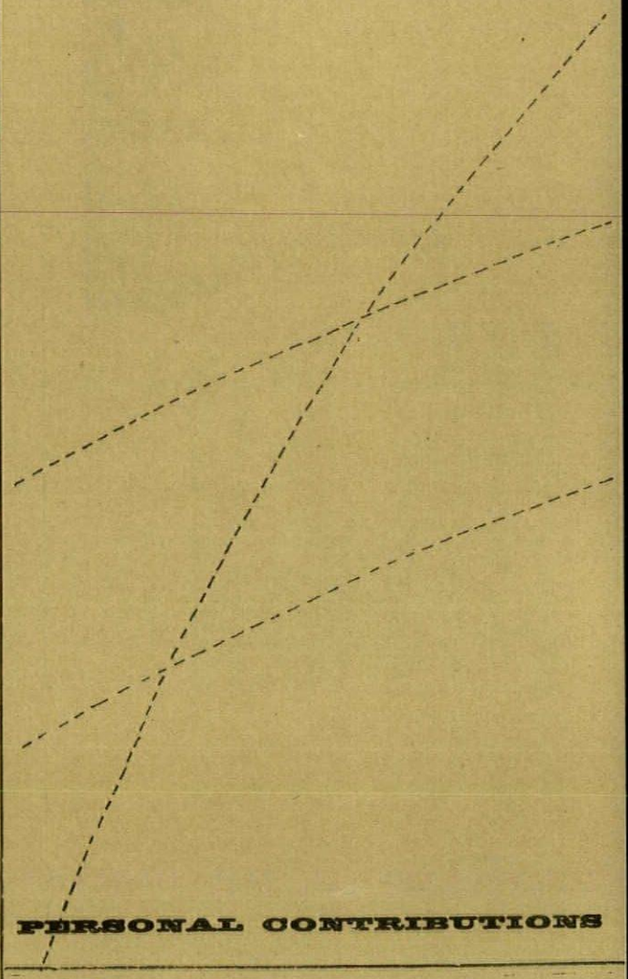
The neutral backdrop outside and the modulated interior within can bring new opportunities for collaboration between architects, painters and sculptors. Already some of the more remarkable contributions of contemporary artists to architecture have occurred within the framework of the American commercial structure;[30] yet the origin of each venture and the success of so many of them is seldom due to the building owners or tenants, there is little here of the patron-artist relationship of the past, instead it would seem to come from an astringency in the architecture which, with its absence of competing architectural 'artwork', leaves the field free for another kind of specialist—the man who knows what paint and metal can express when freed from the necessity to 'do' something useful. This is, of course, dangerous ground, particularly because it may, and probably should, only be take-off ground. Architecture, painting and sculpture will almost certainly come together again more closely than they do in the present relationship of frame to picture. Nevertheless, it's a good beginning, made even better by the extraordinary aptness of the best action painters and the sculptors like Bertoia, Nivola and Lassaw to this kind of architecture.

Standardized, rectilinear architecture is, in a sense, wiping the blackboard clean for a new combination of the arts. It is architecture setting up in minimum competition, so that new ways of defining and enriching space can be tried out, as it were, in a 'space-laboratory'. It is just as exciting when the same attempts are made within the moulded structure, but it is more difficult; for as soon as you have architecture of greater plastic complexity the relationship becomes involved. Since most recent attempts at close collaboration between the visual arts have foundered, perhaps what they needed was the kind of space where they could "reculer pour mieux sauter".

After all the arguments for standardization have been run through, many architects are still disquieted at the thought that the specialization it implies may mean a lowering in status. But this is true only for those who still think of themselves as the old-time all-round Gentleman Architect, whose status anyway descends daily because it fails to take account of today's needs. Only a very brief look at the situation here and in America is enough to show that where the architect gains respect and raises his status, he does so by delivering the goods, and what is more, delivering them on time; the goods in this case being efficient,

economical, weathertight, comfortable and good-looking buildings; much more than that the average man doesn't ask; indeed if he got that, the status of the architects and specialists who provided it would be very high indeed, but he too often fails to get it because without specialization it cannot nowadays be provided.

The position of the architect with outstanding creative ability (the artist-architect as he has been called here) is rather different. In common with all artists, society doesn't recognize its need of him quite as much as it does of the efficiency experts. His will often be the lonely struggle, aided perhaps by part-time teaching, and punctuated by competitions—until recognition comes. It may take him long to achieve this recognition or it may happen quickly; when he does achieve it, he may be over-valued or under-valued; he may even be valued for the wrong reasons; he may or may not make more money than the specialist; his status may be higher or it may be lower; to him this is, or should be, a matter of relative unconcern. The only thing we do know is that he's very valuable and there will be very few of him in any day and age. There are certain marks which distinguish him, though they sometimes turn out to be camouflage; however, what the public takes to be camouflage often turns out to be the mark of genius. Without him there would be no architecture, and without the lead of some of the greatest of his kind the anonymous architecture that has been the subject of discussion in this article would not have been worthy of consideration as the exciting and important new factor that it is.

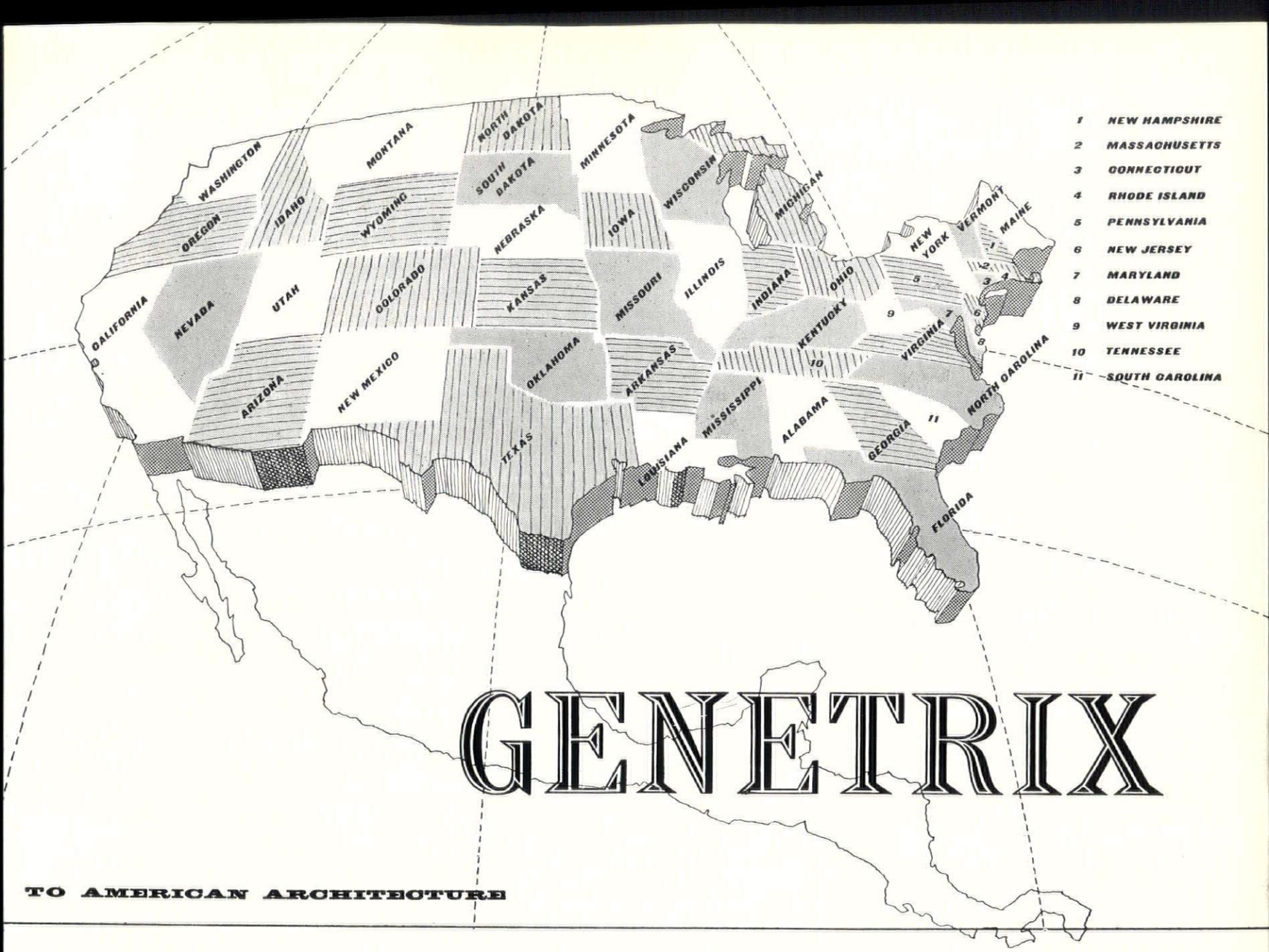


PERSONAL CONTRIBUTIONS

2

age

Mies van der Rohe **71**
Richard Neutra **65**
William Wurster **61**
William Lescaze **61**
Pietro Belluschi **57**
Louis Kahn **56**
Mario Corbett **55**
Edward Stone **55**
Marcel Breuer **54**
Victor Gruen **53**
Paul Schweikher **53**
Bruce Goff **52**
Philip Johnson **50**
Robert Alexander **49**
Raphael Soriano **49**
Vernon DeMars **49**
Gordon Bunshaft **48**
John Rex **48**
Eero Saarinen **46**
Eliot Noyes **46**



GENETRIX

TO AMERICAN ARCHITECTURE

age

46 *Whitney Smith*
45 *Ernest Kump*
45 *Hugh Stubbins*
44 *Minoru Yamasaki*
44 *Carl Koch*
44 *T.A.C. (average age)*
44 *A. Quincy Jones*
42 *Ralph Rapson*
42 *Edward L. Barnes*
41 *Harry Weese*
41 *John Johansen*
40 *I. M. Pei*
39 *King Lui-Wu*
38 *Paul Rudolph*
37 *Roger Lee*
37 *Peter Blake*
36 *Ulrich Franzen*
34 *Reginald C. Knight*
33 *Thornton Ladd*
32 *Pierre Koenig*

The first part of this issue concerned itself with an aspect of architecture which is a collective achievement, many individuals have, of course, contributed to it, but its chief value comes from the fact that as well as being popular, practical and generally applicable it tends to discourage 'personal' expression in favour of raising the architectural quality of a standard product.

The part that follows traces the isolated contributions of the individual, of the men who make a valid contribution to contemporary architecture through a personal vision ; it attempts to trace each contribution to its source in a man's background, training, the vicissitudes of his career, his heroes, his outlook and his inner convictions. It is specially

designed to give architects outside America a more rounded picture of the American architectural scene. The outsider may be, and often is, aware of the latest news and pictures ; he may have attended one of the lectures by architect-visitors to America—a growing phenomenon now that an American grand tour is becoming almost obligatory for the bright young European architect ; he is aware of innumerable names, some of them famous and firmly established in his mind ; but with many of the younger Americans it is often hard to relate names to buildings ; the development of American architecture has been so rapid in recent years and the idiom is becoming so consistent that the picture seen from a distance spreads itself thin and takes on a distressingly two-dimensional appearance. One way to give it depth is to try to bring the personalities behind it to life.

With this in mind, the architects that follow were sent questionnaires designed to 'draw them out'. The answers to these, accompanied by photographs of their newest works (and an occasional reminder of earlier ones), are published in order of seniority (Frank Lloyd Wright's work has been omitted at his own request). The aim is to give those who have not been able to see US architecture in three dimensions, a rounded picture of some of its architects.*

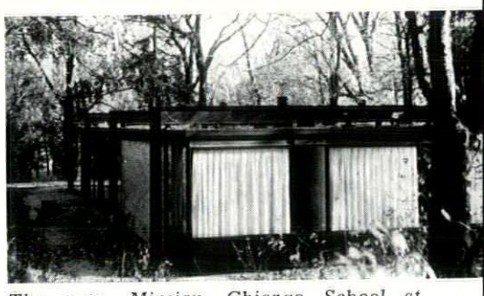
*The field is too vast to pretend that this can be more than an introduction to contemporary American architecture, and an interim one at that; there are parts—Texas, the south-east and the middle-west, for instance, which deserve more detailed attention than we have been able to give them here; and to which we shall return.



71

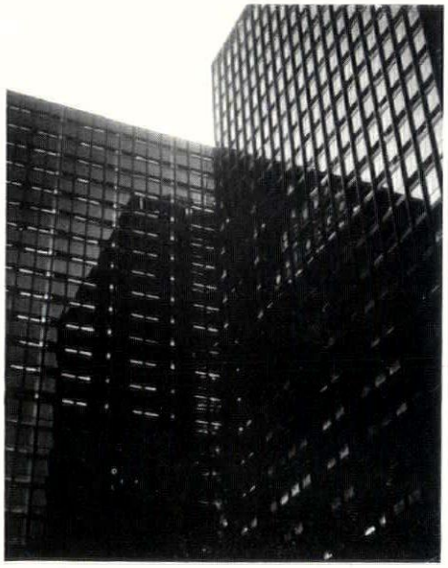
Chicago, Illinois

Mies van der Rohe, at the age of seventy-one and a long way from his native Aachen, has acquired the standing of a touchstone, the living embodiment of a moral absolute, by which US architecture may expect to be judged, a polarity opposed diametrically to Frank Lloyd Wright. However true it may be that his famous Lake Shore towers are the fulfilment of the dream of a glass skyscraper that had exercised him in Berlin as early as 1919, however true it may be that he is 'always the same Mies,' the fact remains that his coming to America in 1938 marks a real break in his career, and his American architecture is very unlike that which he had earlier done in Europe. The earlier body of work had consisted mostly of small buildings and large projects — except for the Weissenhof-siedlung of 1927, which was an event of International significance— and less and less of either as Germany's intellectual life contracted towards the null-point of 1933, at which null-point it was left to Mies, as its last director, to turn the key on what remained of the Bauhaus—and on what remained of an adventure, a generation, a dead world. The New World offered him the chance to realize his large projects; offered him the necessary patrons, the materials, the techniques, the engineers and collaborators—and the IIT campus, as its buildings were completed one by one over the



The new, Miesian, Chicago School at work—a house in Geneva, Ill., by J. C. Brownson, completed in 1952.

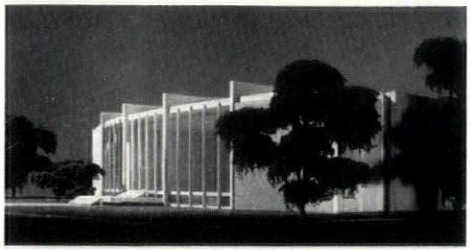
years on his twelve-foot planning grid, revealed to US architects an extreme point in architectural integrity, a right rectangular aesthetic of structure and space and precious little else. This aesthetic, summed up in two basic Miesian sayings, *Wenige ist Mehr* and *Beinahe Nichts* (Less is More, and Almost Nothing) has been called the 'Absence of Architecture,' but on a middle generation of Americans it has reacted as a positive presence, and as Mies has gone on developing it, refining and subtilizing its structural forms and formal structure, a giant ghost has followed it at a safe and not-quite-comprehending distance—the curtain wall industry. For, though Mies's achievement could hardly be more personal, the superficial appearance of the buildings in which that achievement is embodied has

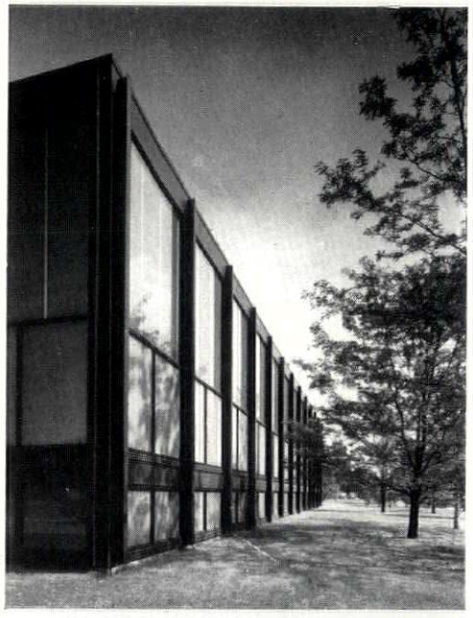


facilitated the visual acceptance of a repetitive, endless, grid façade, while the work of two architects most ready to admit his influence, Eero Saarinen and Gordon Bunshaft, has effectively bridged the gap between one man's vision and an industrial product.

America could not have nurtured Mies, Europe could not have fulfilled his promise; he has perhaps gained more from and given more to the US than any other emigré outside the realm of atomic physics. He has produced a lyricism of two constituent US psychological facts—unlimited space and unmitigated technology—in a form that is neither provincial nor crude, and can be held up to the rest of the world as an example of a convincing machine-age architecture. The rest of the world has taken note and, wherever architectural thought is on the move, the influence of Mies—*American* Mies—can be felt. Indeed, he ranks with Le Corbusier, Nervi and Candela as one of the fundamental form-givers of the 'fifties, and of no other American architect can this be said.

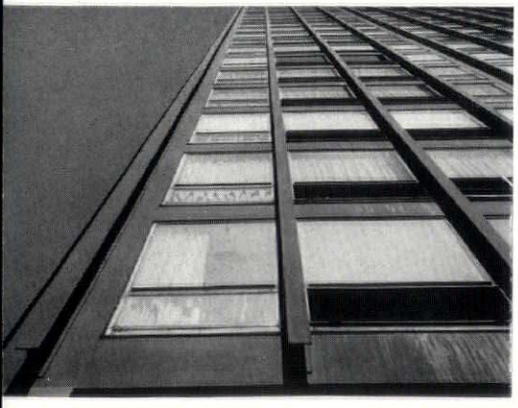




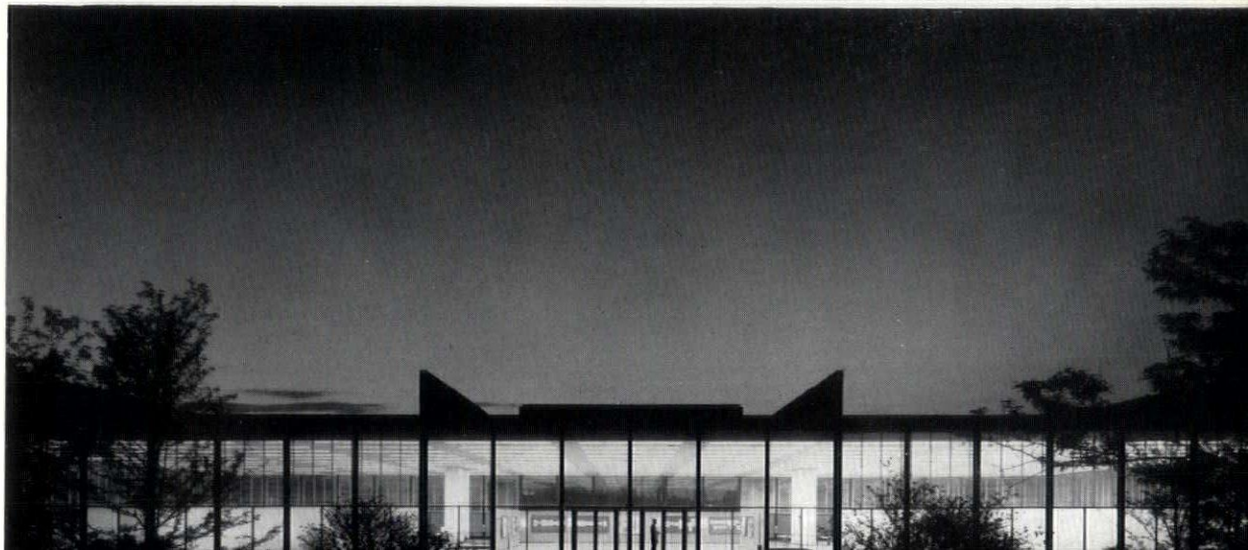


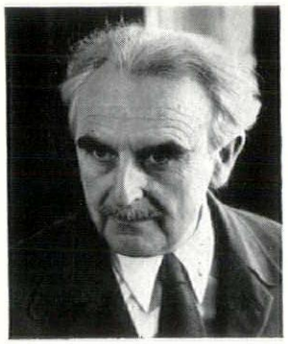


Esplanade Apartments, left, adjoining the original Mies blocks at 860 Lake Shore Drive, Chicago, have black-anodized aluminium trim and facings instead of the steel of the earlier scheme. The even more recent Commonwealth Promenade Apartments, of which the first two blocks are seen at right and above, have natural-anodized aluminium surfaces. The Cullinan Hall extension for the Museum of Fine Arts at Houston, Texas, below, has the usual Miesian structure of brick, steel and glass, but a curved plan, which is rare among his recent work.



Above, the most famous, and the most controversial, of all pieces of Mies detailing, the I-section mullions on the elevations of 860 Lake Shore Drive, including the 'unnecessary' ones on the corner stan-

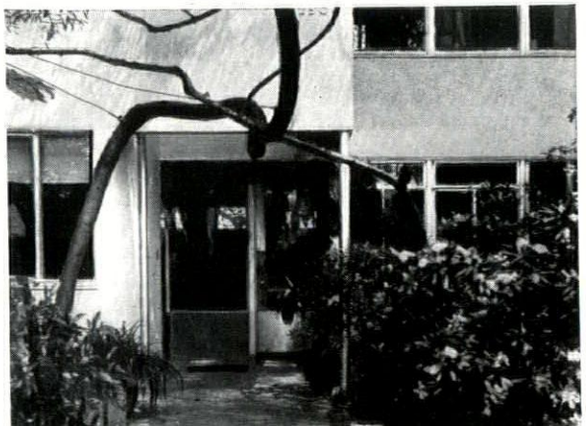




65

Los Angeles, California

Richard J. Neutra, almost alone of America's leading architects, has tangled at many points in his career with the great names of the Modern Movement. Born in Vienna in 1892, his early admirations were for Otto Wagner and Adolf Loos. In the early 'twenties he shared an office with Erich Mendelsohn in Berlin, and like Mendelsohn and Rudolph Schindler (another Viennese) he soon crossed the Atlantic and headed for Chicago and there met Sullivan and Wright. Unlike Mendelsohn, who returned to Berlin, he stayed on long enough in Chicago to he'p nurse Sullivan through his last illness, and then followed the path that Schindler had pioneered to the Pacific Coast. It was a classic education in Modernism, which he was soon passing on through his Academy of Modern Art to such rising talents as H. H. Harris and Gregory Ain. Ever since then, his rigorous and imaginative attitude to technology (which has its roots in the Neutra Family tradition), his thoughtful attitude to the psychology of architectonic form (which has its roots in his readings in the works of Wundt) have gained and maintained for him a solid reputation on both sides of the Atlantic, while the basic attitude which he derives from these interests, and sums up as 'Constructed human environment should be an entity, and not split up by specialists'. Both in his writings and his buildings he has shown a remarkable consistency over the years—works of 1927, like the 'Healthhouse,' and of 1955, like the Brentwood Gemological Institute, are equally unmistakably Neutra, even though they also bear witness to a careful and pondered architectural development. In spite of this quiet and self-effacing devotion to the problems of his art, he has attained wide public recognition, and deservedly.











Neutra (cont.) *Opposite page, constructed human environments by Neutra, exemplifying the extremities of his approach to house-design in the Fifties; above, a view-facing extrovert house at Ojai, Cal., below, a courtyard-facing introvert house at Bel Air, Cal. Left, a recent community building by Neutra, a Teenagers' club at Eagle Rock, which shows his continued command of cantilevered forms and precise detailing.*



Emmons, Wurster, Bernardi

61

San Francisco, California

William Wilson Wurster was born at Stockton, California, in 1895; it was a town of 30,000 people in the Great Central Valley of the San Joaquin, and Wurster's father would take him on each bank holiday (he worked in a bank) to see some new aspect of it. Starting with a fire station, a foundry, a mill and leading through to the City Hall, County Court House and the offices of the local newspaper, until he got to know how the town worked in all its details. He decided to be an architect at the age of three, guided, he thinks, by his mother, who had been impressed by his question 'How do chimneys stay on roofs?' The motto of the New England side of his family was 'At least learn some one thing well—you can change to something else if a greater opportunity comes.'

During High School he worked in the summer for E. B. Brown, an English architect in Stockton, a gifted, irascible and unbusinesslike man, but it was a good office to be in and the work had character and style.

He went to the University of California in 1913 to study architecture under John Galen Howard; however, health and the first world war broke in and he didn't finish until 1919. At architectural school Wurster remembers himself as a conformist, and the whole group, prior to the 'twenties, missed the 'modern surge', though, even then, façadism made him uneasy.

The first office job after qualification was in San Francisco with an honourable, tight-fisted architect of Scottish descent; he obtained his work as a brother-in-law of the mayor, but his performance was beyond reproach. It was not, however, a gay office. Wurster left to work for Charles Dean in Sacramento on an engineering project; there he learned all the field things fast, designed and built

The development and consistency of William Wurster's domestic work are shown by the



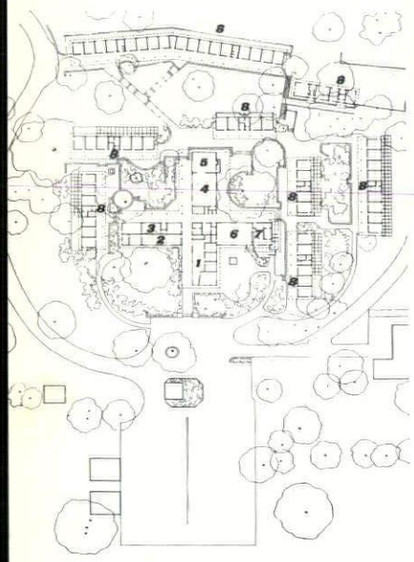
Gregory Farmouse, above, an early commission that won a House Beautiful award in 1927, and the Nowell house at Stockton, Cal., centre completed in 1953, but still maintaining the

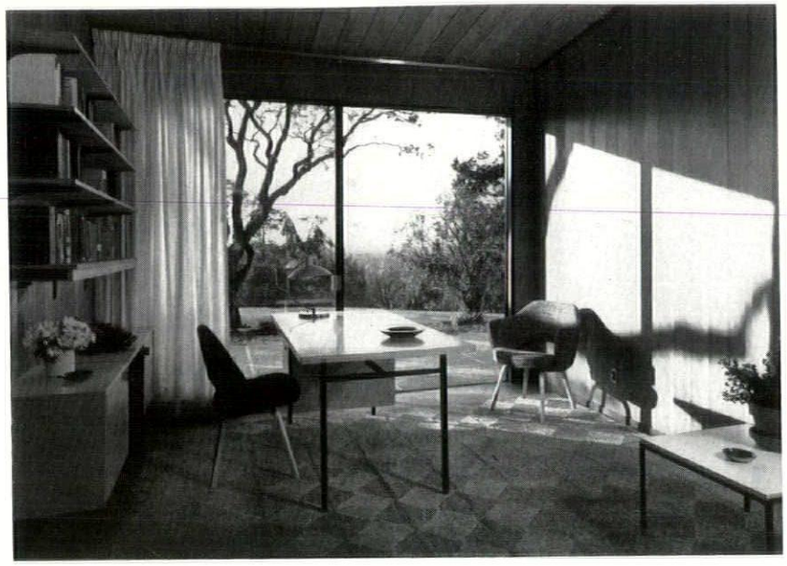


Bay Region tradition. The Monterey Public Library, below, 1952, is one of a number of community buildings that have come from the office of Wurster, Bernardi and Emmons.



Wurster (cont.) *The most discussed of Wurster's recent works is the group of buildings designed for the Ford Foundation's Centre for the Advanced Study of the Behavioural Sciences, Stanford, Calif., a cluster of buildings for high-level thinking. Right, a reading room in one of the blocks numbered 8 on the plan. Key to plan: 1, administration; 2, library; 3, seminars; 4, meetings; 5, lounge; 6, dining; 7, kitchen; 8, study groups.*

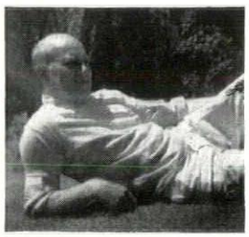




three houses on the side, saved $4,000 in two years and in 1922 set off for a year in Europe.

On his return he worked in New York with the firm of Delano and Aldrich until 1924, when he moved back to the Bay Region, starting his own office in 1926. One of the earliest commissions was the Gregory Farmhouse, designed in one day; it was carpenter architecture (a protest against the, then popular, Spanish stucco) and when it won the second House Beautiful award in 1927 Wurster was 'off to the races'. He now has two partners, Theodore Bernardi and Donn Eamons, and twenty-seven assistants; sharing the office are mechanical and structural engineers who have other clients as well.

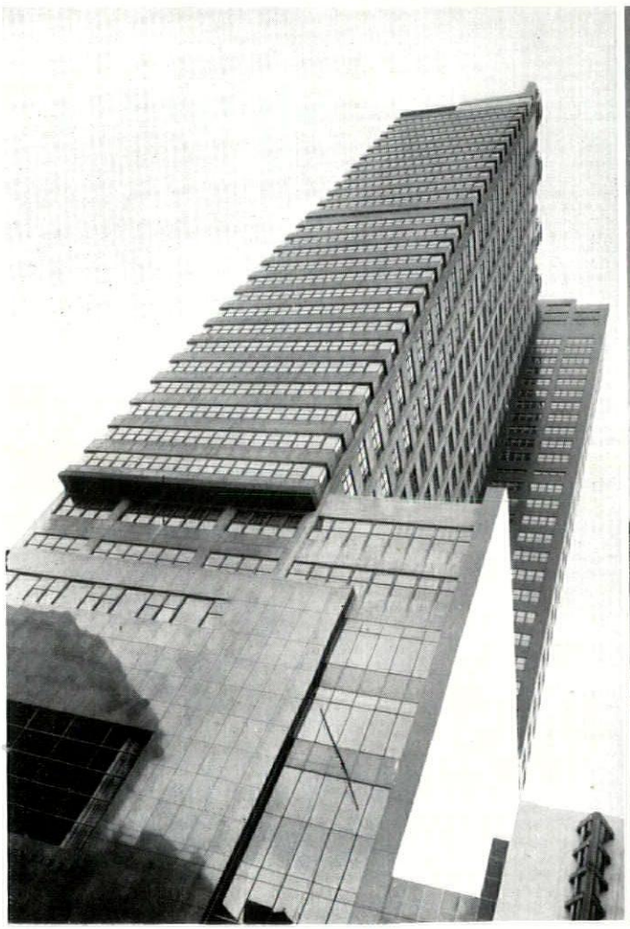
Wurster's chief admirations are Alvar Aalto (in architecture), Barlach (in sculpture) and Cézanne (in painting); he regrets that his clients usually seem to prefer Cadillacs. A constant source of inspiration has been his fellow-townsman Maybeck, whose work is an embodiment of what Wurster considers an ever-relevant dictum—'Let's use the past and yet be free'.

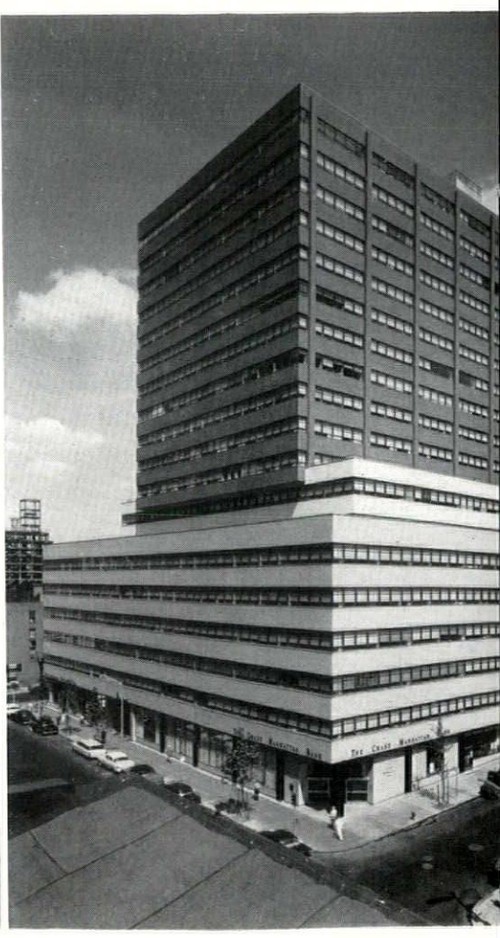


61

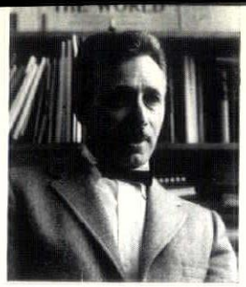
New York City

In 1932 William Lescaze and the late George Howe took a vital step toward the establishment of Modern Architecture in the US with their Philadelphia Savings Fund building, below, left. Lescaze's block at 711 Third Avenue, New York, below right, though twenty-five years later, clearly shows the same hand at work, particularly in the way windows, columns and overhang are handled.





William Lescaze was born in Switzerland in 1896, and still ranks as a pioneer modernist in the US. He will be remembered longest and with greatest respect for the Philadelphia Savings Fund Society building, of 1932, in which he and George Howe achieved the first truly modern skyscraper block; modern in its structure, modern in its services (which included air-conditioning), modern in its aesthetics. At the time of its erection it was regarded as an 'Internationalist' design, but events have over-run opinion, and PSFS now appears as the true ancestor of some of the most conspicuously American buildings of the post-war years—including many of Lescaze's own. Since 1934 Lescaze has worked on his own, or in ad hoc association with other architects, and at present he works with two architects as associates, and a staff of seventeen divided between two offices in New York. He has been in the US since 1920, and went there more or less at the instigation of his teacher in Zurich, Karl Moser, who said of his school designs 'Where are you ever going to find the chance of doing monumental work? Egypt? It's too late. Maybe America.' However, he has not lost the European connection, and quite apart from the Swiss Pavilion at the New York World's Fair of 1939, he has also designed a series of buildings for Dartington Hall that can still astonish the tourist in picturesque Devon.

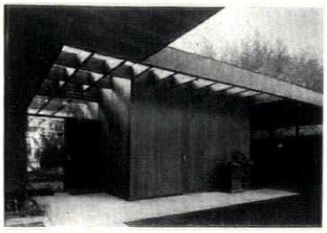


57

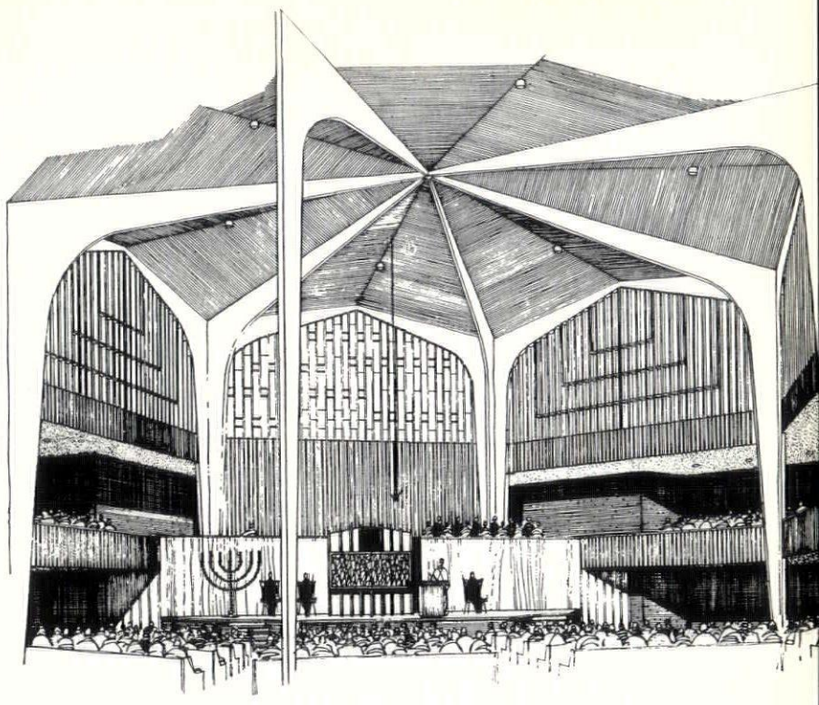
Cambridge, Massachusetts

Pietro Belluschi, whose work in and around Portland, Oregon, is a four-star example of the architect's integration into the life of his local community, comes from as far away as Ancona, in Italy, where he was born in 1899. He passed, by way of training in Rome, and a degree in civil engineering at Cornell, to the office of A. E. Doyle in Portland, which he served as chief designer from 1927 until the firm was dissolved in 1943. He then set up his own practice, but this, in turn, no longer exists as a normally constituted office, and Belluschi now works as a roving consultant in design, especially in the fields of church architecture, shopping centres, and office buildings. His work in these three fields is so dramatically dissimilar that he eludes routine evaluation as an architect in terms of style—whether personal or genera'ized—and he has been appreciated mainly for his achievement in building up a position in which he can design buildings that command respect in the often deadening mental climate of a provincial city—though in this respect Portland is as a-typical as he is. But the stylistic adaptability is as integral a part of his make-up as the community-consciousness, for both are aspects of what he calls 'the kind of integrity that breeds variety as nature will have it'—*nature* in this instance clearly subsuming the character of the community as well as the building's function. And the variety which such nature breeds has precipitated him into some pioneering situations that have kept the community of Portland well in the forefront of symptomatic architectural developments, and made 'North-West Architecture' a term to conjure with. His churches and houses, wood-framed, wood-clad, and often likened to local barns, were early in the field of 'redwood vernacular' and were taking circumspect note of Japanese architecture as long ago as 1938. On the other hand, his business buildings, square, smooth and sharp-edged, include in their number the Equitable Building of 1948, which anticipates much of what was later to be done at UN and Lever House, though not, like them, a sheath-type curtain-wall.

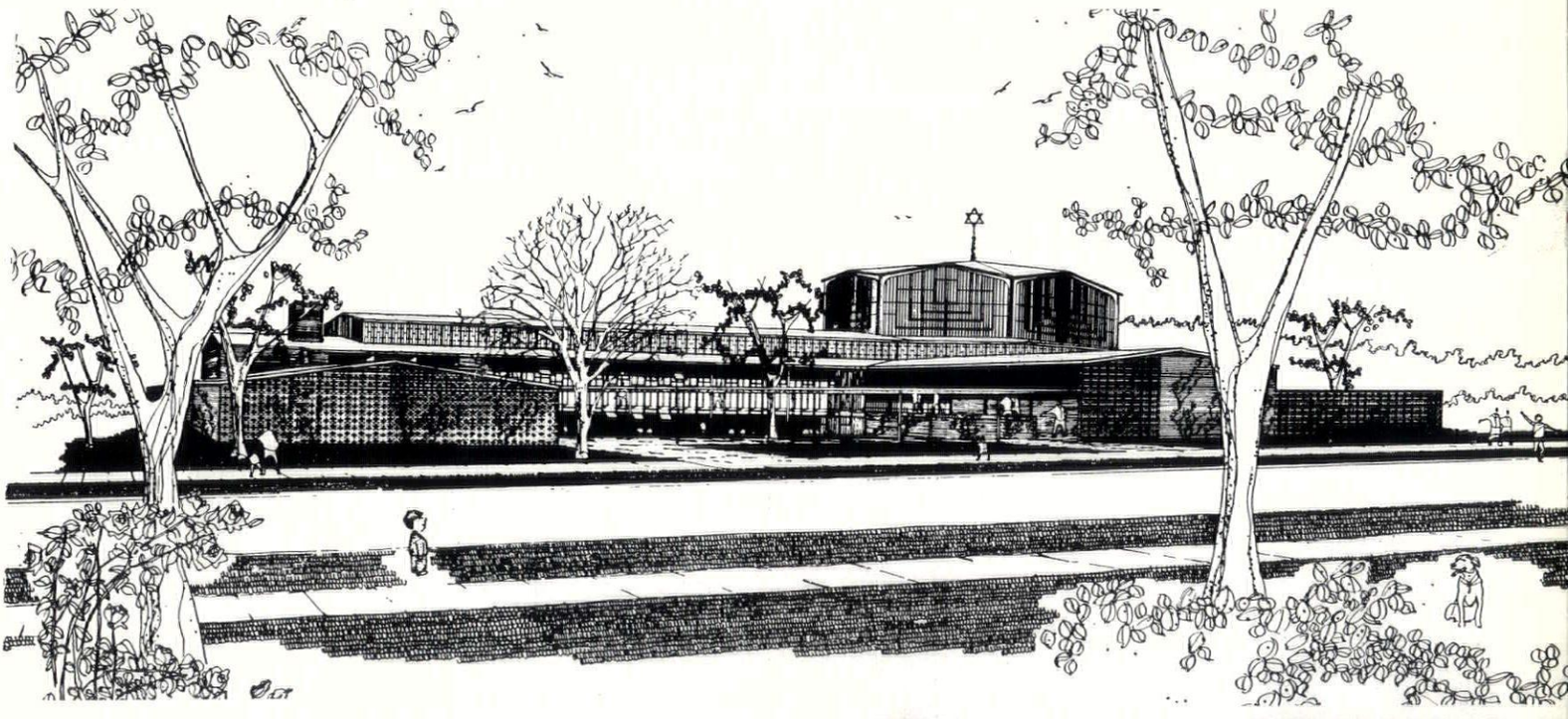


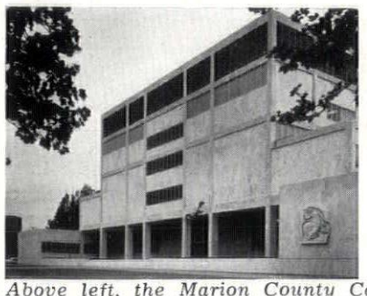


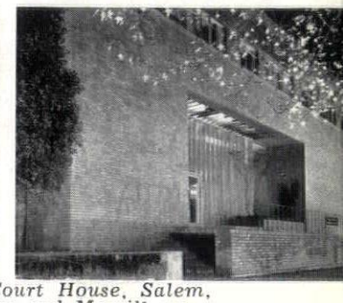
Above, Platts house, Portland, Oregon (1941) and below, the Burkes house (1949); both show the influence of the northwest's redwood vernacular.



Above and below, the Temple Israel at Swampscott Massachusetts, designed in association with Carl Koch and Leon Lipshutz. The hexagonal sanctuary, above, derives its shape from the Star of David; its structural members are of laminated wood. In the exterior view, below, the projecting wing on the left houses the vestry and that on the right, a library, the block linking them to the sanctuary is an auditorium which can be made one with the sanctuary by unfolding partitions.





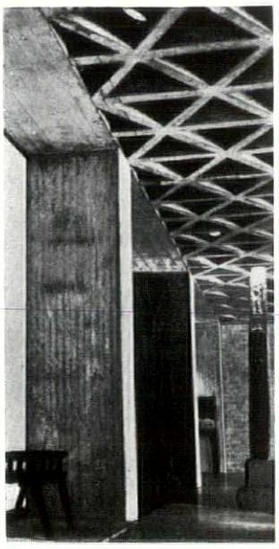


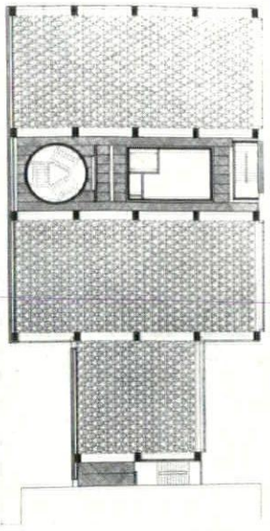
Above left, the Marion County Court House, Salem, Oregon, in which Skidmore, Owings and Merrill were supervising architects. Above, right, the entrance to the Salem YWCA.



56

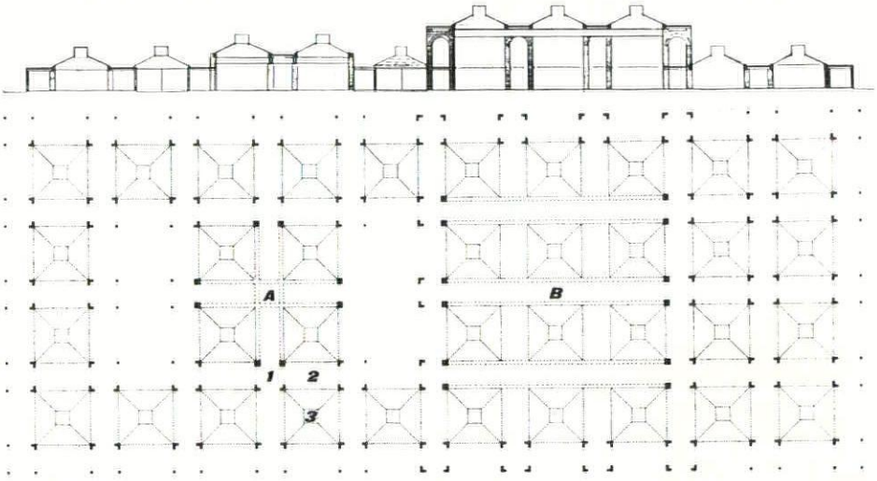
Philadelphia, Pennsylvania

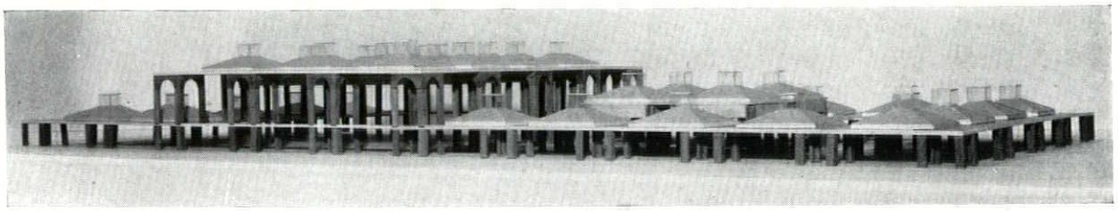


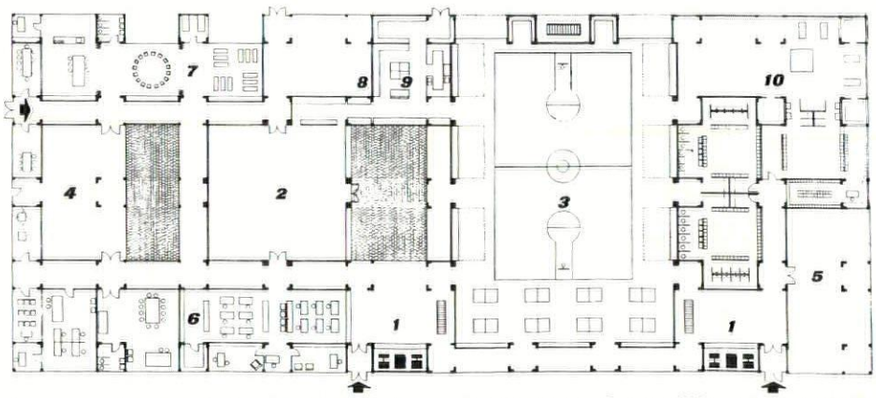




Left, detail of ceiling and columns and a ceiling plan, of the Yale Art Gallery, 1955. Of all Kahn's buildings this one shows most vividly his perception of the architectural potentialities of new structural systems, as well as his knack for making raw concrete, cement blocks and wire mesh into entirely satisfactory finishes. Above, first stage of a public housing project in the Mill Creek area of Philadelphia; building began in 1953 and is still continuing. Below, section, roof plan, model and ground plan of a community centre for Trenton, New Jersey. Column plan: 1, column centre space 11 ft. by 11 ft.; 2, oblong connecting space 11 ft. by 22 ft.; 3, major space 22 ft. by 22 ft. A, social hall; B, gymnasium. Ground plan: 1, lobby; 2, social hall; 3, gymnasium; 4, adult lounge; 5, youth lounge; 6, administration; 7, nursery unit; 8, shops; 9, kitchen; 10, turkish bath.







Louis Kahn was born on the island of Osel in Estonia in 1901. His father was an artist and a worker in stained glass; his mother, a harpist. Kahn started to draw at an early age and during his 'teens won annual prizes, finally being offered two scholarships to the Pennsylvania Academy of Fine Arts; instead, at the age of sixteen, he decided to be an architect, and chose to study at the University of Pennsylvania.* His first job was in the office of the Philadelphia city architect where he was put in charge of design for the Sesquicentennial Exposition of 1926 but, in his own words, he 'simply applied the stylistic design-making tendencies of the day to a unique problem of spaces and communications in a made-up world'. A lost opportunity he wishes he could have over again.

He next went to the office of Paul Cret (who was head of the University of Pennsylvania's architectural department), where the assistants were so many sorcerer's apprentices, reconstituting under the master's watchful and educated eye, ingredients from old Beaux Arts recipes.

The first independent job was a small synagogue, the second the original unit of a psychiatric hospital; both came from clients who must have felt, he thinks, that a young man would give them more for their money. His office now includes seven assistants and, on top of his practice, Kahn teaches at Yale and the University of Pennsylvania.

He sees no necessary opposition between 'organic' and 'standardized' architecture. He considers architecture as 'the thoughtful making of spaces'. 'Organic' qualities in architecture stem from an intuitive understanding of order, the order of spaces, of structure, of building, of services, of movement, all taken separately and together. Forms that come ahead of thought about space interfere with the development of its organic qualities. 'Standardized' architecture implies, he considers, 'stabilized means, static space and accepted function.'

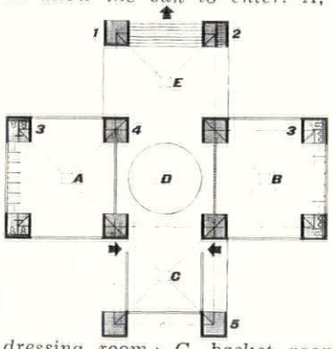
'Space is architectural when the evidence of how it is made is seen and comprehended. A single span space with intervening non-structural partitions raises the question as to whether it is meaningful form when shorter spans could be truer to the nature of the spaces. An "order-concept" of space could inspire the design of structurally defined spaces that "serve" and are "being served"; the large, the intimate and even the smaller voids in a structure (see Yale Art Gallery) should be inherent in that order-concept.

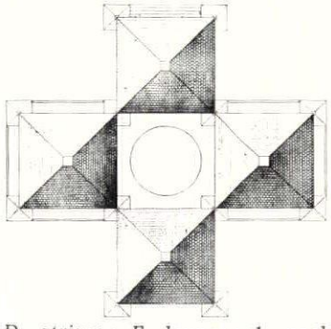
'The continual renewal of architecture comes from changing concepts of space. Long ago, when the walls parted and became columns, architecture began. Are there signs of another transformation, equally far reaching? Are glass, steel and reinforced concrete enough to inspire a new era in architecture? The changing nature of space suggests constant beginnings in architecture. Does not a street want to be a building? What does re-development of our cities mean without an order-concept of movement which gives architectural form and logical position to the harbours of stopping. I believe firmly that we will become even more attuned to qualities that exist in the spaces that "want to be"—qualities that transcend function and circumstances.'

*Music is Kahn's other interest and he could have had a scholarship to study that too, for the asking.

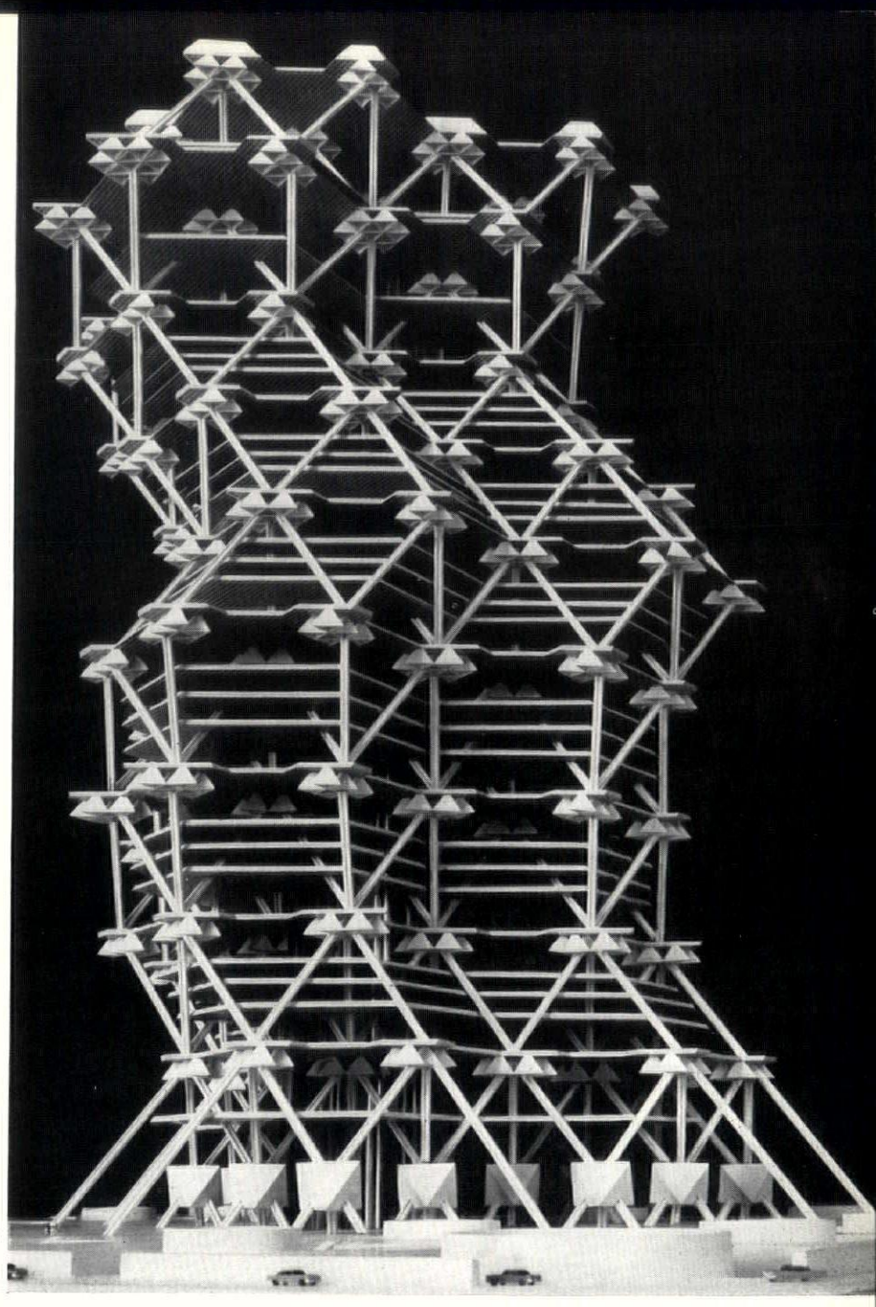


A Bath House adjoining a swimming pool in Trenton, New Jersey, 1955; the view is from the atrium looking towards the elevated pool and shows the baffled entrances to the dressing rooms through hollow columns at each side. Below, ground plan and roof plan of the bath house. The hollow columns are 8 ft. by 8 ft. square and are servant areas of the major spaces. The enclosing walls of the dressing rooms are flush with the outsides of the columns to allow the sun to enter. A, women's dressing room; B, men's

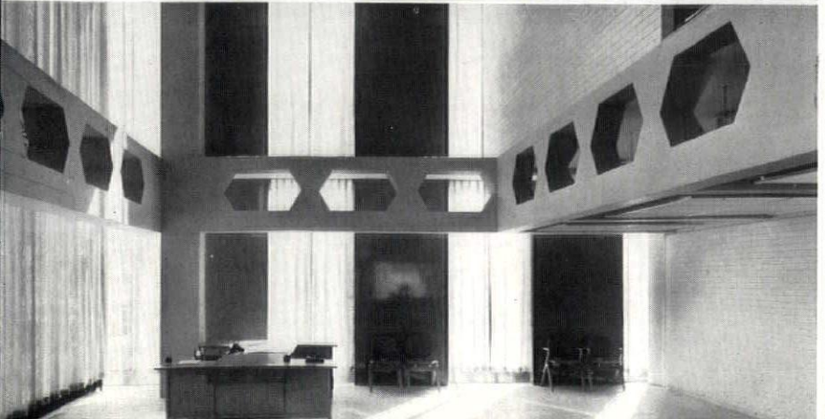


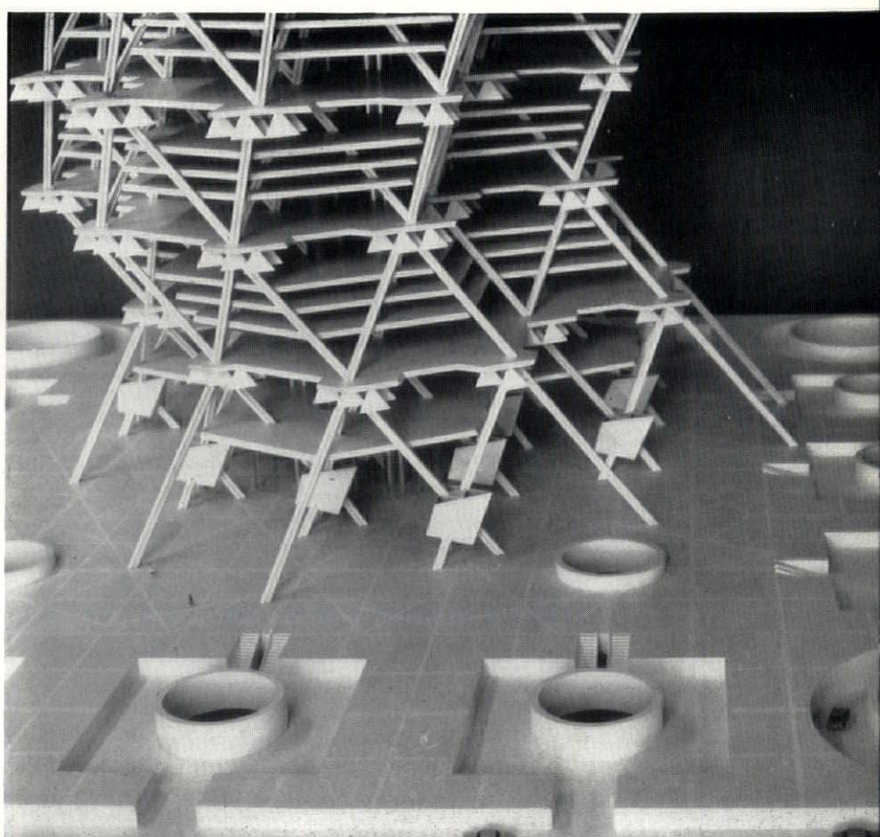


dressing room; C, basket room; D, atrium; E, lounge; 1, pool director's kiosk; 2, entrance to chlorinating equipment; 3, lavatories; 4, baffle. Right, model of a tower resting on a 700-ft.-square piazza. The structure demonstrates the predominant influence of horizontal wind forces over the forces of gravity in the design of high buildings. At the four corners there are street level entrances down to parking spaces; the square courts are for pedestrians, stairs from these give access to the piazza above, and escalators lead down to the parking level. The large circular openings are for lighting and ventilating the shopping concourse on the intervening (street) level, as well as the car park. Below, exterior and interior of a Medical Centre just completed by Louis Kahn in Philadelphia.











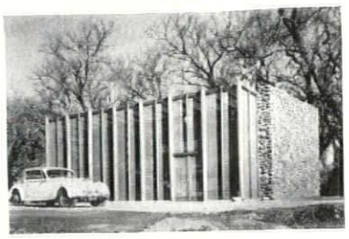
55

San Francisco, California

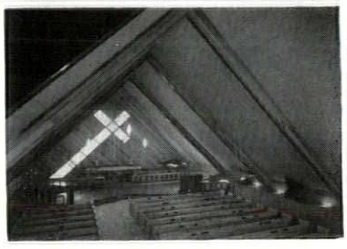
Mario Corbett was born in New York City in 1901, the son of an architect, and spent his childhood in Southern California. He received his training in his father's office, starting at the age of thirteen, and in 1919, until 1922, went to the San Francisco School of Fine Arts, following this up with ten years of work in offices he considered the best; Reginald Johnson and Myron Hunt in Los Angeles; John Byers, Santa Monica; Arthur Brown, San Francisco; Kenneth Murchison, New York.

In 1934 he opened his own office in San Mateo, a suburb of San Francisco, but found it stultifying and in 1937 moved to the city. His office staff varies between one and seven and is in the lower part of a two-storey building with penthouse on Telegraph Hill, San Francisco.

He finds the example of Bernard Maybeck an inspiration, though he doesn't believe his work much resembles Maybeck's; but in the refusal to kowtow to the faddish and the fashionable and in the sensitive and adventurous use of materials Maybeck, he believes, has many lessons to teach the architect of individuality.









Left, above, the Thomsen house, Vina, California. A screened porch extends along the whole house front and between it and the living-room floor is large-scale planting. Above and left, three views of the Hope Lutheran church, San Francisco. Middle left, the narthex, lower left, the east end. Above, west elevation. Redwood is the predominant material and the pews are of white ash.



55

New York City

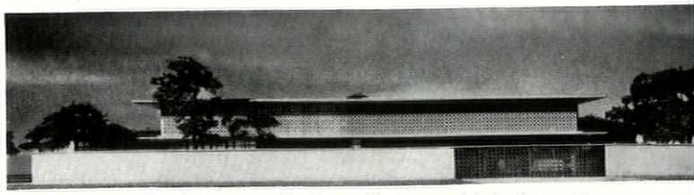
Edward D. Stone was born in Fayetteville, Arkansas, in 1902, and had a brother, James Hicks Stone, also an architect, with a practice in Boston. His earliest architectural recognition came at the age of twelve, when he won a first prize of two dollars fifty in a Birdhouse competition. Five years later, the sight of New York from Brooklyn Bridge fired him to make his own contribution to the New York scene—an ambition that came to significant fruition in the Museum of Modern Art, which he designed in collaboration with Philip Goodwin, in 1937. Between the decision and the realization, he studied at the University at Arkansas, Harvard and MIT, and travelled in Europe on a Rotch Scholarship, designed the Radio City Music Hall, pioneered Modern domestic design in the Eastern States (Mandel Residence, 1930) and established his own office in New York, in 1936. The firm is still called *Edward D. Stone, Architect*, and has no partners or associates, but there are now subsidiaries of the New York office in Fayetteville and Palo Alto, with a total staff of thirty-nine for the three offices.

Since the war Stone's work has become —in a very conspicuous sense—representative of American architecture, since he has designed a number of important buildings and projects outside the US, notably the hotels *El Panama* (in Panama) and *Phoenicia* (in Beirut) and another one projected for Karachi, the US Embassy in New Delhi (which Frank Lloyd Wright suggested be called the *Taj Maria*, in honour of Stone's wife), the US pavilion for the '58 Brussels exhibition, and a large hospital in Lima, Peru. At home, the Palo Alto office is particularly flourishing, with a large volume of institutional building in California in hand. With so much tropical and sub-tropical work in the office, it is hardly surprising that the pierced screen and deep eaves should be almost the trade-marks of Stone's work at present, and it may be these qualities that earned him the rarely-dispensed admiration of Frank Lloyd Wright—'a young man with a brilliant future' were the Master's words. This admiration is reciprocated, and he also admires the work of Alexander Calder (which he used in his Arkansas university buildings), Henry Moore, Matisse, the town-planning of Bath, Piazza San Marco, and Baroque Rome.

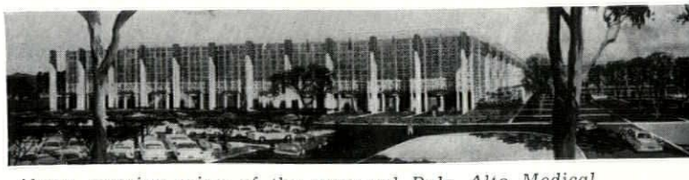




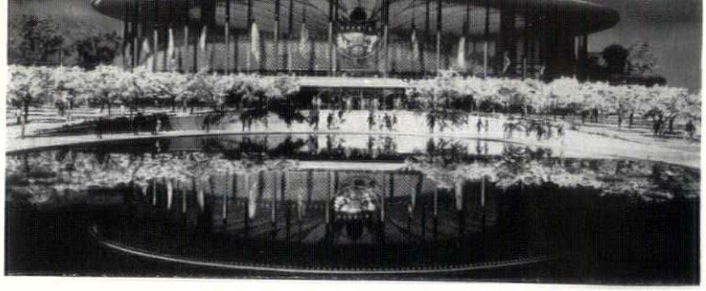
Above left, the Mandel house, Mount Kisco, New York, 1930. Above right, a 400-room ten-storey hotel five minutes by car from the centre of Karachi, Pakistan. The more important of the public rooms on the ground floor are combined into one space, separated by glass partitions and grouped round two courtyard gardens.

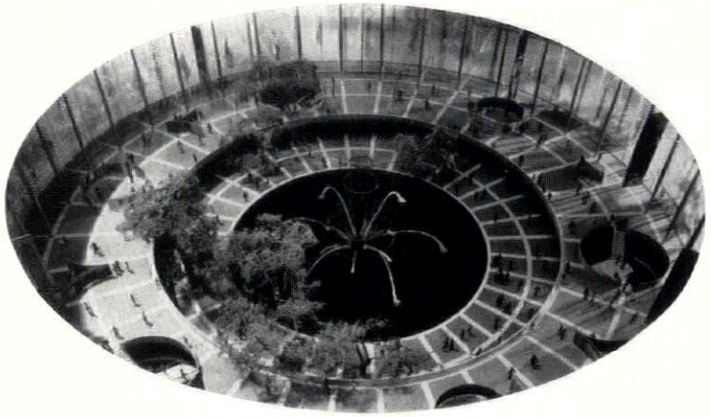


Above, the Graf house, Dallas, Texas, which has an external pierced screen wall for sun protection.

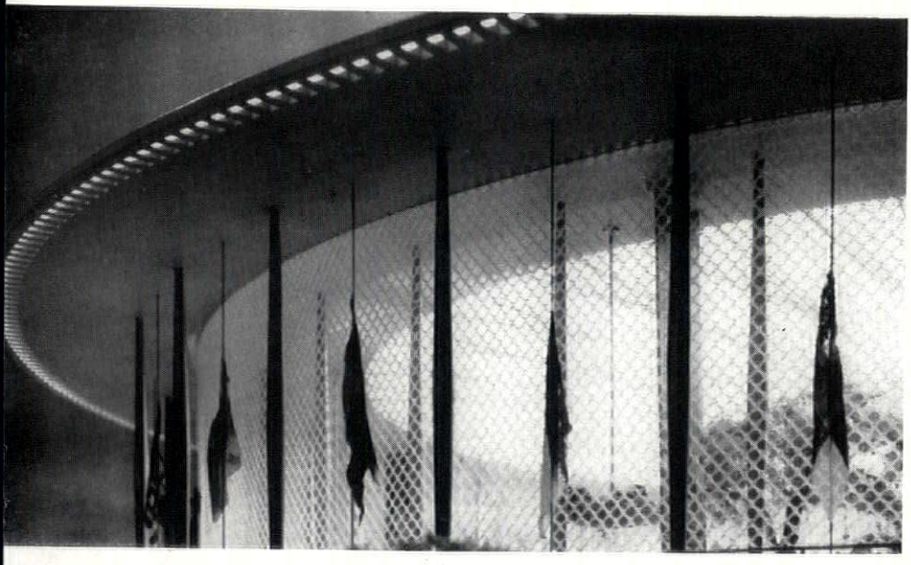


Above, nursing wing of the proposed Palo Alto Medical Centre, Stanford University, California.

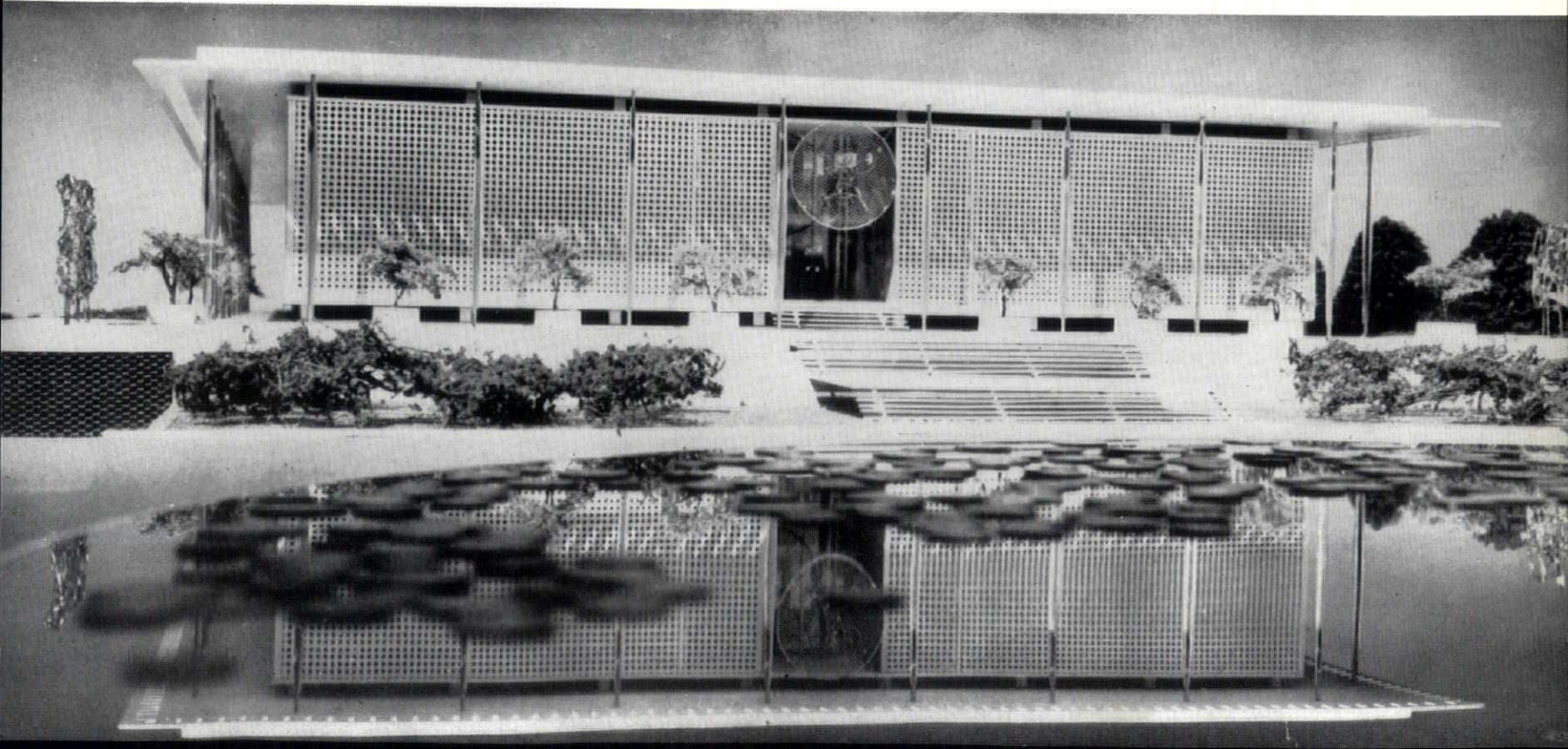








Stone (cont.) *Left and left above, model of the United States pavilion at the Brussels World Fair, 1958, by Edward Stone, showing views of the exterior and interior (oval). The building has a diameter of three hundred feet, covering an area about the size of the Colosseum. The roof construction resembles that of a bicycle wheel, with outer, compression, ring connected to an inner ring by high-tension steel cables; the roof will be covered with translucent plastic over a metal mesh; the outer ring will rest on two concentric rows of columns and hung between them is a honeycomb wall of plastic sealed with an undulating plastic skin. Colours are gold, crystal and white and in the centre of the interior exhibition space is a large water garden surrounded by existing willow trees. Above, the El Panama hotel at Panama. Below, model of the US Embassy at New Delhi, now under construction. It will be of reinforced concrete with an outer row of gilded steel columns, a double roof, a pierced sun-screen wall of tiles and an interior water-garden court roofed by suspended strings of aluminium discs to give the effect of sunlight filtering through leaves. The whole building is raised on a rectangular platform with entrance for cars and parking space below it.*



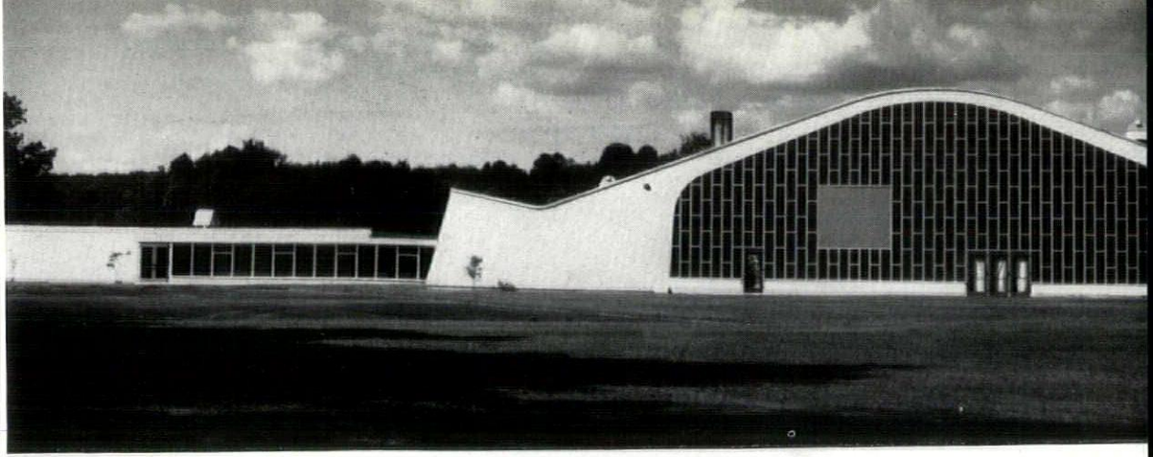


54

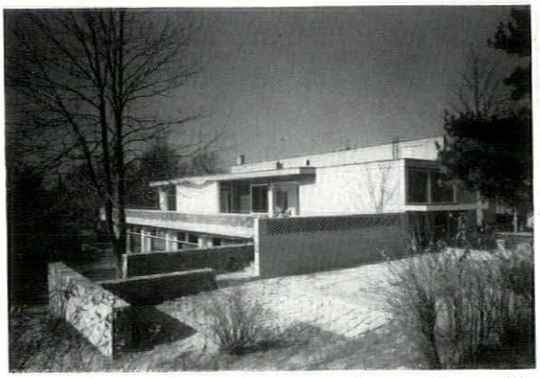
New York City

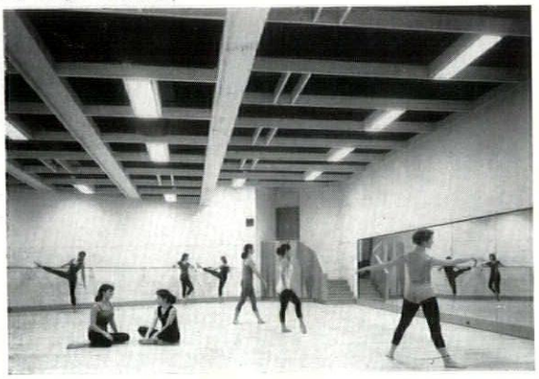
Marcel Breuer, outstanding product of the Bauhaus's most brilliant period (1920-24) and designer of its most famous artefact (the steel tube chair), was born in Hungary in 1902, and decided to become an architect in 1904. After his Bauhaus training, and a phase when he combined headship of the Bauhaus interiors department with independent design-work outside, he passed by way of the Isokon network (which also handled Gropius and Moholy-Nagy) and collaborations with F. R. S. Yorke in England, to the USA in 1937, to team up with Gropius once more, teaching at Harvard, and partnering him as an architect. He was thus among the spearheaders of full, European modernism in US Academic circles and in New England house-building, and he has left his mark in both fields.

In house-design, however, he has made his deepest impression since the partnership with Gropius was dissolved in 1941, particularly with his 'butterfly' exhibition house for the Museum of Modern Art, which was visited in 1949 by over 70,000 people, and probably did as much as anything to sell split-level sections to the US public. Epoch-making as this may have been in the context of US housing at large, in the context of his own work it was only one of a series of remarkable houses produced by him between 1945 and 1955, houses marked by an extensive, original and authoritative employment of wood and stone. The successes of this period, and the very high quality of the work he put into them, focused attention on him as a house-architect more than anything else, but he had always possessed the abilities and ambitions for larger work, and in the very middle of his house-period he designed a dormitory for Vassar and the Arts Centre for Sarah Lawrence College. Since then projects and work in hand outside the domestic field include schools and college buildings, a factory, a monastery, and two widely-discussed designs done in collaboration with Europeans in Europe, the UNESCO buildings in Paris, with Zehrfuss and Nervi, and the new *de Bijenkorf*, Rotterdam, with Elzas. With both these latter teams he maintains project offices, as well as his own office in New York, where he has three associates and twenty assistants. As might be expected from one of the Bauhaus's star pupils his work is unforcedly personal, but never individualistic, and—as might also be expected of an old Bauhaus student—he has a distinguished roster of collaborators from the other arts.

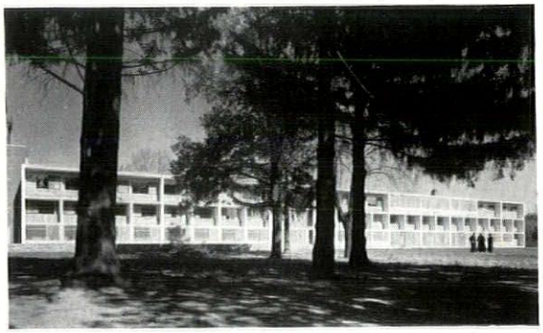


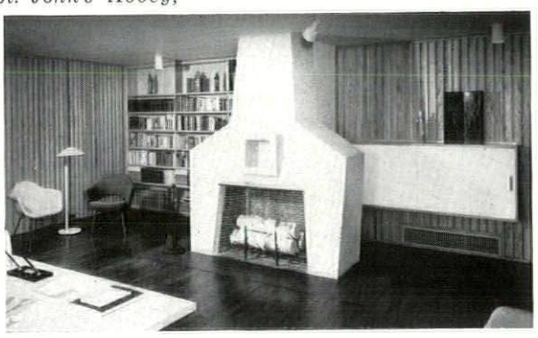
A large part of Marcel Breuer's recent work has been concerned with educational buildings of a very varied kind: above, a classroom wing and the gable wall of the gymnasium at Litchfield High School,



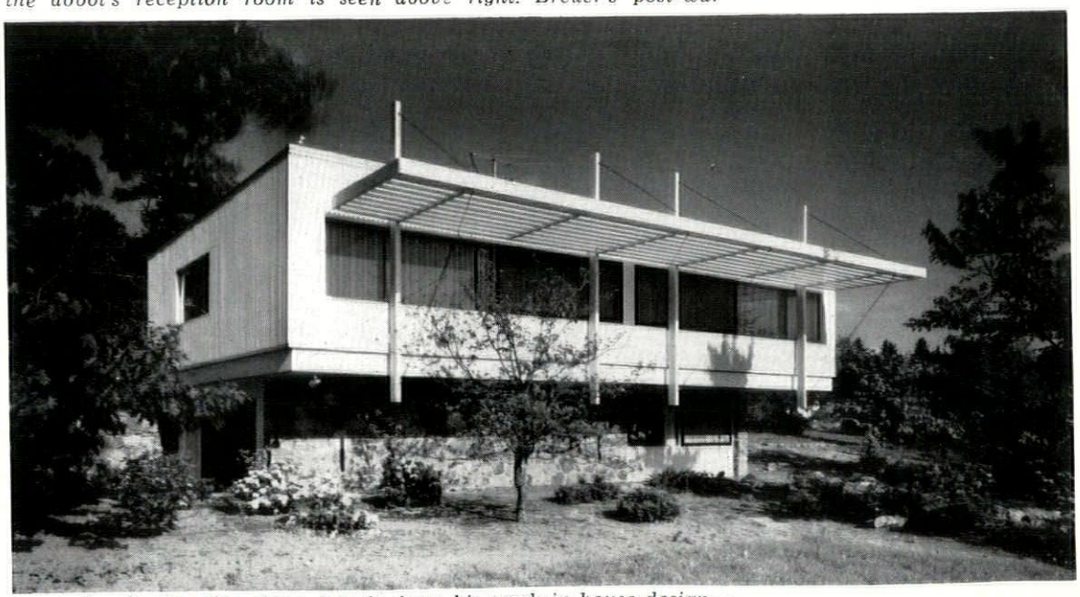


Conn.; for the Sarah Lawrence College, Bronxville, NY, he designed in 1950 an Arts Centre, left, above, with a dance-studio, right, above, under the rake of the auditorium floor; and for St. John's Abbey,

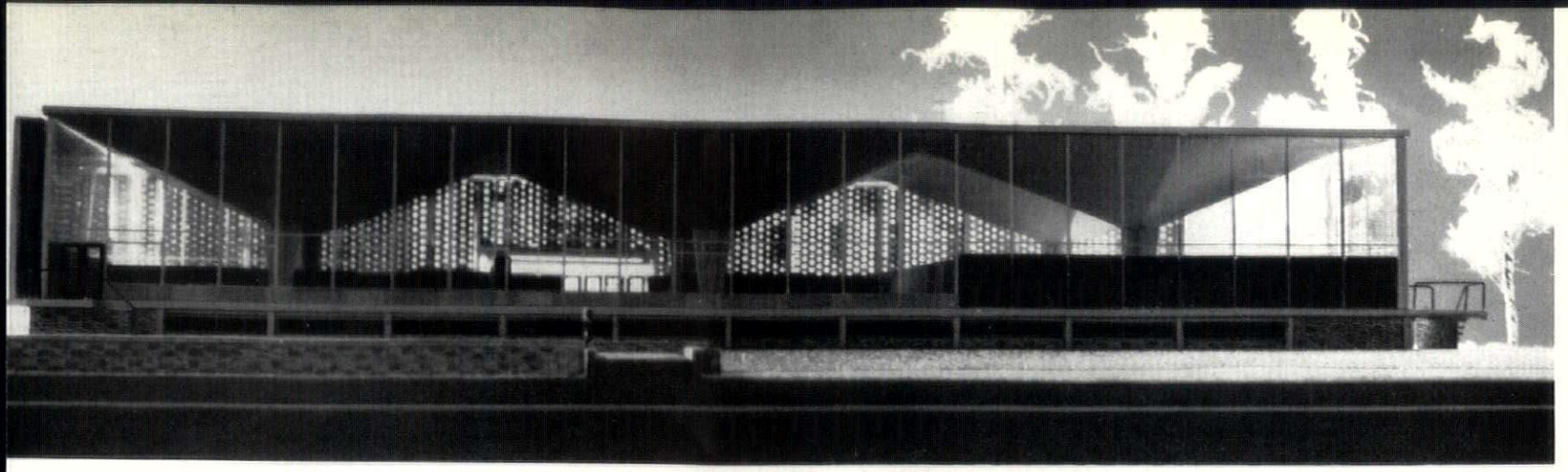




Collegeville, Minn., a large programme of extensions (AR, July, 1954) of which the monastery wing, above left, has been completed—the abbot's reception room is seen above right. Breuer's post-war

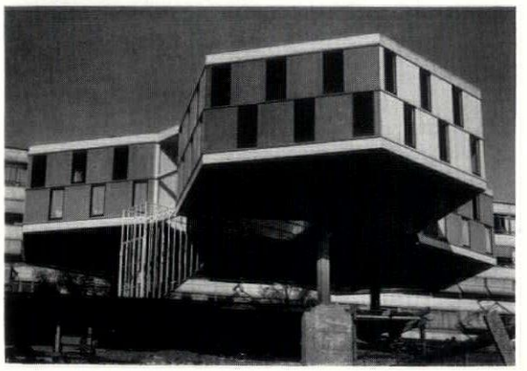


reputation in America stems largely from his work in house-design—the Grieco house, Andover, Mass., with its boarded exterior, wire-braced sun-shade and binuclear planning is typical of his manner in the 'fifties.



Breuer (cont.) *Among the varied commissions that have come Breuer's way in recent years have been the new library block for Hunter College, New York, above, the design-overhaul of the New Haven Railroad —a projected paint-job for Train X is seen below—and the site office for the building work on the new* de Bijenkorf *store in Rotterdam, below right.*







Left to right: Contini, Baumfeld, Gruen, Van Leuven.

Victor Gruen was born in Vienna in 1903. His father was a lawyer, whose interest in the theatre and abilities as a pianist led him to represent many theatres, actors and musicians; he died when Gruen was fifteen and had no influence on his choice of career except to warn him not to become a lawyer and to bequeath him a friend who was an architect and into whose office Gruen went after training in a school of architecture. Parallel with his work in the office he studied at the Academy of Arts under Professor Behrens (passing an entrance examination which had been flunked a few years earlier by Adolf Hitler). Those who had the strongest influence on him at that time were Adolf Loos (whose obituary he wrote for a Viennese newspaper) and Le Corbusier, whose concepts of 'La Ville Radieuse' he wrote about in Austrian magazines. He spent nine years in the office of Melcher and Steiner, and then set up on his own, winning a prize in a housing competition entered with R. L. Baumfeld (one of his present partners in America) and Karl Langer (now practising in Australia). However, economic conditions didn't favour large-scale building projects at that time and work in the office was mostly concerned with decoration and

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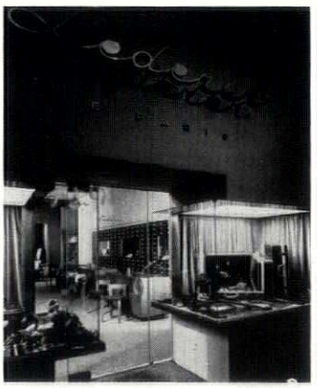
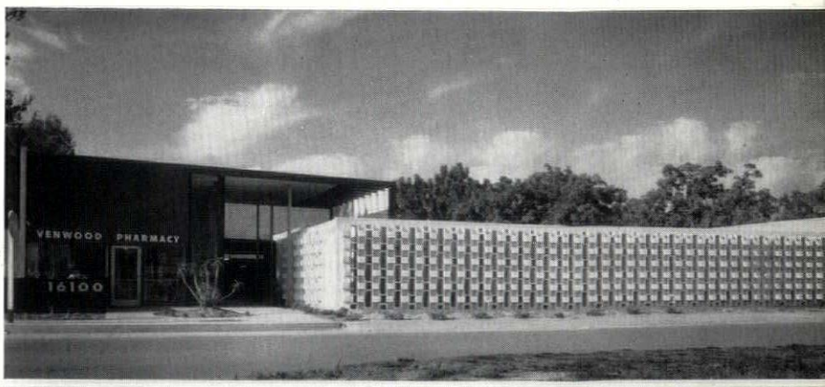
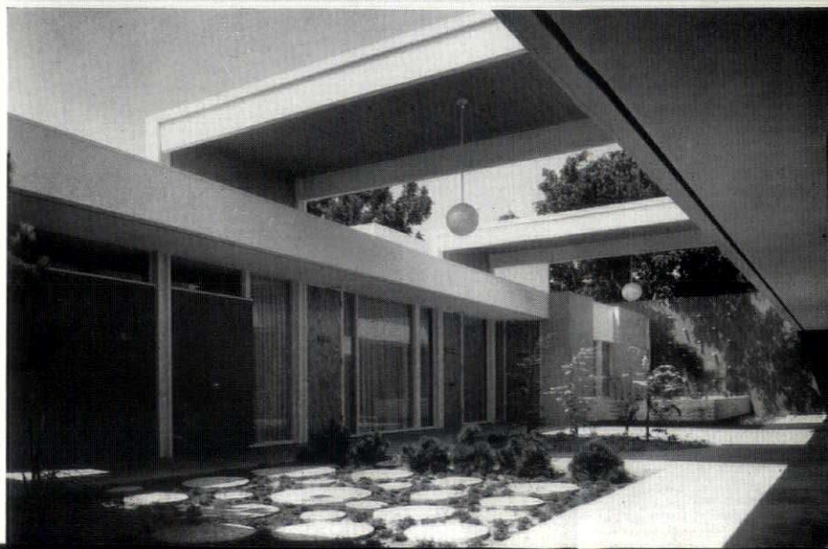
New York City

Victor Gruen's first store-design in the USA was Lederer's, below left, on Fifth Avenue, New York, done just before the War. Although the growth of his firm's reputation has largely depended on its skill in handling store and shopping-centre problems, its output is by no means restricted to such work, and a small office building for medical services in the Los Angeles suburbs is seen below.



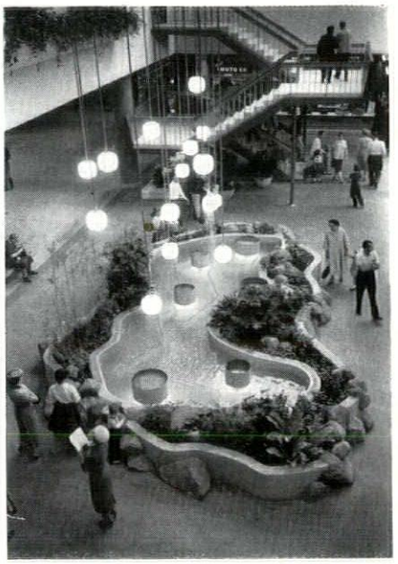




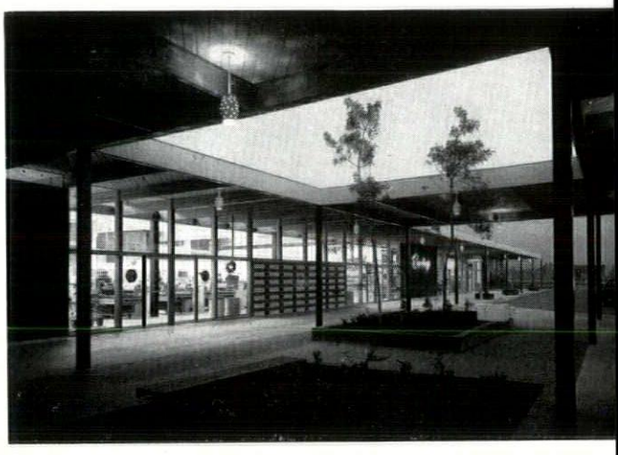
industrial design (a store front for the Deutsch Men's Store was published in the ARCHITECTURAL REVIEW in 1938.) A large commission for a department store in Vienna coincided with the arrival of Hitler in Vienna, and after three months, when all seemed lost, Gruen obtained a visa for the USA and in July 1938 left with his family, T-square, drawing board, books and $8.

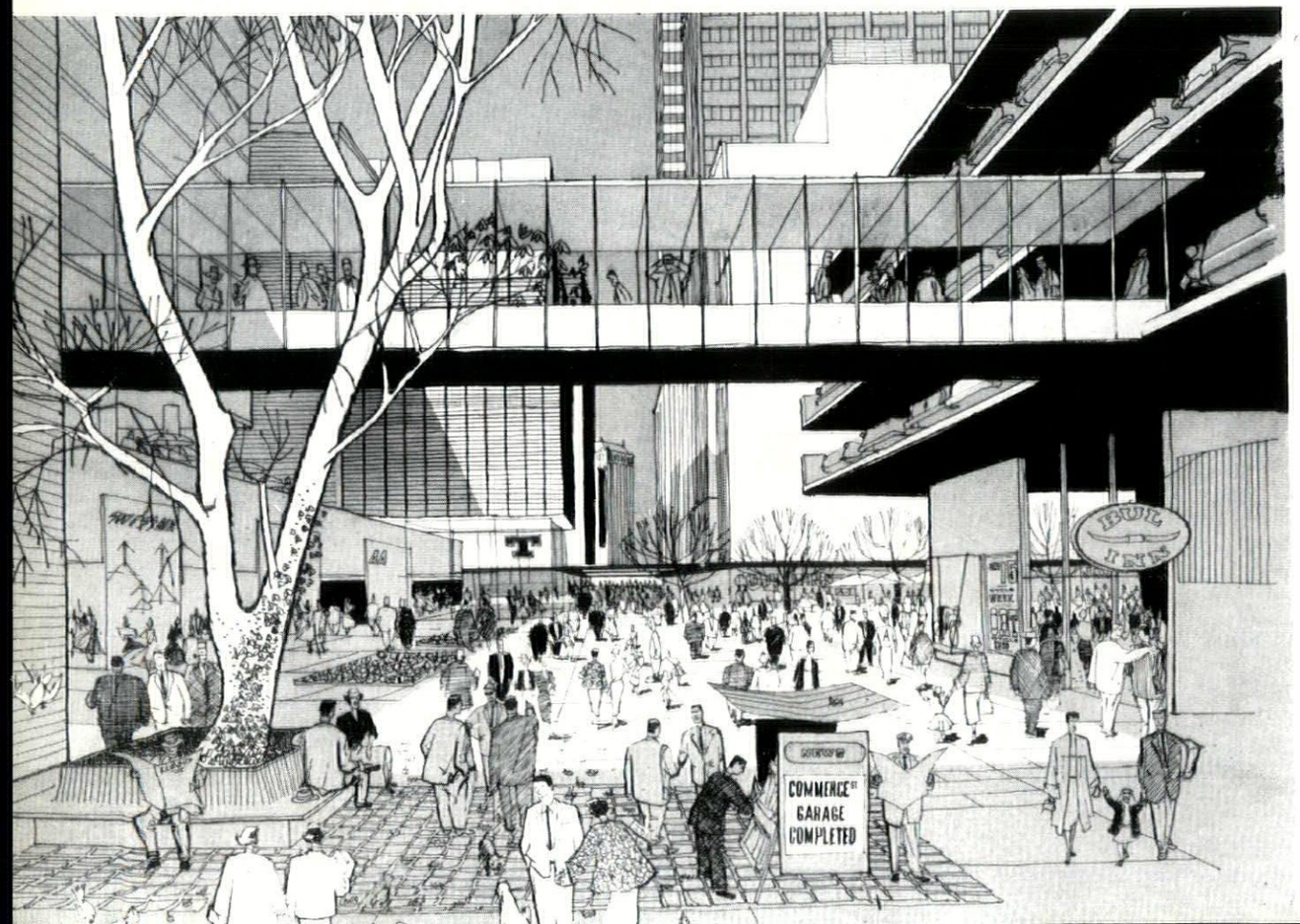
After a period of struggle which included helping to produce two shows on Broadway, Gruen met by chance a man he had known in Europe, who commissioned him to design a store (see page 349). The firm now has five partners and thirty-two associates, employing in all between 150 and 250 men. There are two production offices, in Los Angeles and Detroit, and four smaller offices, in New York, San Francisco, Minneapolis and Miami. The organization includes structural, mechanical, electric and civil engineers, interior designers, graphic designers and specialists in traffic planning, landscaping and other fields. Gruen believes there is a serious division in American architecture between, on the one hand, an 'austere, formalistic attitude to architecture which subordinates human needs, utility and even the rationale of technique to preconceived and personal, ascetic concepts' and, on the other, a 'humanistic approach in which forms are derived from a careful study of physiological and psychological human needs and from the logical use of techniques'. He thinks that America is at present facing a fad for structural ingenuities, expressing itself especially in roof forms, resting on four points, three points and two points (he awaits breathlessly the one-point supported shell). He blames this, as do a number of other American architects, on the desire for publicity.



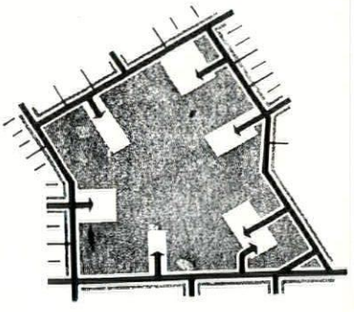


Gruen (cont.) *The most famous of Victor Gruen's shopping-centres is still Northland, outside Detroit, and the air-view above of the centre and its parking lots emphasises the sheer size of the problems involved in its design. Subsequent Gruen shopping centres have made even more lavish use of applied arts—below left, is the court of Southdale Centre, Minneapolis—but some have been on a more intimate scale, as is the Pala, at San Jose, Cal., below.*





Gruen's proposals for A Greater Fort Worth Tomorrow are—consciously—the application of his shopping-centre planning methods to a central area, automobile penetration being restricted to peripheral parking zones, and the rest of the area made over to pedestrian circulation at various levels, below. The resultant urban scene, left, has an aspect that will be familiar to readers of THE ARCHITECTURAL REVIEW, *and its repeated pleas for the creation of pedestrian networks in central area re-developments.*





53

Pittsburgh, Pennsylvania

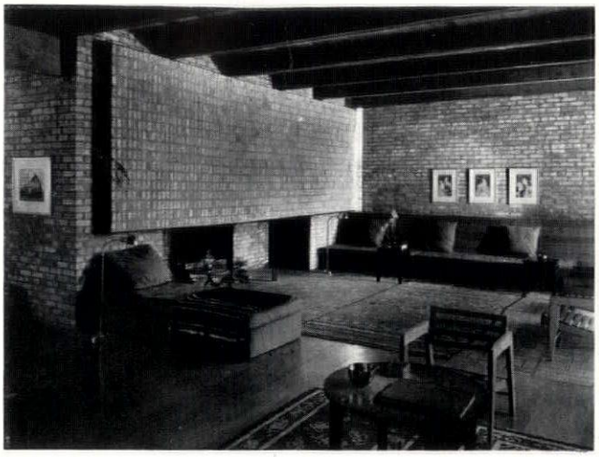
Paul Schweikher was born in 1903 in Denver, Colorado, where his father was President of the Western Institute of Music; he was a pianist and an organist.

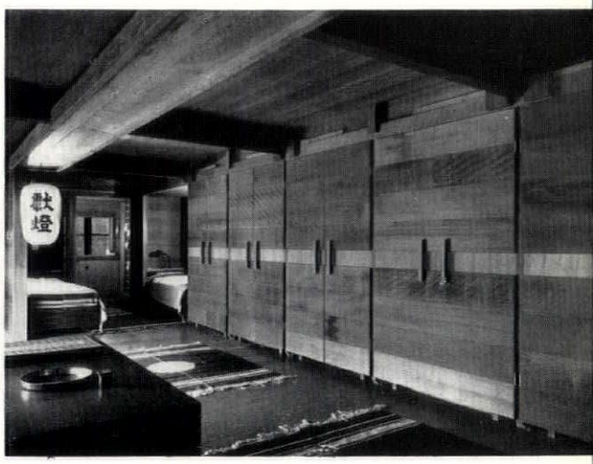
Schweikher left Denver at the age of 18 to study painting at the Chicago Art Institute, but switched abruptly to architecture. What decided him was not the example of Sullivan or the presence of Wright (he didn't know of the existence of either until a year after the decision) but the city itself and the impression its vigour in life and building made on a newly arrived far-westerner. This was in the early 'twenties. After I. I. T. Schweikher worked with David Adler, well known then for his skill with 'English Georgian'; in 1927 he left for Yale, graduated in 1929 and then travelled in Europe for a year on a Matcham Fellowship.

In 1930 he returned to Chicago and found a job in the office of Robert Work and Russell Walcott; emphasis was on technical expertise—it was good discipline. After the depression life became a matter of imaginary projects; some were done with Keck of Chicago and Beatty of Wisconsin, and the group held an exhibition in a local Chicago gallery. It coincided with the visit of the International Exhibition of Architecture organized by Henry-Russell Hitchcock and Philip Johnson, and Hitchcock was impressed with their work, though it was too late to incorporate it as a local entry in the International Exhibition; instead they were invited to show at the Museum of Modern Art. The first commission came shortly after, as the outcome—a small music school and house for David Dushkin and his wife, Dorothy (counterparts, Schweikher suggests, to the Dolmetschs). Built around 1933-34, at Winnetka, Illinois, the Dushkins taught music and made instruments in it for many years.

Schweikher considers it was not until the construction of a house for himself in 1938 that he developed an idiom he felt was his own. It was in wood, Douglas fir for the structure and redwood for the cladding on a post and beam system, with pintles and dowels as connectors in place of nails. It led to the use of standard, mill-run lumber, and to an appearance sometimes described as 'stick architecture'.

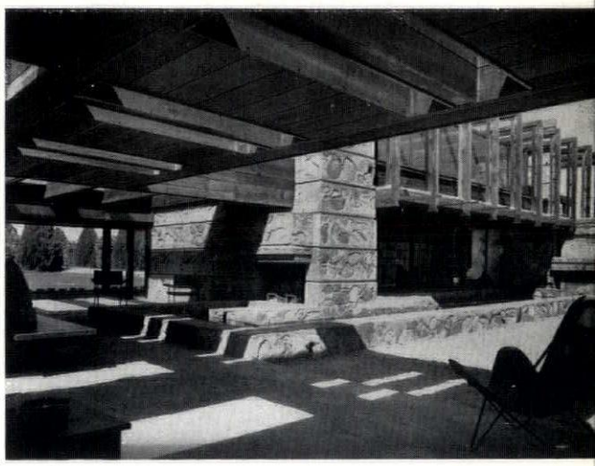
The office of two assistants was joined by a partner, Ted Lamb, in 1936, and in 1938 by another partner, Winston Elting. It closed during the war, when Lamb was killed, and re-opened after as Schweikher and Elting, with Elting as administrative partner. In 1953 Schweikher went to Yale as chairman of the Department of Architecture and in 1955 to Pittsburgh as head of the Department of Architec-



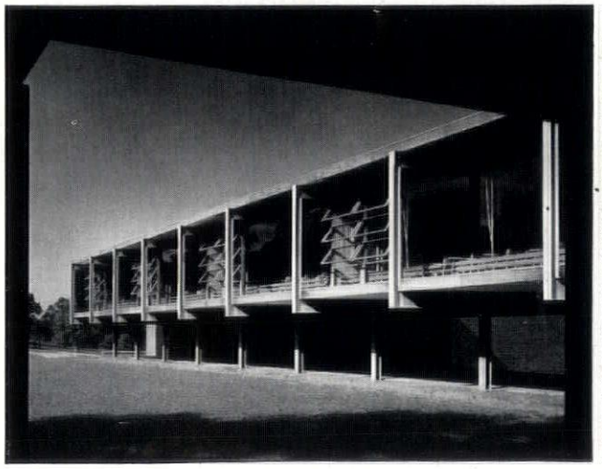


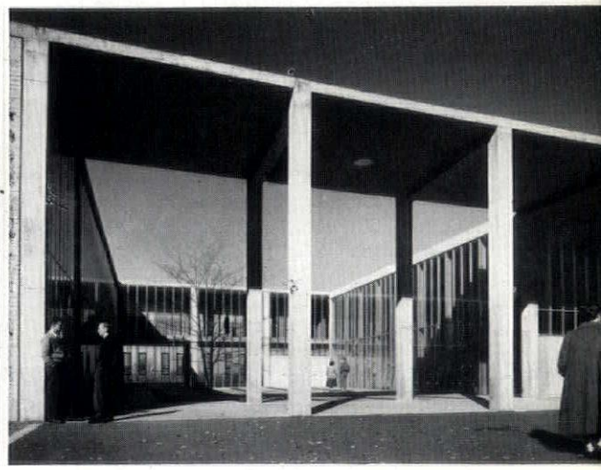
Paul Schweikher's architecture has developed in a personal manner, which he first felt was truly his own in the house he built at Roselle, Ill., for himself in 1938. There—as is seen in the living-room, left, and master bedroom, right—heavy emphasis was laid on materials and structural methods. The same qualities appear nearly a decade



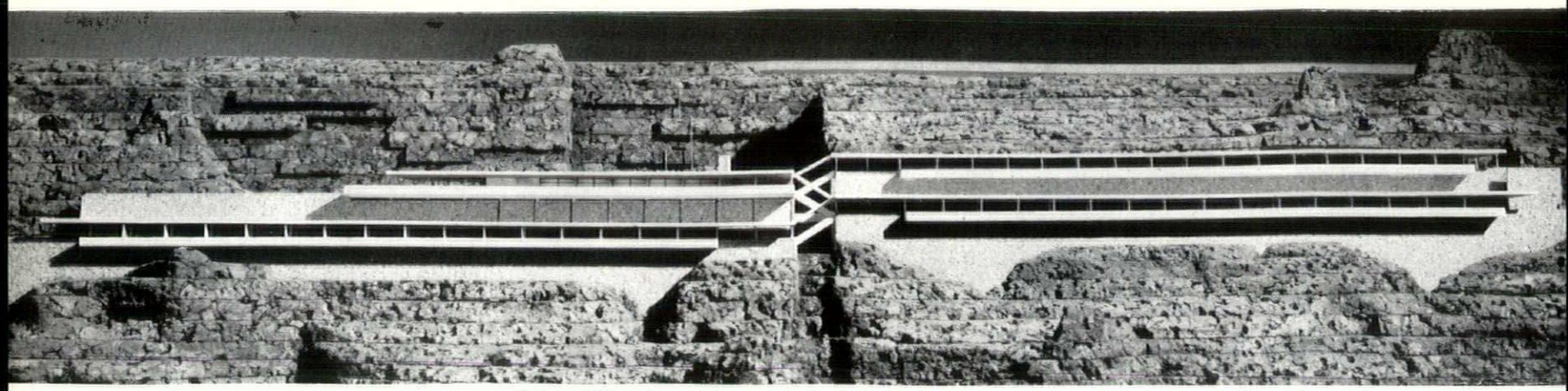


later in the Upton House, whose cactus garden is seen at left, and patio shelter at right, but raised there to an almost Wrightian pitch, as befits a building near Taliesin West (the house is at Scottsdale, Ariz.) and built by the same contractor. But by 1950 these qualities had begun to develop in another way and the Fine Arts Centre at Maryville,





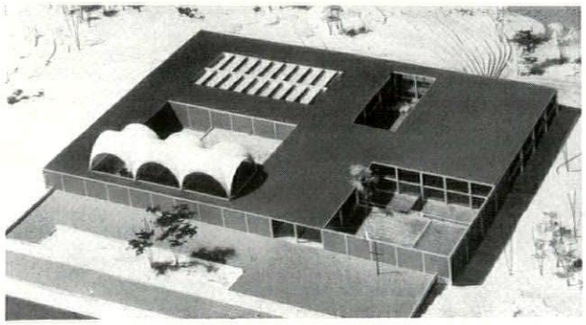
Tenn., using different materials and housing different functions, tends towards almost Brutalist treatment in the classroom wing, left. Later work in Maryville, however, such as the chapel-theatre group, right, shows a more formal tendency which has been maintained since, even in the exotic Peruvian hill-side site which appears over the page.

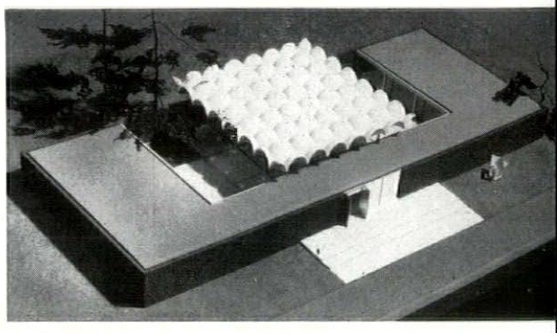


Schweikher (cont.) *Above, Paul Schweikher's project for a terraced hotel on the ancient Inca site of Machu Picchu. Below, two of his most recent projects for semi-public buildings; the Grace Lutheran Church, Teaneck, NJ, left, and the Language Centre for Vassar College, Poughkeepsie, NY.*

ture of the Carnegie Institute of Technology. Since 1953, Schweikher has practised by himself, first in New Haven and now in Pittsburgh, working in various places under separate agreements with associates, including his former partner Elting.

His admirations are Mies and Le Corbusier (architecture), Klee and Mondrian (painting), Arp (sculpture). The painter Josef Albers, and Mies, have influenced him as much in their talk as their work, and both are his good friends.







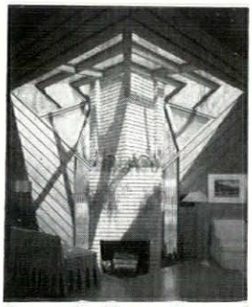
52

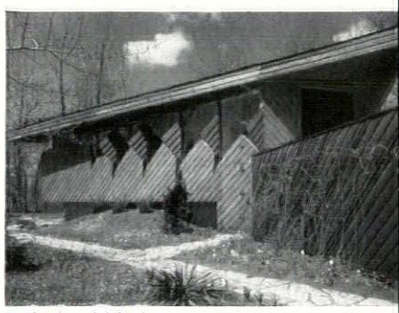
Bartlesville, Oklahoma

Bruce Goff, born in 1904, is often regarded as the most hundred-per-cent American of US architects, even though he has never rated inclusion in the Museum of Modern Art's *Built in USA* series. Though a native of Kansas he has made his mark mostly in the heartland states, and particularly in Oklahoma. His family settled in Tulsa while he was still at school, and he began his architectural practice (and training) there at the precocious age of twelve in the office of Rush, Endacott and Rush. The middle partner, an engineer, gave him encouragement, and advice of the order of '. . . the way you're headed, you better get an iron helmet, because you're going to be in No-man's land all your life.' The prognosis was correct; he has remained unclassifiable all his working life, but he has protected himself against the sniping of the classified by personal charm, not a tin hat.

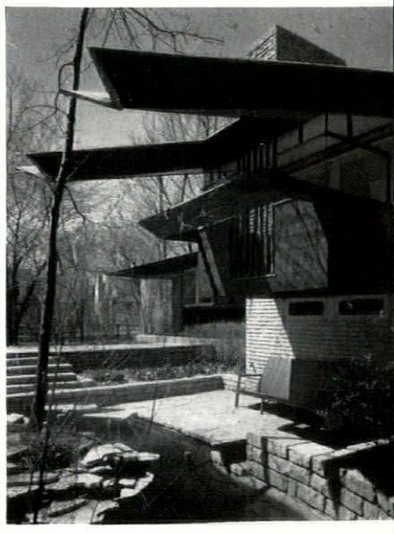
Without formal academic training, he has nevertheless given much time and thought to teaching, first in Chicago in the 'thirties, and—more memorably—at the University of Oklahoma since the War, where his effect on architectural thought and campus life appears to have been galvanic. This post he has now resigned in order to devote himself fully to his practice, now located in the Price Tower, Bartlesville, a work of his life-long admiration, Frank Lloyd Wright. Though he maintains a branch office in Norman, Okla., he has no partners, few assistants; his manner of working, like his manner of thinking, is personal and individual. His work of the 'thirties caused him to be regarded as a follower of Wright, but his following is at the conceptual, rather than formal, level—it is the idea of an organic architecture that they have in common, and it is clear that Goff's views on the use of materials, like his tastes in the other arts, are catholic, not exclusive. He is a master in the use of 'as found' materials—for instance, the outer trusses of salvaged oil-drill piping of his tepee-shaped Hopewell Church (*top left, facing page*).

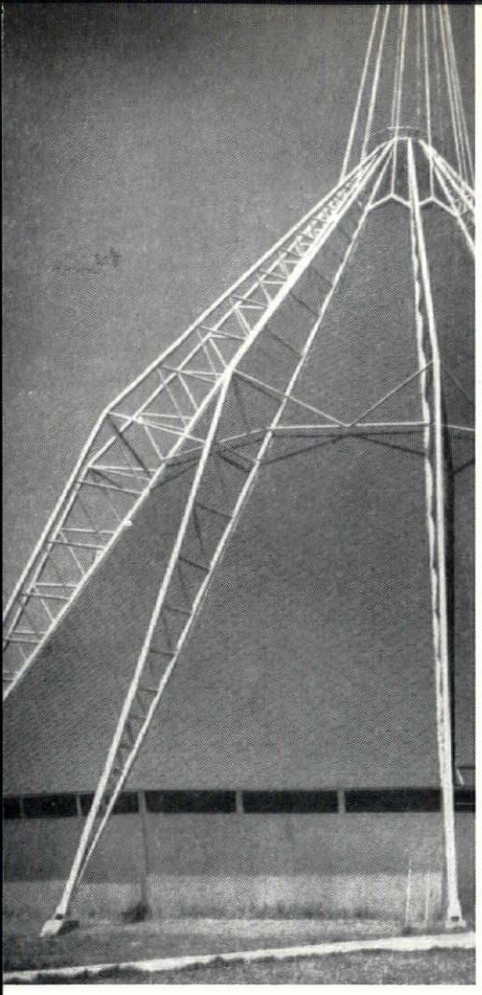
Like Wright, he admits influence from exotic cultures, as well as from music. Unlike Wright (and unlike most other architects as well), he claims a consumer-oriented attitude to design, which justifies itself in works like the Aurora house, which swoops much nearer to the popular conception of a dream-house than most architects could go without courting disaster. Hostile criticism (which has never been in short supply) calls him vulgar, over-romantic, 'ill-controlled' in design. The romantic streak, like the alleged vulgarity, is part of the consumer orientation and he is a stout defender of the American people's rights to sentiment and even sentimentality—it enables him to communicate where more restrained designers cannot, to pioneer modern architecture in staid communities that might never have been persuaded by reticence and European good taste. As to the lack of control, that is a criticism that must fade as anti-formal art movements like Action Painting gain in power; his concept of Interspatial Composition, largely derived, it would seem, from the music of Debussy, 'designed in the continuous present, without dominant routes, but with all parts indissolubly related,' dates from almost the same months as Jackson Pollock's prime ventures into aformal composition and dribbled paint.

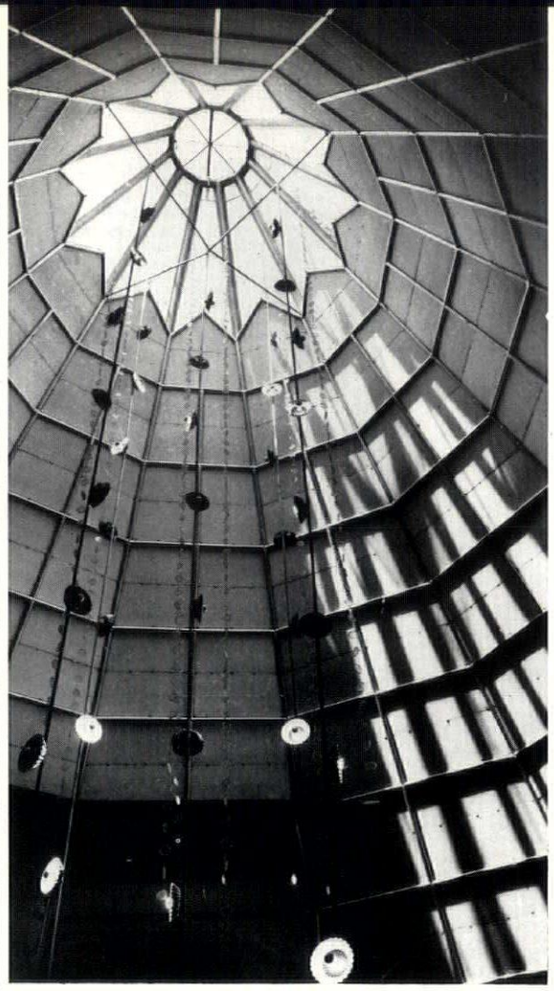


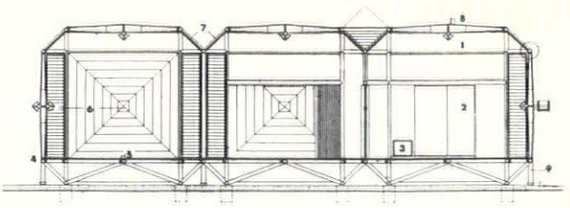


Bruce Goff's early work of the 'thirties and 'forties gives tangible evidence of his admiration for Wright—above are the fireplaces and exterior of his 1940 Unseth House at Park Ridge, Ill., and at right the living-side of the Colmorgan House at Glenview, Ill., of 1937.

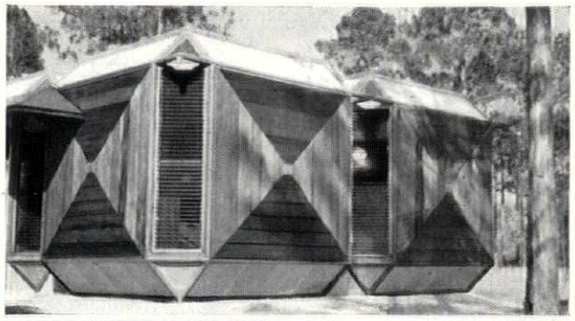


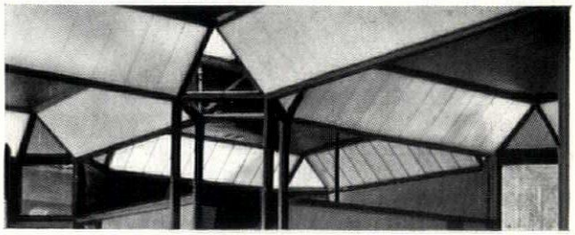




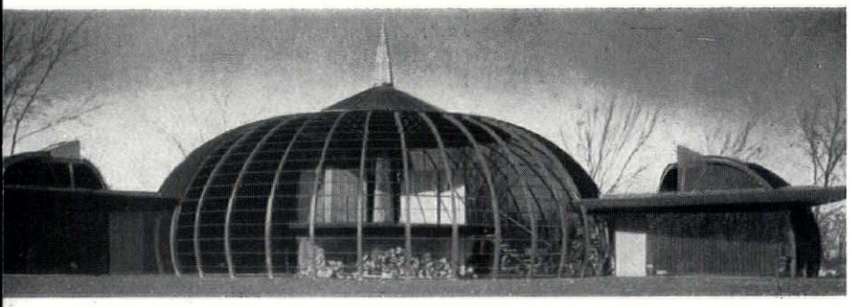


Goff (cont.) *Goff has made unconventional use of tubular structures from time to time, to suspend the roof of Hopewell Baptist Church tent-wise, left and centre, in 1953, or to form spacially complex joins between cubic volumes, above and below, in an experimental house in Florida a year earlier.*

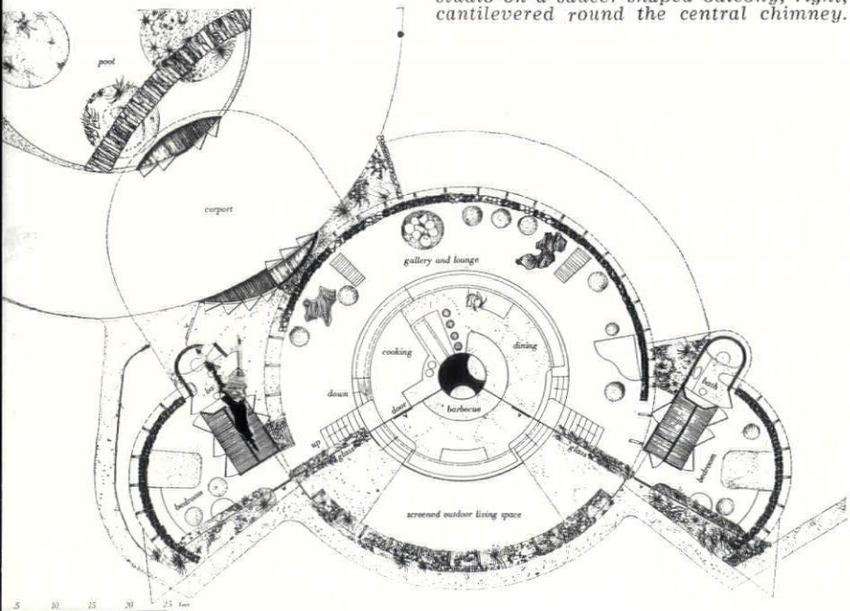


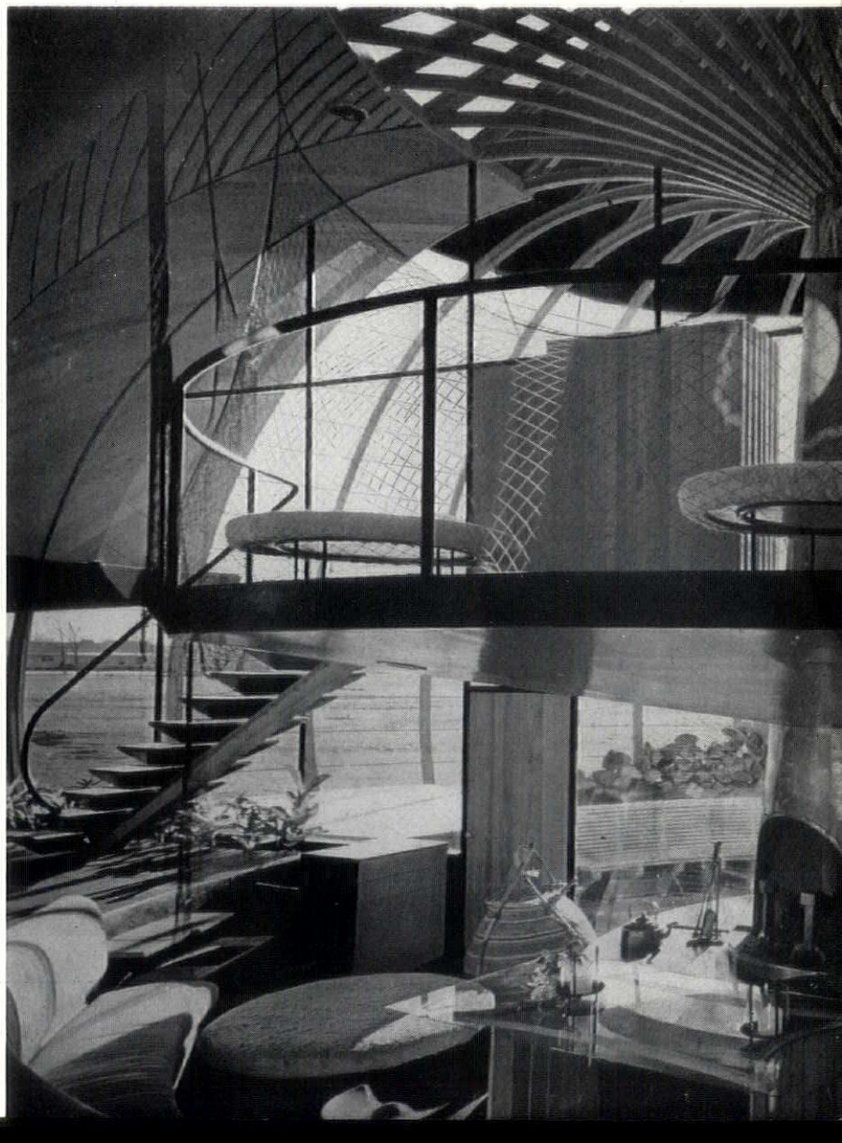


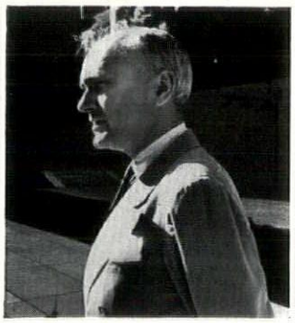
The most original, most noticed and most characteristic of Bruce Goff's dream-houses is the Ford studio-house (1950) at Aurora, Ill., below, built largely of



Quonsett frames on a plan made of segments of circles, below, with the studio on a saucer-shaped balcony, right, cantilevered round the central chimney.





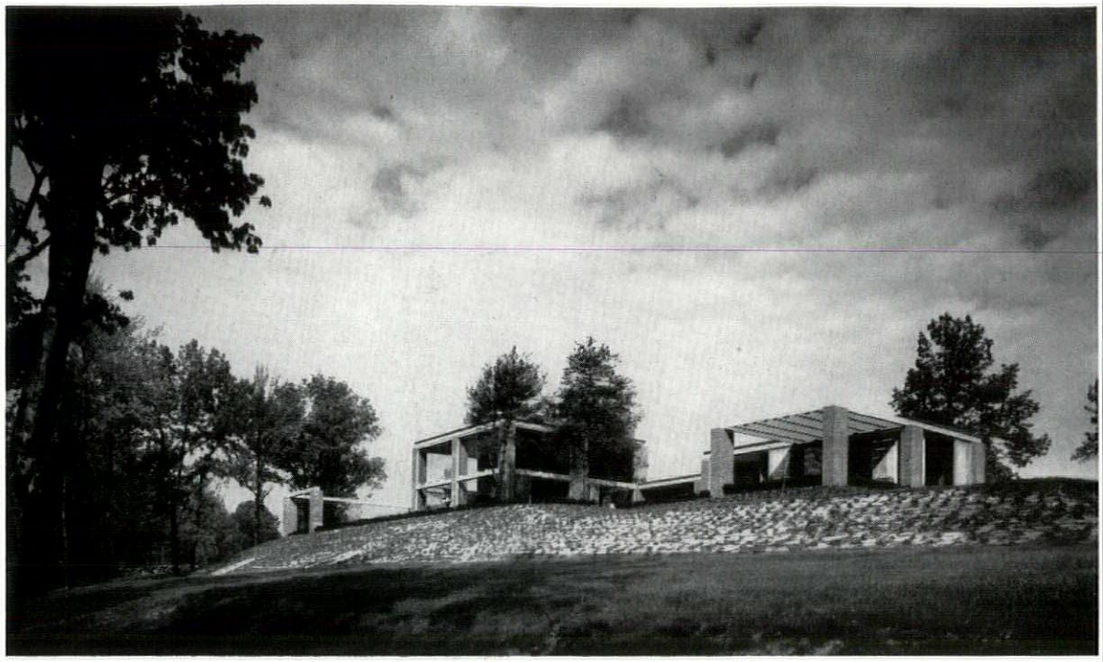


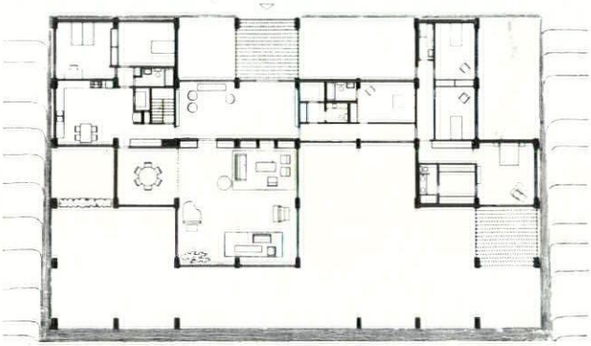
50

New York City

Philip Johnson's unusual and much-commented position in American architecture seems not to be due to any accident of birth, which took place on July 8, 1906, in Cleveland, Ohio, in an apparently inartistic family — his father was a lawyer. As late as 1928 he was still not oriented towards architecture, but was reading classics at Harvard. In that year, however, an article by Henry-Russell Hitchcock not only diverted his attention to the Modern Movement in architecture, but also led to a partnership that eventually produced the book, and the phrase, *The International Style*. He did not immediately take up architecture as a profession, but spent the 'thirties doing an inestimable job of propaganda for Modern Architecture from the Museum of Modern Art. His regular architectural studies were done at Harvard in the early 'forties, very much influenced by Marcel Breuer, who was still on the Harvard staff at that time. His prime admiration remained Mies van der Rohe, whom he had first met in 1930, in spite of his wide and varied experience of other architects and their work, and his own style has developed from securely Miesian beginnings, though it has lately incorporated domical and vaulted forms—as in the Port Chester synagogue—that lie outside any Miesian formal language, and derive more from his immense scholarly knowledge of the history of architecture.

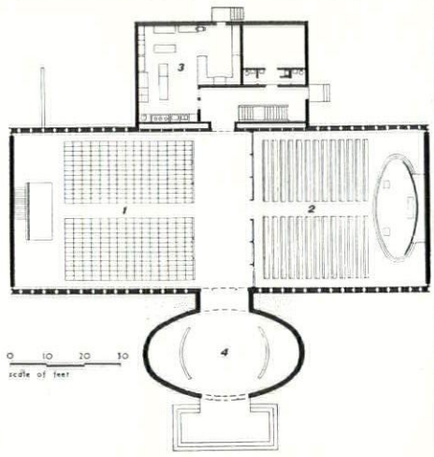
Nevertheless, his most conspicuous building in course of erection, the bronze-clad Seagram tower, is purely in the manner of his first master, with whom he is associated in the design. For this project, Johnson and Mies share an office in New York, but his original base was his own office in New Canaan, where he lives in his famous, and Miesian, glass house. His connection with the Museum of Modern Art has by no means withered away, and he has added an annexe at one end of Ed Stone's street façade, as well as a sculpture garden at the back, designed with a sympathy for the exhibits that comes from a real eye for sculpture—his current favourites being Giacometti, Lassaw and Roszak. In spite of his interest in vaulted forms and in Antoni Gaudi, he is sceptical of the present 'structural complex' and unimpressed by the possibilities of hyperbolic paraboloids.



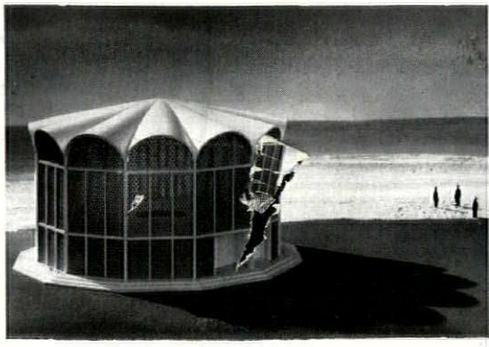


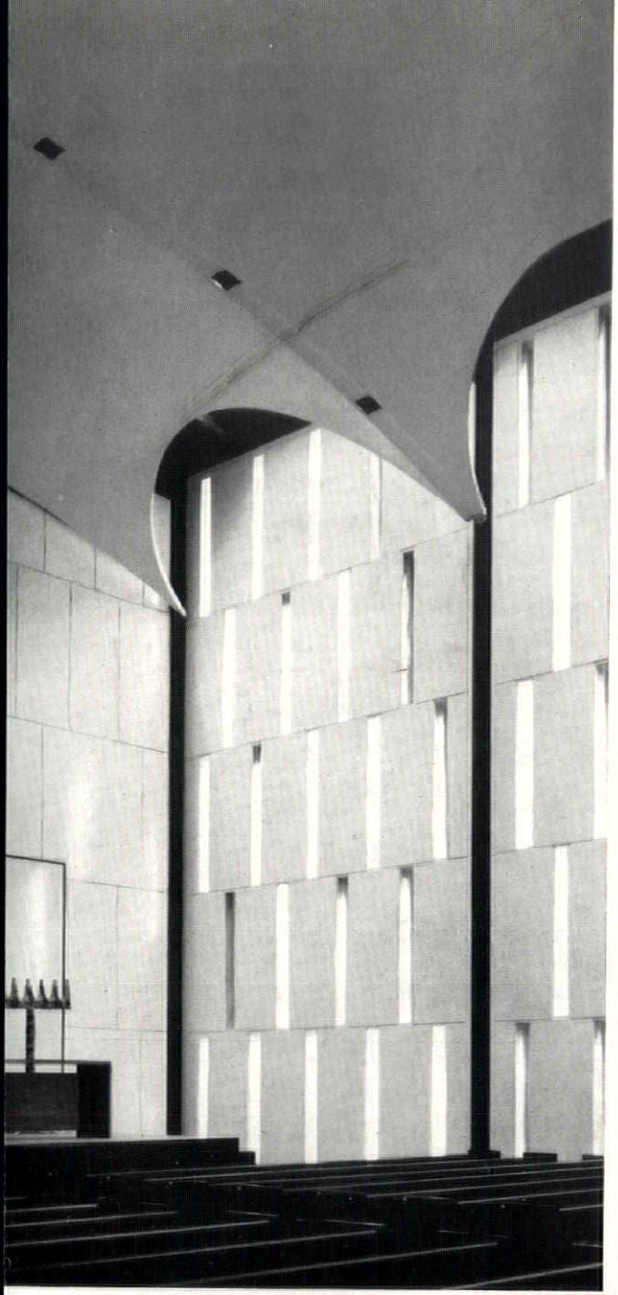
Above, the Boissonas house, just completed at New Canaan, Connecticut, and constructed of brick piers on a square grid (plan left), linked to the landscape by pergolas. A basement below the two-storey living pavilion houses an organ; the sound enters the living-room through a grating in the floor. Below, plan, facing page, interior and exteriors, of a synagogue at Port Chester, New York, 1956. The structure is exposed steel, filled with white stone blocks framing narrow stained glass windows. The velarium-like ceiling is of plaster. Plan key: 1, social hall; 2, sanctuary; 3, kitchen; 4, foyer.

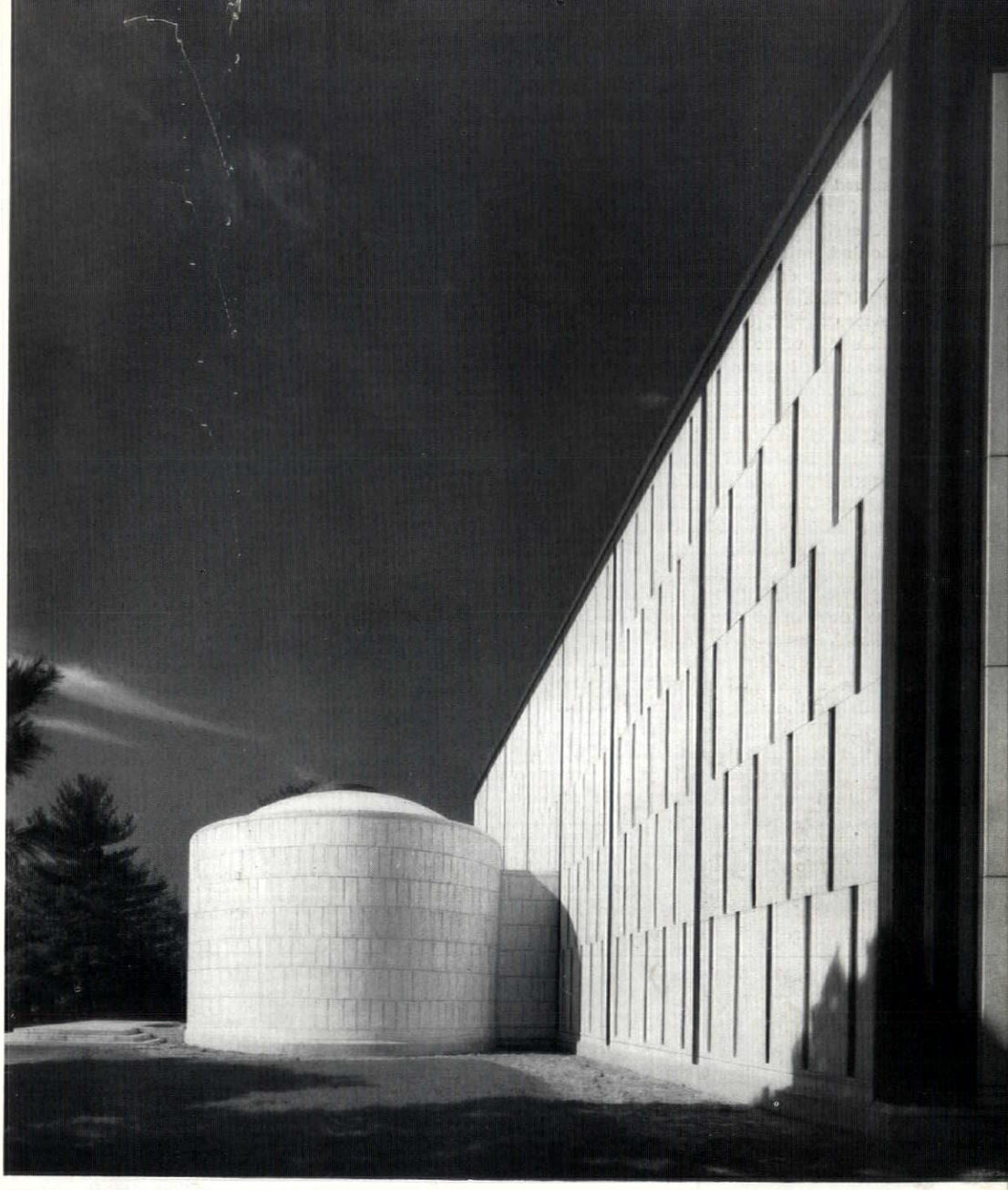




Left and below, a projected beach house, Cuba.











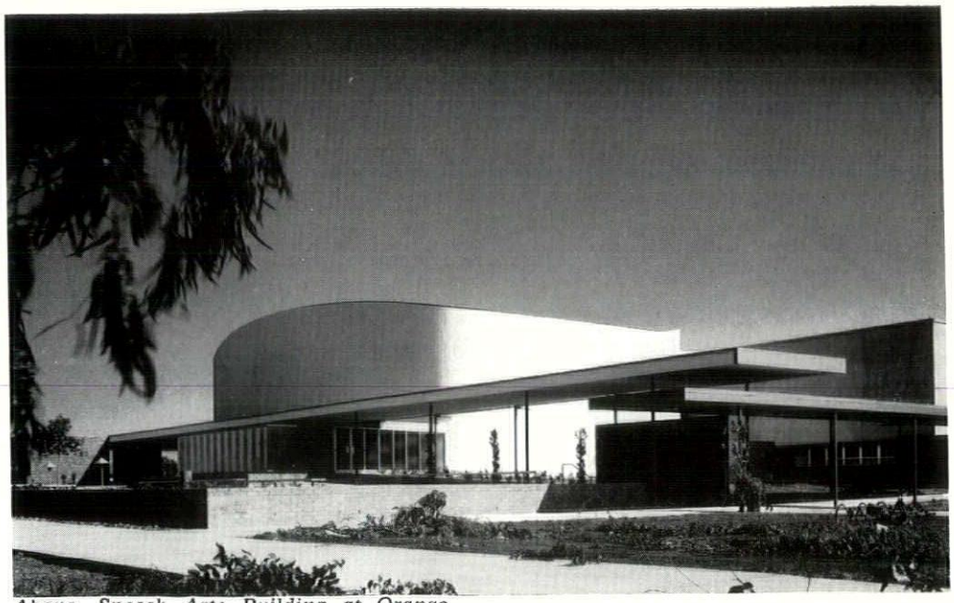
49

Los Angeles, California

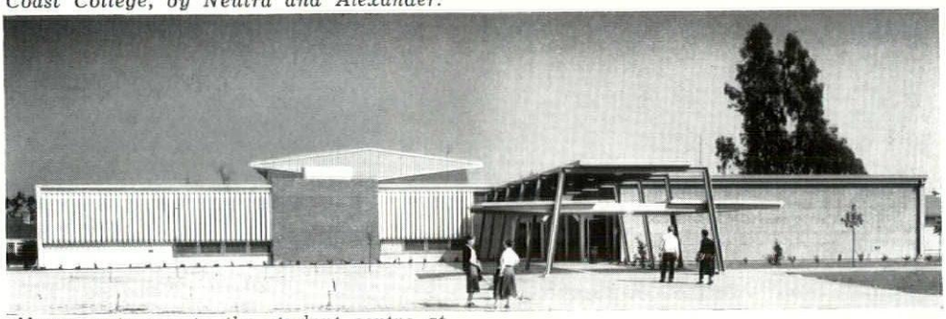
Robert E. Alexander partner to Richard Neutra, was born in Bayonne, New Jersey, in 1907. He studied at Cornell University from 1925 to 1930, where all was dedication to the Beaux Arts system. His thesis design was a non-denominational Temple in New York.

After a visit to Europe and work in a California office the depression came and jobs varied from coaching football to day-labouring on construction projects. This shake-up led to a revived interest in town planning and an extensive self-planned course of reading through Le Corbusier, Neutra, Ebenezer Howard, Geddes, Unwin, Mumford and Clarence Stein. Finally he had the chance of working on the Metropolitan Life Insurance Company's Parkchester development, and was one of the architect partners who developed the design of Baldwin Hills Village, Los Angeles, a model suburban development within the world's largest unplanned suburban spread.

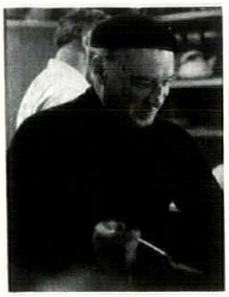
During the war Alexander worked in the Lockheed Aircraft Corporation, not on the design, but on the manufacturing side. This was followed by a commission to build an experimental laboratory school for the University of California. Later he went to India as a consultant on planning for UNESCO. Work was centred in Madras, where Alexander drew up proposals for a Rural City. In 1949 he joined forces with Richard Neutra.



Above, Speech Arts Building at Orange Coast College, by Neutra and Alexander.



Above, entrance to the student centre at Orange Coast College by Robert Alexander.



49

Tiburon, California

Rafael Soriano was born on the island of Rhodes in 1907 and, except for four years in Asia Minor, spent all of his childhood there. Soriano's education was in the hands (sometimes literally) of his father, the subjects taught being French, the violin and Greek, all accelerated by the use of the stick.

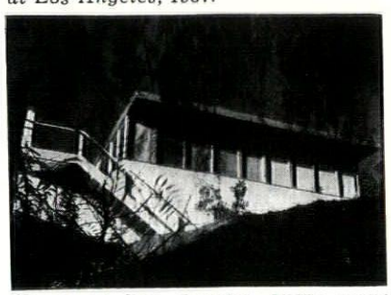
At seventeen he ran away from home and went to America and, at twenty, entered the school of Architecture of the University of Southern California, paying his way by working at night and during weekends at a fruit stall.

In his first year he was advised by the Dean of the School to quit architecture and buy a fruit stall of his own, because he had no talent.

As a result of this early advice his architectural education took place in complete isolation, but the friendship and vision of Dr. Belle, Professor of French Literature at the University, gave him courage, and most of all he found inspiration in the structural lucidities of the music of Bach and the Spanish Flamenco.



Community Centre on a sloping site at Los Angeles, 1937.

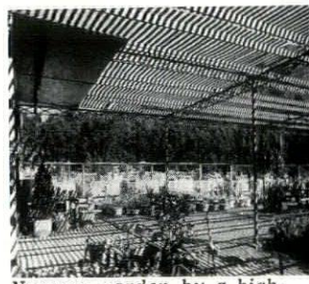


House at Los Angeles, 1937; wood frame on a module determined by standard steel sashes.

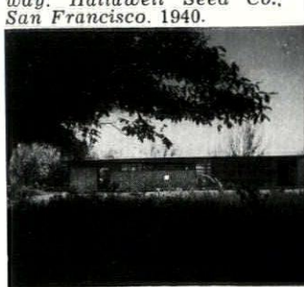
He gained his Bachelor Architecture degree in 1934, and followed it up with a short period in Richard Neutra's office. He landed his first commission as a result of going to a French film and finding himself explaining the point of the jokes to a lady in the row behind. Several months later he was invited by the lady and her daughter to a party to meet a cousin who was a concert pianist, and this led to the commission to build a house round her Bechstein grand. The house was chosen as one of three or four to be shown in the American section of the 1937 Paris exhibition, and the calls began to come in.

The Dean of his old architectural school, who had once advised him to buy a fruit stall, wrote 'Good boy, Soriano, we knew you could do it.'

In 1953 Soriano moved from Los Angeles to a houseboat at Tiburon, a small quayside town with a magnificent view across the bay to San Francisco. His office staff fluctuates between two and eight, the two permanent assistants are Gerald Weisbach and Bill von Lockum.



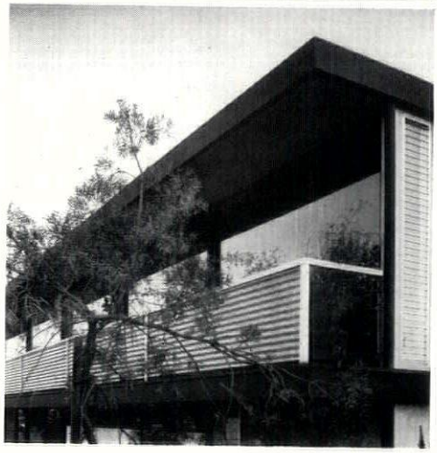
Nursery garden by a highway. Hallawell Seed Co., San Francisco. 1940.



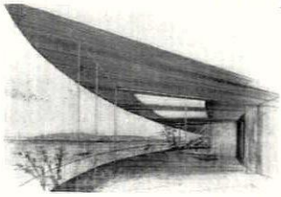
Van Nuys house, California, 1946; light steel frame of posts and lattice girders.



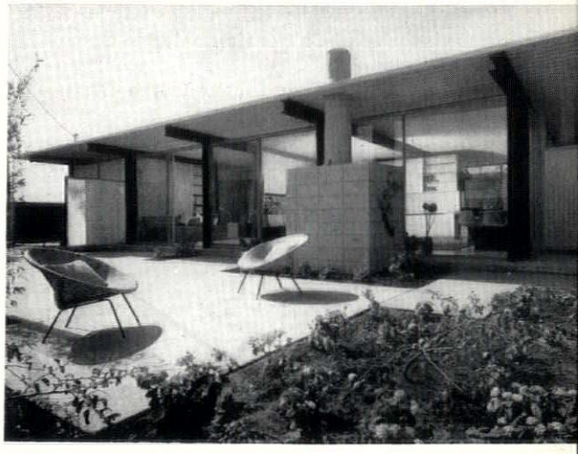


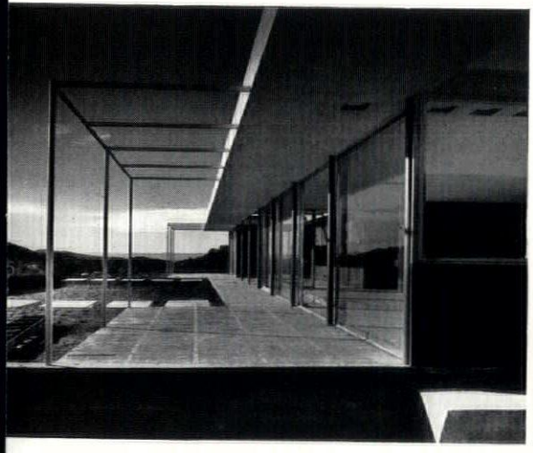


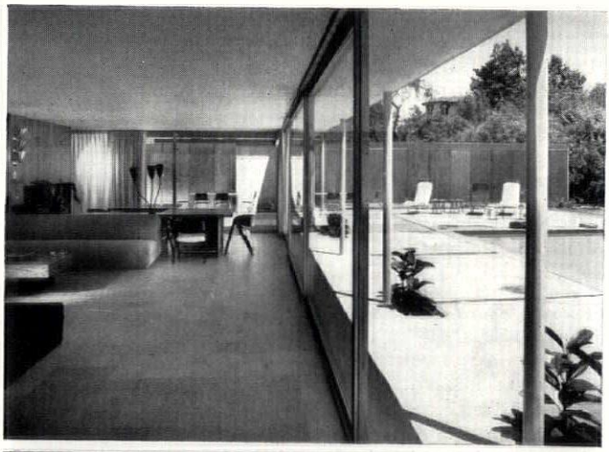
Soriano (cont). *Above, multiple dwelling at Los Angeles, 1951. The frame is steel, and cupboards are used as room dividers to allow flexibility in replanning; above left, internal courtyard; left, detail of balcony. The building illustrates Soriano's sensitive use of the light steel frame filled with glass and semi-transparent materials. Right, prototype of a small steel house (1,000 sq. ft.) designed for mass production. Below, house on a steeply sloping site, using precast and prestressed concrete.*





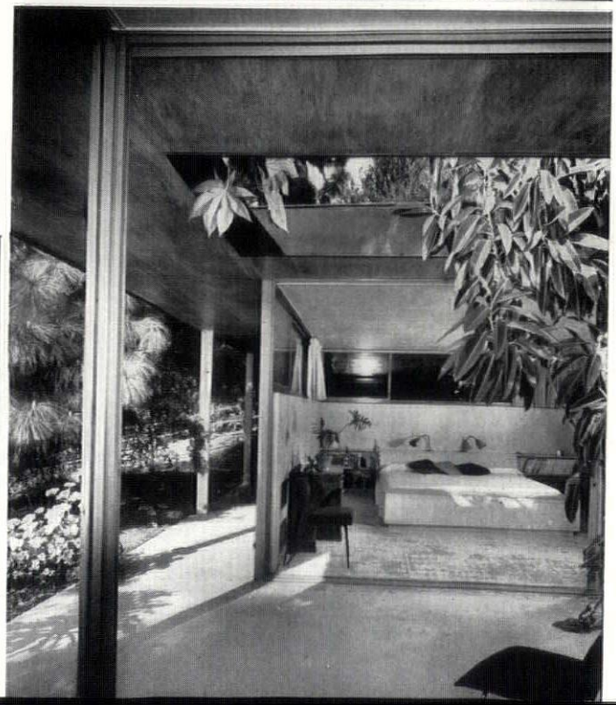






Above, Shulman house, Los Angeles, 1949; main structural members are steel and secondary ones are wood. Above right, Curtis house, Los Angeles, 1949; steel frame with a steel deck roof. Below and right, house built in 1950 to structural module of 10 ft. by 40 ft. to allow for maximum flexibility in planning; because of the Korean war wood joists had to be substituted for metal between the main steel members.



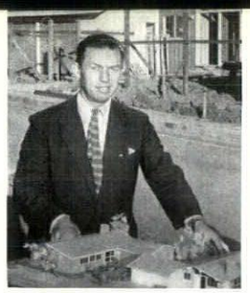


The firm employs consultants in each of the allied professions and has an independent association with four firms in Los Angeles known as project architects, who supervise the work on large jobs.

Soriano believes that it is from the scientific root that architecture should draw its real nourishment today. Painting and sculpture he considers as ritualistic manifestations that may have a place in the life of some men, but he doesn't see the connection between such obscure and irrelevant myth-making and the armature of architectural discipline and creation. Architecture, he thinks, must start from a performing principle—active like the motor or the heart—and not a bas-relief of a motor or a heart.

He is amazed today at the growing tendency to sugar-coat structure, to cloud objectivity with the irrelevances of personality-mongering. 'I cannot find,' he says, 'a single statement by scientists about the applied decoration of cells or electrons, or how to give a sculptural flavour to the jet engine. The architect should be concerned, like the scientist, not with pictures but with principles; it is through these that he will make himself intelligible to others. Architecture will be better served by a clear mind than by a complex personality struggling to express itself at all costs (usually the client's).'

It's no use trying to escape through magic notations like 'standardized' and 'organic' as if we were sitting on the sand drawing a coiled serpent, waiting for the medicine man to come.

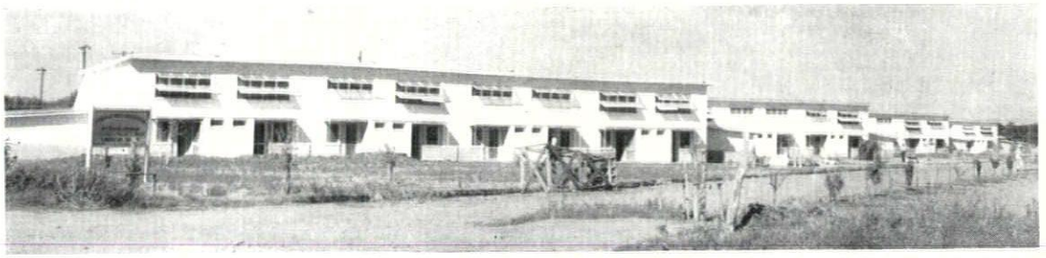


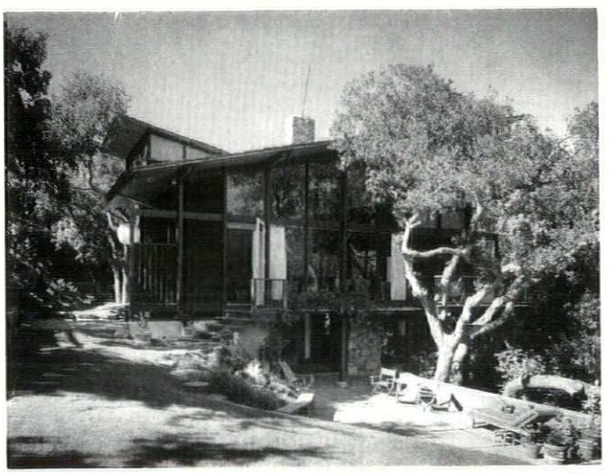
49

Berkeley, California

Vernon De Mars, born in San Francisco in 1908, is rare among US architects in having more or less the turn of mind and the reputation that a European housing-specialist might have. He arrived at this by entering Government service (after some years of variously directed activity preceded by study at the University of California) to design emergency camps and temporary accommodation for migratory labour in the *Grapes of Wrath* epoch in California. The upshot was a resolve to rectify the complete absence of any American contribution to either the architecture or the sociology of housing, and its realization were the adobe-walled row-houses at Chandler, Arizona, that have found their way into every text-book, and the collective subconscious of the Modern Movement. Much of De Mars' work since then has also been in public finance housing, but he and his office also design rental housing, and have made inroads into the merchant-building housing field, as well as community planning work. He is fairly heavily committed to a preference for row-houses as against land-wasting detached units, and was also involved—with Koch, Kennedy, Rapson and Brown—in the design of the very English-looking *Eastgate Apartments* scheme of flats in Boston. By way of contrast, his own private house at Berkeley, California, where he now teaches, is free-standing and admittedly Japanese in extraction. But he does not rate Japan as a primary influence on his work—European sources account for most of that, though not for the projecting party-walls at Chandler—nor among his professed current admirations, which are directed towards Le Corbusier, Aalto, less towards Mies—and therefore a little worried by the most recent work of Arne Jacobsen, whom he otherwise admires—Nervi, Picasso, Portinari and Leger.

Below Chandler Farms, Arizona, a community farming project of 1938 for immigrant families. Each terrace comprises eight four-room apartments; construction is of native adobe and cost per unit was $2,097, including garage. Below, De Mars' own house, built in 1951 at Berkeley, California. The frame is wood, with a module of 8 ft. by 4 ft.; external walls are redwood boards and cedar.







48

New York City

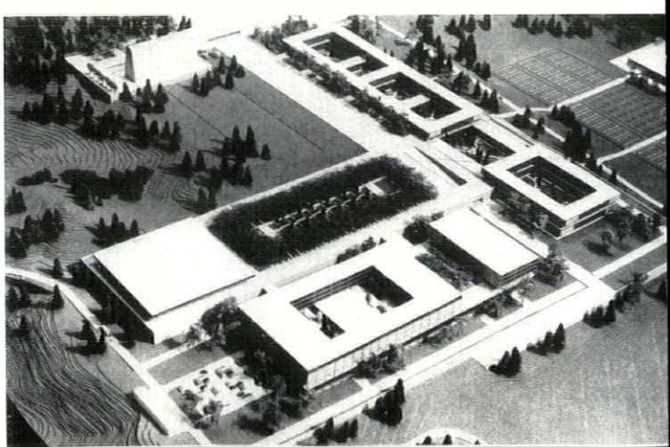
Gordon Bunshaft was born in Buffalo, New York, in 1909, and lived there until he was nineteen. As many children do he made drawings of houses, but the family doctor thought them so good he suggested that Bunshaft should be an architect. His violin teacher had two sons who were engineering students at MIT, and he decided then that he would go to MIT to study architecture. Entering MIT in 1928, he obtained a Bachelor's Degree in 1933 and the Master's Degree in 1935. On a Rotch Travelling Fellowship of $3,000 he spent eighteen months in Europe from 1935 until the Spring of 1937, and, in the autumn of that year, he joined the firm of Skidmore and Owings—Skidmore had just opened an office in New York and Owings was running a small office in Chicago. He started in the firm as a designer and, for the past twenty years, it is to design that he has devoted most of his time. He was made a partner in 1946.

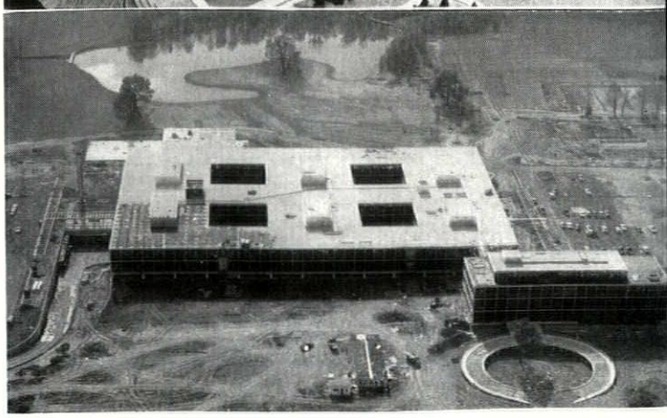
In 1937, the main concern of the office was to build up a practice, and the atmosphere was extremely businesslike; this is still the order of the day, but running through it all is a determination on the part of all the members of the firm to do the best buildings they are capable of.*

During Bunshaft's time at MIT the students were going through a period of transition from Beaux Arts influence to the modern movement, the chief mentor, as in so many other schools at the time, being Le Corbusier. Gordon Bunshaft now considers Mies van der Rohe one of the greatest living architects. 'Although a German by birth, his recent buildings represent the truly great urban architecture of our country. In contrast to the foreign use of reinforced concrete, we employ steel framing as a basic structural system for most urban buildings. Mies van der Rohe's work truly expresses this fact.' Bunshaft's most admired painters are Leger, Miro, Picasso, Ben Nicholson and Mondriaan, and, for contrast, Dubuffet. Among sculptors he singles out Brancusi, Picasso and Giacometti, with Chadwick and Noguchi as close runners-up. Artists who have done work, or are in the process of doing it, for buildings by Skidmore, Owings and Merrill are: Calder, Miro, Steinberg, Seymour Lipton, Lippold, Bertoia, Noguchi and Stuart Davis.

Bunshaft answered, along with a number of other American architects when they were asked the same question, that stylistic cleavages in contemporary American architecture are more apparent between building types than between

Below, model of final design for the US Air Force Academy, in course of construction, 7 miles north of Colorado Springs, 6,500 feet above sea level. The structure is based on a 3 ft. 6 in. module; facing materials will include marble, granite, travertine, and native stone. Bottom, Connecticut General Life Insurance offices, Bloomfield, Connecticut. The structure is exposed steel columns and the curtain wall heat- and glare-absorbent glass and porcelain enamel spandrels, all flush. Four large interior gardens are sunk into the main wing; areas within the building are divided by brightly coloured acoustical screens.





*Skidmore, Owings and Merrill have four offices—New York, Chicago, San Francisco and Portland, Oregon. There are twelve general partners, five in New York, four in Chicago and three in San Francisco. There are 17 associate partners, divided among the offices. The total staff is approximately 900. Also, in the New York, San Francisco and Portland offices they employ consulting structural and mechanical engineers as well as consultants in acoustics, lighting and other specialized fields. In the Chicago office there is a complete staff of structural and mechanical engineers. (For a description of the office organization see A.R., Feb., 1956.)



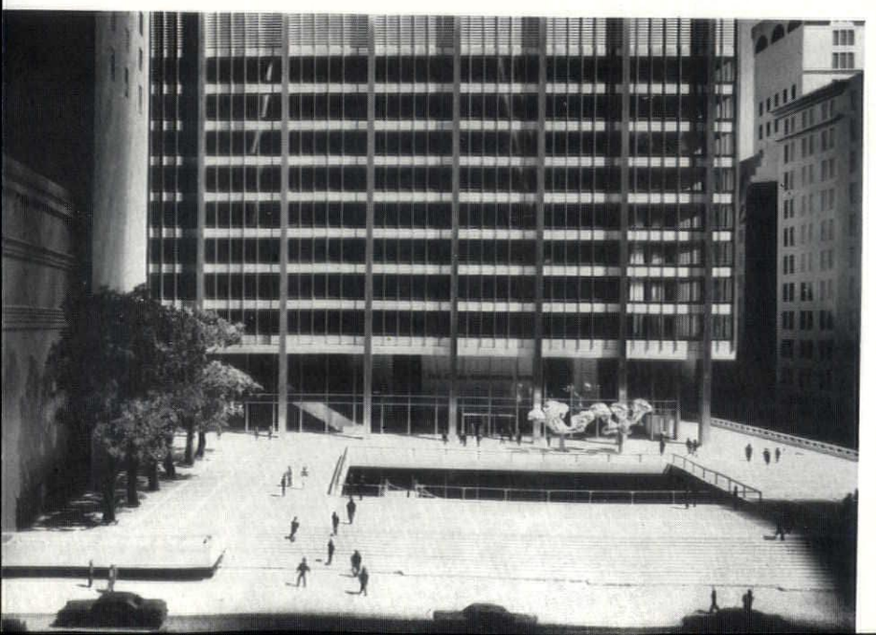
Bunshaft (cont.) *Above, the Manufacturers Trust Bank, New York. The first floor glass panels are 22 ft. by 9 ft. 8 in. Ceilings of thin corrugated plastic are supported on aluminium Ts under a field of cold cathode tubes; their flow eliminates the surface reflection of the curtain walls. Below, Harry Bertoia's gilded steel sculptural wall in the main counting hall. Right, projected 41-storey office block on Park Avenue for Union Carbide, due to be finished in 1958. Bottom, piazza and lower floors of the projected 60-floor Chase Manhattan Bank.*





regions. In the domestic field he sees a certain differentiation from place to place, but he lays this at the door of certain strong personalities working in those regions, producing what he calls 'charm school' designs, as opposed to the more disciplined standards of the 'international' style.

In a discussion between Bunshaft, Saarinen and Philip Johnson, described by Mrs. Saarinen, Bunshaft 'defended the need for a common style, the necessity of a vernacular', and in the work for which he has been directly responsible—Lever House, the Manufacturers Trust and Connecticut General Life Insurance buildings—he has done as much as anyone in America to promote an architectural vernacular of today.



48

Los Angeles, California



John Rex, of the firm of Honnold and Rex, was born in Los Angeles in 1909, and studied architecture at the University of Southern California from 1927-1932. The office has a total staff of eleven and does work of all kinds, ranging from a few thousand to a few million dollars. Rex's admirations are (painters) Rico Lebrun and the late Orozco of Mexico; (sculptors) Noguchi, Rosenthal



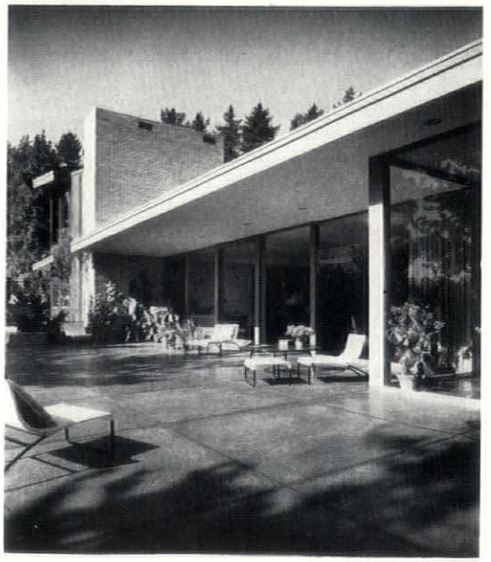
Anderson house, Los Angeles; it is a steel frame structure with external facing of natural redwood.

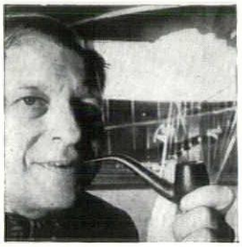
and Bertoia. 'In my twenty-three years experience of architecture', Rex says, 'I have concluded the only really "organic" architecture is the cave—



despite the exaltations of some architects. The tendency, since the first Egyptian architect accepted a commission, has been a progression towards standardization.'

Above, Westchester Junior High School, for 2,500 students, completed in 1952. Below, Robbins house, Beverly Hills, California, seen from the paved terrace outside the living area; it is of frame construction with redwood finish.



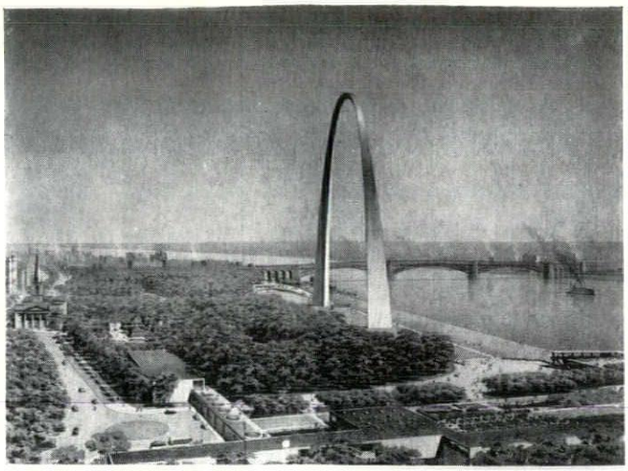


46

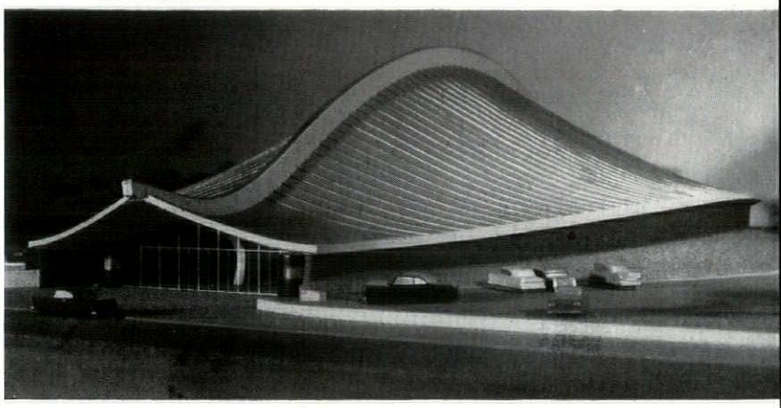
Bloomfield Hills, Michigan

Eero Saarinen, famous son of a famous father, was born in Finland in 1910, and raised there and in the US, crossing the Atlantic when his father went to Cranbrook Academy in 1923—one of the first important inroads made by a European architect on the American scene since Colonial times. Cranbrook's forward-looking, if slightly arty atmosphere, combined with the family tradition of architecture—two uncles also practised, besides his father—and an infancy spent largely in the family drawing office, seem to have left him little choice as to career, and 'by the time I was 8 or 10 I thought pretty much that I was going to be an architect.' Nevertheless, he spent a year studying sculpture in Paris before settling to an architectural training (at Yale) and has always made notably sympathetic use of painters and sculptors in his designs, especially sculptors — Bertoia, Calder, Pevsner, Roszak. He received his first commission at 25, as his father's stand-in, and has progressed from the paternal office to having one of his own, but still in the Cranbrook country—at Bloomfield Hills, Michigan—where he maintains a sizable office, with two partners, Joseph N. Lacy and John Dinkeloo, and nearly fifty assistants.

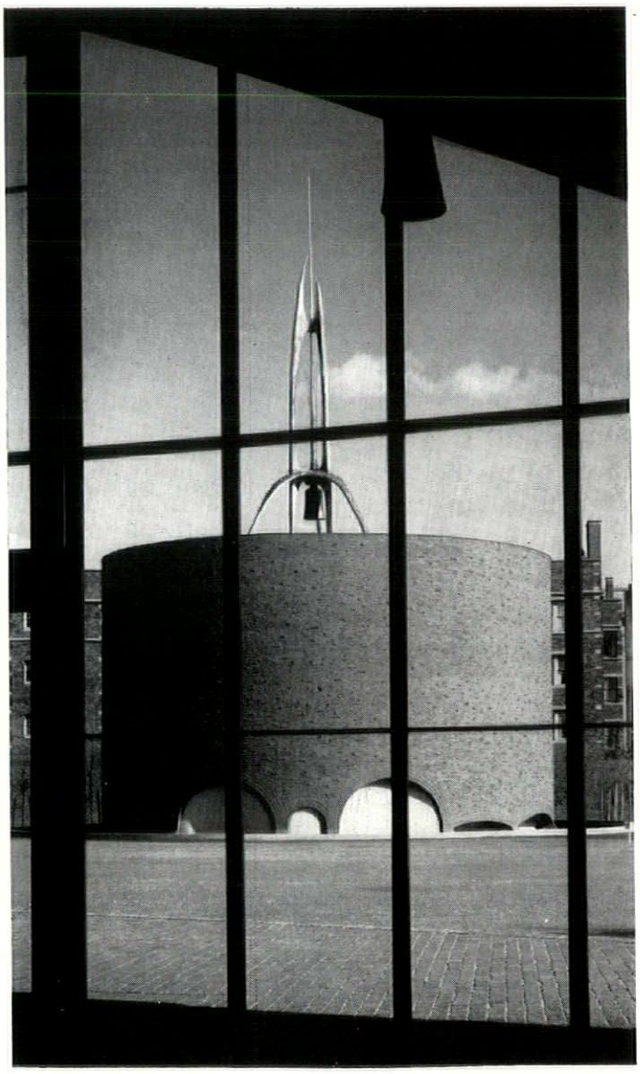
His present position in US architecture defies classification, but not in the usual sort of way. His great scheme for General Motors Technical Centre, with its endless grids of standardized glazing, earned him the reputation of a leading Miesian, along with Bunshaft and Johnson, but, while admitting influence from Mies, he suggests that the building of his which shows this influence most strongly is the three-point dome he designed for the MIT campus, on the grounds that he there achieved his greatest space/structure synthesis. His tendency, it is clear, is to design for character, to dramatize, to make of each building something special. Thus GM Tech Centre was seen as 'an exalted industrial product,' the circular brick chapel at MIT as a place of 'repose,' the dome there as a statement of 'technical audacity.' It is an approach that confutes critics and—occasionally—confuses students, but it also means that the Saarinen office is something of an architectural laboratory where new ideas and new forms are constantly under development as well as discussion—the most recent being the Georgian-flavoured grid façades of the US Embassy in London. the ship-turned-turtle roof of the Yale Hockey Rink, and the Latin-American looking blocks for the Milwaukee Memorial Centre. He says that contemporary architecture is word-poor—his work, as much as anyone's, is attempting to 'enlarge its alphabet beyond ABC.'



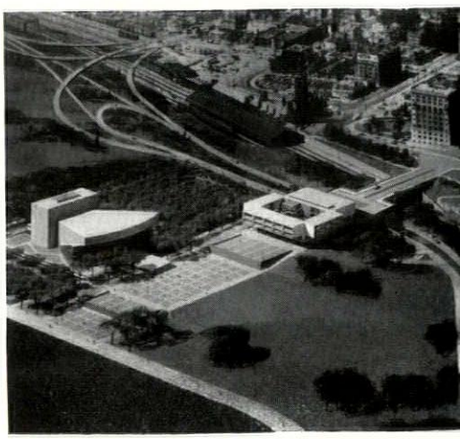
Eero Saarinen's reputation as a Miesian, bred by GM Technical Centre, has tended to obscure his great abilities in the management of curved and arcuate forms—abilities that first clearly manifested themselves in the giant arch on the bank of the Missouri at St. Louis for the Jefferson Memorial project, designed just after the War.

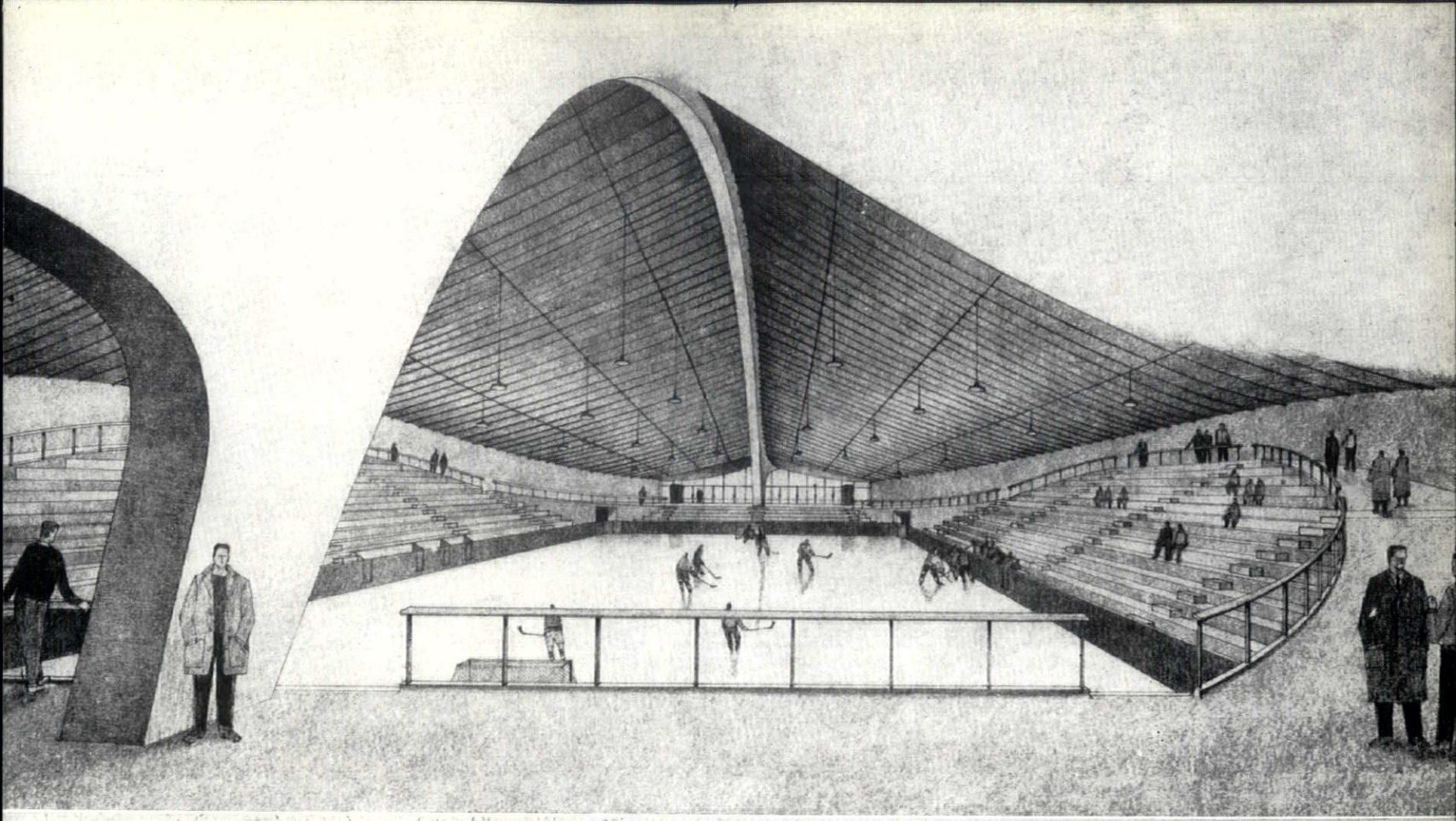


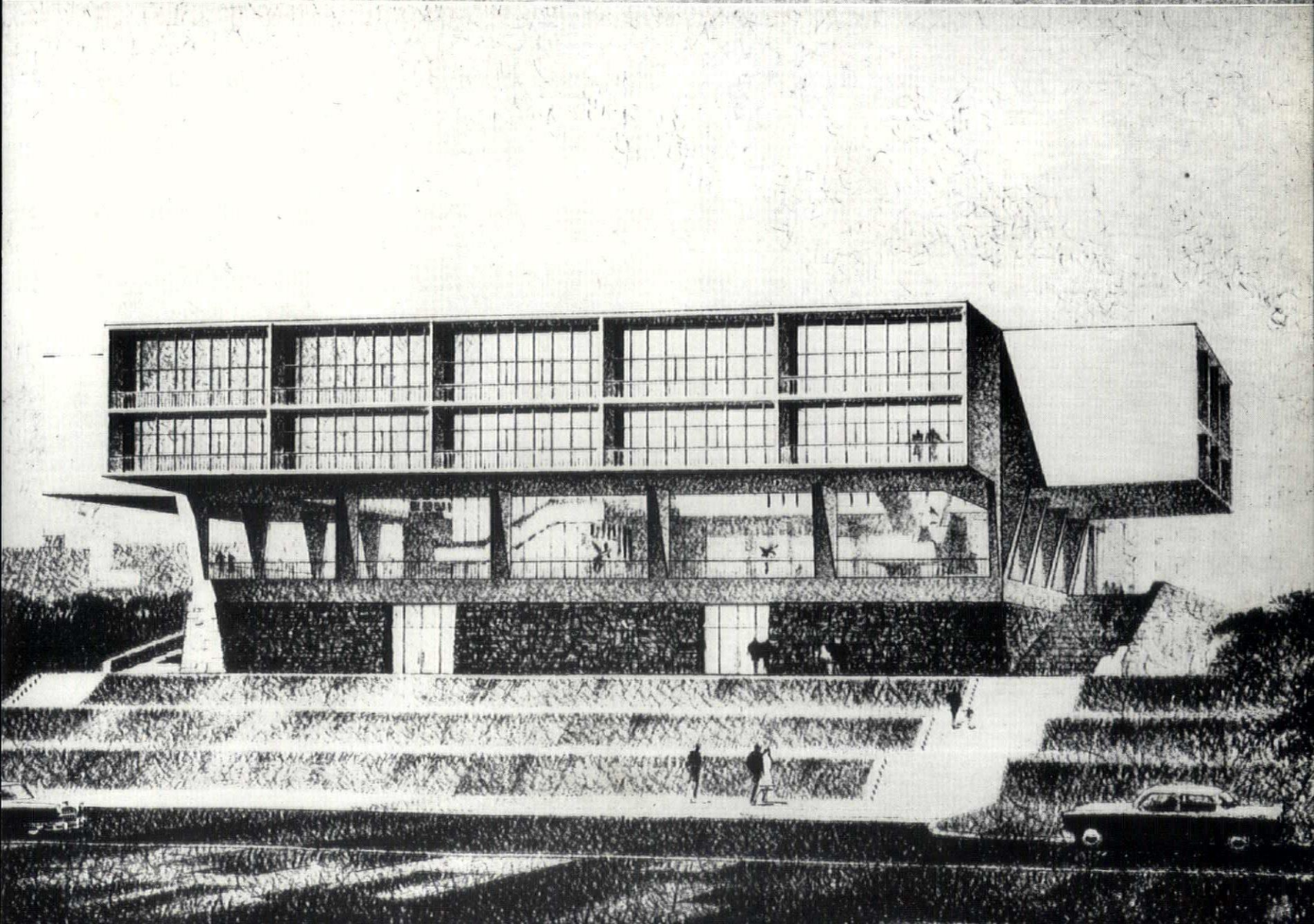
Quite the most remarkable of Saarinen's projects for large curved vaults is the David S. Ingalls hockey rink for Yale University, right and opposite top, a giant multi-curved shell depending from a keel-like arch that recurves upwards at each end to provide entrance canopies.

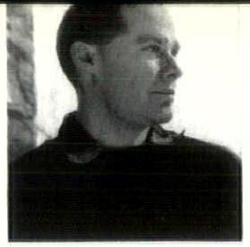


The design of comprehensive schemes for cultural activities, involving the grouping of different buildings and the incorporation of work by painters and sculptors, has been an increasing activity of the Saarinen office. At the left is a view from the foyer of the auditorium at MIT, towards the chapel, with its campanile by Theodore Roszak, the sculptor, while below and opposite, bottom, the Milwaukee Memorial Centre, Milwaukee, Wis., is seen in model and rendering.







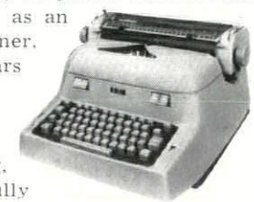


46

New Canaan, Connecticut

Eliot Noyes was born in Boston in 1910, lived in Colorado until the age of seven, and then moved to Cambridge, Mass., where his father taught English at Harvard; his mother was an expert pianist. In his 'teens he thought of becoming a painter, but at the age of nineteen decided on architecture. When he began at the Harvard Graduate School of Architecture, it was entirely under the sway of the Beaux Arts system; but Noyes discovered Le Corbusier in the library and was swept away; next he found a catalogue of the Bauhaus and thought of transferring to Dessau, but it was in 1933 and the idea was impractical, so he stayed, discontentedly, at Harvard. In his third year he left for Iran on an archaeological expedition, returning to find Gropius and Breuer at Harvard, and with them a new spirit. After graduation he was, for a time, Director of the Department of Industrial Design at the Museum of Modern Art, and organized the furniture competition won by Saarinen and Eames with, to date, the most widely copied chair of the twentieth century.

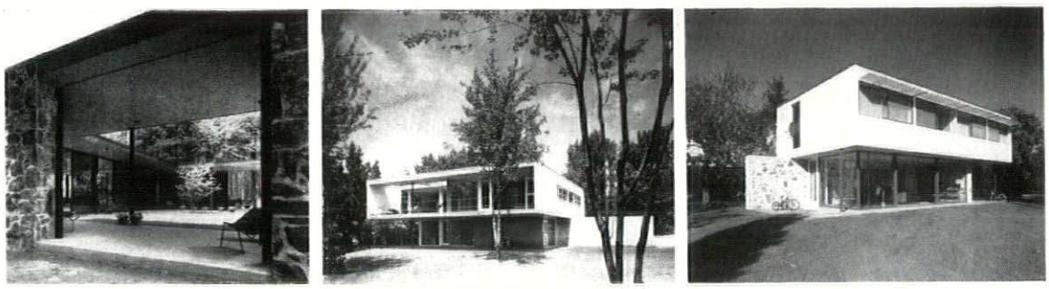
After the war, he joined Norman Bel Geddes and Co. as an industrial designer, and two years later set up his own office which, after ten years' working, still successfully combines architecture with industrial design (see above). There are two associates and a staff of between twenty and twenty-five. His admirations are (architects) Corbusier, Mies, Wright, Saarinen, Yamasaki, Breuer, Eames, Nervi, Peressutti; (sculptors) Lipschitz, Calder, Nivola, Moore, Butler, Chadwick, Noguchi, Bertoia; (painters) Klee, Picasso, Miro, Braque, Matisse and many others.



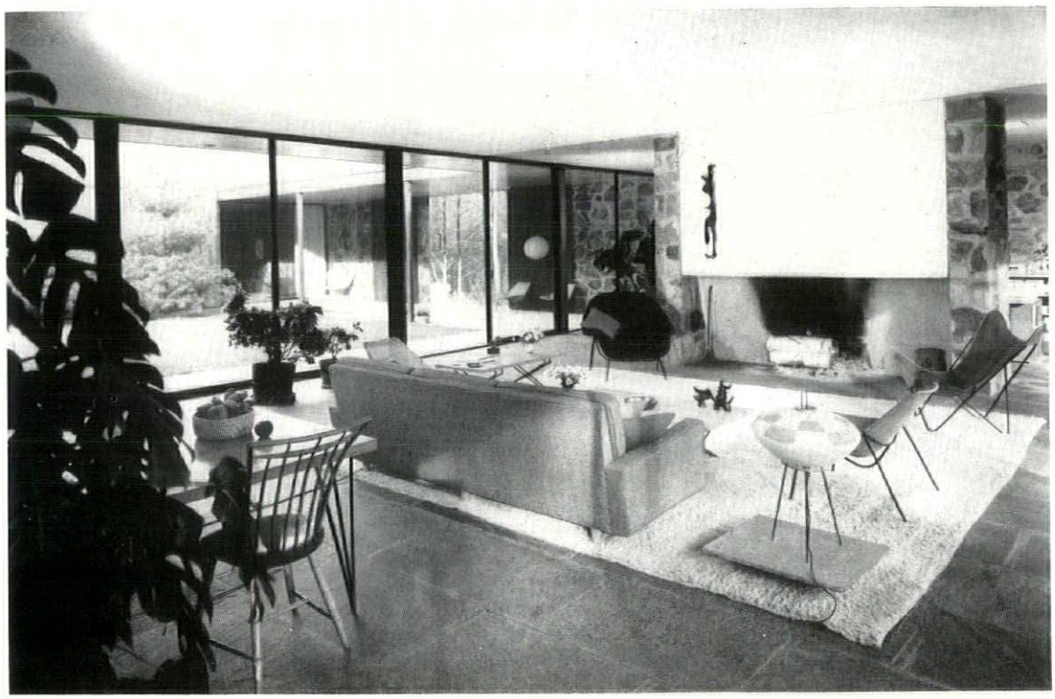
Noyes thinks there is still a valid source of regional difference in US architecture deriving from the influences of climate and materials and expressed in the skin rather than the structure, and he believes that sensitive designers will inevitably reflect this according to the region in which they build. The urge to experiment with and invent new structures is, he believes, a basic and valid one, but it must find its proper place in relation to the other aspects of an architect's work.



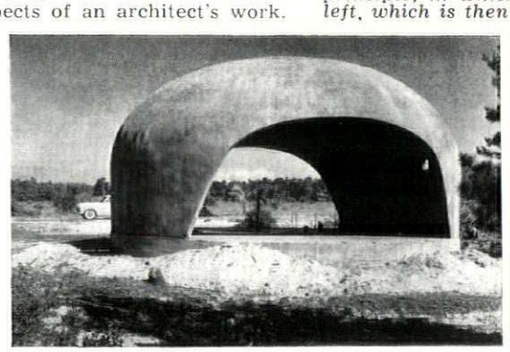
Eliot Noyes works as both architect and product-stylist for International Business Machines; above is the laboratory he designed for them at Poughkeepsie, NY, and inset in text an electric typewriter.

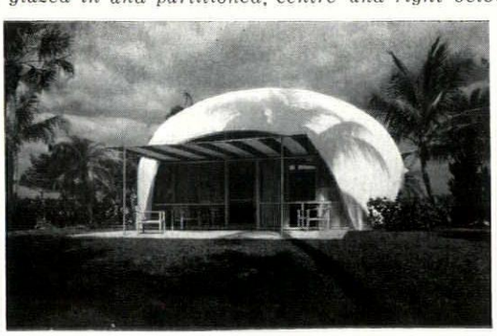


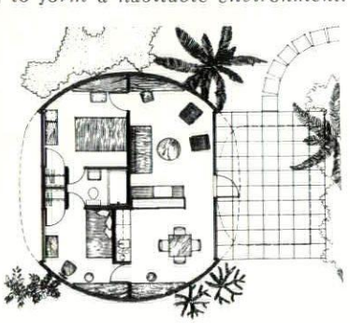
Noyes also maintains a lively practice in the domestic field; his own house is seen at left and below, the Bremer House also in New Canaan, Conn., centre; the Bareiss house, Greenwich, Conn., right.



Quite unlike Noyes' other houses are the two at Hobe Sound, Fla., built on Wallace Neff's Airform principle, in which concrete is sprayed over an inflated balloon to form a simple domed shell, below, left, which is then glazed in and partitioned, centre and right below, to form a habitable environment.







Wayne Williams *Whitney Smith.*



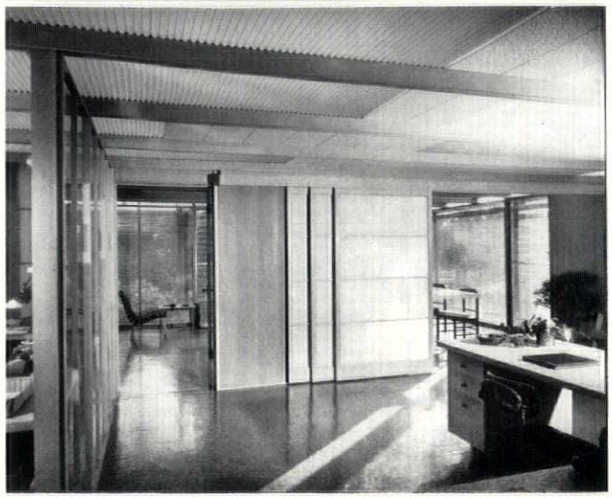
46

Pasadena, California

Whitney Smith was born in Pasadena, California, in 1911; an architect uncle from Texas started him on his career by giving him a tee square for Christmas. He worked his way through the University of California by playing in a dance orchestra and graduated in 1934. The first job, along with other 'depression' graduates, was under Joseph Weston in the Farm Security Administration. His partner, Wayne Williams, was born in Los Angeles in 1919, and also studied at the University of California, graduating in 1942; his war years were partly spent designing hangars and military buildings and he joined Whitney Smith's office in 1946, becoming a partner in 1949. There is a total staff of nine in a converted suburban house (see above) in Pasadena, and work ranges over a wide variety of building types.

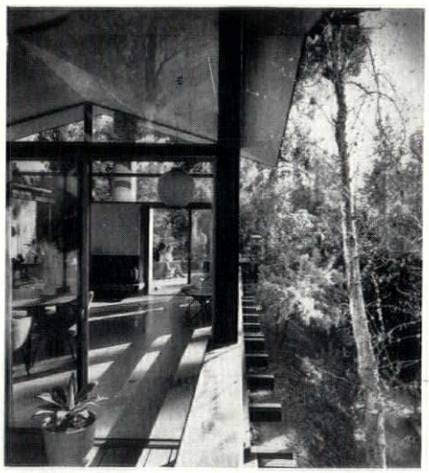




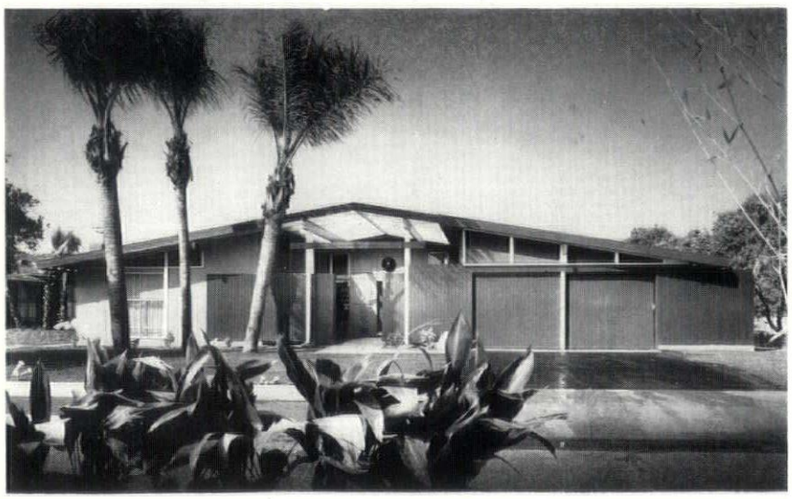


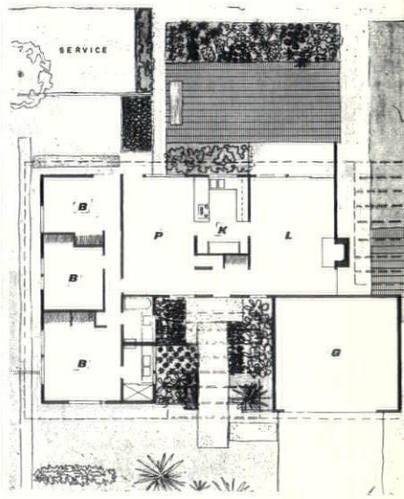






Top left, the suburban house in Pasadena, before conversion into an office by Smith and Williams; top right and above left and right: the house after conversion; the porch and front garden have been transformed with a platform, screen wall and lath pergola into a space where conferences can be held in the open air. Extreme left, religious education building for the Pasadena neighbourhood church: the roof structure is a diamond-shaped timber truss supported on vertical posts which extend through two floors and act as mullions to sliding glass walls. Left, Booth house, Beverly Hills, California; sliding glass doors open from the living-dining pavilion on to decks over a ravine; the four-fold ceiling is of hardwood-veneered plywood.

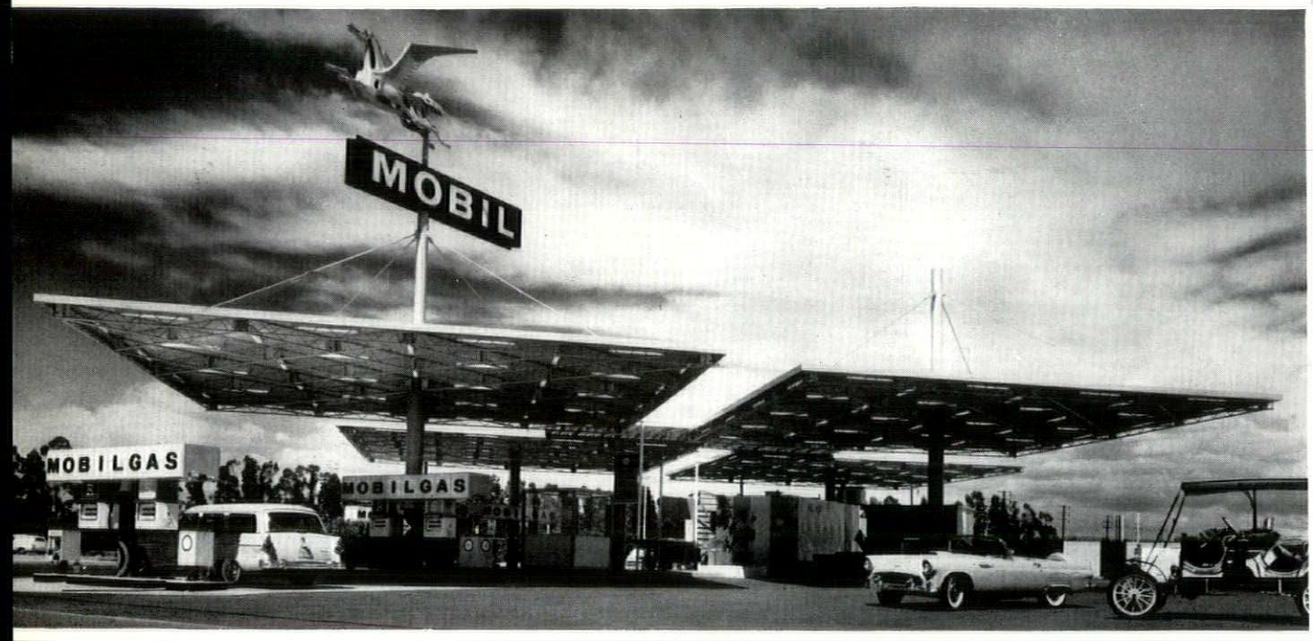


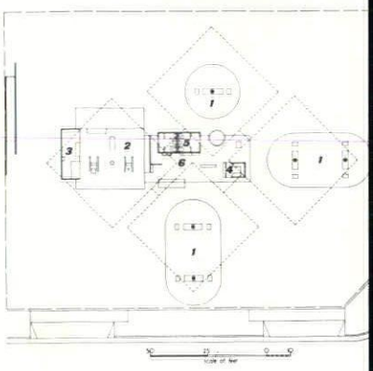


Right, street façade and plan of a typical house (one of three variants) in a 400-house estate at Anaheim, California; prices range between $15,000 and $20,000. The house is built round a courtyard garden which forms the entrance; the living-room has two terraces, one for sun and one for shade; P on the plan, indicates the 'family' or play area and it includes a breakfast-bar built into one wall of the kitchen.

Smith (cont.) *Right and below, two views of a standardized motor service station, designed to provide a background to advertising and selling devices; the structure is a 40-ft. square roof suspended 16 ft. above the ground from a central mast. All parts of the steel framework are identical and easily replaced, and all other stations will be multiples of the 40-ft. unit. Petrol pumps are suspended from the Mobilgas advertising beam (see right). Colours, lettering, lighting and floor surfaces have all been carefully related in the design. Plan key: 1, pump islands; 2, lubritorium; 3, lubrication store; 4, office; 5, lavatories; 6, pedestrian area.*







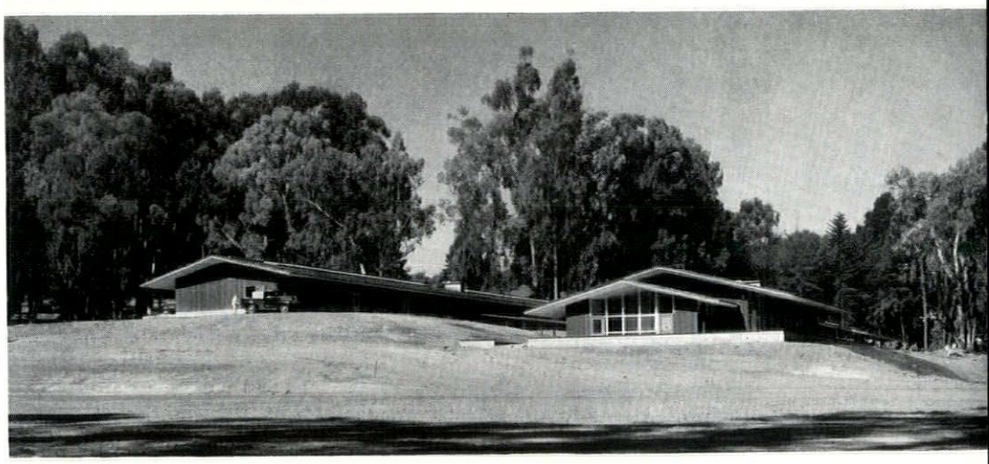


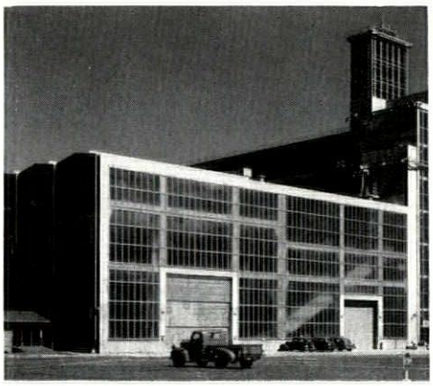
45

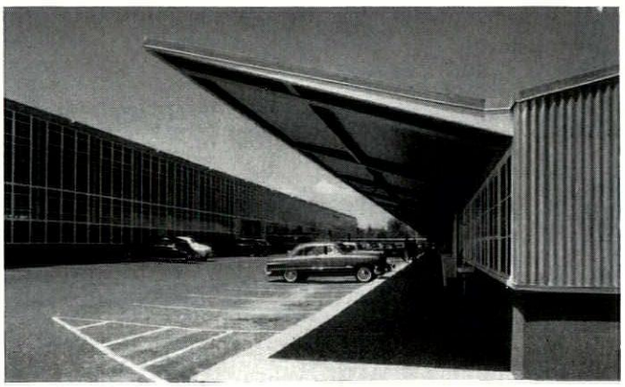
Palo Alto, California

Ernest J. Kump, born in California in 1911, and brought up in a family architectural tradition, trained at the University of California and at Harvard. Though he has publicly expressed his faith in the ability of standardisation and industrialisation to lower costs and make for a better general standard of architecture, his work in school design—on which his reputation mostly depends—shows constant revision of details from one project to the next. His office has also produced a town hall (at Fresno, California), naval, industrial and commercial buildings, hotels, and Embassy buildings.

Below, North Hillsborough School, California, which has a welded steel frame with timber roof framing between steel members and wood frame walls. The framing is set outside one wall, and inside the other, to give a clear external corridor space under the wide projecting eaves. Bottom left, the ordnance and optical shops in the naval shipyards, San Francisco, which won a Progressive Architecture Award in 1948. Bottom right, San Jose Technical High School, San Jose, California. It has a steel frame, and window walls are steel sash in steel plate frames.









45

Cambridge, Massachusetts

Hugh Stubbins was born in Powderly, a small town near Birmingham, Alabama, in 1912. His mother's family were direct descendants of Governor Spottswood, the first Virginia Governor, who built the original Williamsburg Palace, and his early childhood was spent on his grandfather's dairy farm—a Waldenian setting with clear, cold stream, fish ponds, pasture, fields and woods.

Artistic talent showed up early, but due, Stubbins thinks, to the Puritan background, he was steered towards architecture instead of painting; something he has never regretted. At sixteen, in the summer between High School and College, he went to sea as an ordinary seaman, shipping out on a small freighter to the Caribbean Islands and South America. In the autumn of 1929 he went to Atlanta and started his studies in architecture at the Georgia School of Technology, and there received a tuition scholarship for graduate study at Harvard in September, 1933. The senior professor was Prix de Rome winner, Jean Jacques Haffner, and his logic, coupled with the inspiration of Le Corbusier's books, were the chief influence on the class, though it was well aware also of Wright and Sullivan.

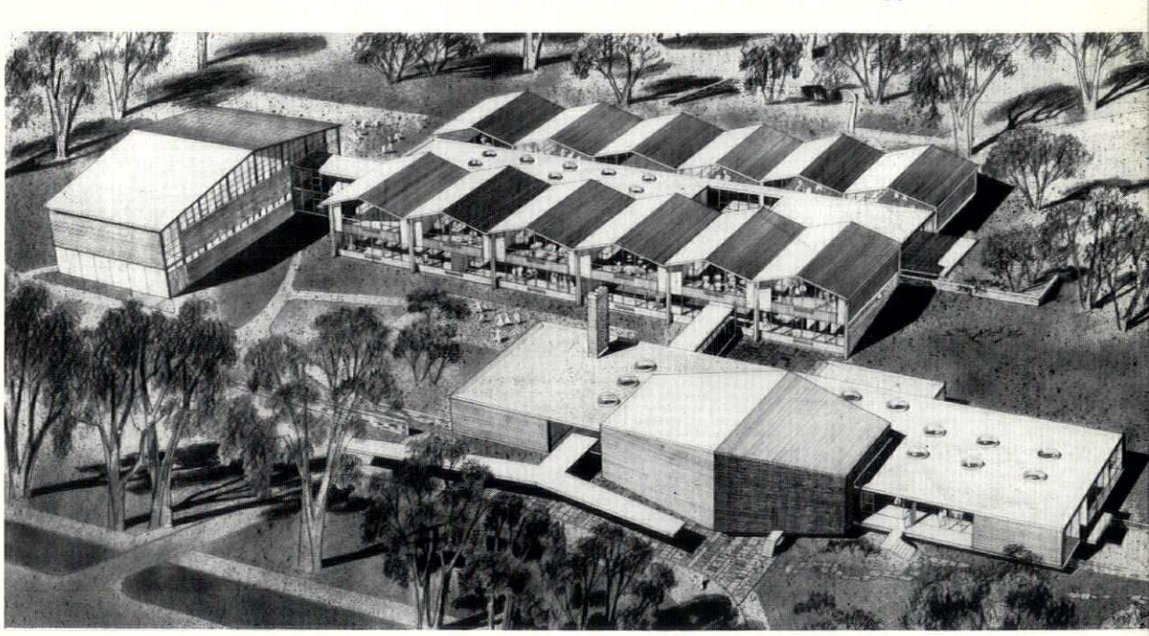
In 1935, at the bottom of the depression, he received his degree of Master in Architecture and started to look for a job. There were few positions open. However, Royal Barry Wills, a well-known small house architect and specialist in the New England Colonial style, had notified Harvard that he needed a young designer. Wills had a client who wanted a 'modern' house, and he felt the need for someone in his office who understood the idiom. Stubbins applied for, got the job and stayed for two years.

In 1939 Stubbins moved his family to Birmingham, Alabama, where he took a position as Chief Designer in the office of Miller, Martin and Lewis. Six months after, two telegrams came from Harvard; one from Gropius, whom Stubbins had never met, asking him to become his assistant in the Graduate School of Design; the other informing him he had been selected as the Wheelwright Travelling Fellow. He accepted the instructorship and moved back to Cambridge.* In 1939 James and Katherine Morrow Ford (authors of *The Modern House in America*) suggested to Stubbins that he send evidence of his work to the US Housing Authority in Washington. This led almost straight away to the commission for a Defence Housing Project, but

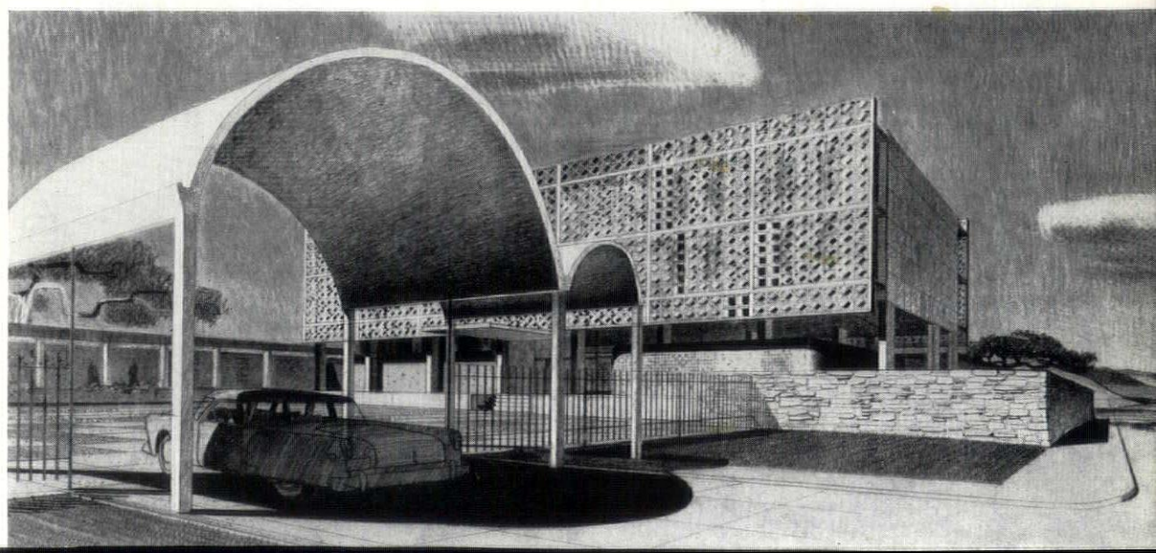
*The fellowship was a coveted prize carrying a large stipend with no strings, but Stubbins couldn't accept both offers, and the Fellowship was 'put on ice' for him. Later he became Chairman of the Fellowship Committee and was thus ruled out from accepting it.



Above, the Keith House, Brockton, Massachusetts, 1950. Centre, Elementary School, Brookline, Massachusetts, 1956: the block in the foreground contains an auditorium, a cafeteria and a music room; the centre block consists of 12 class roomswith administration between; the gymnasium is



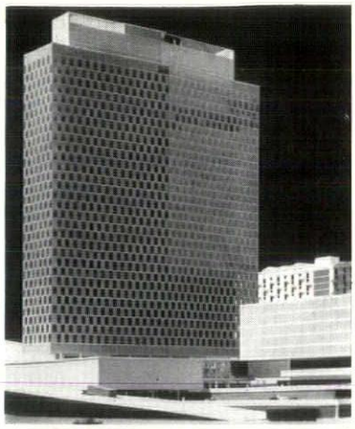
on the left. Below, proposed US Legation building, Tangier, showing the entrance court and main office block; each of the building's long elevations are shielded by glare screens of concrete.



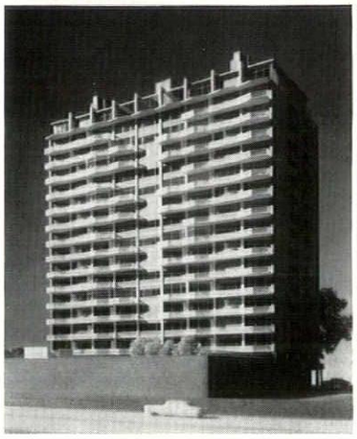
with a killing schedule; drawings and specifications had to be ready for bidding in four weeks. Stubbins had no staff, no office and no money, but he accepted the commission and signed a contract. Meanwhile, in Boston, his wife Diana (she is British) had engaged a small office and lined up the draughtsmen. In three days everything was under way, and, by working round the clock, the job was finished on time.

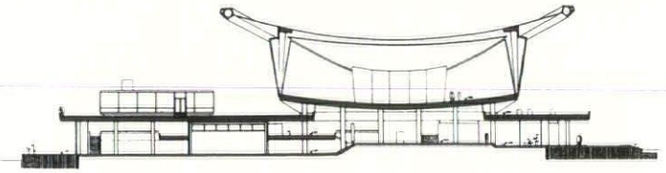
In 1951-52 Stubbins got his first two schools, his practice began to grow, and in 1952 he resigned from the University to devote all his time to it. In his office now are five associates and twelve assistants; the total staff is twenty-six. He considers the much-bandied-about theories of 'organic' and 'standardised' architecture to be largely a matter of words. 'The greatest proponent of so-called organic architecture, Frank Lloyd Wright, has not, in my opinion, built a truly organic structure, only symbols for one. Standardised architecture may be reflected in the work of Mies, but, as a term, it suggests emptiness and sterility.'

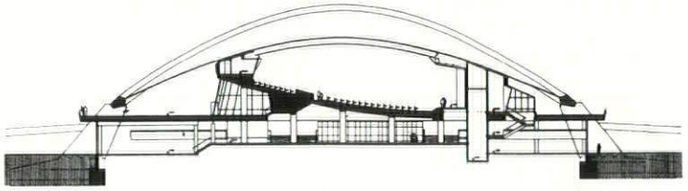
Many architects' obsession today for 'structural ingenuities' is not, he thinks, exactly healthy, but there have been similar diseases before from which we have recovered, and if it were not for architectural publications there would be less desire on the part of designers always to come up with a scoop.











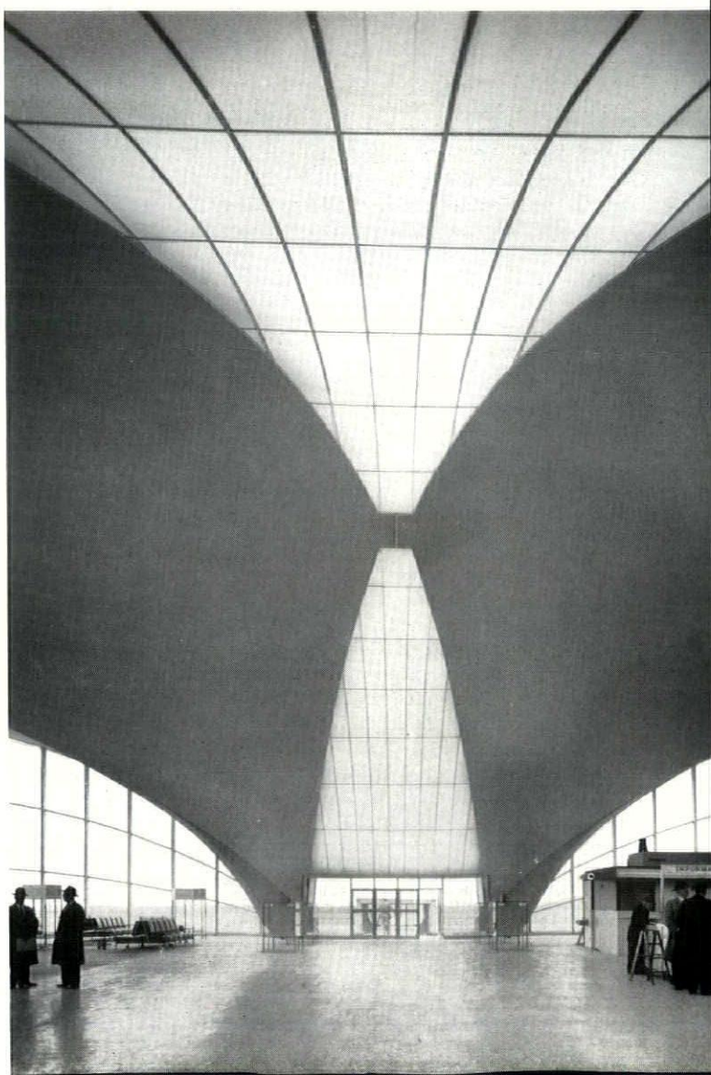
Stubbins (cont.) *Left top, model of the 32-storey office block, part of an urban redevelopment scheme for the Back Bay area of Boston, Mass.; the curtain wall has aluminium frames and alternate panels of glass and stiffened aluminium panels. Left, a 75-unit building of luxury apartments overlooking the riverside in Boston; the frame is of concrete with brick infilling. Top, model of the International Congress Building in the Tiergarten, Berlin, which will be completed for the 1957 Berlin Exhibition. Above, two sections through the Berlin Congress Building.*

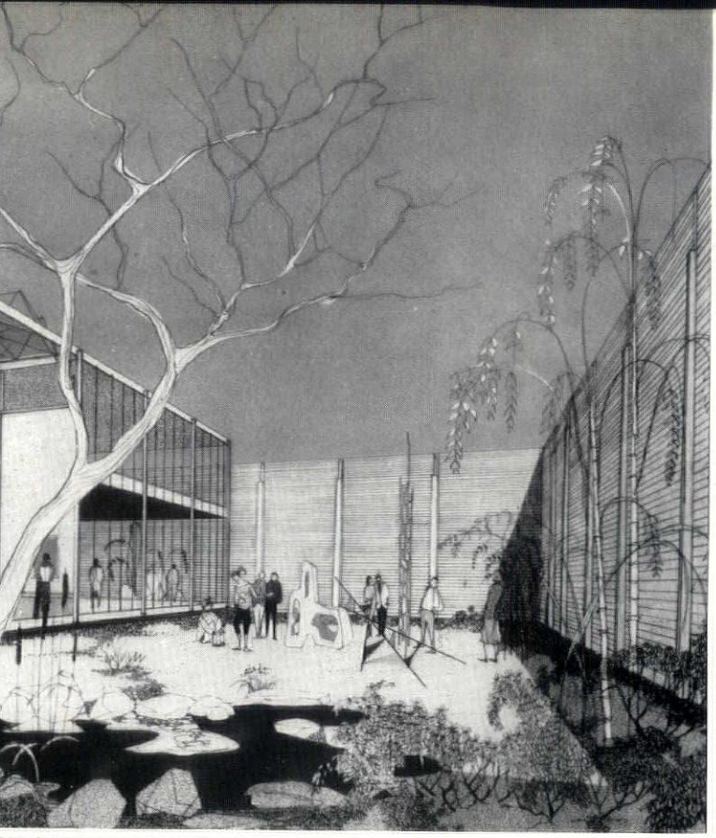


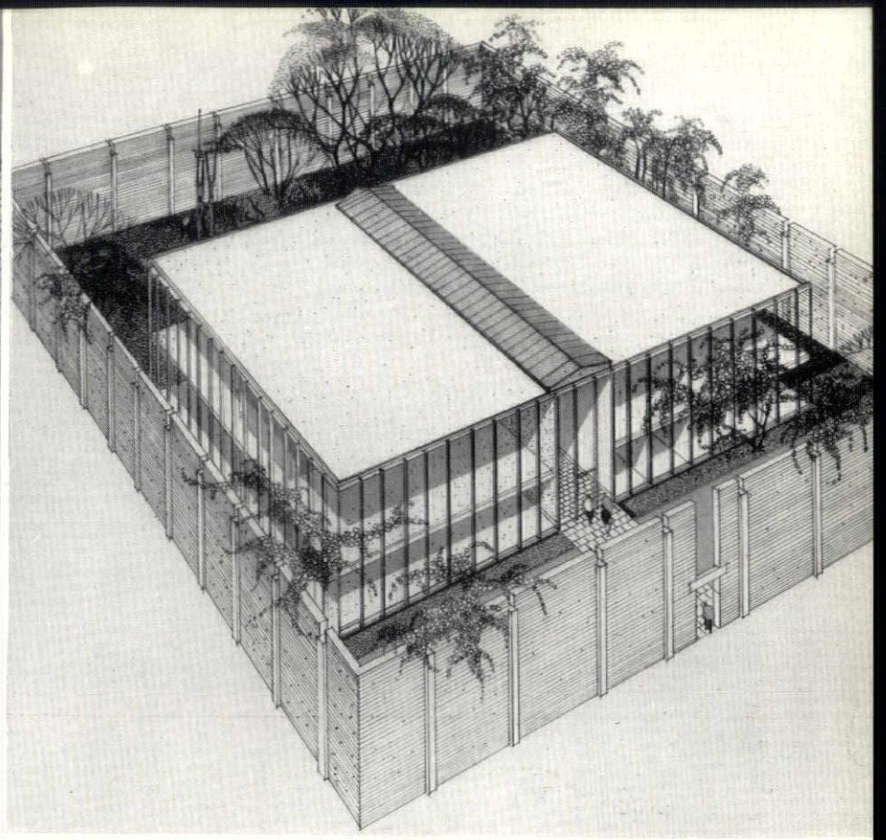
Minoru Yamasaki (Yama to his friends) was born at Seattle in 1912, and spent his childhood there. An uncle who was an architect influenced him to take architecture as a career; he studied at the University of Washington, where the imagination and skill of Lionel Pries inspired all the students, and it is to him, Yamasaki believes, more than to any other person, that he owed his first understanding of how exciting architecture could be. In 1933, during the last year in college, he took a summer trip to Japan, but he considers the visit was wasted architecturally owing to his own immaturity.

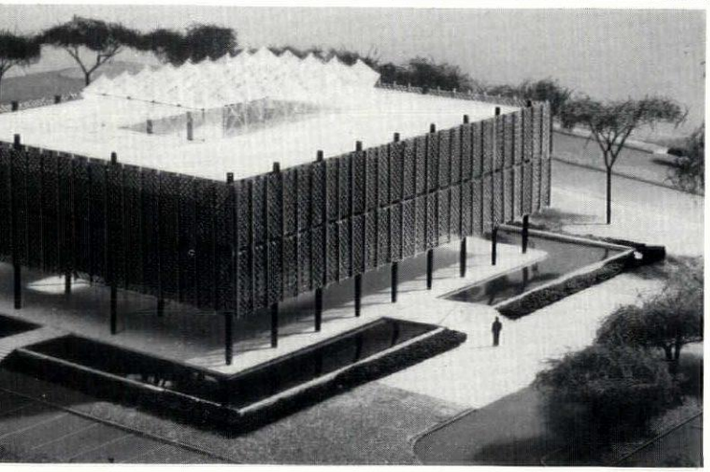
He became a Bachelor of Architecture in 1934; but, owing to the depression, he left for New York, where he wrapped and unwrapped dishes for over a year in an importing firm. His first architectural job was with Githens and Keally—library specialists—where he tried to design for a year before deciding that it was as well to know about construction first. And so, partly deliberately and partly because of the continuing depression, he did working drawings for Shreve, Lamb and Harmon (the Empire State Building architects). The atmosphere there was businesslike and often grim and frightening. Overnight the office would grow to one hundred and fifty men and then week by week they would drop out as a job progressed. Next, a year with Harrison, Foulihou and Abramovitz and a year with Raymond Loewy Associates before moving to Detroit as Chief Designer for Smith, Hinchman and Grylls.

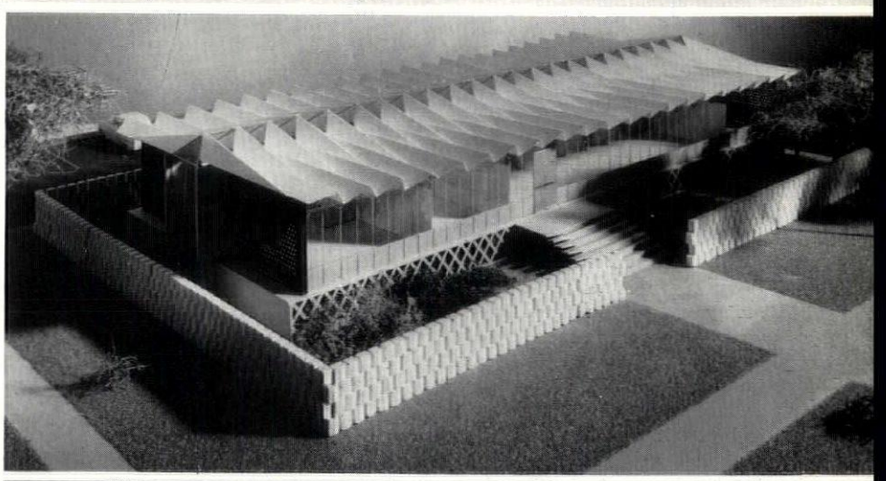
Yamasaki's first independent commission was the remodelling of a brownstone house in New York, done at week-ends and in the evenings. He had little idea of how much such a job would cost and so set a fixed fee based on what the owner wanted to spend—it turned out that he was prepared to spend five times as much—and did, but it was good experience. After leaving Smith, Hinchman and Grylls in 1949 a few houses came along and then two of his former associates from that firm asked him to join them in a partnership on a large public housing project in St. Louis, Missouri, which one of them had obtained as a friend of the mayor. They started in St. Louis with a job worth $7,500,000, and no funds. Nevertheless, some months later they had offices both in St. Louis and Detroit, and for six years the partners commuted back and forth between the two. Now Yamasaki has reduced it to a single base opera-



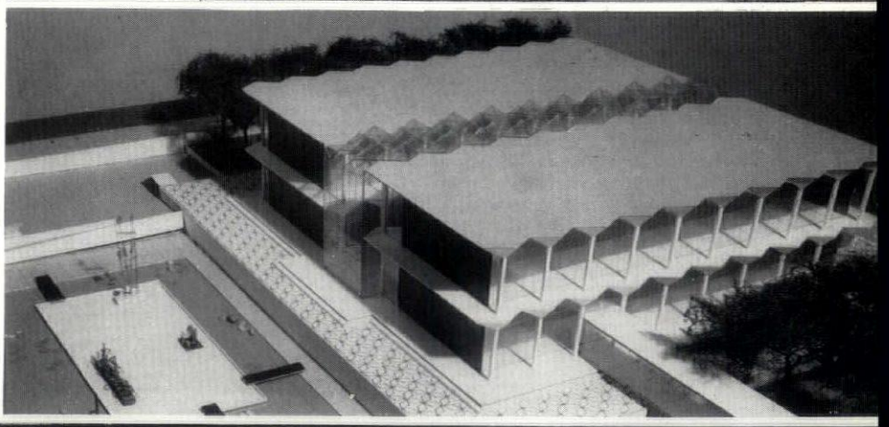


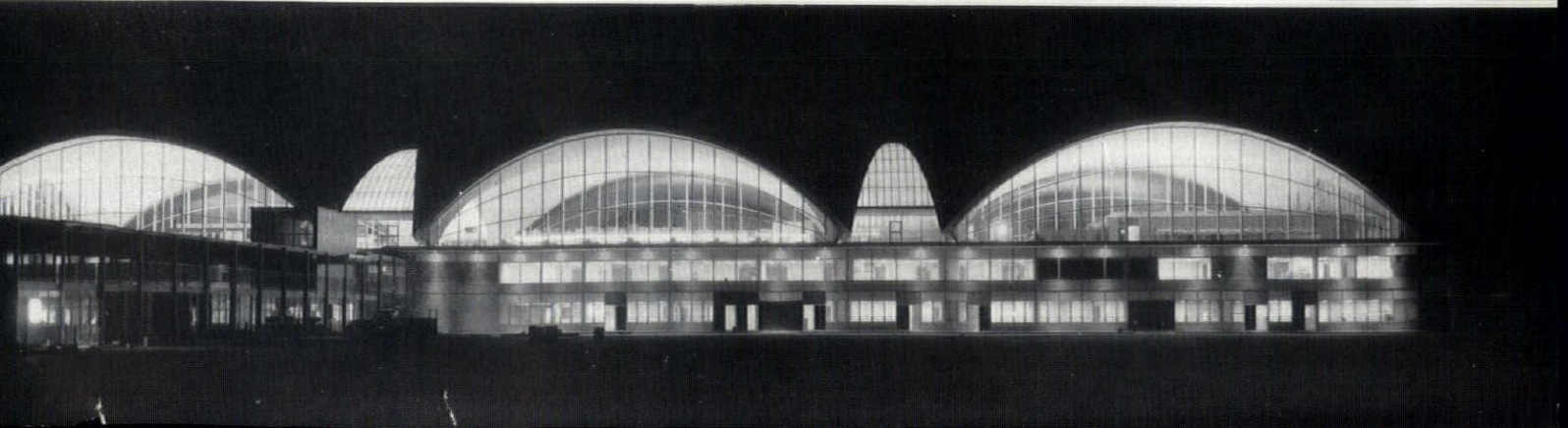






Yamasaki (cont.) *Top left, the sculpture court at the back of the proposed Society of Arts and Crafts building, Detroit, Michigan; top right, bird's eye view of the building which will be all of glass and set behind high walls. Above, proposed office building at Detroit, for the Reynolds Metal Company, the aluminium-screened building will be raised on a platform, surrounded by water and will have a great glass lantern surmounting an internal courtyard. Above right, proposed building for the American Concrete Institute at Detroit; the roof is of shell concrete with a glass lantern along the ridge. Right, the McGregor memorial building at Wayne University, Detroit, now under construction. This view shows one of the sculpture platforms built out on a small lake; ceilings are triangular box beams of concrete, and are supported on marble-clad light steel columns: there are pierced metal sun-breakers running along the upper part of the glass walls; a two-storey-high central gallery is lit by a skylight. Facing page and below, St. Louis Airport; three pairs of intersecting barrel vaults of shell concrete, each 32 ft. high by 120 ft. across, span the great concourse.*



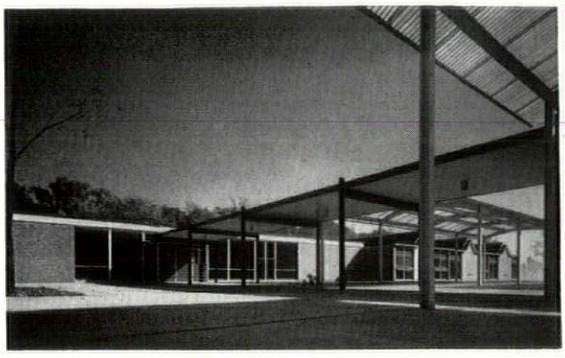


tions—Detroit—and one partner, Joseph W. Leinweber.

Yamasaki most admires Mies among architects because of his 'great and unswerving dedication toward the discovery and understanding of an architecture compatible with technology. . . . Though many of us go off on tangents and aim for a richness that Mies would frown on, I and many others I know base our designs on a fundamental respect for technology which we learned in the teachings of Mies.'

He believes that stylistic differences by regions in the United States are due to romantic notions of a vernacular which are not truly in accord with the building situation as it is. For instance, Harvard and MIT students practise in New York, Texas, California and Michigan; standard and special parts of buildings are transported from all parts of the country to all others. It is unlikely, therefore, that there is much future for regionalism.

Yamasaki (cont.) *Below, Adams Junior High School, Wayne, Michigan; left, exterior view the playground, right, lounge area and internal courtyard.*



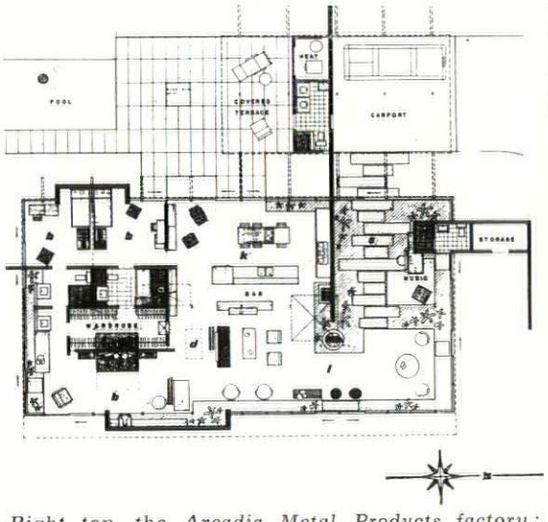


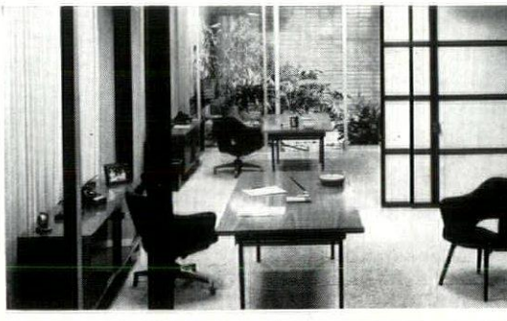


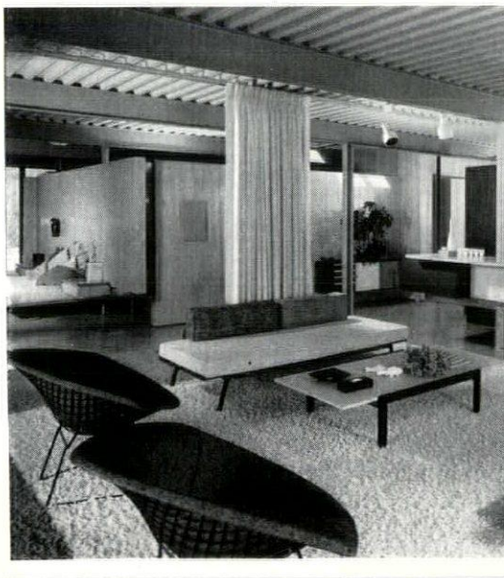
44

Los Angeles, California

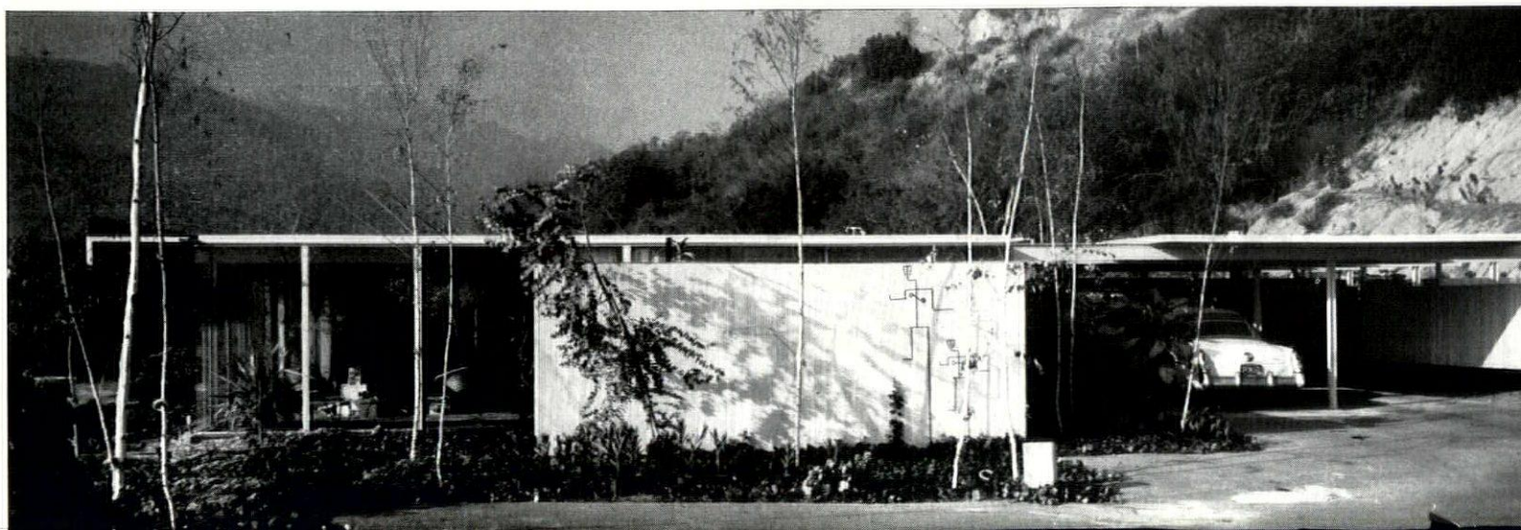
A. Quincy Jones, born in Kansas City, Missouri, in 1913, spent his childhood in Southern California. He graduated in architecture from the University of Washington, and although he did several jobs on his own before going into the navy in world war II, his own office only really started in November, 1945. Jones was returned to inactive duty on November 2nd of that year at 10 a.m. At 11 a.m. he called on a fellow architect who had offered him a job to say that he planned to open his own office. He was warned that he would need $2,500 capital. At 1 p.m. he opened office in one of two houses he owned; at 1.30 a Mr. Manoil called and left a $750 retaining fee for a house in Malibu, California. At 2.30 an architect called with an urgent request for two water colour sketches to be done within forty-eight hours and paid $500 apiece for them. At approximately 5 p.m. a Mr. Carter of Glendale paid a retaining fee of $500 for a new house. Before two days were past Jones had just under $3,000 capital, three jobs and no assistants. The partnership of A. Quincy Jones and

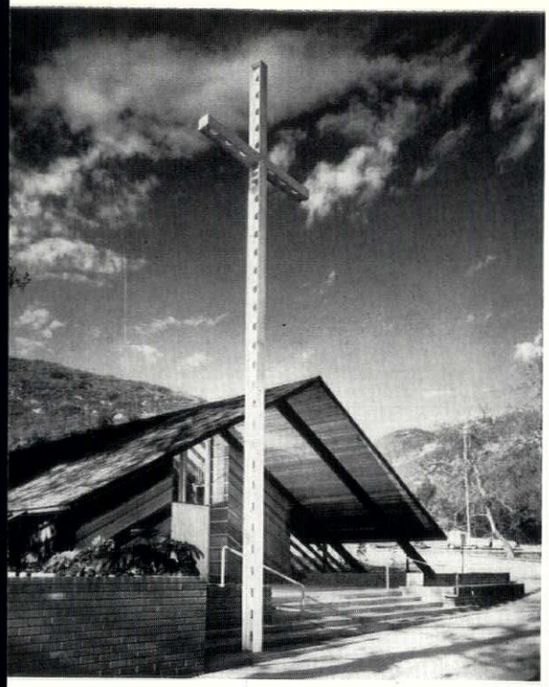




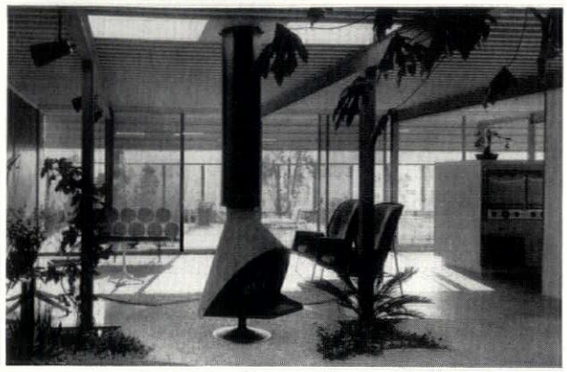


Right top, the Arcadia Metal Products factory; looking through the president's office and the vice-president's office beyond it into the garden. The sliding panel between the two offices is of steel sections, double glazed, with plastic-impregnated paper between the two panes. Centre, living area of Quincy Jones' own house at Brentwood, Los Angeles. Construction is exposed steel frame, painted red indoors, with metal roof decking also exposed. Below, entrance elevation of the Quincy Jones house: the glass walls continue, behind the wooden screen, to the entrance. Plan above.









Left, St. Matthew's Episcopalian church, Pacific Palisades, California. Above, exterior and interior of experimental Eichler Homes X-100, built at San Mateo.

Frederick E. Emmons was formed in 1950, and the present firm tackles a large variety of jobs ranging from $15,000 houses to an $8,000,000 shopping centre. There are three associates and fourteen assistants; the total staff is 20, though close contact is kept up with the various specialists who are called in on a consulting basis. Jones believes that the intimate relationship between architect and client is one of the most rewarding aspects of architecture. But today, if people are to get buildings, particularly houses they can afford, new methods of organisation, construction and marketing must be evolved.

In the residential field, Jones thinks the answer lies in the merchant-built house, with increasing numbers being sold on the market as a retail product. In this, success devolves upon the architect-builder team and the quality of this new kind of client relationship. Merchant-built houses form a large, though not a major part of the work of this firm; the experimental Eichler house (left) is an outcome of architect-builder teamwork.



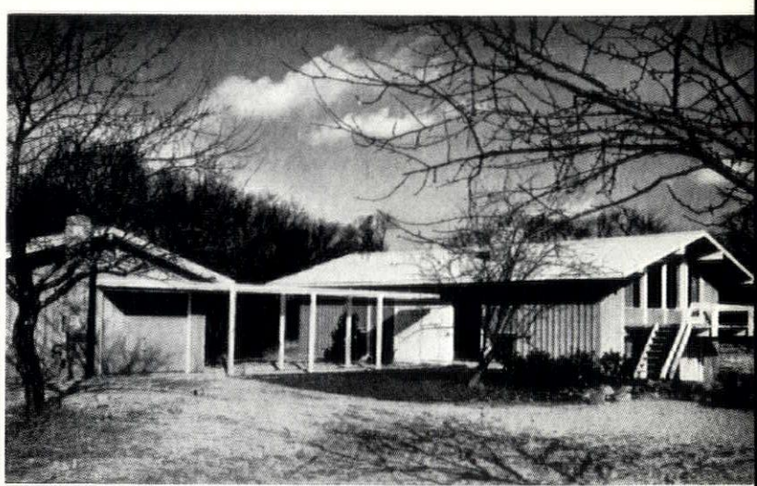
45

Cambridge, Massachusetts

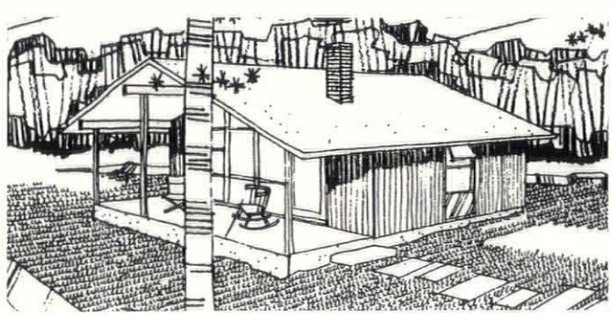
Carl Koch was born in Milwaukee, and raised in the Chicago suburb of Evanston, and at 45 can claim a unique achievement for an architect—his *Techbuilt* houses are a successful venture into the commercial housing field, which—in the USA as elsewhere—is practically architect-proof. Techbuilt houses, loaded with awards and citations, recommendations and support from organizations as diverse as the AIA and *Parents* magazine, are by no means the whole of his output, but he admits that the Koch office are 'specialists in housing as well'. He trained at Harvard in the confusing period between Beaux-Arts Eclectic and all-out Modern. He feels that his contemporaries at Harvard were 'particularly leaderless or rudderless' and that his own prime orientation came from six months spent in the office of Sven Markelius in Sweden, which left him with an enduring admiration for the Scandinavian approach to life, democracy and architecture—as one might have suspected from the way in which his houses are pitch-roofed without being old-fashioned, modern without being aggressive, charming without being sentimental, saleable without being commercialized. For one who is a successful 'captain of a building team' he shows modesty in supposing that 'few have either the qualifications for captain or those . . . to work as a plain member of the team' and that 'most of us hide our inability to cope with this opportunity behind a supercilious disdain for the necessary attributes'—neither statement, obviously, being true of the president of Techbuilt, even if he does look forward to an 'inactive status' in its administration.

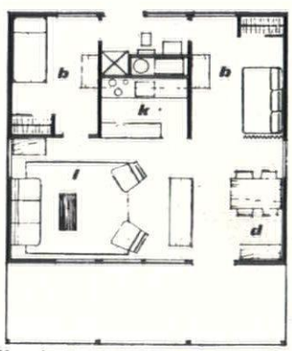






Above, the pre-fabricated 'Techbuilt' house, in one of its six variants; it uses stressed-skin plywood panels. Builders obtain plans and information on a royalty basis. Plans, above left; the house is a rectangle with two storeys under one gabled roof; the ground floor is dropped 3 ft. 6 in. to take full advantage of foundation walls, and the roof pitch is revealed inside to provide extra sense of space in the upper storey.





The 'Techbuilt' prefabricated Vacation Cottage. The buyer, following a complete erection manual which 'Techbuilt' supplies, excavates his lot, pours the concrete foundations and piers himself, and, having given three weeks' previous notice, receives the whole cottage shell in one load and erects it, if he so chooses, with the help of two skilled carpenters.



Left to right, Sarah Harkness, Jean Fletcher, Robert McMillan, Norman Fletcher, Walter Gropius, John Harkness, Benjamin Thompson, Louis McMillen

average age **44**
Cambridge Massachusetts

TAC, The Architects' Collaborative, is one of the pioneers of group practice, and here one of the partners, Sarah Harkness, contributes an account of the working of the group and its approach to the problems of collective design.

'After ten years The Architects' Collaborative is intact, with the original partners. It was started immediately after World War II, the outcome of several coincidences amongst people who were not even all acquainted with one another, but who had each had a dream in mind of a group practice. Gropius had long before made his experiment in the Bauhaus, where both instructors and students worked collaboratively. Collaborative problems were initiated in the Harvard School of Design under his guidance, and have become a regular part of the curriculum. The Yale members of TAC—Norman Fletcher, Robert McMillan, Louis McMillen and Benjamin Thompson—had talked among themselves about setting up a group practice when they finished school. There was always an idea of making an experiment in living. This later developed into building the communities of Six Moon Hill and Five Fields.

'When the war ended everyone was free at approximately the same time. Gropius asked John Harkness (who incidentally is the only original partner of TAC who was ever a student of Gropius*) to assist him in teaching the Master's class at the Harvard School of Design. It happened that we received a letter from Norman and Jean Fletcher the same day on the subject of how to set up a practice. Putting two and two together we discussed the matter with Gropius, and it was decided within two days to set up a collaborative office in Cambridge. An added push to the establishment of the office was given when the Smith College Dormitories Competition was judged. The Fletchers and Ben Thompson, working in Michigan and Washington, DC, won first place, and John Harkness and I, then in Milton, Mass., came in second. The prize money made the first office funds.

'The first year consisted of very few jobs, but a great deal of discussion. The system of job captains and office meetings was set up. There is a meeting every Thursday noon to discuss either design or business. Meetings are called in between times whenever a subject needs special attention. Every job has to go through a meeting before the design is frozen. The job captain, together with those who have been assisting him, brings drawings, models and pertinent facts and figures to the conference room. A really "hot" design meeting often produces the best architecture. In the end, the changes are those of the job captain himself, because he has the final authority.

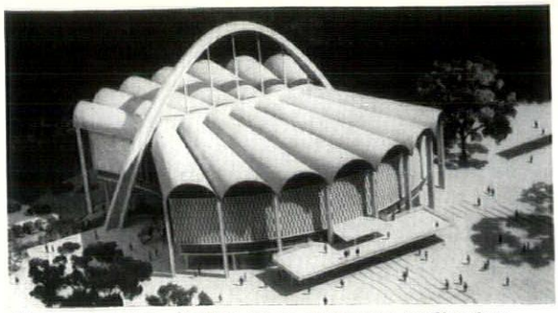
'Architects who practice alone have doubts sometimes about a collaborative office, fearing that if they were part of such a group they would lose their individuality. In a collaborative office, however, something is added, rather than subtracted. Creative talents are stimulated by an active environment. Another question that comes up: is it easier or harder to take a risk in a large partnership? I suppose the answer to that depends in good part on the nature of the partners. However, most risks involve backing. Without the resources of a group most risks could not be taken at all. Although collective thinking sometimes puts on the brakes, or adds safety measures, TAC has gone out on a limb on projects that would have been inconceivable for any member alone at this stage of his career.

'So much for "how" TAC works; the most interesting question is "why" it works. Is it, in reality, "Gropius's Architects' Collaborative"? No one is more annoyed by this misconception than Gropius himself. The idea of a Master surrounded by his disciples is absolutely contrary to Gropius's own precepts. Is it then a remarkable coincidence of personalities that happen to click? Actually, the personalities could not be more different. It is such a "bunch of individualists" that one might wonder how they ever happened to come together. They even have different ways of working and different ways of running a job. To some, a pencil is their sword—if they lost their hold on it they would lose control of the design. Others feel that they can guide the design by remote control. I do not think that the success of a collaborative office is dependent on a remarkable combination of particular people. It is a practical system—on the way to becoming more usual.

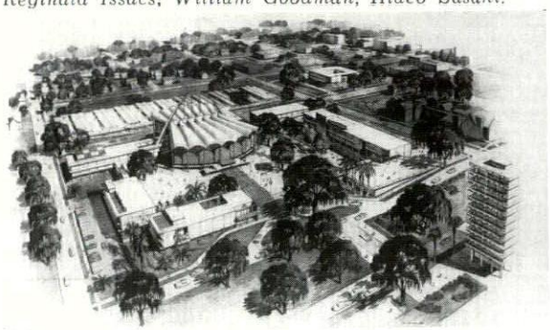
'If there is anything magic in the whole set-up, I believe a good deal of it may simply be a matter of numbers. The partnership (all of the partners having been trained as architects) is large enough so that it would be almost impossible for one person to dominate it. It is also large enough so that whatever idea one member may have, he will always find a willing ear to listen. If it is a constructive idea, he can always find someone to try it out on; if it is merely a "gripe," he will probably talk himself out. However, the group is small enough so that the partnership can meet round the conference table for informal discussion; small enough so that decisions do not have to be made by vote, but only by the "sense of the meeting." Our meetings have been likened to Quaker meetings in this respect.

'Just as it would be impossible to say exactly why a marriage is successful, one can only make a guess as to why an organization works. Along with diversity there must at the same time be a mutual understanding of starting points and directions. In regard to TAC, a few common denominators come to mind: first is the attitude of "live and let live," which could only be held by strong individualists; second is a social conscience—a building is not considered successful unless it answers the requirements of programme and client relations, as well as design—and finally, Gropius's definitions of Total Architecture, the "reunification of art and science," is taken for granted. Owing largely to Gropius's influence over a long period of years, most architects under forty have come out of school equipped, to the best of their ability and understanding, with aesthetic ideals in tune with the world we live in. Various aesthetic expressions have arisen, and will continue to arise. However, there is always a danger that a particular aesthetic expression will cut loose from its origin, at which point it becomes stylistic. There is also the danger that an architect, or an architectural office, that has had some measure of success will become afraid to try anything different. The aim of TAC is to keep a lively approach to every individual design problem, without forgetting the basic precepts of modern architecture that have been so well expressed by Gropius.'

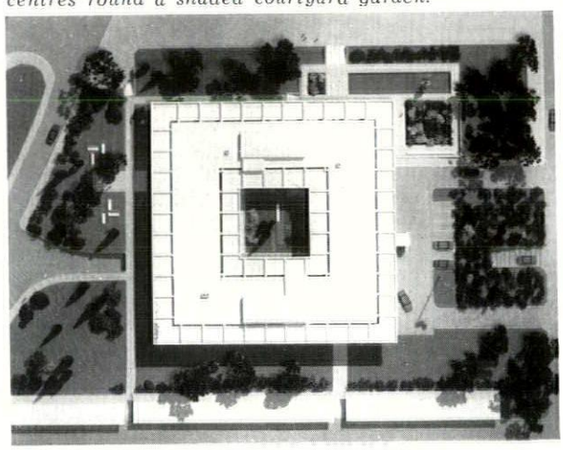
*Chester Nagel, Associate in TAC, is another.

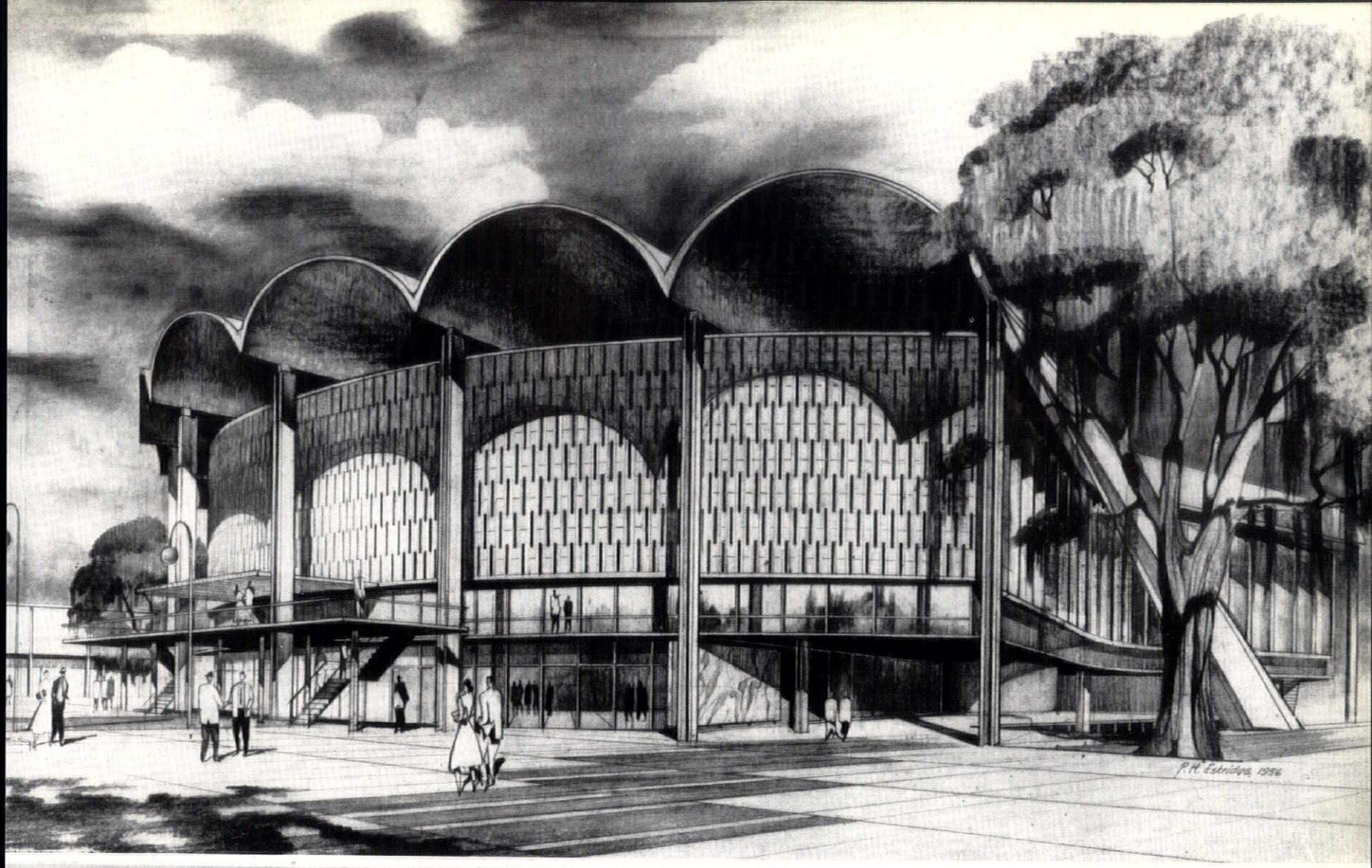


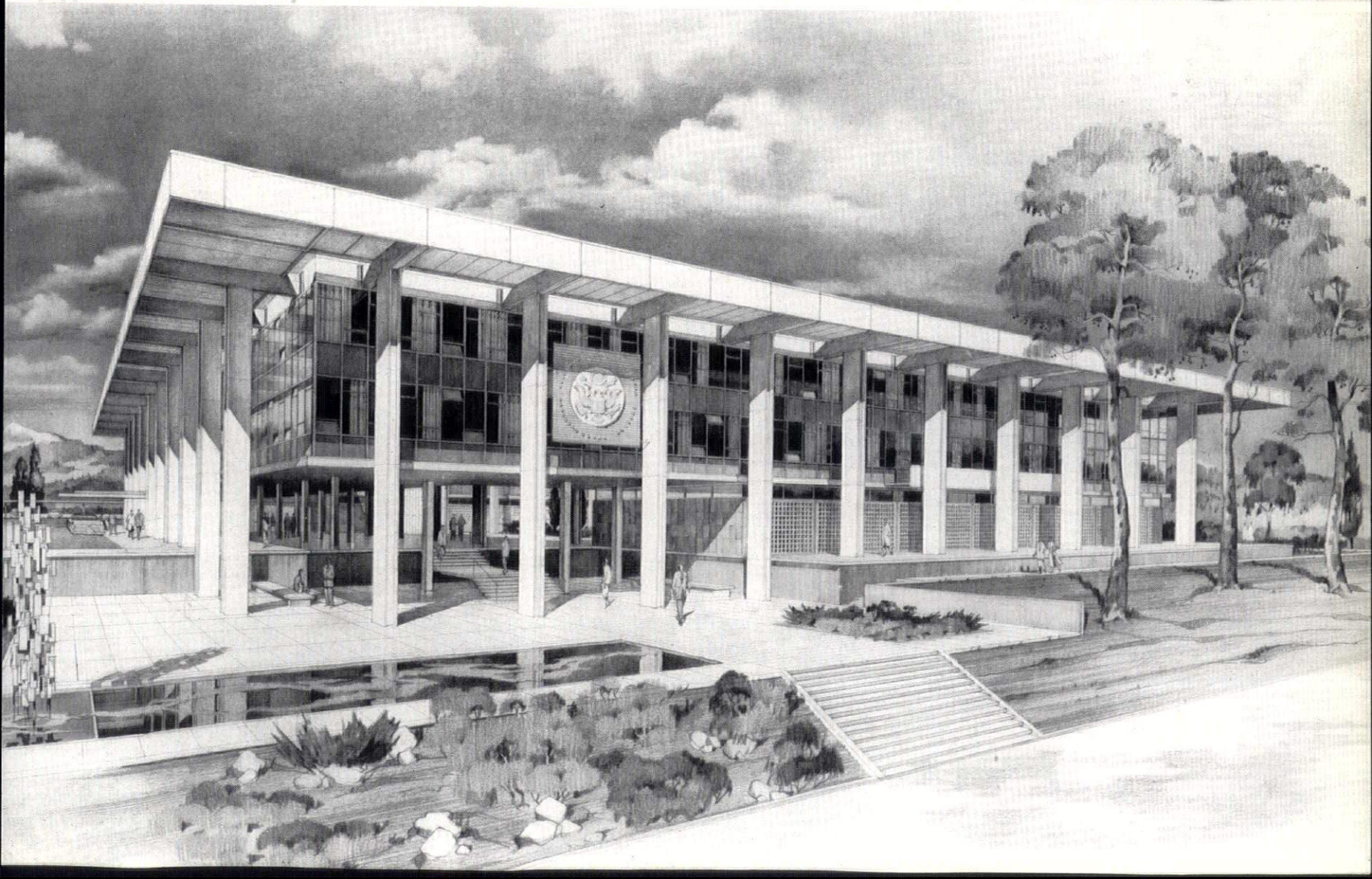
Above and top, facing page, proposed auditorium building for the Tallahassee, Florida, new civic centre. The roof structure, of tapering concrete barrel vaults, is suspended from a parabolic arch. Below, bird's eye view of the civic centre which is a pedestrian precinct. Planning consultants: Reginald Issacs, William Goodman, Hideo Sasaki.

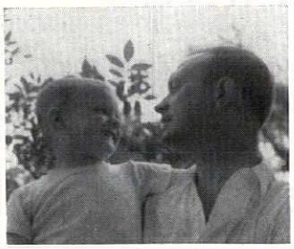


Below, model and right, facing page, perspective of the new US Athens Embassy. The structure is a steel frame, the outer columns uphold canopied eaves, which shade glass curtain walls. The plan centres round a shaded courtyard garden.




P.H. Estrada, 1956





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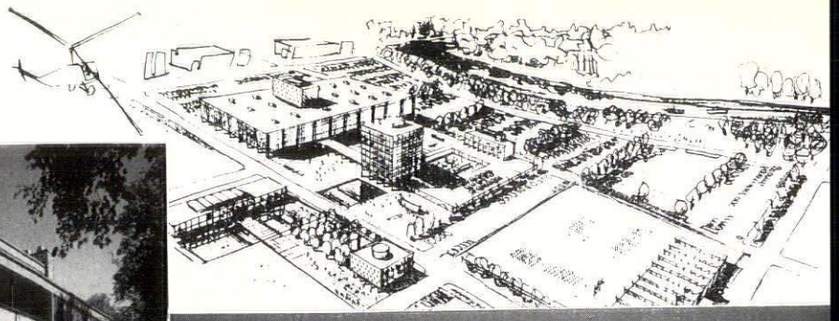
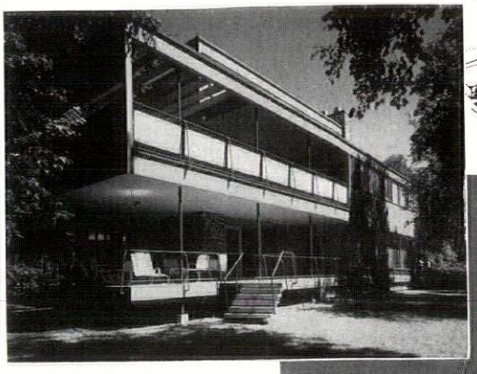
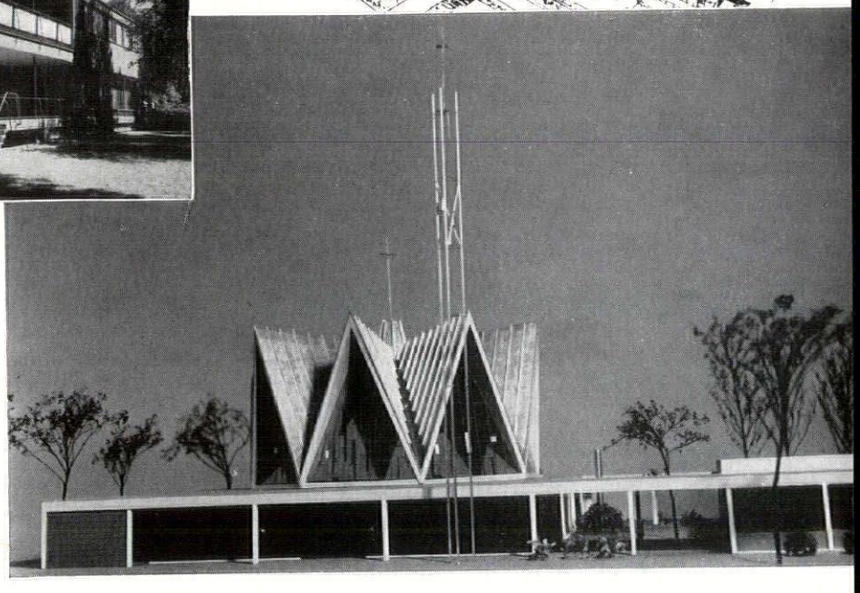
Minneapolis
Minnesota







Ralph Rapson's varied architectural career, which includes apartments, schools, embassy buildings (see AR, October, 1955), is represented here by the Gidwitz house, Chicago, Ill., of 1946, above, in collaboration with van der Meulen; the projected civic centre for Fargo, ND (Thorshov, Cerny, Seifert, associates), above right, and St. Peter's Lutheran Church, Edina, Minn., right, now building.

Ralph Rapson was born in Alma, Michigan, in 1914, of a family in which both grandfathers were village blacksmiths. He dreamed of being a painter but decided on architecture when told that 'artists have a most difficult existence'. He followed up three years studying architecture at the University of Michigan with two years on Regional and Urban planning under Eliel Saarinen at Cranbrook Academy of Art. Frank Lloyd Wright was the strongest influence on his design class, though he was most influenced himself by the writings and work of Le Corbusier. During his two years at Cranbrook he worked closely with the Saarinens, particularly Eero, with whom he later spent two years working round the clock on many buildings and projects.

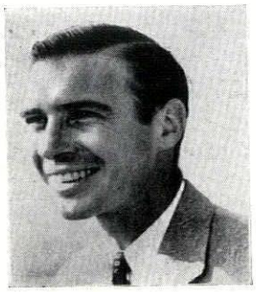
Next he lived in Chicago and worked with Paul Schweikher, George Fred Keck and Laszlo Moholy Nagy; for four years he was head of the Architecture Department of Moholy's Institute of Design, and considers him one of the truly great teachers of our time.

The first commission was a house for a young teacher and his family, who had bought sixty acres which included a beautiful lake; they had only $3,500 left to spend on the house and the architect's fee; they got a six-room house for this, which Rapson estimates would today cost $35,000.

There are two associates in the office; the number of assistants vary but are usually about five or six; Rapson believes in keeping the office small to maintain quality and control. In addition to his practice he is Professor and Head of the School of Architecture of the University of Minnesota.

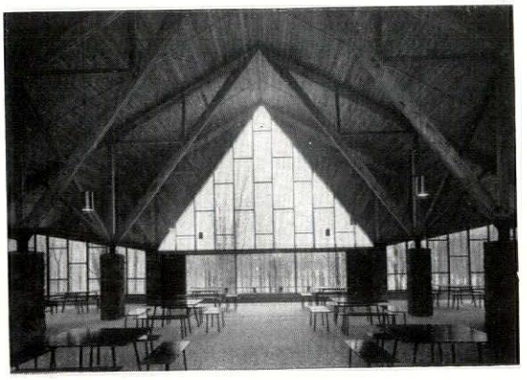
'Economy and technology in the form of improved heating and cooling systems, thermo-sealed heat-resisting glass, modular curtain-wall systems' are all, he considers, 'tending to provide a certain common denominator and common tools to the designer. In many ways I have come to feel,' he says, 'that architecture should embrace anonymity more warmly, that it should provide a quiet, neutral background, in which we—the human beings—provide the colour and animation. There has been far too much of the architect projecting his own "personality" into his buildings.'

'Architecture has become a highly complex art and science in which many specialists must work together.' This will only be successful, Rapson believes, 'if the architect is in complete control.' 'Today,' he thinks, 'they are suffering from an "innovation" complex, a feeling that somehow or other they must come up with something different, something novel, regardless of consequences; they should realise that most people are looking to architects to provide a harmonious total environment rather than a series of isolated and individualistic gems.'

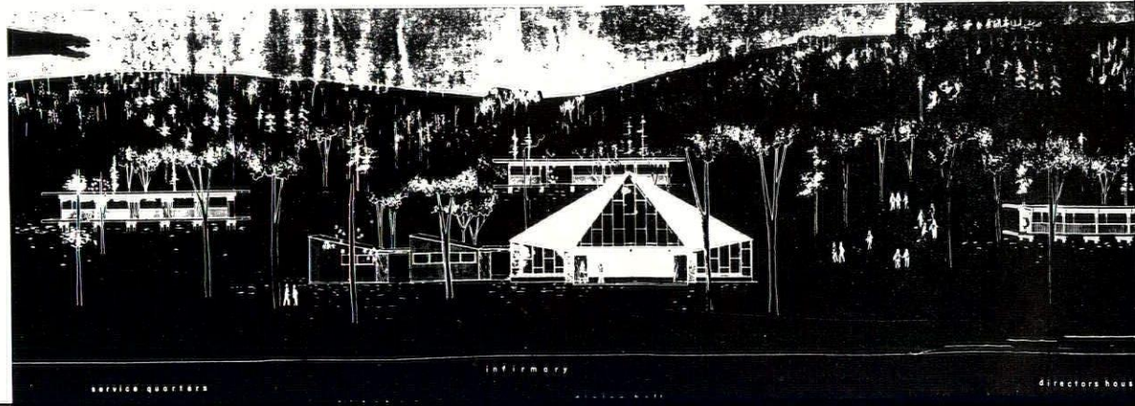


42

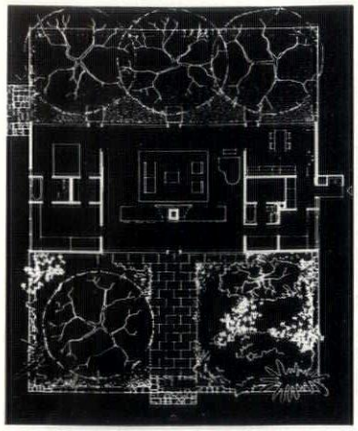
New York City



Edward L. Barnes was born in Chicago in 1915 to a father who was a lawyer and philosopher, and a Pulitzer-Prize-winning mother. Architecturally speaking he is a product of the Gropian revolution in US teaching, having studied under Gropius and Breuer at the Harvard Graduate school, and then worked with them on graduation. Nevertheless he counts Le Corbusier's writings as a major influence on his student years, and war-

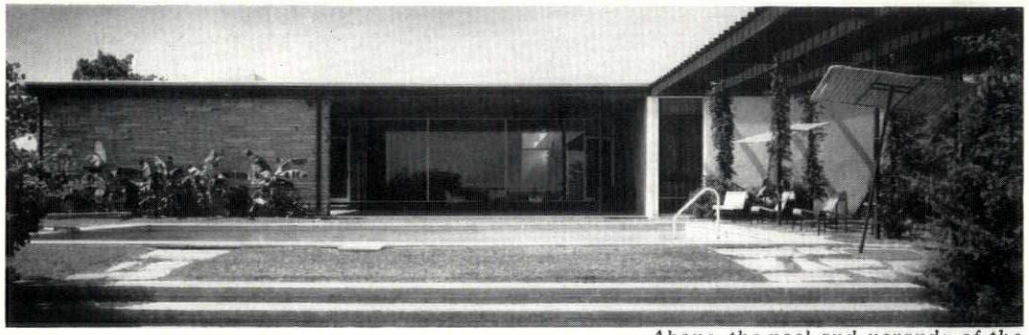


time experience as a naval architect may also have contributed something to his present manner of designing. Based on a New York office with a staff of twelve, he can claim a varied career in design, covering the *Herald-Tribune* auditorium, aircraft interiors, children's camps, an aluminium pre-fab, and a variety of houses which, at their most characteristically Barnesian, exhibit an unforced formality of plan and elevation which sometimes approaches the Palladian. Not unexpectedly, he is an admirer of Mies, as well as Le Corbusier and Marcel Breuer, also of Klee, Mondriaan, Albers, Giacometti and Calder, was able to use work by the last in a house at Fort Worth, as well as a group by Mary Callery.

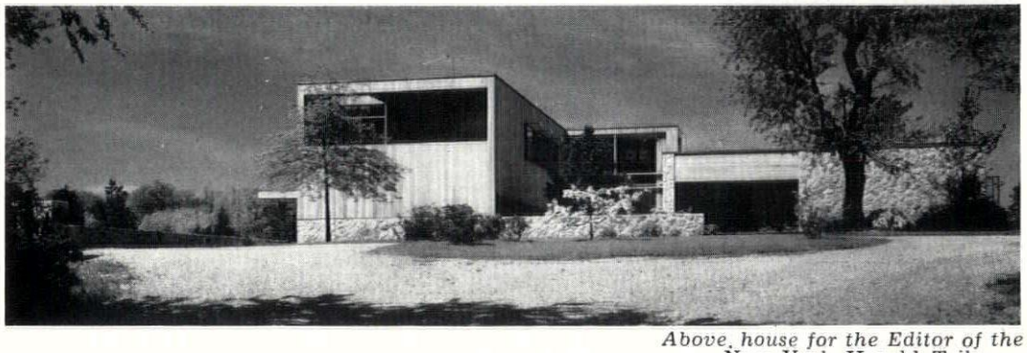




Barnes's domestic work is usually characterised by an easy, unemphatic formality; above is the plan and main living area of his own house at Mount Kisco, NY.



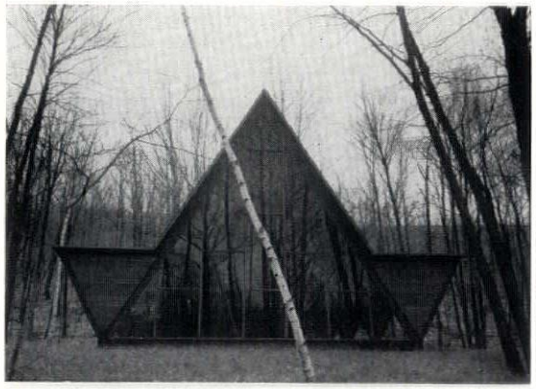
Above, the pool and veranda of the Weiner house, Fort Worth, Texas.



Above, house for the Editor of the New York Herald Tribune, *Whitelaw Reid, at Purchase, NY.*

Summer camps are a type of building venture that has exercised the originality of many US architects (notably Wright and Maybeck) and Edward Barnes has designed two. One of these, at Fishkill, NY, is seen panoramically, bottom, with its buildings in small clusters on the wooded site, while individual buildings are seen below; first, interior and exterior of the dining hall, then a 'village hall' play-centre, and one of the semi-permanent tents, far right.







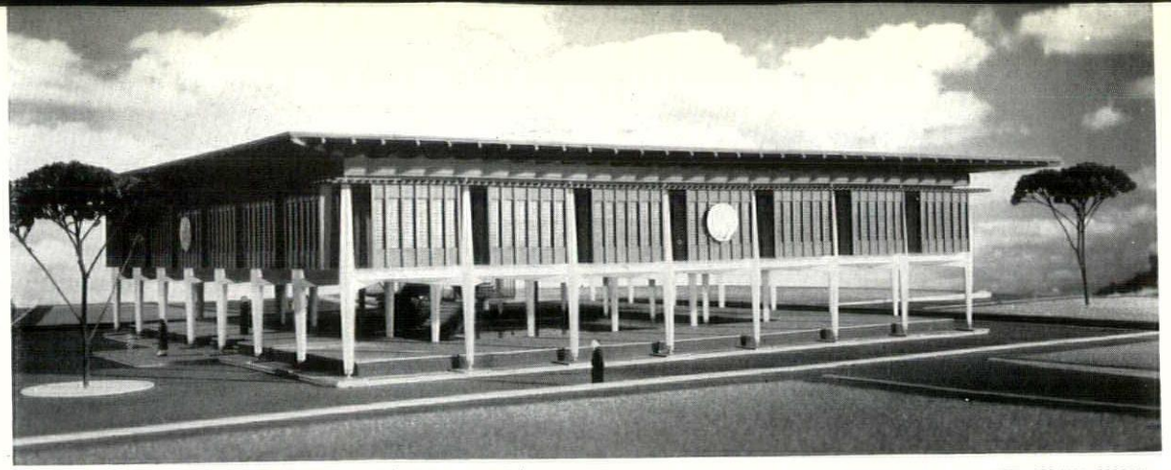


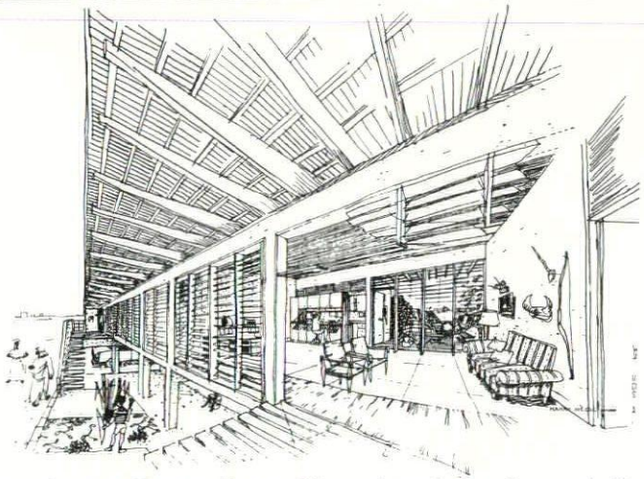


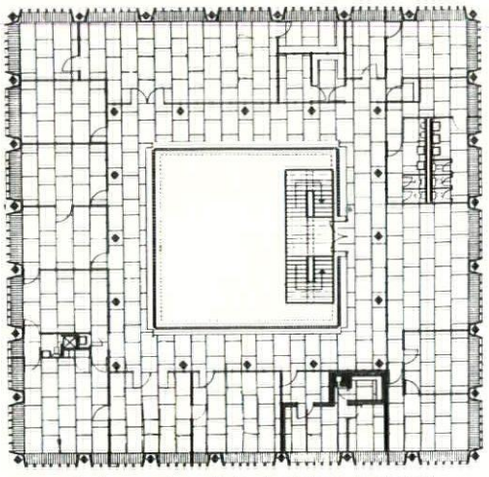
41

Chicago, Illinois

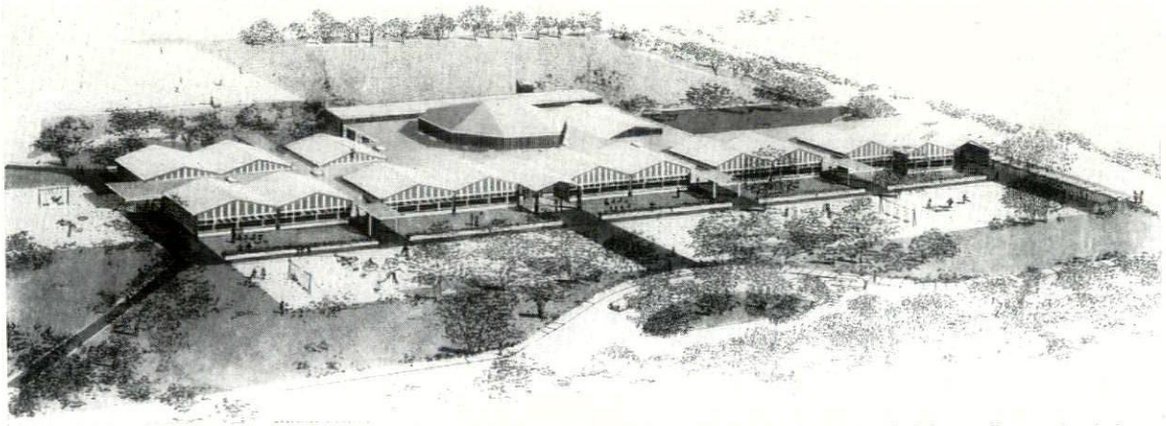
Harry Weese was born in 1915 and is Chicago-suburban by birth and upbringing; he trained at MIT and Harvard in the late 'thirties, and then passed with a fellowship to Cranbrook Art Academy in 1938—an educational tour that brought him into contact with Dean Emerson, L. B. Anderson and the two Saarinens, among his masters, and Bertoia, Baldwin, Rapson and Eames among his contemporaries. With Ben Baldwin he had already a small practice in houses before he joined Gordon Bunshaft in SOM's Chicago office in 1940, an association that he resumed after four years as an engineering officer on a destroyer in the war. About 1940-41, Moholy and Giedion were strong influences and at the same time good friends. His own practice was worked up again from a back room in his wife's Scandinavian import-business in Chicago, and took a turn for the flourishing with a 54-unit housing scheme, which entered the office in the person of the Mayor of the community that commissioned it, the Mayor having come in with a friend who in turn had been referred to Weese by Eero Saarinen and Douglas Haskell of the *Forum*. Most of his work, which currently includes a new consulate building for Ghana, still comes to him by referals from other members of the profession, and Weese's reputation at the moment is somewhat that of an Architect's Architect—not a well-known figure to even the magazine-reading public, but enjoying the wholehearted respect of his fellow practitioners. Like many professionals, he takes an ambivalent love-hate attitude to Frank Lloyd Wright—'I admire him, but feel a lot that is pernicious in the contemporary scene can be laid at his door. . . . Pandora's box emits ranch banks, ranch motels, ranch funeral parlours, ranch office buildings and ranch churches.' It is not surprising, therefore, to find that his current preferences in his own and the other arts incline to the formal and humanist—Corbusier, Breuer, Jacobsen, John Nash; Giacometti, Marini, Bernini; Piero della Francesca, Klee, Miro, Pasmore—and although his style is quite personal to himself, it could be most fairly compared, perhaps, to that of Breuer. His two younger brothers are also architects, one with SOM, the other finishing at Harvard to join what will become the family business, along with Weese himself and his present collaborators, Bruce Adams and John van der Meulen.



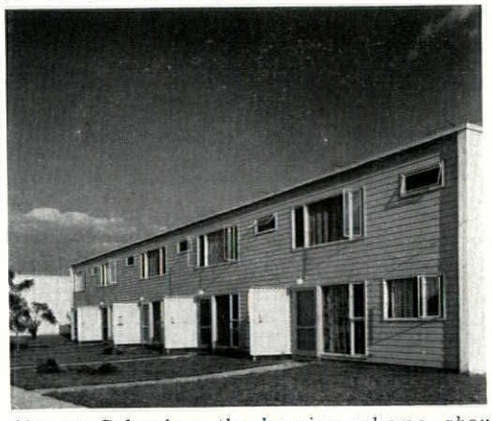




For Accra, Ghana, Harry Weese has designed an Embassy standing one storey off the ground on tapered concrete legs, and extensively sun-shaded by a parasol roof that overhangs ten feet. A similar approach is employed in housing designed by him for consular staff at Accra, left, but the Embassy has the accommodation arranged round an inner court, right.

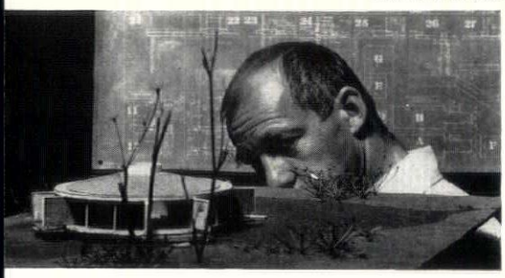


Northside Elementary School, Columbus, Ind., due for completion this year, has an almost traditional structure of load-bearing brick walls and tied wooden arch-trusses for the roofs.



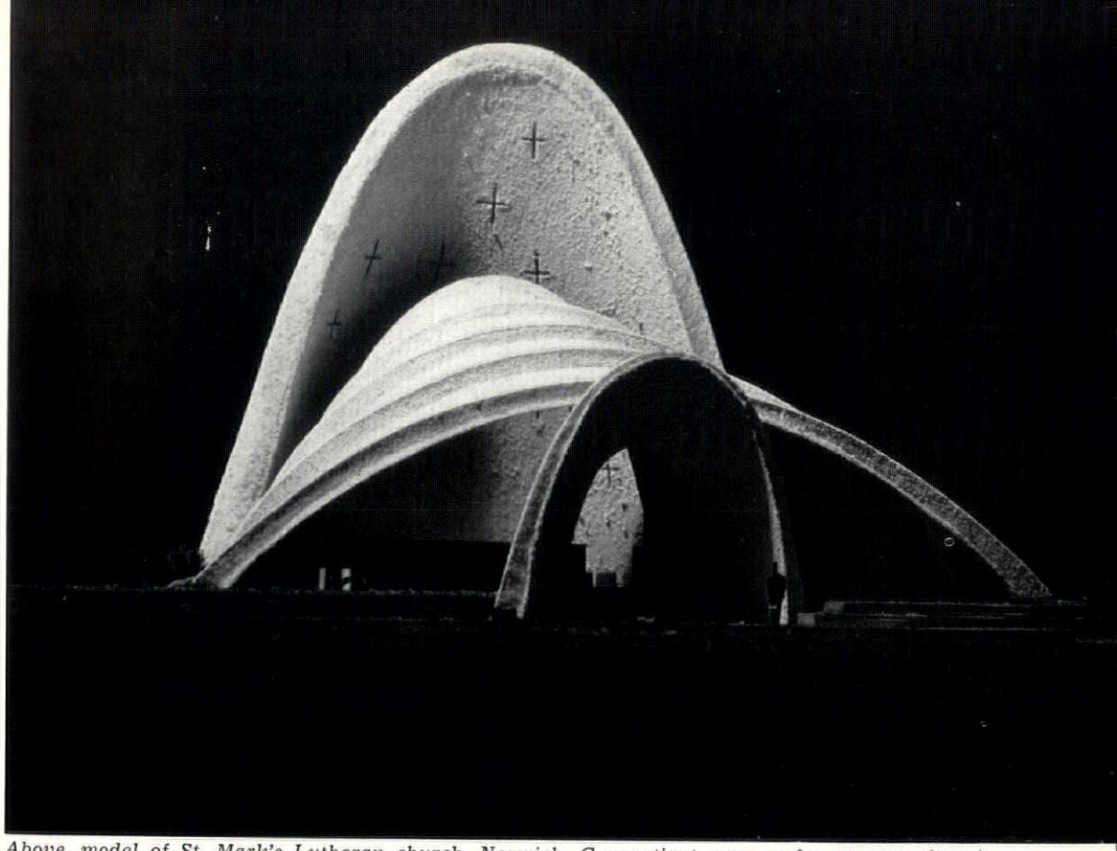
Also at Columbus, the housing scheme, above, is a rare American experiment with row-house development, whose tidy appearance is largely due to the use of mechanical aids (garbage grinders, washer-dryers) to eliminate the need for service access. Another approach to grouped housing is seen at right, the Walton Apartments, designed by Weese in 1955-6, in Chicago, Ill., a co-operative



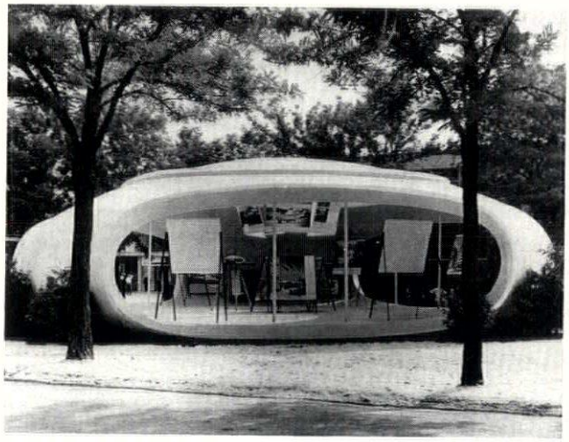


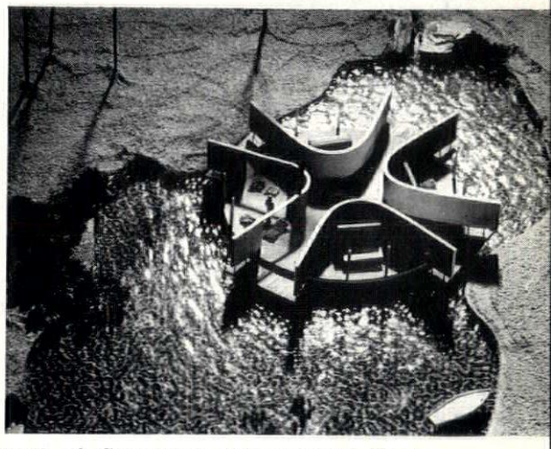
John MacL. Johansen was born in New York in 1916; both his mother and his father were portrait painters. He studied at Harvard under Gropius and Breuer, who, along with Le Corbusier, were his main influences at that time. Later he worked in Breuer's office and at Skidmore, Owings and Merrill. Now he teaches at Yale and has an office with a staff of five at New Canaan, Connecticut, working mostly on houses, churches and experimental structures. Current admirations are Le Corbusier, Nervi and Palladio. He lists influences on American architecture now as: Mies' rationalism in the use of the steel frame; Corbusier's plasticity with concrete; Wright's way with houses; the engineering ideas of Nervi and Candela; the strut construction of Buckminster Fuller, and two other outside influences deriving in the first place from a study of the relevance of the work of past masters to contemporary problems of design and in the second from the impact of other continents on American architects who have received State Department and other overseas commissions (he has himself been appointed architect for the new American Embassy building in Dublin).

Johansen sees a division between the design approaches involved in structural methods employing custom formwork or spray techniques and those employing rolled, extruded or pre-cast parts. The only exception is the three-dimensional space-frame which, though made up of prefabricated parts, can be irregular in volume, outer form and, even, discontinuous. He considers that structural invention is developing faster than most architects can digest it, and though the race between architects to be the first to use a new form has its unfortunate aspects, it is the result of a natural excitement and pride in innovation. Rapid communications and the hope for immediate recognition are partly to blame where architects have employed the new engineering ideas inappropriately; but there is also a failure on the part of the critics properly to evaluate the end result. The passing of time will no doubt see a number of currently acclaimed American buildings finding their rightful, and rather lower, place in the scheme of things.



Above, model of St. Mark's Lutheran church, Norwich, Connecticut, now under construction, in a combination of cast and sprayed concrete.

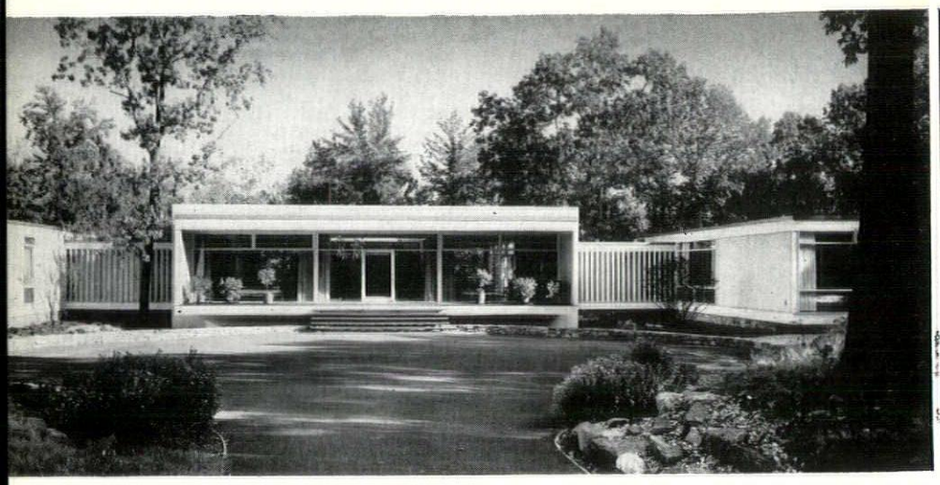


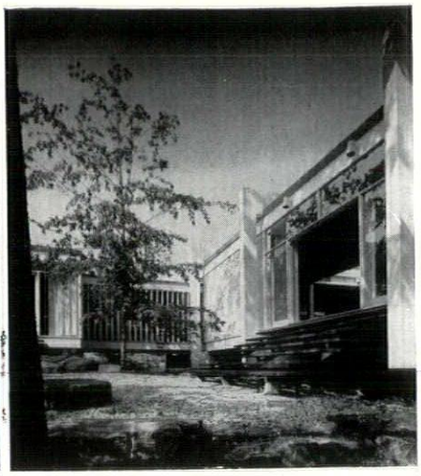


Above left, Architecture Pavilion for the US Department of Commerce, International Trade Fair, Zagreb, Yugoslavia, 1956. The experimental construction was cement sprayed on to an armature of steel pipe, rod and expanded metal: the steel was prefabricated in the US. Above right, model for a Lake-dweller's house with roof removed; it was inspired by the Philosophers' Pavilion at Hadrian's Villa; it would have a concrete saucer floor and saucer dome roof.

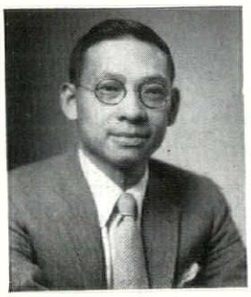


Above, Warner house, New Canaan, Connecticut, built over a stream and of 6,000 square feet floor area; structure, concrete and stuccoed concrete block; arched roofs are of wood.





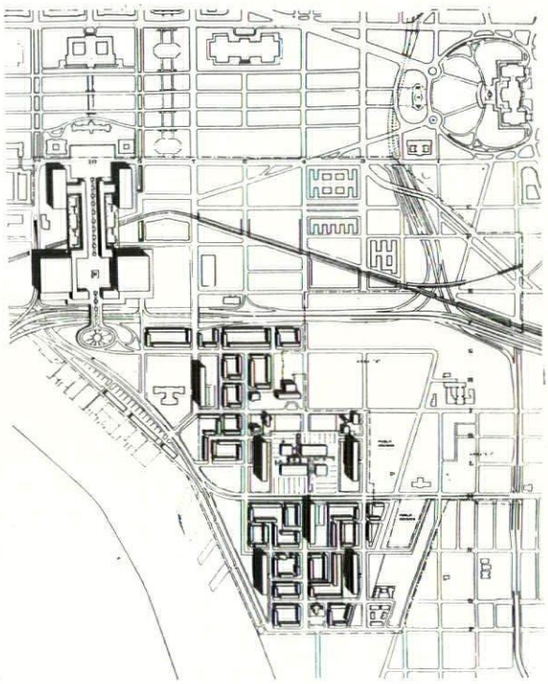
Johansen (cont.)
Extreme left, entrance, and left, garden side of the Goodyear house at Darien, Conn. The 7 000 sq. ft. are disposed on one floor in a central block and flanking pavilions ; an arrangement that Johansen acknowledges to Palladio. The structure is wood frame and stucco on a stone base, with laminated wood beams spanning 48 ft. clear in the centre block.



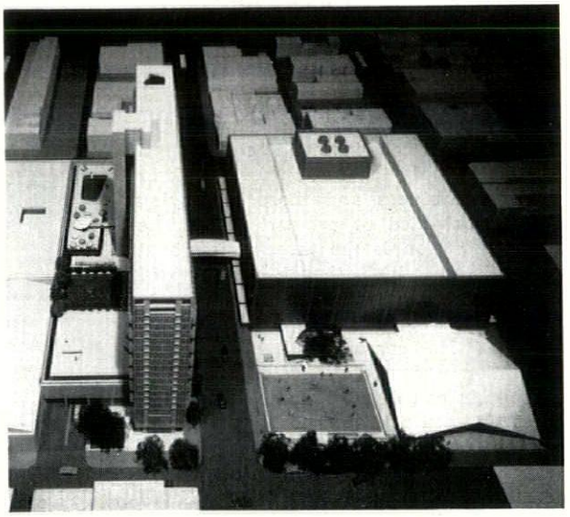
40

New York City

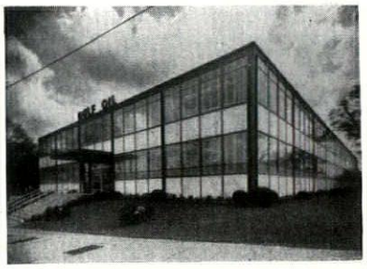
I M Pei, from Canton, China, decided to become an architect in 1933, at the age of 16, on seeing his first skyscraper under construction—the Park Hotel, Shanghai. He went to MIT in 1935, and studied architecture there and (in 1942-3) at the Harvard Graduate School of Design. His great admiration then was Le Corbusier, is now Picasso. His first major independent commission—and first demonstration of businesslike qualities—was the Gulf Oil Building in Atlanta, Georgia, which had to be built within $8 per square foot, air-conditioned, and turned out at seven-fifty. His second commission was for the 'fabulous' offices of the Webb and Knapp organization, illustrated opposite, the first fruit of his working collaboration with William A. Zeckendorf, head of Webb and Knapp and leader of the Enlightened Realtors, for whom he also designed Mile High Centre in Denver, Colorado, and the Roosevelt Field Shopping Centre on Long Island. Pei's office concentrates mostly on commercial buildings and urban redevelopment projects and currently includes four associates and thirty-eight architectural and planning assistants.



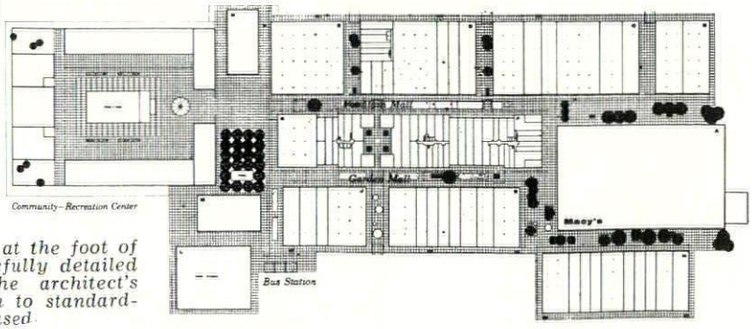
A large part of Pei's work is at present concerned with urban redevelopments either on the large scale of town-planning, as in the South West Washington scheme, left, which typifies the formality and local symmetries of his work in this field, or on the small scale of rebuilding city blocks. The classic of the latter type is Mile High Centre, Denver, Colo., which will soon have as a near neighbour the Courthouse Square redevelopment, below and opposite centre, housing a hotel

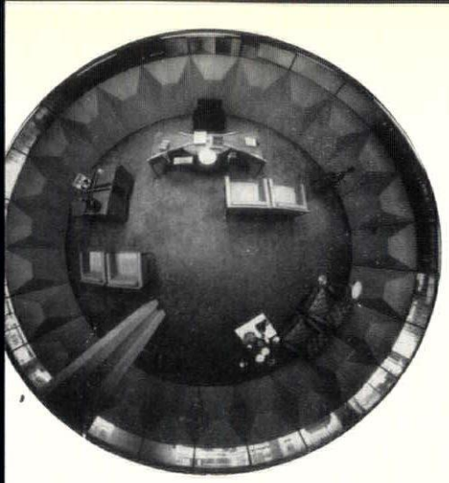


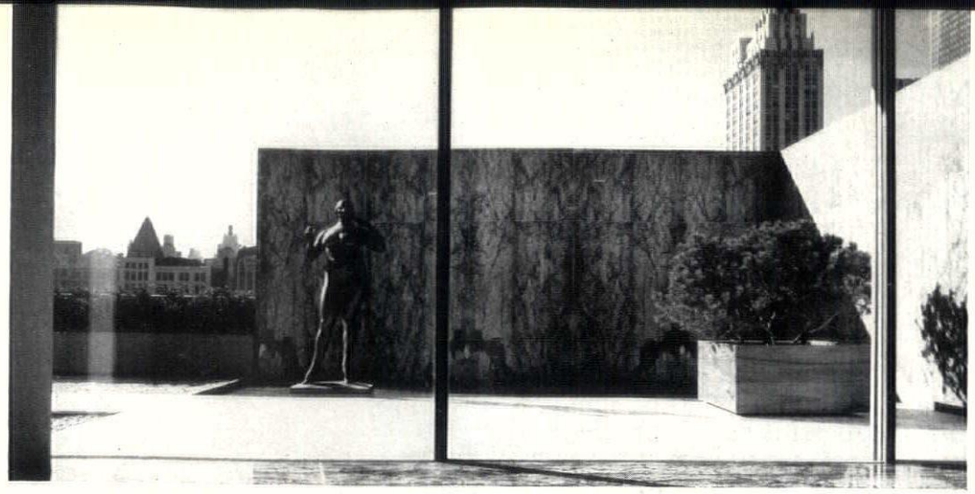
in the tall slab and a department store in the lower block.



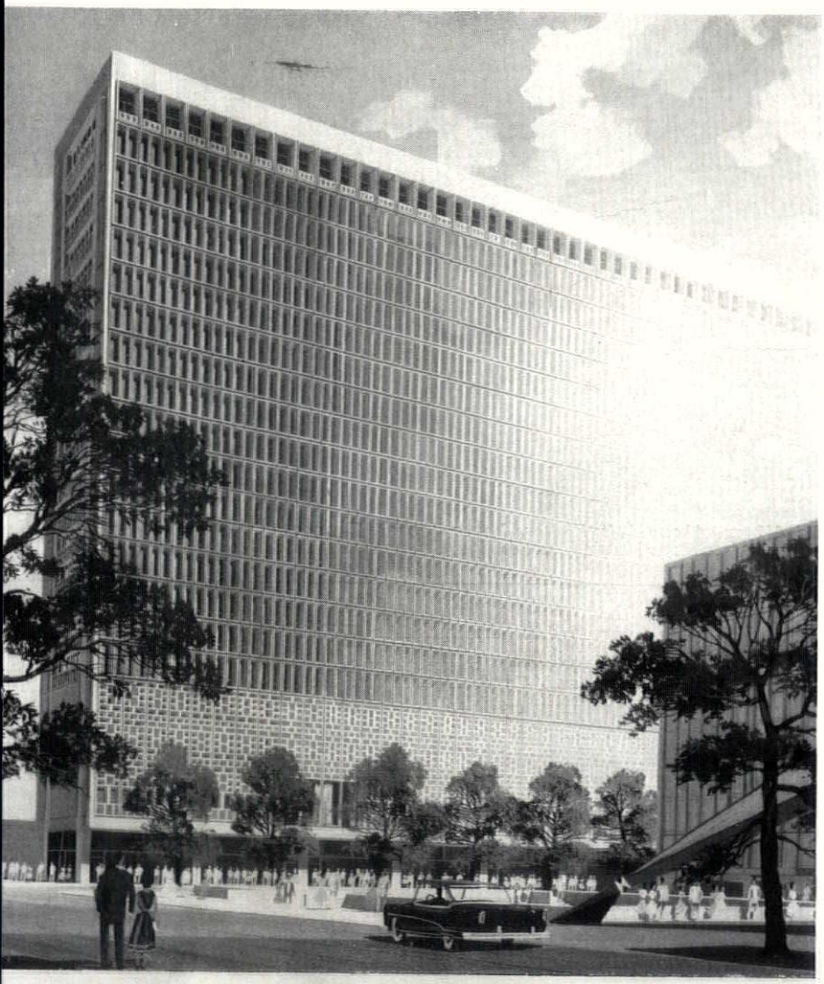
Pei's first important commission was the Gulf Oil offices, Atlanta, Ga., an economical, ingenious and visually straightforward administrative building, above. He has also contributed a distinguished exemplar to the growing body of exurban shopping centres ; at the right is the plan of the Roosevelt Field Shopping centre, Long Island, with views along its malls at the foot of the opposite page, showing a carefully detailed pedestrian street-scape where the architect's responsibility extended down even to standardizing the types of lettering to be used

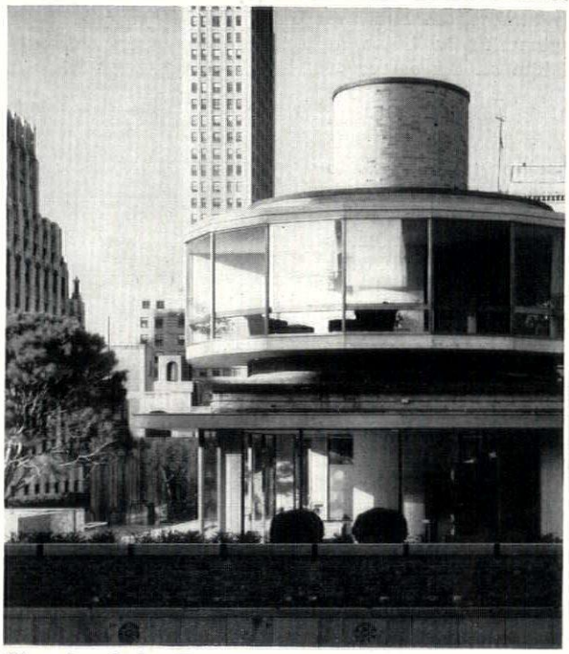




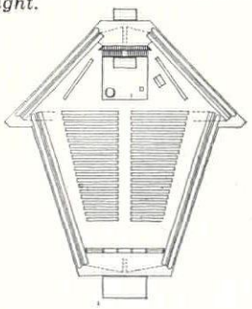


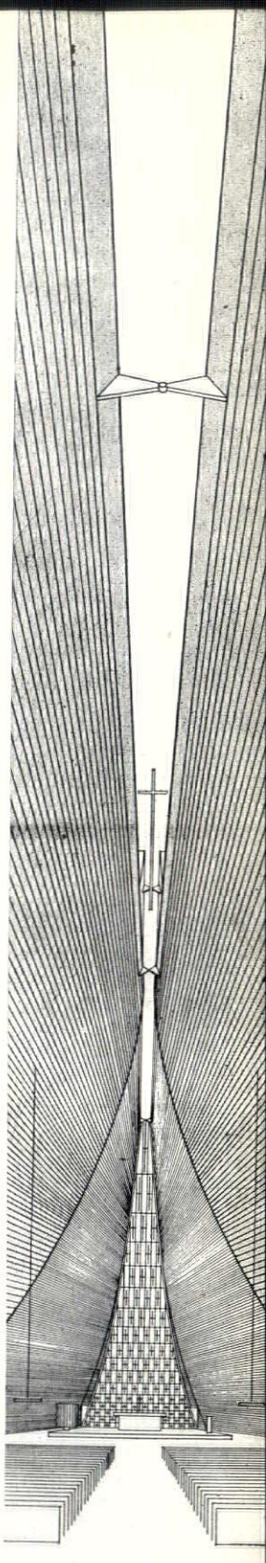
Pei (cont.) *For Webb and Knapp, financiers of many of the schemes he has designed, Pei created a spectacular office-suite in New York; left is a view down into the presidential office, above right, the roof terrace, right, the semi-circular dining-room with skyline panorama.*





The chapel for Tunghai University on Formosa will be one of Pei's most unusual structural adventures; on plan below, an irregular hexagon, it will be enclosed by two pairs of warped mutually-supporting laminated wooden surfaces, leaving a narrow skylight open along the central ridge, right.









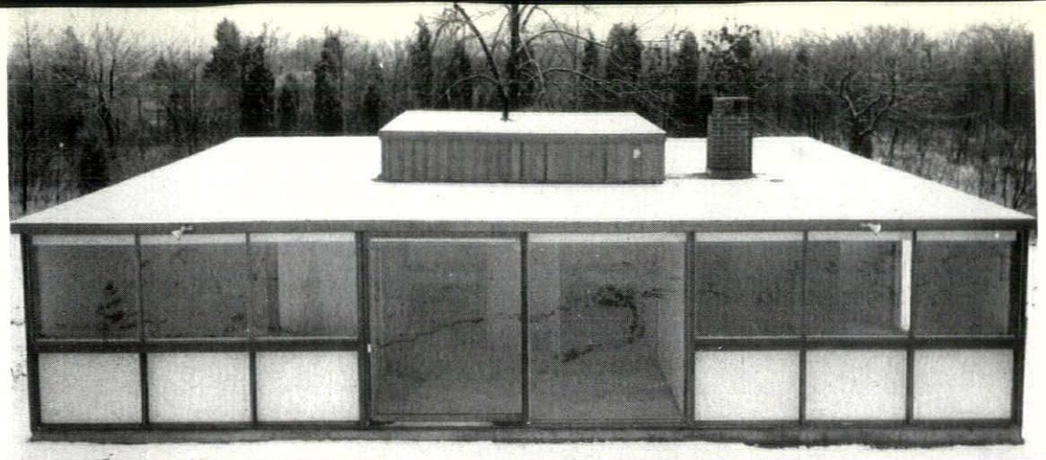


39

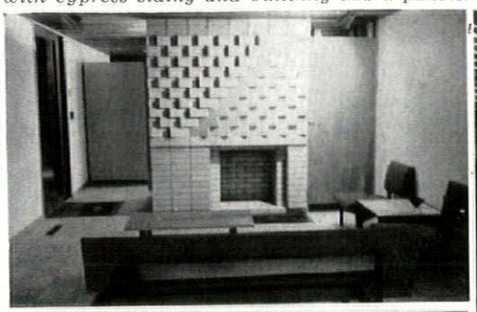
New Haven, Connecticut

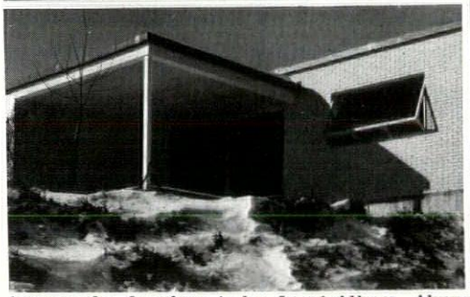
King-Lui Wu was born in Canton, China, in 1918. His father refused to be called a businessman and spent a great deal of his time painting and writing poetry; this home atmosphere and the importance of engineering in China at that time decided him on the career of architecture at the age of sixteen. He entered the University of Michigan in 1937, for a year, and then went to Yale until 1942, when he transferred to Harvard and spent two years with Gropius and one with Martin Wagner (town planning). At that time two books made a strong impression, Whitehead's 'The Aim of Education' on his mind, and the eighteenth century Chinese novel 'The Red Chamber Dream' on his emotions.

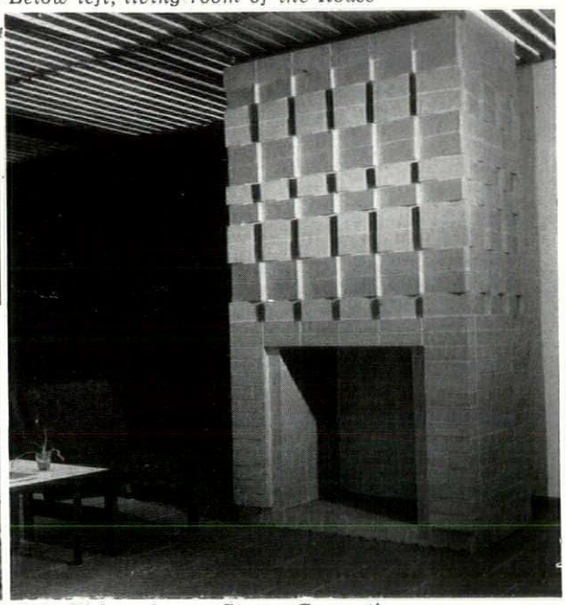
His first commission was a big one—to rebuild Yale-in-China in Changsa. It included a public school, part of a medical centre and a group of faculty houses totalling over a million dollars. He went to China in 1947 and completed the designs there that year, returning to Yale to have them accepted in 1948; the project was a casualty of the revolution. He now has an office in New Haven, Conn., where he is also associate professor of architectural design at Yale.



Above, Rouse house, North Haven, Connecticut, 1955. Construction is post and beam with cypress siding and building board panels. Below left, living-room of the Rouse







house; the fireplace is by Josef Albers. Above, left, Rickers house, Storrs, Connecticut, 1956. Above right, fireplace in the du Pont house, Woodbridge, Connecticut, 1957.



38

Cambridge, Massachusetts

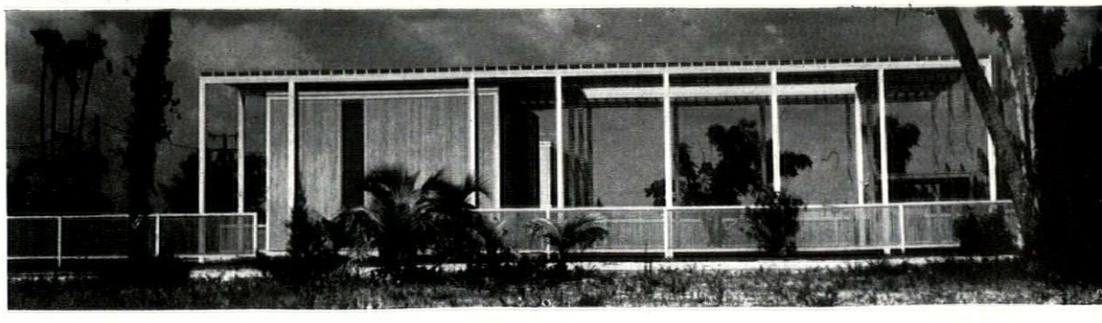
Paul Rudolph was born at Elkton, Kentucky in 1918. His father is a parson; both his mother and his sister are painters. He studied architecture at the Alabama Polytechnic Institute from 1935-40 and then before going to the Harvard Graduate School of Design in 1940 worked in the office of E. B. van Keuren, where he discovered he knew neither how to make working drawings nor how to put materials together; this was such a shock that he literally found it hard to talk for almost a year, but in the ensuing silence he managed to learn a great deal. From 1943-6 he was Officer-in-charge of ship construction in the Brooklyn Navy Yard, and returned to Harvard in 1946 for a final year. The teaching of Walter Gropius and the writings of Sigfried Giedion made the strongest impression at this time. During 1948-49 he travelled in England, France, Italy, Switzerland and Belgium on a Wheelwright Fellowship.

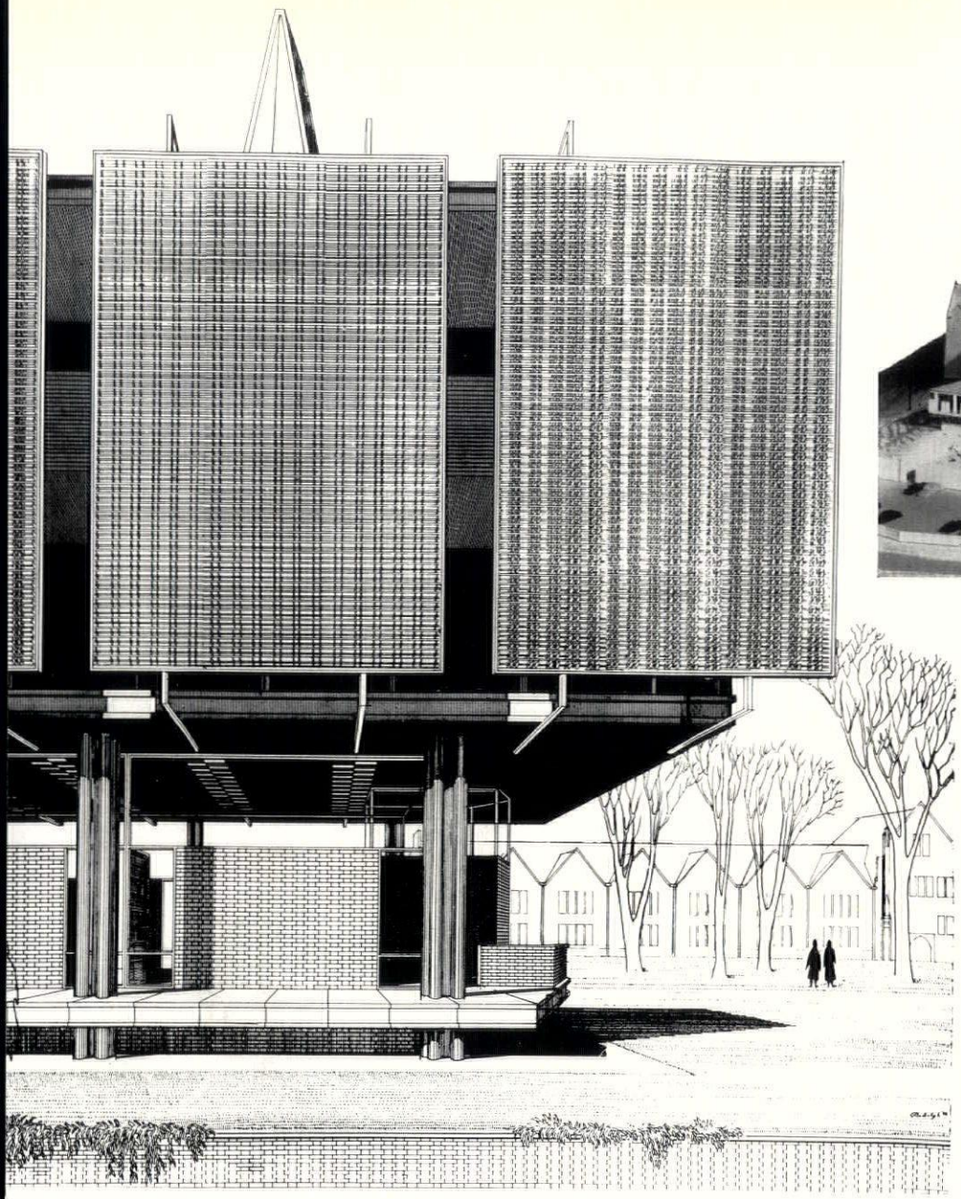
His first commission was a house for a language professor at Alabama Polytechnic Institute at Auburn, Alabama; it was completed in 1940, but Rudolph now considers the conception, right down to the detailing, very naïve indeed. By the time the second commission, a house on the west coast of Florida, completed in 1946, came he had set up in partnership at Sarasota, Florida, with R. S. Twitchell, the partnership terminated in 1952. The total staff is now eight, with offices in Sarasota and Cambridge, Mass. He has been visiting critic at about a dozen schools of architecture in the USA.

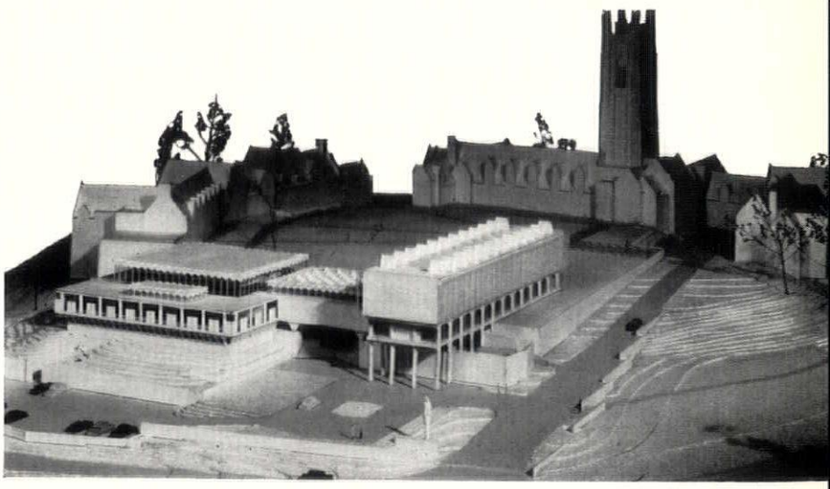
Although Rudolph's published thoughts often refer to European buildings and town-planning, they are specifically oriented to American problems—'We tend to build merely diagrams of buildings. The diagram consists of regularly spaced bays, with the long sides filled

[*continued on page* 380

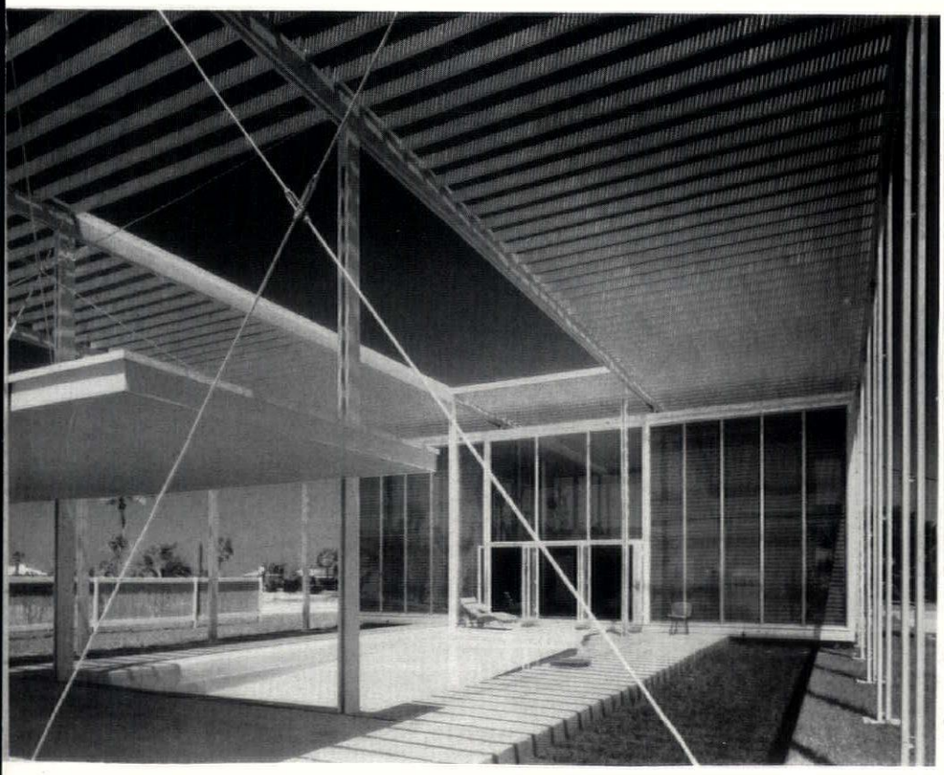
Typical of Rudolph's light-touch with timber is the 'Umbrella' house below and bottom left, facing page, at Lido Key, Florida. The 3,000 sq. ft. latticework sunshade covers both pool surround and house over which it floats leaving a 2 ft. airspace. The house itself is a two-storey structure 44 ft. by 25 ft. Bottom right, facing page, lookout platform at the Sanderling Beach Club, Florida, another example of gracefully poised, tie-rod-braced timberwork.







Rudolph (cont.) *Above, model of the Mary Cooper Jewett Arts Centre, by Paul Rudolph, for Wellesley College, Massachusetts. In his design Rudolph has aimed to follow the basic traditions of the campus, which are: 1, major buildings sited on hills, leaving the valleys in their natural state, 2, buildings grouped in clusters round courtyards, with the space between clusters unimpeded, 3, elaborate silhouettes, with facing materials of brick and limestone and formal emphasis on the vertical. The square building (to the left in the model) comprises a classroom and auditorium core standing free in a clerestory-lit covered courtyard surrounded on two floors by practice and listening rooms, library and offices. A bridge exhibition gallery leads to the art building (classrooms, library and offices, study rooms and studios, on four floors) the south-east corner of which is shown in the drawing on the left. The projecting grilles are of porcelain-enamelled aluminium, 'a kind of built-in ivy': other ways in which the design carries out the requirements of the third tradition listed above are: 1, a module of 15 ft.; the same as the existing buildings, 2, similarity of heights between old and new blocks and subsidiary elements, 3, the use of red brick and precast concrete with limestone aggregate, 4, silhouette provided by prism-like skylights, 5, intimate scale* *(see also page 390).* *Associated architects: Anderson, Beckwith and Haible; David Johnson, job captain. Landscape architects: Sasaki and Novak. Structural engineers: Goldberg, Le Mesurier. Associates: Electrical and mechanical engineers: Stressenger, Adams, Maguire and Reidy. Acoustical consultants: Bolt, Beranek and Newman.*





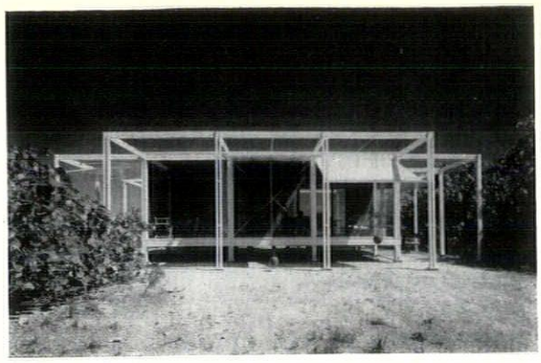
continued from 378

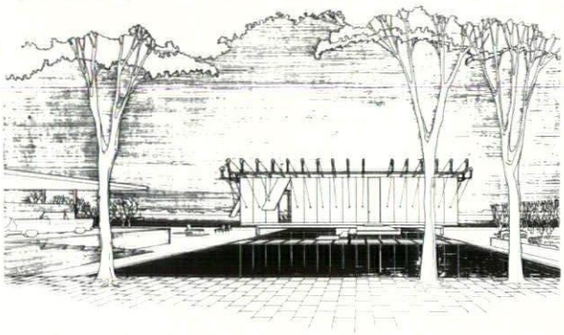
with glass, and the end walls filled with some opaque material. If we raise it on pilotis we might even snare an important prize.'

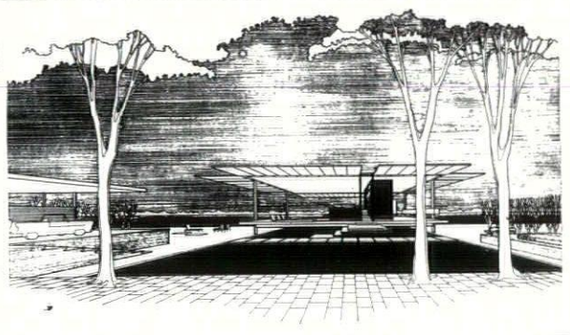
He takes a poor view of the disruptive influence of technical specialists on the architect's unity of conception, and an even poorer one of America's illogical set-back rules and unfocused townscapes. His concern for the relation of one building to another is a subject on which he frequently invokes the Old World to redress the unbalance of the New. Like Mies he has directed attention to the problems of reflectivity in glass façades, and like Mies he has experimented with models to investigate visual effects—the relationship of the new campus buildings at Wellesley to the old ones, and to the eye of the visitor approaching by road—about which theory and the drawing-board are silent. (See also page 393.)

'What the architect has to offer in the final analysis,' he believes, 'has not changed through the centuries. Only the means change, not the end.'

Rudolph (cont.) *Right, the Walker guest-house, Sanibel Island, Florida. It was one of a number of houses chosen by* Architectural Record *(February, 1957) as representing 100 years of significant building, and John Knox Shear writes in this connection, 'in a sense it almost sums up the principal characteristics of Paul Rudolph's contribution to date: its fine, spare frame is carefully scaled; the total structure—in plan or profile—presents a simple, retainable image; its voids and solids produce a rich play of light and shadow . . . its moving flaps permit a flexibility in use and in appearance; . . . (it is) an architecture developed out of disciplines and concerns which transcend the local and the immediate.' Below, exhibition house for the Home-style Center, Grand Rapids, Michigan, with wall panels suspended on counterbalanced pulleys.*





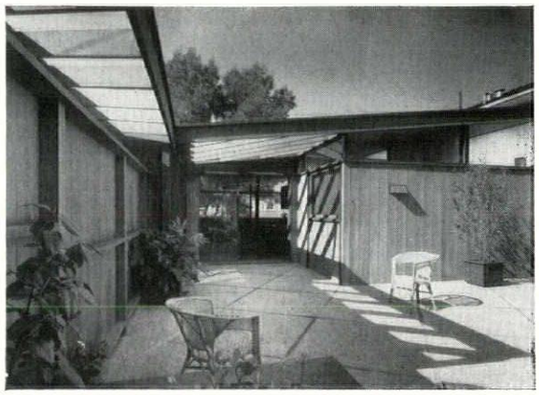


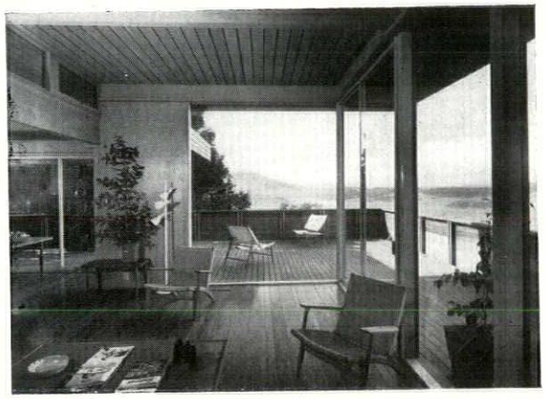


37

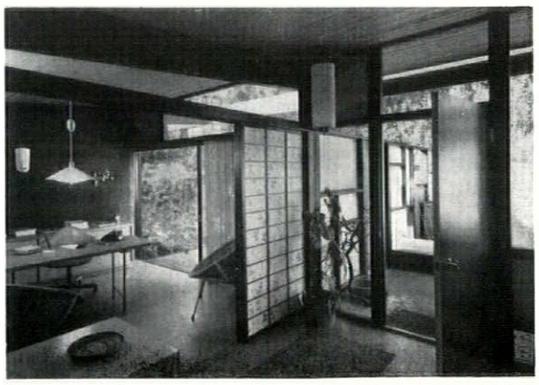
Berkeley, California

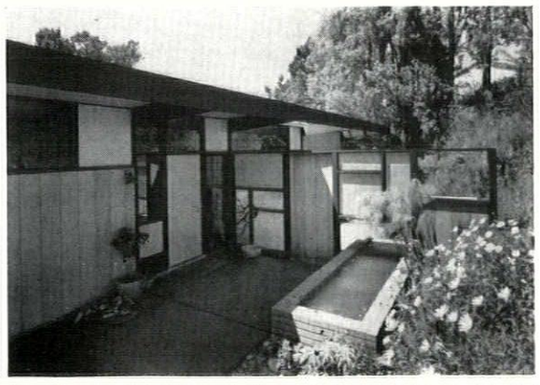
Roger Lee was born in San Francisco in 1920. He studied architecture at the University of California, qualifying in 1941, after which he worked with the US Army Engineers. After the Army he worked for a year in various architectural firms in Los Angeles, and then for two years in San Francisco as an associate to Fred Langhorst. Now he is in private practice across the bay in Berkeley. He has always been interested in good design at a low cost; an early example of this is his own home which he built in 1948, right and below. It combines red-wood beams, planks and posts with corrugated aluminium.



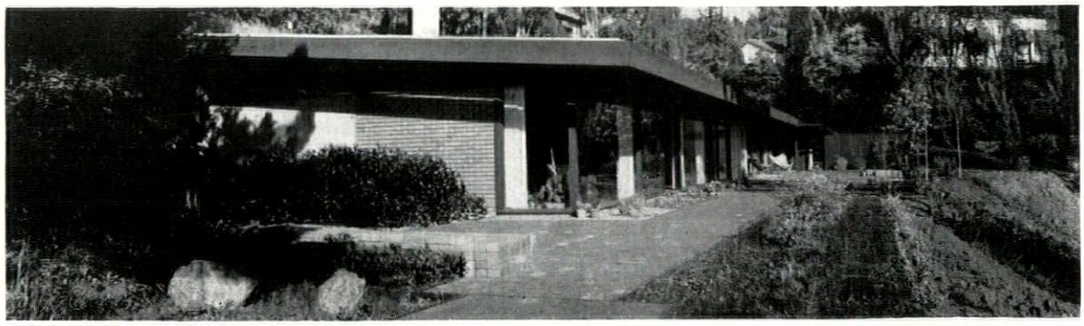


Above, left, the Elizabeth Perry house, Berkeley, California; one-storeyed and on a sloping site. It is timber-framed, and the openwork structure shading the patio, the ceilings and internal walls are redwood, internal screens are plastic. Right, the Channing house, Sausalito, California, which looks west over San Francisco bay, also timber framed, with exposed Douglas fir plank and beam roof.





Roger Lee's own house near San Francisco. The site slopes steeply and the entrance, left, is on the upward side, adjacent to it being a study-office, which can be closed off by a sliding screen of shoji panels. Right, the entrance, showing the brick-paved approach walk and the plastic panels that screen a small patio for the study behind. Below, the garden front, with sliding glass walls.

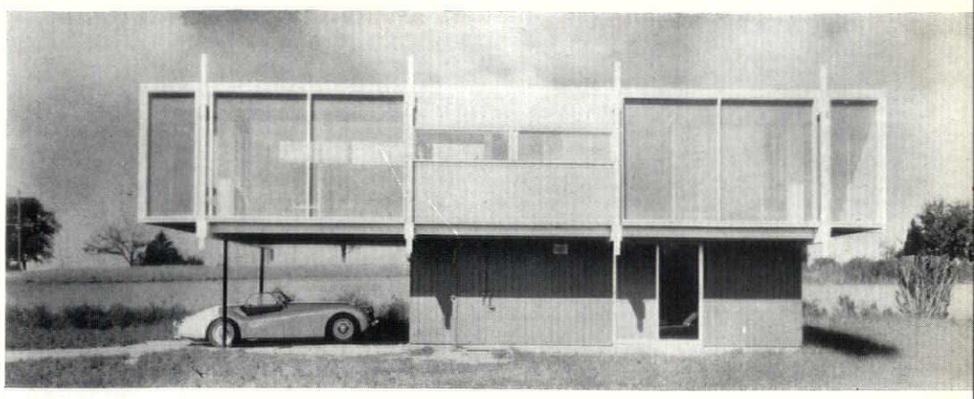




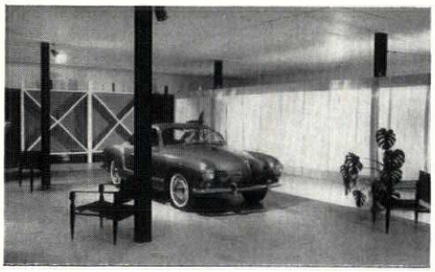
37

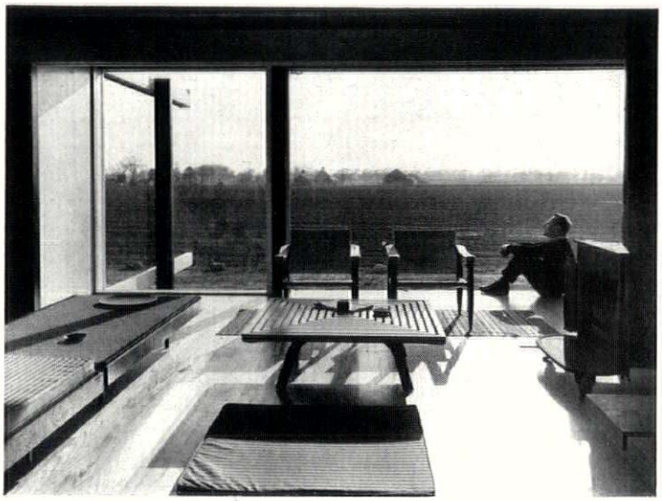
New York City

Peter Blake, born in Berlin in 1920, has had a brilliant zig-zag career around the fringes of the US architectural profession. He arrived by way of Serge Chermayeff's office and the Regent Street Polytechnic in London, and later studied at the Pratt Institute, but is still not a paper-qualification architect. On the other hand, he has been curator of architecture and design at the Museum of Modern Art, an associate editor of the *Forum* and is now Architectural Editor of *House and Home*. Making the best of both worlds, he has to his credit as designer or associate designer a number of houses, conversions and additions, including an ingenious open-and-shut house for himself, and a showroom for Volkswagen, while remaining a telling opinion-maker in the tough (but influential) field of merchant-builder housing through the pages of *House and Home*.

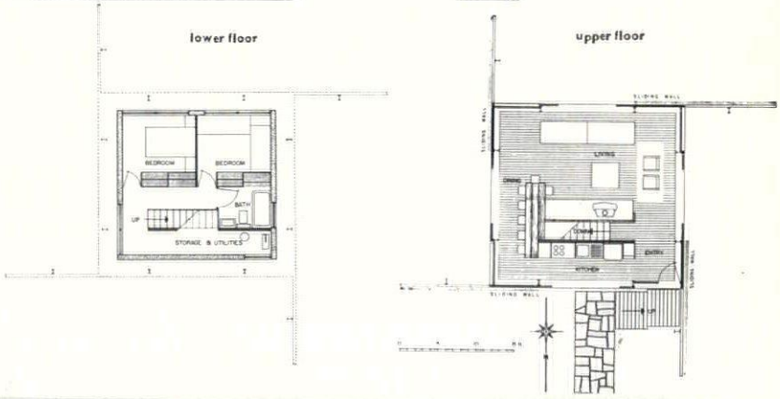


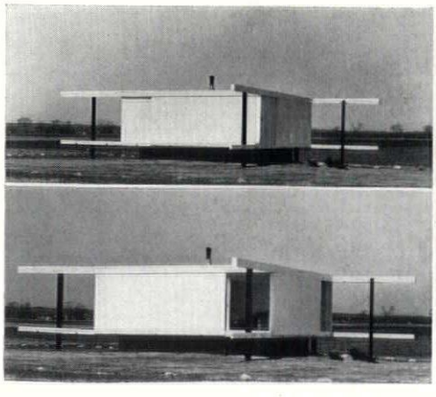
Above, the Russell house, Bridgehampton, Long Island; a timber structure supported on 3½-in lally columns; external wall finishes are horizontal siding for the ground floor and plywood, fibreglass screening and asbestos for the first.

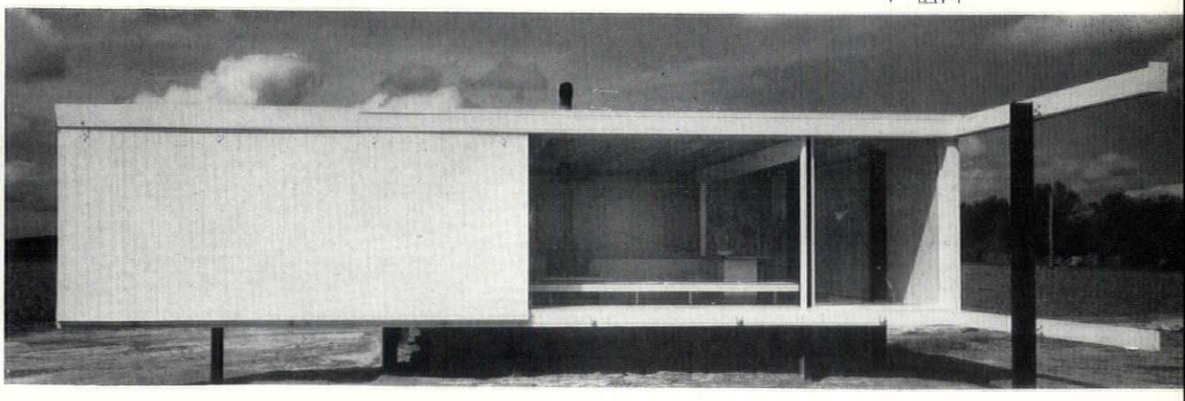




Above, the Volkswagen showroom, Bridgehampton, Long Island, which Blake remodelled in association with Richard Stark. Below and above right, Blake's own pinwheel holiday house on Long Island. The living area on the upper floor is 24 ft. by 24 ft. Each wall of the house consists, reading from left to right from inside, of a 6-ft.-wide fixed glass panel, a 12-ft.-wide opening that can be screened, and a 6-ft.-wide wall panel faced with plywood. The key to the pinwheel system is an 18-ft-long and 8-ft.-high sliding wall, hung from an overhead track, one on each side of the house, which can cover or open the 12-ft. centre openings. Structure is twelve 15-ft. light steel I-beams set into a steel drum filled with concrete, the purpose of using steel being the need for windbracing. The sliding walls, sub-floor and roof-decks are plywood. The house cost $8,300, and took eight weeks to build. Above right, looking out from the living area; below, three views showing the sliding walls in various positions. Paul Weidlinger was the structural engineer.









36

New York City

Ulrich Franzen was born in the Rhineland in 1921; his family (father, writer; mother, psycho-analyst) emigrated to the USA in 1936, where Franzen went to high school and learnt about 'co-education.'* At college (Williams), a small liberal arts institution in Massachusetts, with an excellent fine arts department, he gained insight into and enthusiasm for 'the quattrocento, High Scholasticism, the Renaissance, the Baroque and Wölfflin', all of which, he considers, has become part of his equipment as an architect. Wright's theories of organic architecture made a strong impression during college years and, although he still doesn't understand their meaning, he thinks he's outgrown the damage they did. After military service in 1942-45, architectural training at Harvard, with Gropius and Breuer in the saddle, was a cleansing process and a beginning. A commission followed immediately afterwards; but the small private practice that grew from this was ended by the Korean war and Franzen moved to New York, into the office of I. M. Pei.

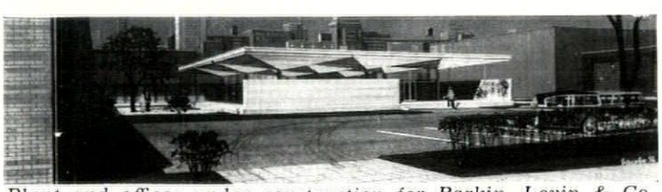
His present office, started in 1955 with an accumulation of residential and commercial commissions, has a staff of five assistants. Franzen's inclination is for quality work with a stress on personal service.

His admirations are Mies, Corbu and Gropius (Breuer was important in the formative years) with esteem for Philip Johnson growing.

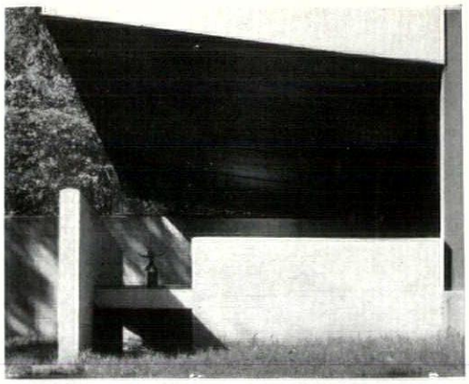
He sees no validity in regional differentiation in American architecture today ('The difference from area to area is only the difference of running the air conditioner three weeks or three months of the year.'). Stylistic cleavages he distinguishes as 'constructionist' and 'mannerist or eclectic', citing Saarinen as an example of the latter predicament, which results, he believes, from missing the 'Bauhaus mill' and the influence of cubism.

Franzen feels a compulsion to resolve the problem of equilibrium in visually comprehensible terms, and thinks that once an architect has a sixth sense for systems of construction and a grammar of detail to draw on, personal expression can be channelled more productively.

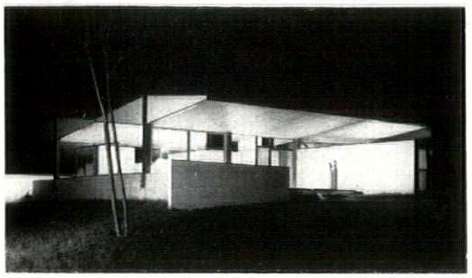
*Franzen thought of becoming a painter but his mother warned him against the Bohemian life and so architecture seemed preferable.

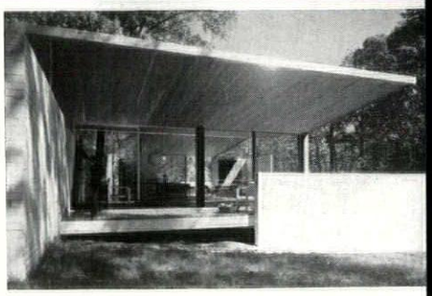


Plant and offices under construction for Barkin, Levin & Co., New York City. The steel umbrella structure on concrete platform is linked to a sealed manufacturing unit on the right.

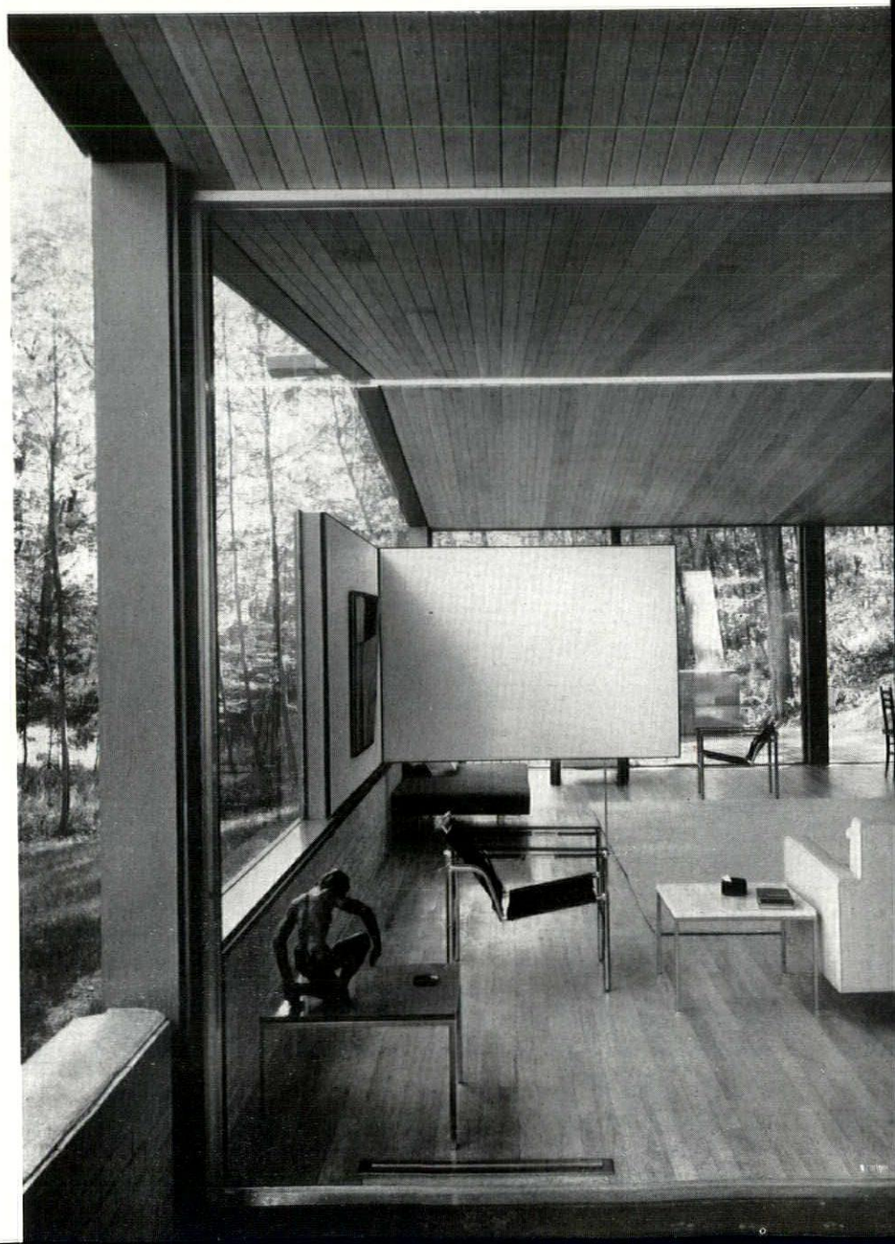








The Arthur Murray house, 1956, overlooking Long Island Sound, is a pavilion of prefabricated steel umbrellas, joined as three hinged arches. The walls of the living area (below) are fixed glass on the garden side and sliding glass at either end, leading on to the terraces. The bedrooms, top right, have brick walls with continuous glass strips above, butt-jointed at the corners. Top left and above right, one of the terraces. Above left, night view of the house. Facing page, top, general view from the garden; below, the bedroom elevation.

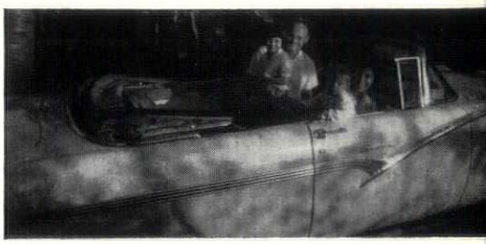






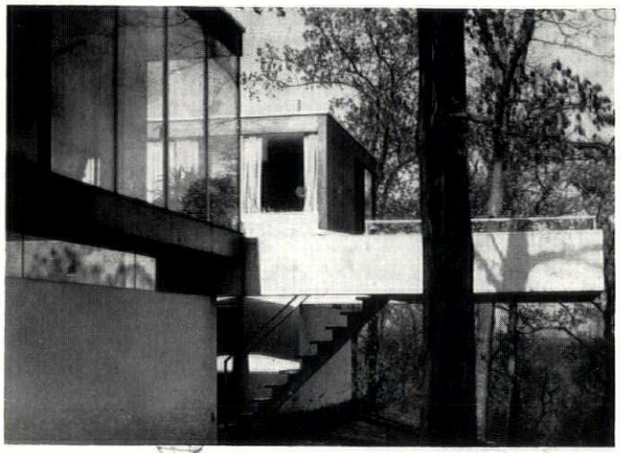
35

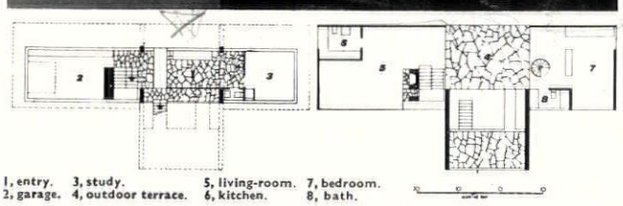
Sarasota, Florida



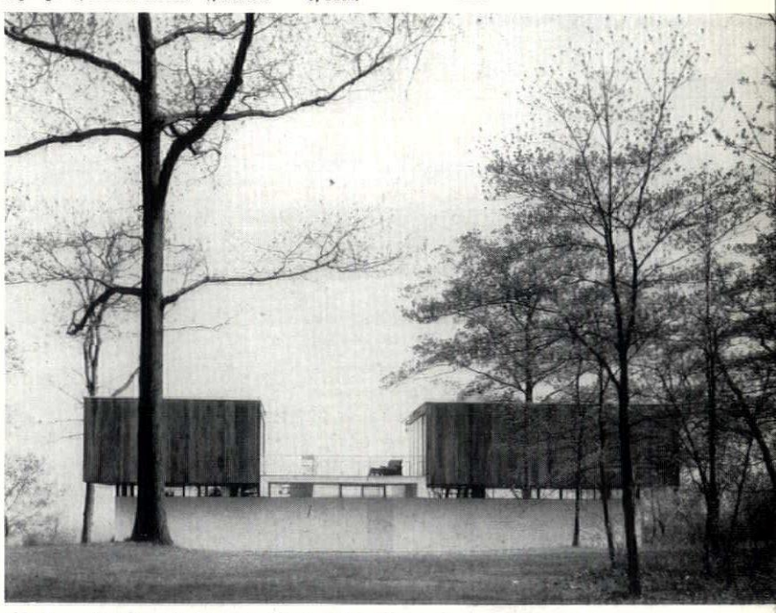
Reginald C. Knight was born in Grandfalls, Newfoundland, in 1921. His father is a craftsman, builder and pianist, who has designed and built churches, public buildings and sailing ships; his mother's family were ships' captains, sea traders and fishermen.

He grew up in East Aurora, New York, a beautiful small town in the western part of the state, now ruined by unplanned development and the cutting down, in 1937, of hundreds of American elms to widen the main street. He has always wanted to be an architect, and

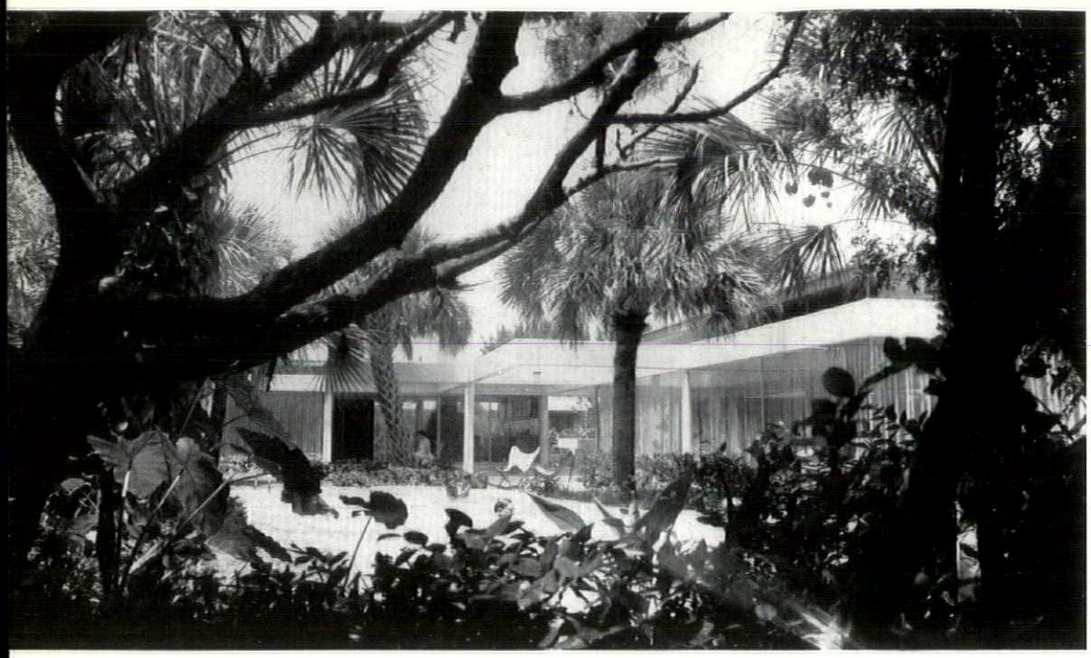




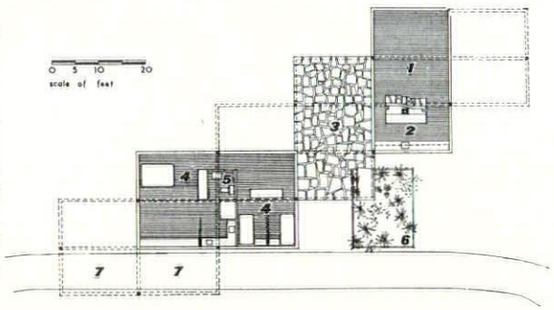
1, entry. 3, study. 5, living-room. 7, bedroom.
2, garage. 4, outdoor terrace. 6, kitchen. 8, bath.

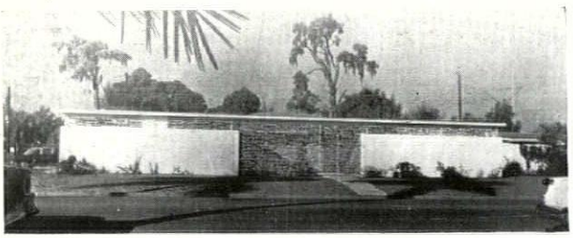


Above, the Swain house, Plainfield, New Jersey, situated on a high cliff, with a view of New York. The house is steel framed, the cladding is mahogany and the terrace is of random slabs of sawn white marble. Upper picture shows a terrace, connected to a higher one, seen in the view above.



Knight (cont.) *Above, the Stahl house, Siesta Key, Sarasota, Florida. The frame is reinforced concrete ; the roofs are laminated wood on an armature of steel pins set in the frame. Flashings are stainless steel, doors aluminium and terraces slate. Plan key : 1, living area ; 2, kitchen ; 3, terrace ; 4, sleeping area ; 5, bath ; 6, plant box ; 7, car port.*





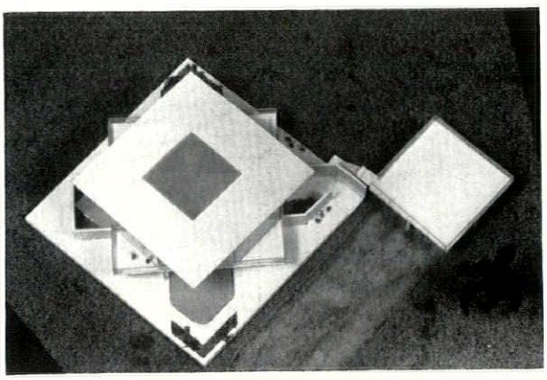
Left, the C. J. Morrison dental clinic and residence, Sarasota, Florida. The plan is three U-shaped white brick walls, two joined together to form a court between the living area and the clinic, the third at the back forming a garage and utility room. At the inner plane of the brick walls is a galvanized wrought iron screen, traversing all the windows and court openings. Roof rests on interior partitions and on 1-in. steel pins set in the outer wall.

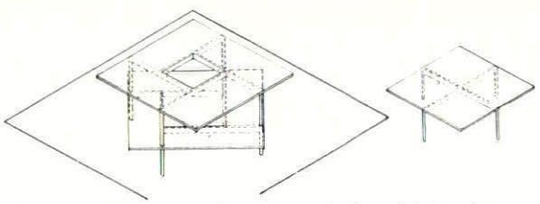
studied at Harvard, Columbia and Syracuse College of Fine Art. Knight is now on the faculty of MIT.

After qualifying he joined Skidmore, Owings and Merrill and worked, among other things, on the designs for Lever House. Since 1949 he has practised on his own in New York City and Florida.

He considers Le Corbusier's Chapel at Ronchamp one of the greatest works of art of our time, and its architect the greatest in the world, whose influence few will escape—perhaps for the next century. Frank Lloyd Wright he also admires and doesn't believe he and Le Corbusier to be as far apart as they are generally believed to be, because both men seem to him to be trying to put the human being at the centre of art. He wishes the public could see the need for collaboration from the start between architect, engineer, painter and sculptor.

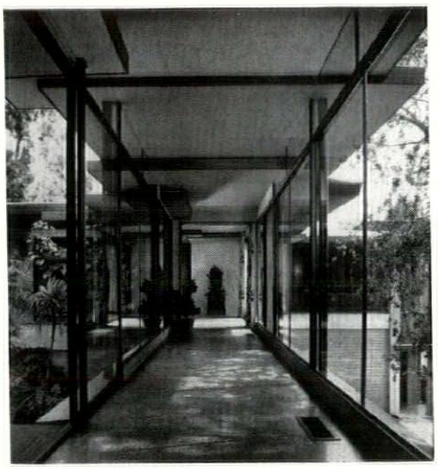
In America, he thinks the architects and planners are outranked by the financial and real estate experts. Ideally big jobs should be a matter of teamwork with the architect responsible for the total picture.



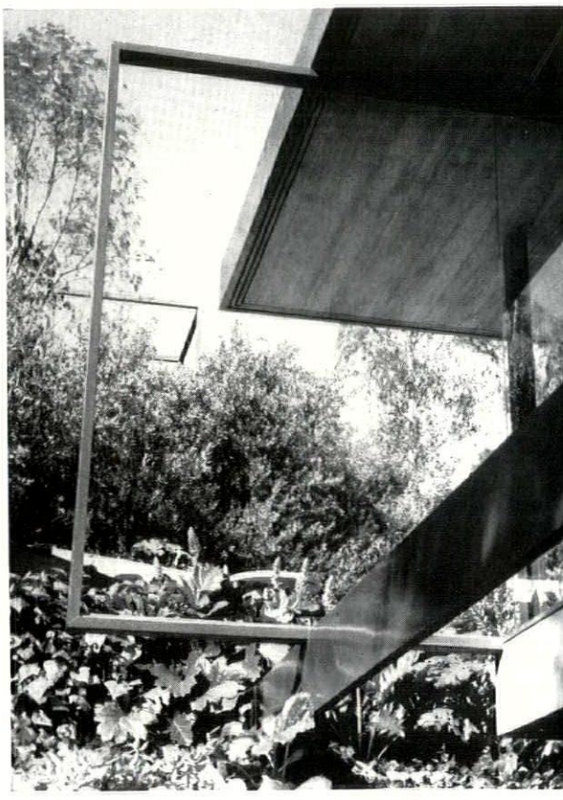


Above, model and diagrams of the Adams house, Sarasota, Florida. The house is of reinforced concrete on a large square base. The first floor is an entrance space over the swimming pool with a screen porch beyond. The upper floor has a square well through which the stair runs, and contains living-room and bedrooms, each with a terrace.

Thornton Ladd was born in Portland, Oregon, in 1924, and spent his childhood in Oregon and California. His chief interest was music, but at twenty-two he decided he hadn't sufficient aptitude for it and chose architecture, which he studied at the University of Southern California, afterwards working for a general contractor, and then in the offices of two architects. He now has two offices, in Santa Barbara and Pasadena, with a total staff of ten. The predominant aim of his office is to integrate architecture, interior design and landscape design into a single creative process, and in most of his work these three are carried through under his own close supervision.



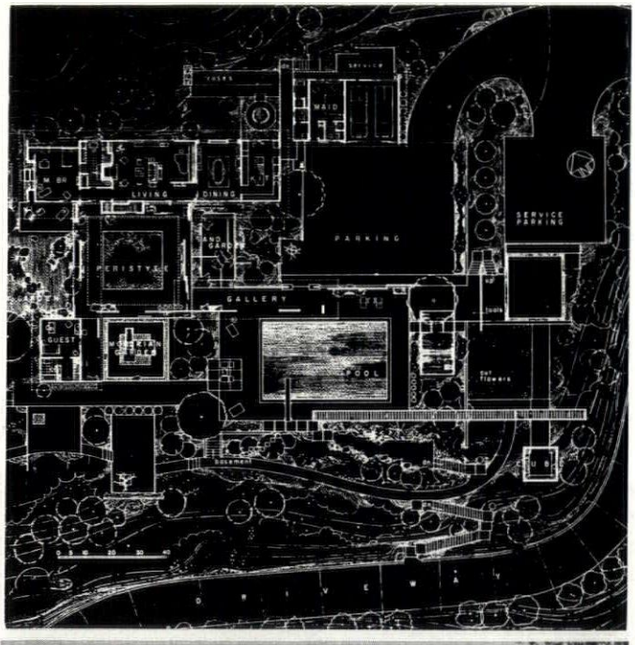
The Parker Lyon house, showing a connecting corridor on the upper level.



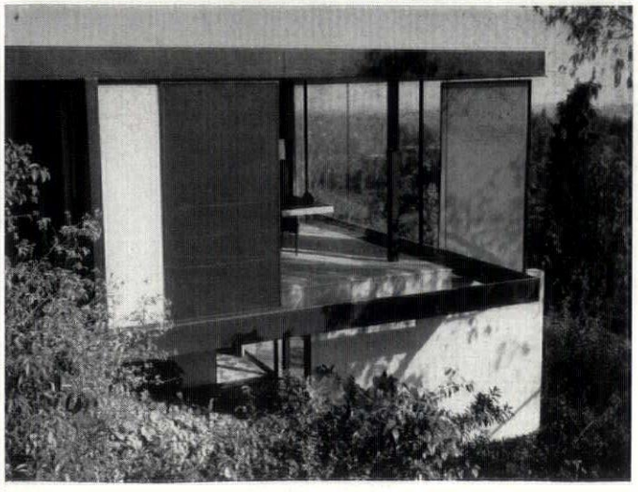


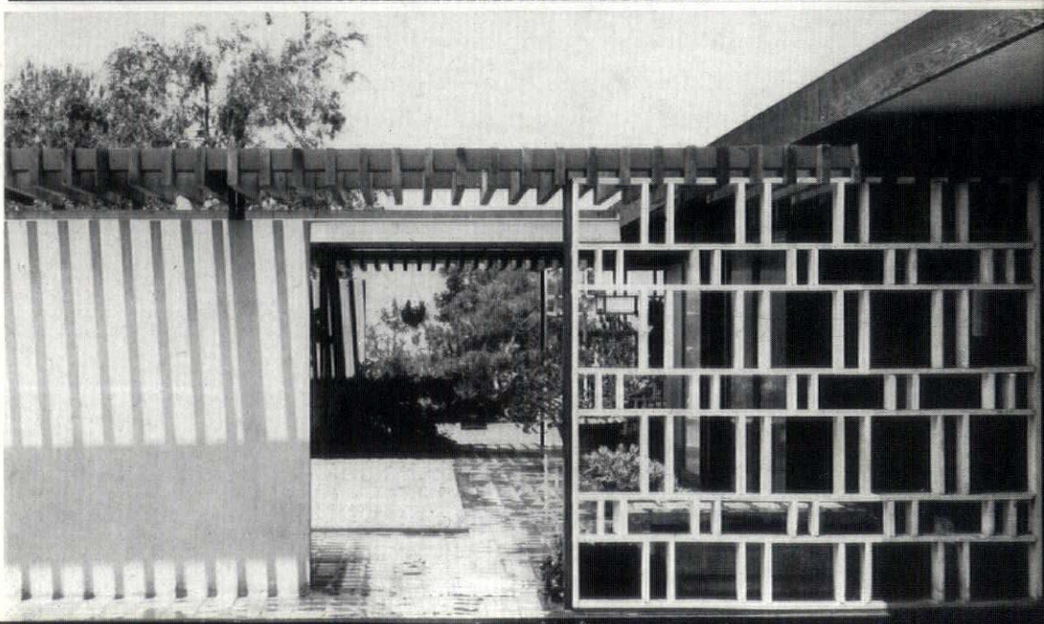


Above and bottom left (also bottom of facing page), studio in the garden of the Thornton Ladd house at Pasadena, California. In the plan, below, the studio is situated just below the drive at the foot of the drawing; it has a timber frame with fixed glass walls and sliding sun-control panels. The three views on the right are of the house and garden at the top of the hill and show, reading from the top, peristyle from entrance; the sand garden, with dining-room beyond; the peristyle from the sand garden: they reveal Thornton Ladd's successful attempt in this house to link the rooms of the house with a series of courtyard gardens, each possessing a different character and effect, though linked together to provide a consistent progression.







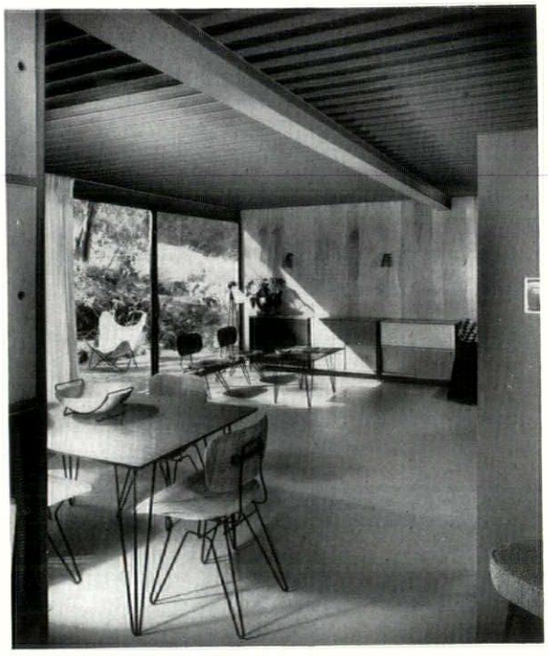


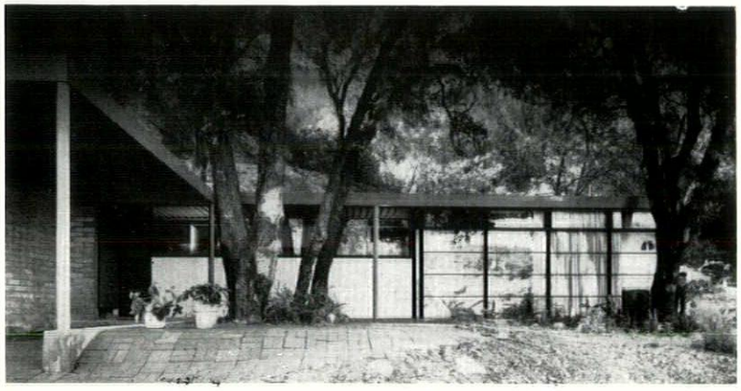


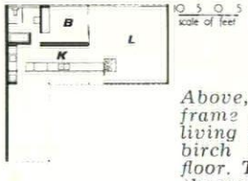
32

Los Angeles, California

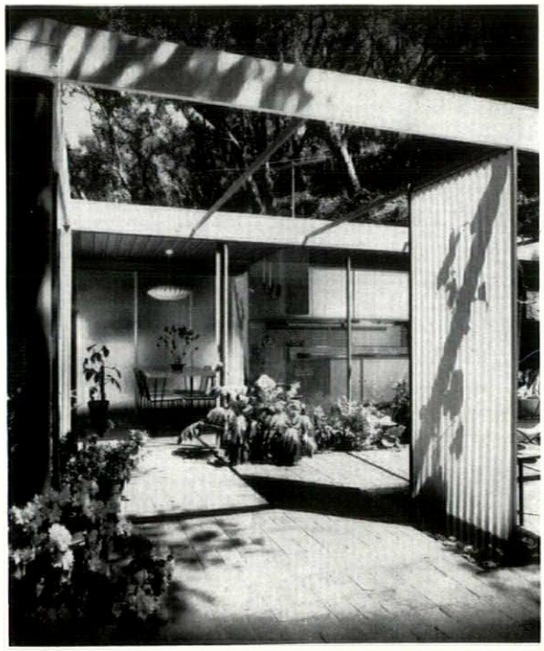
Pierre Koenig was born in San Francisco in 1925 and studied architecture at the University of Southern California, where he qualified in 1952. He has since taught at the University and worked in the office of Raphael Soriano. He built his first steel frame house in 1951 and has been designing them ever since; he has just won the 1957 House and Home award for residential design.

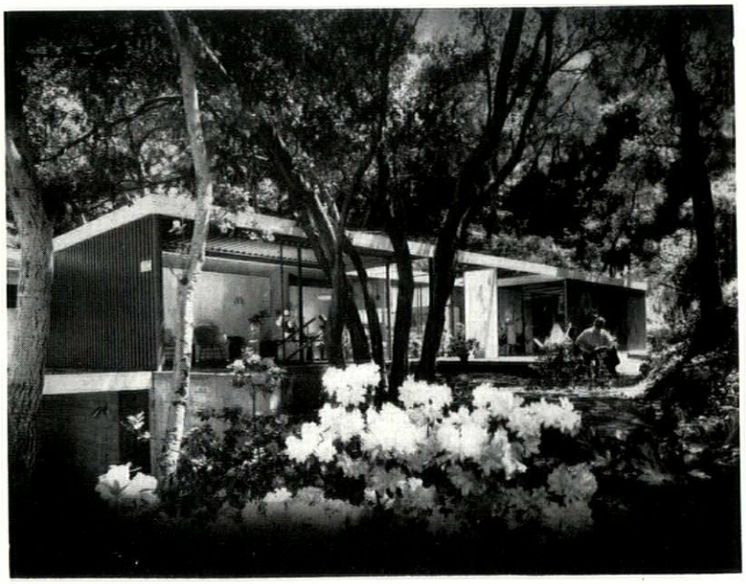


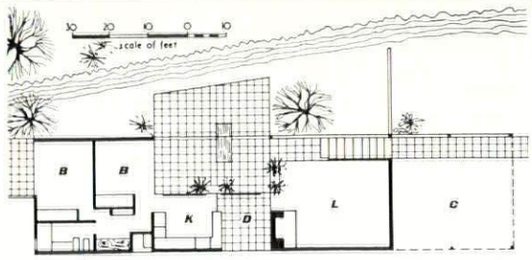




Above, Koenig's own house in Los Angeles. The main frame and windows are all of steel. Top right, the living area, with glass doors leading to a back patio; birch panelling on the end wall and asphalt-tiled floor. The steel roof deck is exposed on the underside throughout the house. Below and right, house at Glendale, California. The frame again is steel, and the siding consists of galvanized steel sheets fastened in steel channels and painted light blue.







3

AMERICAN ARCHITECTURE IN WORLD PERSPECTIVE

MATRIX

'. . . It is not merely that in the cultures of Europe and of the Orient the American artist can find no antecedent scheme, no structural plan, no body of tradition that can give his own work the validity and truth that it must have. It is not merely that he must make somehow a new tradition for himself, derived from his own life and from the enormous space and energy of American life, the structure of his own design; it is not merely that he is confronted by these problems; it is even more than this, that the labor of a complete and whole articulation, the discovery of an entire universe and of a complete language, is the task that lies before him . . . ' from *The Story of a Novel* by Katherine Anne Porter.

For the American architect the task of discovering 'an entire universe and . . . a complete language' is a task he has shared with trail-blazers of the modern movement everywhere; it was just this that the new architecture demanded of its practitioners whether in the old world or the new. The collective achievement in roughly fifty years is a partial universe and an incomplete language, but it is no mean one in face of the task.

It has been a gargantuan struggle and nothing less, as prizes, than a new-made world and a new language of vision could have fired it. Neither could it have won out this far unless it had been an international effort free of tariff-bound intellects—hence the echoes of Marseilles in Brixton, of Chicago in Amsterdam and Tokio, of Berlin in Chicago and San Francisco, of Nantes in Rio de Janeiro and of Ronchamp in South Wales.

The movement has been remarkable for the number of prophets without honour in their own countries whose prophecies have served to awaken others. Sometimes the honour due to a foreign prophet has been over-paid or paid in bad currency, but the act has seldom been quite valueless. Unexpectedly those countries which have altogether turned

their backs on their own have (through forcing cross-fertilization) done, perhaps, the most valuable service of all.

The circumstances of life within and between nations, the push and pull of politics, the heavy swell of economics, the coming and going of the mysterious stranger—culture, have in turn and together made their presence felt in modern architecture. Achievement and the focus of interest have shifted from Germany to Russia, from Sweden to Brazil, from Italy to America and through it all two lone voices have emanated with unwavering intensity out of Paris and Chicago—the voices of Le Corbusier and Frank Lloyd Wright.

Both of these men are great propagandists and as architects great individualists. The very nature of their genius has limited their direct influence, for in common with all great men of their kind, it is their individuality we value, and though we may moan the scarcity of great individuals, the very nature of the thing precludes emulation. Their vigour, their all-embracing enthusiasm, their scale we may admire and emulate; their personal visions may arouse others to feats of imagination they would not have achieved without them, but their architectural handwriting is their very own, and attempts to follow it too closely can only lead to caricature.

We are indebted to them for the fearless prospecting they have done, for the routes they have laid, along which others may follow to make their own discoveries. It would be a mistake, though, to think that this is the way of the many, these are not metalled roads designed to carry a machine civilization (though they may occasionally have been given a mechanical gloss). No, they are ways for those prepared to get their feet wet and labour to push the track that much further into virgin territory—the way of the artist.

Who, then, blaze the way for the rest? Again two men—Walter Gropius and Mies van der Rohe; the first, tireless as a teacher, team-worker and, again, propagandist, but this time a propagandist for a machine civilization, an anonymous architecture and the methods of working that are best suited to it; the second, a poet in architecture of all that the teachings of the first imply. Not that Walter Gropius has failed to give substance to his beliefs, far from it; he has been first in the field in so many things that it would take too much space to list them. But he of all contemporary architectural propagandists has thought most deeply about the implications of technology in building, with all the side issues they raise for the profession, the building industry and the community.

The plea for standardization and teamwork does not attract unanimous support, it does not, for instance, appeal to the genius or even the gifted individualist. Their reaction to the spread of standardization, their inability to see the outcome of it as architecture at all, is understandable for, according to their own definition, it isn't. The argument that there are not enough artist-architects to go round and that means must be devised to get decent buildings efficiently and economically built in sufficient quantity notwithstanding, makes little appeal to them. But the task of providing a decent environment by raising the level of the average is urgent, and though it is vital for some people to keep their eyes on the peaks, removing them from time to time, perhaps, to observe how small the foothills are, it would be a disastrous attitude for the majority (though the eyes of the majority, it is true, are fixed rather too often on their feet).

Most of the remaining opposition centres round vague, though sometimes powerful, feelings of unease about mechanization in general. The abiding influence of William

Morris and John Ruskin, to mention only two whose hackles rose to powerful effect at the thought of a mechanical civilization, is greater than we often realize. It is not that one fails to sympathize with their reaction, given the peculiarly unpleasant first impact of mechanization on their communities; but surely there should be less sympathy for those today who rise whinnying on their haunches, because with them reaction stems more from fear and the wish to be blinkered from reality. Reality it is, whether we like it or not, and we might just as well learn to like it. Mechanization is part of almost every detail of our lives from the mechanical brain to the 'untouched-by-hand cake mix' (see cover): already it has its poets and its painters; an architect like Mies, a painter like the late Jackson Pollock (action painting has a very direct relationship), the new kind of artist-technician like Charles Eames, all give witness to the credit side of the balance (putting material benefits on the debit side as, I suppose, in the light of the highest ideals you should). It has its popular art, no less fascinating and instructive, perhaps, for being on the debit side (in the light of the highest ideals). The cover of this issue is an example of an artist using a popular aspect of mechanization (coloured advertising) as the raw material of his art. It is easy to decry the strange, and often suggestive, shapes of the latest American cars, it is harder to laugh off, except in pure snobbery, the genuine enthusiasm and excitement they generate. We are fond of explaining that modern architecture is still in its infancy, that the maturing process is always a long one; is it not possible that this may also apply to popular art, however different the methods by which it is produced?

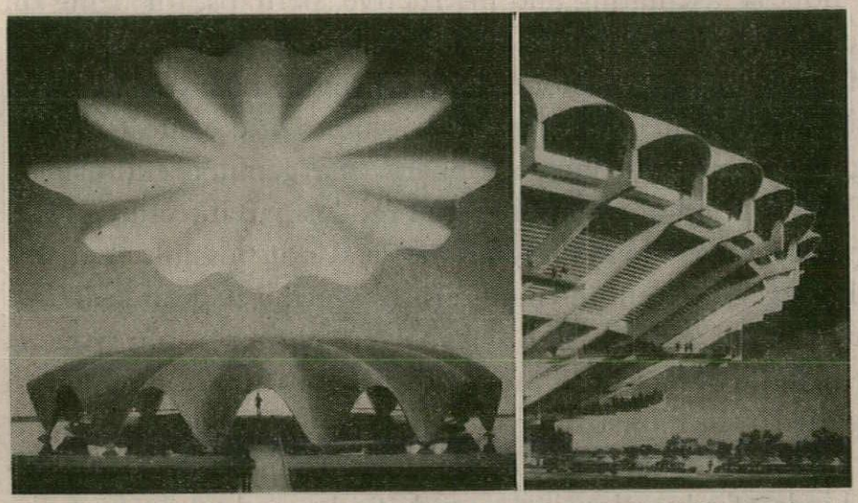
Mechanization is exciting and packed with possibilities in every corner of our lives. It would be encouraging if we in Britain were a little more brash about it; we might be a little less in danger of being engulfed by its monstrous aspects if we were; we don't laugh at it or with it enough and we haven't house-trained it. The comforts it can bring give us uncomfortable feelings; the new kinds of education it demands find us reluctant to make changes; its appearance seems to be in 'bad taste'.

America does not suffer from these inhibitions; it has kept its very real feelings of guilt well-reined in the matter, some might say it makes its peace with the gods through dramatic gestures of generosity (if such they are, then it should go on record as the most intelligent sacrificial ritual in history). Of course America is not free from fear of the possible consequences (a little fear in this department can be a life-saver), nor is it free of laggardness in adapting itself (cf. architectural education and the landscape), but the willingness is there and the right kind of brashness is there.

It is this that has made America the first country to pioneer industrialized building on a large scale, and it is the atmosphere of confidence and excitement that surrounds America's mechanical age that stimulates the imagination of its creative architects. Other reasons for the quality of the contribution they are beginning to make have been given already. Nobody visiting America can fail to be struck by the heightened awareness that the belief in your own power to mould the present can give. Architecture is, perhaps, the best touchstone of this, for where art, science and technology are channelled through imagination, as they are in architecture, when each has to pay a degree of homage to the other, then they can be judged by the man of average intelligence and general knowledge. Their esoteric nature, taken separately, due in science and technology to the specialized know-

ledge necessary to master them and in the arts to their function as surveyors of new and unfamilar territory, tends to cold-shoulder the average man.

The almost inescapable duty of the architect to make his artefacts not only comprehensible but also usable comes clearly through the preceding biographies of American architects. They are men in most of whose lives, both through necessity and temperament, the ivory tower is situated in close and well-planned proximity to the market-place. They are lives, one realizes in reading them, with more than their share of uncertainty, drama and reward. What also comes through very clearly is that the kind of trail-blazing these architects do cannot but be the preserve of the especially adventurous and the especially gifted. The changes and chances of their lot are many; the struggle to acquire the knowledge for qualification, often against severe financial odds; the breakaway from the safe job to found a practice; the difficulties and coincidences attendant upon obtaining commissions; the close connection with an industry vulnerable to even quite small economic recessions; however, when all this is added to the positive qualities the art demands, the result can be a remarkable and many-sided human being.

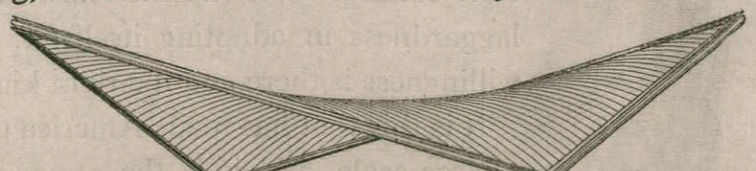


above left, roof elevation and eye-level view of a proposed supper-club at Santurce, Puerto Rico, by Toro and Ferrer in association with Charles H. Warner Jnr.; Weidlinger and Salvadori, engineers. The structure is a thin shell of reinforced concrete (3 inches thick at the crown) which derives its strength from the curved, shell-like planes. Above right, proposed stadium to seat 99,000 spectators by Raymond and Rado; Weidlinger and Salvadori, engineers. The bowl is constructed of tension rings in concentric circles and overhangs 150 feet without support; the roof of shell concrete barrels tapering towards the centre.

To an outsider, the concern of this kind of American architect for enlarging the vocabulary of design and its range of expression to meet different needs, seems to fall into three main categories:

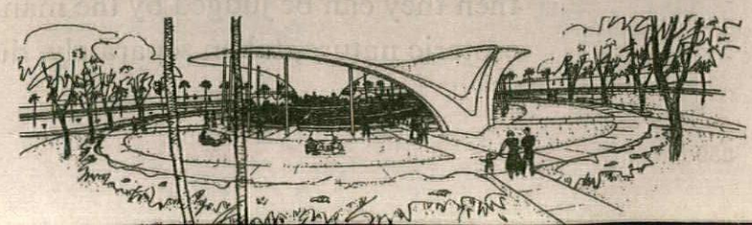
1. The development of new structural systems worked out in collaboration with engineers, many of them concerned at present with roofs.
2. The correlation of new buildings with their setting, where this is considered worthy.
3. The opportunities provided by new building techniques and methods of assembly, with particular reference to the aesthetic potentialities of the curtain wall.

The American architect's enthusiasm for the structural possibilities of shell concrete and the space-frame has attracted biting criticism.[1] Certainly his enthusiasm has, at times, o'erleapt some very large spaces that could just as well have been subdivided structurally, to the greater benefit of



above, drawing of the hyperbolic-paraboloid roof for a house at Raleigh, North Carolina, by Eduardo Catalano; Atilio Gallo, engineer. The main advantages of a warped plane of this kind are 1, though doubly curved it can be made of straight members; 2, all stresses are equal (no bending moment); 3, stresses are calculable; 4, it is very rigid. Below, restaurant and supper-club, bottom, concert pavilion; both part of a master-plan for Long Beach, California, by Raymond and Rado; David Leavitt, Associate. The structure of the restaurant is a concrete hyperbolic-paraboloid shell composed of three diamond-shaped arches springing from three steel pivots. The concert pavilion is a double arched concrete canopy springing from two points in the ground.

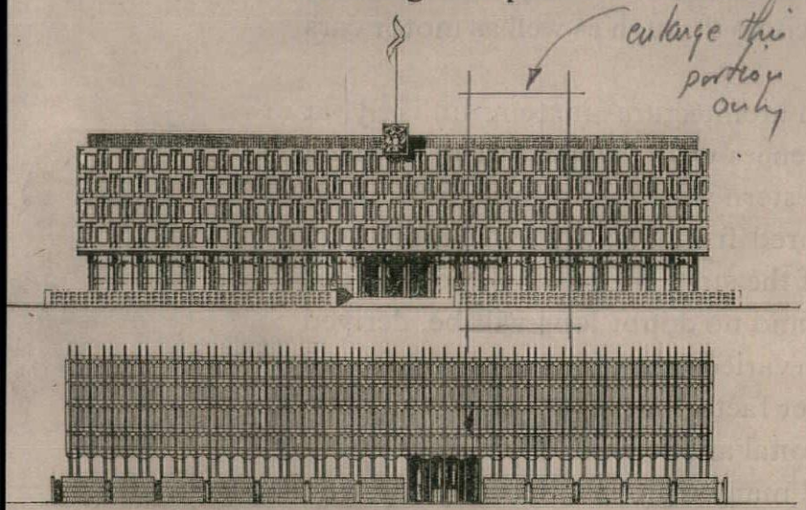




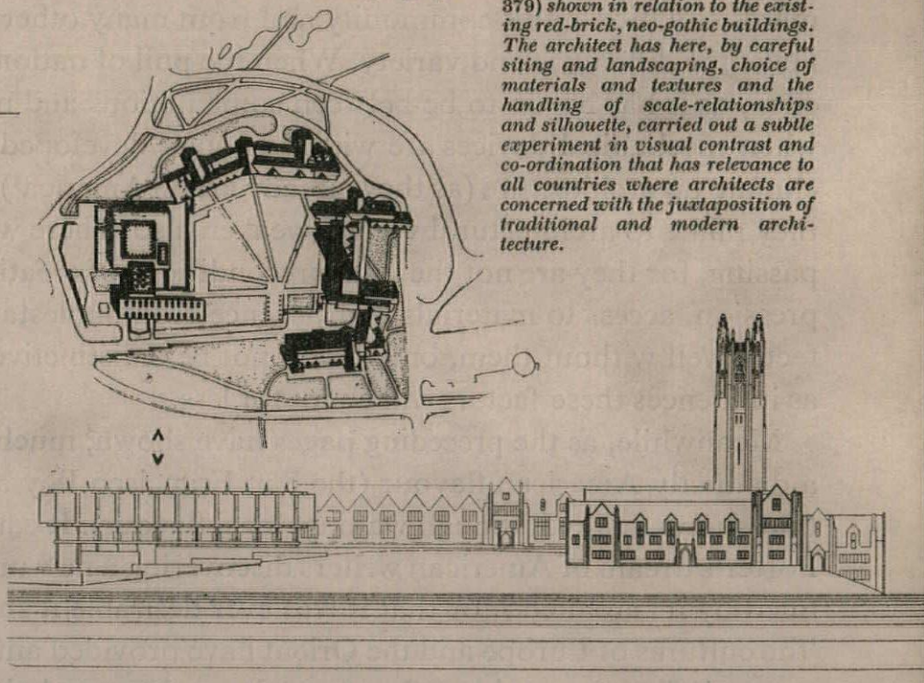
[1] *Architecture—Art or Design?* by Sibyl Moholy-Nagy. *Progressive Architecture.* January, 1957.

function and effect. If he has sometimes failed to grasp the full significance of new engineering devices or has, on balance, given them too much significance, may this not merely be a concomitant of their novelty? An excess of enthusiasm which drives out reason is no doubt evidence of immaturity and hard to tolerate for long, but it often signifies a healthy adolescence—a period of rapid growth. It is perhaps wise, therefore, not to be over-critical when, in so many countries, modern architecture has lately given concern more for its lack than for its excess of enthusiasm.

The concern of the American architect to investigate the problems that arise when new buildings are placed in intimate relationship with old ones is a more strictly architectural facet of that concern for regional differentiation which is now declining. The desire to foster and develop regional distinctions is beginning to be recognized as a matter of nostalgia and Babbitism and out of rhythm with recent trends. However, where a new building is planned in close proximity to old ones the desire to take account, in specifically visual terms, of an existing set of conditions of scale, colour, texture, pattern and form is surely a sign of maturity, a realization that buildings cannot always be considered to exist in a vacuum[2]. Literary and romantic associations may sometimes enter into this process, but as the confidence of the modern architect develops, such problems will, no doubt, be solved without their aid. He may still find relevant answers in the past to visual conundrums of proportion, scale relationships and suchlike; though even here an intensely perceptive and cultivated intelligence is the only safeguard against lapses into plagiarism and slackness of invention.



top, final version of the east elevation of the winning design for a US London Embassy, by Eero Saarinen. Above, the same elevation from the design by Minoru Yamasaki. As with many recent buildings by American architects abroad, both these designs take into account the architectural genius loci, *the first Georgian proportion, the second, Early Victorian Gothic; neither are in any sense plagiarist, for though the desire to reminisce may have dictated the choice of structural system, the proportions are a logical expression of the system chosen and both systems are of recent development.*



left, plan, and below, south elevation, of the new Arts Centre for Wellesley College, Massachusetts, by Paul Rudolph (for full credits and further illustrations see p. 379) *shown in relation to the existing red-brick, neo-gothic buildings. The architect has here, by careful siting and landscaping, choice of materials and textures and the handling of scale-relationships and silhouette, carried out a subtle experiment in visual contrast and co-ordination that has relevance to all countries where architects are concerned with the juxtaposition of traditional and modern architecture.*

The attention paid to the aesthetic potentialities of the curtain wall has already been considered in some detail. It is in this field that American architects have made themselves

[2] The two designs, above, for a US embassy in Grosvenor Square, London, are an example of a traditional setting (Georgian, and Gothic Revival London) providing inspiration for the proportioning of façades which at the same time derive logically from contemporary methods of construction. Ironically the existing buildings in Grosvenor Square are not really worthy of this display of architectural good-manners.

most strongly felt abroad, and since the curtain wall is something which, quite apart from its commercial aspects, is clearly felt to be in tune with the zeitgeist, the study being lavished on it will almost certainly lead to interesting new developments.

In what ways, then, is American architecture contributing to what Katherine Anne Porter described as a 'new universe . . . and a complete language' specifically American? Does the situation today favour a national idiom in architecture? Certainly in the sphere of standardized, and largely anonymous architecture, national differences are tending to be ironed out; industrialized building, with its origins in Europe and its adolescence in America, may finally become truly international; for when it is efficiently exploited and when, and if, tariff barriers come down, buildings will come through as well as motor cars and refrigerators.

Though regional distinctions are disappearing from architecture[3] it seems unlikely, at least in the immediate future, that all national differences will disappear also—even in those countries with close cultural links within the western world. For, though the creative architect may, and indeed nearly always has, ignored frontiers, where the individual instead of the machine produces the one-off instead of the standard part, all the precious vagaries of personality come into play, and these are, and no doubt long will be, derived from the cultural heritages of nations and regions, from varied educational systems, from a man's situation in his community and from many other factors all of which, fortunately, make for difference and variety. When the pull of national and regional loyalties is weakened, as it has begun to be between some nations and many regions in recent years, and when mechanical devices are widely enough developed to counter-balance the effect of climate on architecture (as they already are in America[4]), then we will see the contribution they make to architectural variety weaken also. There will be little reason to lament their passing, for they are not the vital preconditions of creative endeavour that freedom of expression, access to materials and absence from molestation are: variety can flourish perfectly well without them, only it will not be a distinctively national and regional variety; as influences these factors will count for less.

Meanwhile, as the preceding pages have shown, much American architecture does have a distinctly American flavour (the San Francisco Bay area being one of the few regions that shows marked, though waning, local flavour). It cannot be said that Katherine Anne Porter's dream of American writers discovering a new universe and language has been fulfilled by its architects, or that it was ever desirable it should be; there is little doubt that 'the cultures of Europe and the Orient have provided antecedent schemes', but when these are assimilated as, with a few exceptions, they are being, the achievement will be truly American, and its contribution to the common cause of 'a new universe and language' of architecture may well prove decisive.

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[3] and [4] The waning influence of the regional vernacular and of the effects of climate on American architecture was testified to by numerous architects in their answers to the questionnaire which formed the basis of the preceding biographies.

acknowledgments

MARGINALIA, pages 291, 292: 1, 'Architectural Forum'; 2, Truscon Steel Company; 3, Stephens Tru-sonic Inc.; 4, 11, 13, 'Life'; 5, 'Styling: the look of things' (General Motors); 6, Stoeger Arms Corporation; 7, 'Car Life'; 8, 'Interiors'; 9, 'The Columbus Citizen'; 10, 12, 'Los Angeles Examiner/Pictorial Living'; 14, Massachusetts Institute of Technology; 15, 'Mad Magazine'; 16, F. W. Seiders; 17, American Concrete Institute; 18, 'Newsweek'. SYNTAX, page 208: 1 and 2, Michael Brawne; page 303: 3 and 4, Eric de Maré; page 304: 5, Courtauld Institute; 7, Ian McCallum, Arphot; 8, F. R. Yerbury; page 305: 12, Ian McCallum, Arphot; 14, W. E. Tatton Brown; page 306: 18, Edward D. Mills; 23, Dell and Wainwright; page 307: Barbican, 'The Times'; Kaufhof, Ian McCallum, Arphot; page 309: 1–5, W. E. Tatton Brown; page 310: 6, Michael Brawne; page 311: 9, E. C. Valastro; 10, Ezra Stoller; vertical, Ian McCallum, Arphot; page 312: vertical, Louis B. Schlivek; 12, 14, Edward D. Mills; 13, 'Progressive Architecture'; page 313: 15, J. Alex Langley; 16, 'Architectural Record'; page 314: vertical, Ian McCallum, Arphot; 18, 'Architectural Forum'; page 316: vertical and 21, Photographic, Detroit; 22 and 23, Lionel Freedman; page 319: 24, Aluminium Company of America; vertical, Jay-Bee Studio; 26, 'Aluminium on the Skyline'; page 320: 27, Todd Webb; page 324: 30 and 31, Ian McCallum, Arphot; 33, W. E. Tatton Brown; page 325: 34, Gordon Sommers; 35 and 36, Lawrence S. Williams; 37, Ezra Stoller; page 326: 39, Pontiac Photo Studio; 40, Galfas Studios; 43, Robert M. Garrick; 44, Ezra Stoller; 46 and 47, Douglas M. Simmonds; page 327: 49, Ulrig Meisel; page 328: 53, Reynolds Photography Inc.; 54, Hedrich-Blessing; 55, L. D. Jones; 56, Lawrence S. Williams; page 329: 57, Hedrich-Blessing; 58 and 59, W. E. Tatton Brown; page 330: 61, Hedrich-Blessing; 62, William H. Olsen; 63, F. W. Seiders; page 331: 64, W. E. Tatton Brown; 65, Hal Rumel; 66 and 67, Peter Fish Studios; page 332: 70, F. W. Seiders; 71, Frank Lotz Miller; 72, Marvin Rand; 73, Lawrence S. Williams; 74, Hedrich-Blessing; page 333: 75–78, Alexandre Georges.

GENETRIX *Mies van der Rohe*, page 338: left, Berko; bottom, W. E. Tatton Brown; page 339: top left, W. E. Tatton Brown; bottom left, Ian McCallum, Arphot; rest, Bill Engdahl, Hedrich-Blessing. *Richard Neutra*, page 340–341: bottom left, Ian McCallum, Arphot; rest, Julius Shulman. *William Wurster*, page 341: top and middle, Roger Sturtevant; bottom and page 342, Morley Baer. *William Lescaze*, page 342: bottom left, Ben Schnall; bottom right, Joseph W. Monitor. *Pietro Belluschi*, page 343: top centre upper, Rondal Partridge; top centre lower, Roger Sturtevant; bottom left and right, Northwest Photographic Illustrators. *Louis Kahn*, page 345: two bottom left, John Ebstel. *Mario Corbett*, page 346: middle centre, lower centre, right, Dean Stone/Hugo Steccati. *Edward Stone*, page 346: top left, Blitze Sapec. *Marcel Breuer*, page 348: top left, Homer Page; top right, Rufus Stillman; left and right upper centre, Ben Schnall; left and right lower centre, Warren Reynolds Infinity Inc.; bottom, Ben Schnall; page 349: top, both Ben Schnall; bottom left, Frits Monshouwer. *Victor Gruen*, page 349: centre, Ezra Stoller; top and bottom left, Gordon Sommers; page 350: top, York Photographic Studios; centre left, Warren Reynolds Infinity Inc.; centre right, Morley Baer; bottom, Gordon Sommers. *Paul Schweikher*, page 351: top left and right, Hedrich-Blessing; bottom left, Joseph Molitor; bottom right, Frank Lotz Miller; page 352: top, Hedrich-Blessing; bottom left and right, Shapiro. *Bruce Goff*, page 352: centre, top and bottom left, Hedrich-Blessing; page 353: top three right, 'L'Architecture d'Aujourd'hui'; top centre, Philip Welch; bottom left and right, 'Architectural Forum.' *Philip Johnson*, page 354: top right, Ezra Stoller; bottom left and right, Louis Checkman; page 355: all Ezra Stoller. *Robert E. Alexander*, page 356: upper and lower right, Julius Shulman. *Rafael Soriano*, page 356: top left, Elizabeth Soriano; rest, Julius Shulman; page 357: top right and left, centre left, Julius Shulman; centre right, Ernest Braun; rest, Julius Shulman. *Vernon De Mars*, page 358: bottom right, Roy Flamm; Gordon Bunshaft, page 358: top left, Ferdinand

Vogel; page 359: top, Ezra Stoller; centre left, Michael Brawne. *John Rex*, page 359: bottom three, Julius Shulman. *Eero Saarinen*, page 360: top left, 'Vogue'; centre, Yale News Bureau; bottom left, Robert D. Harvey Studio; bottom right, Hedrich-Blessing; page 361: top, Yale News Bureau. *Eliot Noyes*, page 362: top and centre left, Ezra Stoller; centre middle, Ben Schnall; centre right, André Kertész; lower centre, Ezra Stoller; bottom left, Eliot Noyes and Associates. *Whitney Smith*, page 363: top centre, James H. Reed; rest, Julius Shulman; page 364: both, Julius Shulman. *Ernest Kump*, page 364: top left, Skelton Studios; bottom left and right, Roger Sturtevant. *Hugh Stubbins*, page 365: top, Richard Garrison; page 366: top and bottom left, Roger D. Harvey Studio; right, Robert C. Lautman. *Minoru Yamasaki*, page 366: right, Bill Hedrich, Hedrich-Blessing; page 367: bottom, Bill Hedrich, Hedrich-Blessing; rest, Lens-Art Photo; page 368: left, Bradford La Rive; right, Ezra Stoller. *A. Quincy Jones*, page 368: top left, 'House & Home'; top right, Dale Healy; centre and bottom, Julius Shulman. *T.A.C.*, page 370: top left, Walter R. Fleischer; bottom, Robert D. Harvey Studio. *Ralph Rapson*, page 372: centre, Hedrich-Blessing. *Edward L. Barnes*, page 372: top right, Ben Schnall; page 373: top, Ben Schnall; lower centre, Ezra Stoller; bottom left, right, centre, Ben Schnall. *Harry Weese*, page 374: top right, Hedrich-Blessing; bottom left, Bill Engdahl, Hedrich-Blessing; bottom right, Chicago Architectural Photographing Company. *John MacL. Johansen*, page 375: top left, Hans Namuth; top right and centre right, E. J. Cyr; page 376: left and right, Ezra Stoller. *I. M. Pei*, page 376; top left, Cincinnatti Art Museum; top right, Louis R. Glessmann; bottom left, 'Architectural Forum'; page 377: top left, Ralph Steiner; top centre and lower centre, Ezra Stoller; bottom left and right, Lionel Freedman. *King Lui-Wu*, page 378: top left, Jane Doggett; top right and centre left, King Lui-Wu; bottom left and bottom right, S. A. W. Hicks. *Paul Rudolph*, page 378: left, Fred Stone; page 379: bottom left, Lionel Freedman; bottom right, Ezra Stoller. *Roger Lee*, page 380: top left and right, Ernest Braun; rest, Roger Sturtevant. *Peter Blake*, page 381: bottom three, Hans Namuth. *Ulrich Franzen*, page 382: top left, Elliott Erwitt; rest, Ezra Stoller. *Thornton Ladd*, page 384: top, Julius Shulman. *Pierre Koenig*, page 386: all Julius Shulman.

MATRIX, page 392: Supper Club by Charles H. Warner, Jnr., Universal Atlas Cement Company; Stadium by Raymond & Rado, 'Architectural Record'; Roof structure by Eduardo Catalano; Long Beach Development by Ramond & Rado, 'Arts and Architecture.' Page 393, U.S. London Embassy: Saarinen; Yamasaki; Wellesley College designs by Paul Rudolph.

The following architects kindly supplied material for publication on pages 323–334 in this special issue:

Alexander & Rothschild; Anderson, Beckwith & Haible; Copeland, Novak & Israel; Curtis & Davis; deYoung, Moscowitz & Rosenberg; Flatow, Moore, Bryan & Fairburn; Foley, Hackler, Thompson & Lee; Kenneth Franzheim; Golemon & Rolfe; Harrison & Abramovitz; Kivett & Myers & McCallum; Vincent G. Kling; MacConnell & Walker; Mitchell & Ritchey; Perkins & Will; Emery Roth & Sons; Shaw, Metz & Dolio; Sherlock, Smith & Adams; Skidmore, Owings & Merrill; William B. Tabler; Thorshov & Cerny Inc.; Welton Becket & Associates.

The following firms kindly supplied material for publication on pages 294, 310–316, 319–320 and 323–334 in this special issue:

Alcoa Aluminium Company of America; American Steel Band Company; Bettinger Corporation; Cupples Products Corporation; General Bronze Corporation;* Gridwall Company; Hope's Windows Inc.; Ingram-Richardson Manufacturing Company; Kawneer Company; Knapp Brothers Manufacturing Company; Ludman Corporation; The R.C. Mahon Co.; National Gypsum Company; Newman Brothers Incorporated; Panelfab Products Inc.; Porcelain Enamel Institute; Revere Copper & Brass Inc.; Seaporcel Metals Inc.† Small Homes Council; Texlite Inc.; J. S. Thorn Company; Walker Supply & Mfg. Co.

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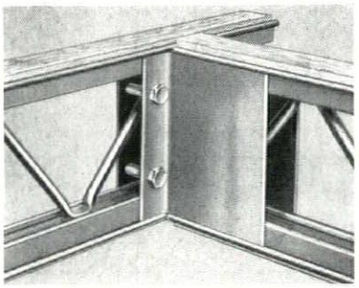
Metal Sections Ltd., Oldbury, Birmingham.

Steel Floors and Wiring Ducts

Until we have more sensitive and efficient costing control for the profession it is very hard indeed for the architect to evaluate the different systems of proprietary flooring now on the market, since their worth is not merely intrinsic (i.e. materials used and labour in fixing), but is to be assessed only in terms of the whole building operation and by taking into account the time saved or lost by other trades.

For this reason we cannot usefully comment on the economy of the Robertson Q-Floor system, apart perhaps from pointing out that it has been developed with this kind of incidental saving in mind and deserves special attention on this account. One aspect of the system which may not be so well known as some, is that of electrical wiring. By running steel header ducts at right angles to the line of ducts which are formed by the steel reinforcement it is possible to provide a complete grid of ducts under an office floor at very small extra cost. Though there is some doubt about the value of movable partitions in an office, there is much less about the need for movable telephone outlets.



Junction detail of the nailable truss made by Metal Sections Ltd.

The knowledge that beneath an office floor there is a grid of ducts which can be tapped (by means of special tools) at any position in one direction and at frequent, predetermined intervals in the other is likely to prove a real comfort.

Robertson Thain Ltd., Ellesmere Port, Wirral, Cheshire.

The Advancement of Slate

A classic example of how a building material may worm its way into architects' vernacular by good trade literature is afforded by Bow Slate. Though it is probable that a few architects would have 'found' slate for themselves, it would never have become the *cliche* which it is now (on the whole a good *cliche*, we hasten to add) were it not for the series of Information Sheets in the *Architects' Journal*. These are now available in a pocket folder which also illustrates uses of slate which have not yet been covered in 'sheets': fireplaces, balance stands, outsize sinks for laboratories, the traditional larder shelving and skirtings.

The Bow Slate & Enamel Co. Ltd., Old Ford Road, London, E.3.

Multi-Coloured Paint.

Readers of American papers during the last few years will have noticed the fairly frequent use of multi-coloured paint: of paint surfaces composed of tiny flecks of different colours in the manner of a Seurat. The resulting surface has a different visual quality from an ordinary paint surface and resembles rather that which you get with certain types of cement paint. This product is now available over here under the trade name Polichrome. Though the range of colours (i.e. the range of colour effects produced by the various mixtures) is limited, the material has certain remarkable qualities which no architect can ignore. Invariably sprayed, it has an excellent coverage: it needs only a single coat and can be sprayed direct on a wide variety of surfaces (among them concrete, wood and building boards) without sealer or primer. More important still is its ability to marry up dissimilar surfaces to give a unified effect. This is because though *physically* Polichrome is a smooth paint film, *visually* it is a texture.

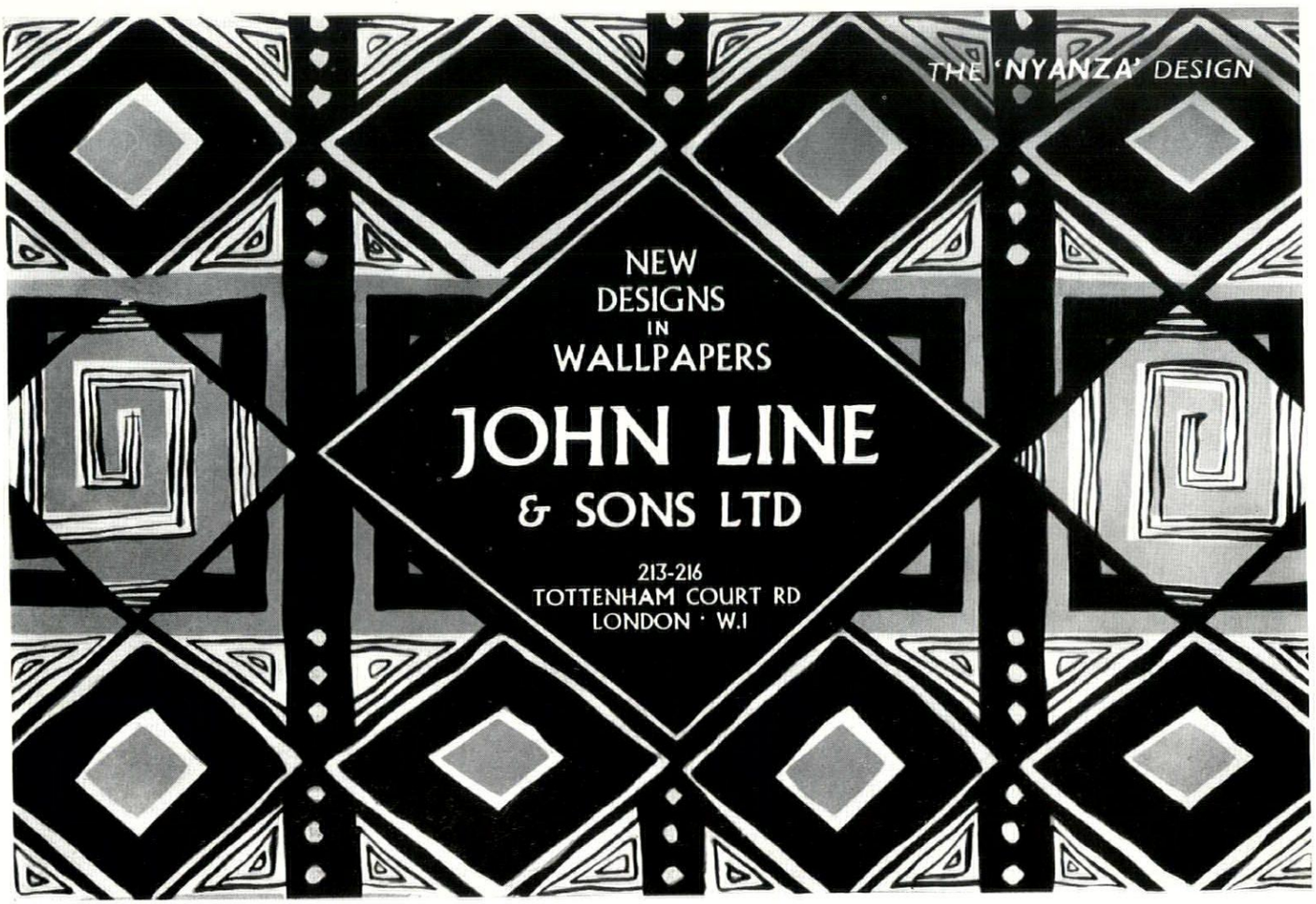
It is very hard wearing, but if a surface should become scratched it can be easily painted over and matched up. Though it has been used as an external finish in America, the English manufacturers are not yet convinced that it will stand up to the English climate, and for this reason recommend it for internal use only.

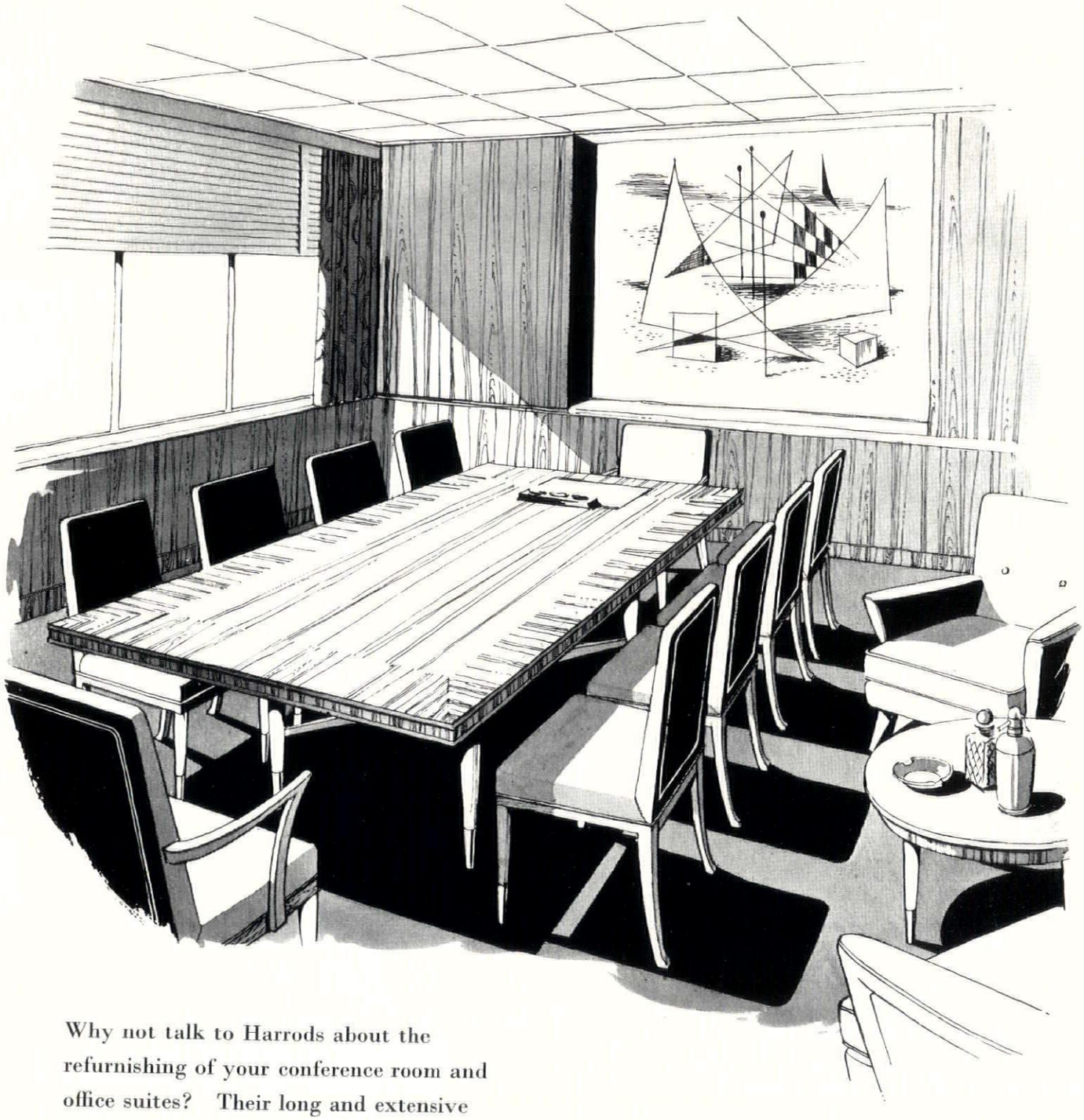
International Paints Ltd., Grosvenor Gardens House, Grosvenor Gardens, S.W.1.

What is the Colour of a Brick Wall?

Though a colour photograph is on the whole a rather dubious friend to the architect, we must draw attention to an exceptional use which has been made of it by Eastwoods Ltd., to show the effect of their bricks when built into walls. This takes the form of a series of sheets of art paper 11 in. by 8½ in., on the face of which is printed a colour photograph of a piece of walling (sunlit, of course!) to rather less than half full size. We can imagine endless discussion in the office about whether they are objec-

[continued on page 398





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tive evidence of the finished appearance of a wall; but it is certain that they are very useful in bringing home the difference between bricks of the same class. When it is a matter, for instance (to quote three actual sheets in the set), of visualizing the difference between 'yellow stock facing bricks,' 'mild stock facing bricks,' and 'second hard stock bricks.' The series would be even more useful if the mortar used in the photographs was specified, also the strength of the brick, and if some indication were given of the price.

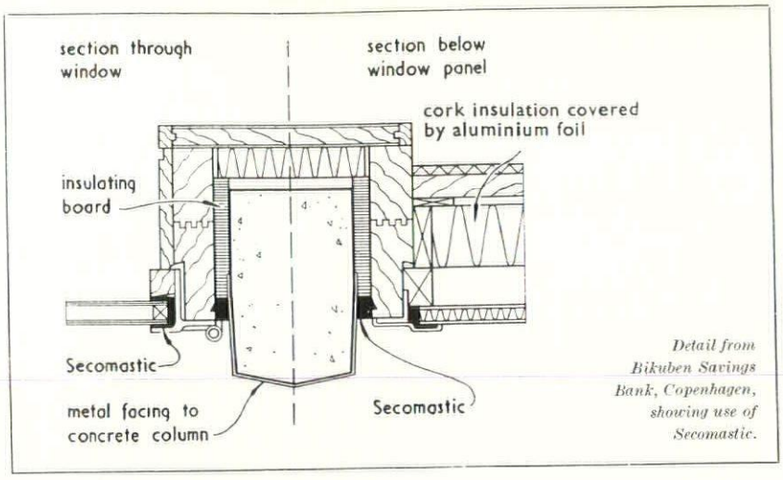
Eastwoods Ltd., Eastwood House, 158-160 City Road, London, E.C.1.

Asbestos in Building.

In October last Editions Girsberger of Zürich completed their first year of publication of their new quarterly *International Asbestos-Cement Review*. We do not know whose idea it was to devote a periodical to the use of asbestos cement, nor what is the precise share (if any) of the asbestos cement industry in the project; but the idea itself was a good one, and even if the object of the venture is what we describe as 'promotional' the standard of the first four publications is so high that even if the nigger *is* in the woodpile you can't see him. For it has the character of a publication which has been compiled chiefly from the contributions of good architects for the use of other good architects.

Asbestos cement is a material which first came into use as a cheap cladding, and, in this country, has not yet outlived the stigma of unconsidered usage. For if its associations are not particularly grateful to English architects this is not so much on account of its inherent quality (or lack of it) but because it has been developed over here without regard for visual standards. As can be seen from this quarterly, the best users of asbestos cement are the Germans: perhaps because they have an inborn respect for economy in the real sense and because they alone have a convincing mystique for the class of buildings—factories—on which it has been most used.

We hope English architects will buy this quarterly—it costs 5s. a copy, the English agents being B. T. Batsford Ltd., 15 North Audley Street, W.1—and we hope still more that they will rub the nose of every English asbestos cement traveller in it.



Detail from Bikuben Savings Bank, Copenhagen, showing use of Secomastic.

Secomastic Forum

Few forms of trade advertising are less welcome to the serious Architect than the kind which shows little more than photographs of the buildings on which the advertiser's product has been used. Though it belongs in this category, he will find a new periodical published by Secomastic Ltd., entitled *Secomastic Forum*, more interesting than most, perhaps because the material itself has grown up with modern building techniques and has therefore been used on a large proportion of the key modern buildings. Particular faith seems to have been pinned on it by good architects practising in Scandinavia: Ralph Erskine used it to point his large precast concrete panels in the flats at Vaxjo, Frits Schlegel to close a very tricky metal/wood/insulating board junction on the cladding of his 'Bikuben' Savings Bank in Copenhagen, and Arne Jacobsen seems to have used it in almost every possible position in his Town Hall at Rodøvre. Nobody knows how long any building mastic is going to last. The right attitude seems to be to think of it as a replaceable item in a building's protection, with a life which where exposed is much longer indeed than that of paint but shorter, perhaps, than that of mortar pointing in traditional construction. Since it commonly covers the joins between large walling units the foot run per unit area for replacement is not great, and since Secomastic at least is applied with a neat and rapid tool, its use in this way should not prove uneconomic. In this connection it is interesting to note that it was used to replace leaking mortar joints between precast granite blocks in that sad lump, the G.P.O. at Cape Town.

Secomastic Ltd., Western Road, Bracknell, Berks.

Checking Decay

Any proprietary treatment which sets out to preserve building material against the weather must contend with the fact that there is no substitute for the weather—particularly for the English weather with its insidious alternation of wet and frost—and that therefore no one can be sure of its durability until it has been on the market for ten or twenty years. Unfortunately, decaying buildings cannot always wait so long, and there are occasions, therefore, when the architect must be prepared to take a reasonable chance.

[continued on page 400

ABOUT CARPETS NOW . . .

. . . this design was created in our Kidderminster Studio to the requirements of James A. Roberts, A.R.I.B.A., Chartered Architects, and was made up in DEVA Fine Woollen Wilton especially for the Clifton Cinema at Leamington Spa. The carpet was supplied and laid by W. W. Turner & Company, the theatre furnishers.

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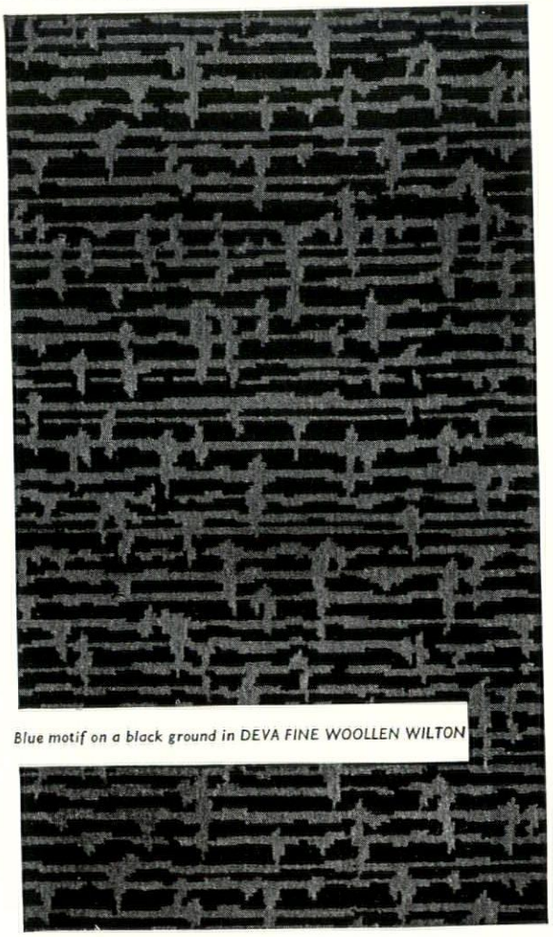
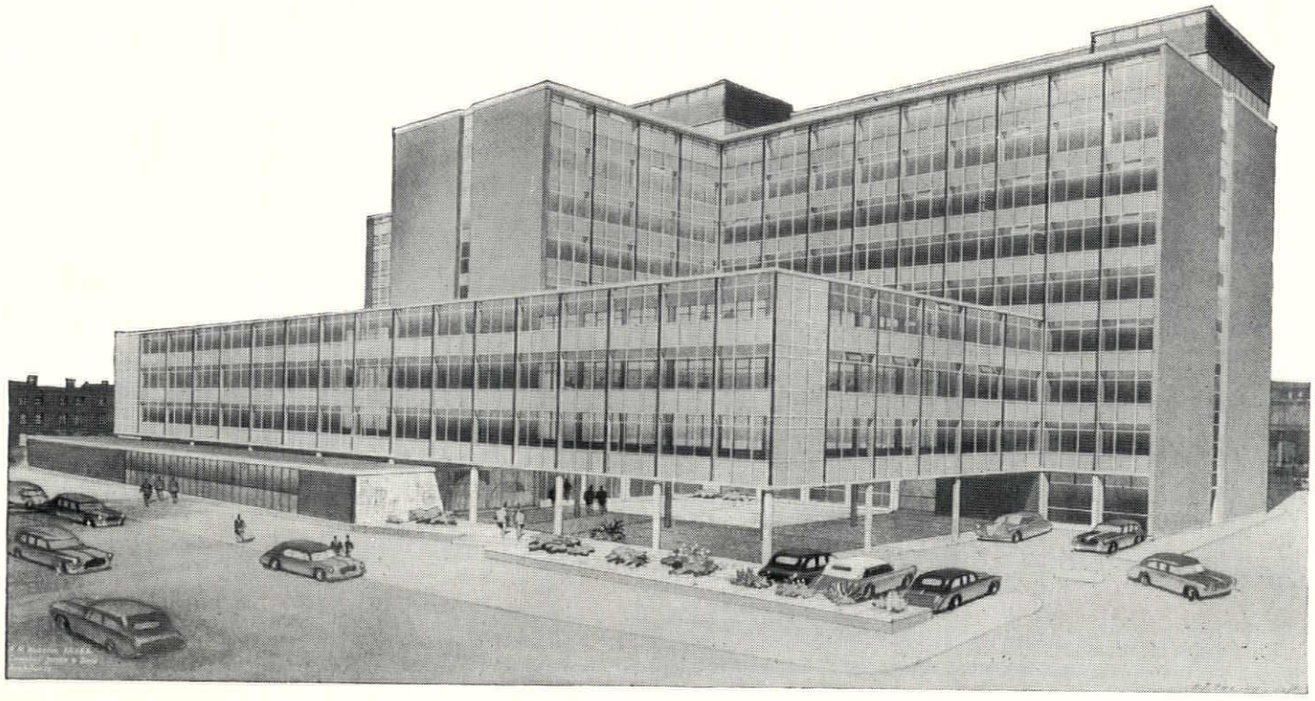


Blue motif on a black ground in DEVA FINE WOOLLEN WILTON

Building by the South Bank



Near to Waterloo and adjacent to Westminster Bridge Road, this imposing office block is rapidly being completed by Richard Costain Limited. It will make a major contribution to the attractive new development now taking place in the Borough of Lambeth.

The architect is R. N. Wakelin, F.R.I.B.A. of Campbell Jones and Sons.

The structural design by E. J. Cook & Co. (Engineers) Ltd., calls for the use of Stahlton pre-stressed floor construction which will give a continuous flat soffit to the ceiling of this nine-storey building.

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Preservatives which have silicone as their main constituent have now been on test in this country for about three years and in America for about six; and there are indications that, by and large, they are probably the best bet. We understand that they are countenanced by the CPAB, by the Ancient Monuments branch of MOW—though not by other departments of MOW which, in matters of this kind, must always wait for the clearance of BRS. The opinion of BRS on this subject was last voiced in Digest 90 (July 1956) *Colourless waterproofing treatments for damp walls*, which gave a sober account of how silicone treatments behave, but which was careful to say nothing about how long they would last. The facts which seem well established are that they do not alter the appearance of the material they are applied to, they do not weaken it, they permit it to 'breathe,' and that during the first years at least they throw the water off in a spectacular way, so that it falls down the surface of the treated material in droplets—like the droplets of mercury. This latter phenomenon ceases in course of time, but the treatment persists below the treated surface and still remains an effective barrier to wet.

One range of silicone treatments of this kind is that marketed by Nubold Development Ltd., under the trade name 'Nubex.' The range includes specialized products for use with every conceivable material used out of doors, from masonry and brickwork to asbestos, timber and even canvas; and including also a bonding agent for consolidating crumbling masonry. The firm issues an excellent 'general survey' which gives all the information the architect will want to know. Nubex is applied with a spray gun (which costs £14 14s. 0d.) and the cost of the material in applying it to 'surfaces of average porosity' is given at between 1s. 6d. and 2s. per yd. super.

Nubold Development Ltd., The Mount, Crawley, Sussex.

Protective Coatings

Corrosion chemistry (sometimes called 'corrosion engineering') is a subject which passes rapidly beyond the architect's understanding. The products which it uses have been developed to cope with situations which he meets with rarely and which are altogether more exacting than those to which he is accustomed. Nevertheless, it *is* of interest to him when a new basic chemical product touches for the first time on the outer fringe of building technology. For most architects the first time they heard of 'Neoprene' (a polychlorobutadiene, or, if you like it better, a synthetic rubber) was in connection with gaskets for sealing curtain walls, or washers for fixing prefabricated plumbing units. We are here concerned with its use as a base for a corrosion-resistant paint. 'Neoprene' and 'Hypalon' (a sulphochlorinated polyethylene) are the trade names of two basic products developed by Du Pont de Nemours. They have been used in this particular application by Semtex Ltd., the floor people, and E. & F. Richardson Ltd., the specialist anti-corrosive paint manufacturers, to produce a range of protective coatings which are being marketed under the trade name 'Semprene Adcora.' The primary use for these coatings is for painting metal parts in laboratories and works where chemical attack is direct and very fierce. Nevertheless, there are certain classes of exposure which they are designed for which are of more general building application (e.g. the structural steel of buildings containing process equipment and surfaces in yard areas adjoining) and it may well be only a matter of time before it is considered economic to use materials in this class for milder exposures, such as for steel by the sea. Neoprene coatings are expensive: 'P6' of this range costs 70s. per gal., but gives a minimum thickness of 5 mils with one coat where lead paints would require three coats. As yet these coatings are black only, but it is hoped that some at least will soon be available in red, grey and aluminium.

E. & F. Richardson Ltd. Buckingham.

Bulldog Clips

Fixing gadgets lend themselves readily to good treatment in trade literature—but rarely get it. An exception is that pioneer fixing for timber-on-a-solid-floor, the Bulldog clip, which is admirably set forth in the Adamite Co. Ltd's new Bulletin No. 10. First used (we were interested to learn) in Carreras' Factory at Mornington Crescent in 1926, the Bulldog clip has been developing to meet changes in technique. It can be got, for instance, with a single leg for use with precast beam or pot floors, with a long shank for use in suspending a ceiling, and with pads for acoustic floors. The exact dimensions, uses and methods of fixing each variant are fully described in text and drawings and the Bulletin finishes with an account of an experiment carried out by the National Physical Laboratory to find out the value of the acoustic clip in stopping impact sound in a floor. In all, a useful presentation of a useful product.

The Adamite Co. Ltd., 94-98 *Petty France, London, S.W.*1.

Advertisements

London County Council. Central School of Arts and Crafts, September, 1957. 7/10ths part-time head of department, man or woman, for the department of Interior Design and Furniture. Should have knowledge of architecture, period furniture, furnishings, and be cognisant with modern design and materials. Burnham F.E. salary scales, Grade II, man 7/10ths of £1,400 to £1,600 (man); increments £24 10s. p.a., 7/10ths of £1,240 to £1,600 (woman, includes equal pay), both plus London Allowance. Application forms from Secretary at School, Southampton Row, W.C.1, to be returned by 18th May, 1957.

Buckinghamshire Education Committee. High Wycombe College of Further Education (Principal: W. J. Davies, J.P., B.Sc.). Lecturer in Advanced Furniture Design. Candidates must have had sound basic training together with suitable industrial experience. Architectural experience or ability to offer additional subjects such as Management, Work Study, etc., would be an advantage. Salary will be paid in accordance with the appropriate Burnham Report. Further details and forms of application may be obtained from the Principal, Queen Alexandra Road, High Wycombe, to whom they should be returned as soon as possible.

Architectural Assistants may be required for interesting work in London from early June with opportunities for overseas later. Luncheon vouchers, 5-day week, pension scheme. Applications, giving full particulars of experience and salary required, to Box 5902.

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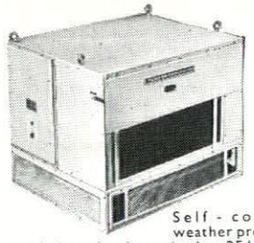

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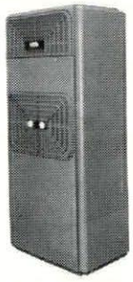

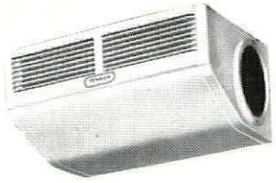

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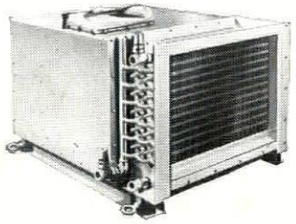

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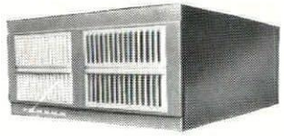

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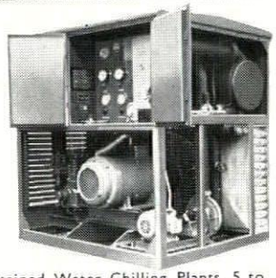

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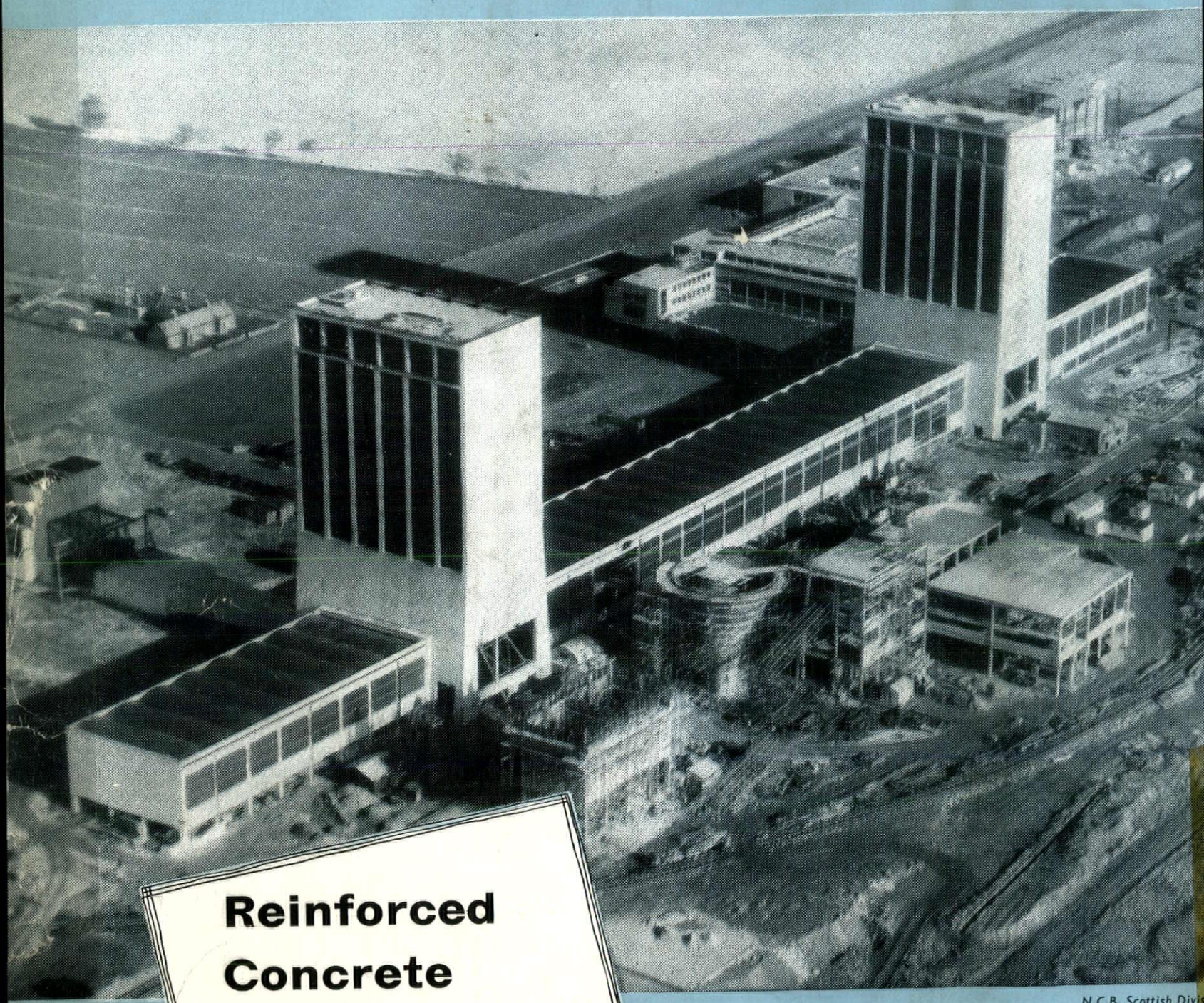

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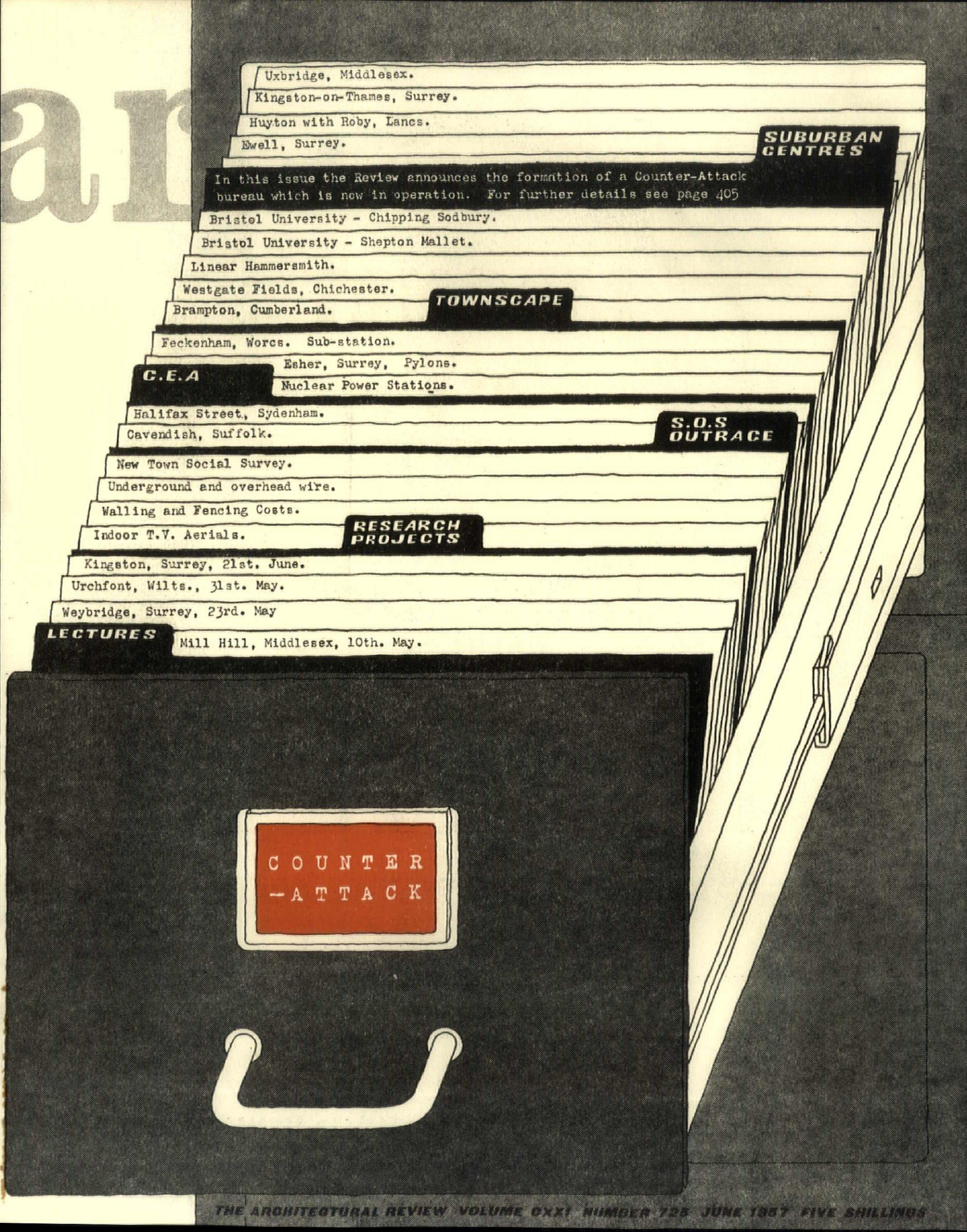
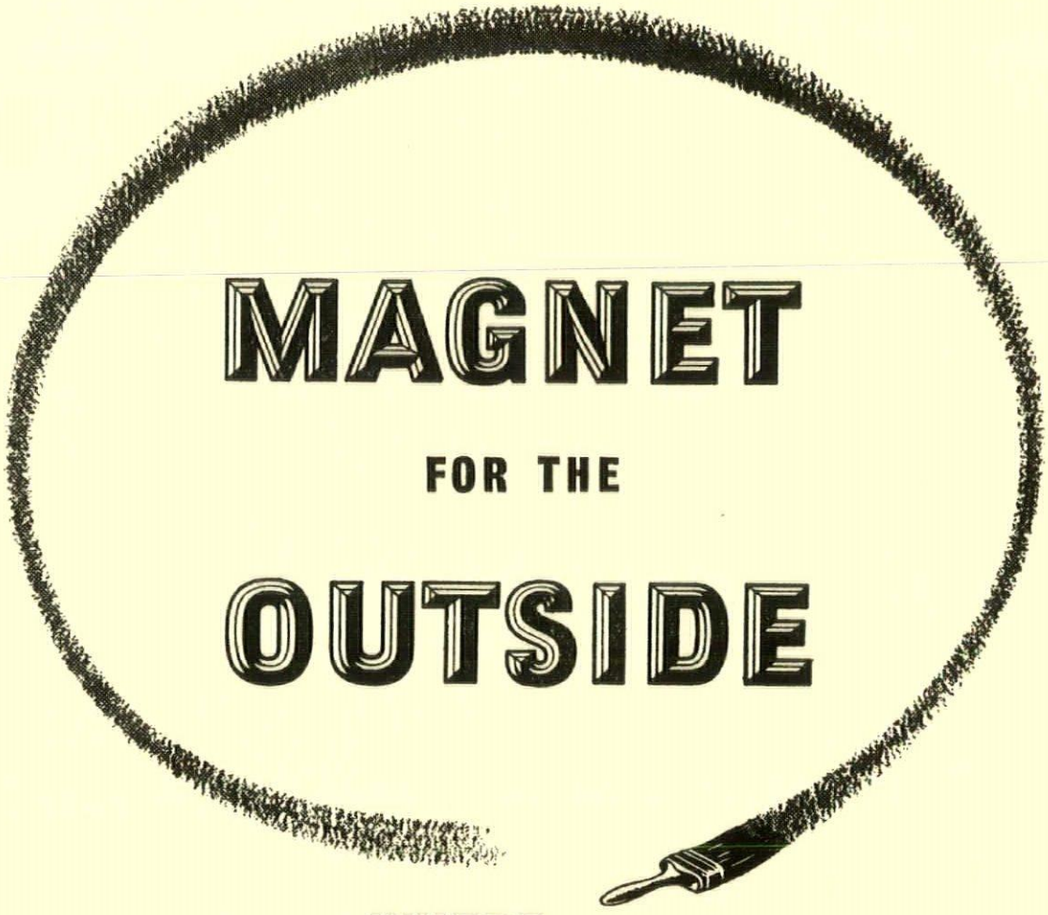

Uxbridge, Middlesex.
Kingston-on-Thames, Surrey.
Huyton with Roby, Lancs.
Ewell, Surrey.
SUBURBAN CENTRES
In this issue the Review announces the formation of a Counter-Attack bureau which is now in operation. For further details see page 405
Bristol University - Chipping Sodbury.
Bristol University - Shepton Mallet.
Linear Hammersmith.
Westgate Fields, Chichester.
Brampton, Cumberland.
TOWNSCAPE
Feckenham, Worcs. Sub-station.
Esher, Surrey, Pylons.
C.E.A
Nuclear Power Stations.
Halifax Street, Sydenham.
Cavendish, Suffolk.
S.O.S OUTRACE
New Town Social Survey.
Underground and overhead wire.
Walling and Fencing Costs.
Indoor T.V. Aerials.
RESEARCH PROJECTS
Kingston, Surrey, 21st. June.
Urchfont, Wilts., 31st. May.
Weybridge, Surrey, 23rd. May
LECTURES
Mill Hill, Middlesex, 10th. May.
COUNTER
-ATTACK

MAGNET

FOR THE

OUTSIDE



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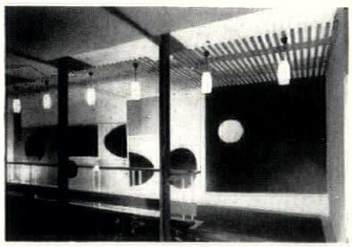
MARGINALIA

Giant Photomurals

Quite apart from their great size, the two wall-long photomurals on the Reed Paper Group stand at the recent packaging exhibition (stand designer: Arthur Braven) were remarkable in bringing together the talents of two artists who, though very different in aims, were able to make particularly sympathetic use of the medium. Victor Pasmore has been experimenting for some time with photographic surfaces and photocollage, and his mural in the lounge, 1, gave him an opportunity to apply these techniques on the architectural scale he prefers to use when a chance presents itself. The



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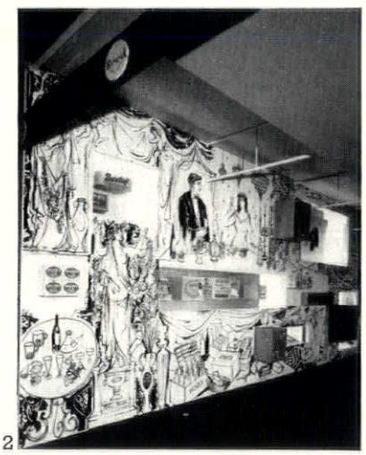


2

other, which was intended to counterpoint a display of food and drink packs, 2, was the last major public exercise of the graphic talents of the late John Minton, and suggested that direct photo-reproduction might have been an almost perfect medium for his style of draughtsmanship, had he lived to exploit it fully.

National Water Park

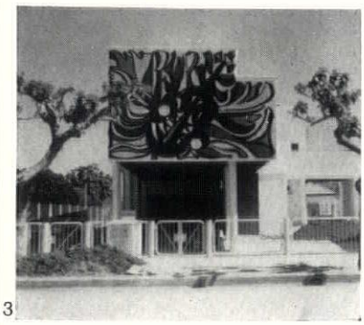
A Society for the Protection of the Solent Area has just been formed to protect what remains of Britain's best sailing inlet on the South Coast: an ideal site for a National Water Park. The Solent has had a raw deal from technology—principally from Fawley refinery. In the words of the brochure, 'This area is almost a test case for amenity societies—if they can succeed here, they can succeed anywhere.' This new society deserves all the support it can get. The area is defined as 'all waters inside the Wight and those extending eastward to Selsey Bill together with the land adjoining these waters.' The annual subscription is twenty shillings and application forms can be obtained from Brig. M. W. Hope, D.S.O., The Society for the Protection of the Solent Area, c/o 680, Commercial Road, London, E.14.

Chichester Churches

The Little Churches of Chichester, by Lindsey Fleming, is a simple conscientious record of four of Chichester's old parish churches, but it is faced with one insuperable obstacle—the architectural poverty of the buildings. All four are small, dim and restored, and their charm is entirely in their place in the town, which isn't mentioned: St. Peter and St. Olave, bobbing up in North Street, All Saints acting as a foil for the entry from South Street to the severely Palladian houses in the Pallant, St. Andrew Oxmarket hidden behind East Street, and only to be reached by a pair of alleys. All four churches have just become redundant in a system of amalgamation of parishes—though only one, St. Peter, seems likely to be demolished: St. Olave, the prettiest, is already agreeably converted into a SPCK bookshop. There are actually just four *more* little churches in central Chichester which remain unimpaired and they would well make another booklet, though they are well and truly post-Reformation. They are St. Bartholomew, a pretty mid c 18 barn, St. Pancras, dour 1750 Gothic, R. C. Carpenter's impeccable church of St. Peter opposite the Cathedral, and the mad irregular octagon of St. John, 1812, by James Elmes, father of Harvey Lonsdale, with the unique arrangement inside of a central three-decker pulpit, quite over-shadowing the altar, and an east gallery.

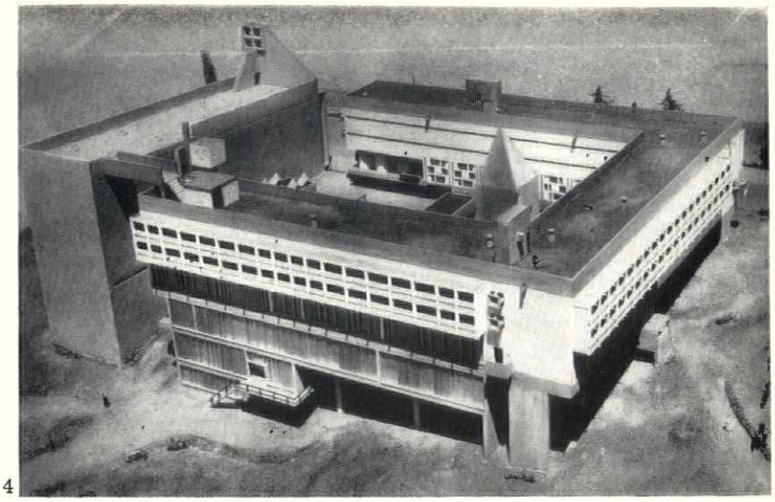
Algerian Wallscape

The use of painted patterns to control an awkward shape, to lose unwanted features, to enliven a blank surface, need not be restricted to diapers and other regular repeats. A wall of limited extent, particularly if it strikes the eye somewhat insulated



3

from its surroundings, may be treated as a (more or less) centralized composition, as in this villa in Algiers by François Caviglioli, 3, where a large Leger-esque floral composition is used to unify a wall that—though a true expression of the corridor-access rooms behind it—might not appear satisfactorily in all viewpoints, and to lead the eye away



4



5

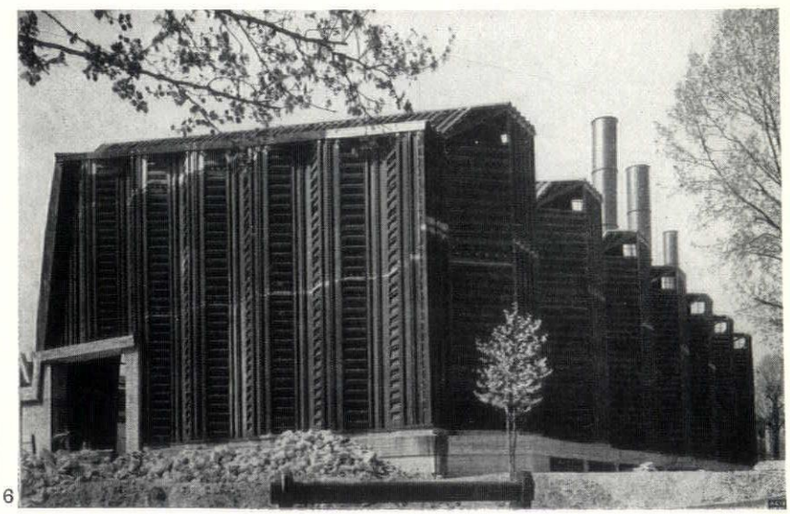
from a window that would otherwise focus attention at an uncomfortable point on the wall surface.

Corb's Friary

Rumours that Le Corbusier was even further involved with religious architecture have now been confirmed by the appearance of picture post-card views of a model of a Dominican Friary now under construction to his design at Eveux, near Lyons. The post-cards reveal a claustral layout on a sloping site that drops the equivalent of three storey-heights from one side to the other, and produces, on the taller elevations, 4, an appearance not unlike a cross between the *Unité* at Nantes and the monastries of Mount Athos. There appears to be a centrally situated chapel within the cloister, and there also appears to be some doubt about its ultimate form when photographs are compared, 5. The completed design will be awaited with considerable interest, since it suggests, among other things, that the somewhat divergent elements of Le Corbusier's post-war style may at last have reached some kind of unity and synthesis.

Welded, Timeless Boiler-House

Although Modern Movement theorists at one time supposed that engineers created works whose virtues, like those of the Parthenon, were timeless, most engineering works can be dated with some accuracy by an observer with a trained eye. One building that might well tax historical expertise to the limit, however, is the boiler house for the Technical Education Centre at Cachan, France, 6, which looks at first sight like a product of Expressionist Machine-Romanticism of about 1924, but is actually a work of the last two years. The dramatic form arises largely from the use of a system of construction from corrugated rolled steel sections, welded together into giant corrugations of up to twenty feet from crest to crest, the whole forming a self-supporting asymmetrical shell spanning over sixty feet, without employing any steel more than .06 of an inch thick. By an historical irony, this feat of timeless engineering virtuosity has been carried out under the general direction of Pol Abraham, whose criticisms of the theories of Viollet-le-Duc (and of Rationalism in general) have done much to corrode those certainties about the timeless virtues of engineering that were current in the Twenties.



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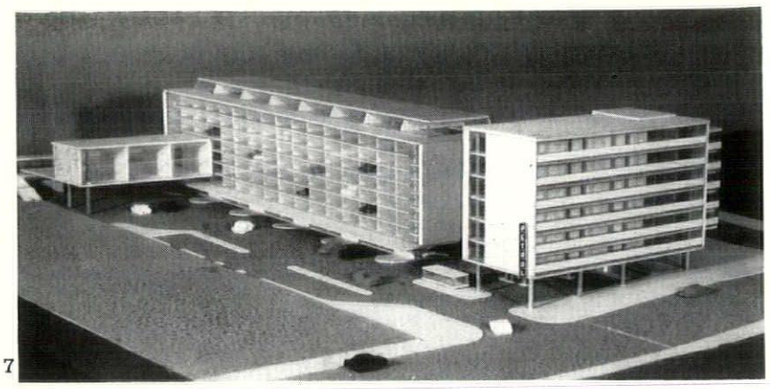


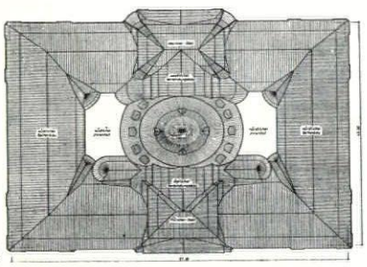
7

London Autosilo

The first proposals for a multi-storey parking garage on the Autosilo principle in the City of London have recently received LCC approval. The garage is part of a group of buildings, 7, which will also include a restaurant, offices and some residential accommodation, designed by C. Edmund Wilford & Son, for a site by Southwark Bridge which will give the restaurant a riverward prospect. The Autosilo principle stacks the cars in a form of egg-crate filing-box, and handles them by means of a variant of the fork-lift method, so that no internal ramps or drive-ways are required and the cars can be left locked. This method has the advantage over other mechanical-handling systems of having been tried out for some time on the Continent, as well as being, architecturally, simpler in plan and easier to fit into the sort of sites likely to become available than circular stacking-towers, whatever their theoretical advantages.

The Roofs of Bruchsal

A late casualty in the war, the Episcopal Palace at Bruchsal in Baden was effectively de-roofed and internally damaged on March 1, 1945. The labours of re-covering this masterpiece of Balthasar Neumann's rococo genius are only now approaching completion, and have an interest far beyond the mere fact of restoration. An accurate survey of the roof layout—whose falls take on very complex geometrical forms in places—has revealed a pattern of shapes fully as rococo as anything inside the building, and which must have required a masterly knowledge of projective geometry to design, since the intersections are much too complex for rule-of-thumb solutions, 8.



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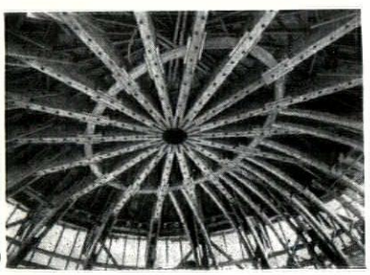


9

But the work of re-roofing is technically interesting in its own right, particularly the framing of the oval dome over the staircase. The main structure was offered up in the form of half portal-frames, grounded on a new reinforced concrete tension-ring at the level of the cornice of the stair-hall, and brought together on a steel compression ring at their heads. The fabrication is mostly by means of large bolts and iron strappings and produces so elegant a pattern, 9, that some regret must be felt that it will be concealed from view by plaster-work that, at its best, will only be a copy of the original.

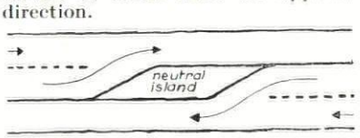
CORRESPONDENCE

Switch ON

To the Editors,

SIRS,—I should like most warmly to support your proposals for making more efficient use of our existing roads (ARCHITECTURAL REVIEW, March, 1957). But I am sorry that you propose to limit your scheme to curves and hill crests, partly because such a limitation is quite unnecessary, and partly because it is in its application to such 'dangerous' sections of the road that official opposition to your scheme is likely to be at its strongest.

A far better plan would be to follow the example of Belgium and other continental countries who have long realized the serious inefficiency and danger inseparable from the ordinary three traffic lane type of road. Instead of waiting pathetically for 'Autobahnen,' they have set to work with a sense of urgency and imagination to rationalize their existing roads. Their main remedy has been the simple one of a shifting continuous white line on all three-lane main roads, the white line being arranged so that the middle lane is clearly reserved for traffic in one direction and then, at a suitable point, the white line swings over so as to place the middle lane at the service of traffic from the opposite direction.



With the certainty of having the use of a 'reserved' middle lane section for roughly every alternate mile, every motorist knows that he has regular opportunities to overtake in safety; and with a *general* system of this kind, its application to all sections, including curves and hill crests, becomes perfectly natural.

I first met this system in Belgium some two or three years ago, and found it unbelievably successful. I had had no advance warning or explanation of any kind, but the carefully designed system of white lines explained itself. It was in the height of summer and the roads were carrying a heavy load of commercial and holiday traffic, which sorted itself out with a smoothness and speed quite impossible on similar width roads in this country.

Here is a really big improvement which we could make quickly, and at almost no cost, to long stretches of our existing roads. In the name both of safety and efficiency let us learn this simple lesson from the continent, and put an end to the present stupidity of leaving it to traffic coming from both directions at once to 'fight it out' in a middle 'suicide lane.'

Yours, etc.,
STANLEY PARRIS.

Pen-y-cae Mawr, Mon.

European Reconstruction

To the Editors,

SIRS,—On page 171 of your March issue, where you describe a 'dismal picture in the much bombed City of Hull,' of the four illustrations given to 'post-war building in Hull'—the first illustration was built in 1930 by a London firm of architects, the second is a pre-war block of flats, the third is a factory on the outskirts of Hull and is not a result of war damage and the last was by a firm of architects from the south coast. We think these examples are far from a fair and true sample of rebuilding in Hull since the war.

Yours, etc.,
Hull. GELDER & KITCHEN.

Gallons into Pint Pots

To the Editors,

SIRS,—I know that mensuration is a dull subject compared with aesthetics, but since not even your gifted contributors have yet found a way of transcending the laws of space, so far as I know, it has its importance.

On page 415 of your 'Counter Attack' issue Walter Manthorpe sets out diagrammatically land use allocations for New Towns, A at New Towns Committee standards, B at his own standards, in both cases for a population of 50,000. He comments: 'Maximum distance of housing in Town A from true countryside = approx. 630 yards. Maximum distance of housing in Town B from true countryside = approx. 280 yards.'

If these statements were correct the overall town density of B would be almost 700 persons per acre, which is on the high side even for the ARCHITECTURAL REVIEW.

The true distances are approximately 2,200 yards, and 1,100 yards for A and B respectively which alters the whole picture rather drastically.

There are many other comments I could make about Mr. Manthorpe's contribution, which, despite much that is interesting and valuable, contains many highly questionable statements, but for the moment I will content myself with pointing out that, even when the arithmetic is corrected, the comparison of centre to edge distances in A and B is still not accurate. B contains only 50 acres of open space, and the peripheral land needed to accommodate the rest will certainly not be 'true countryside,' which is usually agricultural land upon which farmers, oddly enough, do not like the public to disport themselves unrestrictedly.

I do hope you will give some prominence to the correction contained in this letter. Otherwise the frustration among enthusiastic young architect-planners striving to get gallons into pint pots is liable to rise to fearful heights.

Yours, etc.
L. B. KEEBLE,

London, N.W.11.

[*Ian Nairn replies*: Mea culpa; I *was responsible for that particular calculation, and both distances should in fact be multiplied by* $\sqrt{10}$ *to give approximately* 930 *and* 2,100 *yards—figures which add point to the comparison rather than detract from it. Part of the argument was that if the open space is gathered up into a big park instead of being frittered away, the total area of open space (given a compact town) can be less. If there have to be peripheral open spaces and playing fields, they are visually part of the countryside beyond, and can form a natural buffer; whereas the same playing fields surrounded by housing look institutional and make the town sprawl farther.*]

INTELLIGENCE

The University of Khartoum has appointed its first Professor of Architecture, Mr. J. A. Potter, who has been head of the Hull School of Architecture since 1948.

Premio Olivetti

The second national prize of architecture and town-planning offered by Olivetti has gone to Ludovico Quaroni and Carlo Scarpa. Quaroni is known as the town-planner for Ivrea and for the estate called Matera which will shortly be discussed in the ARCHITECTURAL REVIEW. Carlo Scarpa* is a specialist in exhibition displays. He did the arrangement of the Museum at Palermo and the Museo Correr and also the memorable Chinese exhibition at the Palazzo Ducale in 1954, the Klee exhibition at the Biennale in 1948 and the recent exhibition of the work of Mondriaan. The first national prize went to Piccinato and Gardella.

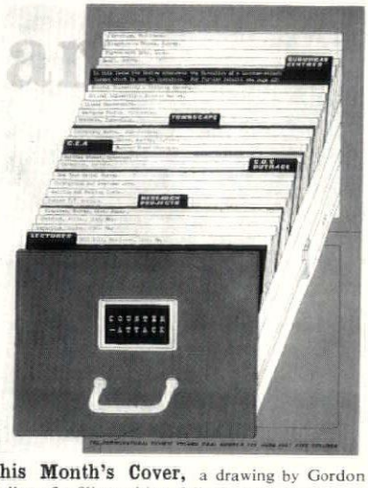
*See the works of Carlo Scarpa in *L'Architectura*, no. 3, p. 340.

ACKNOWLEDGMENTS

MARGINALIA, pages 401–402: 1 and 2, Colliers, Dover Street, Ltd.; 3, Caviglioli; 4, 5, Recamier, Lyon. FRONTISPIECE, page 404: Atelje Sundahl. EWELL AND HUYTON, pages 408–413; all photos Cullen and Nairn, Arphot. HOUSING IN GOLDEN LANE, pages 414–425: 4, Alfred Cracknell; remainder Galwey, Arphot. BOMARZO, 2, pages 426–430: 12, Priscilla Hastings, 14–21, S. Lang. OLIVETTI, pages 431–439: 2, 3, 4, 6, 8, 9, 10, 11, 12, 39, 40, 44, 45, Olivetti photographs; 15, *L'Architecture;* 41, Hans Namuth; 42, Ray J. Pople; remainder Olivetti house publications. MUSEUM AT ACCRA, pages 440–444: Geoffrey Knight and Tom Bell of Fry, Drew, Drake and Lasdun. BALMES HOUSE, pages 445–446: 1, 2, 5, by courtesy of Hackney Borough Library. CURRENT ARCHITECTURE, pages 447–450: Offices at Bristol, Toomey, Arphot; House at Hertingfordbury, J. Samworth; Flats at Liverpool, Carbonara Studios; School at Bletchley, John Maltby. MISCELLANY, pages 451–456: Counter Attack: Halifax Street, Betty Swanwick and Galwey, Arphot; rest Nairn, Arphot; History, 1, Toomey, Arphot; 2, courtesy of Public Record Office; Exhibitions, 2, Royal Academy; 3, Alfred Castlebach. SKILL: Interiors, John Maltby. DESIGN REVIEW: 1, Morland Braithwaite; 2, Court Advert Co. Ltd.; 3, 4, Marshall Studios; 5–10, COID; 11, National Publicity Co.; 12, Jilian Studios. TECHNIQUES, Timber Development Association.

THE ARCHITECTURAL REVIEW

Volume 121 Number 725 June 1957



This Month's Cover, a drawing by Gordon Cullen of a filing cabinet full of outrages and their antidotes, celebrates the fact that the Counter-Attack Bureau is now an organization in being, a centre from which outrage may be combated and forestalled in an orderly and systematic manner, on a nationwide scale, and with co-ordinated effort. The Bureau's aims and methods, interests and services are discussed in an essay on pp. 405-407.

401 **Marginalia**

402 **Correspondence**

404 **Frontispiece**

405 **Counter-Attack** With the foundation of THE ARCHITECTURAL REVIEW'S Counter-Attack Bureau there is now articulate representation for an attitude to planning development that has not so far had a voice—The Improver's. The other attitudes, that of pure Utilitarianism, that of Preservation, and that of Tidy-Minded prettifying of the edges of the mess, have not lacked their official and unofficial apologists, but the Improver approach has rarely been heard outside the pages of the REVIEW. Now this approach is available as an advisory service, aiming to match old and new, the existing and the intruding, in an imaginative manner that would help both worlds make the best of one another. This essay outlines the principles on which the Bureau will work and the kind of advice and publicity it will be able to afford to Outrage's victims, and intended victims; a watch and ward service for the good character of visual England.

408 **Ewell and Huyton** *by Gordon Cullen* As an example of a comprehensible visual and human entity on the brink of subtopian disintegration, Mr. Cullen has selected the village of Ewell, ringed by developer's squalor, and distended by traffic that ought to be funnelled along its existing by-pass road. The existence of the by-pass is a possible instrument of salvation, if the local bus services can be directed into it out of the High Street; the largely accidental existence of a miniature green belt three-quarters of the way round the village is another, if it can be made visually effective. By such simple means as these the identity of the place can be maintained and the rights of its human occupants asserted. As a pendant to the case of Ewell is the situation at Huyton near Liverpool, where pure Municipal megalomania threatens a natural centre with an ill-considered shopping arcade of doubtful utility.

414 **Flats at Golden Lane:** *Architects, Chamberlin, Powell and Bon*

427 **Bomarzo 2** *by S. Lang* The fantastic ruination of the already fantasticated gardens and sculptures at Bomarzo was discussed in the REVIEW in 1954—a uniquely ruinous and romantic landscape in which nature had outplayed the imagination of man. Now, with the conservation of the gardens about to be put in hand, it seems almost certain that nature must, to some extent, be expelled, and attention will be shifted more to what is revealed about the imagination of man. In this article Dr. Lang attempts to relate the seemingly improbable subject matters of the sculptures, carved from the living rock, to the iconographic and emblematic themes current in the century in which the garden was laid out, revealing it as a sacred grove, dedicated in Christian piety to the memory of a loved one to whom the scheme's begetter, Vicino Orsini, hoped to be united in another world. At the same time she uncovers its connections with another garden, laid out for Cardinal Madruzzi at Soriano nel Cimino, and shows in both an early dedication to the concept of the *Genius Loci*.

431 **Olivetti** *by Georgina Masson* The name of Olivetti is a legend in the history of contemporary design, and his policy of visual excellence, embracing every aspect of his plant, products and publicity is an example to enlightened industrialists the world over. But this visual policy does not exist in abstract isolation—it is, as Miss Masson points out, part of a general desire for industrial and social amelioration that runs through all Adriano Olivetti's activities, and has turned the personal paternalism that prevailed in his father's time, when the plant was small, into the broad social policy of today, that expresses itself in improved workers' housing and social facilities, an active interest in regional planning, the *Comunità* political programme, and the opening of new plant in the capital-starved southern half of the Italian peninsula. In this Olivetti is unique in the world, as well as Italy, a product of his time and place who transcends both, and Miss Masson's article is a survey of his aims, methods and achievements, and the faith that supports them.

440 **Museum at Accra:** *Architects, Drake and Lasdun, of Fry, Drew, Drake and Lasdun*

445 **Balmes House** *by Priscilla Metcalf* Better known for most of the two centuries it stood in Hackney as 'Sir George Whitmore's House,' Balmes House was something of an art-historical enigma. The evidence suggests that it was built before the Civil War, the surviving pictorial records suggest that its detailing and much of its conception was artisan, rather than scholarly, yet its appearance can hardly allow it to be classed as Artisan Mannerist. Many of the check-features of Artisan Mannerism are absent, and the intention seems to have been to create a genuinely classical building. Such an intention would have been less surprising after the Restoration, or after the completion of a number of other houses such as Coleshill that Miss Metcalf discusses in an attempt to relate Balmes House, destroyed just over a century ago, to the architectural trends of its times.

447 **Current Architecture**

Miscellany

451 **Counter-Attack**

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Skill

457 **Interiors: Tea Bar in Lower Regent Street, S.W.1** *Designers, Misha Black and Kenneth Bayes, of Design Research Unit*

458 **Mobile Demonstration Unit** *Designers, Misha Black and William Apps, of Design Research Unit*

459 **Showroom in Old Street, E.C.1** *Designer, F. M. Gross*

461 **Design Review: Food Preparation Equipment**

463 **Techniques: Timber Engineering** *by Lance Wright*

464 **The Industry**

466 **Contractors, etc.**

The Authors: *Priscilla Metcalf* is a B.A. of Wellesley College 1936; did war service USA 1942-45; became M.A. Radcliffe College 1947, and was assistant editor Harvard University Press 1947-52; she won a Fulbright fellowship, 1952-54, to study British architecture in London; is now an assistant editor at Leonard Hill Books Ltd., London, and lives in Paultons Square; hoping to be naturalized when required period of residence allows. Was born a New Englander—the first Metcalf was sailing there the same summer Whitmore was probably rebuilding Balmes House.

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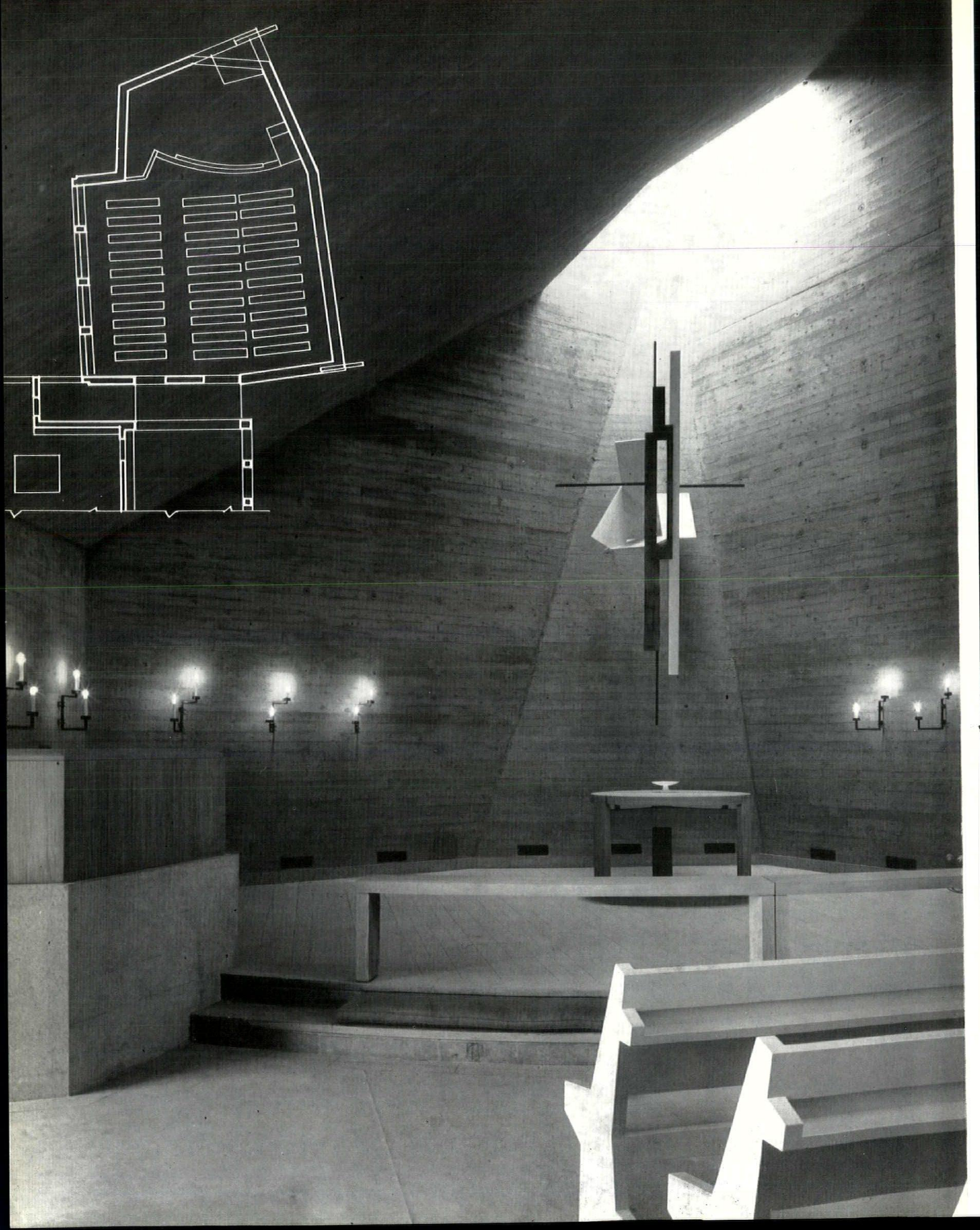
FIVE SHILLINGS



Whether or not it is Brutalist, the use of beton brut, *naked and unadorned, for the walling of Carl Nyrén's recently-completed non-denominational church at Vällingby, Sweden, opposite, is symptomatic of a world-wide feeling that the problem of church design now calls for more radical solutions than any other branch of architecture. Nyrén couples the concrete's blunt, almost Early-Christian simplicity, with a chancel-form and lighting that give the feeling of a cave or catacomb, and the result lies far from the glazed boxes of reason and maximum illumination that were until recently the norm of a modern church.*

The Editors

COUNTER-ATTACK

THE NEXT STAGE IN THE FIGHT AGAINST SUBTOPIA

Outrage is no new game ; it is just a new phase of an old battle with direct lineage back to the Industrial Revolution and, undocumented, back beyond that for as long as radical changes have ever been proposed to existing landscapes. In its present form it was first clearly described and most valiantly attacked by Clough Williams-Ellis in *England and the Octopus*, written in 1928. That was largely a picture of private vandalism, the sort of thing which planning—in the postwar wave of Brave New Britain optimism—might reasonably have been expected to cure. It didn't because, as was shown in *Counter-Attack*, it was castrated by having no powers over the new oligarchy of government departments, and because the Ministry of Planning was given up after a year or two along with the groundnuts and the Gambian eggs. There is no telling what might have happened if it had continued with the same *élan* in administration and research as did the Ministry of Education. But it didn't, and we now have the wry situation where the visual ills shown in *England and the Octopus* can be paralleled exactly, but are now carried out by public bodies (either by local government departments being their own planning authorities, or by central government departments being outside planning altogether). John Betjeman's admirable weekly protest meeting in *The Spectator* logs the spread of the disease.

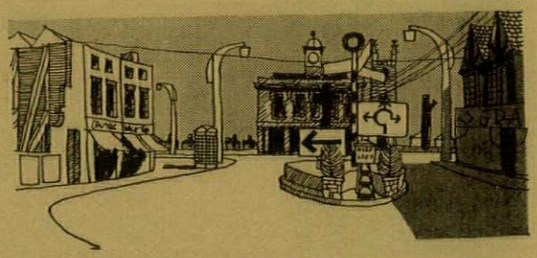
In all this, the basic pattern of material progress *V.* preservation is unaltered, and only takes on new forms—and in the twentieth century it has taken on many more new forms much quicker, hence our present problems. Towards any change in the landscape at any time, there have always been the two perennial attitudes, viz. :

1, *The Utilitarian* : progress at any price. If it looks nasty that's just too bad; the import-

ant thing is to get the kilowatts or the lumens or the housing units ready in time for the annual returns. This attitude is often called by its owners 'plain common sense'* and the reaction is simply and understandably to go to the opposite pole like a repelled magnet:

2, *The Preservationist*: not a tile or timber to be touched; don't disturb our ancient peace (coupled in greater or less degree with the conviction that motor cars, mass housing, street lighting etc. are inherently evil).

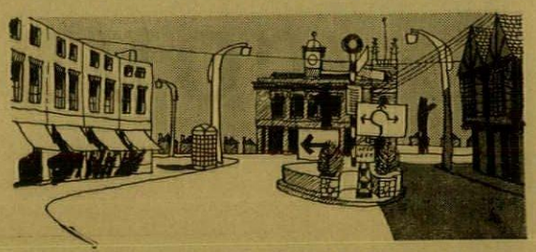
And there the deadlock rests. While British local government persists in behaving like a ludicrous cut-rate edition of national politics, the two attitudes invariably attach to different acts in the political circus, resulting in amenity becoming a minor political counter. Most of the time the Utilitarian wins; a bit of the time the Preservationist wins and secures one 'beauty spot', often cut off visually from the environment around it, a pattern already clear in some outer-London boroughs with their handful of ancient monuments floating like flotsam in a sea of mess.



the typical twentieth-century town centre.

Is there no other solution?—there is obviously the Famous English Compromise, or half-way house, a kind of statistical average of 1 and 2. This is:

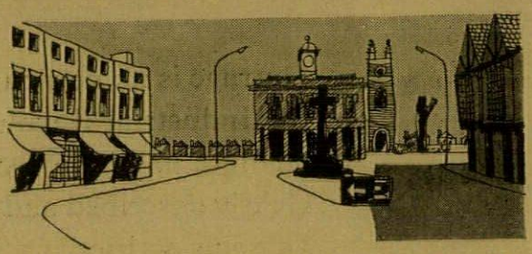
3, *The Tidy-Minded*, which means that all that was going on before continues to go on but with rather better detailing and rather less mess. That is where *Counter-Attack* could lead if it succeeded in the shallow sense and failed in the deeper one: straight to a hygienic and sterile national Sunday School.



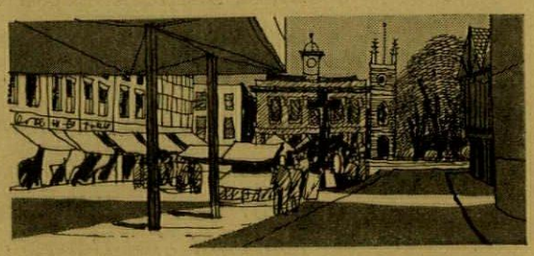
next, the same thing with a bit of Preservation at work.

And finally, there is the creative harmonization of old and new, the half-way house plus imagination, the position of:

4, *The Improver*, which is the REVIEW's position; the attitude that changes can be fitted into the existing pattern to enhance it, not explode it, and that where an existing pattern has to go under, the new pattern can be constructed to be something finer than the old. The keynote, if one word could be found to express it, is integration or 'togetherness'. Nash was clearly an Improver when he built the New Town which we know today as the Regents Park estate: so were some of the early industrialists, at Coalbrookdale or near Halesowen. So, unconsciously, have been the host of local masons† who have made English country towns—Devizes, Ludlow, Louth, Lancaster—among the great anonymous masterpieces of the world.



third, Preservation and Tidy-Mindedness—still nowhere near creating a whole environment.



and finally, Improvement—well designed things related to one another.

This same lesson of togetherness runs through the aesthetics of individual works of art, where 'togetherness of the components' in its widest sense is the essence of artistic

*But, significantly, not 'sound business'. The big American corporations have realized that imaginative design means prestige. The U.K. will realize this, in the usual way, twenty years late.

†Including the one who put a single rumbustious red brick c 18 front in the middle of Burford's cool stone High Street, a kind of *pons asinorum* between Tidy-Mindedness and Improvement.

quality; and through life itself, where psychological terms like 'integrated' and 'balanced' simply mean that living has ceased to be a matter of components—'work', 'recreation', 'home life'—they are all in relation to one another.

There are only too many organizations devoted to Utilitarianism, a few practising Preservation or Tidy-Mindedness; none championing Improvement. The REVIEW is going to provide one. Ever since *Outrage* it has had a stream of cries for help or advice: it attempted to channel them in a small way in the April issue and found that even more cases were sent to it. It can only do them justice with a permanent organization and it is therefore setting up a Counter-Attack bureau. The effectiveness of *Outrage* and *Counter-Attack* was greatly increased by the splendid treatment they received in the national press. In particular *The Observer* has been continuously active in supporting the campaign and the REVIEW is pleased to announce that the bureau will operate in association with *The Observer*, which has made a grant towards the running costs. *The Observer* will forward all requests for help and will also give details of cases under investigation; its circulation and rapid schedule, publishing a matter of days ahead, rather than the REVIEW's six weeks—will be an immense help.

In the REVIEW, 'Counter-Attack' will publish details of cases under investigation in monthly bulletins like that in the April issue (this month's is on page 451): each case will be followed through to the end, prodding and nagging local or national authorities for months on end if necessary. It will continue the Townscape and Landscape articles in the body of the REVIEW, and will also commission and publicize research and social studies about the very many Outrage subjects where there are many loose assertions and damn-all hard facts. But its main job is to help the public to the limit of its capacities: if you have a problem or want advice, write to

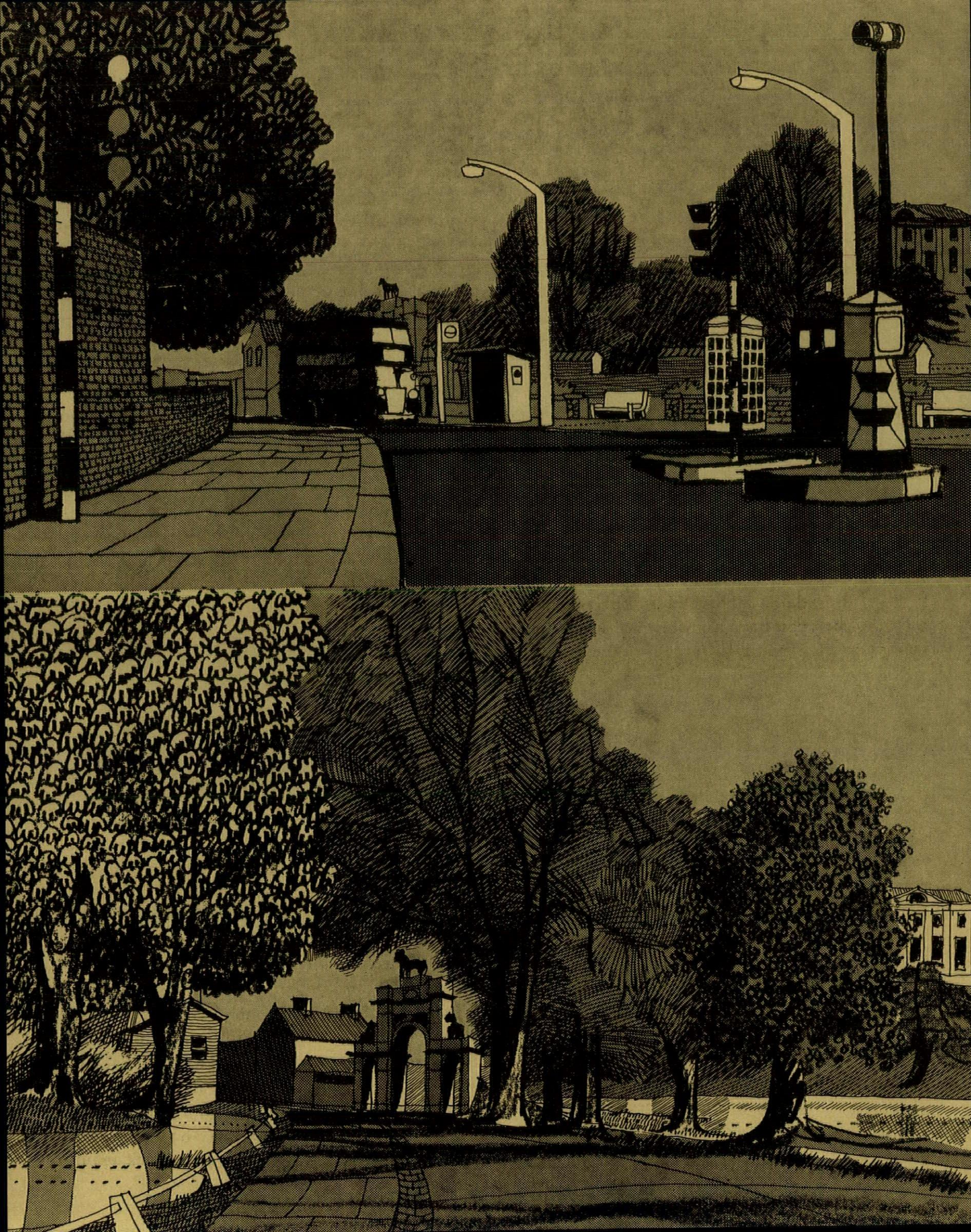
Counter-Attack

9, Queen Anne's Gate,

LONDON, S.W.1.

The bureau doesn't guarantee success, or anything like it, but, at worst, it will give the outrager a good run for his outrage. Any advice given will of course be free of charge: in some cases—such as tree lopping—it will have to be simply of the 'do-it-like-this' variety; in others, such as the Westgate fields at Chichester, reported on page 451, something of national importance is involved, requiring a REVIEW article and the widest possible publicity. The advice may sometimes be unexpected, for the bureau is committed to 'Improvement', and not to 'Preservation'; but it will always be genuine and never influenced by a 'party line', implicit or expressed. The bureau's only rule is that there are no planning rules or stock solutions: there are only places, the people who live in them and ways of enhancing or disfiguring them. No two places are the same, and no two solutions will be identical.

For a long time now the spirit of the place and the spirit of the inhabitants have stood outside the castle of planning, communicating with those in authority—in triplicate—through the 'usual channels'. It is high time to open the drawbridge and let them back in again; if the bureau can help to do that it will have fulfilled its purpose. Meanwhile, uncommitted, in the best sense, at a time when labels and -isms of every sort have never been more in evidence and have never meant less, it is prepared to say, to the whole non-visual, over-organized, under-humanized mess: Little Brother is watching you back again.



Gordon Cullen

The approach to the village of Ewell from London passes through two landscaped parks, Bourne Hall and Glyn House. The Hogsmill river springs on both sides of the road. The top drawing shows the scene today. At the precise point where continuity of the green belt and emphasis by water is most needed to articulate the village from its subtopian surroundings, subtopia has got there first, befuddling the clarity with a battery of irrelevant objects. Below, the scene as it could be making full use of trees and water to define and heighten the uniqueness of Ewell.

EWELL and HUYTON

A suburb of London and a suburb of Liverpool face the same problems, the suffocation and overwhelming of the genius loci by runaway technology which spawns, at an astonishing speed, its own hopeless world; placeless, neutral and without beginning, middle or end. This article attempts to show how the essential quality of locality can re-created out of growing chaos.

THE ROAD TO EWELL

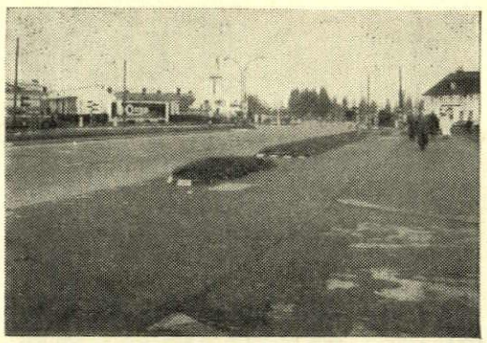
The road from London to Ewell is, by British standards, fairly fast, but the ride is depressing if you observe the scenery. There is no need here to enlarge on the dreary, continuous ribbon development through which the road passes; it is, as the photographs show, typical subtopia. After half an hour's driving it seems that it must go on for ever and ever.

The story starts a little way outside the village for here the main road to Epsom sweeps past Ewell and a minor road takes us into the village; the bypass was constructed to preserve the village several years ago. This, then, is the picture today. Until recently a village lying in its own meadows it is now engulfed by subtopia and, even with the bypass, traffic, particularly buses (50 per hour), is forcing an internal explosion. Thirdly, the cancer of subtopia is attacking the internal structure of the village and signs of disintegration are evident.

As a result of this threefold attack the village is on the brink of disintegration. As a personality it is faced with extinction. And that would be a pity. This is not a sentimental attitude, it is practical sense for, if the feeling of identity goes, then we become nomads living in a world to which we do not belong for there is nothing to belong to.

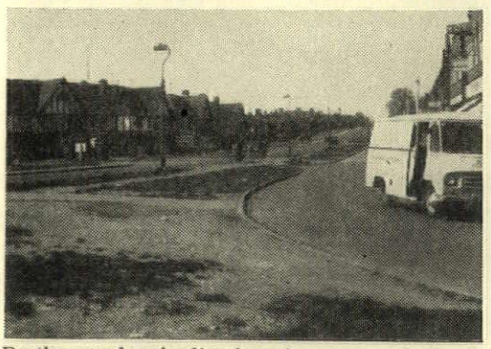
The problem confronting Ewell, and a thousand other villages, is how to preserve or create or recreate the vital sense of locality and personality.

There is enough sense of place remaining in Ewell to call for action, in fact the transformation from subtopia to the village is quite dramatic. It is as though one had left a lunatic asylum and





Five views taken at random between London and Ewell. A continuous proliferation of small objects (and big objects made small by lopping) stretching endlessly from horizon to horizon.



Do the people who live here have any relations? Do they ever go to a church or to a pub or play snooker, do they ever meet anybody? Are they human? Judging by their environment one would think not.

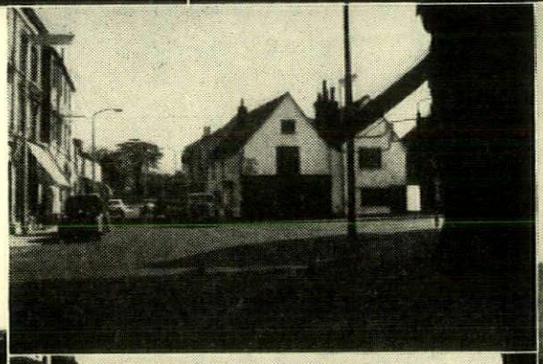


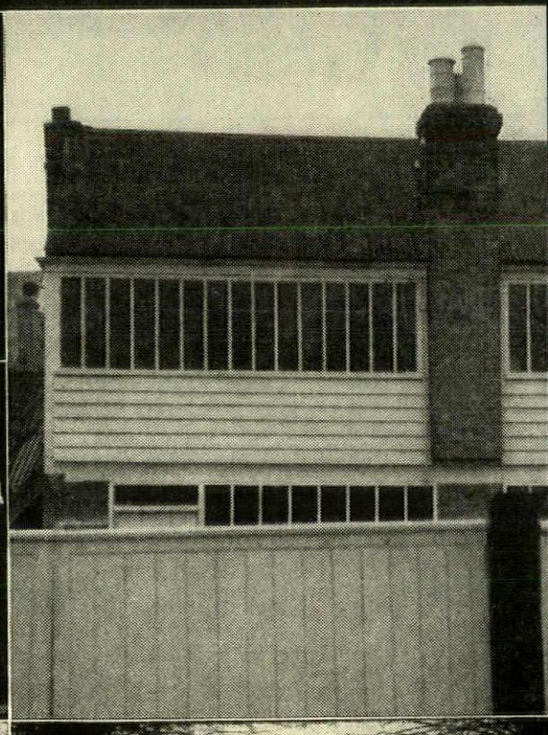


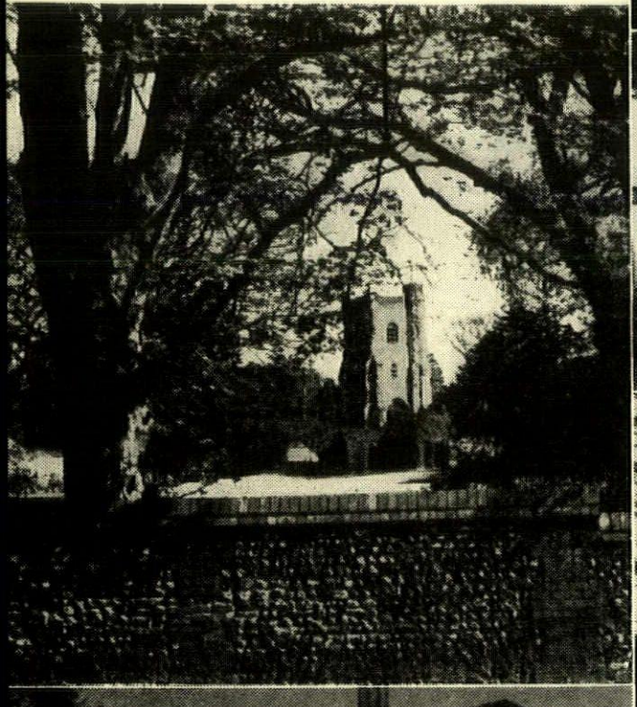


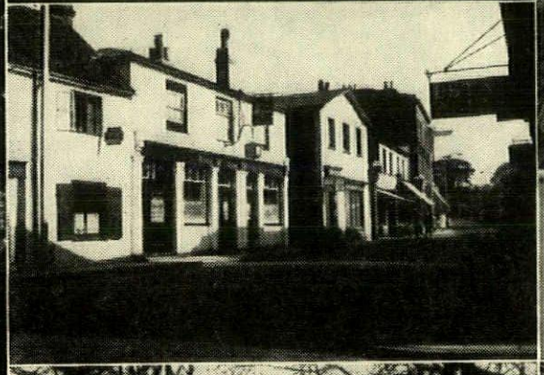


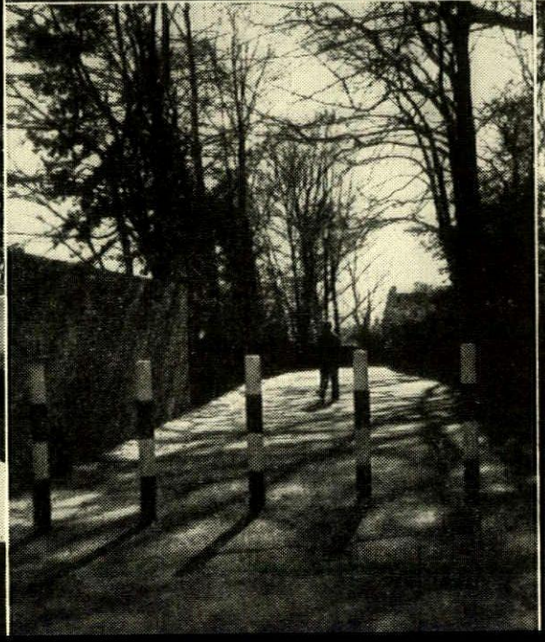
EWELL VILLAGE Suddenly, on entering Ewell, we are refreshed by the sense of locality: water which has not been concreted over, a High Street which is still a High Street and not a shopping parade, multiple use, a sense of scale greater than the sum of the parts and leafy pedestrian ways (for the preservation of which the local authority deserves full marks).

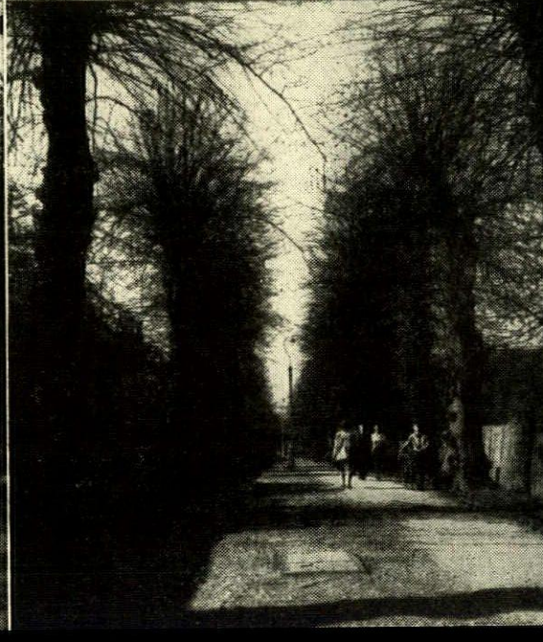














re-entered the normal world whose values you could understand. Houses are placed effectively, the road follows a small, tree-lined river across which lies rough pasture, noble unlopped trees spread over pond and lake revealing the strategically placed mansion and church tower (the mansion is placed on a slight eminence, lawns slope down to water below; yes, it's very straightforward and simple, but it is comprehensible and all of one piece instead of the nightmare outside which consists of single items, mean and tiny, proliferating separately for ever without sense). Then the High Street, unpretentious, right in scale, busy and compact, off which we see the central complex of builder's yard, school, garage, etc., etc.

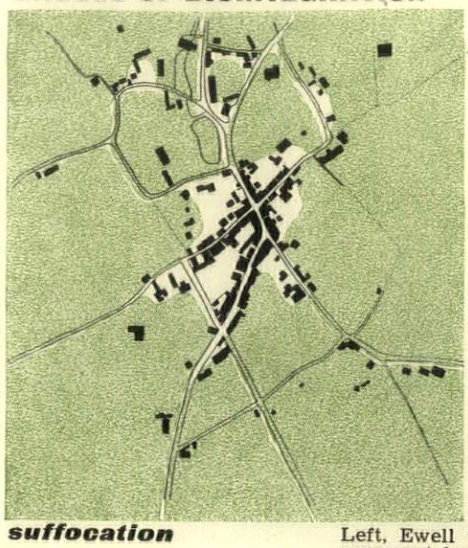
Like most villages the character of Ewell is complex. We can distinguish at least seven different kinds of character in the village. The riverside entrance road, the landscaped parkland, the High Street, the central complex of builder's yard, etc., Church Street, West Street and arcadia. All these different kinds of atmosphere go to make the vitality and variety of the village, but the first step in the process of establishing personality is to take them all together, to regard them all as one entity, just as eleven men of quite different sizes and skills and temperaments are called a team.

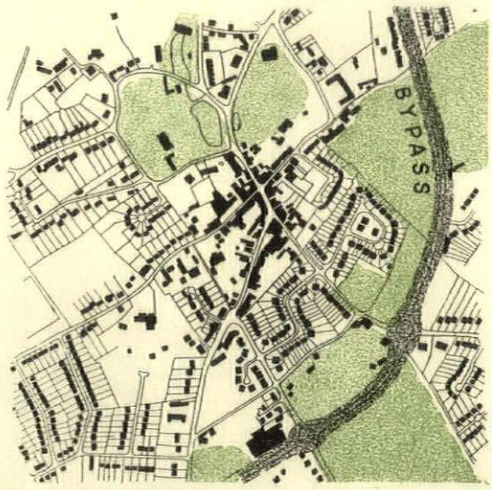
The only way to state this fact visually (for we get our knowledge through our eyes) is to differentiate the village from its suffocating surroundings, to pass from the outside world into the village through a neutral zone, however small, so that the break registers in the brain. This can still be done at Ewell since almost three-quarters of its perimeter is green. The riverside, Bourne Hall, the Churchyard, school playing fields, National Trust property along the bypass, the bird sanctuary and leafy pedestrian ways form a chain of grass and trees through which one passes to arrive at the village centre.

The first proposal, therefore, is to make this green belt *appear* green especially in the vital places, i.e., where the entrance roads pass through it. In other words we value greenery not only for its inherent pleasantness but also for *the job it has to do* in the scheme of things. Seen in this light it seems a mistake to befuddle the issue by erecting a public lavatory, a bus shelter, a police box, an air raid siren, and an ornamental garden at the precise point where continuity of the green belt in its simplicity is most vital (see frontispiece on page 408). Water, too, is a powerful isolating or defining agent, yet at this point it is hidden behind walls, one would not guess it was there at all. All the entrances should be examined in this way so that eventually the village achieves individuality.

The next step, moving into the village, is to find out what are the causes of internal disruption. Think of the village as a house (we have just come through the front door) with various inter-

CAUSES OF DISINTEGRATION





suffocation

Left, Ewell village in 1920. Right, Ewell today. The green areas represent large scale landscape, public or private, which could be seen by the villagers.





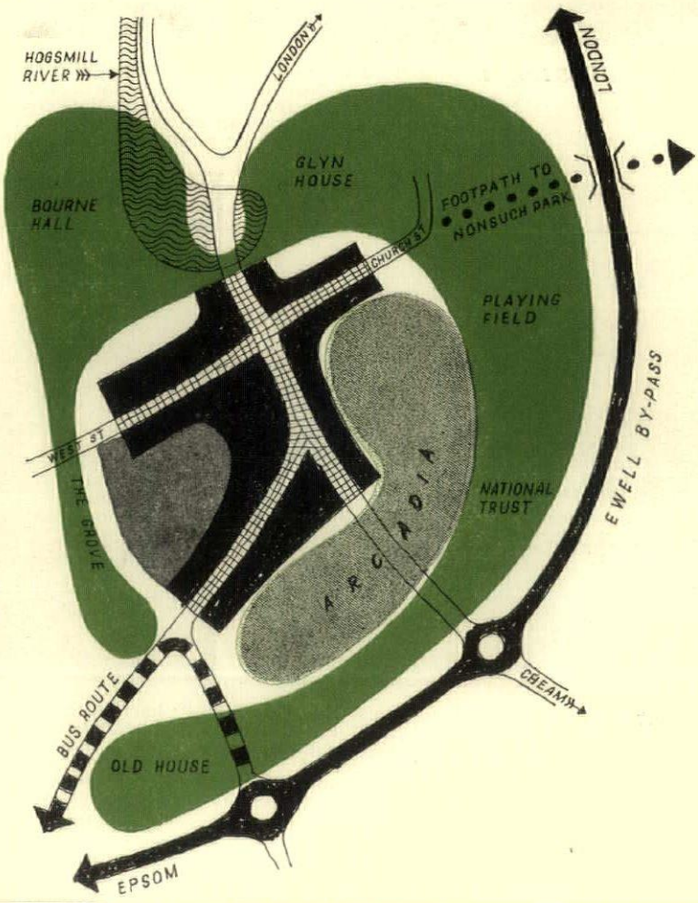
internal explosion

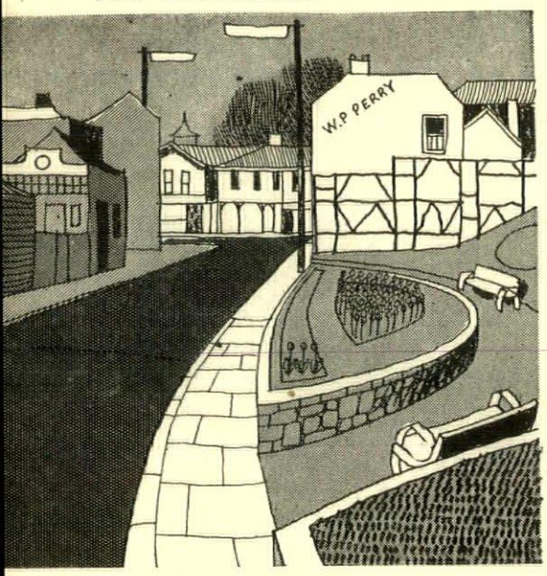
Left, High Street as it is early on Sunday morning. Right, as it normally is. With 50 buses an hour and private motorists, the pressure, inconvenience and smell are causing a very serious problem.

PROPOSALS

To combat suffocation the village should be encircled by its own natural green belt to form a visual break between itself and the outside world. To this end all available green space should be mobilized to complete the encirclement as shown on the diagram.

To prevent the disintegration of the heart of the town by traffic the buses should be re-routed along the by-pass and brought into Ewell along the Reigate Road to a bus station at the end of the High Street where it widens out, thence to Epsom (dotted line). Inside this overall plan the various subdivisions of the Town, High St., central complex, Church St., arcadia, etc., should be strengthened and heightened in character to achieve their own types of uniqueness—as demonstrated overleaf.

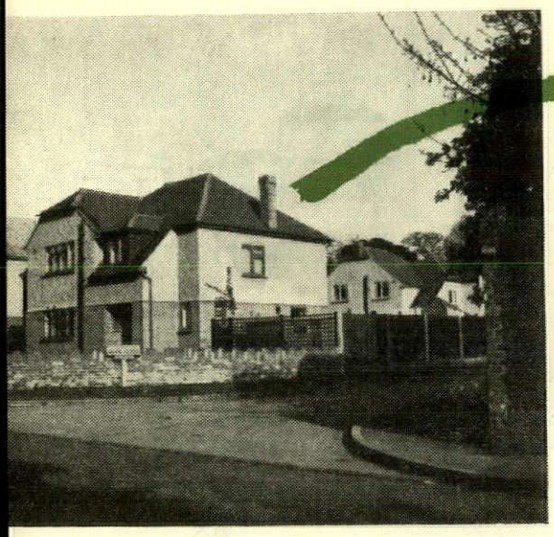


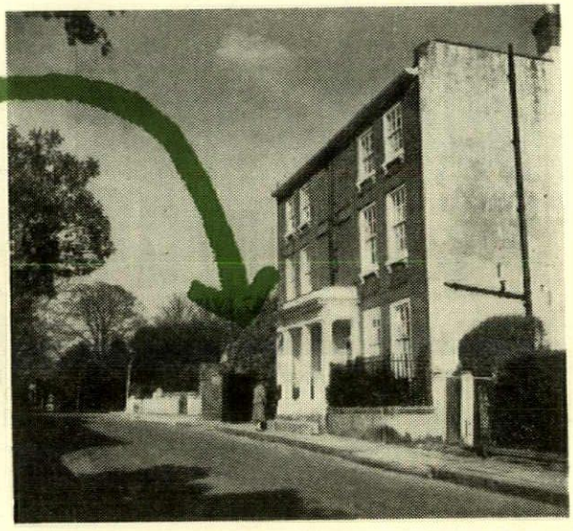




High Street

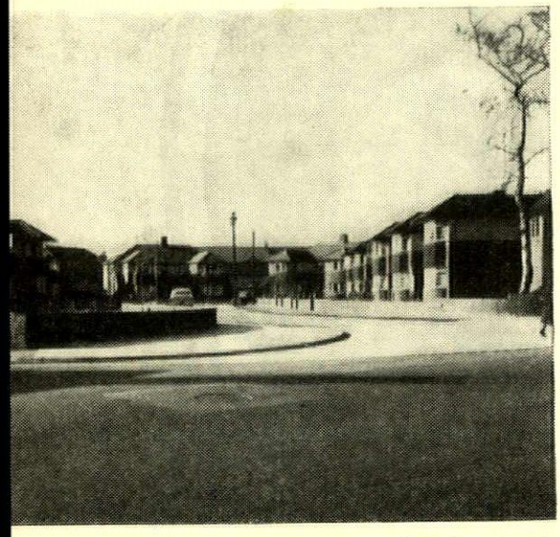
Two views taken in different directions from almost the same spot. Left, a public garden is not a High Street, it is the negation of High Street and dissolves away the proper quality of trade and the offering of goods for sale seen in the view on the right.

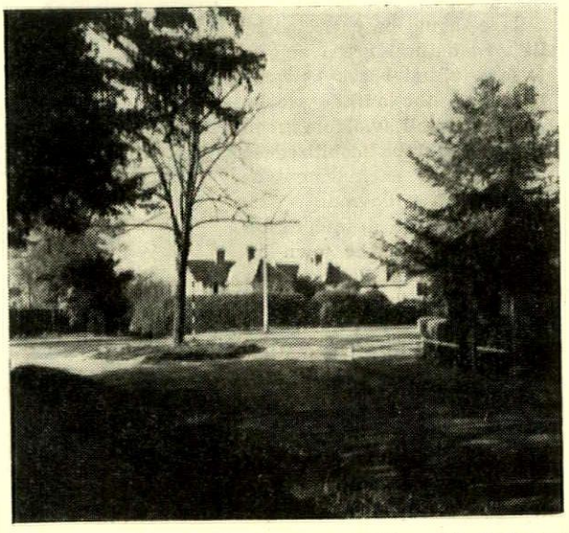




Church Street

Two views in Church Street, which has its own unique character of street architecture leading on to large scale planting. Left, the villas intrude and crack the street in half, thus speeding the process of disintegration. Right, the position of the villas in Church Street is shown by the green arrow. A wall or planting would preserve the street.





arcadia

Left, how not to do it; barren, treeless, anonymous, neither fish, flesh nor good red herring. Right, the proper approach in which one senses the right character of seclusion, of pleasure in the green bowers and grassy verges, of a proper sense of trim in hedges and furniture. It is difficult to imagine that the two views are quite close together.

communicating rooms each with their own special character. The main room is the High Street, the atrium. At present it is, at times, barely usable due to the buses and traffic. There are two alternatives, either to make the room bigger or to reroute the buses. Both are possible and, indeed, road widening has already begun. The simplest solution is to reroute the buses along the bypass and to bring them into the village along the Reigate Road where the High Street widens. This gives a fairly central bus station and preserves the High Street. (It would also have the effect of changing the status of the High Street from a Class I to a Class II road, thus enabling the very tall lamp-posts to be replaced by posts in scale with the street, at present the 25-foot posts stick up above the rooflines and make the street look silly.)

The first essential of a shopping street is pedestrian use of the road so that shoppers can cross and recross it at will. By road widening even more traffic will be encouraged to pass through the town and the problem thus aggravated. No, the best solution would be to regard the High Street as a shopping and business precinct, reroute the buses and impose a 20 m.p.h. speed limit on local traffic, and thanks to the bypass this is possible.

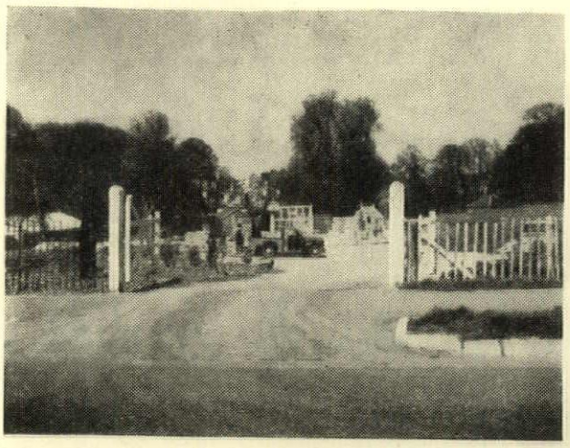
If, by these means, we can return the heart of the village to the pedestrians who use it, thus giving sense and meaning to the centre or atrium, we still have to tackle the problem of the disintegration of character.

For just as the whole village should preserve and emphasize its uniqueness so the several parts of the village should rejoice in their own particular uniqueness. Here are two examples of the disintegration of sense of place. Ewell probably has more gardens, front, back, public, private, than most other villages, yet there is another garden in the High Street. It is out of place, it tends to dissolve away the sense of High Street which should be a place of awnings and merchandise, of assembly rooms and chambers. Again, Church Street has its own particular character. It is street architecture of some sophistication leading slightly uphill where it changes character becoming more of a lane lined with tall trees and bringing one out to large isolated buildings, the Church tower, Ewell Castle school. The transition is excellent yet at the precise point of change the character is disrupted by the intrusion of a row of villas set back behind lawns and dragging the eye out at right angles to the dominant direction to little purpose. In this way the uniqueness of Church Street is compromised and Church Street is the dominant element.

If the process continues we end up with a series of separate objects having no relationship one to the other so that the sense of place is destroyed and we become nomads, dispossessed.

Everybody has his own house but nobody has a village.

The argument must by now be apparent. Ewell is an old village and the prime purpose of this article is not preservation, but to try to pin point its one great asset—its sense of place. The heightening and sharpening of uniqueness of place is the main task, but whether this involves the actual preservation of particular buildings should be a separate question. Within this broad framework there is ample scope for modernization and development, but progress which keeps the High Street a High Street and not a suburban shopping parade, which keeps the village a unit and not just another slice of continuing subtopia.





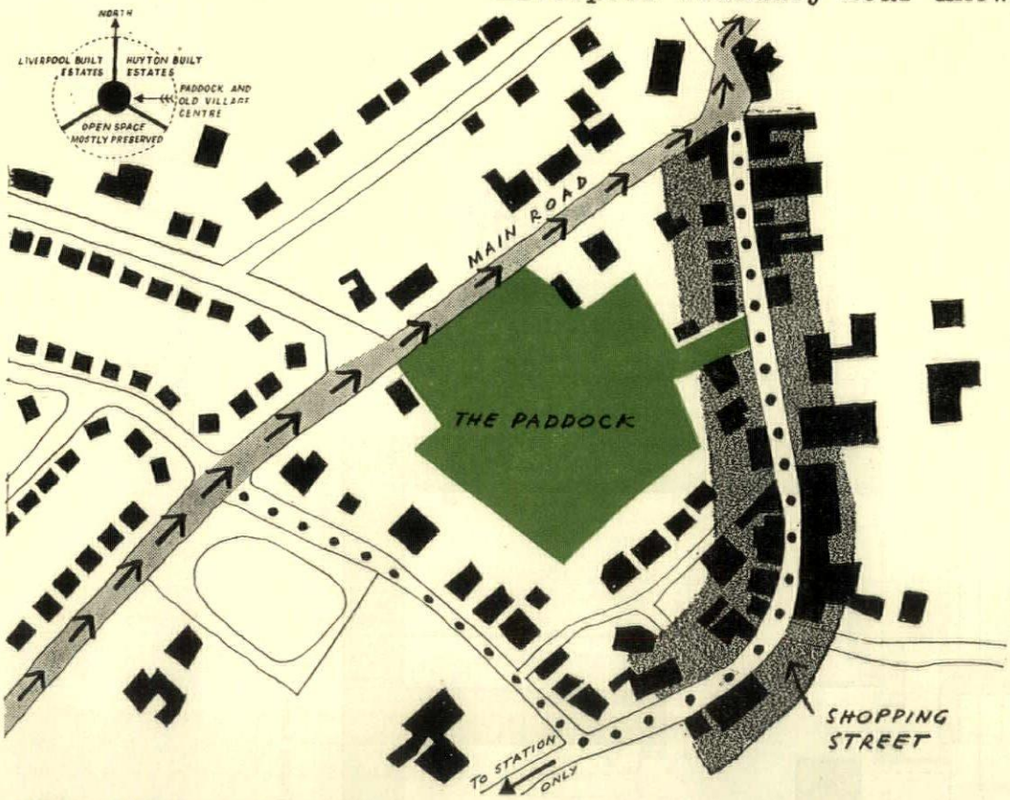
perimeter

Two views of the perimeter of Ewell from the by-pass. Left, a vital piece of green belt is shown here in the process of disintegration. Right, the scene as it should be (and is, a little farther along). Across the allotments a vertical bank of poplars forms a green, decisive edge to the village which lies behind.

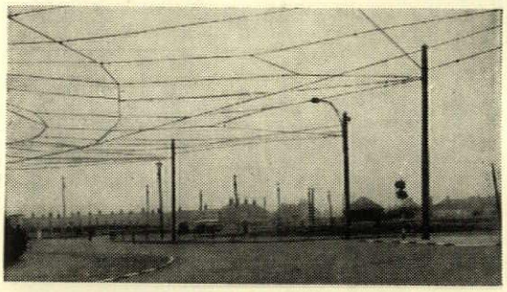
HUYTON

Ian Nairn

At Ewell, the threat is clear but not yet expressed. The next stage is the coup-de-grâce—the single blow which will shatter identity and make further resistance useless; and that is what is about to happen at Huyton, just beyond the Liverpool boundary near Knowsley.





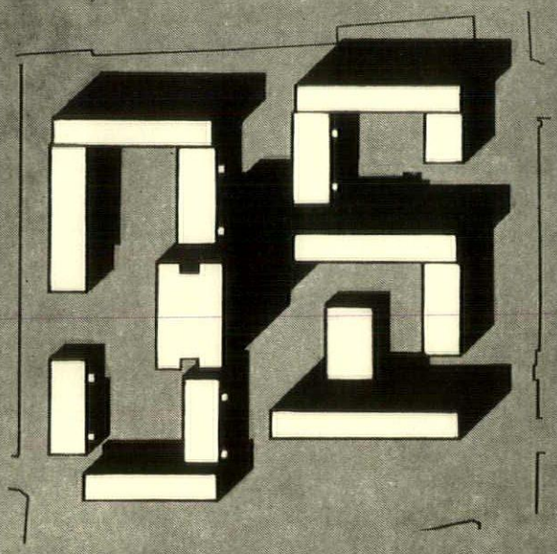


Huyton holds a startling and unenviable record: its population increased 970 per cent between 1931 and 1951 and is now 59,000. Nearly all of this was Liverpool overspill, most of it in Liverpool-built estates. Even so, there is still an intimate small-scale centre—a shopping street looping off the main road, enclosing a rough meadow called The Paddock. The U.D. (it wants to be a borough) divides like a roulette wheel, see above. The threat is a shopping arcade in the middle of The Paddock: the excuse is that the estates are badly short of shops. Opposition is battered down with language like "I had a secret ambition to see Huyton as a borough, but now I see that idea has receded ten or twenty years through the machinations of some narrow-minded stupid egoists." Well, well. Now let's have some common sense:

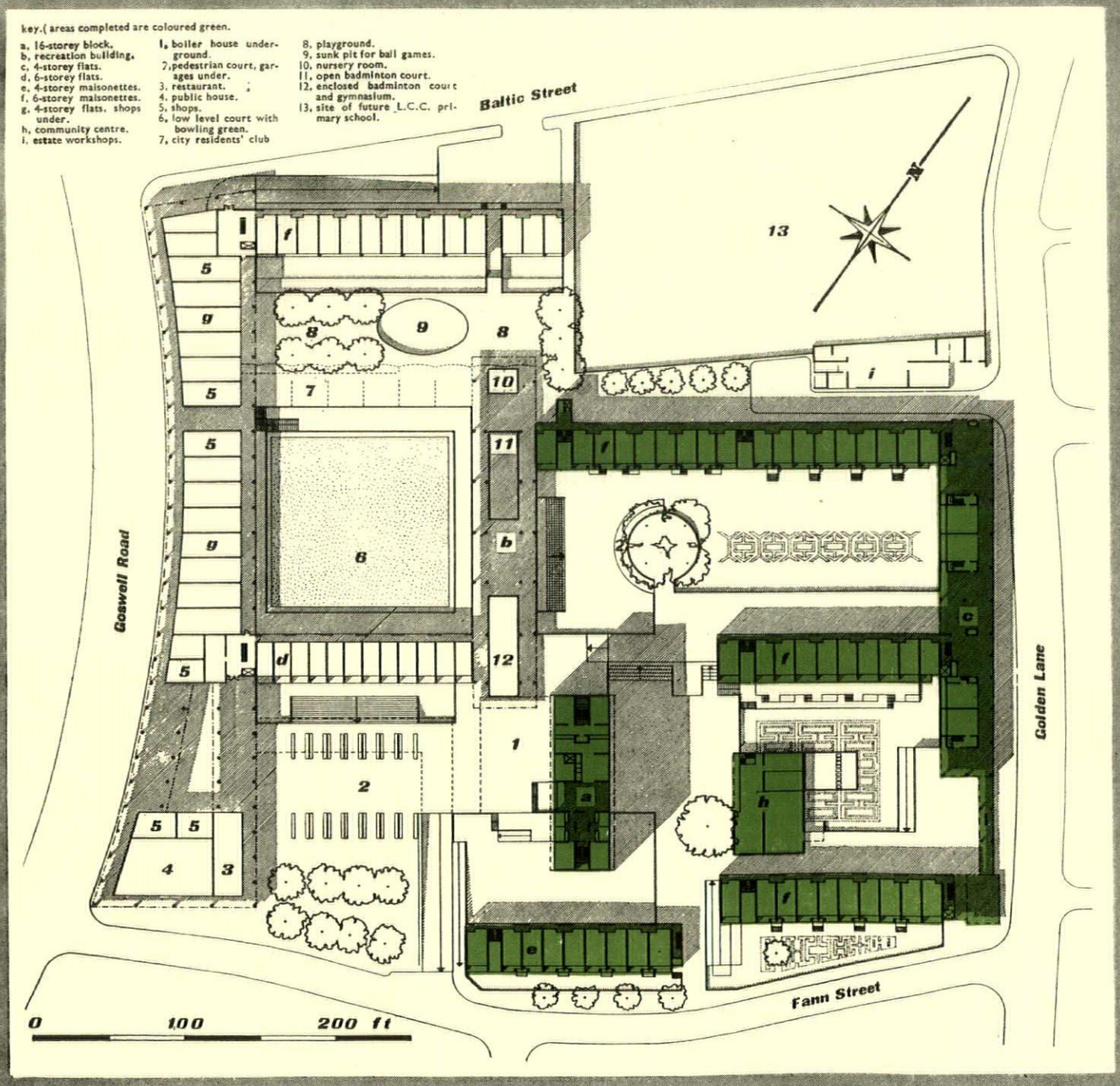
First and in particular, shops on The Paddock will be little use to the estate-dwellers who are said to want them. The Liverpool estates would be almost as far away as they now are from Old Swan and the other Liverpool suburban centres. The Huyton estates are mostly cut off by a railway. In both cases the answer is more shops on the estates themselves where they are desperately needed. The Paddock has just enough shops to serve the people who can walk there in comfort and it should stay that way.

Second and in general, Huyton isn't constructed like a borough and never will be, except in a purely statistical Malden-and-Morden sense. Frankly, the north-west segment might as well go inside the Liverpool boundary—it is Liverpool-built for Liverpool people and there's no country or village centre left there to spoil. That would bring the population down to a size, say 15,000 people, which could then develop as a self-contained unit.

We are not putting forward the centre of Huyton as a beauty spot. It has nice scale, a lot of trees and the fine rough meadow (which must be kept rough and un-flower bedded), but the buildings around it are ordinary and there is a lot of mess, upper picture. But here is the blueprint for a delightful centre: preserve The Paddock and the possibility of realization remains: give it up and Huyton centre becomes one more no-place like the screaming wilderness of Horn Smithies, on one of the Liverpool-built estates, below.



The Golden Lane housing scheme for the City of London was won in competition in 1952; the block plan, left, shows the original design. For a density of 200 people per acre this was felt to be too enclosed and oppressive, and the design was altered to give fewer and taller blocks and bigger courtyards. The site area was then increased from four to seven acres by including land up to Goswell Road, and the final layout is shown below. Half of this revised scheme is now complete and is illustrated on the following pages.



HOUSING IN GOLDEN LANE, LONDON

ARCHITECTS | **CHAMBERLIN, POWELL AND BON**



1, the site from the south-west



2

General The site is near the City of London boundary, ¼ mile N. of St. Paul's. It was completely cleared by bombing and had to contain one- to four-room flats at a density of 200 p.p.a., a community centre and a central heating and hot-water system. The need to create a sympathetic environment for the 1,400 people who will occupy this estate dominated the planning. The whole site is laid out as a pedestrian precinct ; all public roads which formerly intersected the site have been closed and the main service road will be underground at the rear of the shops which flank Goswell Road. The public stairs, lifts and refuse chutes within the blocks of flats have been kept for the most part to the perimeter of the site so that service vehicles can serve the buildings from the public roads. The blocks contrast both in height and character ; family flats and maisonettes are contained in the tower blocks and small two-room flats are planned in the central 16-storey block and in the block facing Goswell Road. The blocks divide the site into a series of inter-related courts, differing both in character and function. Main pedestrian circulation is at ground level while the more secluded courts are largely excavated to basement level. Of the nine blocks of dwellings, five are planned as maisonettes, and four as flats.

Block a provides 120 two-room flats on 15 floors with estate offices, hobby rooms and laundry rooms on the ground floor. Public circulation is concentrated at each floor level in a central corridor served by two lifts and connecting escape staircases at the north and south ends. All bedrooms are approached through the living-room to avoid the inclusion of an internal corridor. Emergency escape doors are provided leading directly from the bedrooms to one or other of the public lobbies or staircase landings ; half of the living-bedroom partition can be opened so that these two rooms may be used as one.

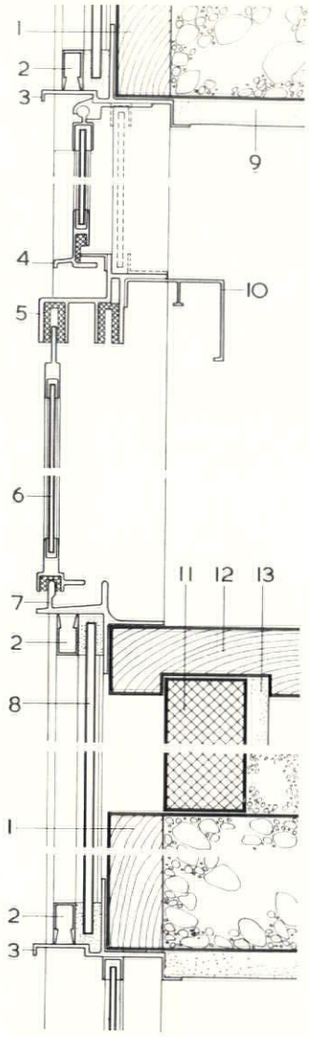
The structure is a concrete egg-box ; 9-in. r.c. cross walls of uniform thickness (9 inches) occur at 20-ft. centres, and r.c. hollow-pot floors eight inches thick at every 9 ft. The reinforced concrete roof superstructure is supported on the cross walls beneath. The projecting balconies are cantilevered from upstand beams forming the external wall of the kitchens and bathrooms.

The north and south end concrete walls are heavily pick-hammered and finished with a gritty grey paint. The return walls to the staircases and the projecting balconies are fairfaced concrete similarly painted. The main elevation to the living-rooms and bedrooms of the flats are clad with clear or yellow opaque glass, held in aluminium frames ; opening lights slide horizontally or are in the form of top hung night ventilators. Kitchen and bathroom windows at the back of the balconies are in softwood frames. The flat roof has a vermiculite insulating screed, asphalt, and *in situ* reinforced sand and cement screed topped with pebbles. The exposed concrete at ground and basement levels is pick-hammered and painted black.

All flats are centrally heated by finned tube convectors behind panels beneath the window cills. All the main services are distributed horizontally beneath the ceiling at basement level and, at roof level, the cold water feed and supply pipes and the vent pipes from the calorifiers are collected together and carried horizontally in the pergola to the centre of the building.



3



enlarged vertical section.



key section.
through one floor of cladding

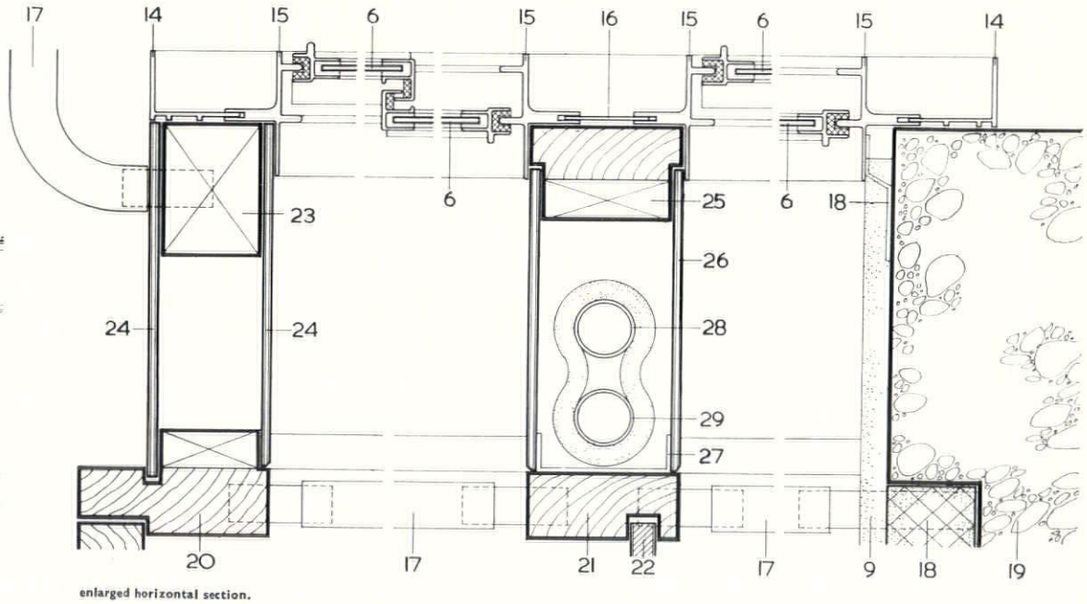
key to all sections.

1. Hardwood permanent shuttering secured to reinforced concrete floor with rag bolts.
2. Aluminium 'clip-on' glazing bead.
3. Aluminium head member.
4. Aluminium framed top-hung opening light.
5. Aluminium transome member.
6. Aluminium framed horizontally sliding opening light.
7. Aluminium cill member.
8. Yellow 'Muroglass.'
9. Plaster.
10. Aluminium curtain rail and pelmet.
11. 2 in. thick moler brick fire-break.
12. Softwood cill.
13. Rendering.
14. Aluminium edge framing, bedded in mastic.
15. Aluminium outer frame to windows.
16. Aluminium cover plate to mullion.
17. Tubular steel guard rail.
18. Cramp securing window frame.
19. Reinforced concrete wall.
20. Softwood balcony door frame.
21. Softwood frame to living room/bedroom partition.
22. 'Verbundplatten.'
23. Softwood post.
24. Plywood.
25. Softwood mullion.
26. Removable plywood panel.
27. Bent steel fixing bracket.
28. Central heating flow main, lagged.
29. Central heating return main, lagged.
30. Aluminium faced plywood panel.
31. Central heating branch return pipe.
32. Finned tube convector.

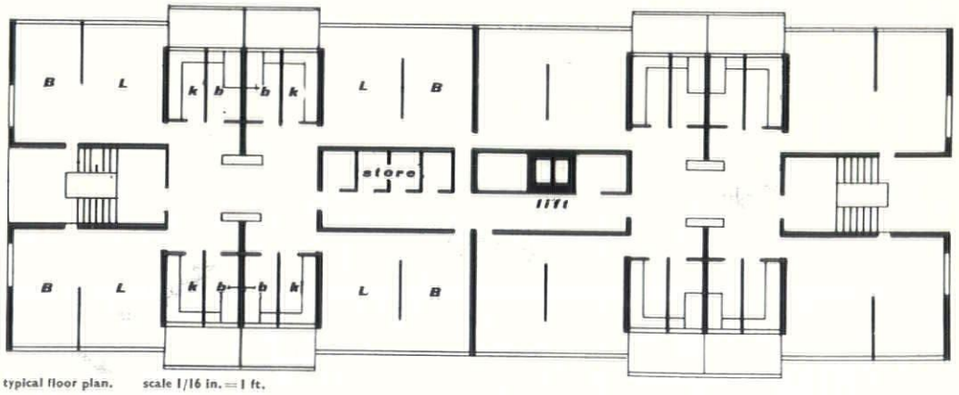


4

HOUSING IN GOLDEN LANE: Block a

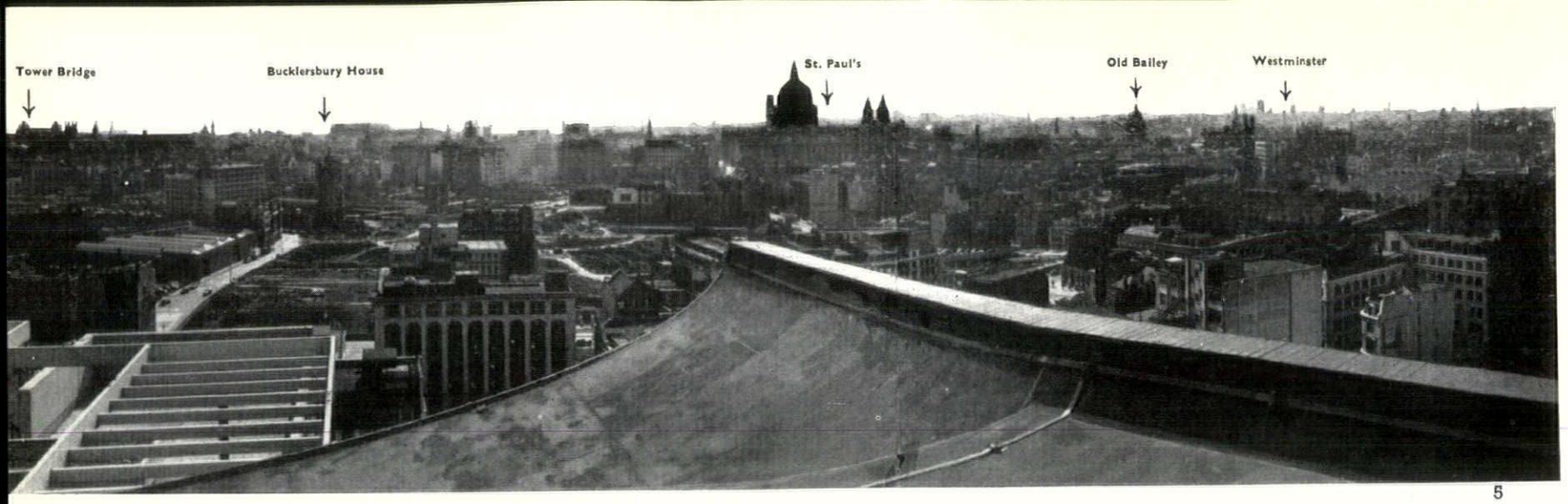


enlarged horizontal section.

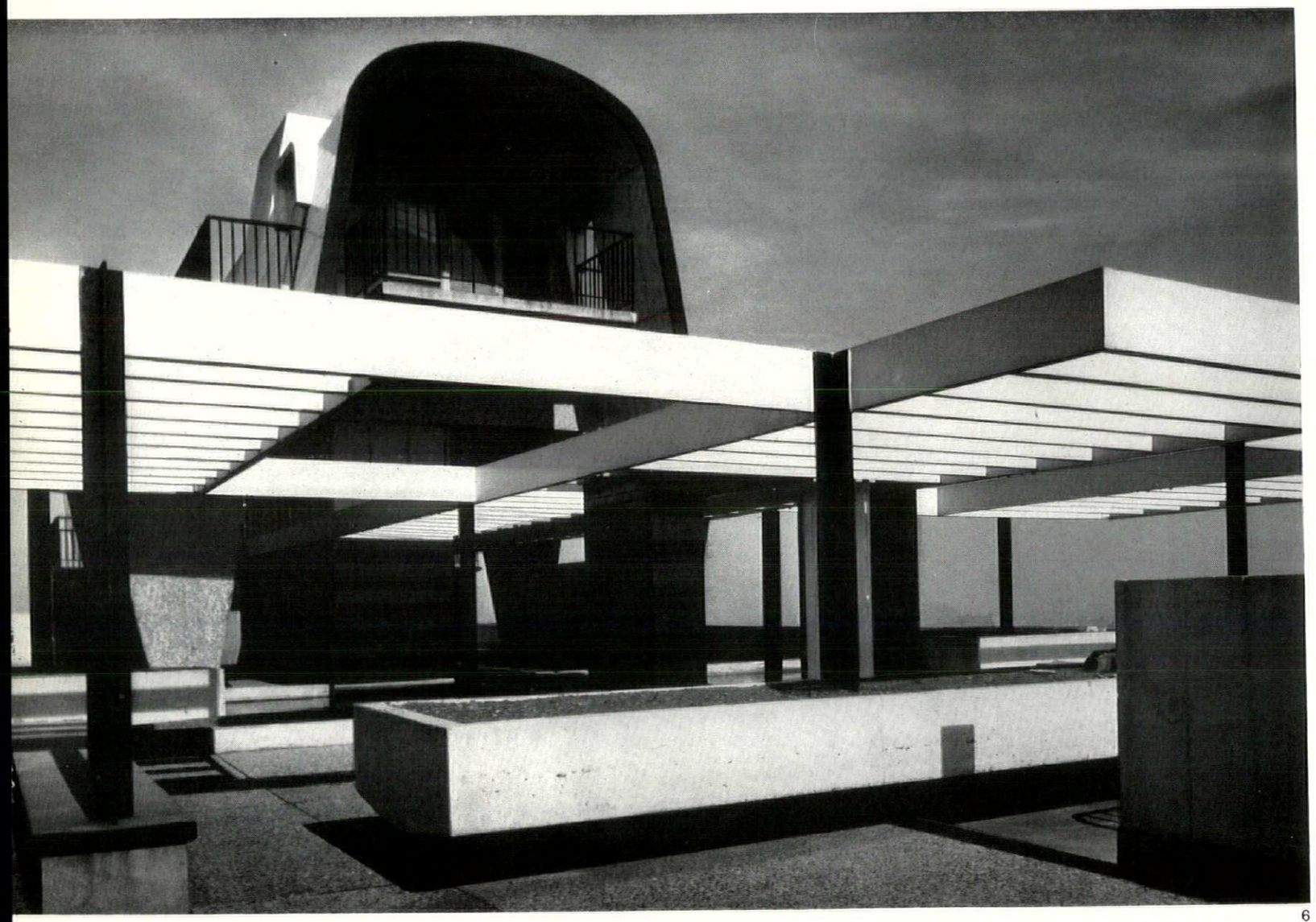


typical floor plan. scale 1/16 in. = 1 ft.

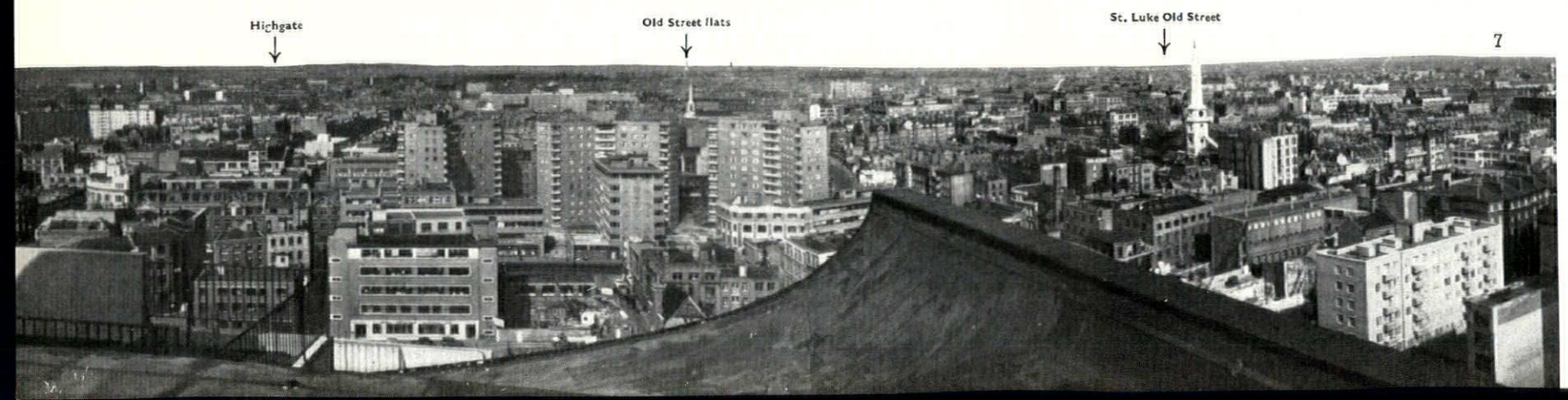
2, looking upwards at the south end of Block a (called Great Arthur House) showing the balconies on the west elevation and the recessed external stairs on the south elevation diving the two banks of flats.
3, the west elevation seen from Goswell Road across bombed sites south of Fann Street.
4, interior of one of the flats showing the sliding screen between living room and bedroom.


Tower Bridge
Bucklersbury House
St. Paul's
Old Bailey
Westminster

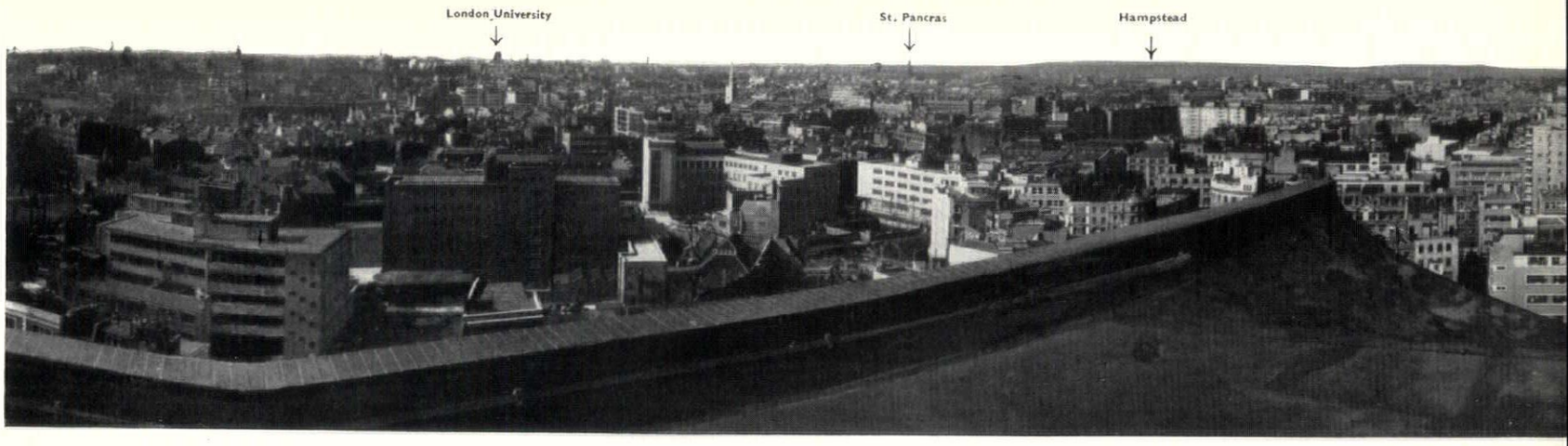
5

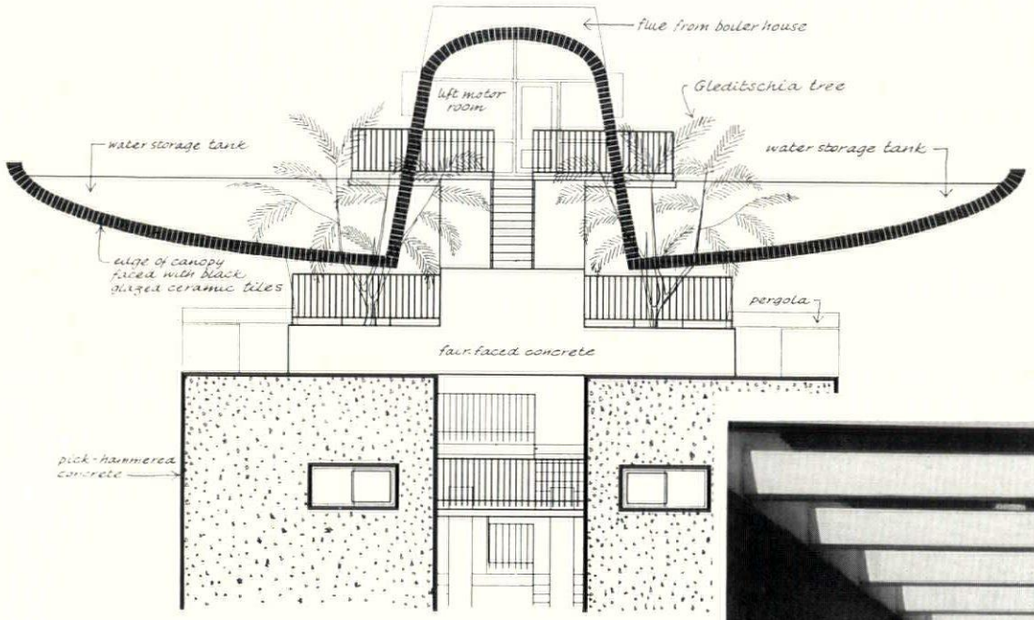


6


Highgate
Old Street flats
St. Luke Old Street

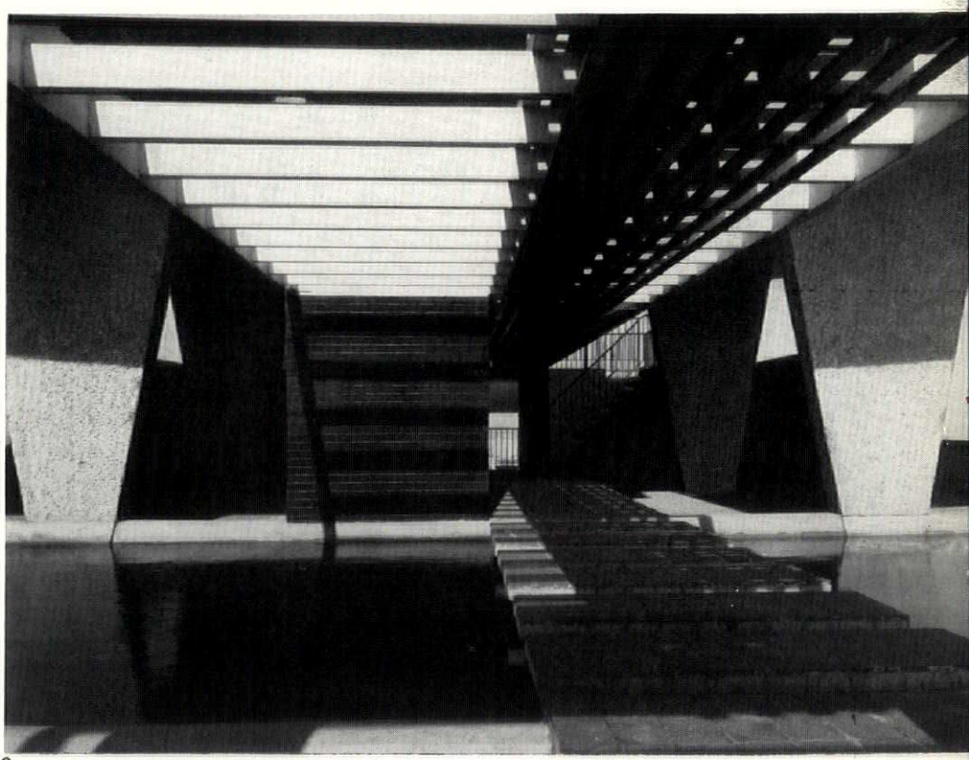
7



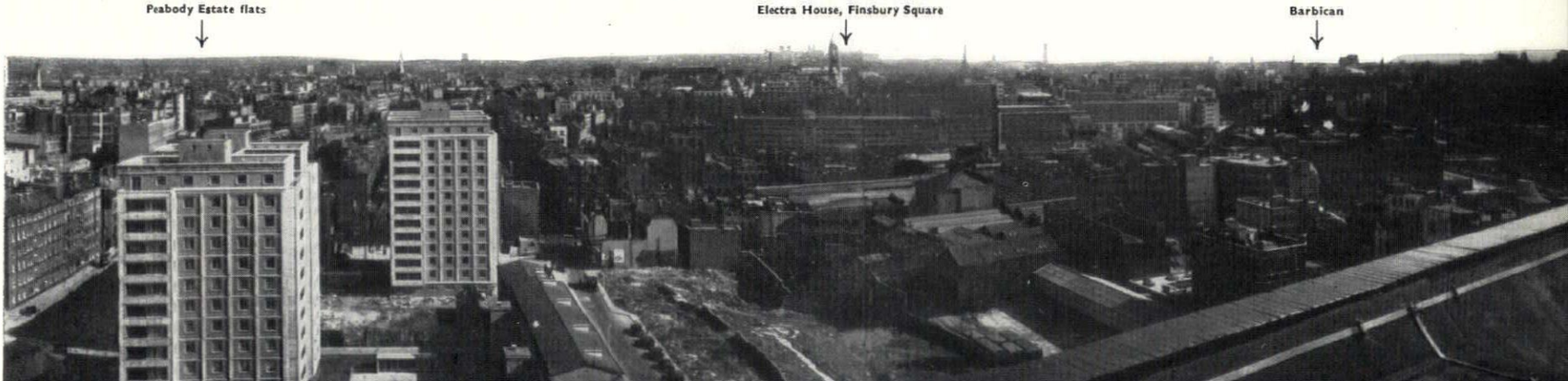


HOUSING IN GOLDEN LANE: Block a roof

5 and 7, panoramic views from western and eastern arms of the roof canopy respectively. 6, roof terrace showing seat, plant box, pergola and canopy over the lift motor rooms. 8, looking north over the stepping stones across the pool.

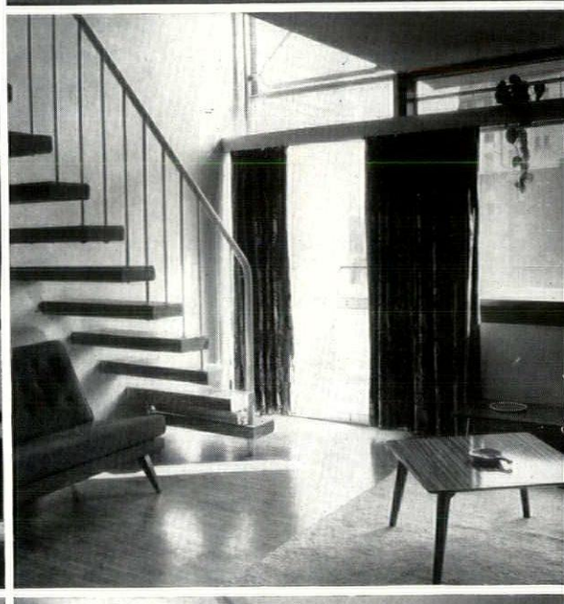


Block a: roof The flat roof is laid out as a terrace for the tenants in the upper floors. The functional elements above roof level—including the flue from the boiler-house, the water-storage tanks, the lift-motor rooms, etc.—are grouped together in a superstructure raised above roof level which forms a canopy over part of the roof. The terrace includes a decorative pool, paving, seats, plant boxes and a pergola. All the concrete of the superstructure, flower boxes, etc., is fair-faced except the legs supporting the superstructure which are pick hammered; the edges of the oversailing canopy are protected with black glazed ceramic tiles. The lift and duct enclosures are constructed of black glazed bricks. A projecting rail for window-cleaning cradles is included. The canopy edges catch the rising and setting sun while the midday sun is reflected from the pool on the roof on to the underside of these canopies.

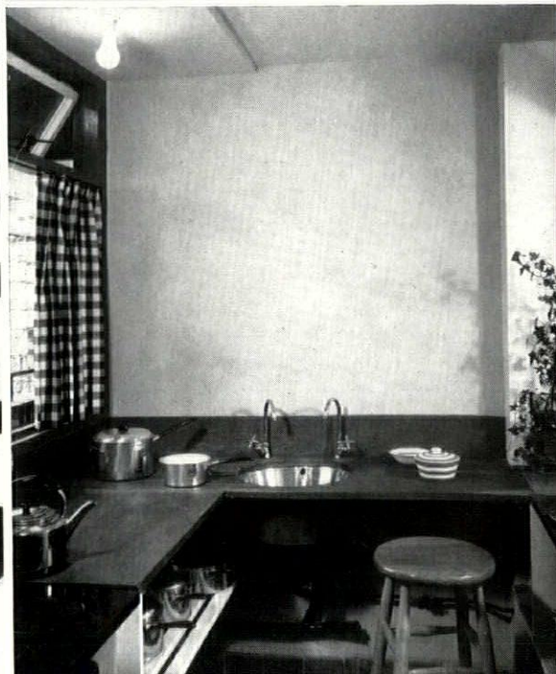










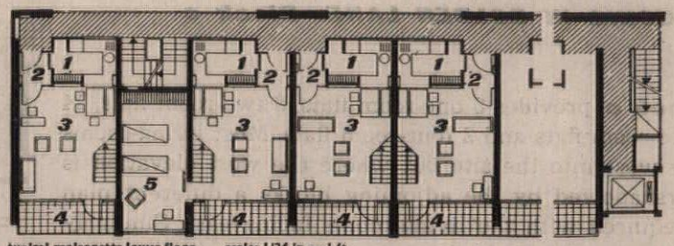


HOUSING IN GOLDEN LANE: Blocks e and f

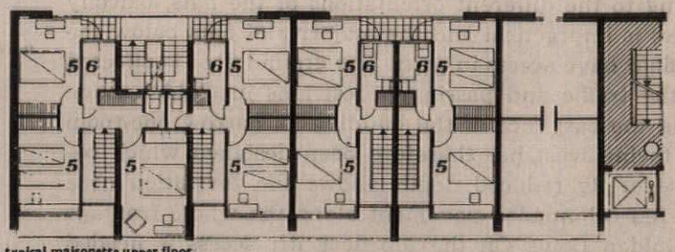
9 | 10
11
12 | 13

9, south elevation of four typical maisonettes The double height window in the lower pair is in front of the stair well and contains a heating coil. 10, view of south-east corner of the site from Golden Lane, showing the typical arrangement of lift, stairs, refuse chute and water tank at the end of a block. 11, staircase in typical 3-room maisonette. 12, south elevation of 6-storey maisonette block. The 'pairing' arrangement of the maisonettes is used to obtain an elevational order large enough to be in scale with the whole of the building. 13, kitchen with access gallery on left, and living room on right, seen through large glazed panels to increase apparent size and allow for child supervision. The blocks are named Cuthbert Harrowing House, Bowater House, Bayer House and Basterfield House.

key to floor plans
1, kitchen.
2, hall.
3, living room.
4, balcony.
5, bedroom.
6, bathroom.

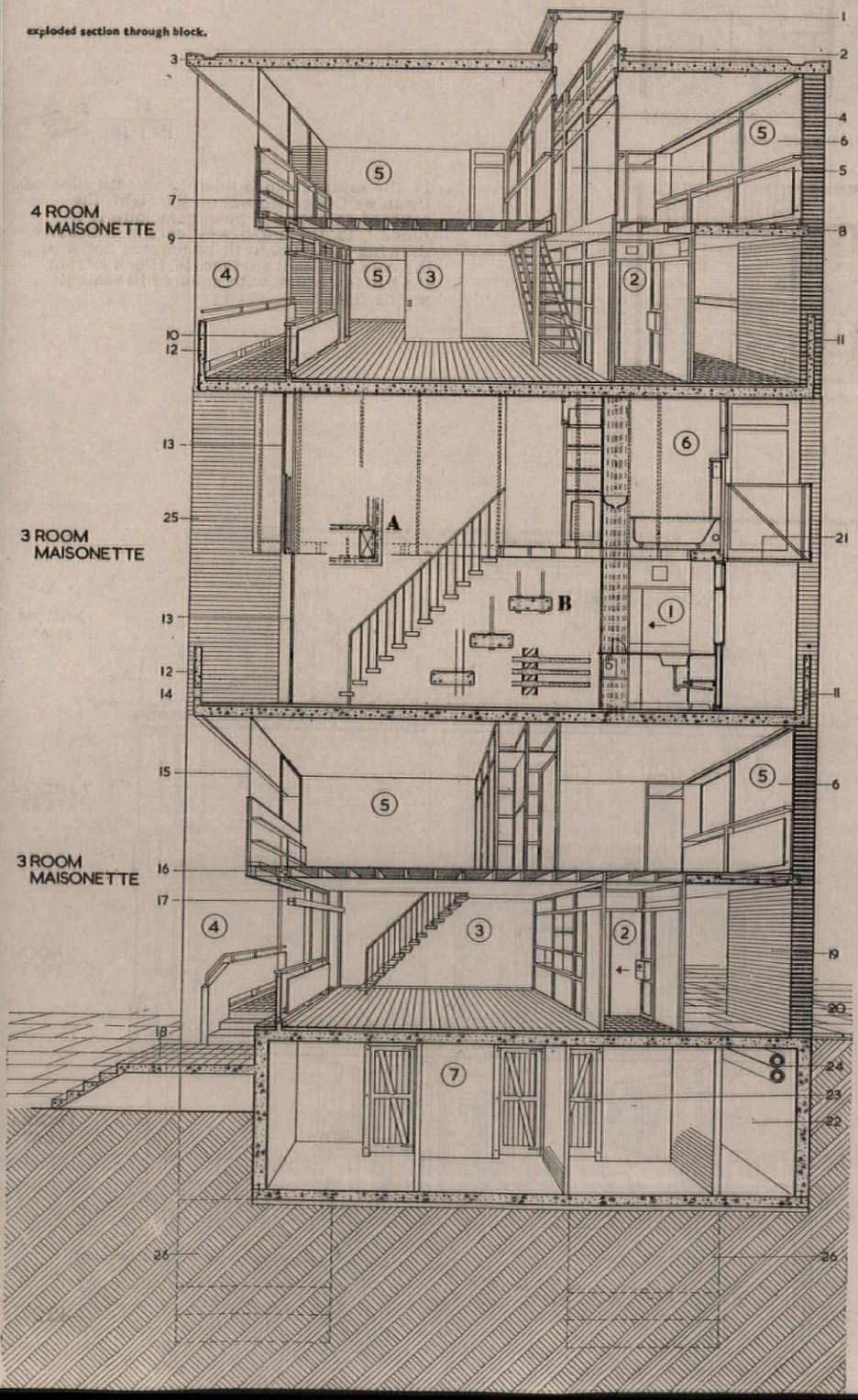


typical maisonette lower floor. scale: 1/24 in. = 1 ft.



typical maisonette upper floor.

exploded section through block.



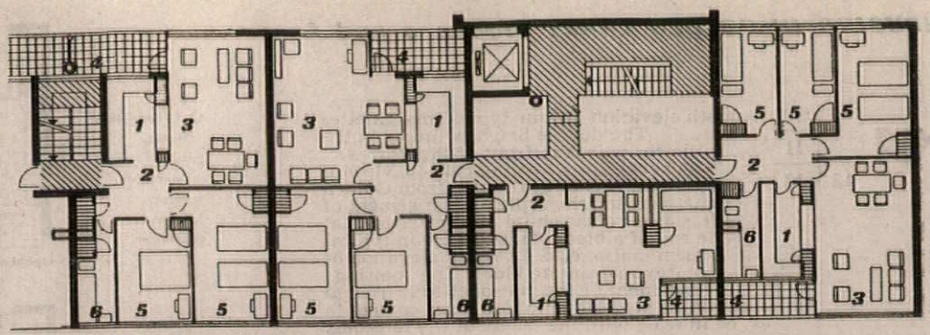
key to section. Ringed numbers correspond to numbers on floor plan.

1, 3-ply felt on tongued and grooved softwood boarding, fascia in sheet aluminium.
2, Hardwood cill on concrete upstand protected by lead flashing.
3, Reinforced concrete roof covered with 2 in. screed, asphalt and marble chippings.
4, Standard 4 in. by 2 in. softwood framing used for all internal framed partitions, extends through two floors to the top of the roof light.
6, The curtain track extends over inside face of brick pier.
7, Coloured cladding and sliding windows are both held by specially extruded aluminium frame screwed to softwood frame with asbestos lining at top floor, and north elevation, and to softwood battens in paramount dry partition on the south on the lower floors.
8, Softwood floor on battens over concrete strip forming ceiling to access gallery.
9, Frameless sliders in polished plate with full height grip and draught excluder running in felt fixed on site into groove in hardwood frame.
10, External cladding is 3/16 in. sheet glass above cill and 3/8 in. plywood below cill bedded in putty and fixed to 7 in. by 2 in. hardwood frame by 2 in. by 1 in. hardwood battens from the outside.
11, All visible concrete fairfaced, and where exposed to the weather left unpainted. The balcony upstand on the north is structural and continues through brick piers.
12, Concrete balcony front, not structural.
13, Glazed aluminium door to balcony, sliding vertically and counterbalanced by top light which, for easy cleaning, can be lowered to 4 feet above floor level. The bottom glass panel is in toughened sheet for safety. The heating coil above the door prevents cold down draughts and, being fixed within the depth of the aluminium frame, cannot cause any pattern staining.
14, 1 in. hardwood veneer floor lightly nailed to 2 in. by 1 in. battens on 6 in. wide strips of 1/2 in. insulation board which rests on the concrete floor. The floor boards are nailed to the concrete only on the perimeter of the room and in the centre, in order to reduce sound transmission to a minimum.
15, Aluminium sliding windows designed to over-slide for easy cleaning.
16, Flow and return pipe to heating coil (13) provide heating to south bedroom via duct in timber floor, provided with aluminium 'hit and miss' ventilator.
17, Projecting curtain track and pelmet across window and balcony door.
18, Private stairs, concrete—finished in blue quarry tiling providing access to sunken courts from ground floor living rooms. 13 1/2 in. flint brick piers purple sand/lime facing bricks with tinted weather pointing used on all external brickwork throughout.
20, Concrete paving flags on north side carried through into access gallery.
21, The floors of the escape balconies between north bedrooms are purpose-made mild steel grilles, shot-blasted and galvanized.
22, Basement corridor fairfaced concrete walls finished in emulsion paint.
23, Basement stores with braced, ledged and battened doors hinged from softwood plates bolted through 3 in. on edge brick partitions.
24, Site heating ring mains suspended from concrete ceiling.
25, 9 in. structural cross walls in semi-engineering bricks on ground and first floors, and flettons on the top four floors.
26, Reinforced concrete foundations taken down to ballast level.
A, Plaster partition on expanded metal fixed to 1 1/2 in. by 1/4 in. mild steel strap hangers supporting timber bedroom floor.
B, Precast cantilevered concrete treads bedded in and running across 9 in. brick walls with lino inserts on top surface.

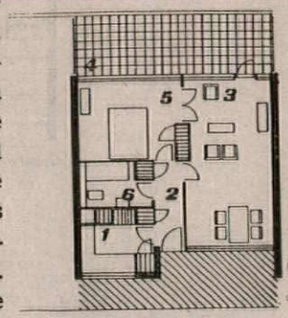
Blocks e and f provide 104 two-bedroomed maisonettes and 28 three-bedroomed maisonettes. The width of 14 ft. 1½ in. between centre lines was found to be the practical minimum for three-room maisonettes with externally ventilated and lit bathrooms. The two-storey maisonettes are arranged on three levels with gallery access on the north side. The galleries are modulated by recessing the paired entrance doors opposite the brick piers and by introducing open grilles to the bedroom level escape balconies, improving daylighting of the kitchens below. On the south elevations the party walls extend at either end of the balconies providing complete privacy between adjacent flats, which thus become in effect individual two-storey dwellings in a terrace. Within this framework the large windows and the glazed screen between kitchen and dining space combine with the double height of the stairwell to give a greater impression of spaciousness than the dimensions suggest (17 ft. 9 in. floor to floor between maisonettes; clear width 13 ft. 4½ in.).

HOUSING IN GOLDEN LANE: Block c

Block c provides 8 one-room flats, 8 two-room flats, 14 three-room flats and 2 four-room flats. Most living-rooms face west into the site but where the west elevation is overshadowed by the adjoining blocks a different plan is required with the living-rooms facing east. Similarly at the junction of blocks a one-sided plan is necessary. Owing to the different orientations of the flats, balcony access is impractical and the majority of flats below the top floor have access in pairs. The ground floor is affected by the traffic and passing pedestrians in Golden Lane along the east face of the building; a narrow one-room flat facing west has therefore been designed which because of its reduced depth allows the formation of a covered colonnaded pavement along the whole frontage to Golden Lane. On the top floor lift access is needed and consequently an access gallery connects with the existing lifts and stairs in adjoining blocks. These flats also have generous private balconies and form a continuous penthouse. The construction is composite r.c. and brick with hollow-tile floor slabs. The loads are carried by upstand beams at first-floor level on the line of the party walls, and the floor slabs span from party wall to party wall. The slab edges in the two middle floors are painted glossy white to contrast with the black strip of cill panel of varying height. This black strip is formed by casting an additional thickness of 1½ in. to the concrete wall and coarsely pick-hammering the greater part away. This very rough texture is then painted with black composition. The recessed ground- and top-floor flats have unobtrusive finishes: grey paint on the top floor and blue engineering bricks on the ground floor.

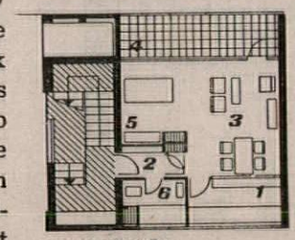


first and second floor plan. scale: 1/24 in. = 1 ft.



key.
1, kitchen.
2, hall.
3, living room.
4, balcony.
5, bedroom.
6, bathroom.

typical ground floor flat.

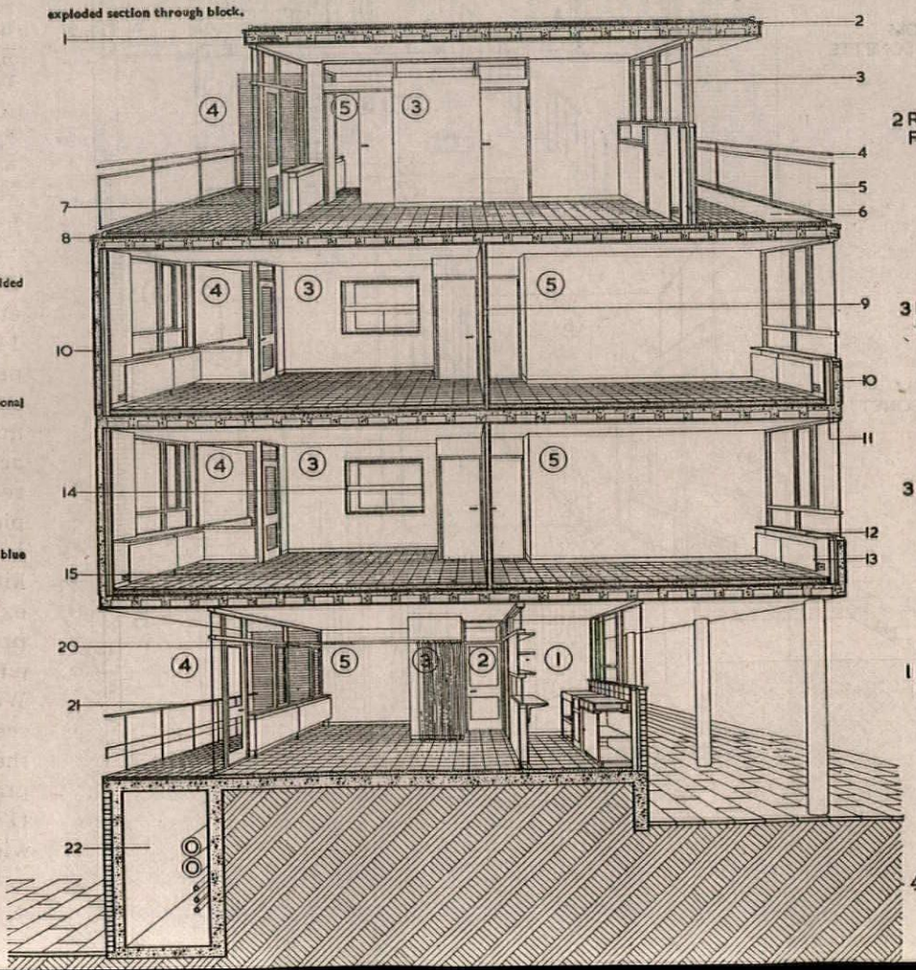


typical top floor flat.

14
15 | 16

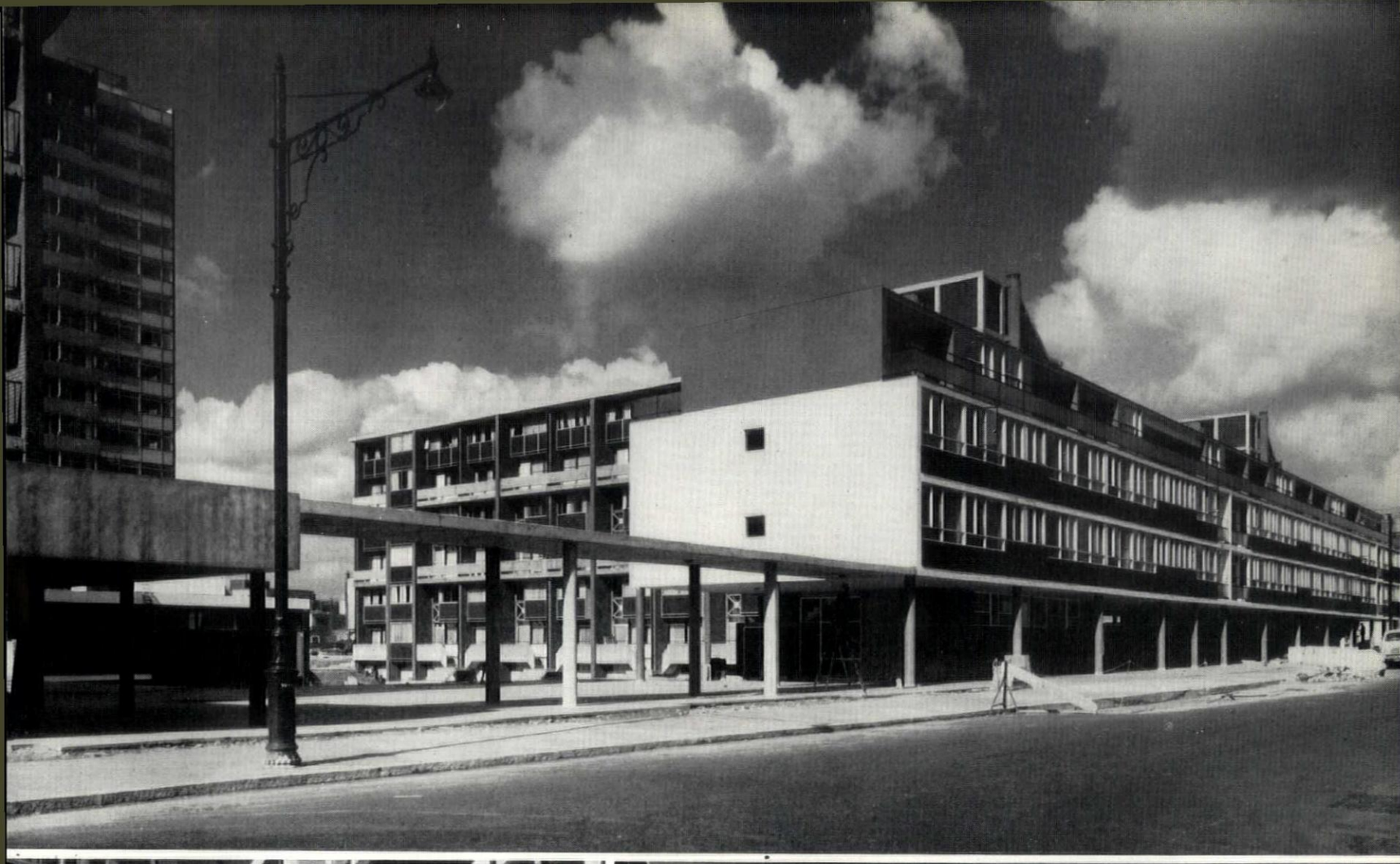
14, the estate from Golden Lane with Block c (Stanley Cohen House) on the right; the covered colonnaded pavement joins it to Block f. 15, the north-west corner of Block c, showing the sepia bush-hammered finish to the concrete wall surface. 16, Block c from the sunken court, with covered pavement on the right.

exploded section through block.



key to section. Ringed numbers correspond to numbers on floor plan.

1, Hollow tile slab. 1 in. fibre glass quilt. 1 1/2 in. screed. 3/4 in. asphalt. Spermatt finish.
2, Zinc flashing.
3, Softwood window frames. Opening lights only of standard steel section.
4, Standards and rail of 1 1/4 in. bore mild steel tube. Horizontals of 1 1/2 in. by 1 1/2 in. mild steel site welded
5, 1/4 in. rough cast Georgian wired glass.
6, 3/4 in. asphalt on screed and 1 in. fibre glass quilt.
7, 6 in. by 6 in. quarry tiles on screed and 1 in. fibre glass quilt.
8, Zinc flashing.
9, 3 in. block partitions.
10, 3 in. block internally; 1 1/2 in. cavity; externally, 4 1/2 in. reinforced concrete wall with an additional 1 1/2 in. for rough pick hammering as finish.
11, Softwood board flush with plaster to accommodate curtain tracks.
12, African mahogany window board.
13, Gilled tube convector heater concealed by aluminium faced asbestos panels.
14, Hardwood framed hatch to kitchen with 1/4 in. polished plate sliding panels.
15, Marley tiles on screed and 1 in. fibre glass quilt in all rooms except kitchens.
16, Kitchen shelf and counter unit with glass hatch and glazed strip over.
17, 6 in. by 6 in. glazed white tiles on 3 in. block wall. 1 1/2 in. cavity, externally 4 1/2 in. wire cut blue engineering brick.
18, Fairfaced concrete columns painted.
19, 6 in. by 6 in. blue quarry tiles to all kitchen floors in the block.
20, Tubular aluminium curtain track separating the bed recess from the living area.
21, African mahogany rail and knee board on 1 1/4 in. bore mild steel tube.
22, Duct for heating ring main and services to the block.









17

17, east elevation of Community Centre from sunken court level. Glazing bars and glazed tiles to the solid panel are black here and white on the west (piazza) elevation. The pool will have stepping stones as shown in the drawing below.



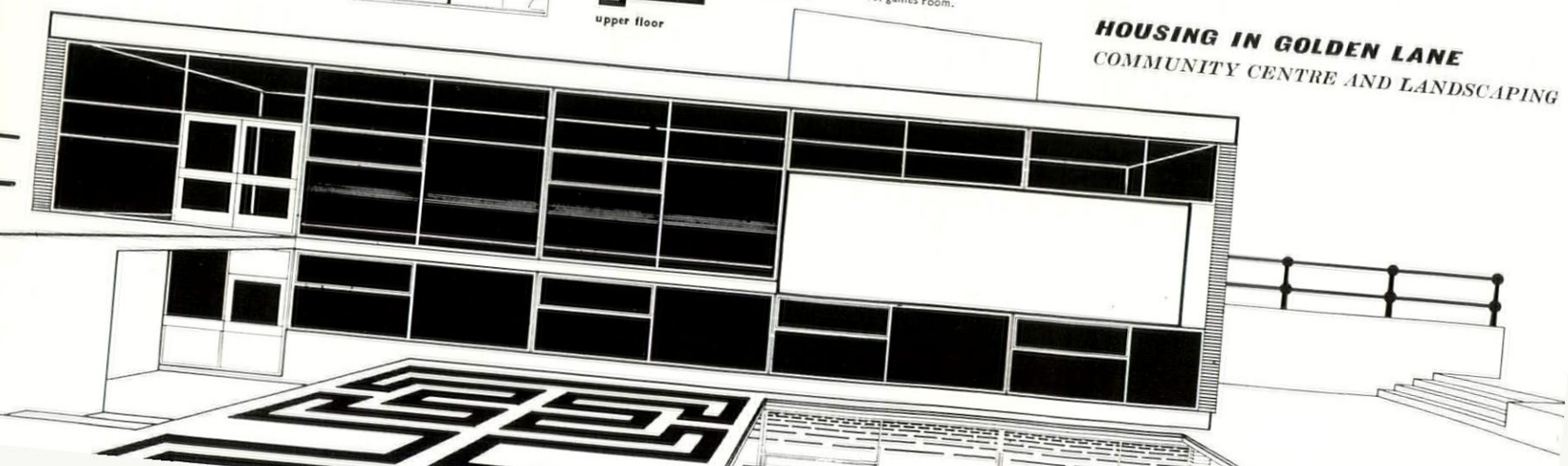
lower floor

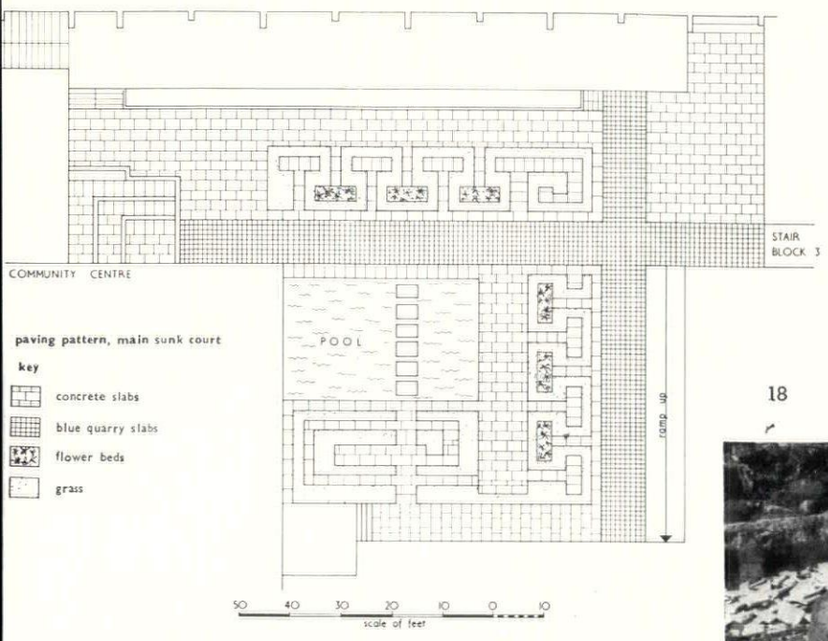
upper floor

key 1, entrance hall.
2, cloakroom.
3, kitchen.
4, hall.
5, stage.
6, general purpose and dressing rooms.
7, lavatories.
8, library
9, club room.
10, games room.

HOUSING IN GOLDEN LANE

COMMUNITY CENTRE AND LANDSCAPING

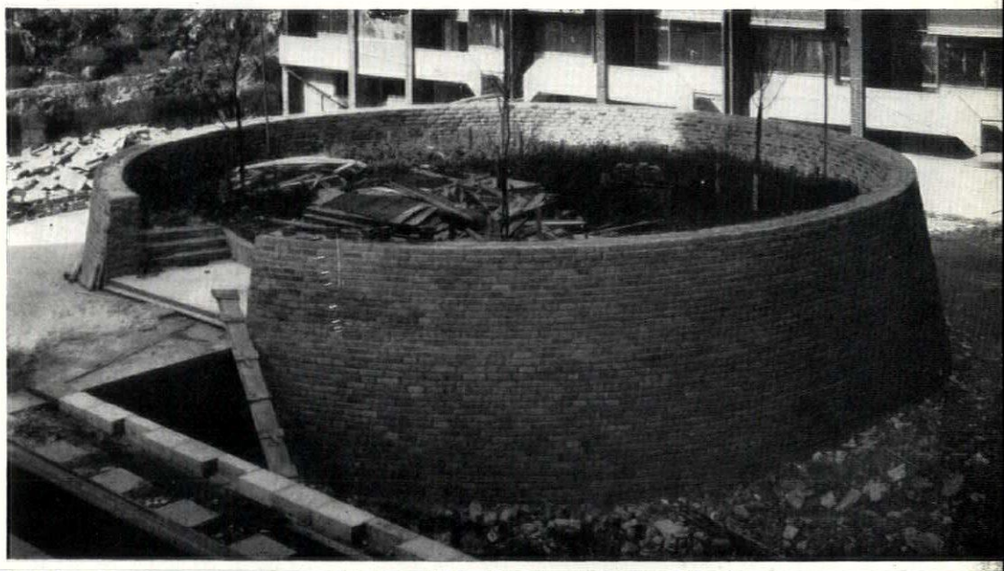




18

Community Centre contains a hall to seat 200 persons with a permanent stage and changing-room on the upper floor (piazza level) and a youth club on the lower floor (sunk court level). The construction is composite reinforced concrete and brick. All the external finishes are permanent, except the painted edges of the roof and floor slabs. Load-bearing external walls are of pressed blue-black engineering bricks with black pointing.

The assistant in charge for the scheme was Watcyn Williams ; the assistant architects were Robert Ashdown, Eric Carpenter, Ross Chisholm, Peter Deakins, John Honer and Peter Honer. The consultant structural engineers were Ove Arup & Partners ; consultant heating engineer, H. J. Knox ; quantity surveyors, Davis, Belfield and Everest.

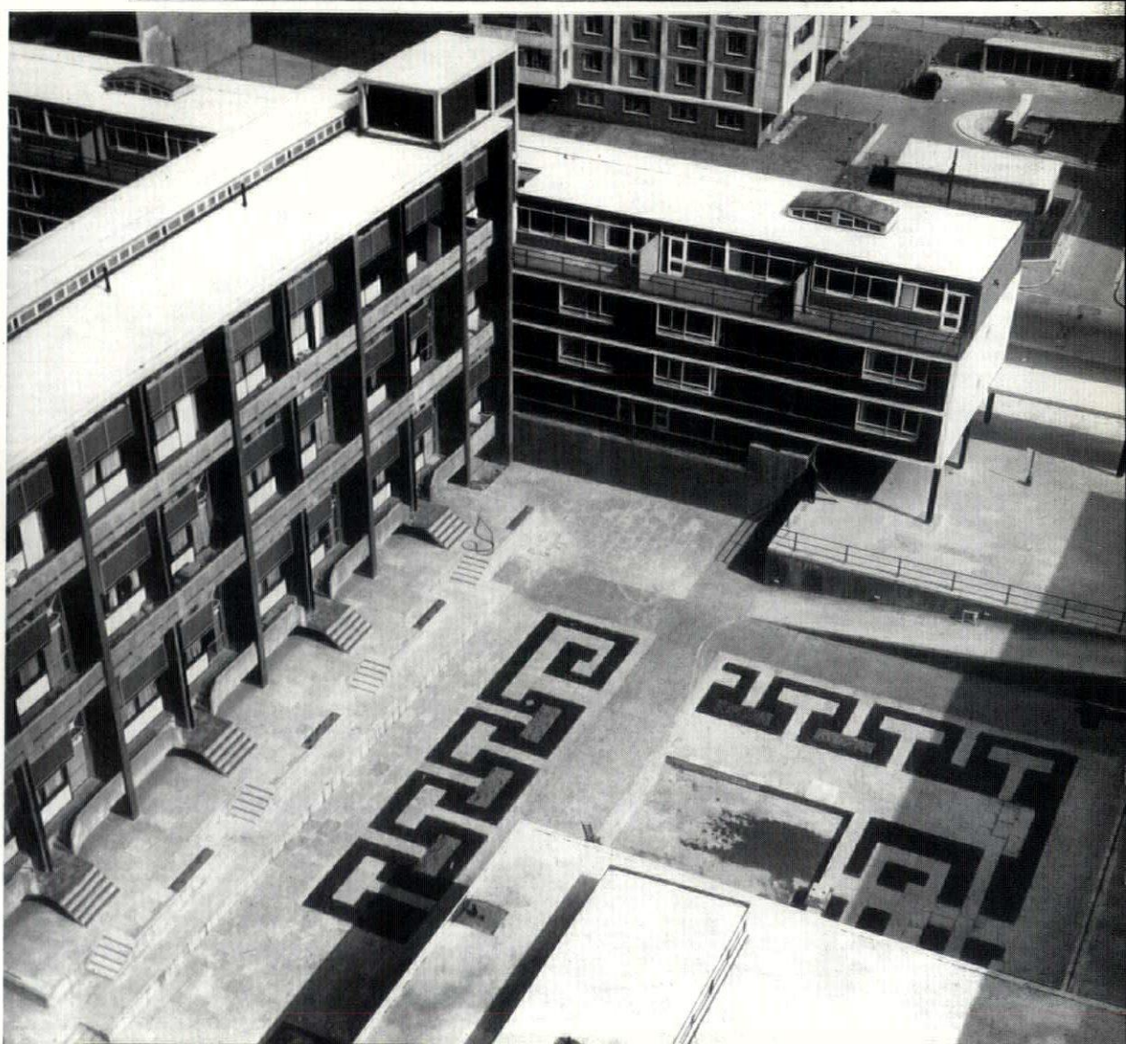


18, the cylindrical ' bastion ' partly encircled by a ramp and containing four white poplars at the north end of the main piazza. 19 and 20, two sunken courts which are normally viewed from above and have therefore been delevoped with a strong two-dimensional pattern of paving slabs and grass. 19 shows the block facing south at the E. end of Fann Street; 20 shows the main sunken court with Community Centre in foreground.

19

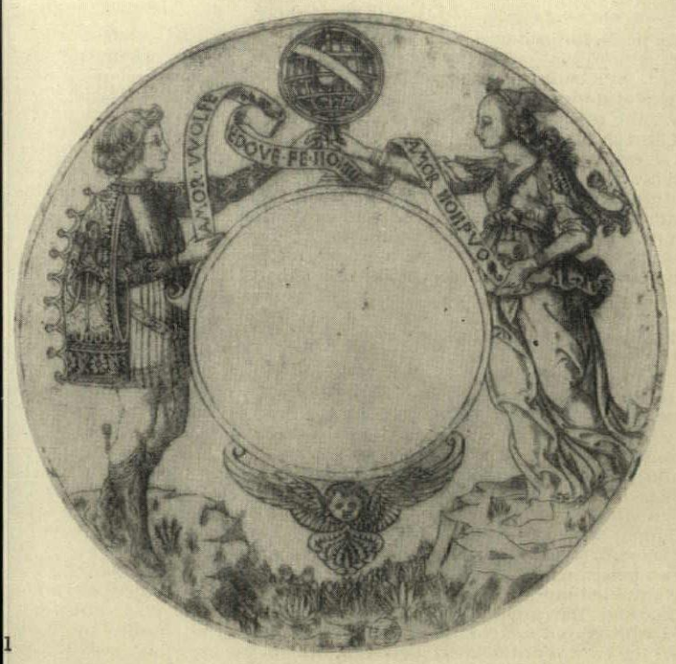


20





21. St. Paul's seen through the pergola on top of Block a.



1

S. Lang

BOMARZO 2

Almost three years ago the REVIEW described and illustrated Vicino Orsini's fantastic gardens at Bomarzo in Italy. Since that time they have come under further scrutiny, from the authorities, with a view to their physical conservation, from scholars, with a view to their iconographical elucidation. In unravelling the relationships of the Bomarzo statuary to such emblematic sources as the *impresa d'amore*, 1, of Lorenzo de' Medici, Dr. Lang, in her article below, uncovers an attitude to the *genius loci* that would make any cleaning-up by the authorities the very worst form of conservation.

The Institute of Architectural History of Rome University has mobilized a team of research students to explore the monsters of Bomarzo.[1] Their findings were published in the *Quaderni* of the Institute for April, 1955.[2] Their date, the early 1560s, has been confirmed but the sculptor is still not known. We now know that the gardens were considered to be a *Sacro Bosco*, a sacred grove, from one of the many epigraphs. Other epigraphs refer to the Seven Wonders of the World, others again to the Colossus of Rhodes and so on. One epigraph varies L. B. Alberti's Impresa, *Quid tum* to *Quid ergo*, another line 'elephanti leoni orsi orchi et draghi' makes one think of Petrarch's line 'Orsi, Lupi, Leoni, Aquile et Serpi'[3] although Petrarch's *Rime* have nothing to do with the lines at Bomarzo; yet another—and that is rather interesting in a connection to be discussed later—runs as follows: 'Non viri locis sed loca viris honestantur.' However, it is impossible to repeat all the epigraphs here as it is also impossible to give even the gist of the results published in the *Quaderni*. In this article only a few observations shall be made on some iconographical facts which seem to have escaped the authors' notice. Several scholars, pointing to the strange orientalisms of some of the figures have assumed oriental influence.[4] But just for the two most outlandish looking groups prototypes exist much nearer home.

The elephant and castle

The Elephant and Castle motif has a venerable ancestry in European art. Representations of it were made throughout the Middle Ages and what elephants looked like could be gleaned from many Roman coins, although the beasts in mediaeval manuscripts, had little resemblance to the real thing. But already the elephants of Sigismondo Malatesta of the second half of the fifteenth century looked like elephants and so did an 'Elephant and Castle' on the title page of the Parisian *Ovide Moralisé* of 1515.

The representation in Bomarzo of the Elephant and Castle is of a special and rare kind.[5] 2, The elephant carries in his trunk a man in what seems to be Roman military dress, his right hand hanging down holding an object or part of one. There is only one variant of the Elephant and Castle where a man is held by the elephant in that manner and that is in the biblical story of Eleazar in the *Book of Maccabees*. Eleazar to rescue his people kills the elephant of King Antiochus V Eupator by splitting his belly: he is killed in his turn by the collapsing beast. This episode was interpreted as a prefiguration of Christ's sacrificial death. The scene had been depicted, though not very often, in the Middle Ages once e.g. with Eleazar simply lying under the elephant, 4; more recently Bosch had shown the hero held by the elephant's trunk as in Bomarzo, 3.

the lion and the dragon

Close to the elephant stand the group of a dragon being attacked by a lion and a lioness, 5. This group even more certainly than that of the elephant is an adaptation of existing engravings; the engravings in question in this case going back ultimately to a design by Leonardo.[6] The meaning of this fight between dragon and lion has been lost (it was possibly political); whether it was still known to the promoter of the sculpture we cannot tell.

Leonardo's drawing has not survived; but Lomazzo refers to it and several copies exist.[7] The British Museum possesses an engraving by Lucantonio degli Uberti,[8] 6, and two or three others are known, that means half a dozen sheets in all—not much really. So, like the elephant and Eleazar, this group of the dragon is modelled on an iconographical scheme well out of the ordinary; but still following an existing pattern and not representing a new invention.

The case of the Woman on a Tortoise, 7, is more complex still. Pausanias talks of a statue by Phidias of Aphrodite who stands with one foot on a tortoise;[9] the idea being, so Plutarch tells us, that the woman should stay at home and keep silence.[10] But in Bomarzo the woman standing on the tortoise is a Fortune on the ball and not a Venus (it could be a Venus Marina; but it is unlikely even in Bomarzo that a Venus Marina should stand on a tortoise). Only one instance of a Fortune on a Tortoise is known to me and that is in Jean Cousin's *Book of Fortune* of 1568,[11] that is a few years after the probable date of the monsters. Cousin's Fortune is captioned 'Subrepunt Prospera Fata' 'Happiness arrives slowly.' She, incidentally, does not stand on a ball, but there is one drawing in the book called 'For tune Occasio' 'Opportunity of Fortune' with a Fortune on a ball. What the connection between Bomarzo and Cousin was is impossible to say; there was possibly a common source: a Fortune with a tortoise is represented in one of Vasari's frescoes in the Sala degli Elementi of the Palazzo Vecchio. That Vasari's figure was a fortune is certain from his *Raggionamenti*, a dialogue in which he explains the frescoes to Cosimo de Medici: [12]

> 'È la fortuna di Sua Eccellenza, quale, per obbedire a Saturno, pianeta suo, gli presenta la vela e la testuggine (impresa di Sua Eccellenza) dimonstrando che con la natura e tardità dell camino di questo animale, e la velocità che fa andare i legni nelle acque, la vela, nel mare delle difficultà e l'essere Sua Eccellenza temperato sempre riuscire con bona fortuna in tutte le imprese dell suo governo.'

The tortoise is to express slowness, the sail speed and the whole is to signify the good ending of all enterprises of the Duke.

Vasari's *Raggionamenti* were only posthumously published by his nephew in 1588; the printed text would therefore have been too late for Bomarzo. Moreover this first edition did not contain this passage; all this seems to indicate that the author of this conceit must have been familiar with Vasari's manuscript and possibly a friend of his. We will see later that there are other indications pointing to Florence as one possible source of inspiration.

It is true that in Vasari's fresco Fortune holds the tortoise under her arm, but the designer of the Bomarzo group may have combined Phidias's Aphrodite with Vasari's Fortune.

In fact such 'combinations' do exist:[13] Fortune was indeed often thought to meddle in love affairs and does or undoes the work of the God of Love; Venus sometimes takes over the function and emblems of Fortune. In the *Échecs Amoureux* Venus found herself turning the wheel of fortune.

Again we do not know for certain. But are we to know for certain? Do not the sphinxes on either side of the path near the entrance to the *Sacro Bosco* indicate that we are going to find an insoluble enigma? The group of the so-called Hercules and Cacus is a case in point, 8. Again no satisfactory explanation has been found; it does not conform to any known Hercules and Cacus groups, although the naked giant looks like Hercules; then there is the epigraph near it mentioning the Colossus of Rhodes; but obviously the group cannot be that either. The closest parallel can be found in illustrations to Ovid's *Metamorphoses*, of Polyphemus killing and tearing into pieces the companions of Odysseus, 9; but then the Cyclops should have only one eye, and in fact only has one eye in the illustrations to Ovid.[14] Also in Ovid occurs a scene of Hercules throwing his adversary to the ground but holding him by one leg only. So what is it to be?

From the *Ovide Moralisé* comes probably the 'Mouth of Hell,' 10, or

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[1] For Bomarzo I *see* A.R. Sept., 1954.
[2] *Quaderni dell' Istituto di Storia dell' Architettura*, Rome, 1955, No. 7–8–9.
[3] *Oxford Book of Italian Verse*, No. IV, p. 3 (from the *Rime Sparsi*).
[4] 'Un ipotesi sull' origine iconografica di alcune sculture della villa di Bomarzo' in *Rivista I.S.M.E.O.*, Rome, quoted in *Quaderni*, 27, and M. Praz, 'I mostri di Bomarzo,' *Illustrazione Italiana*, 1953, p. 160 ff. (I have not been able to consult either magazine in London.)

[5] The following observations are based on W. S. Heckscher 'Bernini's Elephant and Obelisk,' *Art Bulletin*, Vol. 29, 1947.
[6] A. E. Popham, 'The Dragon Fight' in *Leonardo, Saggi e Ricerche*, Rome, 1954, p. 225.
[7] A. M. Hind, *Early Italian Engraving*, Vol. V, Part II, London, 1948, p. 87.
[8] Hind, *op. cit.* Vol. I, I, p. 214 (D.IV.5).

[9] Pausanias VI, 25.1.
[10] Plutarch, *Conjug. Praecept.* 32.
[11] *The Book of Fortune*, 200 unpublished Drawings by Jean Cousin, ed. L. Lalanne, Paris and London, 1883, pl. IX.
[12] Published in *Vite*, ed. Milanesi, Vol. VIII, p. 32.

[13] For further details and texts see: H. R. Patch, 'The Tradition of the Goddess Fortuna,' *Smith College Studies in Modern Languages*, Vol. 3, Nr. 4, 1922, pp. 90 ff. I am greatly indebted to Mr. J. Trapp for drawing my attention to this book and pointing out to me the identification of Love and Fortune.
Perhaps it might just be mentioned in parenthesis that the dwelling of Fortune is sometimes described as a 'falling house' so it seems not impossible that this notion was responsible for Bomarzo's leaning house.
[14] Ovid, *Met.*, Book XIV, ed. Venice, 1513, and Tusculani, 1526.

whatever that piece may represent.[15] There is a representation of the open mouth of Hades and inside it Pluto with his feet on Cerberus and the Fates spinning as they were always depicted in the *Ovide Moralisé*, 11. Similar representations exist in mediaeval manuscripts. If we assume the mask to be the entrance to the Greek Hades the curious inscription round the entrance, paraphrasing Dante—'Lasciate ogni pensiero (instead of 'speranza') voi que entrate'—becomes clear: the Greeks departing from this world had to cross the river Lethe and drink the cup of forgetfulness; they left every thought behind.[16] Through this mask one enters a cave such as was assumed to be the entrance to Hades and could be seen on Giulio Romano's fresco in the Palazzo del Té. A table stands inside the cave with benches round it; some authors thought to enable banquets to be held there; however, if this cave is Pluto's then the table was intended to be used for a sacred banquet as had been done in Athens and had been described by Valerius Maximus[17] and by Zosimus.[18] The learned advisers of Vicino may well have been familiar with those texts even if they did not know the Greek inscription[19] mentioning this custom.

sacro bosco

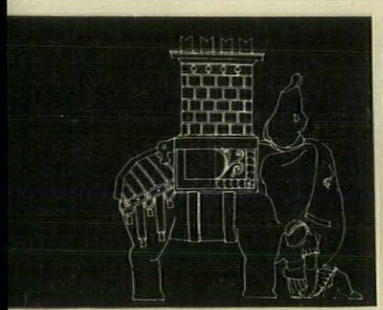
However, most peculiar, taken all in all, is the fact that this collection of strange beasts was meant as a preliminary to a Mausoleum dedicated to a loved one. It cannot be taken as an act of defiance or as a display of paganism in these years after the Council of Trent with Cardinal Madruzzo, one of its principal figures participating in the programme, nor simply as a joke. Should the *Sacro Bosco* represent the world, with sea monsters and water nymphs, with rivers and possibly the earth, full of strife and death or impending catastrophe (for instance the Tortoise rolling towards the abyss) and above and beyond all that, serenely the little tempietto, the mausoleum of a beloved wife? Some such idea may be behind the scheme. Perhaps one can come to a more precise conception of the underlying idea if one takes the texts into account which are distributed as inscriptions throughout the garden. As has been mentioned before, in one of them the gardens are called *Sacro Bosco*, the sacred grove.[20] In Antiquity in the Roman as well as the Greek orbit sacred groves dedicated to a god or goddess abounded and many ancient writers mentioned and described them; Virgil in the *Aeneid*[21] and in the *Georgics*,[22] Ovid in the *Metamorphoses*,[23] and *Amores*[24] and in the *Fasti*;[25] both poets were widely read during the Renaissance. Moreover we have seen that illustrated editions of the *Metamorphoses* had provided patterns for some of the sculptures. Homer too gives a description of a grove sacred to Athene on the outskirts of the town of the Phoenicians in book VI of the *Odyssey*. Furthermore the placing of the Ara pacis, for instance, and of other altars on rising terraces bordered by balustrades, connected by flights of steps, may also have been known; the reconstruction of the temple of Fortune on the slope of Praeneste had occupied many a Renaissance architect;[26] and certainly Suetonius was being read in sixteenth century Italy with his descriptions of the Mausoleum of Augustus. This structure Augustus built in his sixth 'Consulship' between the Via Flaminia and the bank of the Tiber; at the same time he opened to the public the groves and walks by which it was surrounded.'[27]

The description of it and the surrounding parts of Rome by Strabo is even more telling.[28]

'In fact, Pompey, the Deified Caesar, Augustus, his sons and friends, and wife and sister, have outdone all others in their zeal for buildings and in the expense incurred. The Campus Martius contains most of these. . . . Indeed, the size of the Campus is remarkable, the works of art situated around the Campus Martius, and the ground, which is covered with grass throughout the year, and the crowns of those hills that are above the river and extend as far as its bed, which present to the eye the appearance of a stage-painting—all this, I say, affords a spectacle that one can hardly draw away from. And near this campus is still another campus, with colonnades round about it in very great numbers, and sacred precincts, and three theatres, and an amphitheatre, and very costly temples, in close succession to one another, . . . in the belief that this place was holiest of all, the Romans have erected in it the tombs of their most illustrious men and women. The most noteworthy is what is called the Mausoleum, a great mound near the river on a lofty foundation of white marble, thickly covered with ever-green trees to the very summit. Now on top is a bronze image of Augustus Caesar; beneath the mound are the tombs of himself and his kinsmen and intimates; behind the mound is a large sacred precinct with wonderful promenades; and in the centre of the Campus is the wall (this too of white marble) round his crematorium; the wall is surrounded by a circular iron fence and the space within the wall is planted with black poplars. And again, if, on passing to the old Forum, you saw one forum after another ranged along the old one, and basilicas, and temples, and saw also the Capitolium and the works of art there and those of the Palatium and Livia's Promenade, you would easily become oblivious to everything else outside. Such is Rome.'

This description might well have inspired Vicino Orsini. In Christian times the connection between Death and Nature had been established by Petrarch, whom we have had occasion to mention before. In his old age when he thought death was near, the poet retired to the Euganean mountains, there built himself an abode in the midst of olives and vine and waited for the end to come.[29] But how do the monsters fit in? Are they simply the equivalent of the sculpture mentioned by Suetonius or do they have any symbolic or other value in themselves? Certainly the Cerberus guarding the ascent to the Mausoleum fits in well with the scheme of things and so does Pluto's Cave particularly since Ovid

[15] The *Ovide moralisé* is a mediaeval moralization of Ovid's *Metamorphoses*.
[16] For a drawing by Borromini with the same wording over a similar entrance porch, purported to be a prison door and similar masks by Zuccari, see W. Koerte, 'Der Palazzo Zuccari in Rom.' *Römische Forschungen der Bibliotheca Hertziana*, Vol. XII, Leipzig, 1935, pl. 9 and p. 16.
[17] II, 4, 5.
[18] II, 1–4.
[19] I.G. II 948–950.
[20] *Quaderni*, *cit.* p. 33.
[21] *Aeneid* VIII, 347.
[22] *Georgics* III, 332.
[23] *Met.* I, 189, other mention in V, 391; VII, 95.
[24] *Amores* III, 1, 1 ((Iucus III, 3, 35; III, 5, 3; III, 13, 7).
[25] *Fasti* IV, 749–755.
[26] e.g. Palladio and Ligorio.
[27] *Augustus*, C.
[28] 5, 3, 8.
[29] A. Chastel, 'Les Jardins Humanistes,' *La Revue des Voyages*, no. 13, Paris, 1954, p. 14.



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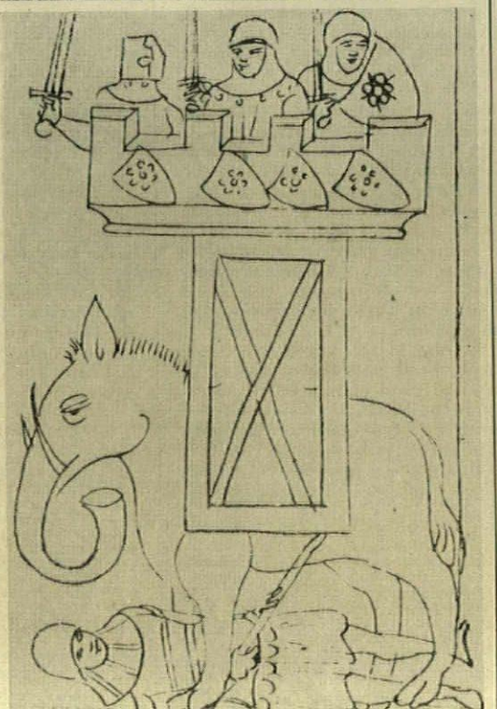
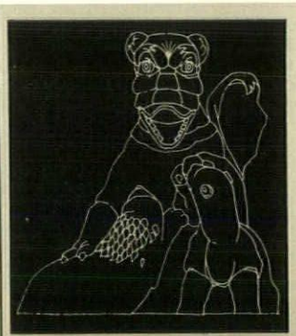


4

The Elephant with a Castle on his back, 2, *has a venerable ancestry in European art. This one is of a special kind: he carries a Roman soldier in his trunk. The representation is of the sacrifice of Eleazar in the Book of the Maccabees, as shown*, 4, *in the mediaeval* Speculum humanae salvationis (1324, *MS Munich clm.* 146) *and later by H. Bosch* (3, *engraved by A. Duhamel) in his 'Besieged Elephant.'*



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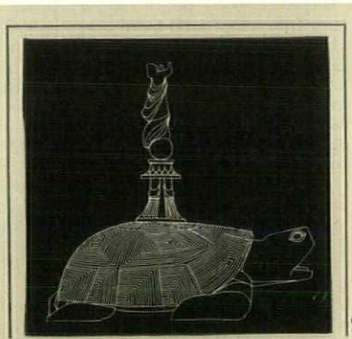

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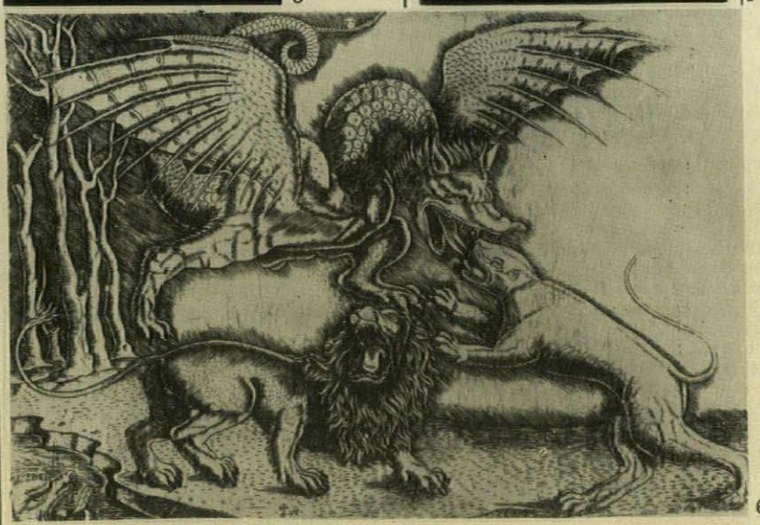

6

5, the group of the dragon fighting a lion and lioness derives ultimately from a lost Leonardo drawing; the engraved version, 6, *is by Lucantonio degli Uberti. Its meaning was possibly political, referring to a feud. The woman on the tortoise,* 7, *may be a Fortune or a Venus, or both.*

speaks of a Stygian sacred grove[30]

'. . . per flumine iuro
infera sub terras Stygio labentio luco!'

The Elephant and Castle with the death of Eleazar was thought to be, as has been mentioned, a prefiguration of Christ's supreme sacrifice. Was this motif introduced as an example that pre-Christian events have some connection with Christian beliefs and happenings? Was it simply thought suitable to have also an image belonging to the biblical world; perhaps, since there is again a parallel in Soriano?

Or was the elephant only introduced, without any ulterior motif as one of the *meraviglie* of the world, one of the 'sette moli' which one could observe in Bomarzo? Altogether this mixture of the idea of the Seven Wonders of the World with a Sacred Grove is somewhat peculiar. But, then, the monsters were in the tradition of the Gardens of the Renaissance. The Villa d'Este at Tivoli, Ligorio's and Caro's work, abounded with strange animals and even the City of Rome was rebuilt in miniature in one corner of the gardens, and, before then, Giovanni Rucellai's gardens at Florence had giants, centaurs, vases, heraldic lions, harpies, philosophers, even popes, cut out in topiary work.[31]

Were, then, the monsters only there as oddities, or as some more 'quotations' from the ancients; the dragon who according to Pliny fights the elephant, would be an instance.[32] Yet another epigraph may help us, however, in our search for Bomarzo's *raison d'être*:

Cedan et Memphi e ogni altra meraviglia
Ch'ebbe gia l' monstro in pregio al sacro bosco

Bomarzo is not to resemble any other garden ever; this memorial to a wife is to be unique.

the sphere

Love for his deceased wife may have been expressed by yet another strange object, a large sphere covered with flowers and many ornaments, topped by a castle,[33]12. Nothing even approximately similar seems to exist anywhere else, at least not in three dimensions. The only parallel I could find are maps of the world on which in addition to the countries or continents also the walled and gated paradise finds its place, 13. Such maps were frequent in the fifteenth century but no longer in the sixteenth. More correct representations of the globe existed then already but would have been less useful for the purpose in hand. But what can have been the purpose? The sphere or globe figured quite prominently in the curious world of Renaissance emblems. Prominently enough anyhow to incur Rabelais's scorn who said of the Italians[34] 'if they want to represent Hope they represent a sphere.' This idea goes back to an *impresa amorosa*,[35] a fifteenth century engraving representing Lorenzo de' Medici handing his beloved Lucrezia Donati a 'sfero', a sphere meaning 'spero,' I hope, that means hope for love (*see* p. 427). Vicino Orsini could not hope for love in this world, he hopes for love in the next, when he will meet his wife again in Paradise. Unless the castle represents a castle of love, to make doubly sure of the meaning of the conceit. Unfortunately the date of Giulia Orsini's death is not known, and the only date we have is that on a letter by Annibale Caro of 1564 in which he approves the programme of the 'teatri e mausolei. [36]

Bomarzo is also different from all contemporary gardens because its monsters were carved on the spot out of the living rock and thus follow no other order than that of the occurrence of suitable bits of such rocks, and because of the layout of the terraces; the steps leading from one to the other, the paths threading through the gardens are arranged so as to fit in with the lay of the land 'Non viris locis sed loca viris honestantur.'

In short the *genius loci* reigns; we will find him again in Soriano.

Who invented the scheme, if there was one, or who found the ideas for the single groups and figures? Vicino Orsini was in touch with scholars like Caro; but as far as one can see none of the 'professionals' were involved. Did Vicino devise it all himself or who helped him? The dedication on the 'leaning house' to Cristoforo Madruzzo provides a clue; his name as an adviser has been put forward before, and he seems indeed a likely person, particularly if one takes into consideration what he had done a few years earlier at his villa in Soriano nel Cimino.

Soriano

Soriano is still entirely unknown and until the *Quaderni* published a couple of epigraphs with dates the villa and its nymphaeum, 14, were utterly undatable.[37] We know now that Soriano came into the Cardinal's possession in 1561 and that he began at once to build a one-storied long-stretched villa with a nymphaeum at one end, and at the other a loggia with a stupendous view comparable only to that from Caprarola. The villa is of no particular interest apart from its position half-way up an extremely steep slope. In the eighteenth century another floor was added imitating the style of the earlier part, thus increasing the confusion of its architectural history.[38] It is the sculpture of the so-called nymphaeum which is of interest to us and helps to explain the gardens of Bomarzo. Nymphaea were quite common features by then, the first having been built by Bramante in the Vatican; others followed, e.g. in the Villa Madama, in the Orti Farnesiani, and in the Villa d'Este.[39]

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[30] *Met.* I, 189. By the infernal streams that glide beneath the earth through Stygian groves, I swear . . .

[31] G. Marcotti, *Un Mercante Fiorentino e la sua famiglia*. Florence, 1881, pp. 75 f.; Vedesi da via le infrascritte cosi. Gran numero di belli bossi di variate maniere: cioè tondi, a palchi, navi, galee, templi, pile e piloni, vasi, urciuoli. uno doppio, cioè che mostra da ogni parte giogante, uonimi, donne, marzocchi, con bandiere del comune, bertuccie, dragoni, centauri, camelli, diamanti, spiritelli coll' arco, coppe, cavalli, asini, boui, cani, cerbi ; et un orso e un porco selvatico e delfini, giostranti, balestrieri, un' arpia, filosafi, papa, cardinali, e più altri simili cose.

[32] Pliny, VIII, 11.

[33] I am indebted for the knowledge of the sphere to Miss Priscilla Hastings.

[34] Rabelais, *Gargantua*, Book I, Chap. IX.

[35] *cf.* A. Warburg *Gesammelte Schriften* I 'Delle Imprese Amorose 'nelle più antiche incisioni fiorentine,' Berlin, 1932, and L. Volkmann, 'Hieroglyphik und Emblematik bei Giorgio Vasari' in *Wesen and Wirken* s.d.s.l.

[36] Caro, *Lettere familiari* II, Padua, 1734, No. 230, 20 Oct., 1564. La lettera m'ha trovato in Frascati tanto occupato intorno a' viali, e simili novelle della mia vignetta, quanto forse non è V.S. intorno a' Teatri, e Mausolei del suo Bomarzo . . . (on painting the fresco) e non ognuno è atto a farla, Taddeo sarebbe molto a proposito, se vuole, o se puo. Caro's reference to 'teatri' is interesting in the light of the quotation from Strabo (*cf.* p. 428), cf. also Caro *op. cit.* II, no. 232, al Sig. Vicino Orsini . . . e forse, non meno ch'ella si sia nelle sue meraviglie di Bomarzo.

[37] *Quaderni cit.* p.24.

[38] Marchese Giovanni Incisa della Rocchetta has very kindly helped me to disentangle the confusion of the building history; on Soriano further Mario Zocca 'Sistemazioni urbanistiche del Rinascimento nel Lazio,' *Palladio* VII, 1943, p. 45, and A. Feruzzi, *Soriano nel Cimino*.

P. Egidi, 'Soriano nel Cimino,' *Arch. Soc. Rom. St. Patria*, Vol. XXVI, p. 381.

On the Madruzzo of Trento *cf.* P. Litta, *Celebri famiglie Italiane*.

[39] James S. Ackerman, The Belvedere as a Classical Villa. *J. of the Warburg & Courtauld Inst.*, XIV, 1951.



8

The so-called Hercules and Cacus group, 8, *represents Polyphemus killing one of Odysseus' companions, as illustrated in Ovid's* Metamorphoses (*Venice*, 1513), 9.



9



10

The mouth of Hell, 10, *is echoed by the mouth of Hades, and the cave of Pluto*, 11, *in an* Ovide Moralisé (*Bruges*, 1484).



11

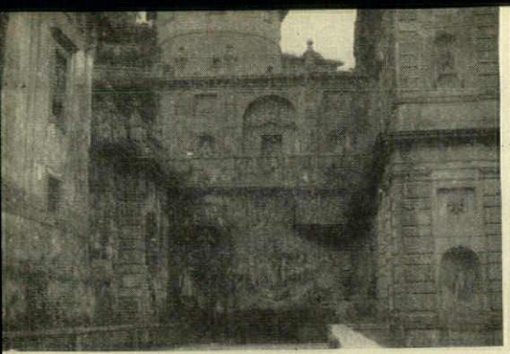


12

The sphere topped by a castle, 12, *is unique in all the arts. It may symbolize Vicino's hope for requited love, as expressed in the* impresa amorosa (*see* 1, *page* 427); *the castle may symbolize Paradise, in the manner of a* mappa mundi, *e.g., that of H. Rust*, 13.



13



14



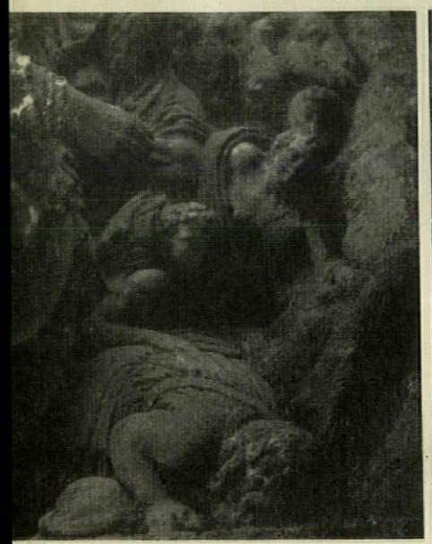
15

Soriano *is a close neighbour of Bomarzo; the 'Nymphaeum,' 14, of the Villa Chigi-Albani built by Cardinal Madruzzo, a friend of Vicino Orsini, is dedicated to the* genius loci



16

and to the source Papaqua springing from the rock above; on the left, 15, 17, is Moses striking the Rock; the background, 16, 18, is filled by a satyr family, a faun, a shepherd and various animals all cut out of the rock representing the forces of nature of ancient Roman



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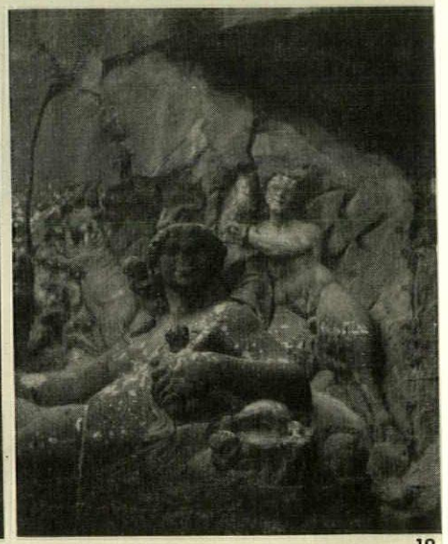


18

belief. In niches on either side stand statues of the gods and goddesses of plenty, 20, 21. *These and their position at the foot of the rock remind us of Cicero's* aedicula bonae deae sub saxo *at the foot of the Aventine hill in Rome.*

19, 20







21

Soriano's is of a different kind: it is dedicated to the *genius loci*:[40]

'Quod felix faustumque sit. Pio IV Pont. Max. Suriatinorum Marchionatus, cui Gallesium et Bassianum subditur, institutori, Madrutiorum propinquo CRISTOPHORUS MADRUT. CAR., Marchiae Legatus, Tridenti Brixiniaeque Episcopus, Princeps German. Italus, postquam sub divo Carulo V obiit, cum in Alemania, tum in Italia, diversa munera publica, et sub Philippo filio Insubres rexit, Ludovico Madrutio Car. nepoti curam rerum tradidit, celebrem arcem hanc jam vetustam instauravit, Ecclesiaeque libertati aeque ac Madrutiis patere jussit, quin etiam vivos gelidi fontis Papaquae lacus suo otio atque negocio, musis, genio loci, studiosorum secessui exornavit MDLXI.'

It is also different in shape, arrangement and contents. The background is carved out of the living rock, which is transformed into a landscape with trees, beasts of many sorts, also water animals and a family of satyrs, the half figure of Pan and a shepherd, 16, 18. Next to this Greek Idyll is a biblical scene connected with water: Moses striking the rock; this scene is given in high relief in an architectural setting and is thus different in every way from its neighbour and follows a more traditional pattern, 15, 17. On either side of this are statues of female figures with putti and children, holding a cornucopia, 20, and opposite it male figures also with putti and one again with a cornucopia, 21. The female figures can be identified as Abundantia, or Ops, or Maja or Bona Dea;[41] but identification of the male figures presents some difficulties. The Bonus Eventus carries a cornucopia; but he should hold a bowl in one hand and the putti are quite out of place. It is, of course, not impossible that something has gone wrong or that the usual iconographical idea has been deliberately altered, to create a desired symmetry.

On the other hand it is quite possible, particularly if we remember the inscription referring to the *genius loci* that here is a representation of a genius, which according to Cartari could be represented holding a cornucopia.[42]

'Ne sa egli però se sia il Genio del luoco, e che altro sia, e per questo vogliono alcuni che si faccia il Genio in forma di serpente. Altri lo fanno in forma di fanciullo, altri di giovane, altri di vecchio, come Cebete nella sua tavola. . . . Et in altre medaglie pure di Ariadno e la imagine di un' huomo di guerra con veste intorno avalta giu infino e mezza gamba, che nella destra tiene un vaso à modo di chi sacrifica, et ha il corno della copia nella sinistra.'

Furthermore there existed representations of genii with putti or with an Amor cum putto on ancient reliefs[43] and one such may have been known to the designer of Soriano.

There are then three different schemes; the biblical scene of Moses, the abbreviated landscape with trees and rocks enlivened by all sorts of beasts and peopled by a satyr family with a half figure of Pan or a Faun on the extreme left holding a curious object, possibly a wine sack, above his head; above him is seated a shepherd. Then there are the statues connected somehow with the gods and goddesses of plenty. A curious mixture, which does not seem to make sense. Moreover, one would expect a fountain to be decorated by a nymph, not by a family of satyrs. But then the inventor of the scheme might have thought of Ovid's definition:[44]

sunt mihi semidei, sunt, rustica numina, nymphae
faunique satyrique et monticolae silvani:

These lines might well have given the cue to the whole scene, the shepherd being a 'monticola silvanus' then a faun and the satyrs. But the most telling passage comes from Cicero, *De domo*: 'Aram et aediculam et pulvinar sub Saxo dedicasset,'[45] and from Ovid's *Fasti*.[46] This, then, seems the obvious answer as to why a temple dedicated to the Bona Dea underneath or immediately adjoining the rock was introduced into Soriano. The 'back-cloth' of the scene was—perhaps in honour of the *genius loci*—a representation of the forces of Nature, according to the ancients, the 'rustica numina' of Ovid. Aesthetically these figures have little merit and were they not cut out of the rock, they would have little claim to attention or renown; but, as it is, these rock-cut figures were probably the example for the Bomarzo figures also cut out of the rock.

This was also the first fountain to use rock scenery, a feature so widely used in seventeenth and eighteenth century fountains from Bernini to the Fontana di Trevi. Another link with Bomarzo is the curious mixture of iconographical themes, the mixture of the pagan and the biblical as well as the fact that the scenes portrayed are extremely rare. Satyr families and female satyrs, in particular, appear very seldom, though they do exist.[47] And Moses striking the Rock is equally rare in sculpture.[48] A reconstruction of the Aedes Bonae Deae is unique. Soriano's iconography then is as far-fetched as Bomarzo's; most important of all, Soriano's dependence on ancient sources makes our interpretation of Bomarzo as a memorial garden as described by Strabo more certain.

Although Soriano too—like Bomarzo—has been attributed to Vignola, the architect of the Palazzo Farnese at Caprarola, there exists really no likeness to Caprarola nor to Soriano's other close neighbour, the Villa Lante.

The only sculpture to which Soriano and Bomarzo is akin in any way is, I think, Giovanni da Bologna's figure of the Apennine at Pratolino and a few features in the Giardini Boboli. This, like the garden of Giovanni Rucellai mentioned before, as well as Vasari's Fortune and the Tortoise, leads us away from Rome to Florence. So does finally another feature, the animals at the back of the satyr family climbing up the rocks. Still, this similarity is iconographical rather than stylistic and so does not help towards an attribution to an artist or a known school.

[40] Quoted from *Quadern*[illegible] *cit.* p. 24.

[41] *cf.* G. Wissowa, Religi[illegible] and Kultur der Römer 2nd ed., Munich, 1912, p. 423, who also mentions that this goddess appears in the books of the pontiffs under the titles Maia, Fauna, Ops and Fatua.

[42] C. Cartari, *Le Imagini de I Dei de Gliantichi*, Venice, 1556, f. 89v. This edition is not illustrated but in later illustrated editions genii are shown partly clothed without wings holding a cornucopia, thus not really agreeing with the classical genius given in the nude with wings.

[43] E. Rink, *Die bildlichen Darstellungen des römischen Genius*, Giessen, 1933, pp. 36, 55.

[44] *Met.* I, 193: I have demigods, rustic divinities, nymphs, fauns and satyrs, and sylvan deities upon the mountain slopes.

[45] V, 136. He dedicated the altar and temple and the sacred couch at the bottom of the rock.

[46] V, 148.

[47] Woman Satyr and bust of Pan, by H. S. Beham after Marc Anton (B. XIV, 249), Bachanal (ditto), Eneo Vico, (B. XV, 298, 33 B. XIV, 284), Satyr and Satyress, by A. Riccio in V.A.M.; *N.A.C.F. Annual Report*, 1950, ditto by Lucini in Brera (Anderson 12712)

[48] Michelangelo had planned a fountain with a Moses for the Vatican but eventually the niche was given to the statue of Ariadne. Michelangelo's design has not survived.



1*

BIOGRAPHY

Georgina Masson

OLIVETTI

THE CREATION OF A HOUSE STYLE

The first thing that strikes the layman on a tour of the Olivetti works at Ivrea is that everyone, whether he be workman, designer, or business executive, refers to everything as 'ours'—'we have our own carpenter's shops' . . . 'we are going to have a new canteen'—the firm or Olivetti are never mentioned. This unconscious sense of participation in the activities of the vast organization for which they work, is perhaps the best illustration of the moving spirit which has animated the Olivetti company since its inception and which is the particular interest of Adriano Olivetti who is now its president.

The success in the business world, and the expansion of what in 1915 was a small family business with 125 workers, into an international concern now employing over 16,000 people, is plainly not the only, or even perhaps the primary, interest of Adriano Olivetti; as is demonstrated by the theories which he has expounded in two books—*L'Ordine Politico della Comunità* and *Società Stato Comunità* which he has written since the last war. In these two works he has outlined his plan for a federated state built up of communities which are designed to fit the social, political, and aesthetic needs of man, as opposed to the colossus of the modern state, with its vast inhuman industries and shapeless urban centres which ignore human needs, aspirations and happiness.

A sense of social responsibility for the material well-being of their employees has characterized many pioneers of industry, particularly in northern countries, but when

* Camillo Olivetti, whose portrait appears in 1, was born at Ivrea in 1868, took a degree in engineering at Turin and founded the typewriter factory at Ivrea in 1908.

Camillo Olivetti first founded the Olivetti company in 1908 he was far in advance of his Italian contemporaries in this sphere, and even when the nucleus of his small company was growing into a large industry, he set aside an hour a day during which any worker in the factory could come and see him to discuss his personal problems and ask for assistance. Inevitably this personal contact was lost in the rapid expansion of the Olivetti concerns, but with time it was translated into the comprehensive social services which now provide health services, a convalescent home, kindergarten, children's holiday camps, scholarships, and emergency loans, free of interest, for the Olivetti employees.

It was natural that having grown up in this mental atmosphere, Adriano Olivetti should also be imbued with his father's sense of social service and responsibility for the material welfare of the firm's employees; but his own personal concept of life has led him to expand them to the far wider field of aesthetic, and indeed spiritual, ideas, which in his philosophy must inevitably form an integral part of human life if it is to be lived satisfactorily and fully.

In its practical application, this point of view has been translated into concrete terms not only in the factory buildings and housing estates of the Olivetti works, but has been extended to the design of all Olivetti products, the shops in which they are sold, and commercial publicity and advertising. In all of these aesthetic considerations have received as much attention as technical efficiency because Signor Olivetti believes that they are no less important; with the result that to the world in general the name of this one firm has come to be associated with all that is best in contemporary commercial design and architecture.

Obviously these varied aspects of the activities of a large commercial concern are the work of many individual outstanding designers and architects, but the policy which has led to their employment—instead of being content with the second best and the banal—is the direct outcome of Signor Olivetti's conviction that aesthetic values are one of the basic necessities for human well-being, especially in the world today.

It is a sad commentary upon our epoch to have to admit that it is surprising to find that a leading European industrialist entertains such views, but it is equally refreshing to reflect that far from having impaired the development of an industry, they have been largely instrumental in its expansion. By becoming an object lesson in the employment of contemporary style, Olivetti's have created for themselves a distinctive trade mark, whose influence upon the publicity and sales of their products can hardly be overestimated.

To put it crudely, Signor Olivetti has proved that good contemporary design is as sound a commercial proposition as the adoption of the most advanced technical and business methods, of which he has also always been the exponent. But what is of particular interest is the basic idea which has led him to put into practice a theory which, if it had not been proved so successful, might well have been poo-poohed as unpractical and unsuited to modern commercial life.

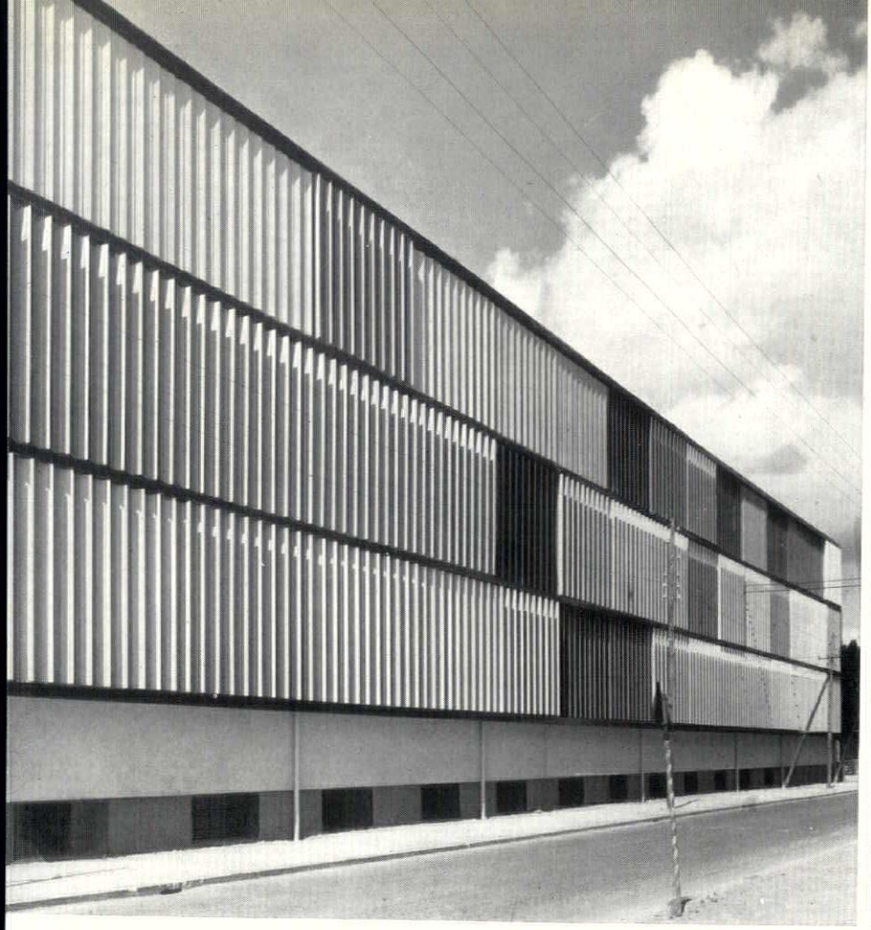
Basically, Signor Olivetti might be termed a modern humanist. It is evident from his writings upon his plan for a state built up of a federation of communities, that he is primarily concerned with the needs of man, his aspirations, and his hope of happiness. This last he believes can only be achieved by creating a world that is designed for man, based upon tightly knit communities, welded together by common interests, and small enough to encourage the development of human relations. For him the present crisis is due to the fact that man is a misfit in the modern world, which has now become a kind of Frankenstein monster that its creator is no longer able to control in order to fulfil the basic needs of human society.

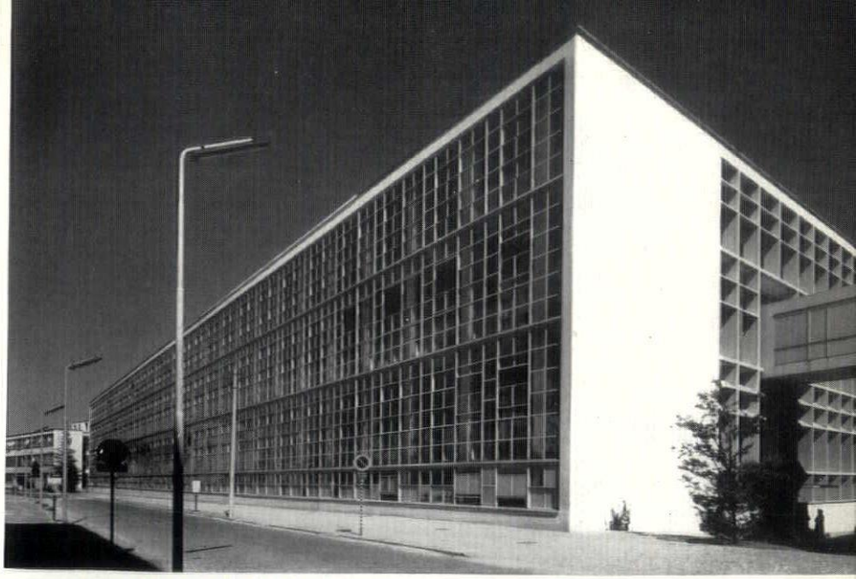
As an Italian Signor Olivetti has naturally founded his conception of the community state upon what he considers to be the primary requirements for the reorganization of his own country along these lines. He is evidently an admirer of many Anglo-Saxon institutions, also of English and American efforts to create community centres and the physical basis for human relations in the new satellite towns and in rural districts—amenities, as Kidder Smith pointed out in 'Italy Builds,'* that are so sadly lacking in the mushroom growths with which post-war speculative building has surrounded so many Italian cities.

In Signor Olivetti's view the ideal community should number something between seventy and a hundred and fifty thousand souls. In rural areas its physical extent could be dictated by the traditional geographical boundaries of a diocese, a district, or an electoral college, that have their origins in a community of interests which have been built up during the centuries, or are founded upon some natural features that in themselves constitute the boundaries of a definite region.

In industrial districts the community would naturally be centred upon the industries, great or small, that provide the population with their means of livelihood. The vast size and lack of coherent planning of modern cities has rendered them incapable of providing a harmonious or satisfying life for the people which inhabit them, and Signor Olivetti advocates their transformation into a series of communities, each with its own institutions and system of local government, on the same model as the rural communities.

* Published by the Architectural Press, 1955, at 56s.







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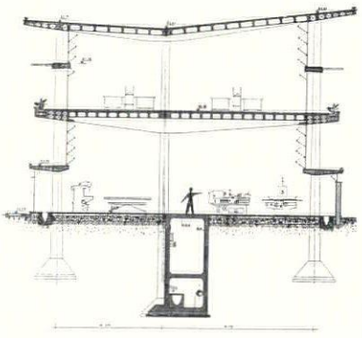
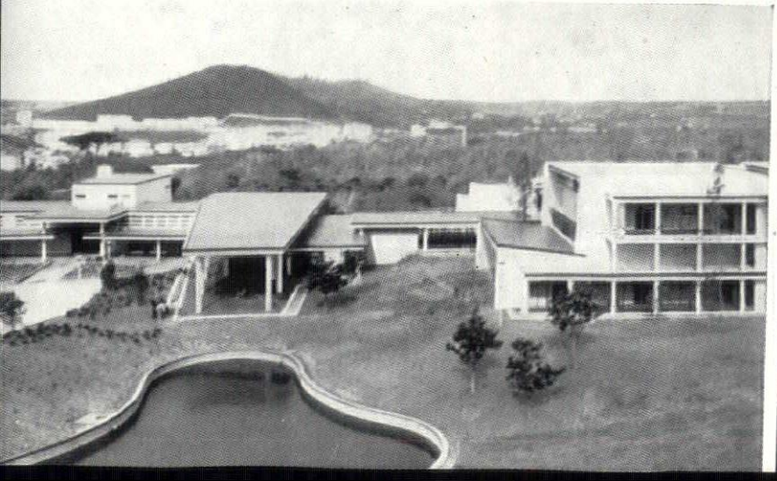
5	6
7	8

Olivetti *as patron of enlightened industrial architecture; 2, recent extensions to plant at Ivrea, by Cascio and Fiocchi; 3, the main factory building, by Figini and Pollini; 4, the new machine tools shop at Ivrea by Eduardo Vittoria. 5, 6, 7, 8, are a section and views of the new factory designed by Luigi Cosenza at Pozzuoli, outside Naples, an Olivetti venture in the economic rehabilitation of southern Italy.*

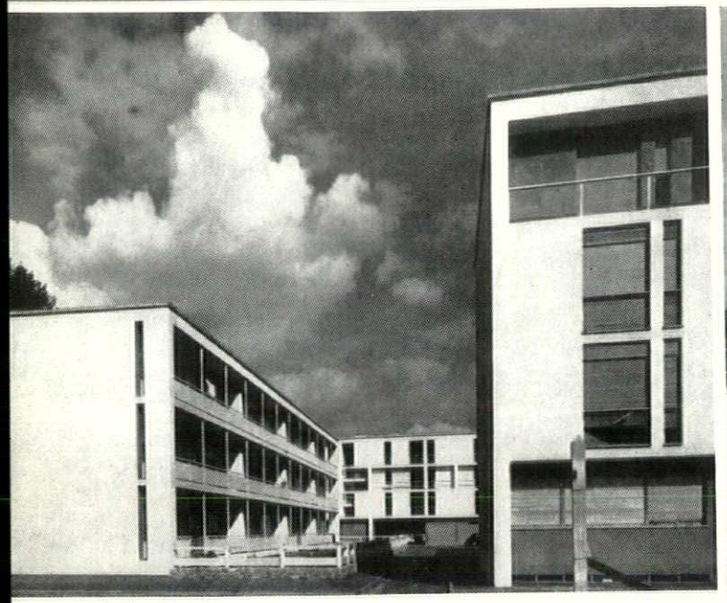


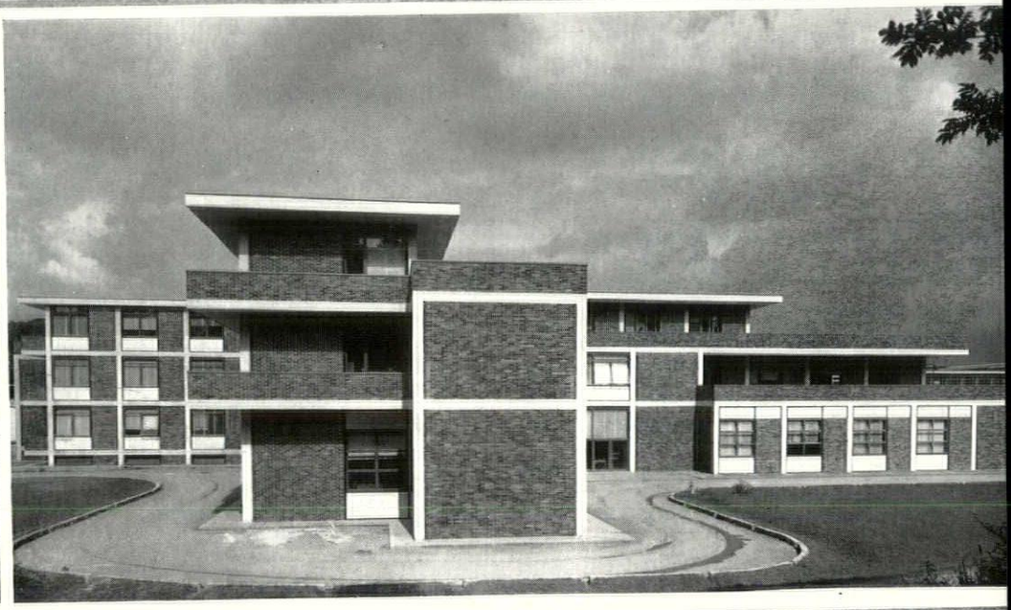


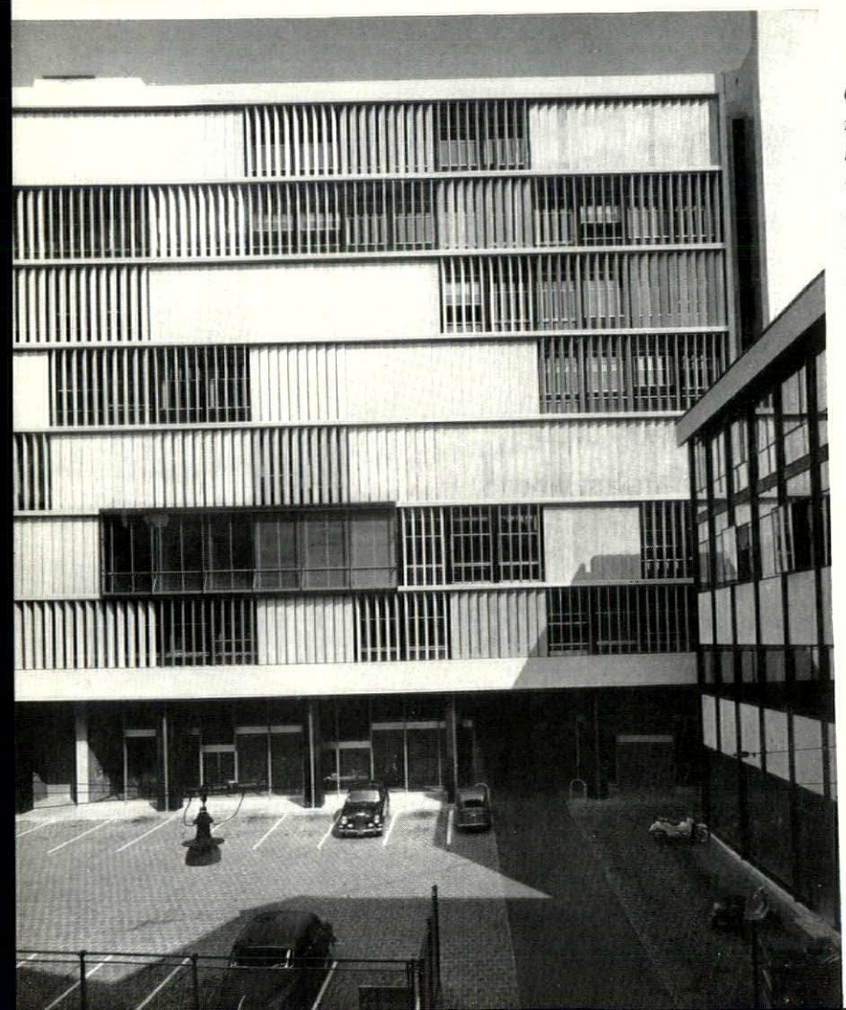












Olivetti buildings *that cover a multitude of uses, but all exhibit an equally high standard of design, outside the field of industrial structures, include workers housing at Ivrea,* 9 *and* 10, *by Figini and Pollini; the research station for the Ivrea factory, by Eduardo Vittoria,* 11*: the brilliant new office block in Milan,* 12, *by Bernasconi, Fiocchi and Nizzoli; employees' summer camp at Marina di Massa,* 13, *by Cascio and Fiocchi; convalescent home,* 14, *at Burolo by A. Fiocchi; and an entirely non-commercial building, the* Comunità *centre at Palazzo Canavese,* 15, *by Eduardo Vittoria.*

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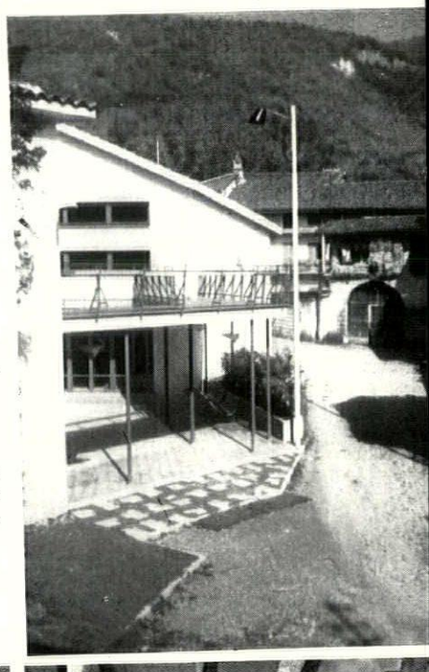
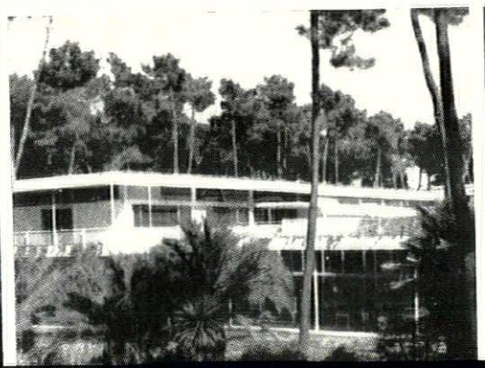
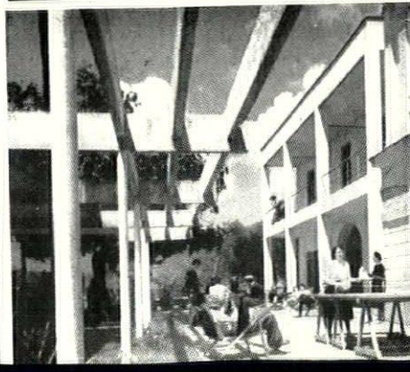




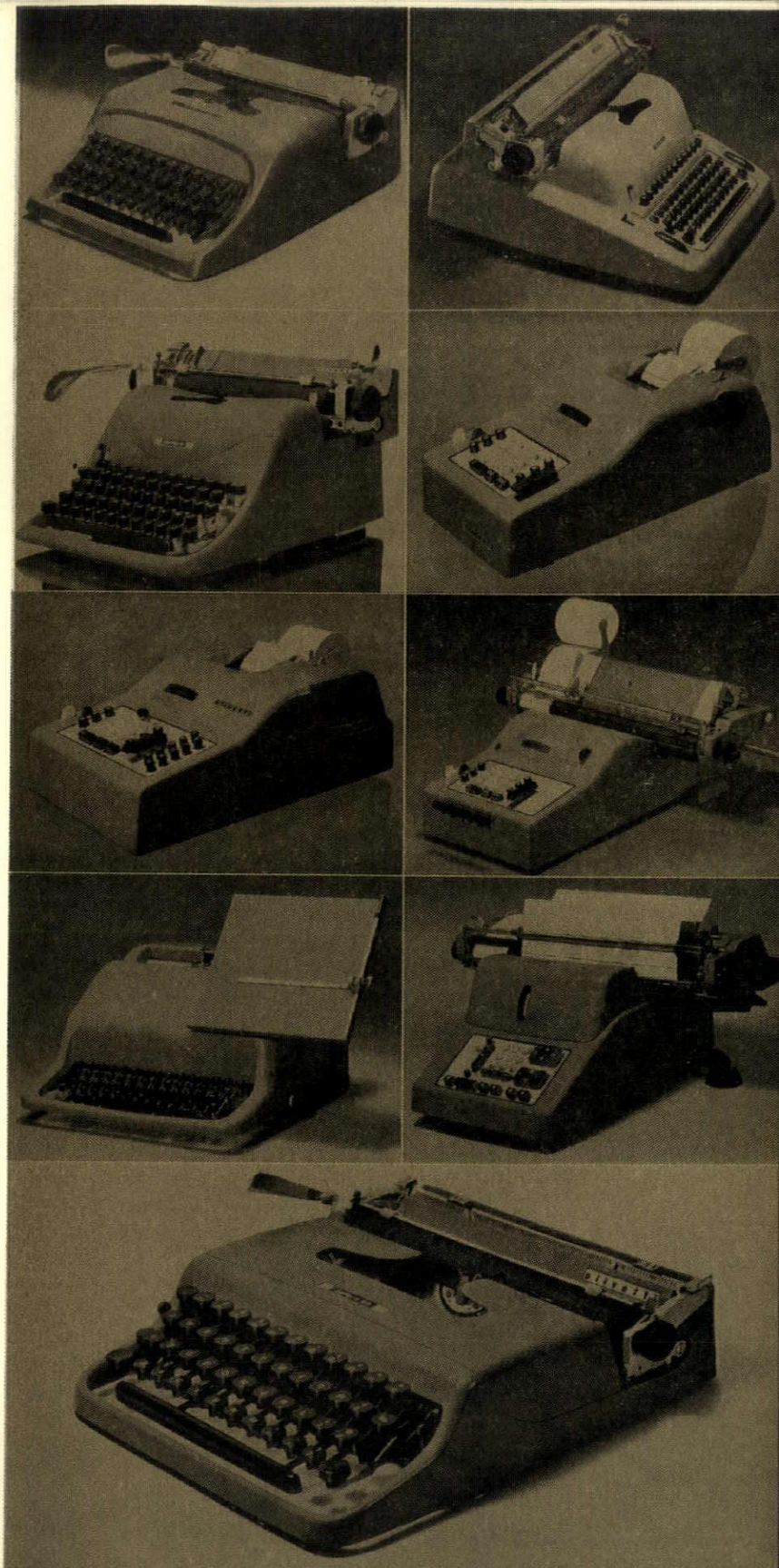


A country which is organized as a federation of such communities would, in Signor Olivetti's opinion, be designed to provide a human basis for life founded upon human contacts and a community of interests, as opposed to the vast inhuman and impersonal scale of the modern state. From this it will be clearly seen that in his preoccupation with the needs of man, Signor Olivetti sees life very much in the round and as a corporate whole. Freedom from financial strain, based upon a good living wage and the provision of social services—the aims in fact of the welfare state—do not seem to him to be sufficient guarantee for the basic requirements that go towards producing human happiness. To him the aesthetic, and in fact the spiritual, needs of man are equally important constituents of the whole, and it is this insistence upon the need for beauty as well as material well-being that seems to distinguish him from many other social reformers. The validity of his theories have been proved in the hard test of commercial competition by the success of the Olivetti products which have been designed with this end in view. It is interesting to note in this connection that a modern American author, in writing of the Olivetti products, has quoted Schiller's contention that aesthetic conditions are of greater importance to a moral life than physical ones.

On his own admission, Signor Olivetti has arrived at these conclusions through a long process of evolution of his original ideas—as a young man he was primarily interested in socialist, and even Marxist, theories. In his youth he saw the failure of the socialist movement in Italy and the birth of Fascism before he went to America, in 1925, as a young man of twenty-four, to study modern systems of production and organization. As a result of his experiences in the United States, the family business was completely reorganized and expanded from a small firm that made four thousand typewriters in 1924, to thirteen thousand in 1929, and which today produces three hundred and fifty thousand office machines annually.

During the years which have seen this great expansion of the industry that he directs, Signor Olivetti watched his country pass through the crises of the fall of Fascism, the Italian armistice, the German occupation, the struggle of the resistance movement, and the chaotic aftermath of the immediate post-war years, and inevitably they have left their mark upon him. Although he is still deeply interested in socialism, his personal philosophy has also now a definitely religious and Christian basis. In his book *L'Ordine Politico della Comunità*, which was published in 1945, he wrote—'without a renewed moral education founded upon the Gospel, all political change will be insufficient, and the most profound causes of the world catastrophe—the propaganda of hate, and discords, will not be extinguished'—but it is the spirit which animates Christian teaching, not its dogma, or even necessarily its creed, that he considers to be of primary importance.

These, then, are the basic ideas which Signor Olivetti has gradually evolved over a period of some thirty years; they have been influenced by the atmosphere in which he grew up, by his own personal experience as the head of a rapidly expanding commercial concern, and his reactions to the period of



machines *Olivetti products, predominantly key-board operated, show Marcelle Nizzoli's two basic solutions for encasing the machinery: either a single cover, through which the controls protrude, or a projecting frame to protect keys placed outside the main box. Above are:* 16, *Studio 44 typewriter;* 17, *Lexikon electric typewriter;* 18, *Lexikon 80 typewriter;* 19, *Elettrosumma calculator;* 20, *Divisumma calculator;* 21, *Elettrosumma Banca;* 22, *T2-ZN Teleprinter;* 23, *Audit 202 calculator; and,* 24, *the famous Lettera 22 portable typewriter that has made Olivetti's house style a household experience.*

16 | 17
18 | 19
20 | 21
22 | 23
24

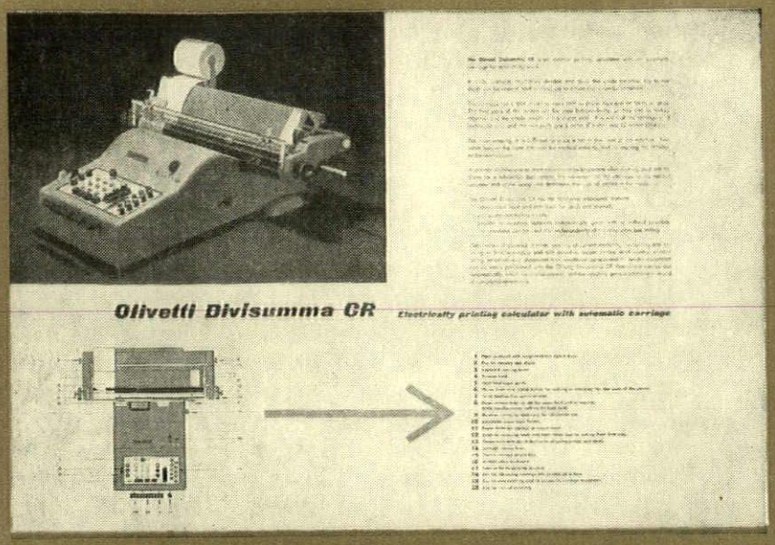
stress and strain through which men of his generation have lived. Their evolution has been gradual, and already in the early 'thirties it was evident that he felt that the successful direction of a large commercial concern carried with it responsibilities far wider than those which are normally associated with such a function. The provision of social services and good living conditions for the Olivetti employees led him to take an interest in town and country planning—an idea which was then in its infancy in Italy—and his participation in, and ultimate direction of, the 1937 Valle d'Aosta Plan, the first of its kind in Italy, was the immediate result.

The study of town and country planning inevitably brought in its train an interest in architecture; and when, in 1938, the Olivetti works at Ivrea had to be enlarged, Signor Olivetti commissioned two outstanding young Milanese architects to prepare the designs—the result was Figini and Pollini's remarkable glass-fronted structure, 3, which even after the passage of nearly twenty years can still be accounted an outstanding innovation in industrial architecture.

With his conception of life as a corporate whole in which aesthetic principles play as important a part in man's well-being as provision for his material needs, it was inevitable that Signor Olivetti should lay much stress upon the design of the machines which are produced in the company's factories, and all their concomitants of sales organization and publicity. His father before him had insisted upon the importance of good design in the manufacture of typewriters, and in the early 'thirties Signor Olivetti had already commissioned Aldo Magnelli to design the new portable typewriter which the firm was then beginning to manufacture. Under his direction, as far back as 1928, the Olivetti publicity service had already broken new ground by its conception that publicity material should be in tune with contemporary currents in art and architecture, and not simply pander to preconceived ideas of what would appeal to the popular taste. Foreign artists such as Savignac, Henrion, Herbert Bayer, Paul Rand, and Xanti Schavinsky were commissioned at different times to prepare designs for the publicity organization. Out of these beginnings there grew up the new conception of a long term publicity which informs and creates in the public a taste and a demand for products which conform to the highest standards of contemporary design.

By the outstanding commercial success of this policy Signor Olivetti has proved that the specious reasons which are so often advanced to excuse low standards in commercial design and publicity, on the grounds that they coincide with what is believed to be the popular taste and are therefore what the film trade would term 'box office,' are in fact fallacious. By his refusal to accept such debased standards and his courage in applying his philosophy of life to commercial and business practice he has achieved not only a great measure of material success for the industry which he directs, but has made it an object lesson in contemporary style.

If in general terms his philosophy of life has had a profound influence upon Signor Olivetti's activities, there can be little doubt that in particular his participation in the 1937 Valle d'Aosta Plan has had a



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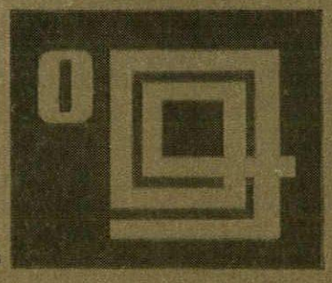

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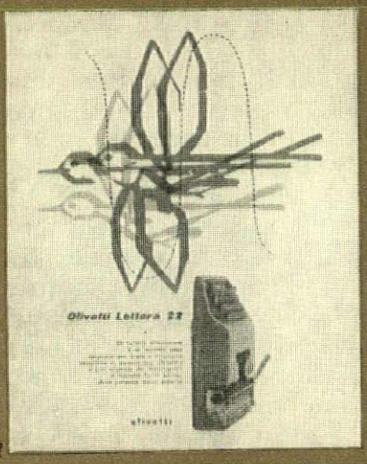

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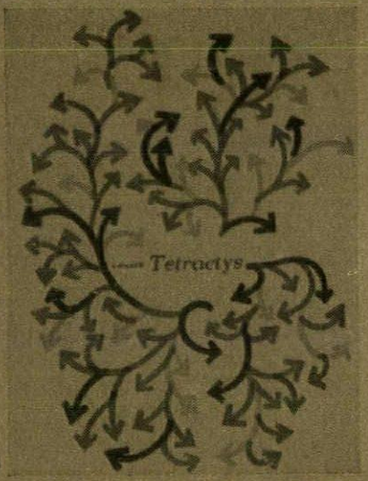

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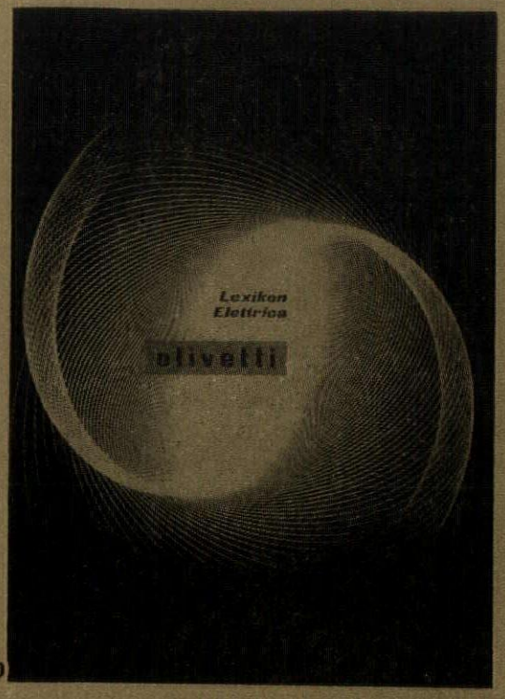
29

Olivetti publicity *as a conspicuous part of the company's policy, has its origins in 'the epoch of roses in giant ink-wells' that is, the mid-'thirties, when Sinisgalli, Persico and Nizzoli were in charge. Backed by exemplary typography, 25, Olivetti's publicity designers still enjoy remarkable opportunities for the creation of memorable images: Nizzoli's symbol of continuous progression, 26; Pintori's patterns of speed and featherlight motion, 27 and 28; and Savignac's well-known poster, 29. Brochure and catalogue covers, by various hands, 30–38, facing page, pursue two main themes, manipulation of information, and the symbols that contain it, and 34 finds in the abacus an image for both—and reintroduces the traditional flowers.*



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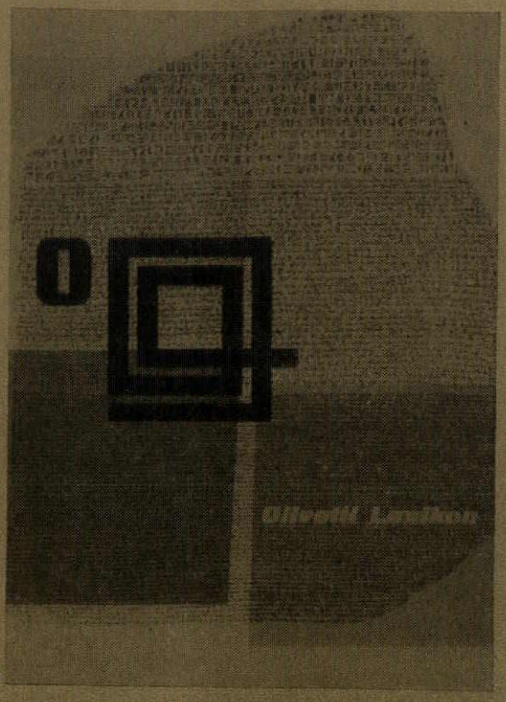

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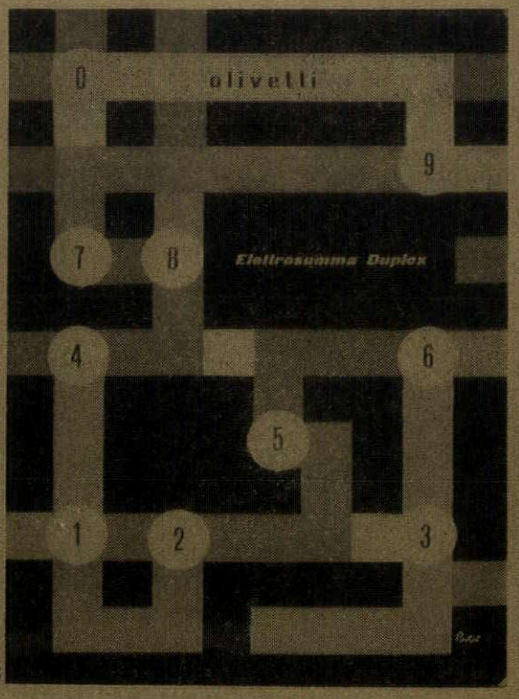

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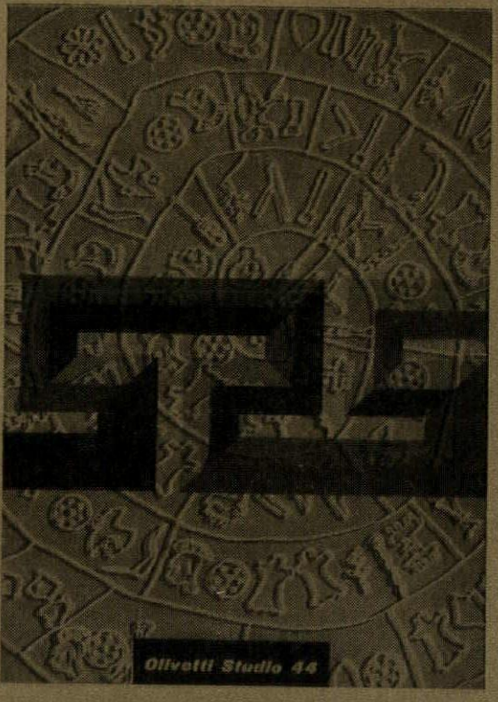

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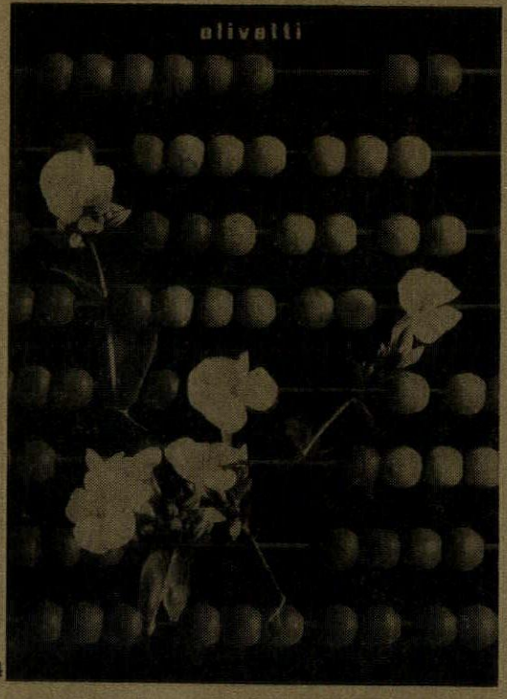

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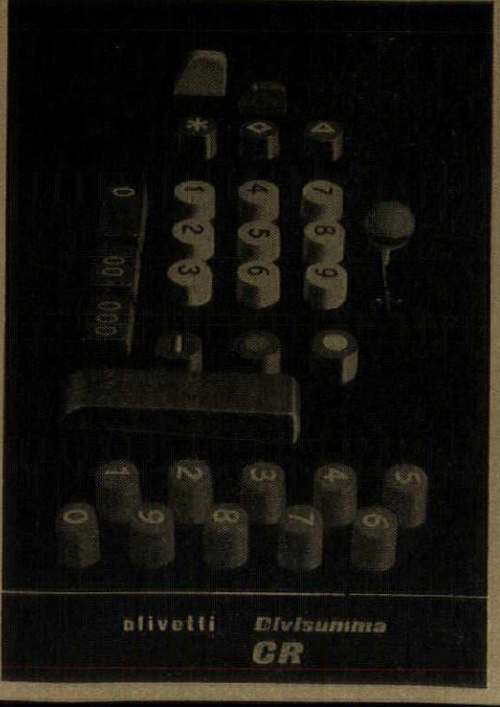

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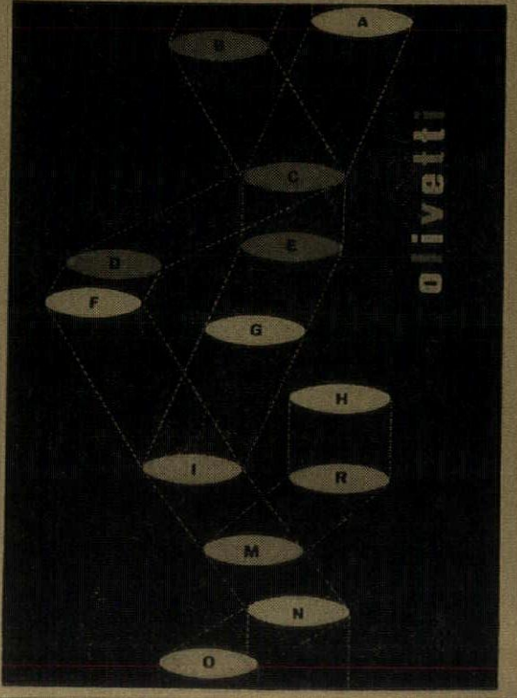


38

practical influence upon his personal interest and taste in architectural style. During those early years he was brought into contact with many of the outstanding members of Italy's rising generation of architects, like Figini and Pollini, and it has been the employment of men such as these that has been largely responsible for what is recognized as the Olivetti style.

There exists a general planning committee which is responsible for the Olivetti concerns' policy in these matters, but, owing to Signor Olivetti's personal interest and experience in this field, his opinion naturally bears great weight in the final decisions taken. When asked to explain the visual consistency attained by the most diverse aspects of the activities of the Olivetti concerns—the guiding policy which appears to weld factory buildings, workers' housing, shops, publicity material, and the design of the Olivetti machines themselves into one comprehensive whole—and his personal influence upon it, Signor Olivetti modestly maintains that by requiring a high standard of design in objects, no matter how diverse in character, one automatically achieves an impression of unity and harmony.

In actual fact, however, there is little doubt that Signor Olivetti's influence has contributed a great deal to the general artistic direction of his firm's policy; he sees personally all designs—whether for large buildings, or even for small details like publicity booklets, 30-38, and the choice even of a particular colour for one of the latter may well be his own. If much of the discerning taste which is evident in the artistic direction of the Olivetti concerns is to be ascribed to Signor Olivetti and his advisers, the high standard of its execution must be attributed to the architects and designers whom they employ. Signor Olivetti would probably, with habitual modesty, deny that his personal knowledge has led to the felicitous selection of the individual men for each specific job, but there is little doubt that this has been so.

As a result many of the most outstanding names in Italian contemporary architecture have figured upon the list of those who have been employed in the design of Olivetti buildings during the last ten years. Apart from Figini and Pollini, who have already been mentioned, G. A. Bernasconi was, with A. Fiocchi and M. Nizzoli, responsible for the design of the new Olivetti office building in Milan, 12, he also designed the Olivetti shop at Vogera, and, in association with B. Coda, the one in Milan. E. Bonfante has also designed Olivetti shops, notably the one at St. Gallen in Switzerland. O. Cascio, in association with Fiocchi, designed the children's holiday camp at Marino di Massa, 13, also the extension of the aluminium foundry at Ivrea, 2. L. Cosenza was the architect of the new Olivetti plant at Pozzuoli near Naples and the workers' housing attached to it 5-8, (he had already done some excellent work in this field in the Naples area before starting on the Olivetti project). L. Giovannini, G. M. Oliveri, and M. Nizzoli were responsible for a large proportion of the workers' houses at Ivrea, 9-10, Nizzoli is also the designer of the Olivetti typewriters and machines, 16-24. L. Lionni, who is art director of the Olivetti Corporation of America, designed the San Francisco shop, 45, and the Olivetti exhibit at the Museum of Modern Art in New York. N. Renacco was the architect of the new carpenter's shop at San Bernardo near Ivrea. E. Vittoria designed the lately completed research centre at Ivrea, 11, and the machine-tool shop at San Bernardo. Peressutti, Belgioioso, and Rogers were commissioned to design the shop in New York, 39-41, and artists such as R. Guttuso and C. Nivola have at different times been employed in the decoration of Olivetti shops.

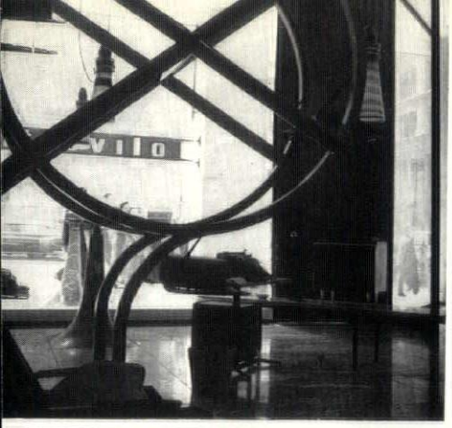
The Olivetti publicity material also owes its high standards to the men who are responsible for its design. M. Nizzoli and G. Pintori are among the best known Italian contributors—Nizzoli was responsible for the creation of the sign of constant progress, 26, which frequently appears upon Olivetti propaganda booklets, and Pintori designed the covers for the prospectuses for the portable Lettera 22 typewriter, 27, and the Tetractys calculating machine, 28.

The publicity field is, however, not limited to Italians by any means; one of the most familiar Olivetti publicity designs—the amusingly vivacious figure of a woman attired in typescript, brandishing the Lettera 22, 29, was the work of Savignac, the French designer, who works extensively for Olivetti. The whole Olivetti publicity services, which were largely originated by Signor Olivetti himself, are now under the direction of Ignazio Weiss who, in collaboration with Pintori, is responsible for the production of the famous Olivetti calendars.

Signor Olivetti's own extra mural activities, if they may be so described, include the presidency of the Istituto Nazionale di Urbanistica, of which Bruno Zevi is the general secretary, apart from town planning, this organization publishes the review Urbanistica, and books and pamphlets upon kindred subjects: the patronage of Sele Arte, a review which is concerned with the fine arts, art history, and decorative and commercial arts, edited by the well-known art historian Carlo Ragghianti: and, of course, the Movimento Comunità, that includes among its many and varied activities the creation of community centres, the production of a monthly review—*Comunità*—and an extensive publishing business, which during the last ten years has brought out more than 200 books as well as pamphlets and other publications.

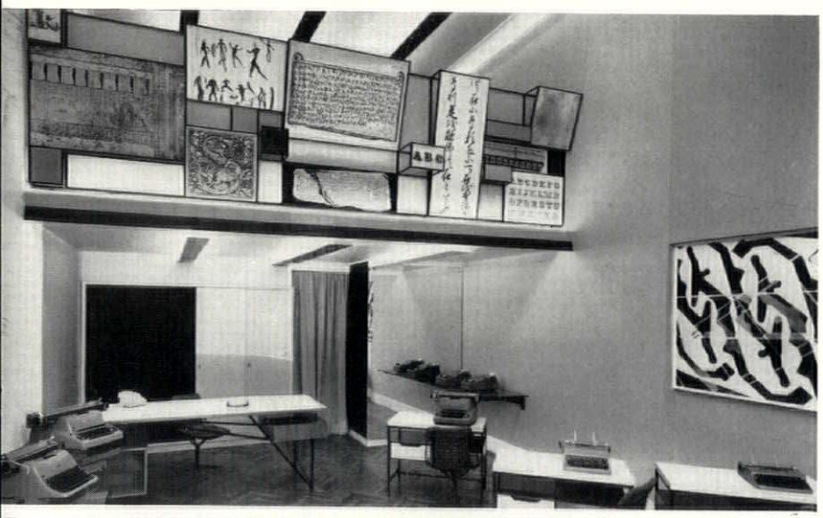
As a man Signor Olivetti is extremely modest in his estimate of what he has achieved, and any suggestion that he might be regarded as a modern Maecenas, or even a contemporary edition of one of the great patrons who contributed so much to the flowering of the arts in Renaissance Italy, he brushes aside.

Whether one agrees with him or not, one cannot doubt the absolute sincerity of the man, or withhold one's admiration for the mind which is prepared to give practical expression to a philosophy of life which most men are content to leave in the realms of theory. If his past achievements provide a basis for expectancy of future performance, it is likely that much more will be heard of Signor Olivetti's conception of a pattern of life which is designed for man, instead of trying unsuccessfully to fit man like some cog into a vast machine, in a world made hideous by blighted landscapes and soulless urban agglomerations, with all that they entail in terms of human unhappiness.



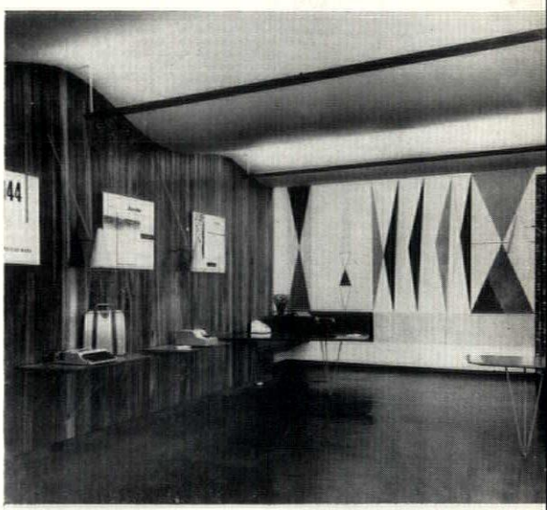






Olivetti showrooms, *no less than the products and the publicity, have helped to take the Olivetti house-style to the world;* 39–41 *are three aspects of the New York showroom, designed by BBPR of Milan;* 42, *the small showroom in Kingsway, London, by Emilio Bonfante;* 43, *in Nottingham, by Gordon Andrews;* 44, *Rome, and* 45, *San Francisco, Cal., by Luigi Lionni.*

39 | 40 | 41
42 | 43
44 | 45







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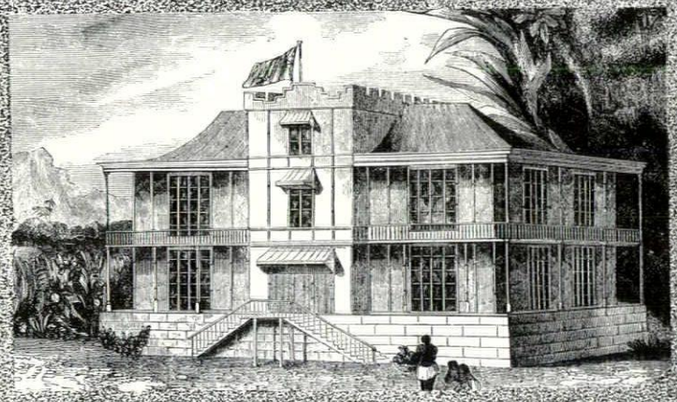
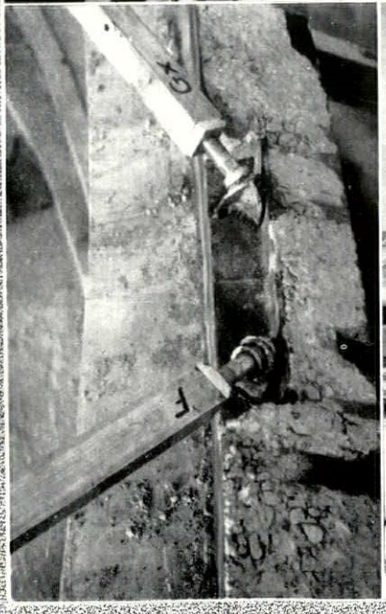


2



3

Britain pioneered the export of prefabricated buildings: as early as 1843 a prefabricated iron palace, 2, was sent from London to Calabar in Nigeria to house King Eyambo and his three hundred and twenty wives. After a long period of disuse, the technique was taken up again after World War II, at first with standardised buildings, but later including one-off designs. One of the most interesting of these is the dome for the Ghana National Museum, described in the following pages, which was given a trial assembly at Woking, 1, then dismantled and re-erected at Accra. The progress photographs show the completed ribbing, 3, the fixing of a pair of ribs in the r.c. ring beam, 4, and the roof partly clad with sheet aluminium, 5.



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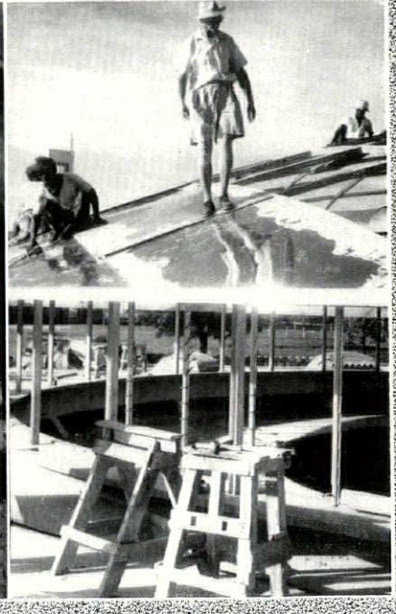


5

MUSEUM AT ACCRA

ARCHITECTS | **DRAKE AND LASDUN of Fry, Drew, Drake & Lasdun**

1. the museum from the east.



The building was designed for the Public Works Department of the Gold Coast Government as the first stage in the establishment of a National Museum, and was opened at the celebrations held in March, 1957, to inaugurate the independence of Ghana. The building had to provide for a large open floor area, a well-lit series of wall displays, a small upper level for storage, filing, office accommodation and small scale exhibits, and space for the occasional showing of films for 20-30 people. In addition, the warm, humid climate needed highly reflective waterproof roof surfaces for heat and rain protection, overhanging roofs to provide wall-shade and storm protection and maximum openings for cross ventilation at all levels.

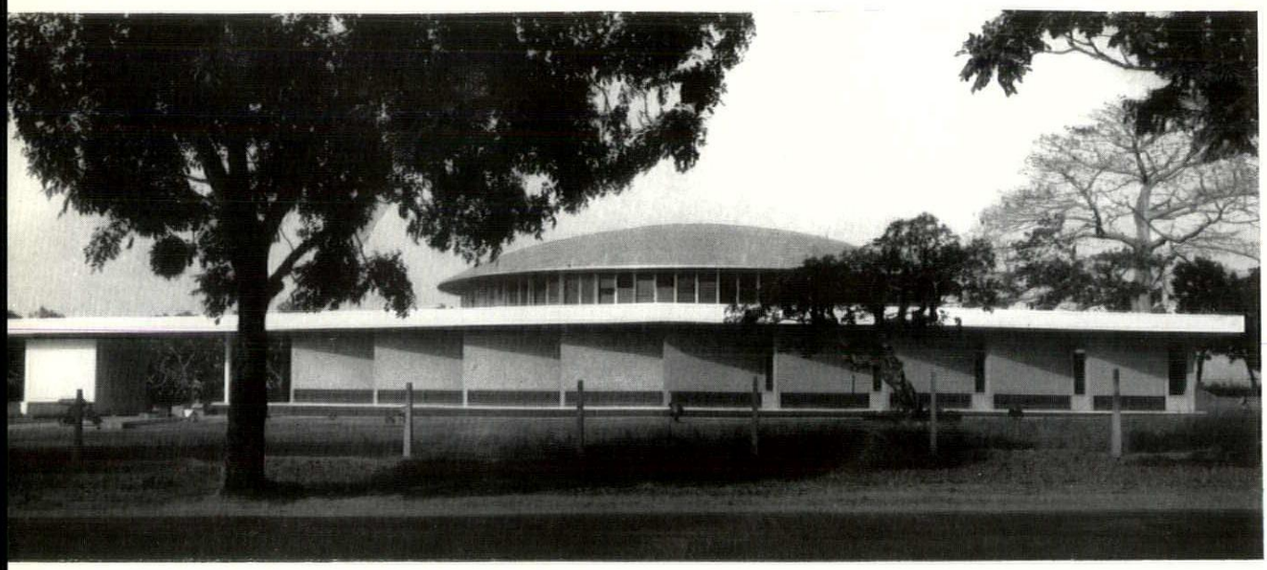
The walls are r.c. and rendered blockwork ; the dome was built in aluminium and was prefabricated in England (see opposite page): with its high resistance to corrosion and its low density, aluminium was clearly an ideal material for a tropical dome, whilst a shell concrete dome would have presented considerable technical problems locally, such as shuttering, insulation, waterproofing and maintenance.

The dome is constructed with a stressed skin 80 ft. in diameter supported on a r.c. ring beam. It consists of a framework of extruded box-section aluminium ribs in compression, covered externally with aluminium sheets. The aluminium ribs, exposed internally, are all curved to an 84 ft. radius and are all great circles of a sphere : they are joined together by inner sleeves and slotted and interlocked at the intersections, thus forming a flush aluminium soffit to the ribs.

The r.c. ring beam takes up the tension, and the uplift due to wind forces is taken up by the aluminium roof sheeting in tension. Expansion and contraction is taken up by the dome rising and falling at the centre, the ends of the aluminium ribs having spherical seatings to allow

[*continued on page* 444

MUSEUM AT ACCRA



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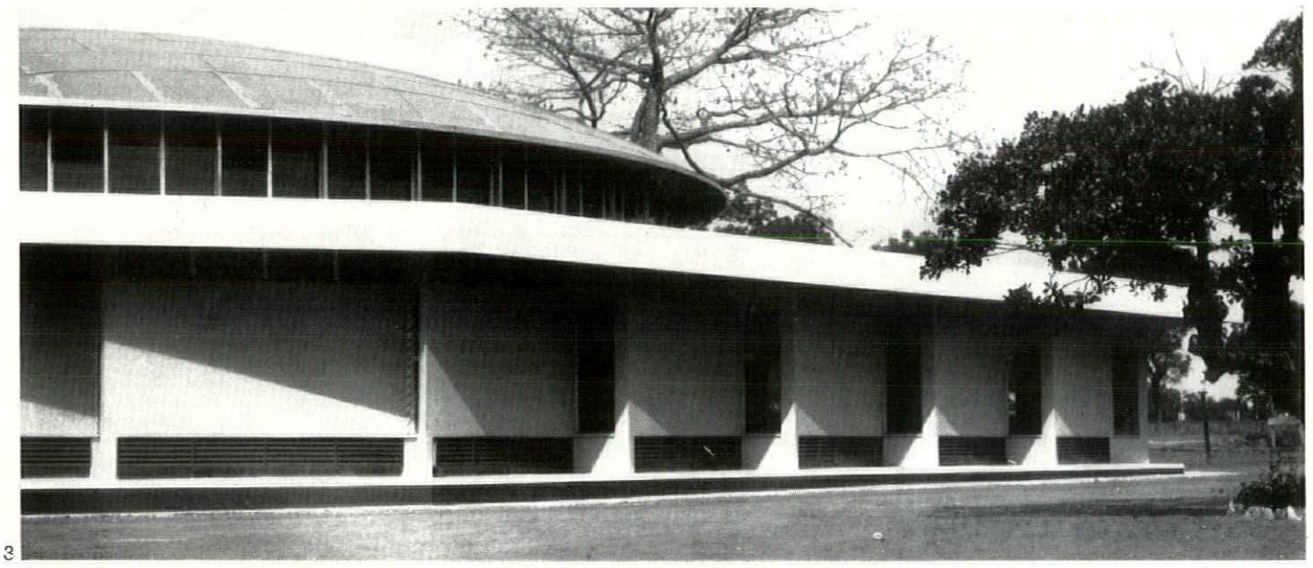
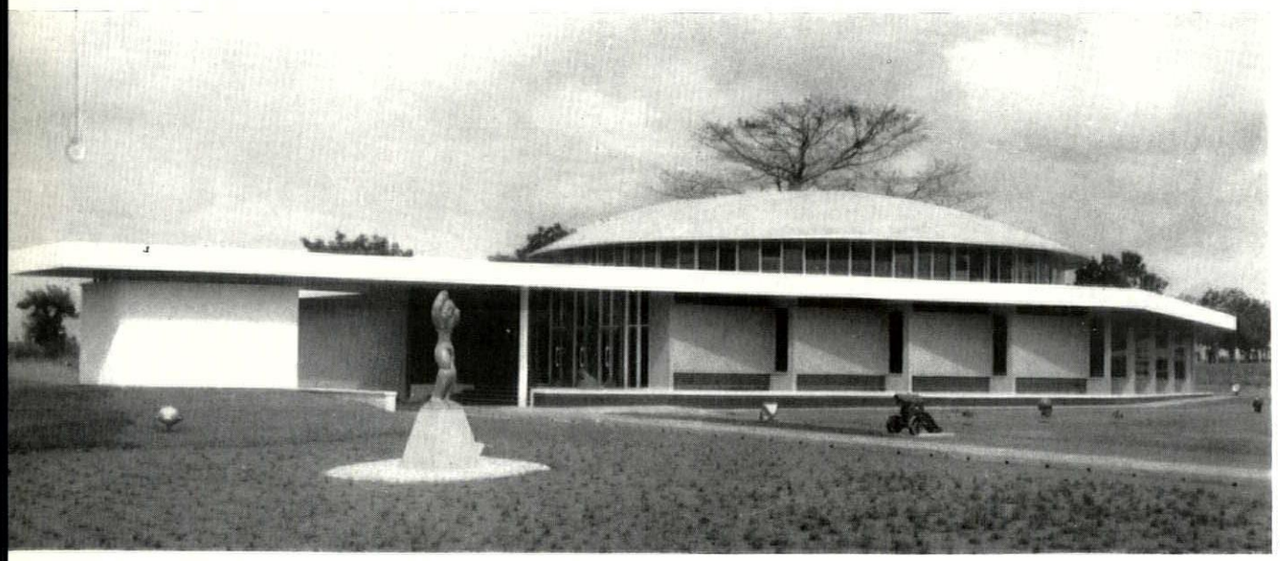


3

2, the east side from the approach road. The car park is beyond the porte-cochère on the left. 3, a close-up of the panel construction at the north-east corner. The space beyond will be made into gardens and used for open-air exhibits. 4, the main entrance; garden store on left, terrazzo sculpture by Dr. Oku Ampofo in foreground.



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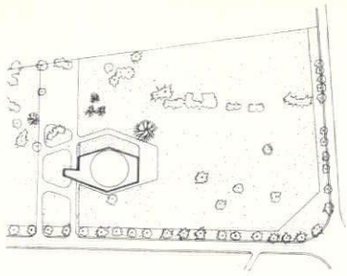
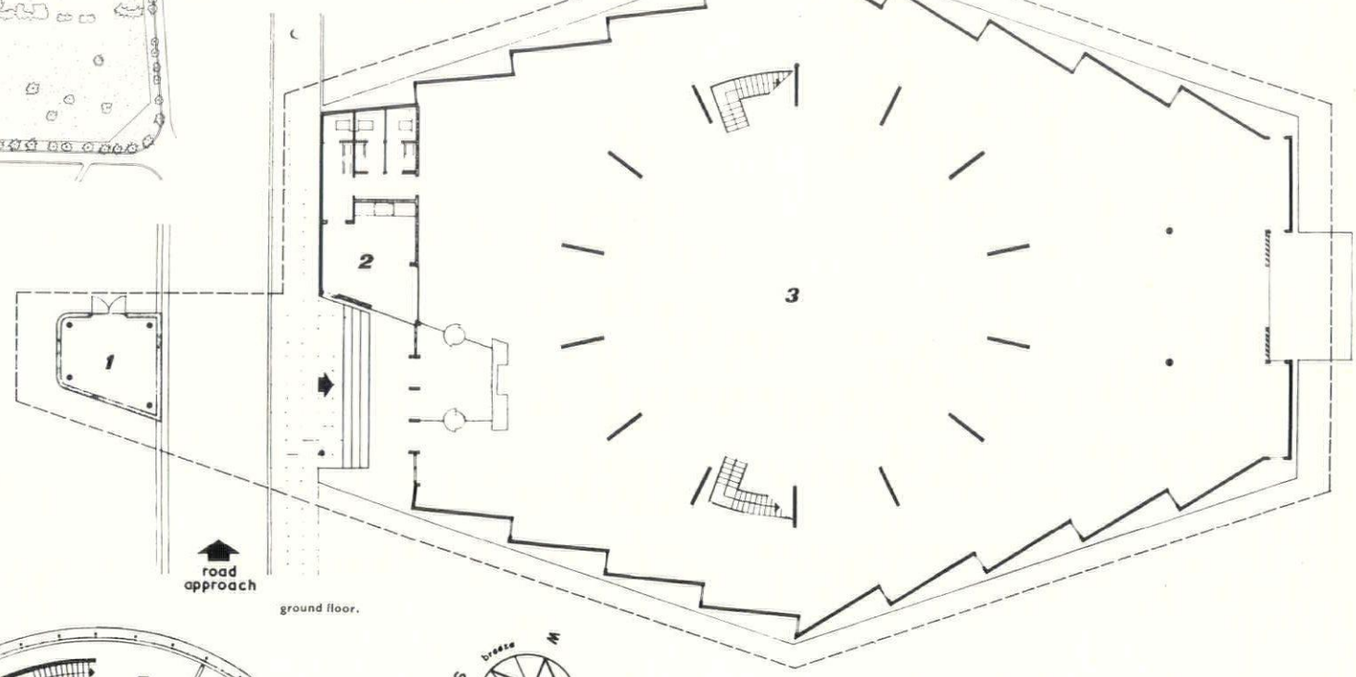
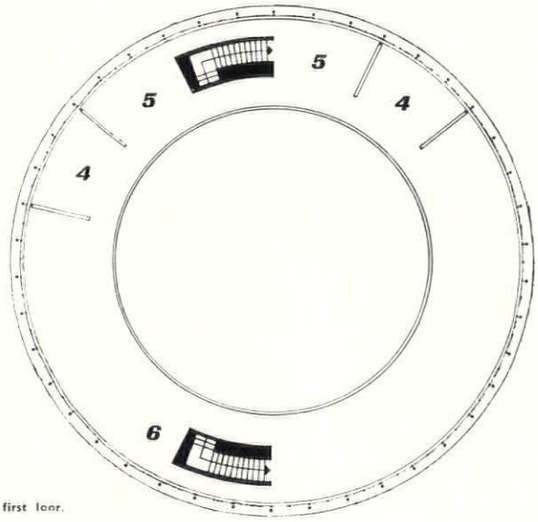


site plan.

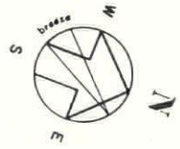
key.
1. garden store.
2. store.
3. exhibition hall.
4. office.
5. filing.
6. storage and special exhibits.

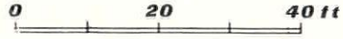


ground floor.

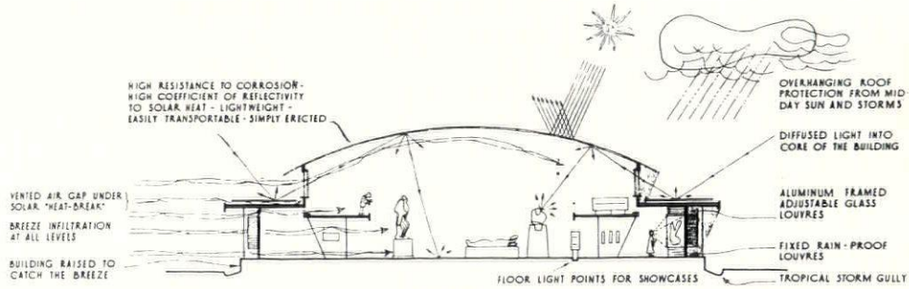


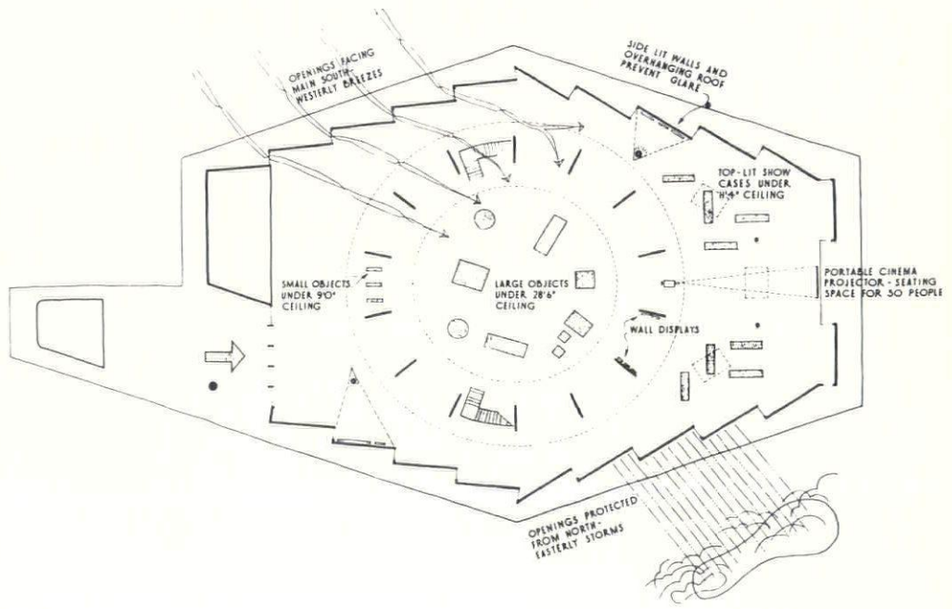
first floor.



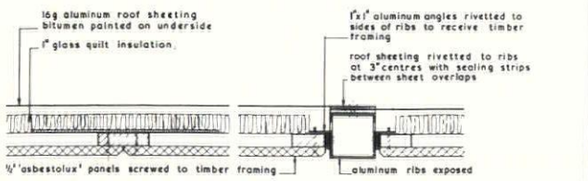


climatic and functional analysis

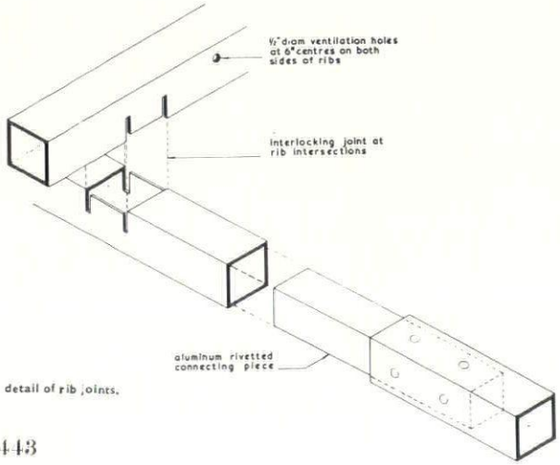




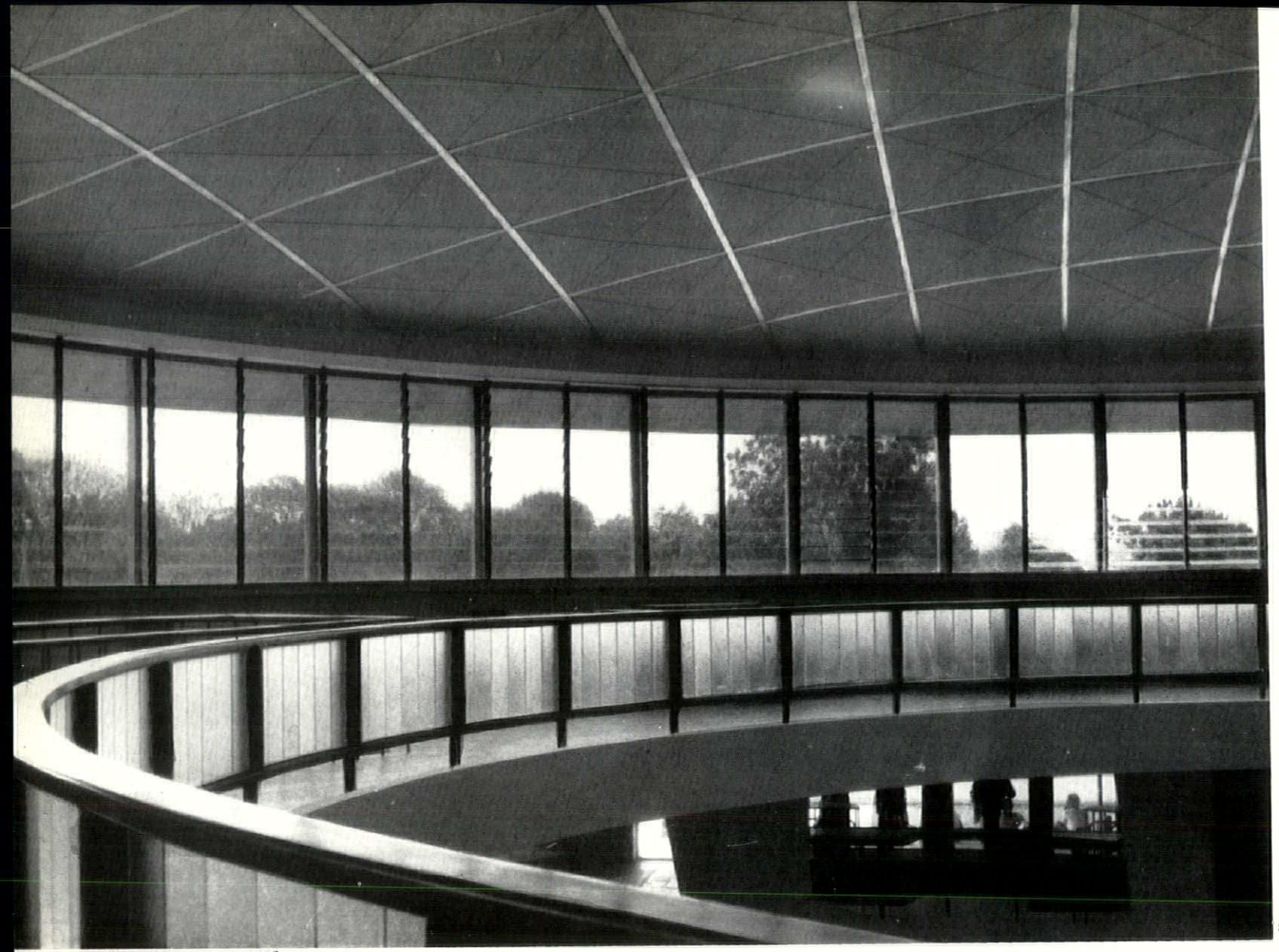
dome details



detail of infilling panels.



detail of rib joints.



5

continued from page 441]

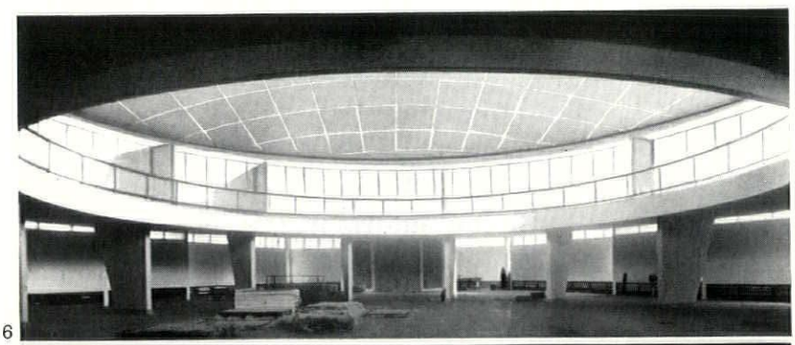
for any slight movement of the structure. The roof overhang, the soffit of which is lined with aluminium sheets, is cantilevered from the concrete beam, and provides protection from sky glare and heavy rains. This extremely lightweight roof—4½ tons, i.e. 2 lb. per sq. ft. —requires only a minimum of support—forty-two 3-in. square H-section aluminium columns—thus allowing maximum breeze infiltration from all sides.

A trial erection of the aluminium structure was made in England prior to despatch, and it was then packed in three crates, two each 11 ft. by 5 ft. 6 in. by 1 ft., for the sheeting and one crate 20 ft. by 3 ft. by 3 ft. 6 in. for the ribs and columns—a total weight of 5 tons. The cost of the dome, including delivery, was £3,978.

At Accra, the dome was erected by five men in four weeks. The ribs, marked for identification, were set out on the ground below the dome position. The two main ribs were positioned and supported on a centre scaffold followed by four ribs intersecting at the quarter points. This established the basis and framework for erecting all the remaining aluminium ribs and once these were all in position, the remaining shoes were welded to the mild steel shelf on the ring beam and the adjusting screws engaged in the spherical seatings so that they were all taking the same thrust.

The external finishes, other than the exposed aluminium, are painted concrete ; internal finishes generally are painted rendered walls and ceilings. The flooring is terrazzo tiling. The museum was begun in February, 1956, and completed in November ; the contract price was £38,047.

5, the first floor gallery and detail of clerestory and roof. The adjustable glass louvre blades are held in aluminium frames. 6, interior, looking towards the cinema, before exhibition cases were installed. 7, the east side of the museum, floodlit.



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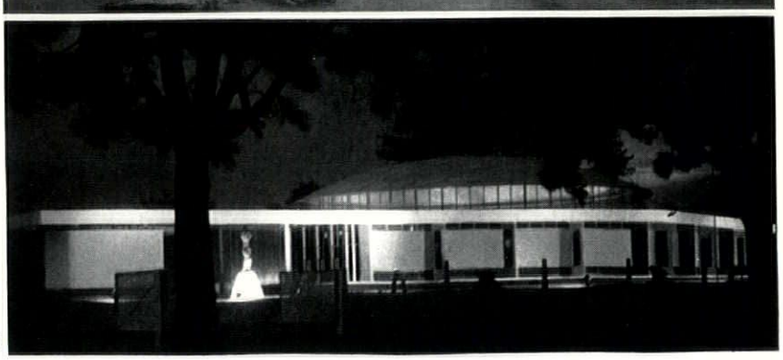
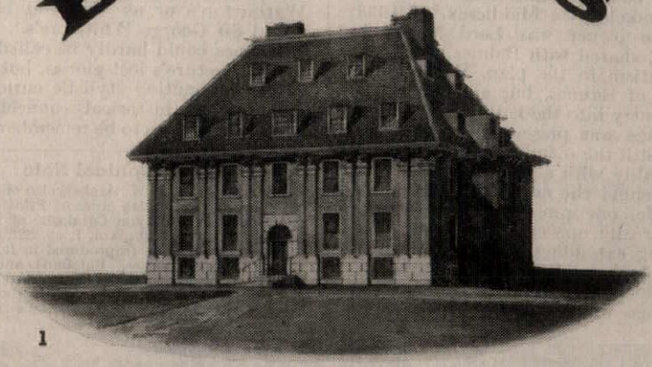


7

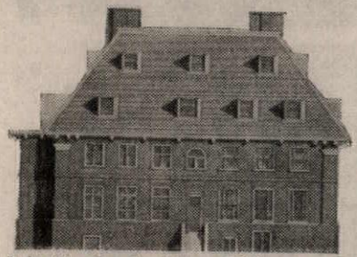
Priscilla Metcalf

BALMES HOUSE



1

Balmes House is seldom now remembered, yet in its last days its appearance was recorded in at least two sets of water-colour drawings, and it was drawn and engraved several times in the eighteenth century. But architectural historians seem to have overlooked it. The chance that in its last role, as lunatic



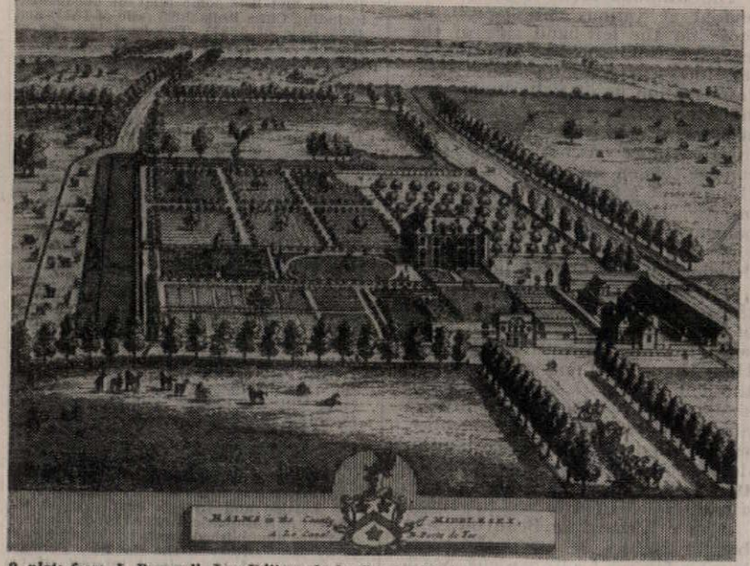
1, in title-piece, front view of Balmes in 1852, *by G. W. Toussaint. 2, rear view also by Toussaint,* 1852.

asylum, it may have sheltered Mary Lamb, may be known to a few more people than the chance that its front elevation was unique in England in its time.

Luckily, in 1852, a few people thought it interesting enough to record before it went. The Tyssen Collection of books and prints now in the Hackney Borough Library includes a set of views (five exteriors and two ceilings), signed 'G. W. Toussaint' and dated 1852, three of which are here reproduced for the first time. Others, by J. W. Archer, are in the British Museum.

The *Illustrated London News* for June 5, 1852, carried a prominent article on 'this interesting specimen of olden domestic architecture better known as Sir George Whitmore's House . . which will very shortly be taken down, so that our readers may be glad to have their attention directed to this archæological relic of the north-eastern suburbs . . . one of our earliest specimens of brickwork and of the Italian school of architecture.' Its site lies in De Beauvoir Road, London, N.1, near Kingsland Road and the Regents Canal.

Indentures of sale now preserved at the Public Record Office establish that the house was in the hands of the Whitmore family from 1634 to 1687. It appears from the document of 1634 that Sir George Whitmore had been living there as a tenant, leasing the house without most of the surrounding lands, for eight years previously (1625 had been a bad plague year, and Balmes was almost two miles from the Royal Exchange). In 1634 his three trustees seem to have acquired vacant possession of the rest of the property, turning out all the other copyholders and tenants on the fairly extensive estate, and acquiring Sir George, as it were, along with the house.



3, plate from J. Beeverell, Les Délices de la Grande Bretagne et de l'Irelande, *Leyden,* 1707. *First dated view.*

Whitmore, well connected and no shopkeeper, was a Royalist. He was Lord Mayor in 1631–32 and the portrait at the Haberdashers' Company, of which he had been Master, dates from that year: it shows a rather majestic presence in three-quarter length, and one might guess at a painter such as Cornelius Johnson. The Whitmore family came from Shropshire, and he owned manors in Somerset and in Essex. He was a member of the Virginia Company from 1609. He is said to have given a large sum to the reconstruction of St. Paul's during his year in office (the year before Inigo Jones was commissioned to do the work, this would have been—and a year after the death of Dean Donne, to put everyone into the picture). Whitmore contributed money to the King's cause—voluntarily, that is—and was imprisoned by the Parliament when war began in 1642. He died during the Commonwealth.

William Whitmore, his son, I think we can assume was not the building type: during the 1670's he was characterized in the conversation of Lord Keeper North in *The Lives of the Norths*, who were relatives of his, as 'one Mr. Whitmore of Balms near London, a humoursome old gentleman but very famous for the mere eating and drinking part of housekeeping.' He had been living at Ramsay Hall in Essex, up near Harwich, before his father died, and after living for twenty-four years at Balmes and marrying one of his servant maids in his old age, had himself buried in Essex. His one son died under age and three family trustees sold the estate of Balmes in 1687 to a gentleman from Guernsey named Richard de Beauvoir.

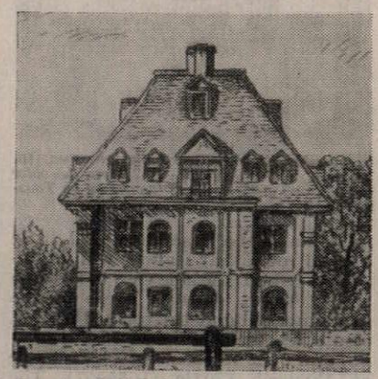
I have gone into Sir George's constructive character and his son's unconstructive character because someone may think this colossal classical order was more likely after the Restoration, and because the names of two of these trustees, together with the architectural oddity of the house, may bring to mind an architect who, one can be quite sure, had nothing to do with it: Captain Winde or Wynn. One trustee was the Earl of Craven, whose mother had been a sister of Sir George Whitmore's and whose collection of houses included the Dutchly vertical Ashdown. The second trustee was Lord Powis, whose mother was a sister of Lord Craven's—Lord Powis had been recently released from the Tower on the uncovering of Titus Oates and a year later was to follow James II out of the country. Winde was building for both Craven and Powis, but I do not think he was reviving artisan classicism of the 1630's for William Whitmore. (As for Lord Craven's old house in Drury Lane, it was an even less sophisticated mixture than Balmes, and another story.) The third trustee was Lord North and Grey, one of Whitmore's relatives in the North family. (There is no suggestion in the *Lives of the Norths*—or, indeed, in the appearance of the house—that Roger North of the Middle Temple gateway put a new front on Balmes, either.)

Architecturally, Balmes was an unusual example of bricklayer's classicism, one of a group of houses built during the time of Inigo Jones, but largely independent of him. Mr. Summerson's convenient term, 'Artisan Mannerism,' does not altogether apply to the front elevation, 1, because the principal 'mannerist' motives listed by him were not present: no 'Holborn' gables, no architraves breaking into scrolls and half-pilasters. But the interrupted entablature and the extra spacing at the corners can be called artisan-mannerist.

It is odd to find a merchant's mansion of this period inclining more toward the severe than the busy, but a rather grandiose ungainliness betrays it as craftsmen's classicism—not the more mature 'Dutch' classicism employed later on by May and Winde and Hooke.

That English bricklayers had been for two or three decades familiar with the use of the giant order is shown by a document preserved at Dulwich College. This is important: reliable dates for the beginnings of 'artisan classicism' are so few. It is a contract for Edward Alleyn's first building there, dated May 17, 1613 (Inigo Jones had just left for Italy, so he is safely out of it), between Alleyn and John Benson of Westminster, bricklayer, for 'a certain buildinge of brick . . . accordinge to a plott thereof made and drawen by the saide John Benson,' and specifying that 'the forefront . . . shalbe bewtified with sixe Dorick pillasters with petty-stalls, bases, capitalls and cornishe to reach from the lowest part of the foundation within the grounde unto the raysinge peece' (a height previously given as thirty feet). Benson's façade was gothicized in the nineteenth century, but Pocock's School in Rye probably conveys the idea.

The *doubling* of the giant order on Balmes, however, may have been unique in England in its day. Artisans like Benson had been brought up on Serlio, and manipulated his designs in a free way. The more sophisticated, irregularly spaced flat order on Broome Park, Kent, of 1635–38, may echo a design in Serlio (VII, 41), 8. The giant order that was being adapted to *town* houses in the 1630's was usually raised on a ground-floor base in imitation of the Covent Garden



4, east end of Balmes, 1795, *from Lysons's* Environs of London, *vol. II.*

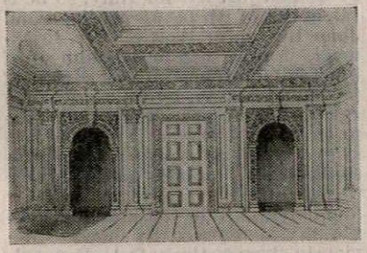
houses: the row in Great Queen Street by Peter Mills comes to mind. Thanet House (later Shaftesbury House) in Aldersgate Street, of about 1642, 7, was another example of town-artisan mannerism; perhaps it was also by Mills.

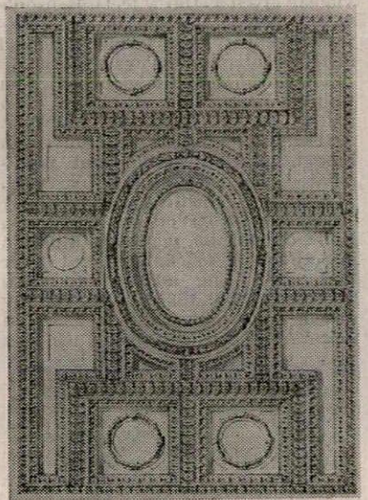
Although there is no dated view of the house earlier than 1707, it seems highly unlikely that the front elevation was added at the end of the century by De Beauvoir. For one thing, even though unique in a way, when seen in the context of other brick architecture of the 1630's, it seems to *fit*. If such a change had

been made around 1700, the inordinately high roof would probably have been lowered or disguised at the same time.

The gateway, visible in the view of 1707, 3, was torn down about 1794, when it was noted by Sir Henry Ellis for his history of Shoreditch. If he was right in saying it bore the date 1623, the gatehouse was built before Whitmore's time. Ellis included the interesting item that Balmes was once 'ornamented with the busts of the twelve Caesars upon brackets.' De Beauvoir could have added these. The north front of Ham House was decorated with such busts about 1675, but so of course had been Hampton Court, Wollaton, and others. No marks of such brackets seemed to be left on the brickwork.

The rather overweening roof had two rows of dormers—as if doubling the garrets were a fitting climax to the paired pilasters and modillion brackets below. One of the few remaining English houses with two rows of dormers is at 19 St. George's Square in Stamford, a smaller and somewhat later house, but the dormers have the casements and little hipped roofs that Balmes will originally have had (the side view in Lyson's shows these, 4) and there is the same moulding at the top of the roof, also a feature of Thorpe Hall (1653–56) and once the basis of a balustrade at Wisbech Castle (1655–57). The double row of dormers was common enough in northern Europe.





5, *possibly the first-floor great chamber* (Ill. London News, *June* 5, 1852) *over the older hall.* 6, *one of the ceilings (as drawn by Toussaint,* 1852).

Furnival's Inn of about 1640, which looked rather like a Netherlandish town hall, had a vast roof, although, if eighteenth-century views can be believed, with nothing like the pitch of the roof at Balmes. If Chevening was the first of the 'regular' houses to have a hipped roof, it did not attempt such height. The Balmes roof was in its way just as 'unclassical' as the 'Dutch' gables on Swakeleys or Broome Park.

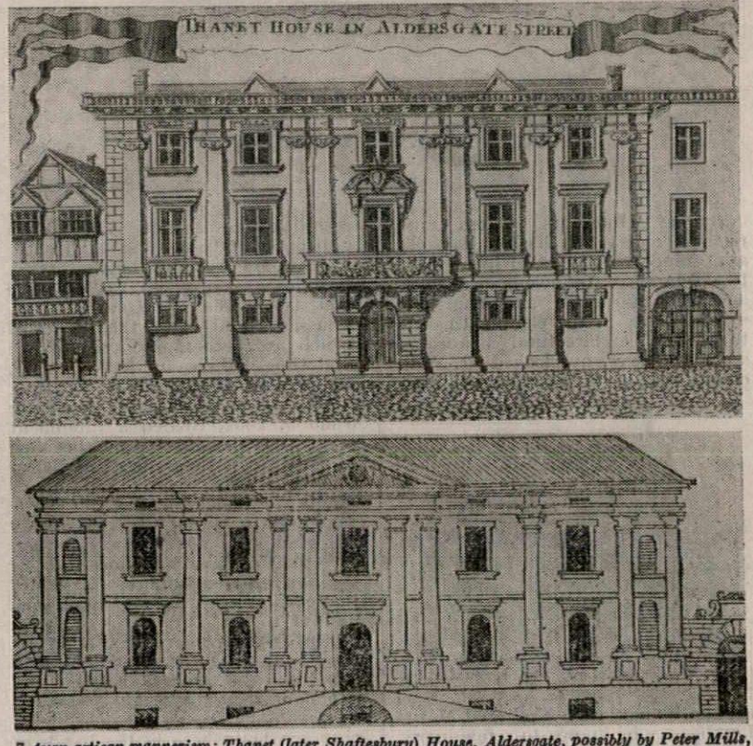
I should like to suggest, tentatively, that there is more than two English generations' digestion of Serlio here, that an engraving of some steep-roofed French building, perhaps of part of the Tuileries, was used. Mathieu Mérian's view of Paris in 1615 shows Bullant's pavilion (between De l'Orme's and Du Cerceau's work) with its *paired* colossal pilasters (later duplicated by Le Vau at the Pavillon de Marsan end). This combination, of high roof and more than one row of dormers with a mannerist use of the classical orders, began in France anyway. Whether Whitmore's nephew, Lord Craven, who came back from the wars in 1633, might have engaged in some correspondence for him or obtained engravings from, say, Sir Balthazar Gerbier, who was in Brussels, may be immoderate guessing. The surveyor or bricklayer in charge may simply have owned some French engravings. There is certainly not here any of that *new* French influence of the Court circles nearest the Queen, noticeable in Jones's work at Somerset House and later at Wilton.

Balmes was no simple matter, for besides this puzzling old-fashioned French quality, with the clearly English brickwork of the 'thirties, there were also apparent remnants of the earlier house. The two-storey piece jutting out on the east side looks like making the best of something already there—perhaps part of the line of an early Jacobean house corresponding once to another extension on the west side—or perhaps even part of a very much earlier tower. Whether it contained the stairs is hard to tell from the one view of a staircase that we have. The woodwork of one of the main rooms looks early Jacobean too, so the work of 1635 may have been mainly a recasing and a new roof outside and much redecoration inside. Someone may well wonder why the whole thing couldn't have been done before Whitmore's time, with 'Sir George's house' merely taking its name from his more resounding personality—only parts of that argument are excellent, for it does seem that the *tout ensemble* could only have happened around 1635.

The career of Sir John Harrison, of Balls Park (Herts) and the Customs House, one of the royalist financiers imprisoned in 1642, must have been similar to that of Whitmore. The exterior of Balls Park, presumably going up between 1638 and 1640 or so, is fussier, more naïve, than that of Balmes, but some of the same craftsmen might have been employed. Oddly enough, there are the same relieving arches of brick voussoirs in the wall over the windows as on the rear elevation of the Hackney house, 2—perhaps habitual with one bricklayer's yard and so more revealing than applied ornament required by the patron. The stricter controlling hand of a more knowledgeable bricklayer-designer is apparent on the front elevation at Balmes, but on the sides and back there was the same rather clumsy spacing of eaves brackets as at Balls Park. Panelling in the room illustrated in the *Illustrated London News*, 5, resembled some at Balls Park.

Richard Sprignell, a man of City family who was made a baronet in 1641, was building a house, now called Cromwell House, at Highgate in 1637–39. He had become Captain of the Trained Bands in 1634. (The fields of Balmes had been in use for City archers for a century, although it wasn't used for the Artillery Company's manœuvres until after the Restoration). Sprignell's was a more modest house, but with a fine staircase: the stair at Balmes (Archer view, British Museum) was so like it that the same wood-carvers may have been employed. Other staircases of the same time and type can be seen, in Nash's *Views*, at Aston Hall and Aldermaston, with the same awkward scrolls that were more akin to earlier strapwork than to the heraldic ease of the almost exactly contemporary staircase at Ham House. Ham had more courtly connections.

Swakeleys in Middlesex, of 1638, whose owner was Lord Mayor in 1640, shared with Balmes great conservatism in the plan. We have no plan of Balmes, but apparently the old entry into the hall from a screens passage was preserved and the hall was still the main ground-floor room, probably with a great chamber over it. Behind the new regularity of the façade, one probably entered what was really one end of the hall—the ceiling extending over the screen in the Archer view (British Museum) shows this. No doubt the screens passage was extended as a corridor along the short axis of the house. Mills, even in the 'fifties, kept this arrangement at Thorpe Hall.



7, *town artisan mannerism: Thanet (later Shaftesbury) House, Aldersgate, possibly by Peter Mills, c.*1642; *now demolished. Engraving before* 1676. 8, *Serlio, Book VII, page* 41.

The windows seem to have been revised at various dates—probably those on the left-hand side of the rear elevation represent the style of the 1630's. The round-headed windows remind us of Balls Park, and, indeed, of the so-called Dutch House at Kew, of 1631. The shape of the front entrance was not changed (one can see this on engravings of Thanet House) but a fanlight was no doubt inserted later. Over it was once a balcony—there is one in the 1707 view—the 'pergula' of Smythson's drawings of new London houses.

The ceilings—we have evidence for three—were craftsmen's adaptations of the Whitehall court style, 6. They seem to come in between those at Ham House (hall and stair-hall) and those at Balls Park in elaboration of similar motives. Neither Whitmore nor Harrison, we must remember, was in a position to finance interior decoration after 1642, and by the time Coleshill was built about 1650, a fruitier ceiling style was the thing.

Under Richard de Beauvoir, who bought Balmes in 1687, the place became famous for its gardens. See 3.

Nichols, in 1788, wrote that the house had been 'leased by the late Meyer Schomberg M.D. for the reception of lunatics' (*DNB* says Dr. Meyer Schomberg died 'at Hoxton,' probably Balmes, in 1761). In the early nineteenth century this was run by a man named Warburton, and the place was locally referred to as Warburton's or as 'the Mad House called Sir George Whitmore's.'

Balmes could hardly be called one of architecture's lost glories, but as a rather fascinating stylistic curiosity, and for its historical connections, surely it deserves to be remembered.

Bibliographical Note

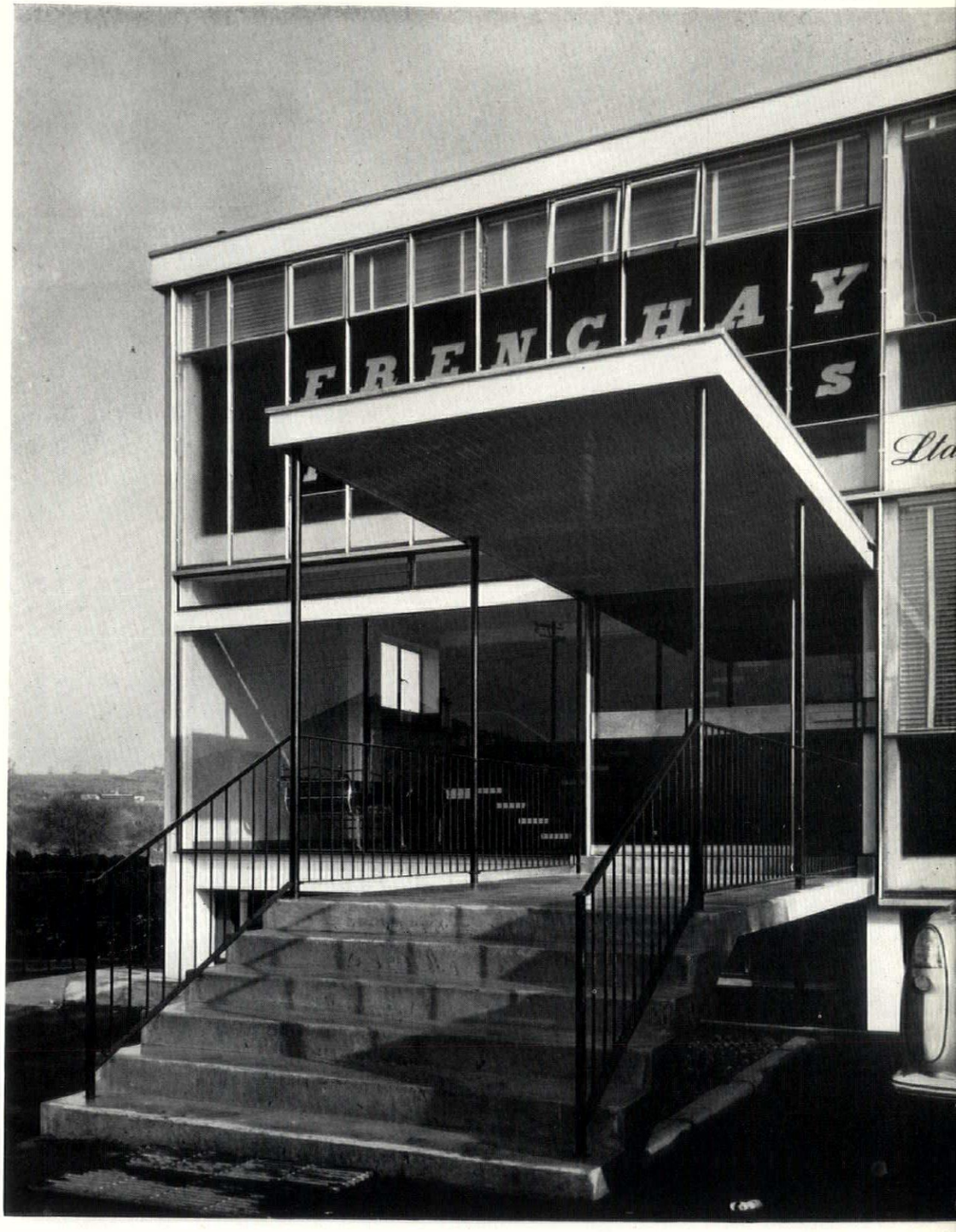
Four views by J. W. Archer, also of about 1852, are in the British Museum Print Room (Portfolio XVI, Binyon Catalogue of Drawings by British Artists, vol. I, pp. 32ff); they include the staircase (reproduced in R. Dutton's *English Interior*, Batsford) and one partly Jacobean room. Rasmussen's *Towns and Buildings*, 1951, p. 57, shows the 1615 view of the Tuileries, from Mérian's 'Paris.'

There is undoubtedly more to be found out about Balmes, or Baumes or Bammes, and its owners in the Public Record Office and Guildhall Library. The Survey of London volume on Shoreditch touches marginally on Balmes and lists some relevant documents, including Close Rolls 3025 (sale of 1634) and 4655 (sale of 1687). The local histories of Nichols (Canonbury, 1788), Lyson (*Environs of London*, 1795), Ellis (Shoreditch, 1798) and Robinson (Hackney, 1842-43) all have information and misinformation about it. The early ownership is confusing. A MS. history of Hackney by Thomas (1832) in the Hackney Library was largely a compound of hearsay and a quarry for Robinson.

The contract at Dulwich, kindly shown to me by the College Librarian, is inaccurately reproduced in the local histories by Young and Blanch. Engraving of Benson's building, *Eur. Mag.* for May 1, 1790. It is said that one reason Soane was chosen to design the new building at Dulwich was it was felt he would have the proper sensibility toward what was then thought to be a work by Inigo Jones!

Whitmore is in the *DNB*. The Haberdashers' portrait survived the fires of 1666, 1838, and 1940, and has recently been installed securely in the woodwork over a fireplace at the new hall in Staining Lane.

Balls Park can be found in V.C.H., *Herts.*, vol. III, and *Country Life*, April, 1912. On Peter Mills and Thorpe Hall see Mr. Colvin's *Biographical Dictionary* and his article in *Country Life* for June 6, 1952. De Beauvoir Town is touched upon by Millicent Rose in her *East End of London* (1951). Mr. Summerson's chapter on Artisan Mannerism (Pelican History of Art, 1953) and the turning up of the Leyden and Lyson's engravings at the Society of Antiquaries first led me to Hackney and the unpublished views by Toussaint. It is by the courtesy of the Hackney Borough Librarian and the helpful interest of his Reference Librarian that they are reproduced.



1, *the main entrance, which is approached over a reinforced concrete bridge spanning the basement area. The soffit of the canopy is matchboard painted white; the name above the door is etched white on to blue glass.*

OFFICES AT BRISTOL

ARCHITECTS: LEONARD MANASSEH AND PARTNERS
ASSISTANT ARCHITECT: BRYAN P. FIELD

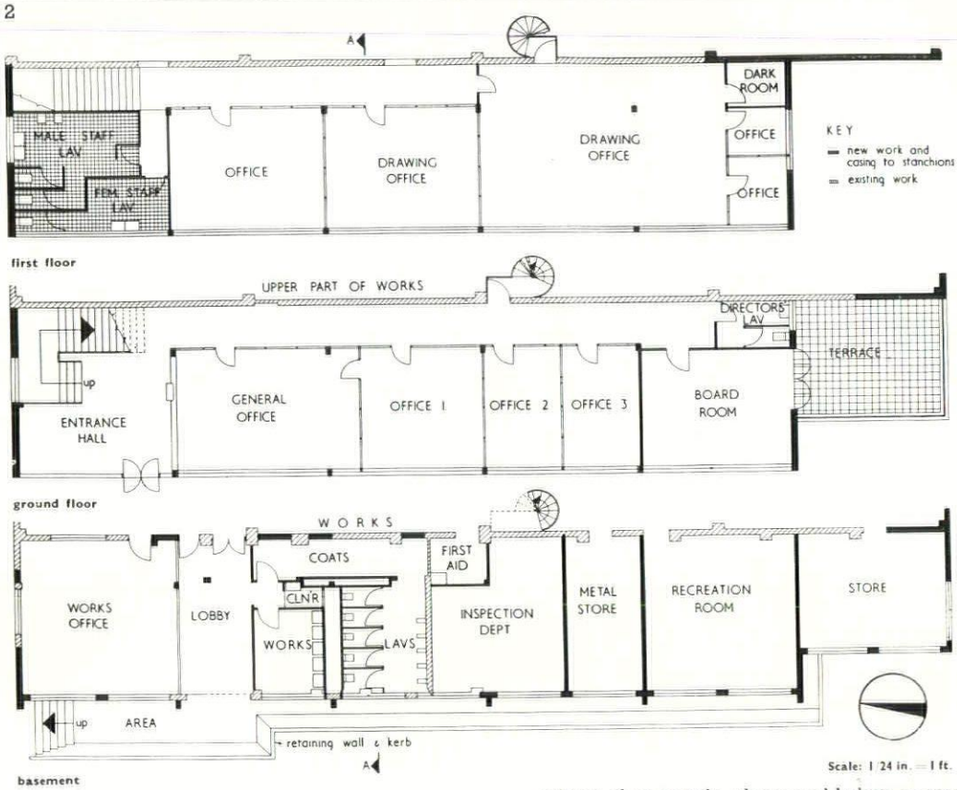
The offices are in Station Road, Kingswood, and are for Frenchay Products, an engineering firm which carried out the erection itself. The main (west) front is clad in aluminium framed curtain walling, conforming to a 2 ft. horizontal module. The brick dwarf walls to sill height behind the curtain wall glazing are painted dark grey, the panels above the main entrance are Bristol blue flashed glass with the lettering etched white; the word ROTORK (an associated company) is ruby red. Entrance canopy is timber framed with a matchboard soffit painted white and black painted steel tube supports. The main construction is steel frame, with precast concrete floors and flat roof; panel walls are of hollow

Offices at Bristol



2

2, main (west) elevation: opening lights and fascias are painted white: the dwarf walls behind the curtain wall glazing are dark grey. 3, the staircase which has reinforced concrete treads: the stainless steel rods which support the outside edge from a r.s.j. trimmer beam can be seen.



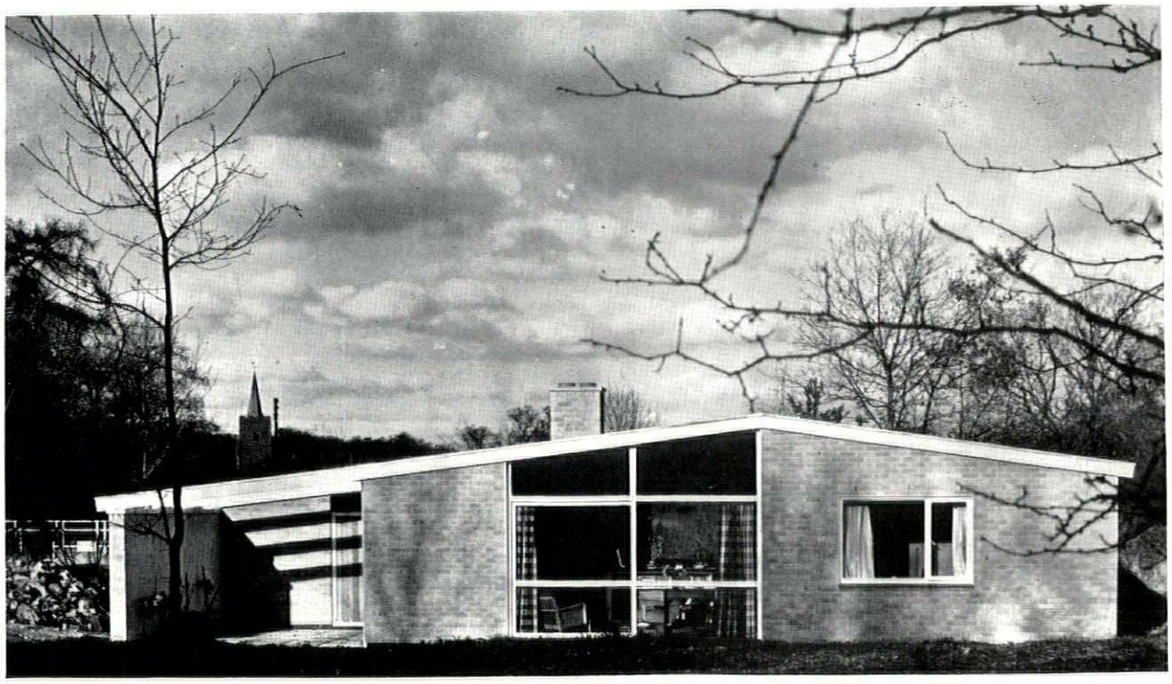


3

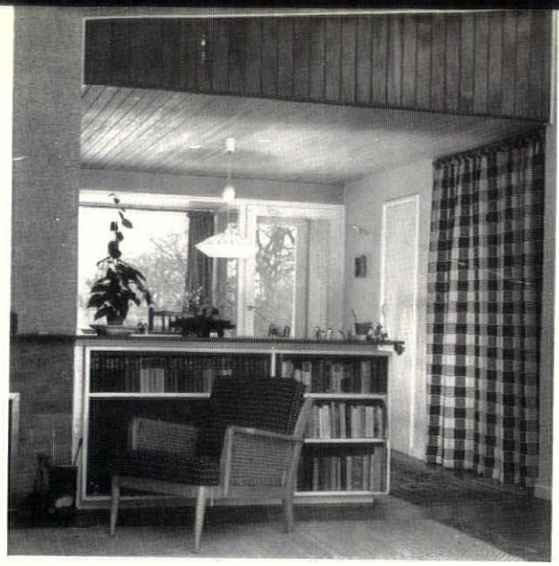
concrete blocks. The main flight of the staircase, consisting of r.c. treads and open risers, is supported by the wall at one end and $\frac{3}{8}$ in. diameter steel rods, suspended from an r.s.j. trimmer beam, at the other end; the handrail is mahogany. The wall behind the staircase is dark green, that to the left of the entrance cadmium red and the entrance hall ceiling pale blue. The enquiry desk has mirror glass panels, above and below; a screen framed and veneered in mahogany divides the entrance hall from the general office. The hall floor is ceramic-tiled, and the lighting here is by reflector spotlight lamps; elsewhere, except in the board room, where tungsten is used, lighting is by fluorescent battens.

HOUSE AT HERTINGFORDBURY, HERTS

ARCHITECT: GEOFFREY WOODWARD



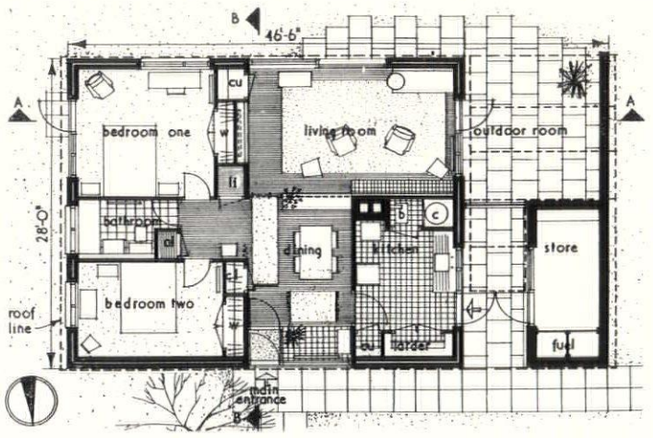
4, from the south. The living room, centre, has a sliding window.



5, looking from the living room, through the dining room, to the main entrance. The dining room ceiling is of untreated pine.

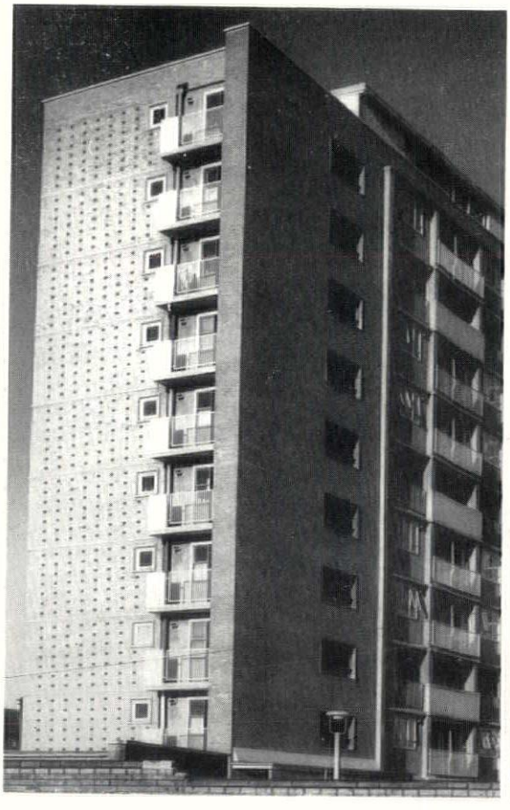
The house occupies a large site in St. Mary's Lane, Hertingfordbury, two miles west of Hertford. The approach is from the north, giving privacy to the outdoor living areas on the south; an unbroken west wall shuts off the road. The construction is 11-inch cavity brickwork round the perimeter, except where glazed door and window units occur; fixed and opening lights and sliding windows are framed in Oregon pine, painted white. The roof decking throughout is aluminium on softwood framing.

The dining room ceiling is untreated pine boarding, which is also used for a panel over the entrance door; other ceilings are plastic. Beside the entrance door, below a fixed light window, is a composite glass spandrel consisting of two sheets painted venetian red between; its internal lining is hardboard. Floors are quarry tile, hardwood block or thermoplastic tile. Heating is by low pressure hot water radiators.



plan. Scale: 1/16 in. = 1 ft.

6, 7





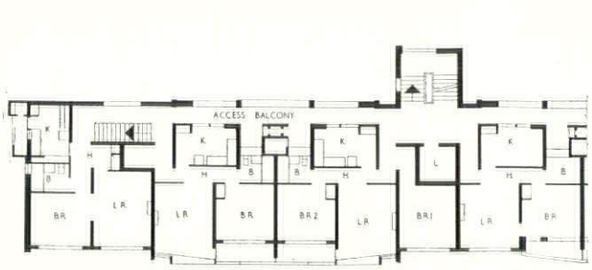
6, south elevation and 7, the west front, which contains the main entrance and all living accommodation.

FLATS IN LIVERPOOL

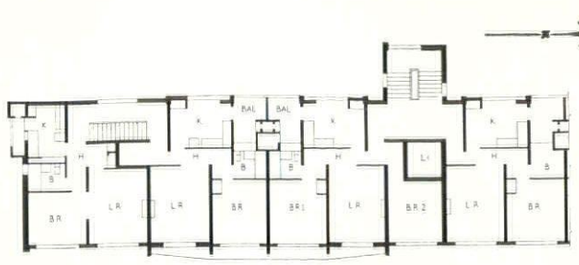
CITY ARCHITECT: RONALD BRADBURY
ASSISTANT-IN-CHARGE: R. BROWN

Coronation Court is a ten-storey block of 114 flats north-west of the East Lancashire Road and Lowerhouse Lane roundabout at Fazakerley. It is on the verge of the Sparrow Hall estate and may be approached from that estate or from Lowerhouse Lane. The block is 330 ft. by 30 ft. by 100 ft. high, approximately one mile from the City boundary; a service road encircles the building giving access to the main entrance on the west or living accommodation side. On the east side is the heating chamber, fuel store, garages, private stores and subsidiary entrances.

The block is constructed on a r.c. raft with r.c. walls running crosswise at right angles to the east and west walls and which are cast-in with the r.c. floors. All structural walls above the ground floor level are 6 in. thick and all floors are 5 in. thick. The external walling is 4½ in. brickwork facing with 2 in. cavity and inner 2 in. foam slag partition. The floors and walls of the flats are insulated against sound transmission, condensation and loss of heat; floor insulation is ¾ in. bitumen bonded glass wool. The main



floors 2, 5, 8.



floors 1, 3, 4, 6, 7, 9

Flats in Liverpool

entrance approaches are paved with broken York stone flags, the main stairs and halls on the ground floor are paved with precast terrazzo tiles with terrazzo surround. Circulation space elsewhere has 1¼ in. grano laid in small squares.

The accommodation provided comprises 32 bed-livingrooms, 44 one-bedroom and 38 two-bedroom flats; 25 garages are provided. On the ground floor there are 6 flats (3 at each end); the central space is used for circulation, main stairs and lifts, and accommodates 90 heated stores for the use of the tenants.



8

8, the entrance hall, with the assembly hall through the doorway on the right. The floor is Broughton Moor slate; the tile panel, right, which is black overprinted on blue, was designed by Peggy Angus. The entrance doors and screen are Honduras mahogany. 9, one of the two 2-storeyed classroom blocks, from the north-east.

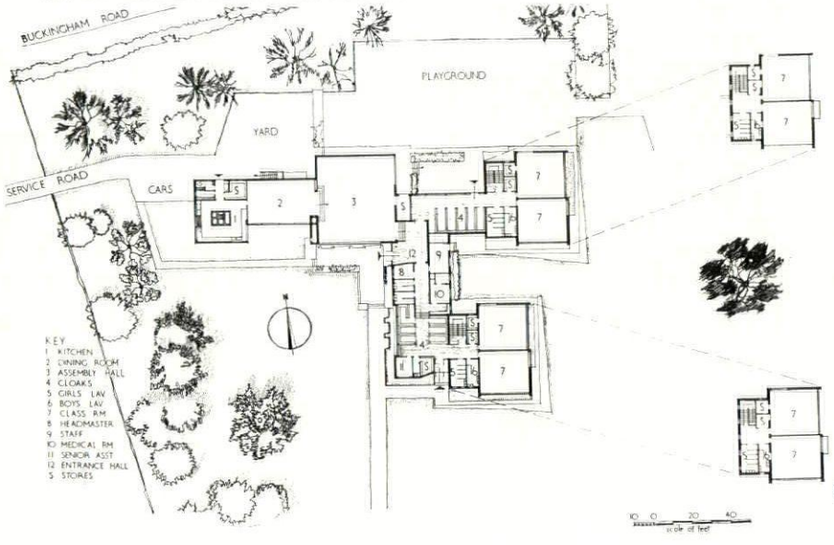
SCHOOL AT FAR BLETCHLEY, BUCKINGHAMSHIRE

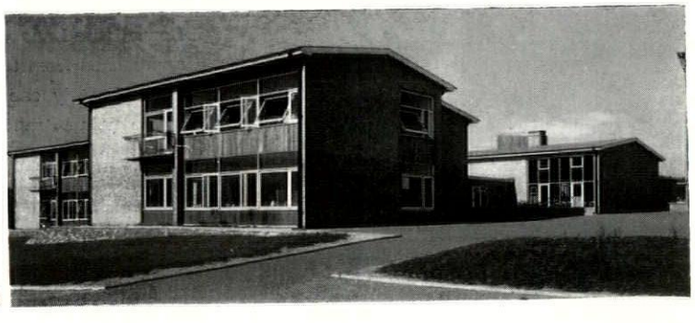
COUNTY ARCHITECT: F. B. POOLEY
ASST. COUNTY ARCHT.: C. HINDLE
ASST. ARCHITECT: M. DEAN

The school, which is designed to accommodate 320 juniors, is on rising ground west of Bletchley.

Construction is load-bearing brickwork; the upper floors are in prestressed concrete units. Roof construction throughout is in timber units. External brickwork is yellow London stocks; all fascia boards are timber and flashings aluminium. Large windows are in softwood painted white with Honduras mahogany glazing beads; small window openings have rendered reveals painted white, and slate cills. External timber cladding is Western red cedar and the classroom balconies are wrought iron supported on steel T-bars.

Floors to the classrooms, assembly hall, dining room and staff room are Rhodesian teak blocks and the floors in the cloakrooms and circulation areas are black and light grey plastic tiles. Ceilings are in insulation board or plaster, except in the first-floor classrooms and two cloakrooms where the soffits of the roofing units have been left exposed and painted.





9

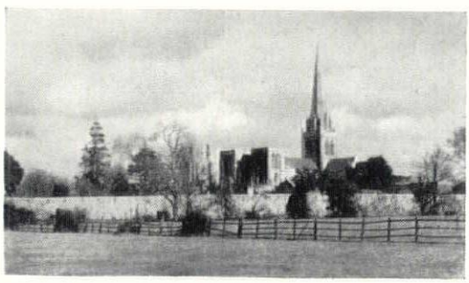
COUNTER-ATTACK

BUREAU BULLETIN

This will now be a regular monthly miscellany feature, operated by the Counter-Attack Bureau. Cases under investigation will be given a code number which for easier identification will be used throughout the progress reports in subsequent months. Examples of good planning and of outrage averted will also be included regularly.

9. Kings Road, Chelsea (London County Council): open-air car sales site on a cleared bomb-site almost opposite Chelsea Town Hall. The site is LCC owned and scheduled eventually for a fire station; it was given by the Valuer (without asking planning permission!) to a car dealer in exchange for premises in Stockwell which were needed for housing. When the residents objected, planning permission was granted retrospectively; when the Chelsea Council again objected they got no satisfaction beyond a clause saying that it shouldn't be floodlit after 7 p.m. The only proper solution for this site is the sort of thing that was there before the bombing—multi-storey urban terrace houses: the LCC's housing division would make a good job of them. If there is to be a fire station it should be at the end of the site, which is long and narrow, and not breaking the line of the Kings Road with an unrelated public building, however well designed (in any case, any sort of direct access by fire engines to the Kings Road would be dangerous). Meanwhile the retrospective planning permission should be revoked (it merely looked like one department covering up for another) and the Valuer's department should then do what they should have done in the first place—find a site which would suit both dealer *and* the local residents. There seem to be too many cooks stirring London's planning broth.

10. Westgate Fields, Chichester (About six bodies: chiefly Sussex County Council and Chichester City Council): The County propose to implement the Development Plan and put three schools and a ring road through Westgate Fields. Because they are still completely unspoilt, 1, *any* invasion of these meadows would destroy them completely. Chichester is the only cathedral city in Britain where you can walk straight out of the centre of the city into true countryside (see Counter Attack, page 364) and hence the meadows are as much of a national monument as the Cathedral itself and must be preserved as they are—vested in a body like the National Trust as farmland—(a 'public park' in this case would be worse than building all over them). The bureau is getting all the publicity it can for this and will publish a longer article on the Fields later this year.



1

11. Halesowen, Worcs. (Borough Council): The main approach to Halesowen from the E. used to be cottages; now it is a vast and arid garden, 2, breaking open what was a compact—but not squalid—industrial town. In an area where every available piece of open country is being built over avidly—Halesowen and Birmingham are now finally joined up—the ground would have been well re-used as housing for those who want to be at the centre of things—as old people's cottages, e.g., with an internal court. And the public garden?—well, right next to the site is a deep wooded valley, 3, now neglected, part of the original romantic early-industrial landscape. If the seats had been put here there would have been a local park in a local style to be proud of, for the landscape is ready made, instead of an out of place imitation of a style that is the same from Cornwall to Cumberland.



2



3

12. Nottingham, Collins Almshouses (City Corporation): These are (were!) among the best of their date—1700—in the country. The Corporation bought the site to put an office building on it, and started demolition at 4 a.m. one morning last summer without Ministry approval. A telegram from the Minister halted the wreckers with the job half done, and the ends of the wings were left as gaping wounds, 4. The Corporation now await approval to demolish the rest, happy in the knowledge of a *fait accompli*. Yet it needn't be a *fait accompli:* the Ministry has a splendid chance to prove that it won't be trampled on. It takes its duties seriously enough to compel demolition of something done against planning permission by a private individual: exactly the same principle could be used to compel Nottingham to rebuild the almshouses—measured drawings will exist. It would be no more of a fake than most of the Wren City churches; it would be a splendid symbolic monument to the system's integrity. Otherwise, every philistine body that thinks it is big enough will act first and get permission afterwards. As can be seen from the City Hall and the gardening in front of it, Nottingham has very little idea of what a city centre ought to contain: 'much too valuable for almshouses' was their reaction to the bureau's enquiry. Yet *exactly opposite* the almshouses is a great open area housing one-storey dwellings at a very low rental—cars, to wit. A truly progressive City Council would have put an office building above the car park and have been proud to keep the almshouses. Nottingham evidently hasn't the nous.



4

13. Halifax Street, Sydenham (London County Council): Halifax Street is a tiny self-contained stockbrick street near the Crystal Palace. The LCC propose demolition of some of the houses as unfit and have included the rest of the street under the weird and insufficiently known system of 'added land' by which a clearance area can be extended to make it tidier for redevelopment. On enquiry, they said it was done because 'we couldn't do anything with these small bits of land.' In fact the LCC has some of the best teams of housing architects in the country who are already planning grafting operations (e.g., at Brandon Estate, Southwark), and who could make very good use of just such small bits of land for urban infill.

The LCC are doing fine work in giving new life to London's slums: but this is a long way from the normal clearance area. It is a community, the inhabitants like living here, they care for their houses, 5–10, over page. One or two may need replacement by infilling—not many, for if they are substandard the reasons are only technical ones—but to redevelop the whole street would be to destroy a happy community; something that amorphous sprawling London can't afford to lose, even though it can never appear on the housing returns. Below we print a *cri de coeur* from one of the inhabitants about the proposed demolition. There will almost certainly be a public inquiry at which the bureau will be represented.

an anxious street

Halifax Street, S.E.26, has been waiting for a year to know if the High-ups are going to smash up what is one of the few remaining village streets in this area. It is a year since the Valuer sent his men. They walked down the middle of the street with their note books and knocked at the doors to make their first five-minute inspections. They shrugged their shoulders when questioned by the anxious owners and occupiers. Perhaps after all they may leave this street as a memento of the

past, for as an entity it has great charm and character. During the course of their 120 years the solid little houses have seen the glass towers of the Crystal Palace rise and fall, and now from one end of the street you may see the magical television transmitter being erected on the old Palace site. The great houses of Sydenham are crumbling and decaying up on the hill. Too many servants needed. Creepers and vines squeezing through the bulging rotted floorboards and strangling the chimney pots; peeling wooden panelling; clammy fungi squatting together round the empty marble fireplaces; mouldering ornamental ceilings clinging frantically to broken laths. Halifax Street can lay no claim to the splendours that once belonged to the rich Sydenham Hill mansions. The practical and simple little cottages housed the poorer people who served the richer people above.

At one end of the street is the grocer's and post office. The post office, framed in hanging hams and shelves of jam and vinegar, must have served the public for about a century, whilst the Boucher family have been grocers here for 130 years. 'The Woodman,' on the opposite side of the street, is still backed by a piece of its original flint wall. A few of us might welcome block life with a refrigerator perhaps, but most would prefer to stay with their neat gardens, their cats, dogs and hens. Also for many in the street there is the spectral link with their parents' parents' parents, who lived and died in the cottages before them.

When the minions of the High-ups who walked so heartlessly up and down the street have gone away, rumours flash about. Rumour has it that someone's husband's ashes are put under the apple tree in the back yard. Wild horses will not drag her away. This causes concern amongst us. Then we are set at rest, for a counter rumour flies round that the box containing the ashes has been dug up and placed on her bedroom window sill.

The density of the population in the area is about right according to official statistics and there are plenty of open spaces around and we wonder *why* are we threatened?

Since the cold courteous men with their note books and measuring sticks were here a certain amount of extra outside painting has taken place. Always well kept and frequently washed down, people have touched up the woodwork a bit lately. My paint is blue, Syd Gibson's next door is black and white, George's is red, old Mrs. Hughes's green. The cockle and winkle man leant his bike on my gates last Sunday and the zinc bath holding the shell fish fresh in water, attached to the front of the bike, has made a little mark on my gates. Harry barked angrily at him and that started off Rex, who started Floss, who started Patch. Just as they barked when the High-ups' chaps came.

The bombing of the last war did not upset the houses much because they are all tough with good foundations. Rehabilitation for some of the tenant-occupied houses that perhaps do not quite come up to scratch would be a good idea. The clever sort of thing that the LCC have so understandingly achieved in some other interesting areas of London. Just beside us, in Mill Lane, are a few little wooden houses. These, too, should be preserved for posterity. Of course, they should be painted white again, but as Jack Baker, owner of one of them, says—that would not be difficult. The London Society is particularly interested in Halifax Street and Mill Lane and sent two of their representatives to view the houses.

We had a meeting about the future of the Street, in Mrs. Baker's big room. Mrs. Baker's house is at the opposite end from the grocer's and used to be 'The Hanover Arms.' (The street used to be Hanover Street, but this was discreetly altered during the first world war.) Mrs. Baker has converted the old pub, and a very handsome dwelling-place it is, solid as a rock. In spite of the gloomy subject, we enjoyed ourselves. I fancy that the meeting was not run on the usual orthodox lines. Maybe we shall have a roaring street party if we do not have to go. An individual and hardy cross-section of the community lives in this small area. 'We are not snobs here' as Harriet Baker remarked to me when I first came. It has been my great good fortune and privilege as an artist to live with them for a few years. Every time I walk up or down the street is a new adventure. There is always some fresh aspect to notice in the architecture and the many interesting characters moving within it. Figures appear larger than life as they open and shut the small sensible doors of the tiny houses, to appear again even larger at the windows as they draw the blinds. If the worst comes about and the Shadow is cast on us, I for one will be grateful for, and will cherish the memory of, something that was once so varied and so vital as Halifax Street.

Betty Swanwick

progress report on earlier cases

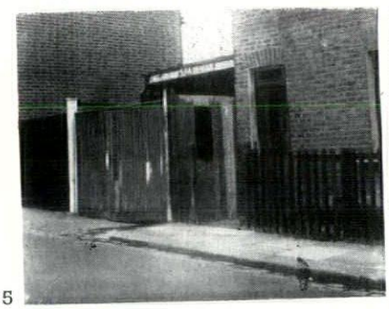
1. Uxbridge Market House Not now to be demolished. The Middlesex CC refused the application by Uxbridge BC to take the building off the scheduled list. The building is obviously not out of danger—the Georgian Group has been fighting for it intermittently for eight years—as the Council seems to regard it as coming into the 'that old thing' category. In fact it is the key to giving Uxbridge a true town centre, and as promised the bureau will be producing a scheme for this.

2. Kew Green, Surrey (lamp standards) Outrage halted. No new standards are being put up and the matter is in the hands of the Royal Fine Art Commission which—on the results of similar cases they have handled—should give a good solution.

3. Edmondbyers, Co. Durham (reservoir landscaping): Public enquiry, June 10th.

Counter-attack: Halifax Street

5–8, two examples of 'before and after' in Halifax Street showing how the owners have improved their property. 5 and 7, show the entrance and courtyard of no. 6 in 1950; 6 and 8 show the present state. 9, nos. 6 and 8 Halifax Street, two houses included as 'added lands' although they are not below standard. 10, a weatherboarded house in Mill Lane, condemned as sub-standard.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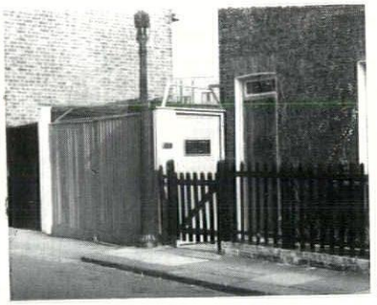
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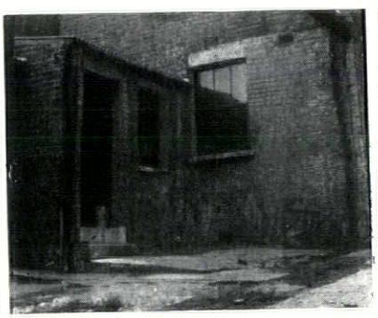
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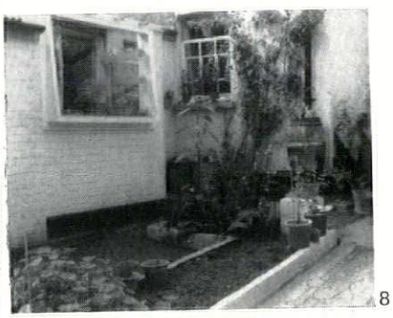
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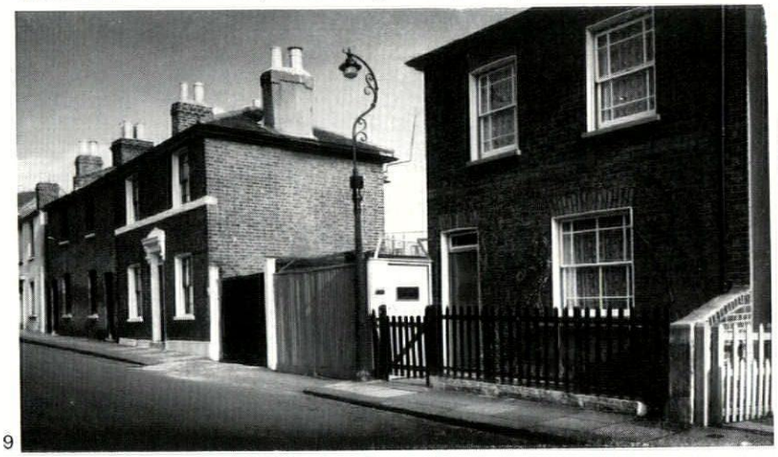
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10

7. Princetown, Devon (prison housing): On taking it up, the bureau got 'No comment,' equivalent to saying 'why should we bother, it's only public opinion.' If public bodies won't even listen to a reasonable exposition of a reasonable point of view, just what sort of a dictatorship are we living in? This forces the conclusion that 'no comment' means no ideas—and no common sense either, because each high-handed action by a Civil Service department antagonises a few more people and even the British won't lie down under it for ever.

8. Harefield Almshouses (proposed demolition): (see A.R. April '57 page 221) Public enquiry June 5. The bureau will give evidence.

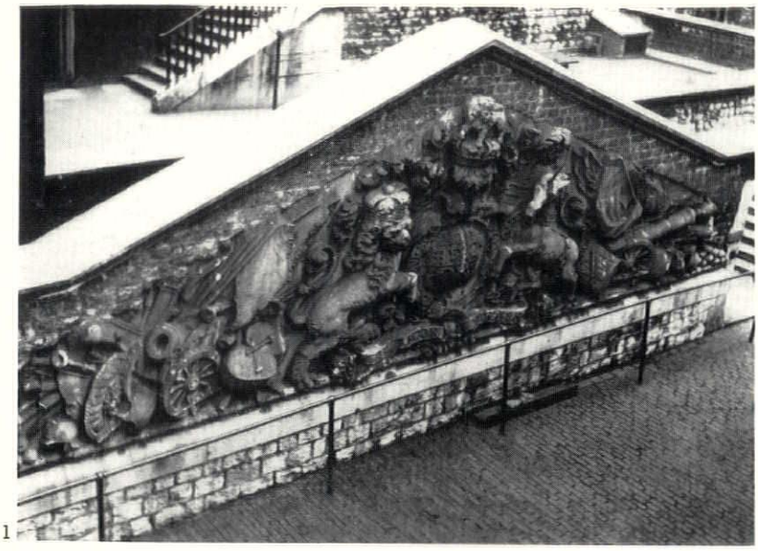
HISTORY

THE STOREHOUSE IN THE TOWER

The Great Storehouse in the Tower, which was built in the first years of the reign of William and Mary, was burned down in 1841. Only the carving within the pediment survives, to the east of the White Tower, 1. The *Wren Society* ascribes the building to Sir Christopher and reproduces an engraving, presumably the best available for the purpose, in which, from a great distance, about half the Storehouse can be seen, the rest being blocked by the White Tower.[1] It is not clear on what authority the ascription to Wren is based. Neither the *Chronologica Series Vitæ et Actorum*[2] nor Elmes' *Memoirs*[3] mention the Storehouse.

From the Exchequer Accounts and the records of the Board of Ordnance it is possible both to come nearer to establishing the authorship of the design, and to see, at last, from detailed drawings of the southern elevation, exactly what the façade of the Storehouse looked like.

The accounts show that a contract was made between the Principal Officers of the Ordnance and Sir Thomas Fitch and John Fitch on March 29, 1688, for building the Grand Storehouse in the Tower[4]. The work must have been put in hand at once, for Robert Barker, overseer of the workmen engaged on the new building, drew his salary from April 9, 1688, until, at length, on January 15, 1692, he received a gratuity of 20 l for his service at the Storehouse, 'being new finish'd.' Sir Thomas Fitch died in 1689. The account of his widow, Lady Anne Fitch, and John Fitch, esq. (? their son), appears in the Declared Accounts of the Ordnance of June 30, 1692. It amounted to 13,942 *l*: 12 *s*: 3 *d*.[5] In addition to the wages of the overseer, a few items were not included in the contractor's account. Such were the expenses of John Young and John Thompson, masons 'for setting up the King's arms in the pediment,' and of Robert Bird, copper smith, 'for a copper fane, scrolles, flowerpott and globe,' and a gratuity for Henry Durden in consideration that his leg was broken by the falling of the joists. Nowhere, however, is there mention of any payment to Wren in respect of the Storehouse, either in these accounts or in his own accounts as Surveyor of the Works,[6] though, in that capacity, he was responsible for maintenance works at the Tower. Wren's authorship of the design is not thereby precluded. For the accounts, in fact, contain no reference to the design of the Storehouse at all. It seems possible, however, that the design, though certainly in Wren's manner and in many ways reminiscent of Chelsea Hospital, is by Thomas Fitch, whose only known work is the Court House at Windsor, completed, after his death, by Sir Christopher.[7]



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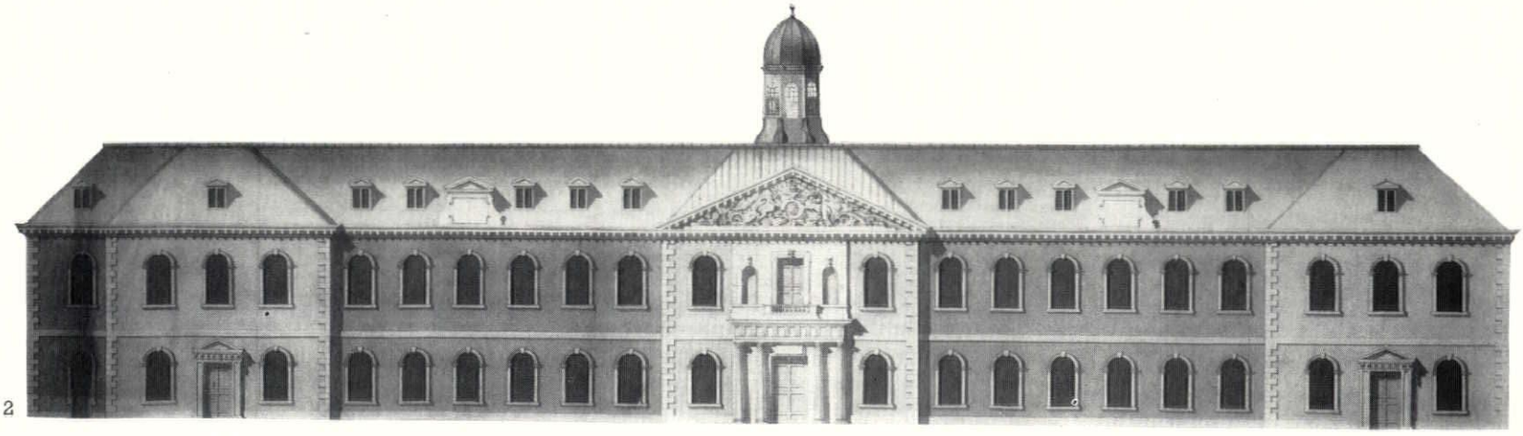
Among some maps and plans of the Board of Ordnance lately transferred to the Public Record Office, are five wash drawings of the front of the Storehouse. Three are to the scale of 7 feet and two of 12 feet to an inch.[8] All appear to be dated c. 1800 and to be exercises in architectural draftsmanship by those being trained as surveyors to the Board. 2 is signed 'J. Sedley, cadet draftsman.'

About 350 feet long and nearly 70 feet high, the Great Storehouse was an impressive building. Yet, even if not the work of Wren, it must with its red brick, its Portland stone quoins and facings, and its sculptured pediment, have had a domestic or civilian air about it that will have made it less forbidding than most military architecture. Its purpose as an ordnance storehouse is, indeed, apparent only from the two doors in the roof through which we may suppose stores to have been conveyed, by lever from the ground, in and out of the top storey. **Noel Blakiston**

1 *Wren Soc.* Vol. XVIII, pl. V.
2 *Lans. MS.* 698.
3 James Elmes: *Memoirs of the Life and Works of Sir Christopher Wren* (1823).
4 W.O. 48/26.30.
5 E. 351/2677.
6 E. 351/3300-3304.
7 Colvin *Biographical Dictionary of English Architects*, p. 206.
8 W.O. 78/1139 and 1235.

EXHIBITIONS

My father was already a young man when the world began to think of Vermeer as one of the greatest

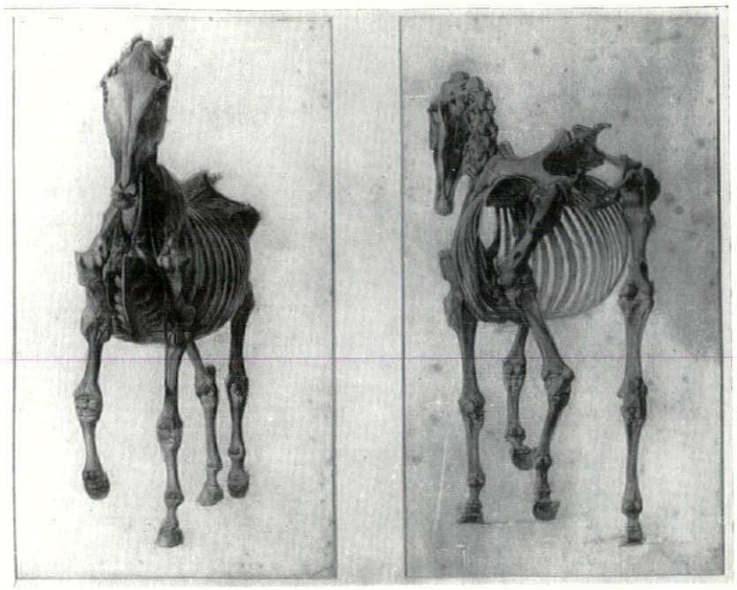


2

painters of all time, and I was already at school when the rumour of El Greco's mastery spread beyond the frontiers of Spain, so it is just possible that I shall live to regret the fact that I am puzzled by Basil Taylor's attempt to raise George Stubbs, England's best horse painter, to the level of Chardin and Goya.

Mr. Taylor's argument, which is set forth in the catalogue of the Whitechapel exhibition, is subtle and brilliant, but it is dependent upon the assumption that Stubbs's ingenious use of various compositional devices create informal and spontaneous effects, and it seems to me that, on the contrary, they impose an almost paralysing formality on informal situations. The Whitechapel exhibition was a remarkable display of a kind of 'home-made' neo-classicism, for which one might find suitable parallels in the art of an unimaginative master like Ingres. Although Stubbs never established vital relationships between his figures he achieved fascinating and eery juxtapositions in some of his paintings of race horses with attendant figures; but for the most part his pictures were carefully worked-out tableaux with scenic backdrops, as in the delicious, over-sanitary *Haymakers*, 1. Mr. Taylor says, quite rightly, that one has only to compare him with Zoffany 'to see how his work avoids being picturesque or illustrative.' Likewise, one has only to look at Gainsborough's early paintings of figures in landscape to see that Stubbs rarely managed to be more than a very tidy literalist.

He was at his greatest when he was engaged upon his purely documentary drawings, and the group of studies in which he meticulously records his expert dissections of horses are among the finest examples of anatomical demonstration in the history of art and science. Left to their own devices, these marvellous gothic machines betray their maker's dream of composure, and canter to an appointment with the Apocalypse, 2.



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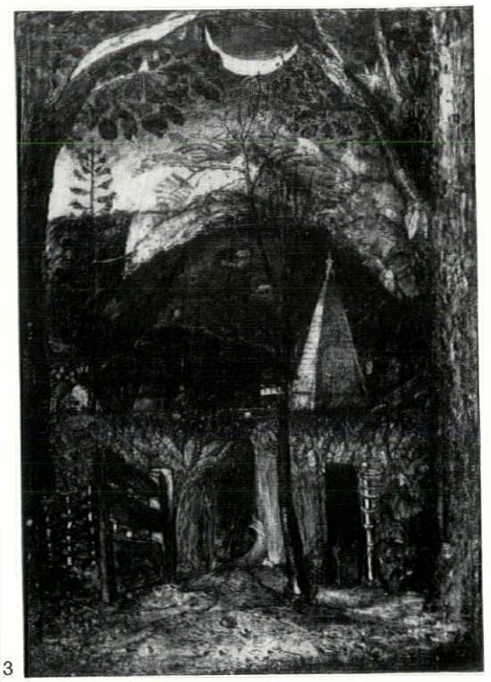
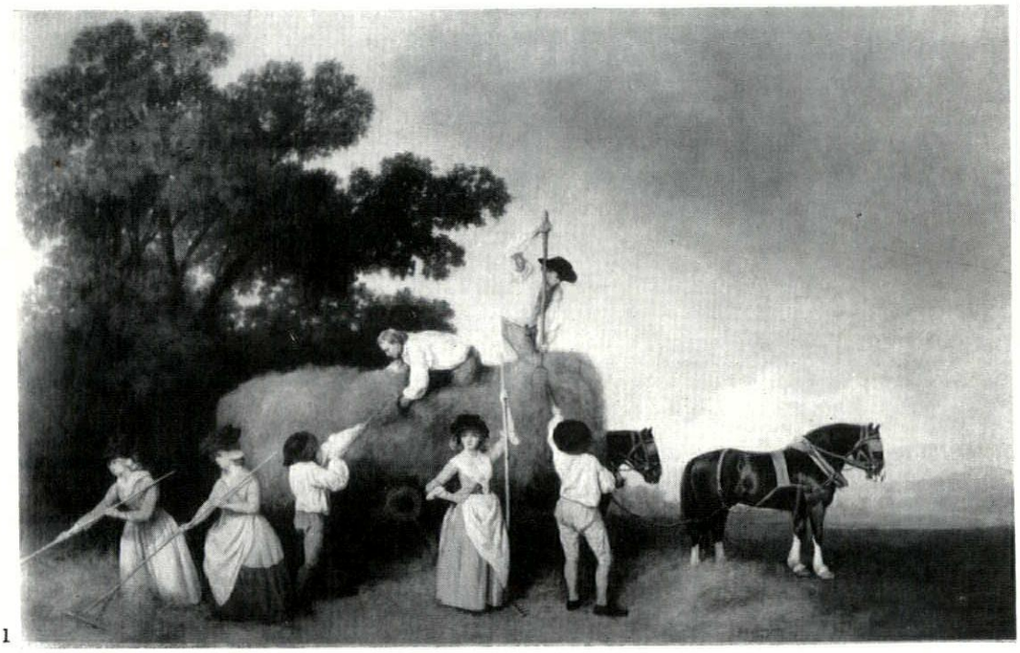
Nothing could be less like the Englishness of Stubbs's large, smooth, impassive pastorals than the Englishness of the small, feverish, tightly packed pastorals which Samuel Palmer painted in his Shoreham period. V. S. Pritchett's description of the English Puritan fits Palmer like a glove: his inner life 'was not only filled with dramas of power and guilt but these were exotically coloured by his reading of the Bible. He can even be said to have become too absorbing and too interesting to himself. He was living alone a life of inner violence.' It is not easy to take a balanced view of some of the tiny paintings and drawings included in the impressive exhibition of the Shoreham works recently held at the Arts Council Gallery, for they have a way of becoming tempting little hide-outs for the spirit. Palmer made them in a state of religious ecstasy: he looked at the Shoreham valley as if it were an elaborate substitute for the burning bush, dropped out of Heaven as a sign of God's love for Samuel Palmer, and when he was at the height of his hysteria he gathered all that Shoreham promised him into a panel $8\frac{1}{4}$ in. by $5\frac{1}{2}$ in., demurely entitled *Hilly Scene*, 3, which is a kind of Ikon, filled with the signs and portents of a trysting place with God. (This extraordinary work usually hangs in the entrance to the Blake Room in the Tate Gallery.)



3

It is customary either to ignore the eroticism implicit in the atmosphere of excited longing which charges Palmer's best work, or to dismiss it as 'literary,' and I find it a bit ironical that the stiff and inarticulate Indian paintings from Rajasthan (exhibited at the Arts Council Gallery at the same time as the Palmers) were accompanied by a boldly explanatory catalogue which contrived to place them precisely in that atmosphere of excited longing which the Palmers manage for themselves.



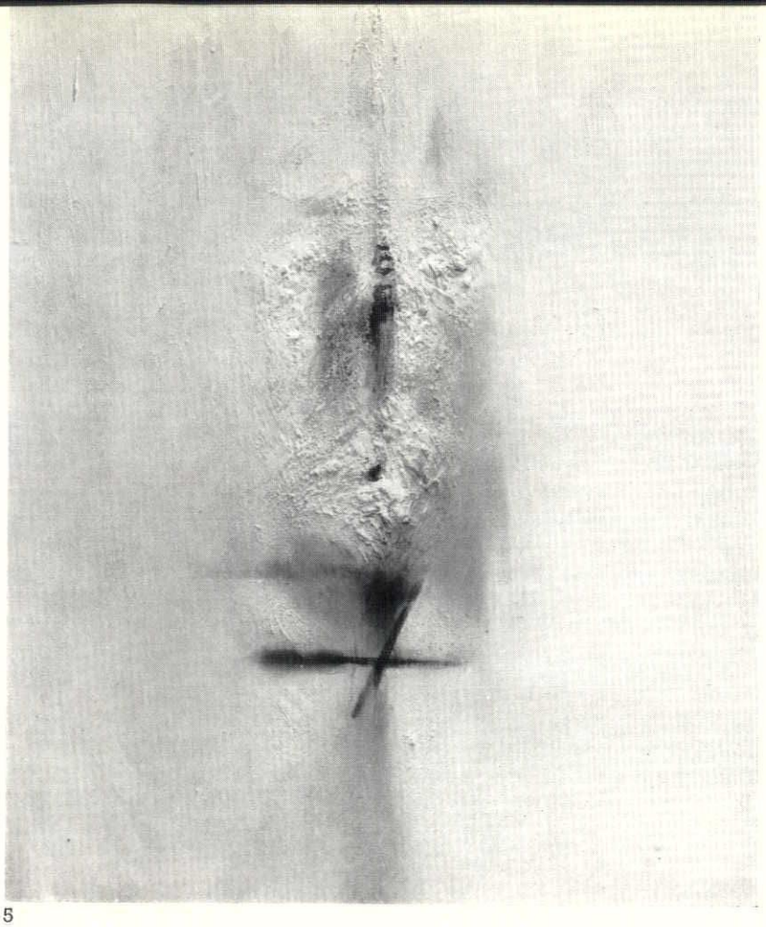
1



4

The Rajasthan pictures are mainly illustrations of love poems dedicated to Krishna's scandalous goings-on with the milk-maids (or cowgirls, as William Archer, who wrote the commentary, prefers to call them). Mr. Archer has just published a fascinating account of the loves of Krishna, and he has a way of making the little pictures connected with the Krishna cult seem more expressive than they are. I do not care for the rather primitive Rajasthan work, and much prefer the sweetness and sophistication of the examples of the Garhwal and Kangra schools which are on view in the new and handsome Indian galleries at the Victoria and Albert. They have a lyrical and emblematic quality reminiscent of Nicholas Hilliard's *Youth Among the Roses*. But I can more easily appreciate the creative role of iconography in Indian art when I look at the V. and A.'s collection of Indian sculpture. In a tenth-century bronze of Siva and his consort, for instance, the way the figures are seated, every position of their limbs and every gesture of their eight hands are dictated by ritual, and it would be interesting to compare Henry Moore's *King and Queen* with this piece, and try to compute the gains and losses of free invention. It seems evident, too, that rigid iconographical discipline accounts for the reticence and gravity of the forms in the earlier stone-carving of Siva fused with his consort, 4.

Louis Le Brocquy has always shown great assurance in his manipulation of paint, and his textures have always had a pleasantly delicate sensuality. He is now in the midst of getting rid of his less pleasant linear mannerisms by allowing his forms to be sucked into a quicksand of white paint. His recent pictures at Gimpel Fils have been referred to as 'white Francis Bacons,' and it is clear from the example called *Young Woman*, 5, that the remark is not unwarranted, but the exhibition as a whole was an equally vivid reminder of the charming, fondant-like art of Marie Laurencin.



5

As it happens, the Francis Bacon show at the Hanover, where the remarkable paintings of Van Gogh going to work not unnaturally took most of the limelight, contained one of Bacon's finest paintings of male nudes, 6, and demonstrated quite as brilliantly as the Van Gogh studies his uncanny ability to intensify the 'presence' and psychic content of an image by giving his brushstrokes the kind of freedom that usually leads to the *suppression* of the image.

Robert Melville



6

BOOKS

THE SURVEY RE-DIRECTED

THE PARISH OF ST. MARY, LAMBETH. PART II.—SOUTH LAMBETH. (*Survey of London, vol. XXVI*). *The Athlone Press*. 1956. 40*s*.

The *Survey of London* was started in 1894 by C. R. Ashbee, one of the most original and intelligent of the followers of William Morris. It first published a few monographs on individual buildings, but in 1900 turned to the issuing of inventories with long strictly historical introductions and commentaries on London parishes. Chelsea, one of the first, took four volumes, St. Martin-in-the-Fields three, St. Pancras four, and so on. They were a blessing to local historians as well as architectural historians. The present volume is No. 26, and it marks the beginning of a new era. The Survey Committee had found after some years that production of the volumes, got up more lavishly than was necessary, was too costly to be carried on without public support. So the L.C.C. stepped in, and between 1909 and 1956 the Survey Committee (largely through the efforts of Walter Godfrey) and the L.C.C. brought out volumes alternately, the Committee twelve, the L.C.C. thirteen.

From now onwards all volumes will be the responsibility of the L.C.C. A general editor has been appointed, and he has at his disposal helpers from the Clerks' and the Architects' Departments. The result looks at first like the previous volumes, but differs from them in some notable ways. The most important difference is one for which the preceding two or three volumes had already prepared readers. The Victorian style is resolutely included. In the present volume this forms indeed the bulk of text and illustrations and

extends even into the early twentieth century. Documentation is throughout from primary sources, deeds, court rolls, newspaper articles, etc. New also is the tenor of the General Introduction with its emphasis on the growth during the nineteenth century of the areas under discussion. These areas are Kennington, Vauxhall, Stockwell, Brixton, Denmark Hill, Herne Hill, Tulse Hill and Norwood. The most interesting buildings are the so-called Waterloo Churches, Prince Albert's model dwelling for workmen shown first at the 1851 Exhibition, the Oval, and Noel de Carol's great mansion demolished in 1683. No buildings of any interest seem to have escaped notice. The volume completes the parish of Lambeth and, as was pointed out officially, the first third of the Survey's programme. That is surprising and appears possible only if the City parishes no longer form part of the programme.

The jacket is handsome, but it is a surprise to notice that while it shows St. James's Park, St. James's Place, Northumberland House, the Thames and a distant St. Paul's, South Lambeth is conspicuously absent from it.

N.P.

SHAVIAN AMERICANA

THE SHINGLE STYLE. *By Vincent J. Scully Jr. Yale University Press. London, O.U.P., 52s.*

The Shingle Style carries the sub-title 'Architectural Theory and Design from Richardson to the Origins of Wright.' It is a history of the country house in the United States during the 1870's and 1880's, and it is devoted almost exclusively to work carried out in the eastern States, especially in the coastal resorts of New Jersey, Connecticut, Rhode Island and around the Gulf of Maine. Within the limits he has set himself the author has made an extremely thorough study of an interesting by-way of domestic architecture; the ground will be new to almost all readers on this side of the Atlantic and even to many American students.

'Shingle style' is a name coined by the author to cover American work equivalent to that of Norman Shaw and his school in this country. The absence of clay tiles and the existence of a plentiful supply of timber led the Americans to use shingles both for the roof and wall hanging, producing results that must have been a deal more attractive in execution than the pressed red tiles commonly used by Shaw himself.

The 'Architectural Theory' of the sub-title does not relate to an æsthetic theory of asymmetric composition, but rather to the influence on architects of the writings of Whitman, Emerson and others who, like Ruskin in this country, discussed æsthetics in relation to social, moral or religious ideals. The description of the Designs is meticulous, the illustrations are excellent and beautifully reproduced. There are plans and sections as well as photographs, the situation of each building is described and there are notes on the present condition of those that still exist. There is a complete index, a full bibliography and the author gives references for all his quotations.

The book is invaluable as a source of information for the specialist, and the professional historian will be grateful for the publication of Mr. Scully's material in its present form, but it is a sad truth that a first-rate thesis is not the same thing as a readable book. In spite of its interest the general reader will probably find *The Shingle Style* exceedingly difficult to get through. The average student of architecture is unlikely to do more than while away an idle hour enjoying the illustrations, and the amateur will wish that instead of publishing his thesis the author had used his accumulated information to write a fresh essay summarising his conclusions.

Every footnote is relevant and throws light on the matter under discussion, but the distraction caused by shifting one's eyes from large type to small and back again effectively prevents concentration on the main lines of argument. One of the footnotes will certainly set the English reader thinking, for on page 112, in note 63, Mr. Scully points out that after 1880 American houses began to appear frequently in English periodicals and suggests that the possible influence of these illustrations upon Voysey and others has not yet been adequately investigated.

As far as Voysey himself is concerned I think it can be stated with certainty that he was not influenced by American or by Continental work. A study of his designs and of papers and letters, both in the RIBA collection and in private hands, clearly shows that he learned his trade from Seddon and Devey under whom he worked, and from Norman Shaw who was the architectural hero of his youth and for whom he retained a profound respect until the end of his life. Voysey seldom if ever bought an architectural magazine unless it contained a reference to work of his own, and it was his habit to paste the reference in his scrap book and pitch the remainder into the waste paper basket without more ado! The similarities between the works of Voysey and the works of some of his American contemporaries to which Mr. Scully draws attention are due to a common ancestry in the designs of Norman Shaw. From this starting point the developments were parallel but independent.

On both sides of the Atlantic the purely picturesque approach was modified, partly perhaps for economic reasons, but also in deference to theories of architectural ethics and the romantic association of Beauty with Truth. Mr. Scully quotes from Stevens and Cobb—'Now this man's work is lovely because there is instilled into it the power of a chivalrous, joyous nature, revering everything pure and brave and holy in his fellow creatures; while scorning all that is extravagant, meretricious.' The point of view, and even the choice of words, is very close to that of Voysey, expressed in lectures and essays on architecture; but here again the similarity can probably be traced to a common source in the writings of Pugin and Ruskin rather than to any contact between Voysey and his American contemporaries. But although the pursuit of a contact with Voysey seems unprofitable there may well be some American influences at work in the designs of some of the younger English architects. The houses in Tuxedo Park by Bruce Price in 1885 have very much the spirit of later houses by Prior and Blow, and there is also a similarity between the work of Wilson Eyre in Pennsylvania and houses by Mallows and Dare-Byran in England.

Whether or not an influence on English architecture can be proved there is no doubt that the houses of the Shingle style are of very great interest and the best of them of outstanding merit. In addition to Bruce Price and Wilson Eyre, the English reader will be grateful to Mr. Scully for introducing him to W. R. Emerson and J. C. Stevens as well as for the illustrations of works by McKim, Mead and White that will surprise those who only know the later and more monumental buildings of that famous firm.

John Brandon-Jones

BREUER ILLUMINATED

MARCEL BREUER: SUN AND SHADOW. *Edited by Peter Blake. Longmans, Green and Co., 50s.*

Sun and Shadow stands to Marcel Breuer very much as the *Oeuvre Complète* stands to Le Corbusier, and the fact that there is five times as much of the latter as of *Sun and Shadow*, for a not so very different volume of completed buildings or furniture produced, underlines the difference between the extreme types of genius that the Modern Movement has produced.

Typically, Breuer can hardly be bothered to illustrate his un-executed projects—they appear only for the record, in the two historical surveys by Peter Blake, and occasionally to illustrate an idea or a principle. As he says in his introduction, 'Architecture . . . should not be a self-portrait of the architect,' and the same could almost be said of this book. Portraiture, as such, is left to his editor, and Breuer himself is content to talk about the way he works and thinks—his occasional use of the first person singular is far less personal than some architects' habit of apostrophising themselves in the third person. Hardly a single building is discussed at any length for its own sake, they tend to appear fragmentarily as illustrations to such themes as *Forms in Space* or *Architecture in the Landscape*.

From such an approach a personality does eventually appear, a personality which, at the second or third reading of the book, does begin to tally with what one knows of Breuer through other channels, as a designer who humanely unites within himself the functional and the romantic. This book is a valuable addition to the documentation of the modern movement, for it records not only the achievements of one of the truest sons of the Bauhaus, but also his mode of thinking and working.

P.R.B.

Books Received

ARVFURSTENS PALATS. Swedish Ministry for Foreign Affairs.
DUMPY LEVEL WORK. By James Vose. Cleaver-Hume. 9s. 6d.
OIL FUEL APPLICATION. By A. T. Henly. Crosby Lockwood. 35s.
SCHOOL CONSTRUCTION, 1955-1956. Councils & Education Press Ltd.
TIMBER DESIGN AND CONSTRUCTION HANDBOOK. By Timber Engineering Co. F. W. Dodge. $12.75.
DRAINAGE AND SANITATION. By Blake and Jenkins. Batsford. 21s.
PRIVATE ARCHITECTURAL PRACTICE. By Maurice E. Taylor. Leonard Hill. 15s.
SMALL COMMERCIAL BUILDINGS. By Richard W. Snibbe. Chapman & Hall. 108s.

SKILL

A MONTHLY REVIEW

OF BUILDING TECHNIQUES & INDUSTRIAL DESIGN



1, *bowl reflectors casting indirect light on to the fibrous plaster barrel vaults of the ceiling, which are painted matt eggshell blue.*

1 INTERIORS

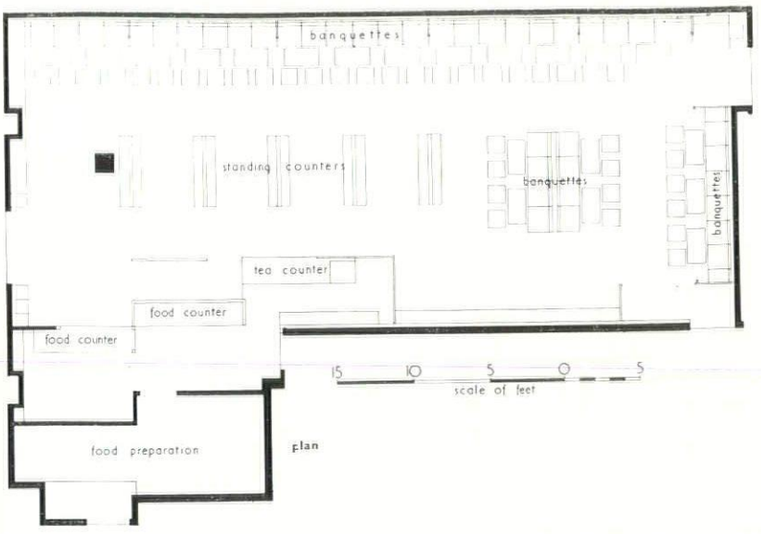
TEA BAR IN LOWER REGENT STREET, S.W.1

Designers: Misha Black and Kenneth Bayes of Design Research Unit
Assistant Designer: John Diamond

A room 48 ft. by 21 ft. in the basement of the Tea Centre, Lower Regent Street, had to be converted to a tea bar providing 80 seats, with standing counter space for a further 40. Although rapid service is required at peak periods it was decided to avoid cafeteria atmosphere, but to encourage customers on the whole to drink and eat in leisurely comfort and in an atmosphere emotive of Ceylon where the fine tea served in the Colombo Tea Bar is grown.

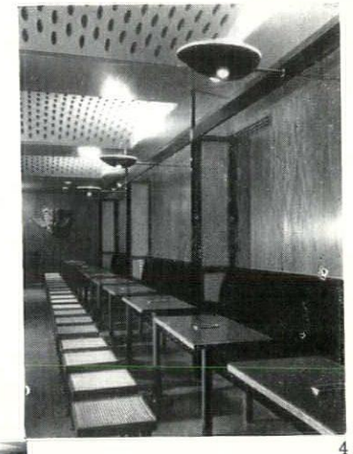
As the room is low (8 ft. under beams) an effect of increased height has been obtained between the beams by four barrel vaults of fibrous plaster closely slotted and backed with acoustic board to reduce the sound level; the cork-covered floor further improved sound absorption. The walls are panelled and veneered with Honduras mahogany. The same timber is used in the solid for furniture and other fittings. The lower portion of the ceiling towards the entrance is of timber veneered with elm, these panels continuing to form a frame round the barrel vaults. The illumination is indirect lighting from large bowl reflectors on to the ceiling barrels and direct lighting from 100-watt lamps recessed into the lower areas of the ceiling





2, a tea-counter at which customers have their tea standing, with brass 'hour-glass' light fitting. All tables and counters are topped with matt melamine plastic decorated with a tea-leaf pattern, black on either dark green or crimson. 3, looking the length of the standing counters. 4, the 28-ins.-high tables, supported on steel columns, and banquette seating, which is upholstered in black-white fabric; on the end wall is a Cingalese dancing mask.

2

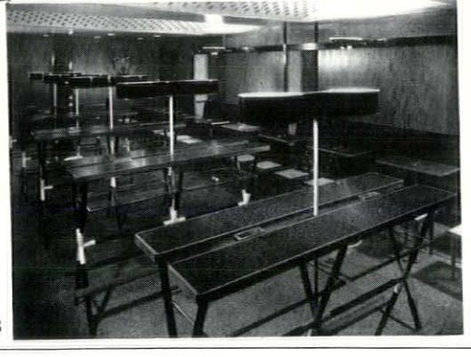


4

TEA BAR IN LOWER REGENT STREET, S.W.1

and screened by specially designed aluminium baffles.

No attempt has been made to create a pastiche of the East. However, it is hoped that the colours used, the framing of counters and screens with ebonized mahogany enlivened with brass and the finely plaited cane covering the stools and screens will be reminiscent of Ceylon.



3

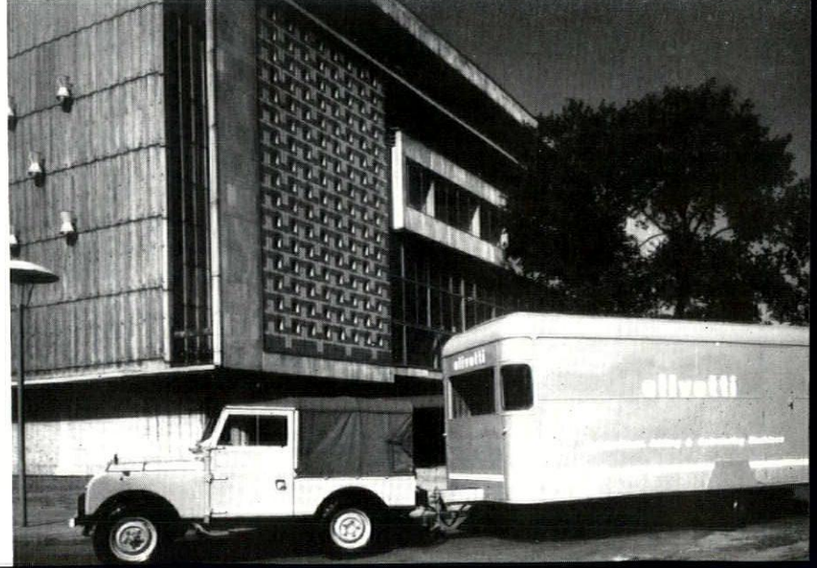
MOBILE DEMONSTRATION UNIT

Designers: Misha Black and William Apps of Design Research Unit

British Olivetti commissioned a mobile demonstration unit so that their typewriters and accounting machines could be shown at the numerous agricultural shows held throughout the country during the summer months.

The main shell of the unit is a standard trailer 20 ft. long and 7 ft. 6 in. wide, externally, and standing about 10 ft. 6 in. high, including the wheels; the internal height is approximately 7 ft. Both the trailer and the Land Rover which pulls it are painted externally in the buff-grey standard Olivetti machine colour with signwriting in white. When the unit is on

1, the Olivetti trailer and Land Rover, both painted the buff-grey standard Olivetti machine colour, ready to take the road.



site a platform, normally housed below the body, pulls out to form a display area on one side and a flap opens up to form a canopy over it. Three movable display units are then fixed at the leading edge of the platform. These units have metal angle frames, stove enamelled matt black, with infill panels to top, front and sides of formica-covered blockboard.

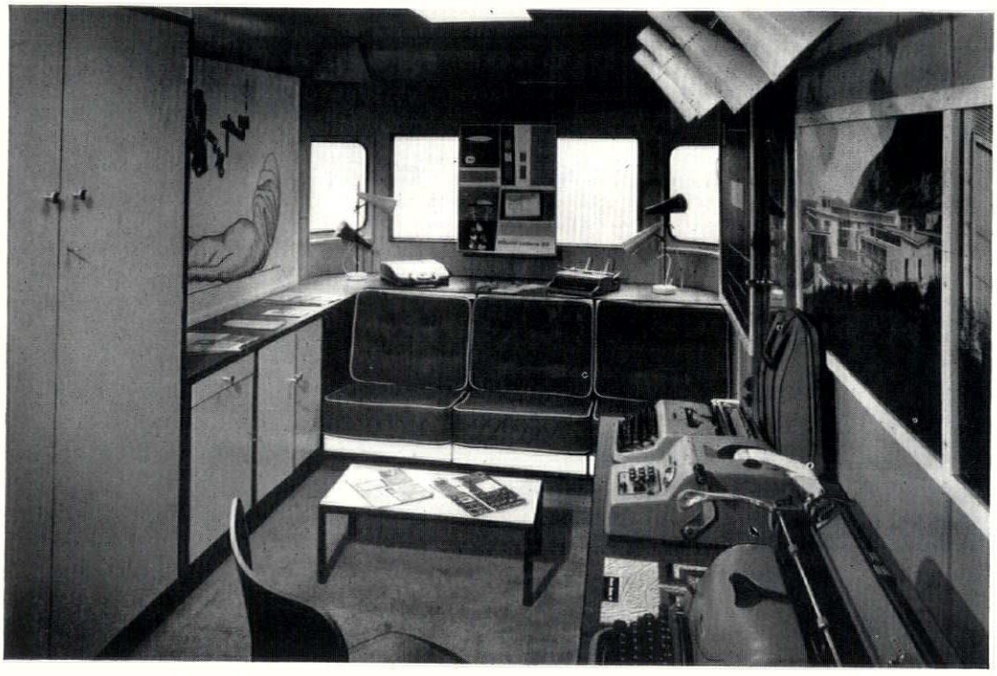
The demonstration tables are arranged opposite and adjacent to the entrance and again are constructed in metal angle with tops in blockboard covered with cherry red formica. The chairs are by Arne Jacobsen and have teak-veneered plywood backs and metal legs. The various cupboards and storage units are planned at the other end of the caravan. The doors of the tall wardrobe unit are covered in blue formica and those of the low cupboards adjacent to it in beige. The tops of the low cupboards and the shelf behind the settee are in red. The three sections of the settee are pulled out to give access to a large storage space where the machines are housed during transit. The upholstery of the settee units is in dark green and black. The ceiling and walls of the trailer are painted light grey, and the floor is covered with a gunmetal grey carpet.

Natural light to the caravan is by the end windows and three roof lights. Lighting fittings above the demonstration tables and behind the settee are in black metal and polished brass and have black and white shades. Typographical layouts and special display panels are by Ronald Armstrong, of Design Research Unit.



2

2, the unit on site: the fronts to the three display units are blue, beige and yellow formica; the panel beside the entrance opening is red and the soffit to the canopy is olive green. The sign on top is red and white. 3, the interior: the settee unit has green and black upholstery and the top of the small table is yellow. During transit, the machines are stowed behind the settee.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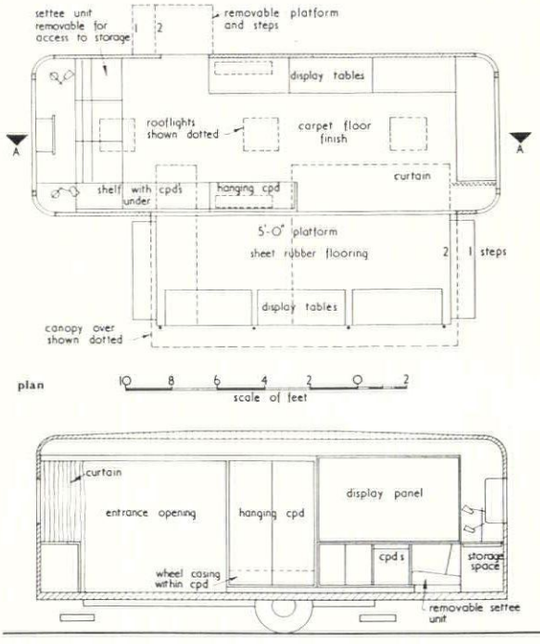
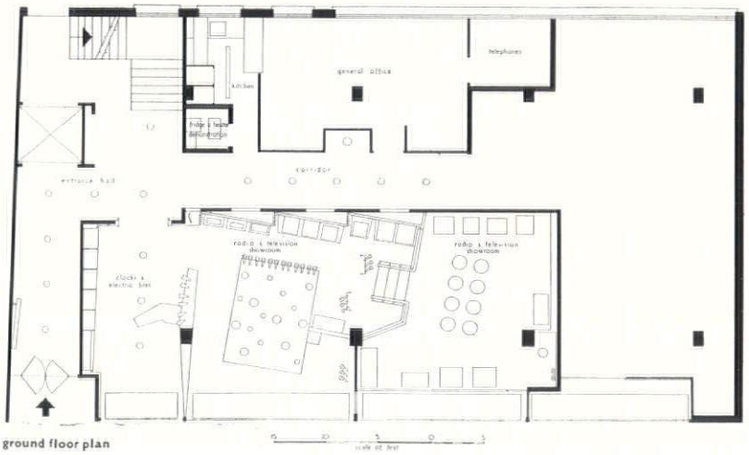


SHOWROOM IN OLD STREET, E.C.1

Designer: F. M. Gross

Ferranti have leased a block of the commercial building erected by the Finsbury Borough Council in Old Street consisting of ground floor (showrooms, offices and store), three upper storeys (offices only) and the basement (storerooms), each of which has an area of 3,000 square feet. Also on the ground floor is a demonstration larder for the new Ferranti 'fridge-heater' with an


ground floor plan



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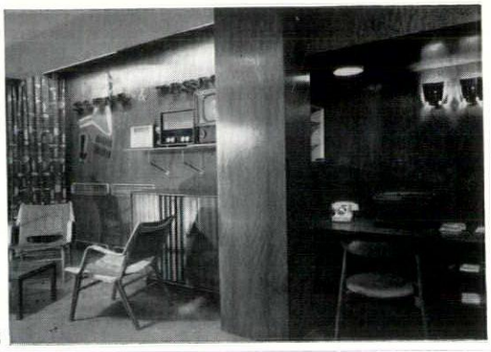


2

adjacent tea-kitchen that serves the entire premises; the fridge-heater cools the larder and at the same time produces hot water for the tea-kitchen. In the offices on the three upper floors the partitions and the office furniture are steel; the swing-doors leading to the store departments have red rubber shock-pads fitted at the bottom.

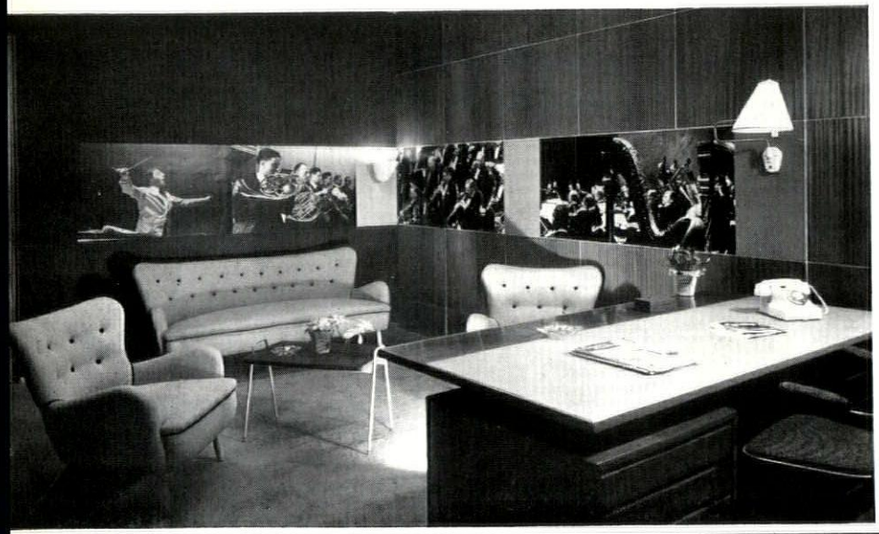
The showroom houses three distinct sections of manufacture: domestic appliances, such as clocks and electric fires; television sets; and radios and radiograms. Two of the show windows are open at the back giving a free view into the room from outside; the backs of the two remaining front win-

SHOWROOM IN OLD STREET, E.C.1

1, the showroom, looking from the entrance, where clocks and electric fires are displayed, towards the stage, on which television receivers can be viewed, with the curtain drawn across the front. The fins, right, are sycamore and the veneer on the wall to the right of the stage Honduras mahogany with U-cuts painted white. 2, typist's alcove beside stage, with inbuilt desk. The words 'sound and vision' are satin finished aluminium. 3, office on second floor with photo-murals continuing the theme 'orchestration' from the manager's office, 4, which is mahogany panelled, the chairs and settee being covered in lemon yellow woollen material.



3



4

dows are partly closed to allow the erection of raised demonstration parts in the showroom. Slanting panels, carrying television sets, are veneered in aromatic cedar and are decorated with interrupted squares of pastel shaded colours carrying wire-sculpture; elsewhere the wall panelling is veneered Honduras mahogany and pearwood. A small stage, with an electrically-operated curtain, patterned with representations of cathode tubes and valves, and the firm's trade mark, enables television receivers to be viewed in semi-darkness without other visitors being disturbed. A floating ceiling contains reflectors and spotlights for lighting the displays.



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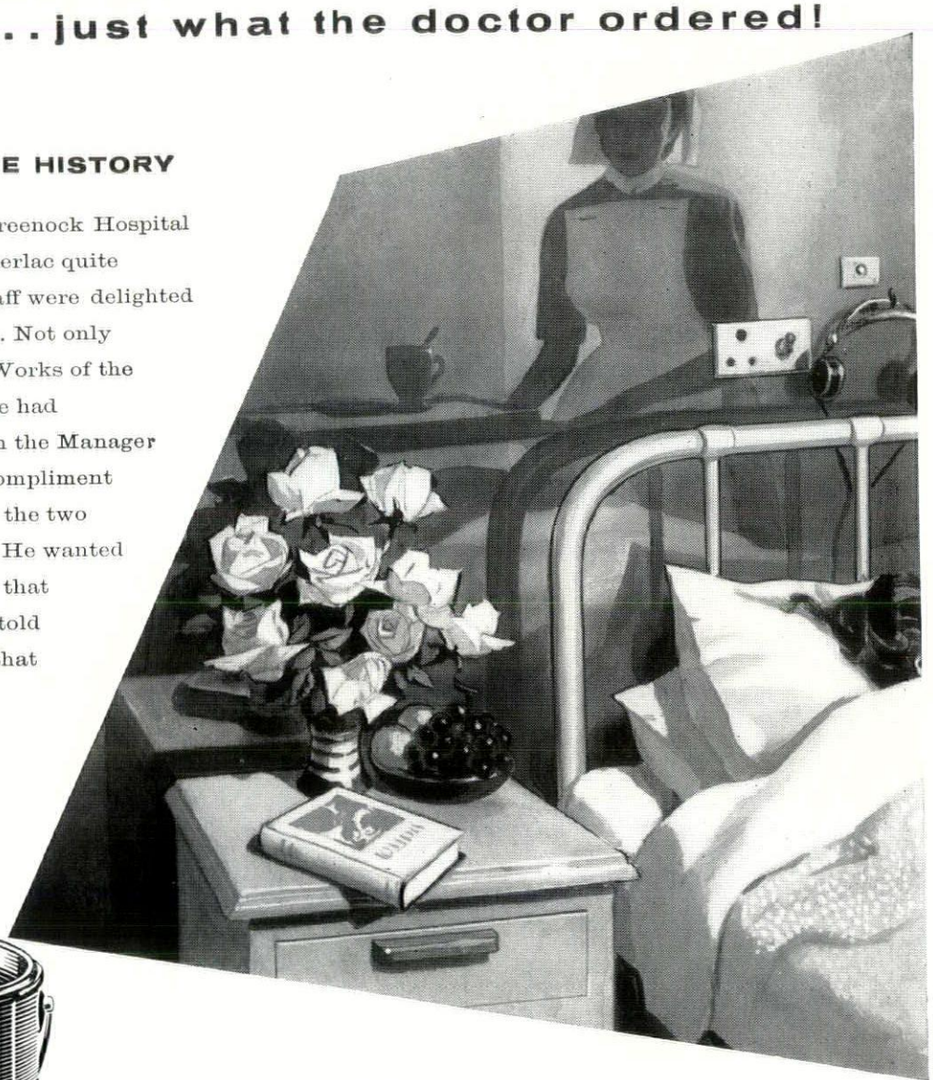

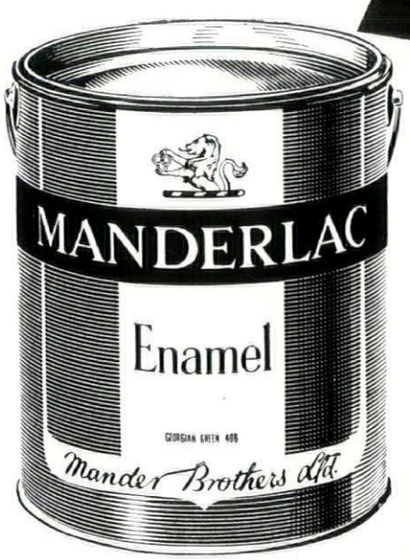

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2 DESIGN REVIEW

FOOD PREPARATION EQUIPMENT

This article reviews current small hand and powered kitchen equipment which has begun to rival in quality the equipment of the dining room.

The smaller hand equipment used for preparing food—cutlery, mixing bowls, saucepans and so on—have changed little in form and purpose over the years. Though new materials have extended their variety and usefulness, many of them have strong traditional associations and designers' efforts have been concentrated mostly on refinements of shape and on details of colour and finish. Cooking pots and kitchen tools are no longer things to be hidden away in dark cupboards but are as proudly displayed on kitchen shelves as were the objets d'art and heirlooms in grandma's china-cabinet. The link between kitchen and dining room is made more complete when the casserole can come from the oven to take its place among the plates and dishes of the dining table. For many years the Scandinavians have pointed the way in decorated oven-proof earthenware and, more recently, in enamelled cast iron; they still have few rivals.

The powered appliances, however, reflect a change not only of method but also of purpose. Kitchens are evolving in two directions which at first sight seem mutually antagonistic. On the one hand there is a marked trend towards integration of storage components and major appliances; on the other, a tendency towards disintegration of the functions once concentrated in the kitchen but now gradually spreading over the rest of the house.

If each function is considered on its own merits and a piece of equipment designed to fulfil that function, then the multiplication of kitchen gadgetry can be endless. This, in fact, has been occupying the attention of American appliance designers for some time, and already the kitchen of the future is seen as a well-knit, compact nerve centre from which various mobile units can be brought out to perform their duties at the required time and in the required place. Thus, in the long run, integration and disintegration are not opposed but are complementary aspects of the same idea.

In this country, the electric toaster and coffee maker represent the unplanned, embryonic beginnings of this process. Powered tools, such as mixers, belong essentially, however, to the kitchen and though most are made as separate machines, they could well be considered as an integral part of larger kitchen fitments. The prospect of growing numbers of these individual appliances suggests that new thought must be given to their place in the home, for disintegration is no virtue in itself.

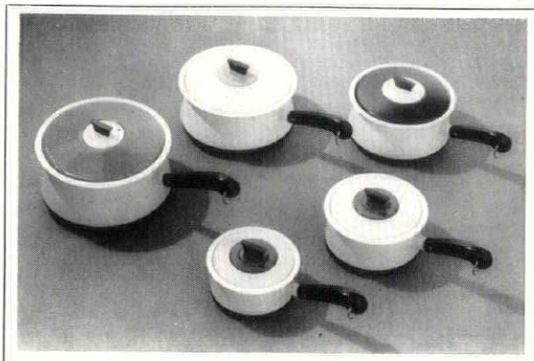
hand equipment

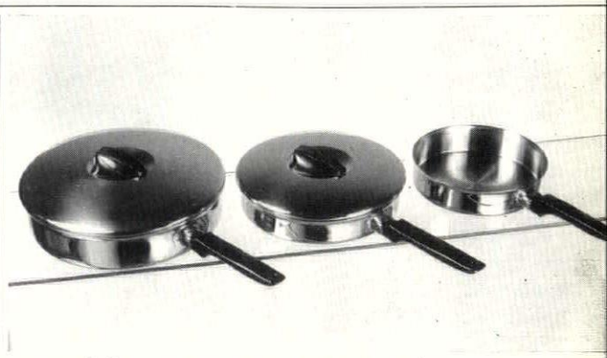
The visual appeal of this type of uncomplicated equipment depends primarily on a simple and direct statement of form combined with the devotion of much care to seemingly unimportant details. Careful finish, and clever use of colour or texture contrasts, can give a greater sense of quality than any extravagance of shape, for this type of article does not lend itself naturally to styling gimmicks. The quality of the material, the shaping of handles and knobs and the avoidance of protruding edges all contribute to higher design standards with a result that the best designs tend to be expensive.

Brightly coloured enamelware has a place in most people's homes, but in recent years has tended to be replaced more and more by aluminium and stainless steel. A new lease of life has been given, however, to this traditional material in the brightly coloured 'Jury Jetware,' **1**, where new shapes have been developed which retain something of the comfortable sturdiness usually associated with enamelware. Colour has also been used to enhance the simple elegance of the 'Colorama' aluminium saucepans, **2**, whose smooth unbroken contours and slim handles set new design standards for this type of equipment. A few British stainless steel saucepans have been appearing in the shops recently and, although expensive, offer a permanence and resistance to staining hard to find in any other material. The 'Prestige' pans, **3**, are well detailed and have lids which fit snugly without binding. The kitchen scissors, **4**, by the same firm, also in stainless steel, show a similar attention to detail in the careful shaping of the handles.

Several makes of kitchen cutlery and other tools with wooden or plastic handles have introduced a new type of austere grace to the kitchen. The deeply serrated knife-blade in **5** gives a tough visual equivalent of its efficient action.

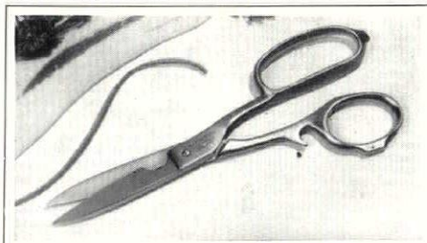
Much of the best kitchen pottery does not attempt to rival the refinements of dining tableware but derives its visual appeal from an acceptance of its more robust purpose. In the 'Lord Nelson Ware,' **6**, over page, the restrained pattern defines the shapes without obtrusion. The shape of the 'Denby' casseroles and vegetable dishes, **7**, seem to owe much to a peasant tradition, although the smart black and white colouring makes its appeal to a more sophisticated market. In oven glass the quality of the material itself contributes to the design and considerable research has been carried out in recent years to improve the clarity. In the 'Phœnix' dishes, **8**, where white opal glass has been used, the black wire stands contrast well, and also serves





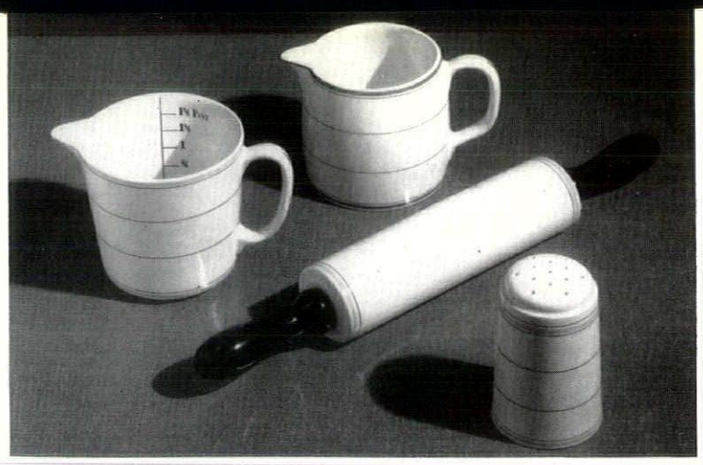


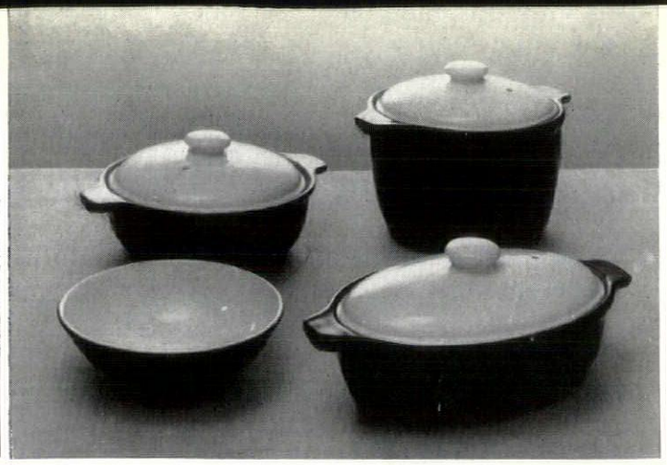
1, 3 **enamelware** 1, *enamel saucepans, made by Jury Holloware Ltd. Prices:* £1 13*s.* 6*d.* (1 *pint*); £2 8*s.* 4*d.* (6 *pints*). 2, *'Colorama' saucepans, designed by Carmella Rossini; made by the Mirroware Company Ltd. Price:* £5 19*s.* 1*d.* (3 *saucepans and frying pan*). 3, *'Prestige' frying pans, by Prestige Group Ltd.* £2 9*s.* 6*d.*–£3 17*s.* 6*d.*





cutlery
4, *'Prestige' scissors, made by the Prestige Group Ltd. Price:* £1 5*s.* 5, *kitchen cutlery, made by Noedlam, Veall & Tysack Ltd.*

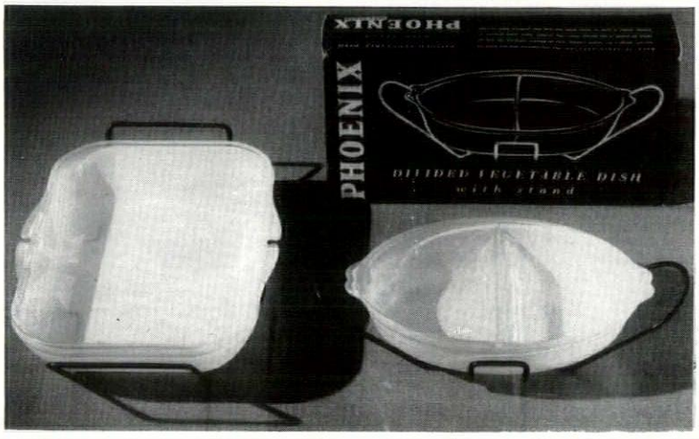


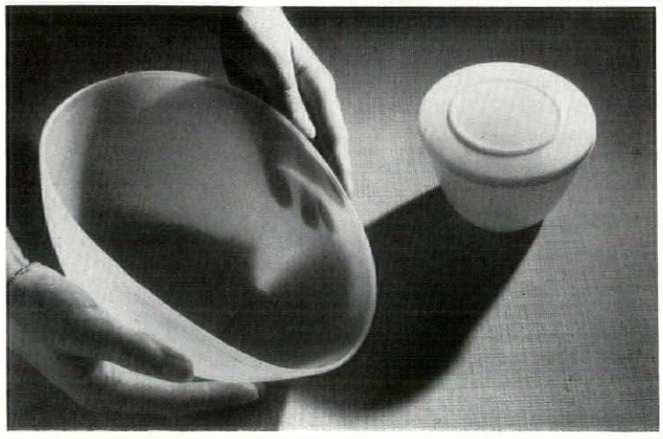


6,7

kitchen pottery

6, 'Lord Nelson Ware,' made by Elijah Cotton Ltd. 7, 'Denby' casseroles and vegetable dishes, made by Joseph Bourne & Son Ltd. Prices: 9*s.* 11*d.*–11*s.* 6*d.*



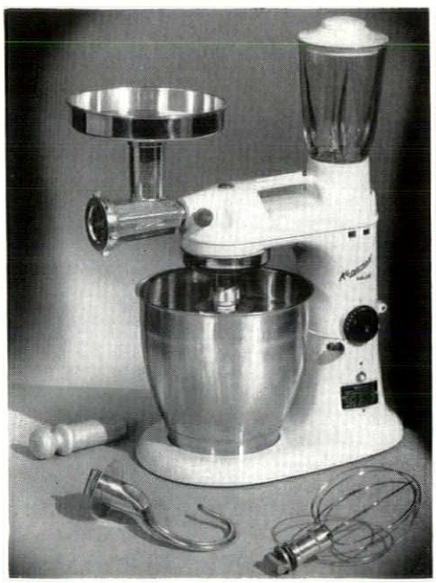


8,9

oven glass

8, 'Phoenix' oven glass designed by Arthur Brown, and made by the British Heat Resisting Glass Co. Ltd. Price: 18*s.*5*d. and* 19*s.*8*d.*
9, polythene mixing bowl, made by Jarret, Rainsford and Laughton Ltd. Price: 4*s.* 2*d.*

powered equipment



11, *food mixer made by Kenwood Manufacturing Co. Price:* £45



12, *food mixer made by Valmade Ltd. Price:* £5 12*s.*

a practical purpose in holding the hot dish clear of the table top. The use of plastics for numerous types of kitchen utensil has increased rapidly during the past year or so and provide welcome splashes of bright colour. The malleable qualities of polythene have many practical advantages and the 'Twinco' mixing bowl, **9**, shows how the material can be adapted to new purposes, in this case pouring. The ease, however, with which the surface can be scored calls for the use of less harsh mixing tools.

An approach to the design of rolling pins can be seen in **10**, which shows a functional development from the traditional wooden article and differing characteristics of form, resulting from the material used.

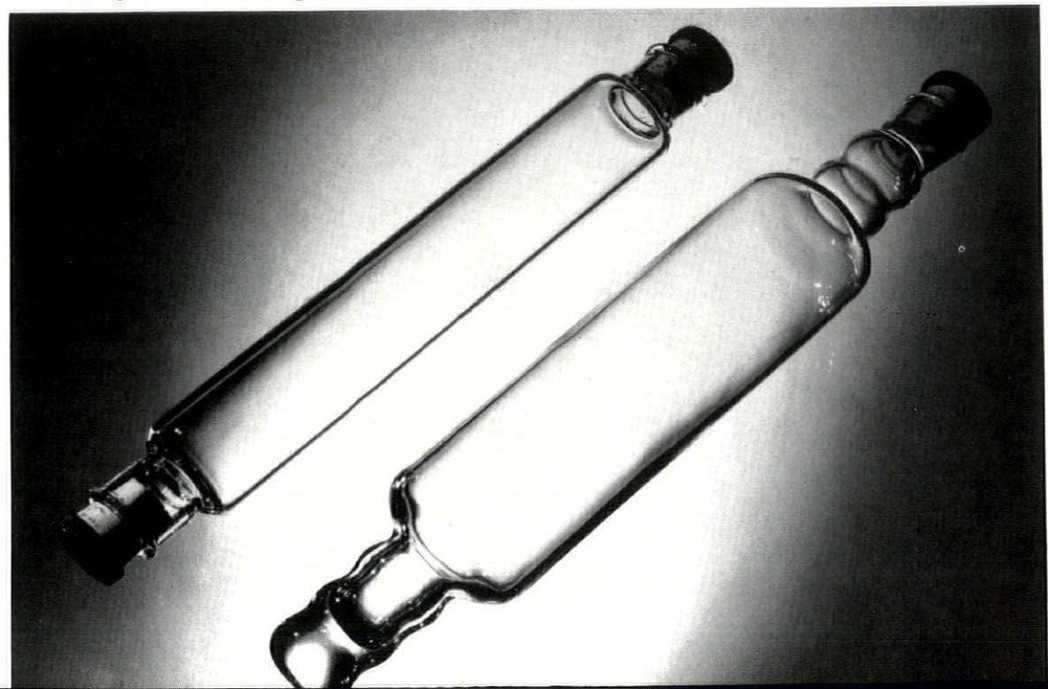
powered equipment

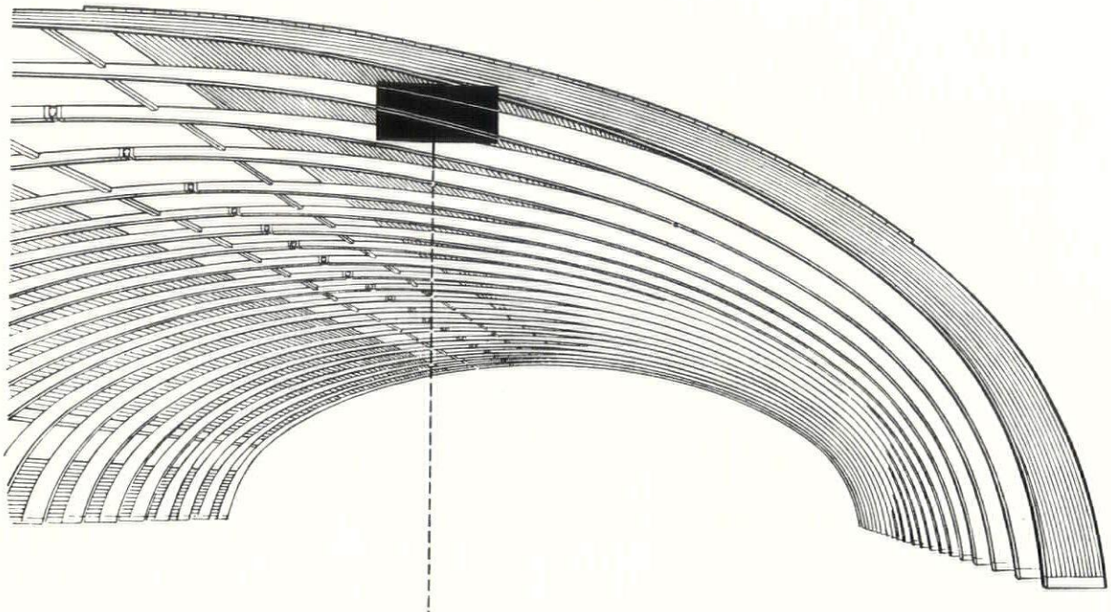
The wide varieties of powered tools for food preparation have no long-standing traditions to limit the designer's freedom. These tools are a machine age product which require a machine aesthetic.

The 'Kenwood' mixer, **11**, which can be fitted with accessories for mincing, potato peeling, juice extracting, etc., gives a similar visual satisfaction in its smoothly flowing

[continued on page 463

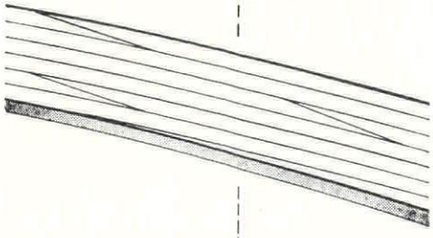
rolling pin **10**, *'Pyrex' rolling pins, designed by John Cochrane and made by James A. Jobling & Co. Prices:* 9*s.* 3*d. and* 9*s.* 7*d.*





Structural design in **TIMBER...**





Wide-span trusses and girders for industrial structures, glued laminated timber arches and frames, plywood portals and box beams for schools and public halls, rigid frames for farm buildings, timber bridges— in all these fields timber is being used with increasing success.

To learn of these new developments write for the new folder which describes the design facilities which the Timber Development Association now provides in collaboration with practising Consulting Engineers and Manufacturers who will undertake construction to TDA standards.

A new service

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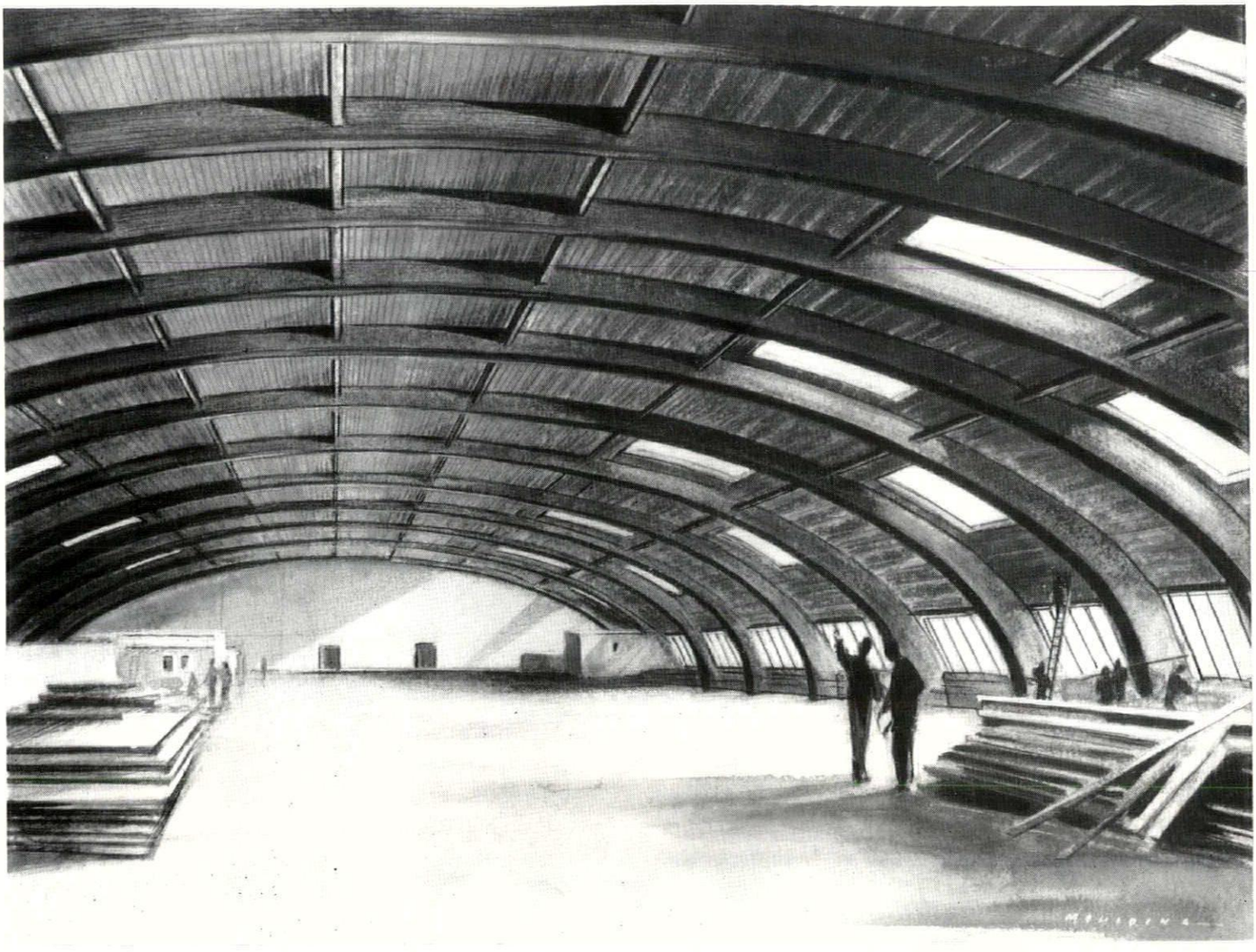

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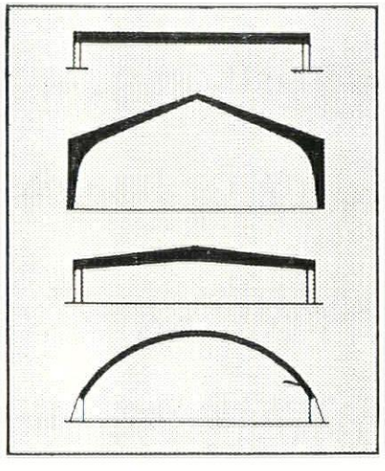


The examples show some of the limitless structural forms which are available using this technique.

KINGSTON LAMINATED TIMBER STRUCTURES

KINGSTON LAMINATED TIMBER STRUCTURES

KINGSTON ARCHITECTURAL CRAFTSMEN LTD. · MINSTER WORKS · HULL

forms and in the contrast of the white-painted basic unit and metal bowls and fittings. The hand-held machine, **12**, expresses its simpler purpose in a more compact arrangement, the casing over the mechanism forming a handle that allows good control.

Much equipment of this type has given rise to excesses of the stylist's art; but manufacturers are slowly beginning to realize that a more discriminating public derives less satisfaction from exaggerated speed-lines and applied ornament than from forms and finishes that look efficient for the job they have to perform.

3 TECHNIQUES

TIMBER ENGINEERING

by Lance Wright

WHAT THE T.D.A.'S NEW DISPENSATION MEANS TO ARCHITECTS

In the long run the extent to which architects use new techniques depends on how easy it is for them to do so. For a long time we have been hearing about the virtues of calculated timber structures, of glued lamination and of long span framed and connectored trusses: but most of us have put off using them because we are not sure how to get the calculations done, or which firms can be relied upon to do the work. This month's technical article describes and comments on a scheme which has been put in operation by the T.D.A. to iron out these very practical difficulties.

Before an architect can make use of a new technique involving intricate calculations he has to ask himself a number of questions. Who is going to make the calculations? How is he going expeditiously to compare the cost of using the new technique with that of using the old—and indeed with that of using some other material altogether? And who can be relied upon to carry out the work?

Up to now the answers to these questions when applied to calculated timber have been, to say the least, equivocal. Structural Engineers who might have been expected to design in timber as readily as in any other structural material, have in fact lacked experience and in the main have shown themselves unwilling to obtain it: while architects need not be reminded of what happens when they ask joinery manufacturers to quote for something they are unprepared for: of the high tenders and the uncertain results.

To overcome all of these inhibiting factors, the Timber Development Association have set up a new system. This falls into two main parts, corresponding to the two main problems. First they have evolved a design* service which has as its end the preparation for architects of sufficient structural working drawings and specifications to enable them to use the new techniques to the best advantage and to get fully competitive tenders. In addition they have issued a 'live' list of approved manufacturers for each of the major techniques of timber engineering so that architects may know whom they may safely ask to tender for each kind of job.

the design service

Architects are rightly suspicious of any commercial organization which offers a design service. Partly because they consider that they themselves ought to be doing any 'designing' which has to be done, but chiefly because they find that in accepting such a service they are committing the client to a scheme of which they can appraise neither the design merits nor the price. Concerning the first objection we must reluctantly admit that in the last ten years or so timber technology has become a specialist subject: even the well informed architect cannot make the best of it on his own. To consider the TDA's offer in the light of the second objection it is necessary to describe the machinery of the scheme they propose.

When an architect goes to the TDA with a problem of timber design requiring more help than the limited advice the Association still offers free of charge, he will be given a choice of two alternatives. It will be suggested to him either that he should approach one of the independent design consultants on TDA's list, with whom he can make his own arrangements as regards fees and services, or that he should apply to one or more of the TDA 'Approved Manufacturers.' If he takes the latter course he again has two alternatives. Either he can follow the usual procedure and ask these manufacturers to prepare their own designs (assuming that they have their own staff to do it) adding merely that he wishes these designs to be checked by the TDA. Or he can ask one of them to obtain for him a TDA design, complete with drawings and specification, and on receipt of this design may use it to obtain competitive tenders from as many 'approved' manufacturers as he may think fit. (He may, if he wishes, send the design to other firms, but then he would no longer be enjoying the full protection of the scheme.) The main interest of the scheme lies in this last alternative, since, if the architect adopts it, he will be under no particular obligation towards the firm who procured the design for him, because, as we shall see, the cost of preparing the scheme will (apart from a nominal fee) fall not necessarily on him, but on the successful tenderer. When the TDA send the design to the manufacturers who asked for it they tell them at the same time how much they should add to their prices to cover the charge which the TDA would have to make to the successful tenderer to cover the cost of the design. On being asked to submit a tender to a TDA design an 'approved' firm is obliged to inform the TDA who in turn will tell him what design charge he must make—but *not* what his total price must be!

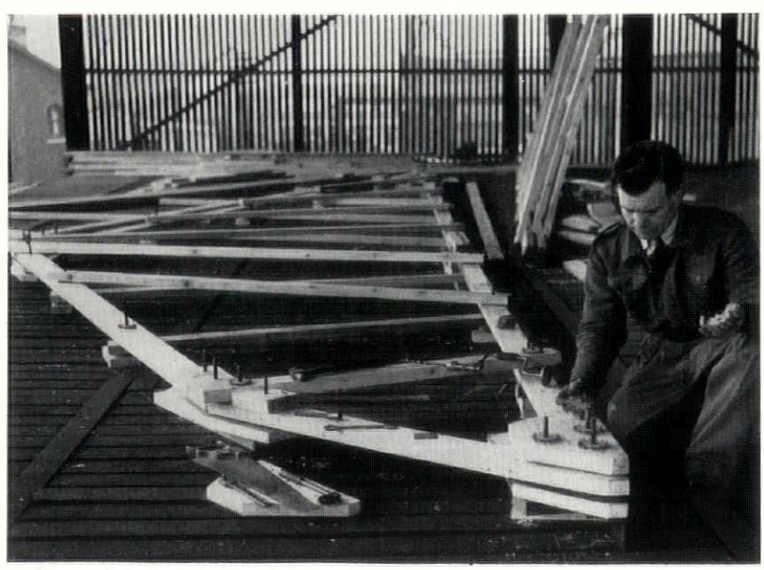
For the architect, the points to notice about this procedure are first that it relieves him from any sense of moral obligation towards the manufacturer whom he first approached on the score that he has 'put him to special trouble' and has 'picked his brains'. Second, that the design which he gets will not have been prepared with any manufacturer's convenience particularly in mind. So often when he goes to a specialist sub-contractor the architect is made to feel that the resulting design owes its form more to the fact that the sub-contractor had a large stock of some material which he wanted to dispose of or to some like fortuitous circumstance, than to the merits of the case. Here, however, he can be reasonably sure that he is getting as good and as economical a design in timber as he is likely to get by any other means. What he will not get, of course, is a wholly unbiased opinion on whether timber is the right material in any given case: though in fairness we must add that TDA has not got the reputation for advising the use of timber in unsuitable circumstances. It would clearly be contrary to its policy and interests to do so.

the list of 'approved manufacturers'

The list of approved manufacturers is divided into four categories according to the four main classes of technique which are practised in timber engineering. These four categories are: (i) the use of mechanical connectors (e.g. calculated nailing, timber connectors, shear plates, etc.), (ii) glued frameworks, (iii) plywood assemblies, and (iv) glued lamination. These are of different orders of technical difficulty and require different equipment. It is interesting to notice that, at the time of writing, there are 62 manufacturers in the first category, 33 in the second, 30 in the third and 19 in the fourth. Though, by the time of publication, these numbers may have slightly increased, they give a good indication of the present technical strength of our timber manufacturing industry. It is of some interest to mark, for instance, that only about one third of those firms which can cope with mechanical connectors can at present cope with glued lamination.

The list also gives the regions in which each firm is prepared to operate and we understand that the TDA has further agreed with the firms the maximum size of job which each can undertake. In order to be placed on the list, firms have to state the equipment they possess, to quote examples of the work they have done and to be subject to an inspection: and in order to remain on the list they must renew their registration every year.

This question of maintaining workshop standards is particularly vital in timber engineering, since the comparatively high stress it permits can only be realized if the work is carried out with the greatest precision and, where glueing is involved, sometimes within narrow time and temperature limits. Unfortunate experiences in Germany have in fact

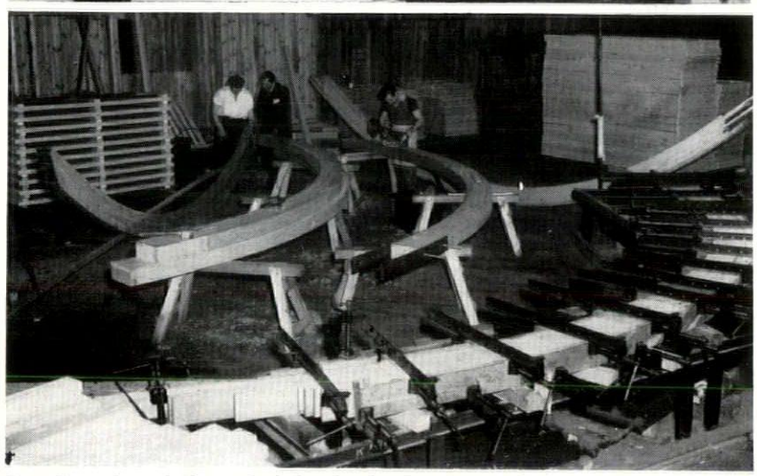


1, *the use of timber connectors to effect the eaves joint on a framed and bolted truss.*

* "Design" has been used throughout this article in the broadest sense, to include at one end of the scale the determination of the form and the fixings of all the structural elements in a building, and at the other, the mere checking of calculations and the preparing of the contract documents.



2



3

2 and 3, the technique of timber lamination (top and above) to provide large scale structural members is still comparatively uncommon in this country. As yet only 19 firms are 'approved' for this class of work.

compelled the public building authority to confine the glueing of structural timbers to firms which have received a licence. The registration of approved manufacturers by TDA offers similar guarantees.

work on site

It is one thing to obtain a design and a tender, another to get the parts made in a factory and a third to get them erected on site. Some timber manufacturers do their own erection, in which case they take full responsibility and, for the architect, there is no problem. As all do not do this and as it is quite possible for all the good work done by the manufacturer to be set at naught by a general contractor who does not appreciate the finer points—and for responsibility to fall somewhere between the two—a scheme is now being considered whereby approved manufacturers who do not do their own erecting can themselves appoint a number of 'approved' sub-contractors who will erect for them and for whose work they will accept responsibility.

This arrangement if put into practice should roll away the last obstacle which at present still prevents the architect from using timber as he ought.

conclusion

Throughout this description, we have been concerned mainly with the contractual aspect of the TDA's scheme since this has seemed the most important; and apart from pointing out that timber engineering calculations are generally 'beyond' the architect, we have said nothing about what should be his contribution to timber design and nothing about whether this new dispensation is likely to help him to make it.

The difficulty of any architect/specialist relationship is to know how the two can start off on a design together: 'early consultation' is something we hear about so often but, through force of circumstances, practice so little. From the point of view of this relationship and apart from glued laminated construction (which is a self-contained mystery), timber engineering has the advantage that its intricacies are mostly confined to jointing: its main achievement is precisely the evolution of jointing methods which enable the designer to use to the full the strength which has always resided in the main timber scantlings.

For this reason the architects' non-specialist knowledge carries him further towards understanding with the specialist than is the case with other branches of engineering. From the technical side, therefore, there is every reason to expect the comparatively rapid maturing of an accomplished architecture using the 'new' techniques. It is for this reason that the forming of the right professional/commercial relationship is so important. The success or failure of any contractual system depends on whether it can bring the architect and the specialist into one another's presence without duress on either side. On whether it can bring about a situation in which neither feels that he has a professional mystery or a commercial interest to conceal. It is notorious that where steel and concrete took wings and flew out of the architects' competence, the current professional and commercial relationships made it virtually impossible for the architect to carry on a fruitful dialogue with the specialists, with results which were to the advantage of nobody. The indications are that timber is going to be more fortunate as an engineering material and that the TDA have struck on a set of professional and commercial relationships, which will not only cause timber to be used more often than it otherwise would, but with greater knowledge and sensibility.

4 THE INDUSTRY

Floor Channels

There is no surer evidence of the slow but steady increase in architect influence in building than that provided by items of standard hardware. A good example of this is the new 'Florline' half-round channel now marketed by Broads. Up to now the trouble with channels has always been that, if you want them to finish flush with the floor, you must always put up with the sight of the socket doubling up behind the spigot at each joint. By the simple expedient of stopping off the socket just below the finished floor surface this piece of clumsiness is removed for ever.

Broad & Co. Ltd., South Wharf, Paddington, London, W.2.

All-Purpose Framing

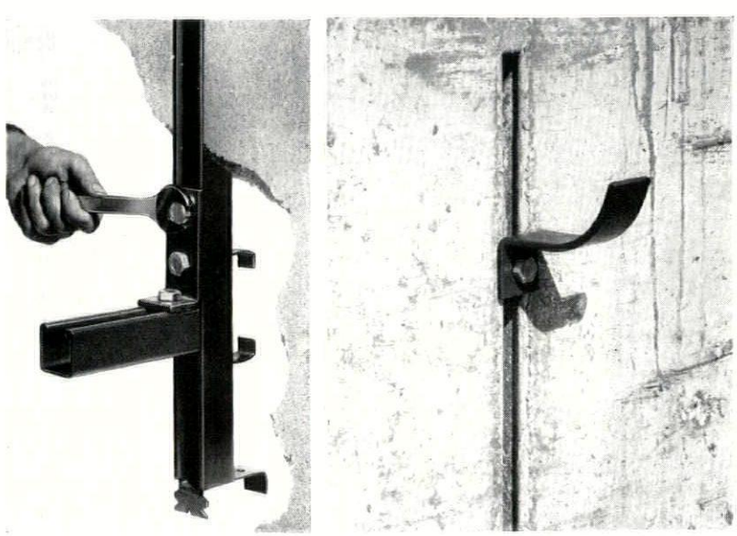
The various meccano sets which have come on to the market, mostly to solve the problem of flexible storage in warehousing, have generally had a bad press from architects because in order to serve every possible use they have had to cast appearance to the winds. Any meccano set which provides flexibility by a regular sequence of holes is always going to look what it is—a convenient substitute for thinking; and it is quite evident that no such gimmick can have anything to do with architecture.

Unistrut, which is the subject of this note, serves the purpose of these meccano sets better than any of them, if only because the system of connection depends not on the penetration by a bolt of one of a series of holes, but on a spring clamp running in a channel. It is also immeasurably better looking. The basic channel section is made in two sizes: $1\frac{5}{8}$ in. by $1\frac{5}{8}$ in. and $1\frac{5}{8}$ in. by $\frac{13}{16}$ in., the former being in 12, the latter in 16, gauge cold rolled steel. The strength of the resulting sections and their form make them suitable not merely for such items as racks and temporary structures, but as electrical trunking; and it is interesting to notice that in America (*vide The Architects Journal*, January 1, 1957) channel sections are welded together back to back to form the load-bearing structure of buildings. The picture below, left, shows a length of Unistrut to which fixing lugs have been welded for the purpose of casting into an *in situ* concrete wall, while the picture below, right, shows an application of this to provide movable wall bracketing in the BBC Television Centre, Wood Lane.

Unistrut Division of Sankey-Sheldon Ltd., 46, Cannon Street, London, E.C.4.

Lightweight Aggregate

The Cementation Co. Ltd. announce that they are now marketing a new lightweight aggregate named 'Terlite' which is manufactured from the pulverized fuel ash extracted from the Battersea Power Station. Though as yet only available in the London area, the Company are hoping shortly to develop plant in other centres up and down the country. This is good news, both because it is always comforting to hear of new commercial uses for our embarrassing stocks of pulverized fuel ash, but also because the ready availability of lightweight aggregate is necessary for the full exploitation



Left, photographic montage showing method of effecting a right angle joint in Unistrut. The bolts are spring loaded. Right, photograph showing a pipe bracket secured to a length of Unistrut used as an in situ duct in concrete.

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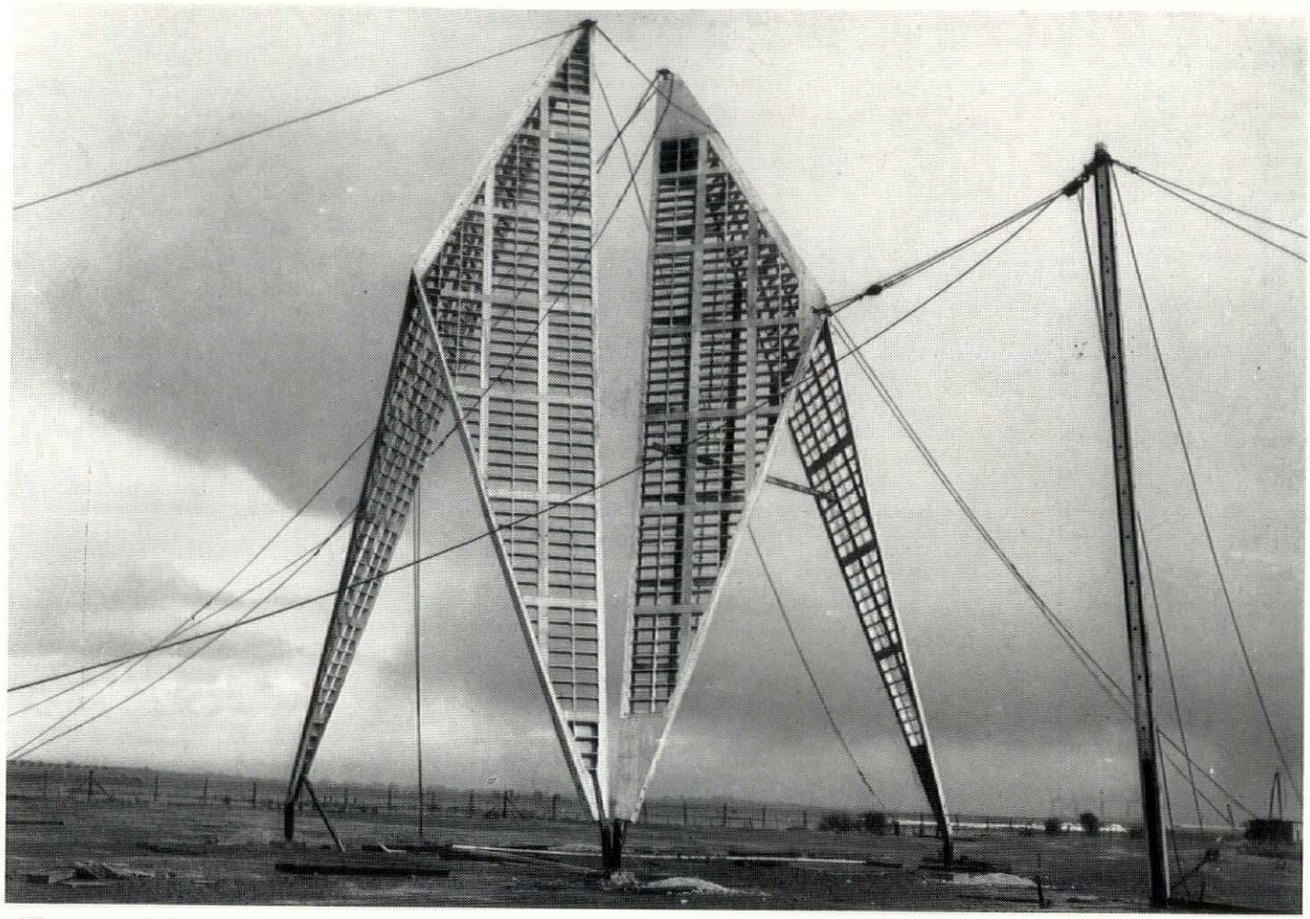


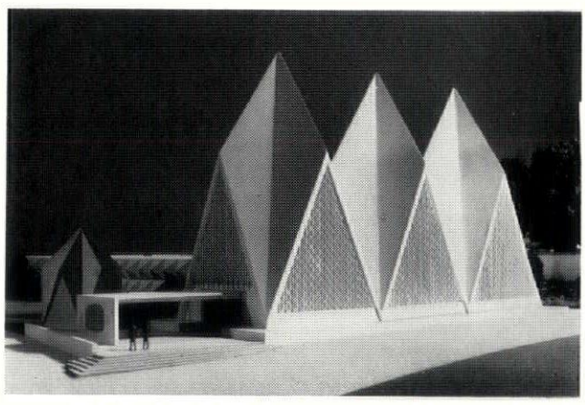
Crystalline Hall • British Government Pavilion • Brussels 1958

One of the most striking features of the Brussels International Exhibition in 1958 will be the Crystalline Hall—entrance to the British Government Pavilion—with its three great crystal-shaped spires 70 feet high. *Architects: Howard V. Lobb & Partners, F/F.R.I.B.A. (Consulting Engineer: Felix J. Samuely, B.Sc.(Eng.), M.I.C.E., M.I.Struct.E.).* These unusual structures are being prefabricated by Rainham Timber Engineering Co. Ltd.

Shown above is a trial assembly of four "egg-crate" panels, eight of which form one spire. The perimeter structural members are of Glued Laminated Timber. The difficult job of precision machining these large pieces (74 feet long) for a perfect fit was accomplished with complete success.

Other R.T.E. contributions to this Pavilion are the outside wall coverings of the Hall of Technology—a series of four-sided flat pyramids made of plywood—and the V.I.P. Hall which is a smaller construction similar to the Crystalline Hall.

R.T.E. are also responsible for the special Timber Curtain Walling incorporated in the British Industries Pavilion at the Exhibition, which will give the Pavilion four glass walls of approximately 60,000 sq. ft.



R/T/E

RAINHAM TIMBER ENGINEERING COMPANY LIMITED

Ferry Lane, Rainham, Essex · Telephone: Rainham 3311

T·D·A Approved Manufacturer

CONSTRUCTION IN GLUED LAMINATED AND BOLTED & CONNECTORED TIMBER

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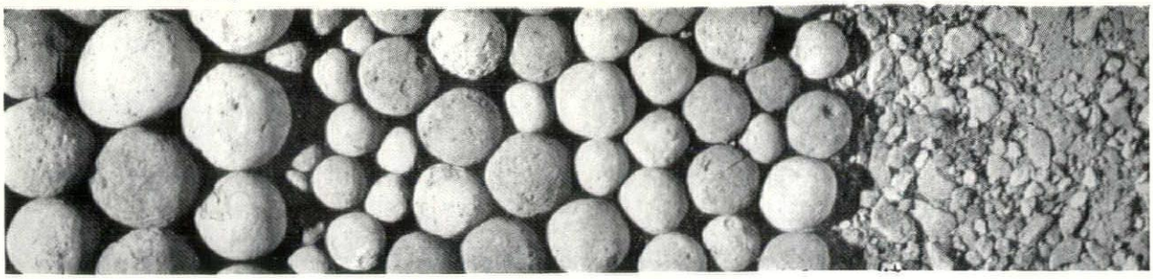

The three grades of Terlite in their actual sizes. See 'Lightweight Aggregate.'

of our lightweight architecture. The more competitive products in this field the better.

At the time of writing Terlite is only available in its original aggregate form, but it is presumably only a matter of time before it is taken up by the manufacturers of building blocks and of precast concrete floor and roof slabs. It is available in three grades, $\frac{3}{4}$ in., $\frac{3}{8}$ in. and $\frac{3}{16}$ in. down (which we illustrate to actual size, above). Typical weight/strength ratios of concretes made from these aggregates are:

weight: 68 lb./cu. ft.; mix: 8 : 1 no fines mix; crushing strength: 600 lb./sq. in.

weight: 88 lb./cu. ft.; mix: 3 : 2 : 1 graded mix; crushing strength: 3,000 lb./sq. in.

Concrete made this way can be nailed and cut and is reckoned to save 40 per cent dead load in structures where it is used.

The Cementation Co. Ltd., 20, *Albert Embankment, London, S.E.*11.

New Lighting Catalogue

Architects are deluged with lighting catalogues these days, many of which achieve a high standard of typography. A recent addition is that of Courtney, Pope (Electrical) Ltd., an off-shoot of the firm of shopfitters. Though this lapses occasionally into those 'artists' impressions' and general photographs of lighted interiors which architects can do without, the facts are presented in a businesslike way: photograph, dimensioned diagram, brief description and (once you understand the method) easy reference to the price. Doubtless because of the shopfitting connection the range is fuller than most, particularly in the tungsten spotlight, recessed and semi-recessed ceiling mounting sectors, and there is a welcome suggestion which crops up in several places that the architect can obtain modifications to the patterns at small extra cost.

*Courtney, Pope (Electrical) Ltd., Amhurst Park Works, Tottenham, London, N.*15.

Cellular Rubber Flooring

The field of comparatively expensive floor finishes for use in places where sound is very important and wear is hard is now enriched by the availability in this country of the 'Bulgommie-Silence' rubber floor. Manufactured at Roubaix, Bulgomme-Silence has been a staple flooring of continental cinema foyers for twenty years and more. It consists of a hard, smooth upper wearing surface of high quality natural rubber bonded to a thick cellular latex cushion with a fabric interliner between. This gives an easily cleaned surface which is almost indestructible by wear and which is probably as silent in use as any smooth surface can ever be. Costing between 60s. and 65s. per sq. yd. supplied and laid, it is made in the usual mock-tile and mock-marble finishes; but it is also made in a range of plain colours, several of which are exceptionally good.

Burtain Ltd., 16, *Sheldon Street, London, W.*2.

Forced Pipe Circulation

Though it is not the business of the architect to design heating installations for large jobs, it is, to say the least, very handy if he can do so for jobs which are too small to carry the expense of an independent heating consultant. Unfortunately the information enabling him to do this is hard to get and usually harder still to understand. For this reason we welcome a booklet published by Sigmund Pumps Ltd. (price 3s. 6d.) entitled *The Principles of Forced Circulation in Hot Water Heating Systems* which explains clearly how to 'size' a small installation, radiators, pipes, pump and boiler; and gives sufficient tables and data. Though mention is made of the 'small pipe' system, full data is given only for traditional pipe sizes (i.e. 1 in.–2 in.). In general there is no doubt that the improvement in small pumps in recent years, and the consequent feasibility of forced as against gravity systems, has much encouraged the use of central heating in small houses and that a reference of this kind would be very useful to those who do this class of work. The booklet is obtainable from *Sigmund Pumps Ltd., Team Valley Trading Estate, Gateshead* 11.

Factory Insulation

Whether Gerald Nabarro's Private Member's Bill to enforce standards of roof insulation in factories is law or not by the time this note is read, the facts which its debate has elicited should make it impossible henceforth for the architect-designed factory to fall short in this respect. In any event one useful by-product of the Bill has been its stimulation of all manufacturers of roofing materials and the motive it has given them for re-examining their products.

[continued on page 468

WOODWELD

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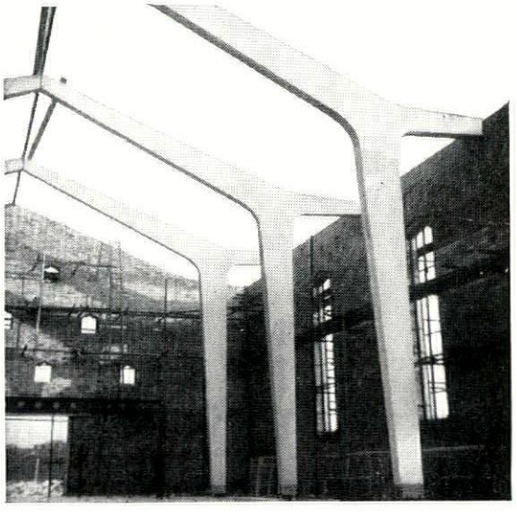

(*above*) WOODWELD PORTAL FRAMES of 52ft. span being used in a Rochdale building. (January '57).

(*top right*) WOODWELD PORTAL FRAMES used in construction of a Church at Oldham, Lancs (December '56).



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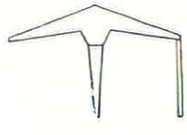

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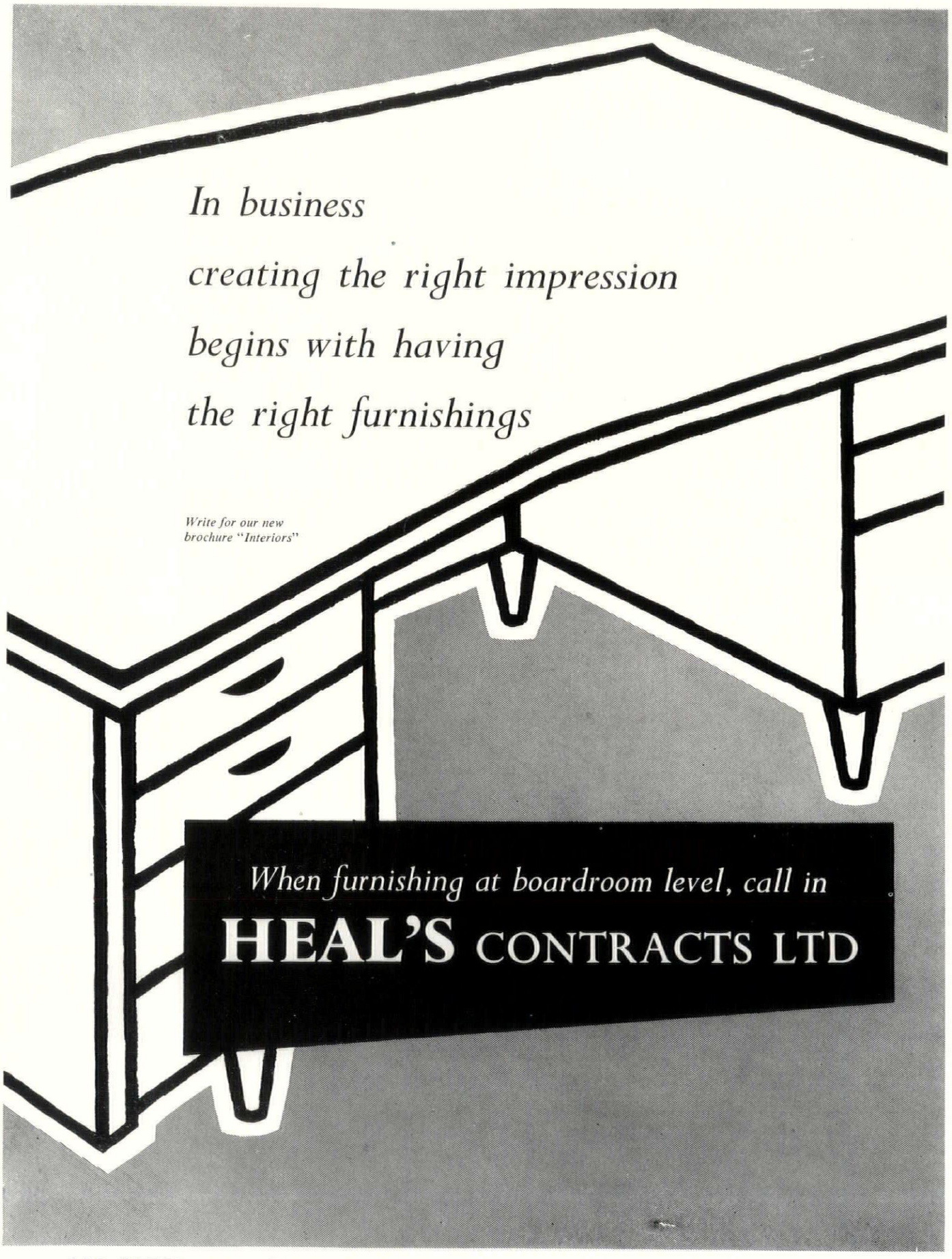

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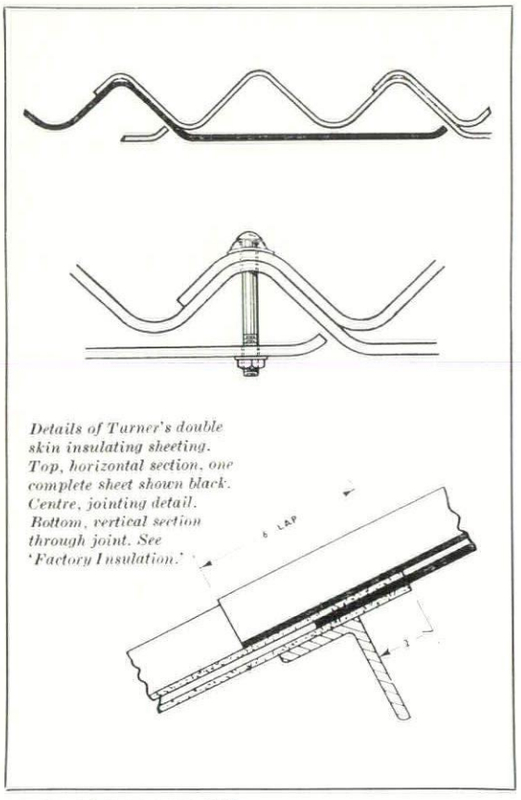

Details of Turner's double skin insulating sheeting. Top, horizontal section, one complete sheet shown black. Centre, jointing detail. Bottom, vertical section through joint. See 'Factory Insulation.'

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Asbestos cement is a strong competitor for this new market and it is interesting to notice that Turners have been incited to produce a new vocabulary of sheeting entitled 'Large span combined sheets' which consist essentially of large flat sheets, 3 ft. 5 in. wide, part corrugated, part flat. These interlock in the manner of a tile, the corrugations forming a continuous corrugated roofing and the flat sections forming a tray beneath to hold insulation—and, of course, a flat surface when seen from below. This roofing is designed to allow purlin spacing at 7 ft. 6 in. centres and five different roof pitches ranging between 5° and 15° from the horizontal. It is, of course, the extras—the barge boards, the eaves fillers and the flashings—which make or (more commonly) mar asbestos cement sheeting. There are signs that these are becoming a trifle less ungainly as the years go by, but they still fall short of the standard reached by the Germans. Asbestos cement sheeting still remains, for the English architect, a material which he will use only when its practical merits compel him. They often do.

Turners Asbestos Cement Co. Ltd., Trafford Park, Manchester 17.

CONTRACTORS etc

Housing at Golden Lane, London, E.C. *Architects:* Chamberlin, Powell & Bon. *General contractors:* George Wimpey & Co. *Contractors (for substructure):* Griggs & Son. *Sub-contractors: Shuttering:* Scaffolding (G.B.) Ltd. *Reinforced concrete:* Helical Bar & Engineering Co. *Sanitary fittings:* Adamsez Ltd. *Acrow units:* Acrow (Engineers) Ltd. *Joinery:* Austins of East Ham Ltd. *Plywood:* Bambergers Ltd. *Reinforcement:* B.R.C. Engineering Co. *Joinery suppliers:* Boulton & Paul Ltd. *Refuse chutes and manhole covers:* Broads & Co. *Sash cramps:* Buck & Hickman Ltd. *Slate larder shelves:* Bow Slate & Enamel Co. *Carcassing timber:* Burt, Boulton & Haywood Ltd. *Taps:* Barking Brassware Co. *Fabricated steelwork:* Clark Engineering Co. *Stair treads:* Costain Concrete Co. *Steel railing:* Clark Hunt & Co. *Sheet and cast iron railing:* Carron & Co. *Metal windows:* Crittall Manufacturing Co. *Lightning conductors:* R. C. Cutting & Co. *Heating and plumbing:* Ellis (Kensington) Ltd. *Lift installations:* Express Lift Co. *Garage doors:* Esavian Ltd. *Lathing:* Expanded Metal Co. *Compounds and expansion jointing:* Expandite Ltd. *Glazing:* Faulkner Greene & Co. *W.C. cistern:* Fordham Pressings Ltd. *Wallboard:* Gabriel Wade & English Ltd. *Flooring:* Great Metropolitan Flooring Co. *Floor tiling:* R. H. Griffin. *Pavement lights:* John Healey (London) Ltd. *Resinoid flooring:* Haskell Robertson Ltd. *Roller shutters:* Haskins Ltd. *Steel:* T. C. Jones & Co. *Plywood:* London Plywood. *Common bricks, sandfaced, rustics:* London Brick Co. *Doors:* Leaderflush Ltd. *Paints:* W. & J. Leigh Ltd. *Glazed bricks:* Leeds Fireclay Co. *Fosalsil bricks:* Moler Products Ltd. *Scaffolding:* Mills Scaffold Ltd. *Laminated timber flooring:* Master & Andren Ltd. *Precast concrete products:* Joseph Mears Ltd. *Thermoplastic flooring:* Marley Tile Co. *Fire resisting doors:* Mather & Platt Ltd. *Scaffolding:* Norstel Scaffolding & Hire Ltd. *Asphalt:* Prater Asphalte Co. *Prestressed concrete roofing:* Pierhead Ltd. *Roof domes:* Pilkington Brothers Ltd. *Window and units:* Quicktho (1928) Ltd. *Ironmongery:* A. G. Roberts & Co. *Sanitary fittings:* Rownson, Drew & Clydesdale Ltd. *Shuttering:* Rapid Metal Development Ltd. *Leca blocks:* J. H. Sankey & Son. *Wood wool slabs:* W. F. Schlesinger & Co. *Sanitary fittings:* Stitsons Sanitary Fittings Ltd. *Steel partitioning:* Steel Bracketing & Lathing Co. *Teak draining boards:* J. Styles & Son. *Reinforcement:* Twisteel Reinforcement Ltd. *Paving:* Roman Art Terrazzo Paving. *Wall tiling:* Teuton Davis & Bennett Ltd. *Waterproofing liquid:* Tretol Ltd. *Flue pipes:* Universal Asbestos Co. *Glazing:* Williams & Williams Ltd. *Purpose made windows:* Wainwright & Waring Ltd. *Joinery:* J. R. Welch & Co.

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[continued on page 470

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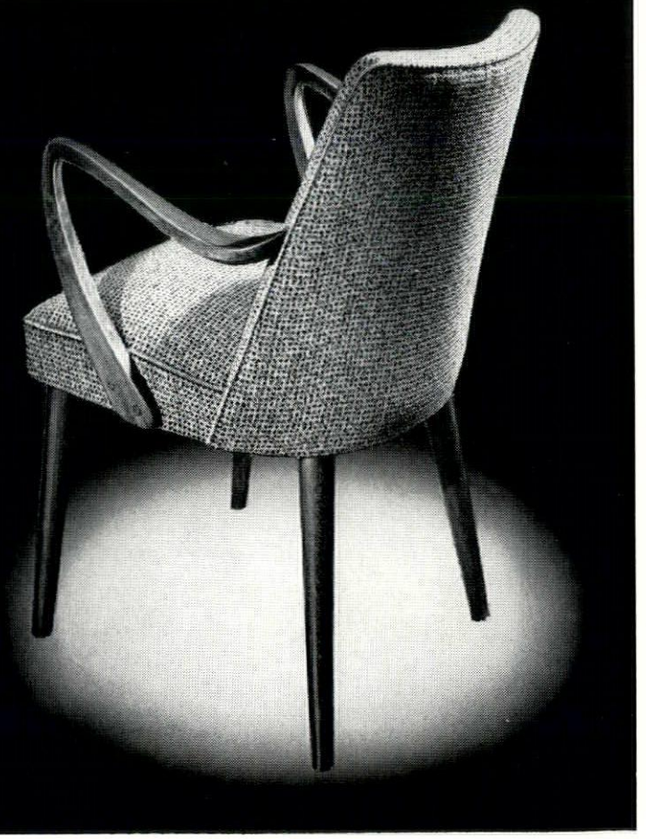

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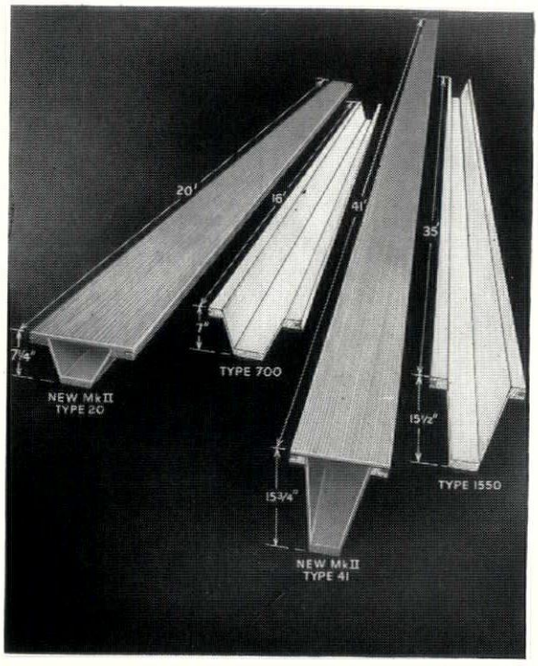

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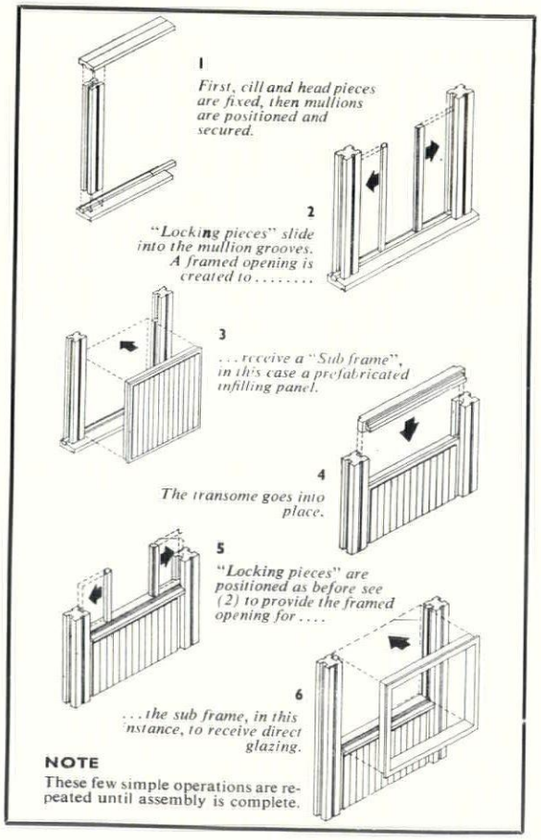

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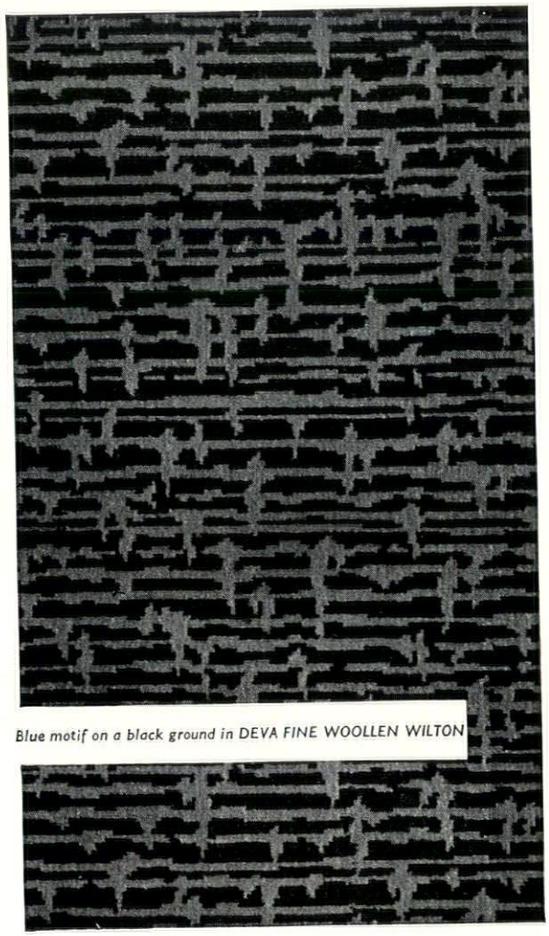

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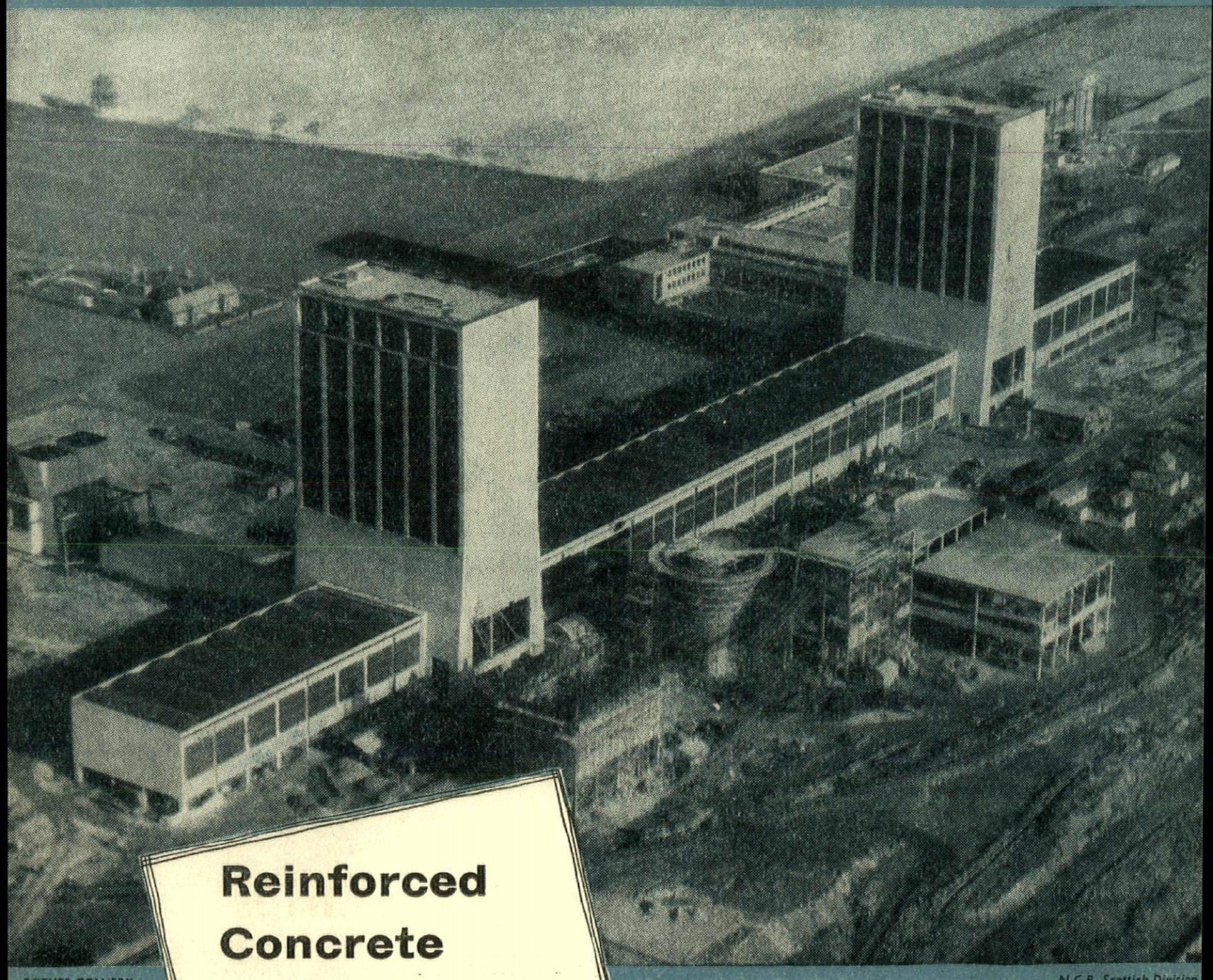

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