architectural design

June 1966 Price 5s.

Volume XXXVI June 1966

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Publication date Seventh of each month.

Publishers
The Standard Catalogue Co Ltd.
26 Bloomsbury Way, London, W.C1
Telephone: HOLborn 6325.
Telegrams: Britstanex
Telex: 1261244 Whitstan, London

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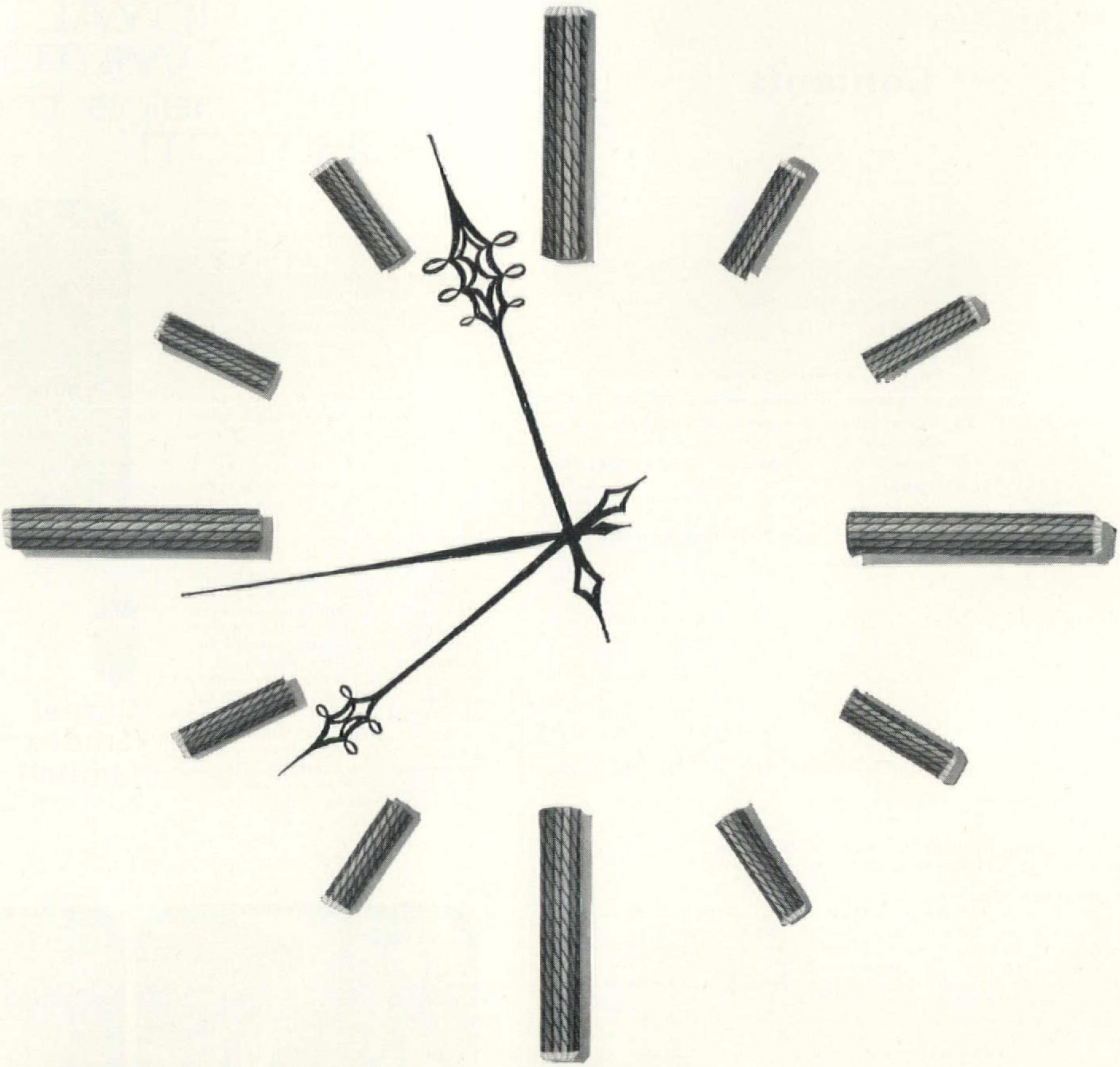

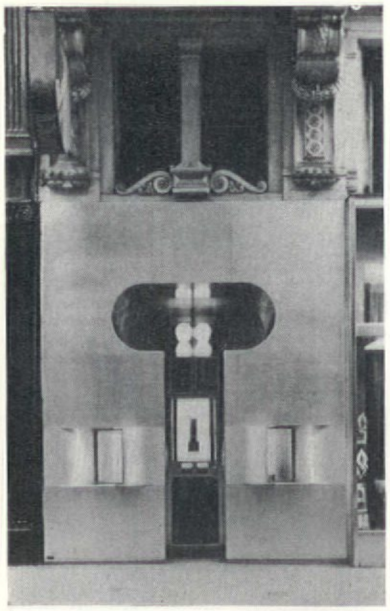

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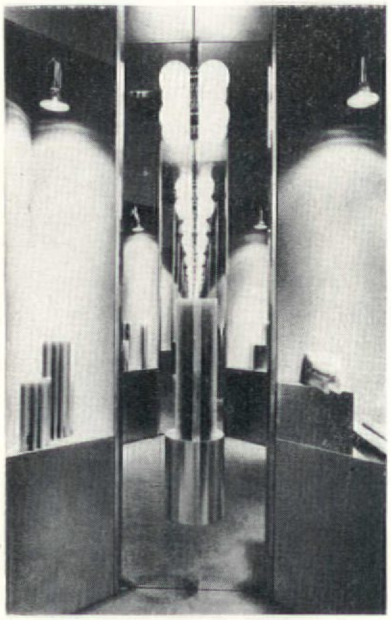

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Reynolds Award 1966

Hans Hollein, the 32-year-old Viennese architect, has been awarded the R. S. Reynolds Memorial Award ($25,000), for a tiny speciality candle shop for Marius Retti, in Vienna.

Hollein is one of a new generation of architects working to change design concepts in his country. He graduated at Vienna Academy of Fine Arts in 1956. He worked for two years in Stockholm with the firm of Ahlgren-Olson-Silow, and then studied architecture and city planning at Illinois Institute of Technology, Chicago, in 1958-59 under a Commonwealth Fund (New York) scholarship. The following year was spent at the University of California, Berkeley, where he received a master's degree in architecture.

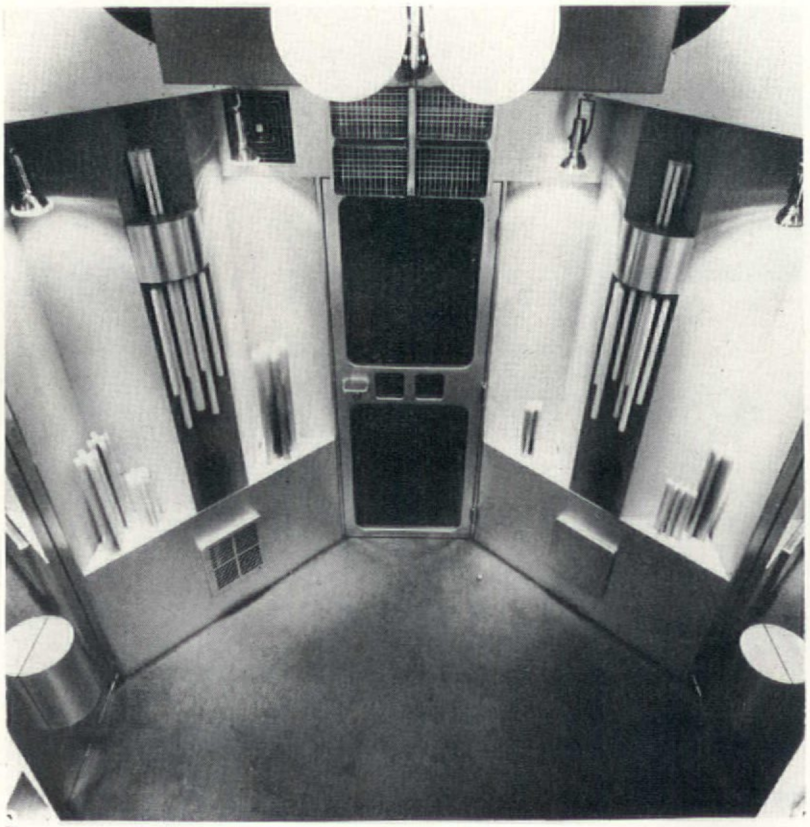
From 1960 to 1963 Hollein worked in Vienna, in the firm of F. Kiener. In 1963 he had an exhibit in Vienna which attracted the attention of Dean Joseph Passonneau of the Washington University School of Architecture, St Louis, who invited him to teach there. This he did in 1963-64, and then returned to Vienna to establish his own office. He is currently designing a bank in Vienna and several houses in other parts of Austria, including one which makes use of part of a castle near Salzburg. Hollein is also one of the four editors of *Bau*.

With clean, simple lines formed by an exterior of polished, anodized aluminium sheet in natural finish, the candle shop stands out forcefully from its ornate nineteenth century neighbours **1**.

The shop occupies only 12ft of street frontage, and its interior floor space measures 160ft². It provides a display showroom **2, 3** and a room for sales of its single product.

To give the visual impression of a much larger interior space, Hollein utilized the continuity of a single building material, the reflective surface of polished aluminium, and extensive mirrors.

Colour accent is provided with orange shantung hung in display niches and with terracotta red wall-to-wall carpeting. All other features of the interior, including specially designed display stands, are in natural finish aluminium. Almost every fixture in the candle shop, down to the hinges and the packaging for the products, was designed by the architect.



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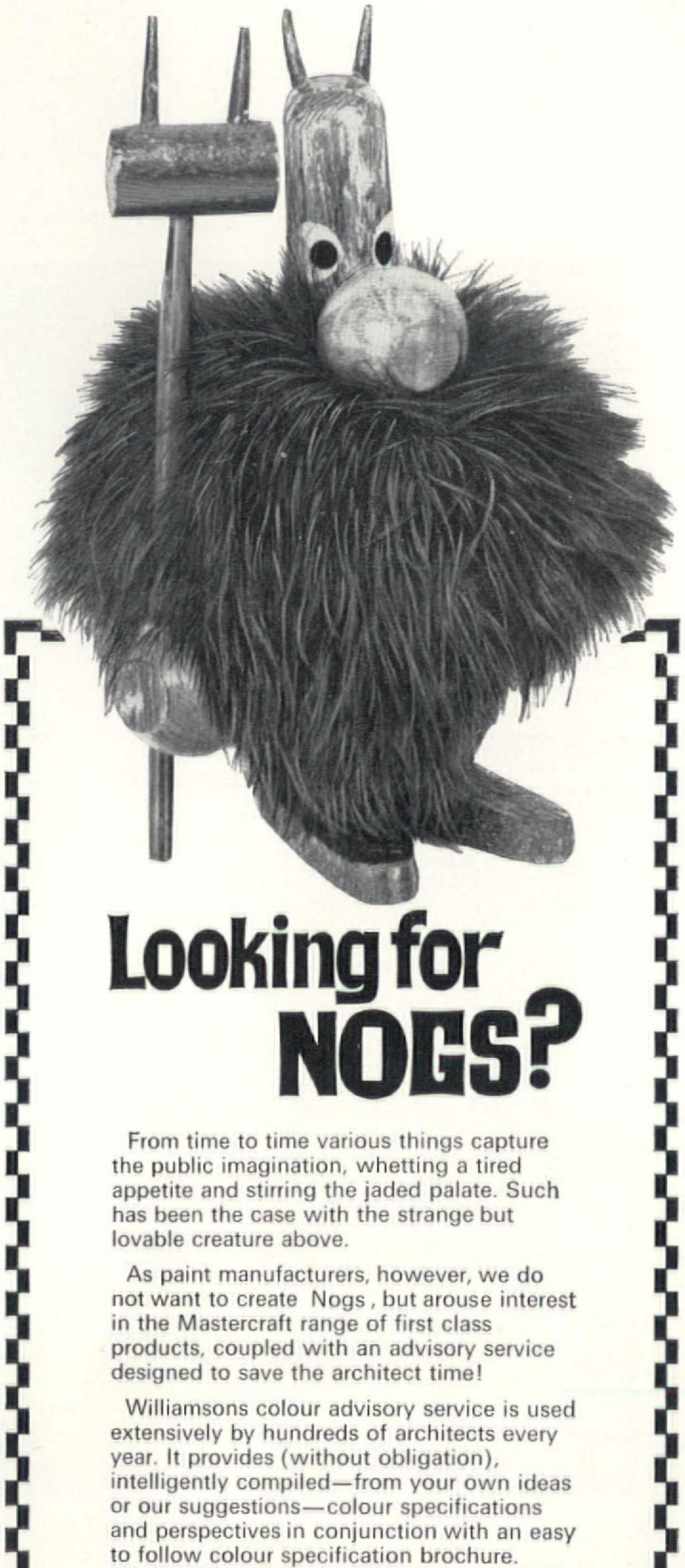
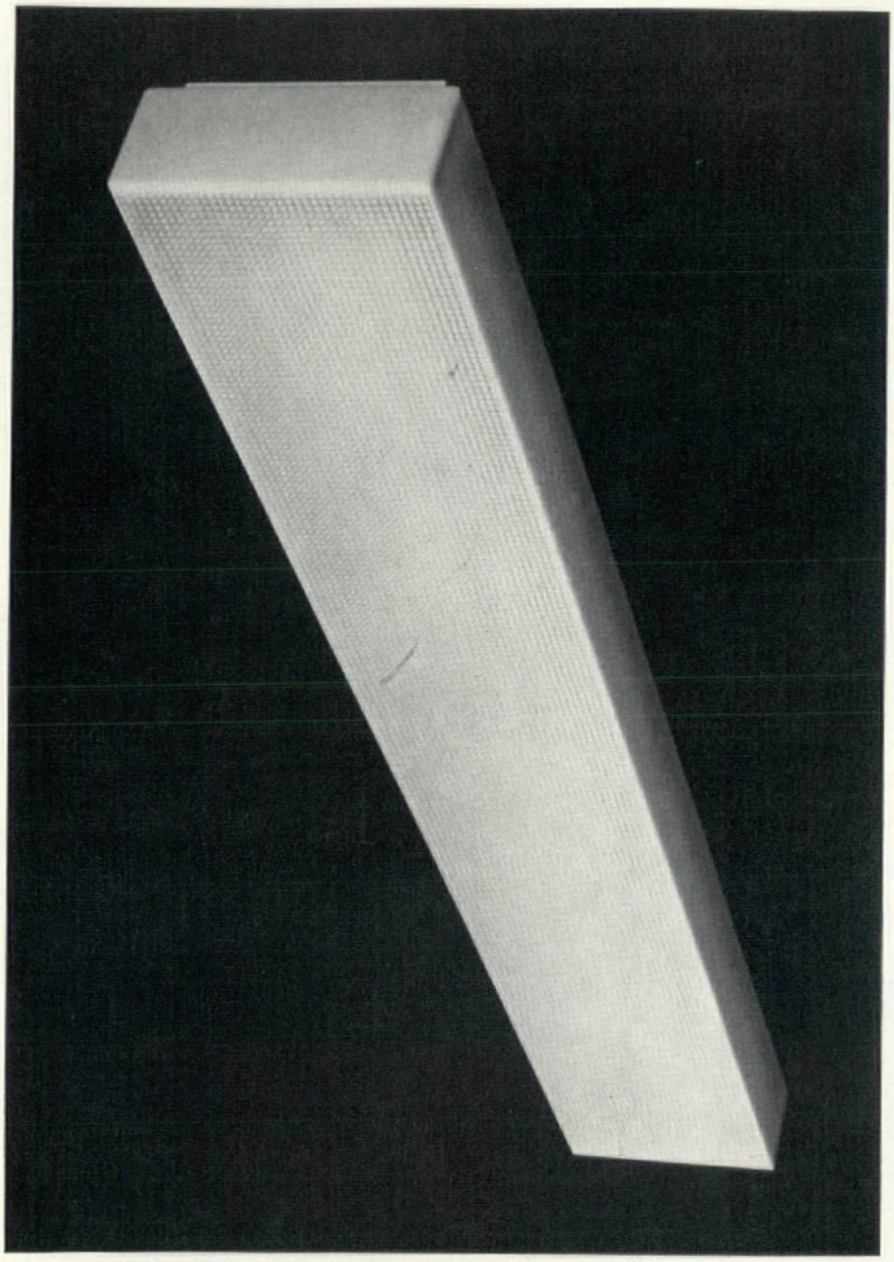




Books

Norwich Cathedral at the end of the eighteenth century

Ed. by S. Rowland Pierce. 24×17. Pp. 10+16 *plates. Farnborough, Gregg Press. 1965. £21.*

Here, in a sumptuous limited edition, are the exquisite drawings of Norwich Cathedral produced in 1798–1800 by John Adey Repton. Intended to illustrate a volume by William Wilkins senior (1751–1815), architect, antiquary and astronomer, they were bought by the Society of Antiquaries of London for £150 in 1806, and have since remained unpublished.

The drawings have not remained entirely unknown, and material from two of them (Plates 3 and 6) formed the basis of John Britton's engraved cross-section (Plate IX, published in 1816, of his *History and Antiquities of the See and Cathedral Church of Norwich,* dedicated to John Adey Repton). Repton's plan, too, was the acknowledged source used by Roland W. Paul for that published in *The Builder* on September 5th, 1891 (and re-issued in book form in 1894), itself the basis of most modern plans of the cathedral.

The present publication is in every way notable. The drawings are finely reproduced to the original scales, one sixteenth of an inch to the foot or larger, while the letterpress includes the descriptive notes by Wilkins, from a manuscript preserved by the Society of Antiquaries (MS. 766), and scholarly apparatus compiled by the late S. Rowland Pierce who, tragically, did not live to see publication. The editorial matter includes critical lists of drawings by William Wilkins senior and by J. A. Repton, a note on the 'Cathedral Series' of the Society of Antiquaries, of which six volumes were published in 1795–1810 and one further instalment in 1835. Financial stringency prevented further issues, though the Society possesses the drawings made by John Carter of Wells Cathedral. It is much to be hoped that the Wells drawings will similarly appear in their full glory as a record of that cathedral as it was before the alterations of the nineteenth century. Errors are few, but the date of publication of *Gloucester Cathedral* (p. 6, col. 1) should read 1809, not 1908; and the bibliography of Norwich Cathedral (p. 9, col. 2) requires some expansion: notably the entry under D. J. Stewart should include: *Arch. J.* (R.A.I.) XXXII, 1875, pp. 16–47, 155–187; XXXIII, 1876, pp. 394–396. At 1935–37 in the useful list of restorations of Norwich Cathedral since 1800 (p. 8, col. 2), 'Tristram' should be read.

This book must always remain the definitive edition of the architecture of Norwich Cathedral and a worthy memorial to the scholarship of the distinguished architect and antiquary who was its editor.

John Harvey

The Architecture of the Roman Empire I. An Introductory Study

W. L. MacDonald. Yale University 1965. 6 guineas

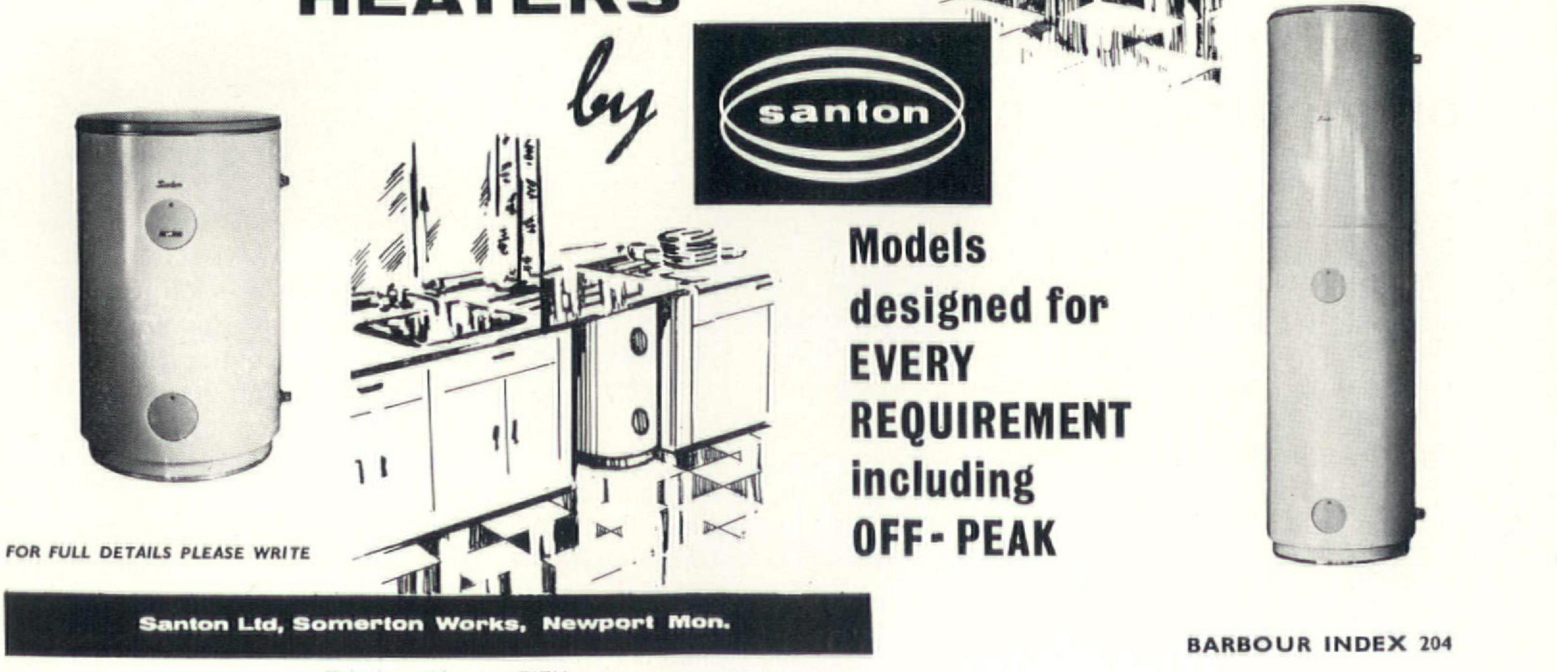
Mr MacDonald is a fortunate man. He has behind him the resources of the American Institute in Rome and of Yale University, not to mention several competent and obliging draughtsmen. He can refer with ease to all the latest discoveries and, though treating in detail only four buildings of the High Empire, can dispose of no less than 135 pages of handsome photographs. The price, 6 guineas, will make his work an acceptable 'table book' for the cultured rich.

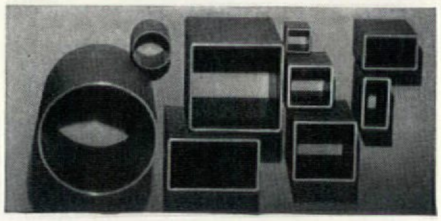
Being only the first volume of a large projected history, it will serve to show that Roman Imperial architecture took its decisive turn away from Vitruvian Classicism and the Vitruvian Orders in the period A.D. 60–130. Such a theme, though announced with many flourishes, is hardly very novel. A whole set of scholars has recently tried to rescue Roman architects from the 'modernist' reproach that, while they invented many new structural forms, they never ceased to cripple their effect by perversely applying the Orders to them or even contorting them into the semblance of Grecian designs. How far did Imperial architects intentionally disregard the Orders, and with what success? Here, surely, should be the nerve of MacDonald's inquiry. His analyses might reveal many incidental beauties, but they should begin and end with this theme.

I take his account of the Pantheon, one of his four buildings. He attributes much of its internal effect to the coffers of its dome. But he never considers the value for scale of its two tiers of Orders. The classically-trained connoisseur, knowing the diameter of the lower columns and the normal proportions of Corinthian, could gauge the size of the whole building; all the more, because the upper Order is about three-fifths the height of the lower, thus observing the proportion traditional in temple interiors from the early days of Doric. MacDonald, not seeing this, says the storeys are related as $1 : \sqrt{2}$ and appeals to a totally irrelevant passage in *Vitruvius* (VI, 3, iii), giving rules for the length and breadth of *atria* in private houses. Again, so low was the pitch of the Pantheon's dome externally, that it surely had a low conical roof of Classical form, resembling, perhaps, those of Classical Greek *tholoi*. Of all this, not a word in MacDonald, even when he is criticizing the model Pantheon in New York! Yet, before we can assess the novelty of a building, we must appreciate its conservatism. MacDonald goes out of his way to see fancied scale-giving devices in the new Imperial structures. For instance, he says on page 178 that their concavities 'described at large scale in generalized architectural metaphor' (whatever that pompous language may mean) 'the invisible envelope determined by the maximum reach of the human body'. But he ignores the fact that one can determine the height of an Order, probably of a whole building, from the mere measurement of a lower diameter! This, when even as late as Sancta Sophia the columns were giving the scale!

How does he envisage Vitruvius, that great pedantic bogey? 'It is apparent', he writes on page 10, 'that the external use of the Orders, freestanding or engaged to walls, represented for him and for many others the essence of suitable and acceptable architecture.' Where does Vitruvius once mention engaged orders? And what necessary place does he give the full Order in his private houses in Book VI? Coming to that, how fully did he apply any Order externally or internally in his basilica at Fano? The new *insulae* of Nero's Rome, though they had porticoes, represented, thinks MacDonald a clean break with Vitruvius. But the tenements that Vitruvius praised in II, 8 xvii, many-storeyed and of mixed structure, can hardly have imitated Greek temples. It is even on the cards that they embodied arcaded substructures. As for Nero's tenements, MacDonald has to admit that Tacitus never mentions concrete in them. Common sense, further, would suggest that *Annals* XV, 38 ff, merely commend the solidity, spaciousness and neatness of Nero's new city. But, relying heavily on the two words *sine trabibus* ('without wooden beams'), MacDonald presses Tacitus into applauding a new style of architecture!

Common sense is what MacDonald seems to lack. For instance, he comments on Cicero *Ad Quintum Fratrem* III, 1, i, that Cicero apparently disliked vaulted architecture. But Cicero merely says that he inspected the building work on his new villa, disapproved of certain (*quasdam*)





vaulted rooms and ordered them to be changed. I would refer MacDonald to *The Honeywood File*. Does MacDonald always pause to think? In his first chapter, on the new vision of the new designers, he nowhere asks how far their roof-structures were forced on them. If, under Roman conditions, one were asked to build enormous fire-proof halls, what could one have used but pozzuolana vaults? Despite page 5, were the new structure techniques the 'mechanical servants of a new *imagery*'?

On page 38 he talks of the 'Vitruvian rule for a centralized building, calling for a vault diameter equal to the building's height' and cites *Vitruvius* V, 10, v, and IV, 8, iii. But the first passage says that a circular *laconicum* should have a breadth equal to its height up to the springing of the dome (compare the rule in VI, 3, viii, that a square room should have a height one-and-a-half times its side); while IV, 8, iii, seems to be prescribing a rule difficult to understand for the conical outer roof of a *tholos*. Similar weak scholarship may partly account for MacDonald's failure to come to the point or to the real evidence on many topics, notably the precursor of the Pantheon (page 119), the roof of its portico (pages 94 ff) and the evidence for pre-Neronian arcades (page 29, n. 18). His Italian seems no happier than his Latin, according to which (page 26) this review would be commending him to the 'facilis descensus *Auverni*'. At any rate, he says on page 8 that at Praeneste a *tholos* 'capped' the hemicycle at the top of the temple. But on page 187 of his *Fortuna Primigenia* Gullini writes of this round hall that 'non poteva in alcun modo sporgere al di sopra dell' emicichio antistante'.

MacDonald's English, perhaps, is worst of all. One has a great struggle to read it —eg, such phrases as 'part of a thermal bath' (page 11), or (page 30) 'Most important, a rich strain of creativity pervaded this rational structure of events'— as if his soaring imagination were somehow embedded in the masses of Imperial concrete. But the real historian will always try to write to the point, and to write clearly.

Hugh Plommer

URSS: architettura 1917–1936

Vittorio de Feo. Editori Riuniti. 6000 lire

The great Constructivist phase of Russian architecture is uncommonly interesting to architects; even to die-hard traditionalists. For there is nothing quite like it anywhere else. And nowhere has the idea of structural and functional expression been made more explicitly and more satisfyingly mechanistically apparent than in the projects of the Vesnins, Ladovsky and El Lissitsky. Their designs unfailingly excite those architects who are in search of a revealed religion in architecture. Their air of certainty and strong conviction is compelling. But, in fact, we know very little about the movement. El Lissitsky's own work, even if partisan, is not easily come by, nor is Jean Badovici's more comprehensive study. Reyner Banham's remarks in the *Theory and design in the first machine age* have, for all their polish and precision, served only to incite still more the brethren. Camilla Gray's swollen volume *The Great Experiment: Russian Art 1863–1922* is—not to put it too harshly—a disappointment to architects. Signor de Feo's book is thus timely. There are 77 pages of text (in Italian) outlining the history of the movement, a bibliography and 106 pages of illustrations. These alone are of interest. They provide in the strongly contrasting black and white of lithography a pictorial record of the famous buildings and projects of this Russian interlude to modern architecture. There is little to be studied of detail in the strident contrast of the line drawings or the blurr of the photographs, but they are undeniably intriguing for what they do adumbrate. And it is fascinating to see just how much, even in English architecture, was derived from Russia.

The failings of the text are not so readily to be condoned. Journalism is undifferentiated from scholarship and this is for the most part of limited scope. It is based on sources already available to us and in no way offers a new assessment of the material. None of the key problems is solved. Did, for instance, Viollet le Duc's *L'Art Russe*, which was written at the instigation of the director of the Moscow Museum of Art and Industry, Victor Boutowsky, and translated by him in 1879 into Russian, have any influence? No other explanation is offered for the sudden irruption of constructivist thought.

The book, however, is a product of enthusiasm and until something more definitive appears is likely to be enjoyed by other enthusiasts.

The history, theory and criticism of architecture

Edited by Marcus Whiffen. MIT Press. 30s.

A summary, in the form of seven printed papers by Peter Collins, Bruno Zevi, Serge Chermayeff, Sibyl Moholy-Nagy, Stanford Anderson and Reyner Banham of the goings-on at the AIA–ACSA teacher seminar held at Cranbrook in 1964. The main issue appears to have been to what extent the teaching of history—so rudely dismissed in the Bauhaus curriculum—should be regarded as an inevitable aspect of the understanding of architecture. Not one of the teachers whose papers are reproduced demurred. The debate is marvellously gallant with congratulations being passed from one participant to the others. Banham gets most of the applause—and he deserves it. His piece on *Convenient benches and handy hooks* strengthens the props of our utilitarian morality with firm complacency—or should one write, conviction.

Henry Moore, Vol 2 1949–54, Vol 3 1955–64

Edited by Alan Bowness. £3 10s. and £4 10s.

Apart from Sir Herbert Read's always perceptive, and inevitably partisan, introduction there is no text in these volumes. There are a vast number of marvellous photographs, by Moore himself, and a definitive catalogue of his works during 15 years. The period was a difficult one for Moore: he became a popular celebrity, his work expanded enormously in scale and he began to be absorbed into the establishment. In the same period several distinct sculptural fashions have come and passed and after each he has come out, taking a little here and there, distinctively himself. Not actually doing anything better than his early work, but maintaining a standard of invention and excellence under great pressure.

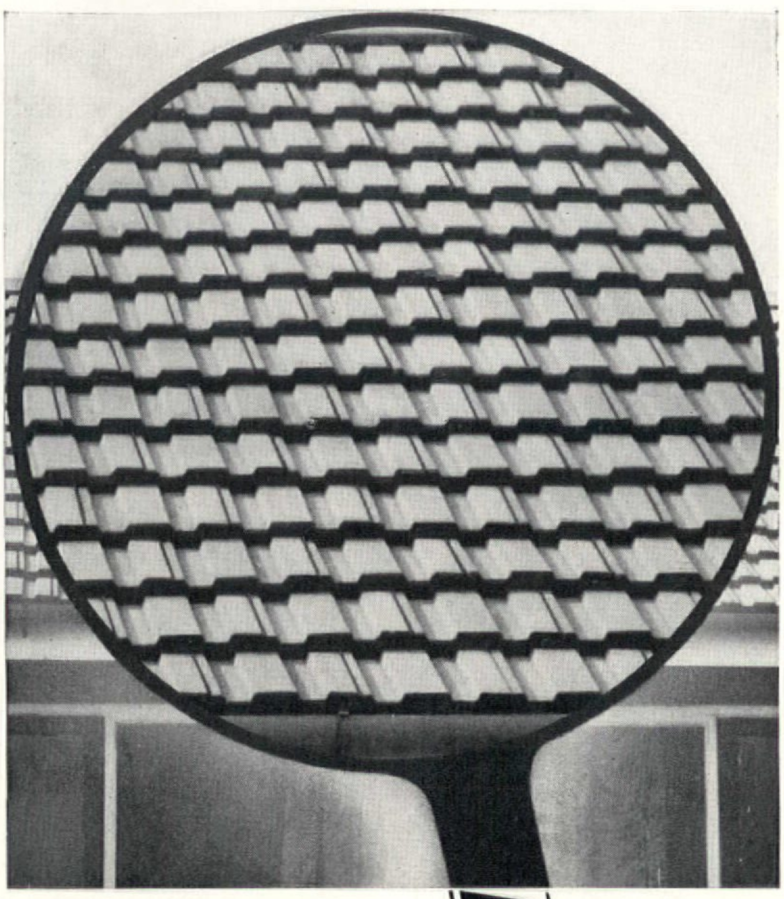
Yet there is something tragic in a great monumental artist (our first perhaps since Stonehenge) 68 years old and a world figure since 1946, who has yet to receive a commission for a major monument in his own country. And think of the places that might be redeemed by such an act of patronage: St Paul's precinct, the South Bank, Birmingham Bull Ring, any of those giant redevelopment schemes.

Theo Crosby

The architect's guide to site management

Ronald Green, The Architectural Press, London. 16s.

Small and sensible guide that has the peculiar merit of keeping the architect happy in his amateur status while propounding important practical issues that usually receive insufficient attention.



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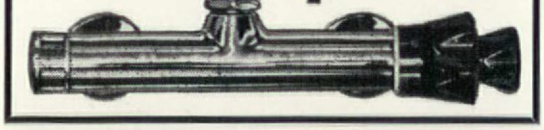

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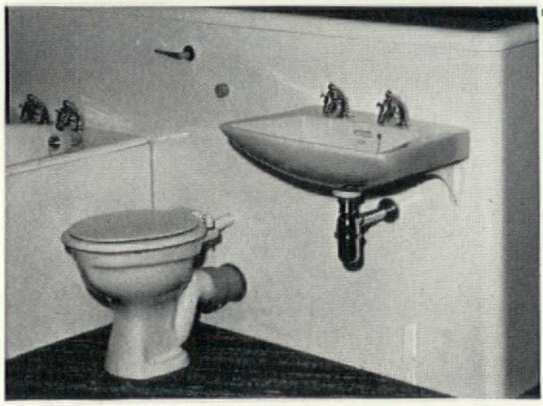

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Conran Contracts **News Letter**

Conran Contracts is specifically organised to supply the entire range of furniture and furnishing needs of public authorities, universities, colleges and schools, executive and general offices, hotels and restaurants and clubs. We undertake the complete cycle of furnishing—from assisting our clients in the preliminary selection of merchandise, preparing specifications and tenders through to the supervision of deliveries and installation on site. To do this as effectively as possible we work in close collaboration with the client and his architects and when required we can draw on the services of Conran Design Group for the detailing of interiors and special furniture.
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We hope that the examples that follow will provide an indication of the scope and versatility of Conran Contracts' activities.

St James' Club Manchester

Conran Contracts won the tender for carpeting, curtaining and the supply of furniture throughout the new premises of the St. James' Club in Manchester. Furniture was drawn from the ranges of a number of manufacturers and we were responsible for planning deliveries and site supervision in conjunction with the client's Architects Casson Condor & Partners.

City of London Real Property Company Limited

For the executive offices in their head office building The City of London Real Property Company required an integrated range of desks and tables of various sizes, storage cabinets, bookcases, desk chairs and typing chairs. C.L.R.P. Architects asked Conran Contracts to supply the Euclid range throughout these offices and also to provide carpets, curtains and accessories.

Oxford law library

The Common Room at the Oxford University Law Library required well designed, well made unit seating and tables, which were both comfortable and adaptable. The University Surveyors Office specified Summa Unit Seating for this contract to be supplied by Conran Contracts.

Buckinghamshire County Council

The Architects Department of the Buckinghamshire County Council required 240 plan presses and drawing tables for use in the new County Council Offices at Aylesbury: Conran Contracts won the competitive tender with the Pythagoras range.

Runcorn Development Corporation

In the new Runcorn Development Corporation Offices, Conran Contracts supplied all the furniture from the Abacus Unit Seating in the entrance hall to the Euclid desks, tables, storage cabinets and bookcases in the Senior Executive Offices.

Penguin Books Ltd

Penguin Books Limited are one of an increasing number of major companies who are standardising the furniture throughout their offices. Conran Contracts have supplied the Euclid range of desks, tables, storage cabinets and bookcases, together with desk chairs, conference chairs and typists chairs to the specification of the client.

Centre file

Centre-File Limited, who operate a large new computer centre, are standardising their office furniture and have nominated Conran Contracts to supply the Pythagoras range of related desks, tables and storage cabinets, together with desk and conference chairs throughout their offices.

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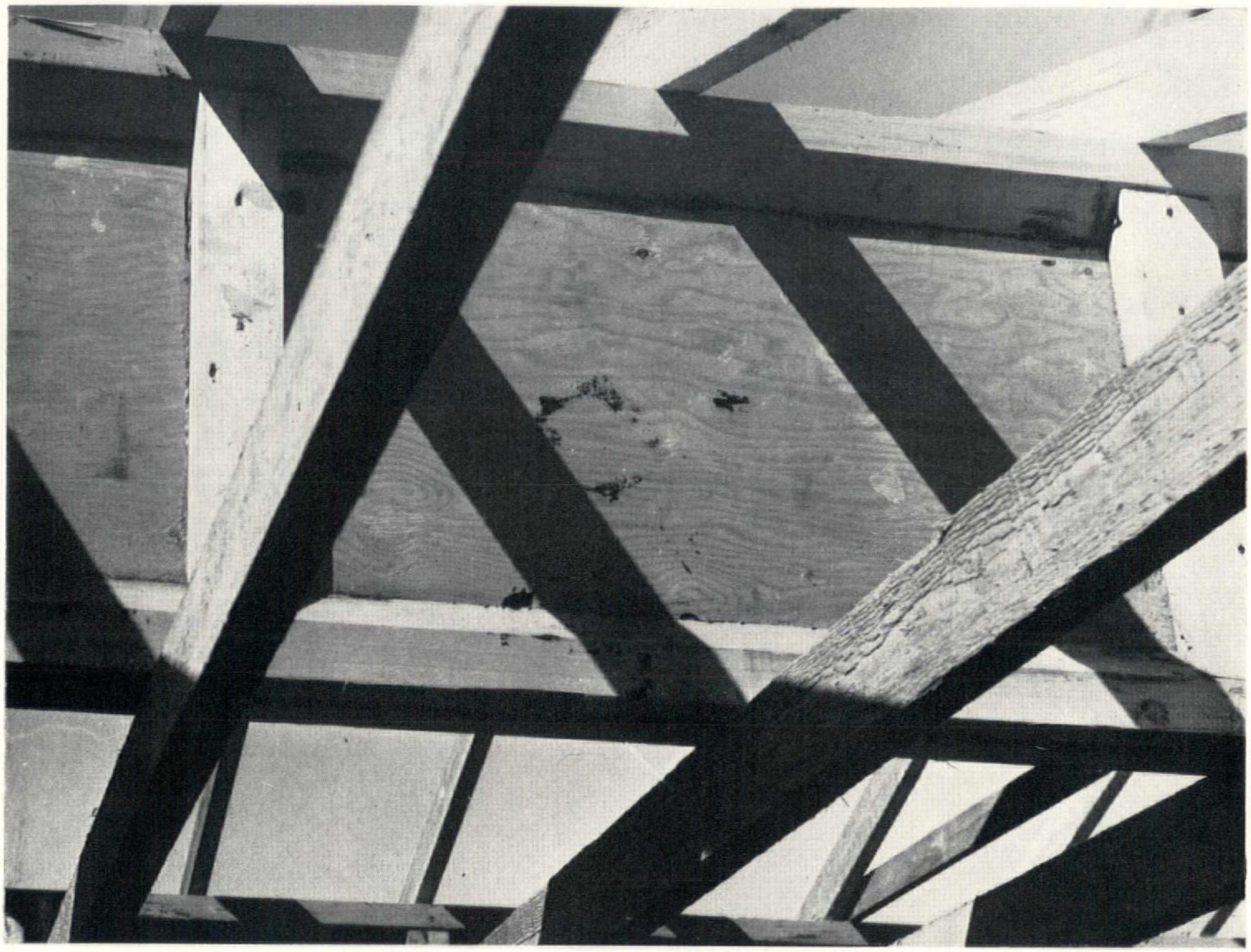

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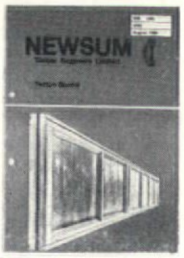
You should specify Tecton Purlin Beams on your next pitched roof project. You'll need all the facts then—so why not start now? Technical specifications, fixing guides—they're all in our literature. Just send off the coupon today for your copy of the Tecton Purlin Beam folder. You'll like the A4 size and SfB classification too.



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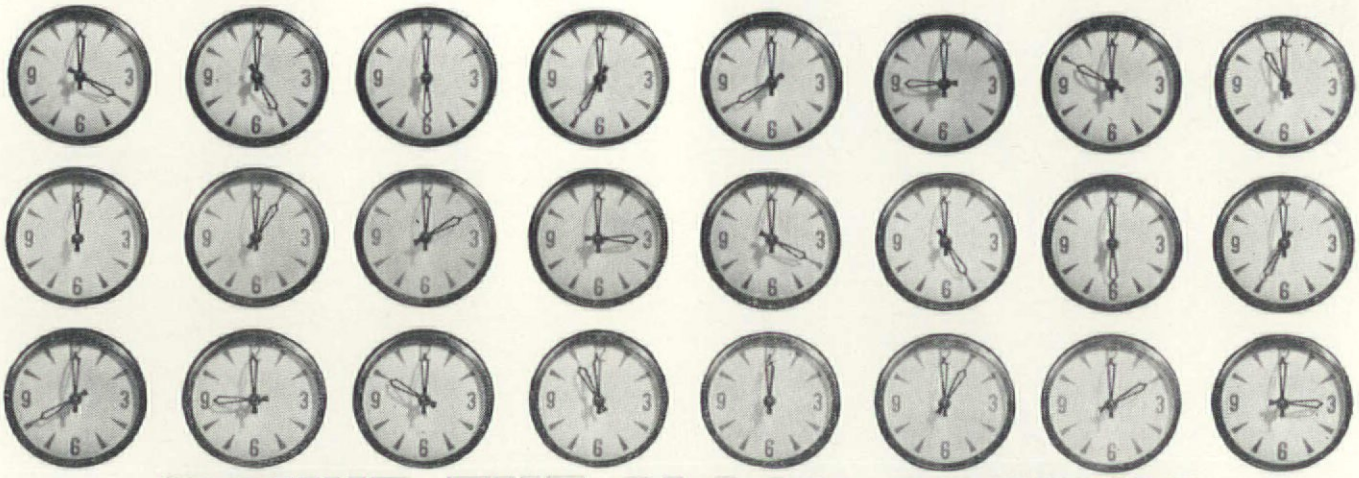
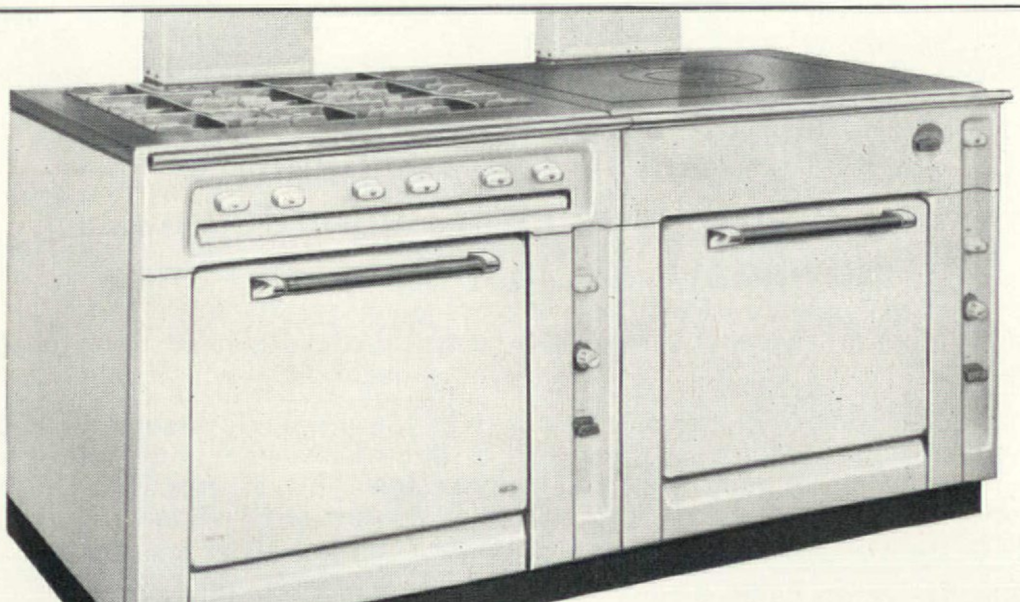


ROUND THE CLOCK COOKING

The Mayfair Range is designed for continuous cooking for large or small numbers to the most exacting international standards. The solid hotplate has, as standard, a Rado burner giving a well-diffused heat all over the top, but the Vortek burner, giving a powerful concentrated swirling flame, can be fitted at slight extra cost. This brings the central area to a dull red heat, and if the disc is removed the flame can be used for direct-contact flash-heat work. Open tops, with six Radoflex burners, with slow-cut-down safety taps, are also available.

● *The Ovens are semi-externally heated, massively built, and well insulated for heat retention, fitted with smooth-action double-spring-loaded fall-down doors, and with quick-response Regulo control* ● *Unit construction means that any number, of any type, can be arranged in line or as central suites* ● *Ovens and boiling tables can be supplied separately* ● *Pilot lights are fitted to all enclosed burners* ● *Safety flame-failure devices are available if required.*



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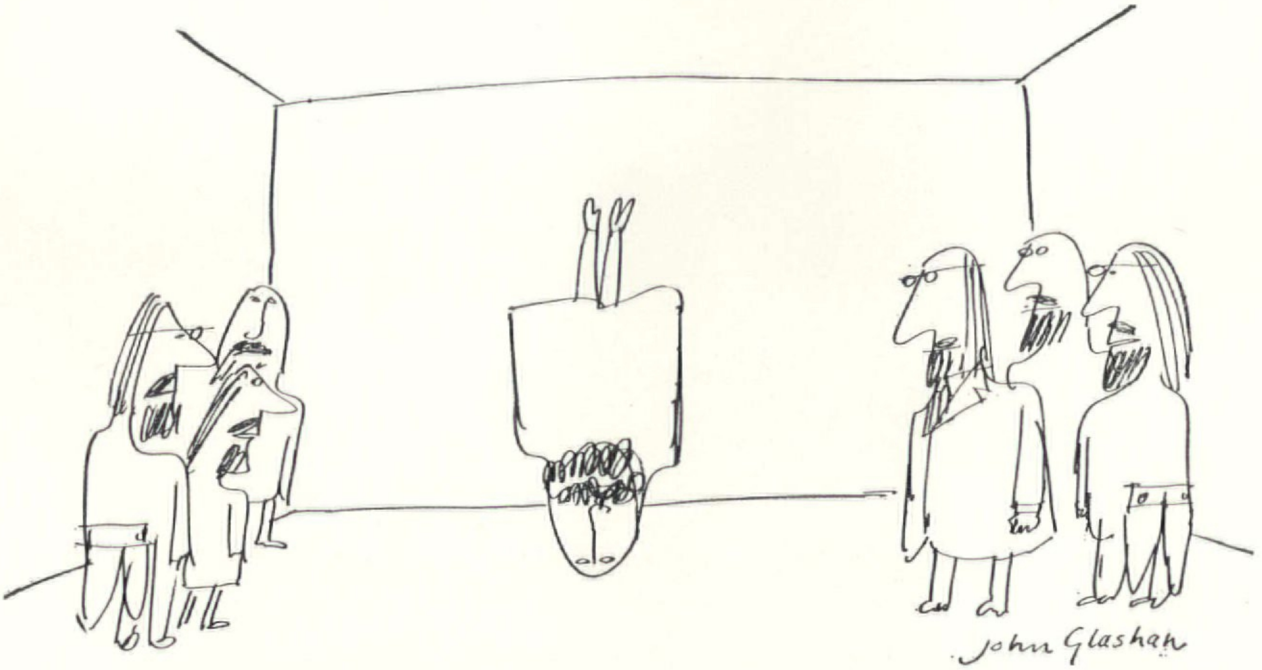
Who's the joker who said we could have all our heating, lighting, ventilating and sound-absorption through the ceiling?



The HT Ceilings man. And he wasn't joking

Deadpan, he said it. Because he knew he could do it. 'He who laughs last', he muttered, as he stood on his head (the better to look at the situation, you understand.) Then he jumped to his feet, and came up with all the answers — including a gem on cost-cutting. We kid you not. HT Ceilings can combine any or all of these functions in *one ceiling*. There's nothing to clutter up design. In point of fact, HT Ceilings are a flexible design element in themselves.

Heat through 'em. HT Radiant Ceilings with unique new electrical element built right in, give gentle uniform warmth at unbeatably low running cost. The element, operating at around 100° F, has an exceptional safety margin. There are no unsightly radiators or pipes. And what's more — no maintenance.

Light through 'em. HT Luminous ceilings give you glare-free, shadow-free lighting at any level. They can provide up to 100 lumens per sq. ft.— or more. Pretty bright, eh? And HT will put any size or shape of lighting unit into any ceiling, integrated to suit design requirements.

Ventilate through 'em. When it comes to ductless ventilating ceilings, HT have yet another ace up their sleeve. Multiple invisible slots give controlled air-injected ventilation with absolute freedom from draughts, even at 120 air-changes per hour. Still no draughts when the volume of air injected is varied in different parts of a space. Given the air-change requirements, HT experts will calculate the rest to ensure complete mixing above head-height. If you want to introduce humidified or conditioned air, HT Ceilings are the boys for that as well.

Let's speak acoustically. HT make the only acoustic ceilings that can both reflect and absorb sound scientifically calculated for optimum performance, with no change in appearance.

The sound-reflecting and sound absorbing materials are effectively concealed behind aluminium alloy strips. Stove-enamelled in twenty-one colours, and completely flexible directionally, the lineal facing offers endless design possibilities.

As an example of HT Acoustic Ceiling efficacy — they can reduce reverberation time in swimming-pools from 6½ seconds to 1½ seconds. Five seconds worth of nerve-racking reverberation lost! And again, these ceilings need no maintenance.

Thinking of integrating? Fitting fire-sprinklers, air-terminals or lighting-units — any shape — into all HT Ceilings presents no problem, nor does working round corners, or partition integration.

The HT Ceilings man wasn't standing on his head purely for laughs. He was entirely serious about the possibility of combining all these features in one ceiling.

To give you a case in point — HT are producing a special two-layer luminous/acoustic ceiling for Ford's new £10½ million Engineering and Styling Centre at Basildon. In this ceiling, the light fittings are designed to be the wiring trunking and main support of the Acoustic Ceiling which itself forms the air-conditioning plenum and fire barrier. The lower ceiling, designed to the building module, provides glare control and supports for the demountable modular partitioning throughout. Covering 200,000 sq. ft. this is the largest single special ceiling in Europe.

The gang at HT live and breathe ceilings. Their expert advice is available from the drawing-board onwards. They're thoroughly qualified to see the project through. At design stage, during erection and after completion HT are ready and able with help. For as long as the building stays up.

Look, we don't want to go *on* about this. Write for Sfb classified technical literature or ask the HT Ceilings man to call.

HT CEILINGS
A HALL-THERMOTANK GROUP COMPANY

HT CEILINGS LTD FORMERLY LUMENATED CEILINGS LTD
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FIRTH'S CARPETS

... a double investment

adonis*

Firth's "Adonis" Carpet stays young because it's made of 'Acrilan 15' a springy fibre. Flatten it and it stands up straight not just when it's new but all its long, long life.

Its colour always stays bright because it is fadeless and hardly anything will stain it. Moths and other insects will not touch it. Damp cannot harm it.

Acrilan is immensely hard-wearing, immensely strong and will stand up to grit and grime and the wear and tear of furniture and feet.

Ideal for contract carpeting, "Adonis" is ideal for light contract installations and is also available on request in qualities for heavy contract work.

Samples and Prices gladly sent on request.

Firth's design studio is equipped to create new designs and re-colour existing designs over a wide range of qualities.

Firth's technical representative will be pleased to call at your request.

ACRILAN 15 acrylic fibre CHEMSTRAND

FIRTH CARPETS LTD., BRIGHOUSE, YORKSHIRE

A new suite of three office or conference room chairs in Afrormosia to match the 1100 series Composit desks. These comprise of:

PL 80	Seat height	17½"	Retail Price
Small chair	Overall height	30 "	£8.18.2.
	Overall width	19 "	
PL 81	Seat height	17½"	Retail Price
Armchair	Overall height	30 "	£11.1.7.
	Overall width	23 "	
PL 82	Seat height	15½"	Retail Price
Easy chair	Overall height	29 "	£15.14.1.
	Overall width	26½"	

Composit Leasing

As the actual manufacturers of COMPOSIT FURNITURE including the 900 and 1100 series desk ranges Esavian Limited are able to offer exceptionally favourable terms, since their leasing contracts are subject to full normal discounts. Such contracts can, in addition, embrace ancillary equipment including office machinery.

COMPOSIT FURNITURE is designed by J. W. Leonard FSIA and made by Esavian Ltd at Stevenage, Hertfordshire.

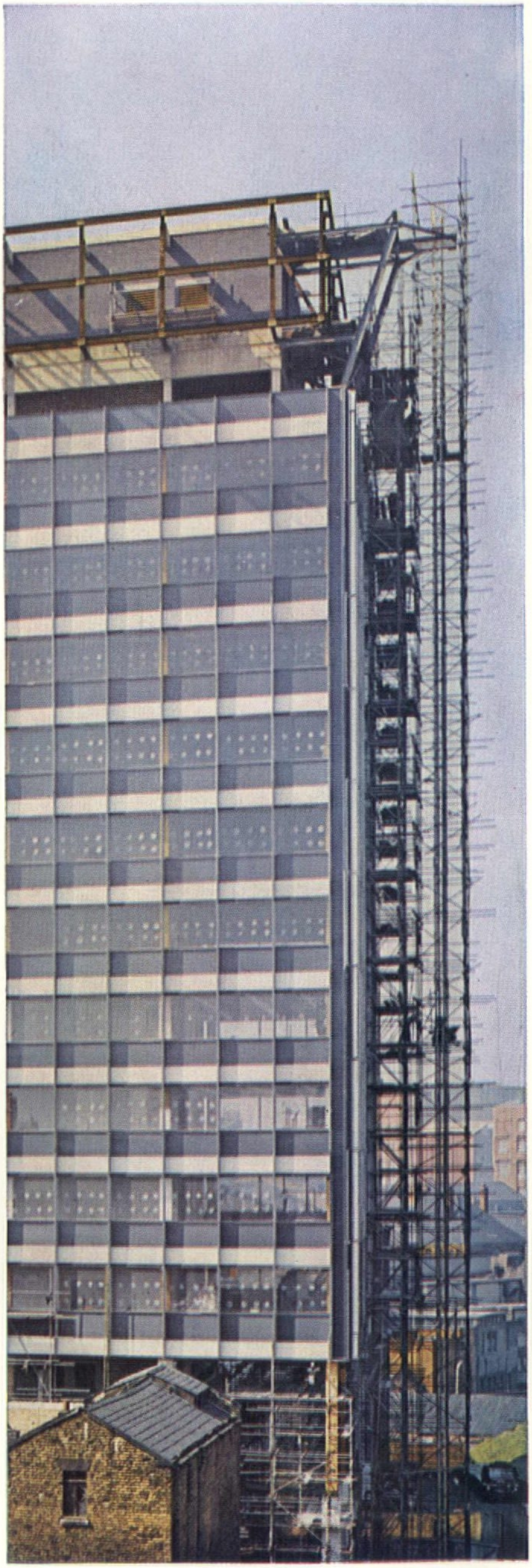
ESAVIAN

Showrooms:—
London: 185 Tottenham Court Road, W.1.
Birmingham: Charles Street, West Bromwich.
Glasgow: 101 Wellington Street, Glasgow C2.

PL 82

PL 81

PL 80



A tale of EIGHTEEN STOREYS

You are looking at Littlewoods' new building in Liverpool—and at a bit of history!

This is the highest office block in Liverpool (320 feet above sea level.) It is also the first structure in Britain to be designed as a rigid all-welded steel frame using high yield stress steel Universal beams and columns (rolled at Dorman Long's Lackenby Mill.)

> *Why? Because on this contract, the consulting engineers found that for overall economy and speed of construction steel showed definite advantages over other forms of construction.*

Using a steel framework had other advantages. Smaller columns gave more usable space. No haunches meant clear runs for services. Less deadweight allowed small foundations.

Fabrication and erection of all structural steelwork (about 2,200 tons in the first phase) was carried out by Redpath, Brown & Company Limited.

Architects, Quantity Surveyors
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W. L. Stevenson, Esq., O.B.E., Manager,
Littlewoods Department of Architecture & Planning.

Consulting Structural Engineers
Bingham Blades & Partners, Liverpool.

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a family suite of door and window furniture

Put an extra touch of brilliance to your new project by insisting on the Evered County Suite — the *matching* door and window furniture. Note the fluid lines, the smooth, expensive-looking finish, the carrying-through of a design theme. The County Suite is consistently good in every detail and adds that unmistakable note of distinction wherever it is employed. There is a *complete* family of fittings to supply every need, in a choice of two finishes: silver anodised or tinted anodised on cast aluminium. This is the suite to set off *your* masterpiece; send for illustrated brochure giving full details of the County Suite before you settle for second best!

ARCHITECTS' INFORMATION SHEETS for the entire EVERED Architectural range are readily available.

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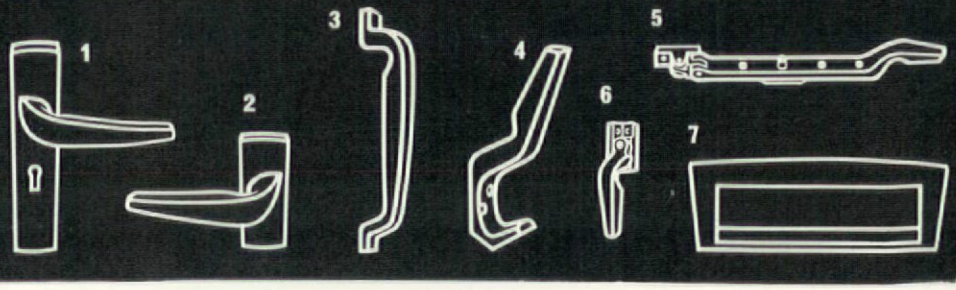

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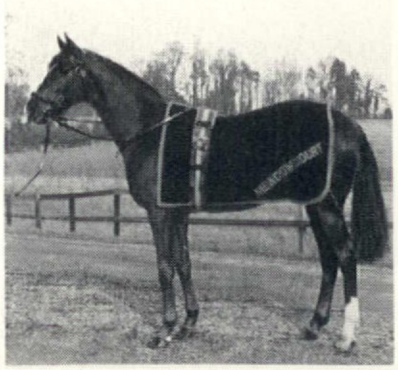

MEADOW COURT LEADS

Winner of The Irish Sweeps Derby, King George VI and the Queen Elizabeth Stakes, Ascot and over £100,000 in Stakes. It takes real experts to breed and train a horse to reach these high standards. In the same way it takes experts to develop a new paint; it also takes tremendous research and manufacturing resources . . . and it's here that PJA are out in front. The Gaymel line is being extended and new products are being developed to meet changing techniques–take Speed-Prime, one of the latest PJA products, it enables bare materials to be taken through priming, undercoat and to finishing all in one day . . . **from PJA it's a winner every time.**

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Standard size: 8 ft x 4 ft. Smaller sizes available.
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Ten attractive pastel colours, (plus white), computer controlled for precise colour matching.

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Photograph by courtesy of Wates Built Homes Ltd.

THE GLIKSTEN MARK 12 VENEERED FLUSH DOOR

An elegant room designed for a pleasant awakening; a room that by its very simplicity is restful, quiet and dignified. Fitting into the picture so easily is the Glikstеn Mark 12 door, put there by the designer who needed something rather better than usual to harmonise with the well-thought-out colour scheme.

Glikstеn Mark 12 doors are, in fact, at home in most surroundings and will give an air of quality to a lounge, dining room or an entrance hall just as well. Have you considered using Mark 12 doors in your own housing schemes? It's well worth looking into, especially as the extra cost per house is very little. If, however, the call is for painted doors, there is none better than the 'Silkstone' door. Write to us for details of either or both these types.

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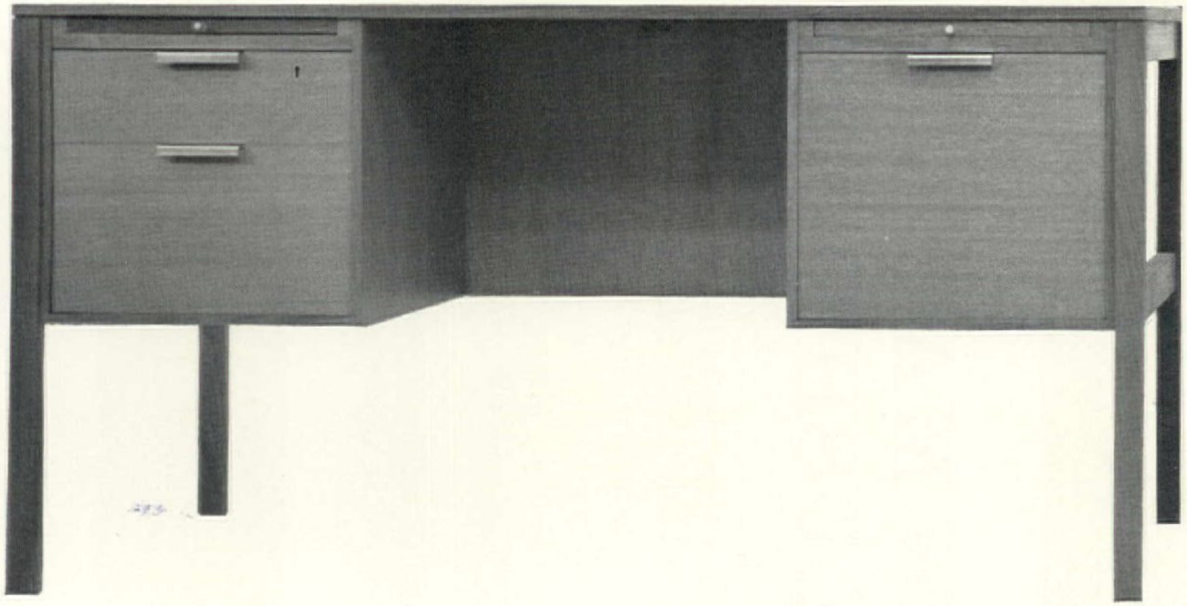
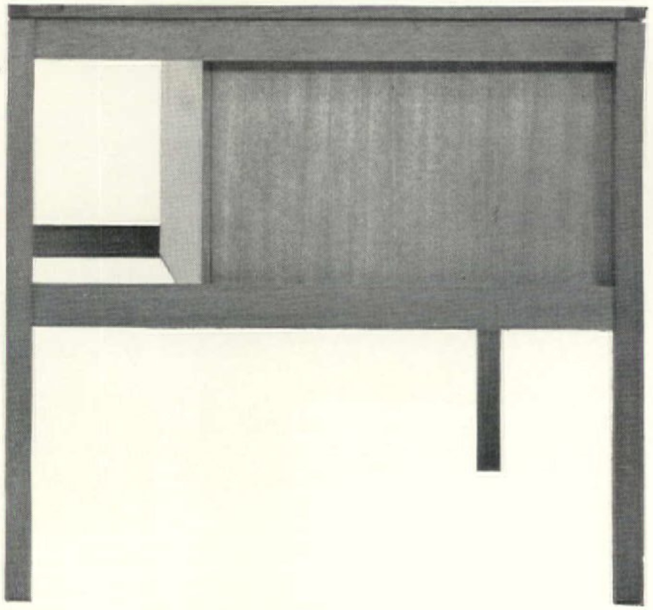
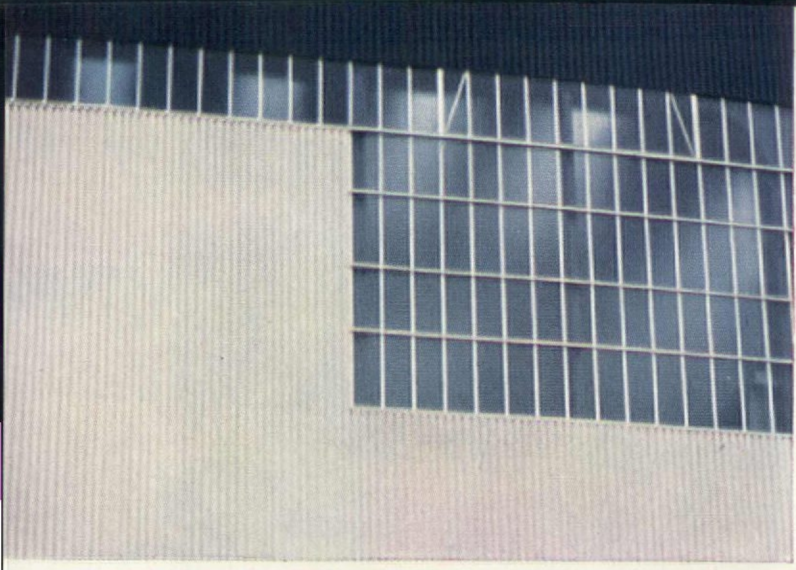
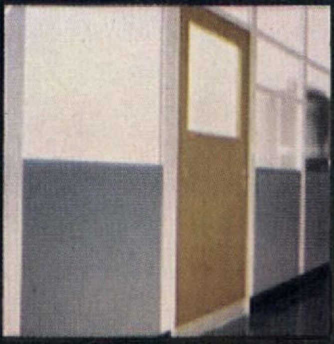




LUCAS FURNITURE Double pedestal desk, Model LD46 from the Lucas Range. Designed by Herbert Berry FSIA and Christopher Cattle MSIA, it is available in mahogany or oak at £35 12s including tax. The construction used makes it easily demountable for access where space is limited. The Range includes double and single pedestal desks, tables and storage. Lucas provide furniture for all contract needs. Four ranges of desks, tables, storage, plan chests, beds and a wide range of chairs. On show in The Design Centre, London, and in our showrooms. Write or telephone for details to Lucas Furniture, Old Ford, London E3, Advance 3232. Barbour Index File Number 410



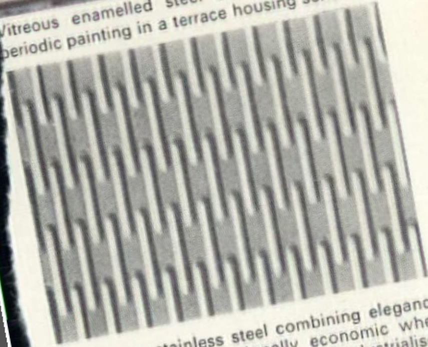
MANY FACES OF MODERN STEEL



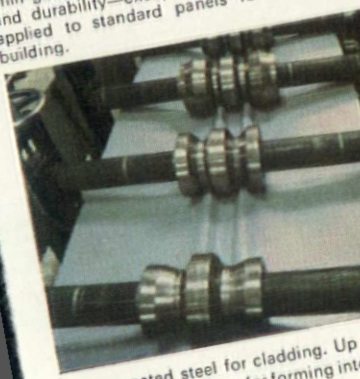
DESIGN IN STEEL

This 4-page inset illustrates some of the many important uses of steel sheet for modern architectural applications.

Vitreous enamelled steel cladding eliminates periodic painting in a terrace housing scheme.



Thin-gauge stainless steel combining elegance and durability—exceptionally economic when applied to standard panels for industrialised building.

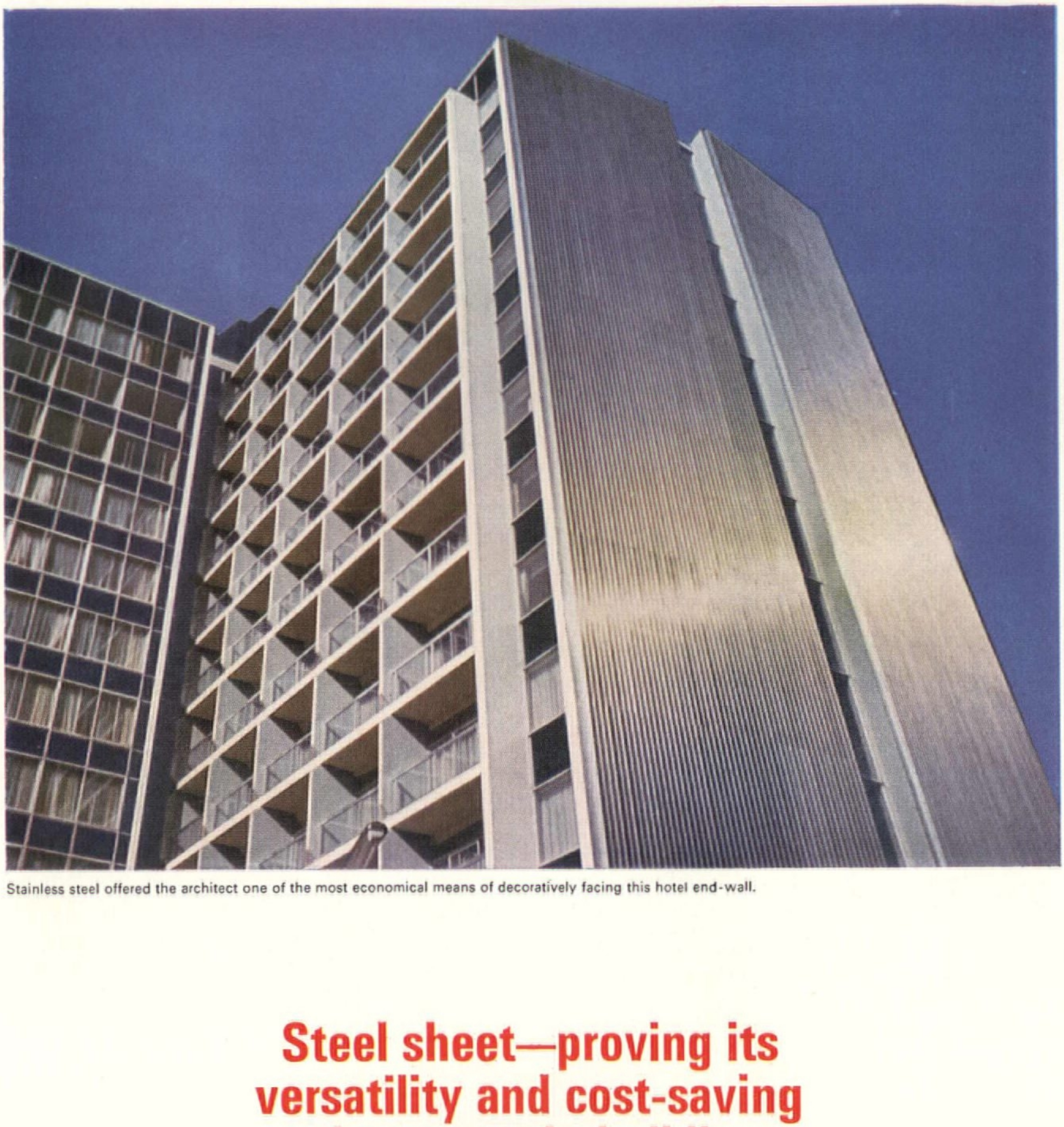


Colour-coated steel for cladding. Up to 52 ins. wide, in many colours, for forming into architectural panels.

Vitreous-enamelled steel infill panels, cladding and facing units have cost-saving, maintenance-free, colourfast surfaces. Panels can be laminated to insulating material to give required 'U-value'. Above: Imaginative use of colour in home design, with vitreous-enamelled steel sheet wall-cladding units.

GALVANISED STEEL SHEET—rigid, rust-resistant, economical. Easily fabricated for—garage doors; rainwater goods; ducting; floor-decking. The most useful and cheapest form of ready-protected structural sheet material. Tight-coated on modern, continuous hot-dip galvanising lines, it is available now in sheets up to 30 ft or *any specified length.* This can speed erection of agricultural or industrial cladding by 30 per cent or more with big savings in labour and material cost.

Attractive long-life cladding Colour `Galbestos' sheet with layers of protective zinc/asbestos felt/plastic outer coating designed to withstand industrial atmospheres. The colour and profile range provides good-looking external cladding. Widely used today to good architectural effect, in giving an attractive finish to projects of many types—from shops and schools to power stations, hospitals and factories such as this AEI-Hotpoint works, near Peterborough.

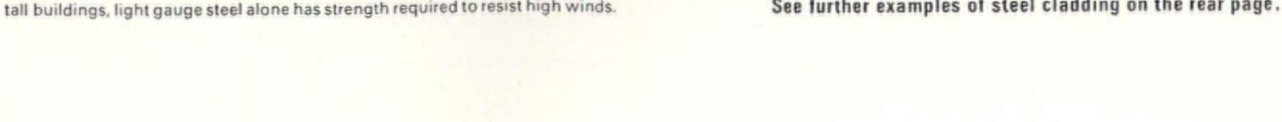


Stainless steel offered the architect one of the most economical means of decoratively facing this hotel end-wall.

Steel sheet—proving its versatility and cost-saving advantages in building

Steel sheet products are giving designers and architects wider scope than ever for freedom in the expression of imaginative ideas for enclosing, cladding and facing modern structures.

An unrivalled strength/cost/weight ratio. Steel sheet possesses a high strength-to-weight ratio and usually costs less than competitive sheet materials. This often permits important structural savings, reduces transport costs and site handling, speeds erection, and allows lighter, cheaper foundations. Corrosion-protected and permanently colour-finished steel sheet is now used in many building products—for cladding, decking, and various decorative and structural duties. It may be colour-clad on one or both sides with durable plastics or special paint films. No finishing process is required. Long-life colour coatings save the expense of future painting. Stainless steels too, are also being used more economically to give architectural projects superb appearance, high strength and durability—plus the practical and economical virtues of maintenance-saving, corrosion-resistant surfaces.

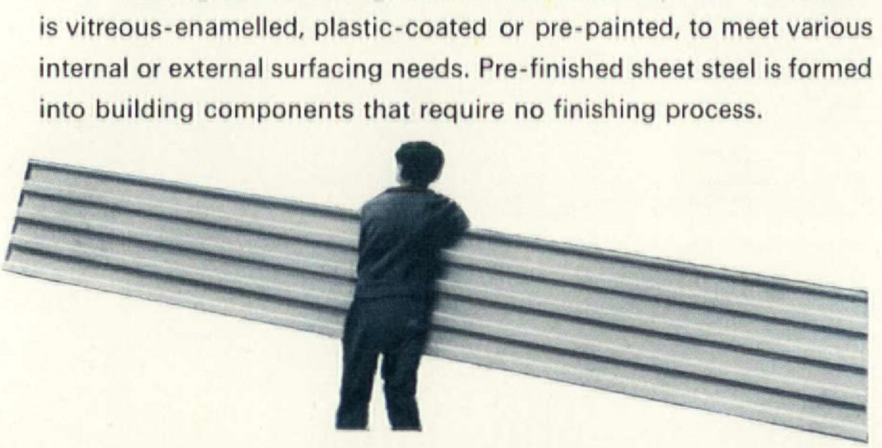


Plastic-coated steel infill panels, mullion and stanchion covers. For cladding tall buildings, light gauge steel alone has strength required to resist high winds.

See further examples of steel cladding on the rear page.

Bringing new COLOUR to industry

Steel cladding products—add fresh colour to the industrial scene. Modern factories and industrial buildings should be colourful, stimulating to work in, have aesthetically pleasing interiors and exteriors. Sheet steel wall-cladding and roofing products—many with durable corrosion-resistant colour coatings—now provide a wide selection of attractive profiles, textures and colours. Lightness of strong steel sheet panels permits quick, easy site handling and helps to cut both structural and erection costs. Big maintenance savings are also possible. Painting on site during construction is not required. Sheet steel is vitreous-enamelled, plastic-coated or pre-painted, to meet various internal or external surfacing needs. Pre-finished sheet steel is formed into building components that require no finishing process.



1 Attractive colours in plastic coated steel give brighter surroundings for work at this new Highways depot for Shrewsbury Borough Council. **2** Ford Parts Depot, quickly and colourfully clad. Decorative, durable p.v.c. plastic-coated sheet steel banishes drabness, never needs painting. Light, easily-handled troughed sections speed erection. **3** Neat, aesthetically pleasing cladding of U.K. Atomic Energy Authority Research Establishment, Reactor Physics Building, in Colour 'Galbestos'—fully-protected steel sheet core, colour-coated finish. **4** Bright new colourful face—with vitreous enamelled steel facing panels, used to modernise the Welwyn Garden City factory of Nabisco Foods Ltd.

1

2

3

4

REFERENCES **COVER** ☐ Stainless steel frontage, The Centre, Feltham, for Hallmark Securities Ltd. Fabricators: Culford Art Metal Co ☐ Colour 'Galbestos' industrial cladding by Robertson Thain Ltd. at C.E.G.B. Dungeness Nuclear Power Station. Contractors: Sir Robert McAlpine & Sons Ltd. Architect: Maurice H. J. Bebb ☐ Curtain wall with blue 'Escol' vitreous enamelled steel panels, Winchester House, London Wall, owned by St. Martins Property Corp. Ltd. Main Contractors: Trollope & Colls Ltd. Architects: Gunton & Gunton ☐ Maintenance-free partitioning fabricated from plastic-coated steel sheet ☐ Brake press forming of colour coated galvanised steel into architectural cladding. **INSIDE PAGES** ☐ Stainless steel troughed wall-facing of Royal Garden Hotel, Kensington. Architects: Robert Seifert & Partners ☐ Plastic-coated steel infill panels and facing of Philcote clothing factory extension. Fabrication and erection by F. Braby & Co Ltd, Glasgow ☐ Yellow vitreous enamelled infill panels by Vitreflex Ltd in terrace housing at Whitland, Carmarthenshire. Architects: H. A. Metcalfe. Contractors: Cambrian Construction Co Ltd ☐ Modern home with vitreous enamelled steel wall units, photographed by permission of the owner, Mr. F. Kobler. Architects: Bronek Katz & R. Vaughan ☐ AEI-Hotpoint factory, Peterborough. Contractors: Sir Robert McAlpine & Sons Ltd. Architects: Walker, Harwood & Cranswick. ☐ Factory-built panels by Hawthorn-Leslie (Buildings) Ltd. **REAR PAGE** ☐ Shrewsbury Borough Council Highways Depot. Designed by Architects Section of the Borough Surveyor's Dept. ☐ Ford's new West Thurrock Parts Depot. Cladding by The Ruberoid Co Ltd. Construction by Taylor Woodrow Construction Ltd. ☐ Reactor Physics Building, U.K.A.E.A Research Establishment, Winfrith Heath. Contractor: Robert Watson Ltd, Bolton. Colour 'Galbestos' cladding by Robertson Thain Ltd. ☐ Modernised building of Nabisco Foods Ltd. Welwyn Garden City. Architects: Charles W. Fox. Contractor: Headway Construction Co. Ltd. Vitreous enamelled steel facing panels by Edward Curran Engineering Ltd. Cardiff.

DESIGN IN STEEL

BRITISH IRON & STEEL FEDERATION STEEL HOUSE TOTHILL STREET LONDON SW1


TRUE
FLUE

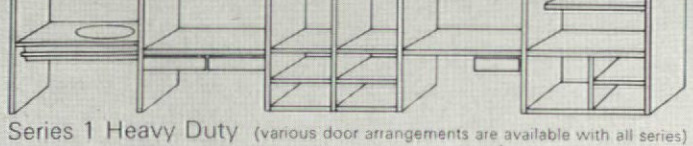
Besides being beautifull
erected, endlessly adaptable an
Storage Wall System actuall

Look

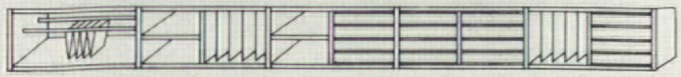
The Hille Storage Wall System is a compact, flexible, knock-down wall storage system, in four series, suitable for storage and working requirements in the home, in hostels, in universities, and for shops, offices and other work places. It is designed to conserve costly floor space by making use of vertical/horizontal wall areas. Fixed to a wall or partition, it can equal the capacity of any kind of conventional furniture yet increase the circulation area of the room.

It is easily and quickly erected. Metal channels are fixed horizontally to the wall, panels are then hung from them at right angles and components to make up each functional unit are suspended between the panels. Components are based on the international 4" (10cm) module and are finished in pencil striped end grain veneer and in mahogany. Shelves and horizontal working surfaces can also be surfaced with melamine.

Series 1, which won a Design Centre Award, is suitable for heavy duty contract use in universities, hostels, hotels and offices. Series 2,



Series 1 Heavy Duty (various door arrangements are available with all series)



Series 2 Low Units

designed and made, easily extremely economical, the Hille saves floor space. How?

no feet!

3 and 4, designed mainly for domestic use, provide exactly the storage needed for bedrooms, dining-rooms, studies, bedsitters, etc. As a guide to the possibilities of this system, Hille have planned over 250 bay assemblies and, by combining two or more of these, most people will be able to meet the most exacting requirements—although those who wish can plan their own assemblies ad infinitum. In any case, the Hille Interior Design Organisation is at your disposal.

The Storage Wall System is also available through the Hille Leasing Service. Details of this new service and further information about the Storage System can be obtained from Hille showrooms. **London:** 41 Albemarle Street, London W1. Hyde Park 9576. **Watford:** 134 St Albans Road, Watford, Herts. Watford 42241. **Birmingham:** 24 Albert St, Birmingham 4. Midland 7378. **Edinburgh:** 25a South West Thistle Street Lane, Edinburgh 2. Caledonian 6234. **Manchester:** 50 Sackville Street, Manchester 1 Central 6929.

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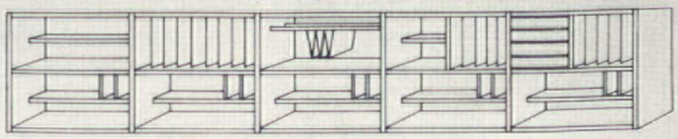
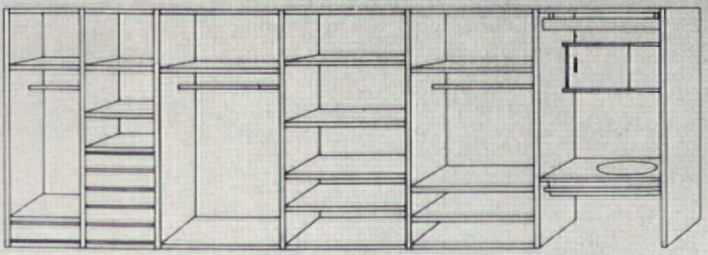


Series 3 Medium Units



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LE CORBUSIER COLLABORATORS

Last month, in the feature on some of Le Corbusier's recent work, we regret that we omitted to name his collaborators Guillermo Jullian de la Fuente (Venice Hospital and Brasilia Embassy) and José Oubrerie (Firminy Church), both of whom not only helped on the design but have been commissioned to build these works.

The month in Britain

Michael Manser

The Ministry of Housing reported that the downward trend of house completions was continued during March. Four more systems, Kincorth, Miller, Multigrid and Skarne received NBA Scottish appraisal certificates, and in Windermere a plan was unleashed for a 'Florida style development' involving one of the largest-ever property developments in the Lake District. The Minister of Housing and Local Government designated 25,200 acres as the site of the proposed North Buckinghamshire New Town, decided to extend the new town of Aycliffe, County Durham, by 1643 acres, and told local authorities they may resume advances for house purchase. His opposite number at Building and Works discovered that stocks of bricks increased by 35 million at the end of March. And natural gas was found in the North Sea and Yorkshire.

In Hastings an aluminium triodetic dome was erected in four days to house part of the 1066 celebrations, an expert claimed that a Briton designed the Bayeux Tapestry, and General de Gaulle did not, after all, ride in a British Hovercraft. Electric runabout cars for urban areas were demonstrated in London (see page 314); and in Middlesex at the Road Research Laboratory it was discovered that a 1955 car weighing 2475lb and travelling at 29 mph penetrated 54ft into a hedge of *Rosa multiflora japonica*.

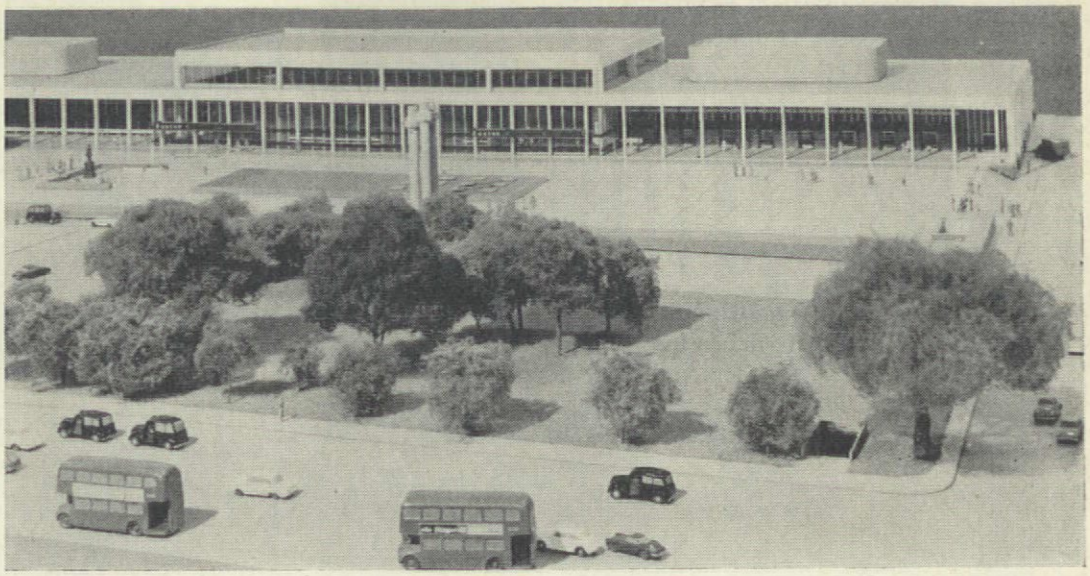
Coventry Department of Architecture and Planning announced a post-graduate scholarship scheme for this summer's graduates. Newcastle University School of Architecture published a new magazine called *Datum* and took a soft chop at the sadness of architectural ideas having to 'be presented in Superman type comic strips'. And Southend Department of Architecture announced its impending death.

The RIBA banned the international competition announced by the Brenta Precompressi Company of Italy. And at their (RIBA) Annual General Meeting, members seemed more concerned with the trivia of professionalism than with the ever present 'package deal' threat.

Pilkingtons received a Queen's Award to Industry, the Society of Architecture and Associated Technicians became the first associated society of the RIBA, and the Design Centre celebrated its tenth birthday. More news was published about the September RIBA conference in Dublin, including the unlikely title of a paper by Eric Lyons entitled 'Managing without design', and a great gloom fell on the profession with the announcement of a payroll tax. Few architects were excited by the open-air building exhibition at Crystal Palace hopefully named IBSAC. The Postmaster-General officially opened the Post Office Tower.

AD map/guide to London architecture

AD is preparing a new series of city architectural map/guides showing outstanding buildings of the 18th, 19th & 20th centuries. The first guide will feature London and will be included in the July issue.



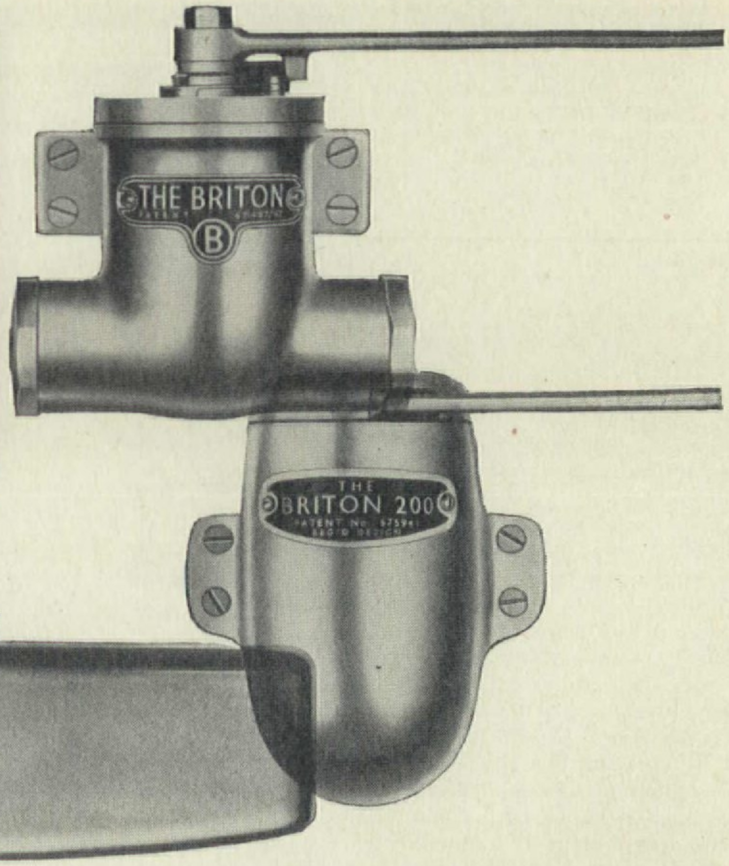
The Euston story

It was early in 1962, after the demolition of the Euston Arch, that Taylor Woodrow was awarded the contract for the building of stage 1 of the new Euston Station. Expectation and enthusiasm were almost magical. Up front the station was to become a whole new interchange, a city centre in miniature—well, not exactly miniature: there were to be 3,000,000ft^2 of offices, over a hundred shops, a 500-bedroom hotel with an adjoining conference centre, entertainments centre and all the paraphernalia of a full-scale development. It was even thought that with a first floor pedestrian walkway linking it to the Levy development at the corner of Hampstead and Euston roads, the complex might rival Piccadilly Circus in glitter and certainly in amenity. There was not only the Levy development to link up with; to the south was Sir Leslie Martin's University of London precinct, to the north new St Pancras housing estates. A team of architects was gathered together under Theo Crosby, and the design laboriously prepared during the early sixties by British Railway's architects under W. R. Headley was subtly altered, twisted and finally cast aside. Sheafs of new drawings were made. But some things were not allowed to be altered. The level of the tracks was an absolute, as was the position of the new buffer stops, which were designed to make all platforms of an equal length and long enough for the proposed new trains that BR planned to shuttle in and out of the station by 1966. It was the position of these buffer stops that had determined the demolition of the arch. Once declared expendable, its site was earmarked for the new Underground station. But the position of the entrances to this were still flexible.

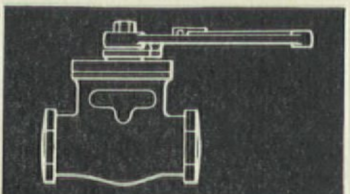
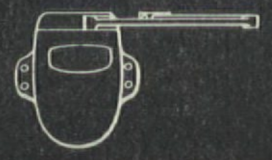
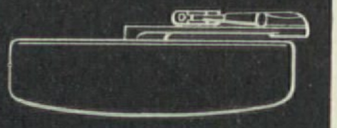
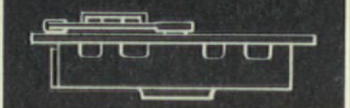
Despite all eagerness and merry freedom, however, things began to go wrong. The LCC was not prepared to allow the vast office development, and the office area was cut down to BR's own requirements. The LCC conceded, however, that the towers could be filled up with flats. This made of the scheme something other than that first envisaged and it was difficult to sustain the financiers' interest in an 'unbalanced' development. Interest lagged. Meanwhile the station had to be built to meet BR's electrification programme. With the prospect of a lesser revenue from the frontal development, money was not made available for the parking garages planned for that area over the tracks not already taken up by the parcels depot. Parking here was cut out and with it the whole complex of ramps that were to take taxis and cars up to the top deck. This made the traffic organization in any future frontal development an almost insoluble problem (the LCC having already determined that the eastern part of Euston Square was to become a traffic roundabout). Proposals and counter proposals were made. The affair seemed a mess and it is difficult to disentangle the thread of events—not that it is necessary. Within a few years interest had virtually lapsed. Crosby's initial team had gradually drifted apart. In 1964 he himself felt bound to resign. The initiative reverted once more to the BR architects, by now led by R. L. Moorcroft. But the only dramatic change affecting the frontal development was a decision by the railway authorities to move back the buffer stops more than 60ft. (Alas, poor arch!) This greatly increased the area of ground available for a frontal development which was by now whittled down to almost nothing. So that the model now proposed as the new Euston development is little more than an inflated concourse with a warren of parking garages and taxi set-downs below. The waste of energy and time involved in the extended programme is iniquitous. But the waste of this vast and valuable site is likely to have an even longer lasting effect.

British Railway's architects' early research showed that most travellers arrive by Underground, their tickets to hand; the inflated concourse is not necessary, it sustains only a nineteenth-century image of a railway station. The present concourse is thus, patently, a space filler. The vast windswept piazza planned in front of it is likely to be even less useful, though some of this boundless area of paving, it is hoped, will still be taken up with a hotel and ancillaries. But this will be a separate development. The prospect of making a great new focus on the northern fringe of the centre of London is lost and in compensation we will have only a concourse of the most ordinary, lack-lustre kind.

WHICH briton TO CHOOSE



FOR MAXIMUM ECONOMY AND EFFICIENCY

briton		The orthodox surface fixing closer that is made in various sizes and types to suit every door whether internal or external. Suitable for both left and right hand doors without alteration.
briton 200		A stylized version of the Standard Briton, for internal or external doors up to 112 lbs. Suitable for both left and right hand doors without alteration.
briton 502		A new closer styled to blend with today's architecture. With the projection from the door being only 1¾" the Briton 502 is ideally suited for situations where the space behind the door is limited. For internal doors weighing up to 112 lbs.
briton 500		A concealed closer for situations where surface fixing is undesirable. (Latch action back check and hold-open are incorporated as standard.) For doors weighing up to 112 lbs.

See our exhibits at the Building Centres, London, Birmingham, Manchester and Glasgow. All details can be found in the Barbour Index, File No. 53 and the Gorco Bureau, File No. 44/3.

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NEWMANS

IBSAC 66

Alexander Pike

Contesting the total of 400 industrialized building systems quote by *The Times*, the latest edition of the *Comprehensive Industrialized Building Annual** confirms its previous estimate of 260 viable systems. It gives no coherent basis for the measurement of viability of any system, nor does it suggest the maximum number of systems the market is capable of sustaining.

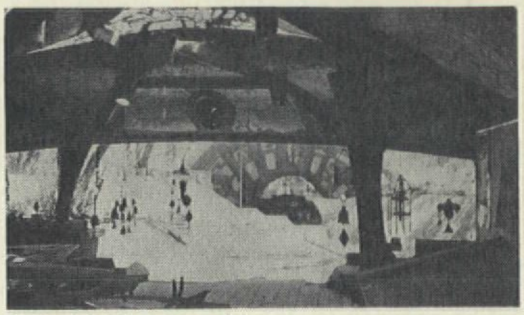
Discriminating observers must view with anxiety some of the opinions on the quality of industrialized building now being irresponsibly committed to print. If correctly reported, Cleeve Barr considers that the 33 systems originally appraised by the NBA compare very favourably with any similar group of 33 random pictures one might take of typical local authority suburban housing. This is a very short yardstick indeed by which to measure optimum standards, made even more ominous by the implications of a sponsor who claims that 'even if the aesthetic prospect is not so hot, doesn't it come down to the question of sheer numbers to be housed?' Ardent proponents of industrialized building will have found little to raise their hopes or allay their fears at the IBSAC 66 Exhibition last month, where the jingoistic waves of a form of commercial solipsism made the choice of the Crystal Palace site truly ironic. Much of the space was occupied by manufacturers of materials having marginal or obscure connections with industrialized building, and many of the housing systems displayed little evidence of considered design.

Two features made a visit profitable:

Allied Ironfounders' experimental services wall showed an intelligence rare amongst manufacturers in its coordination of the essential elements of kitchen equipment.

The reinforced plastic cladding panels by Indulux Engineering, designed by the GLC with F. G. Minter and Redpath Brown (see *AD*, December 1965).

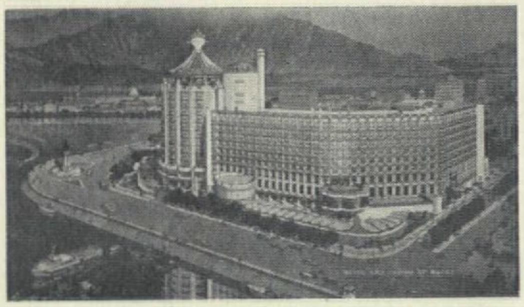
*House Publications Ltd. £3 12s.



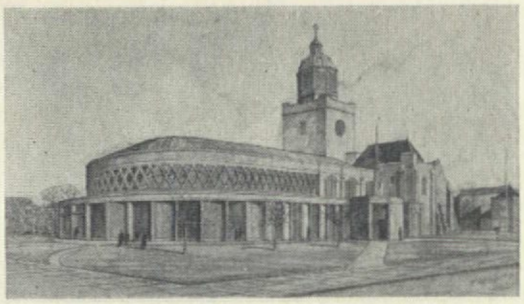
Soleri in the sunshine

Paolo Soleri's hideaway in the Arizona desert, photographed in the spring-time, the sun shimmering and the wind-bells tintinabulating, provides an image, in a minor key, of his great Mesa city projects and the effect, one is bound to confess, is of a subtopian romantic sort.

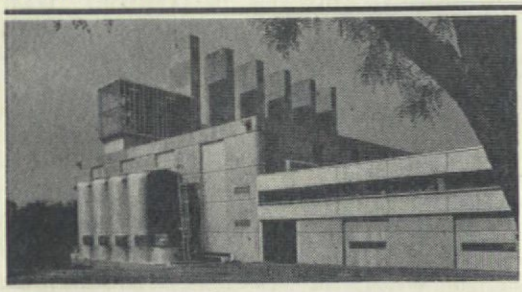
L'Oeil, February 1966



Architecture represented in the Royal Academy Summer Show was of a catholic range. Eric Cumine showed his hotel and casino at Macau.



D-Day Cathedral for Portsmouth by architects Seely and Paget, with Professor Pier Luigi Nervi as principal structural consultant.



Aldershot powerhouse

Building Design Partnership's recently completed power and heat generating station for the military town is of particular interest in that the architects were able to control those elements of the building which influence the architectural expression—their idea being that the building should evolve from engineers' sketches of optimal plant layouts rather than the plant being shoehorned into a preconceived powerhouse image.

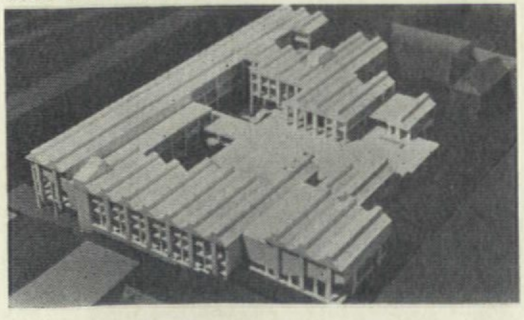
The elements of the building group (power house, oil store, offices and stores) are grouped around the maintenance courtyard to give some weather protection to this work space and some control of working paraphernalia.

The architects' other design principle was simplicity of form to emphasize the character of the building: the result is neat.

Washington University Competition

The competition for Washington University's new social science centre and law school has been won by George Anselevicius, Roger Montgomery and Dolf Schnebli—an oddly assorted team. Anselevicius, a native of Konigsberg, graduated at Leeds, worked in England until 1947, and then in the USA with Skidmore, Owings and Merrill and afterwards with Yamasaki. Montgomery is a Harvard graduate, while Schnebli, another Harvard graduate, is of Swiss origin, an ex-associate of Gropius and the designer of the house at Campione (AD Sept 1962).

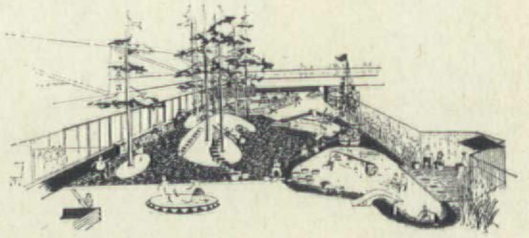
The plans of their new building for Washington are not yet available, but the model suggests, despite all other influences, something of the Corb-Kahn syndrome.



Children's play

At Expo 67

Cornelia Hahn Oberlander, Vancouver landscape architect, has designed the outdoor play spaces for Montreal Expo 67's 'Creative Center', which will take care of the 3 to 11-year-old visitors to the Canadian Pavilion. The 'Center' is to demonstrate teaching methods that guide youngsters' creative imagination, and will include nursery school, and drama, music and art classes.



The playgrounds have sun and shade and covered portions. The equipment is designed for its play value, to stimulate use of muscles and the child's natural desire to climb, balance and explore, 'pan for gold', build boats, experiment with sound and vision, play with sand or pets, etc. Parents can watch from the bridge.

At Lanham, Maryland

Princeton University's sculpture professor Joseph Brown, rightly maintaining that 'play is nature's way of preparing the living creature for the responsibilities of maturity', has been designing play equipment which he calls 'a play community' where varying ages can mix. One is a fibreglass whale incorporating a slide; another, the 'jiggleweb', consists of a series of ropes attached to four corner columns, where movement at any point affects all parts and the children have to adapt to the effects of each other's actions.

The latest (highly popular), at Lanham, consists of 'neoprene-clad stainless-steel cables attached to rubber tyres and wooden "boats" ', and exploits Brown's pet theory of 'challenging the child with the unpredictable'.

Fortune, 11/65

East–West colloquium, Beirut, March 1966

E. Maxwell Fry

A group of experts who met in Athens in 1963 under the aegis of the East–West programme of UNESCO, to study the problems of housing and urban structures, met again last March in Beirut. Both meetings merely resulted in laudable but circumlocutory aims being proposed. In the interim the problems have become acute to the point of crisis.

It seems to me that such conferences can actually cause harm in suggesting that solutions can be found by such academic and bureaucratic means. If all the money spent were to have been given to one expert for his opinion, it would have been better spent.

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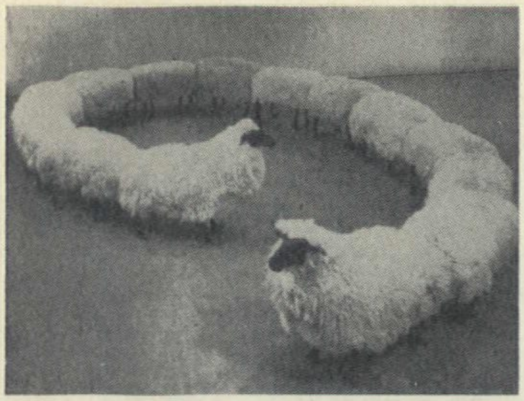


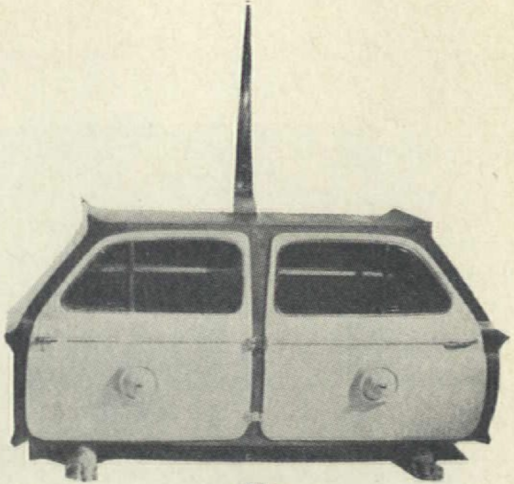
1

2

Way-out furniture

Anything for a change. If architects are unwilling or unable to indulge in follies, then the furniture designers feel that *they* must. François Lalanne, who first startled Parisians with the rhinoceros that he exhibited at *Galerie J*, showed a new range of chairs at the *Salon de la Jeune Peinture* this year in the form of sheep or semi-sheep. They can be formally grouped **1** or free ranging **2**. In New York an exhibition of Fantasy Furniture, by five different designers, at the Museum of Contemporary Crafts has determinedly set out to prove that furniture need not be for use; it can be designed just to fill up space and perhaps prompt mirth. And it can poke fun at the stylists. Fabio de Sanctis and Ugo Sterpini's walnut buffet has Fiat 600 doors and a tail fin **3**. All, however, is not mirth. Pedro Friedeberg's clock might be a surrealist finger exercise **4**, but his stated intentions have other points—'I am particularly fond of social problems and cloud formations,' he writes, 'I am an idealist. I am certain that very soon now humanity will arrive at a marvellous epoch totally devoid of Knoll chairs or Danish coffee tables, and the obscenity of Japanese rock gardens 5000 miles from Kyoto.'

Vogue (France), April 1966; *Industrial Design*, March 1966; *Progressive Architecture*, March 1966



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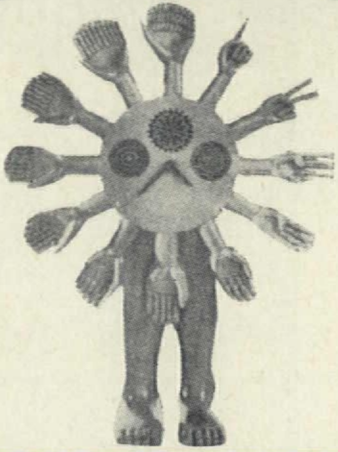
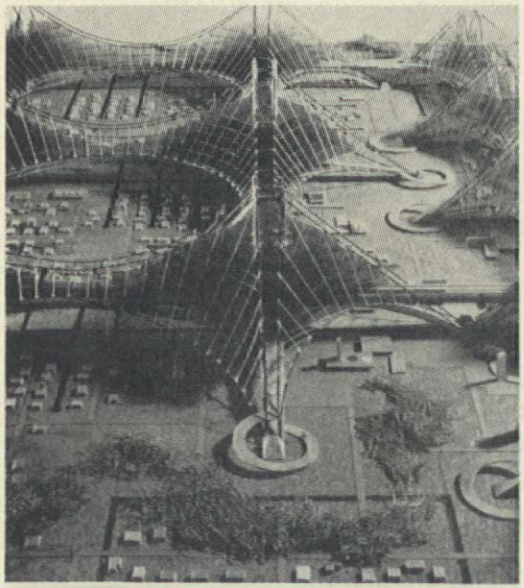


4

Japan plans

Y. Hosaka and his group have a proposal for creative cities. The ground is to be freed for 'living' man; giant suspended platforms and a network of roads are to be built for 'organization' man—the natural environment in sharp contrast to the artificial one. The oddity is that the artificial environment is made to loom ominous over the natural one.
Kenchiku Bunka, November 1965

5



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The flying house

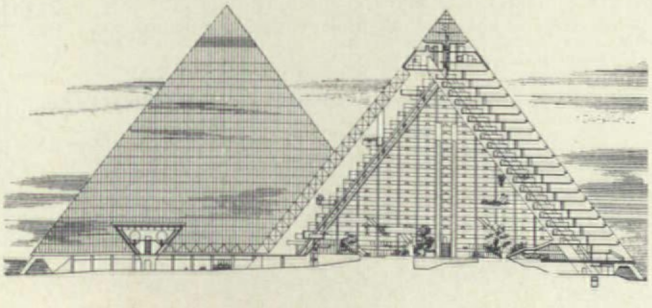
Warren Chalk

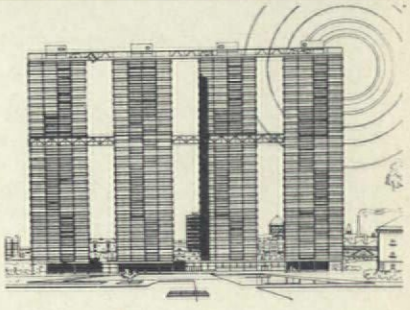
In the current preoccupational climate of mass-produced capsule dwellings, one of the principal constraints has been the bulk restriction discipline imposed by existing road, rail and shipping transportation regulations governing the size of objects in transit from factory to site. This inevitably swung opinion in favour of on-site assembly kit ideals as opposed to a complete factory-assembled product. Recent developments, however, in Russia **6** and the United States **7** with helicopter transporters could well lead to increased development in the other direction. The Buckminster Fuller helilift *key image* **8**, so long with us, may soon be due for revision.
Paris Match

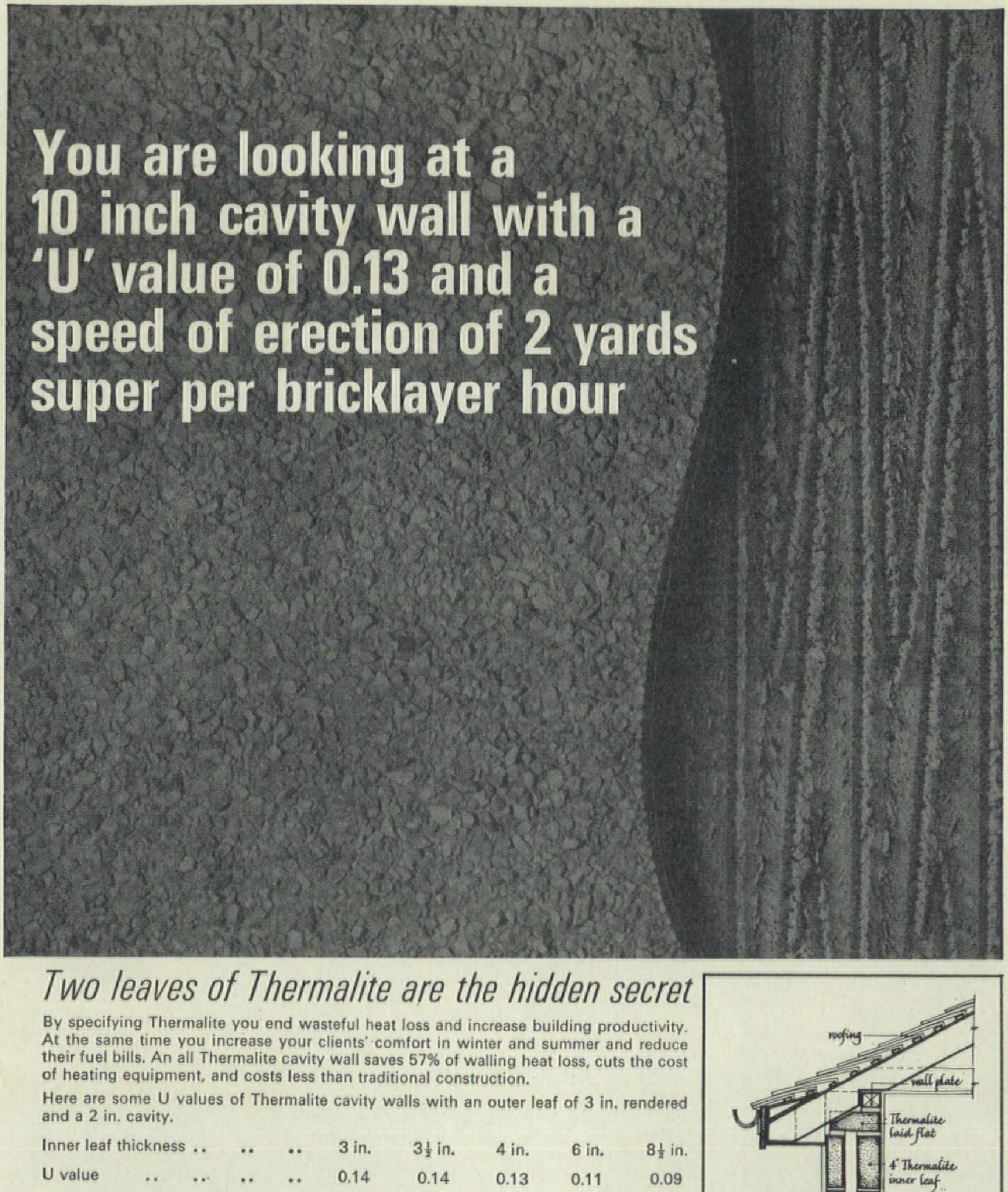
8

Technological environment

Constructivism, it has long been taken for granted, is a dead cause in Russia. But suddenly, with the need to build tenable living environments in the new lands of Siberia, bold and altogether surprising projects on the Constructivist theme—and far better worked out than any previous ones—have been published in the Russian journal *CCCP*. Nor are they utopian images; they are likely to be built.
CCCP, 10, 1965







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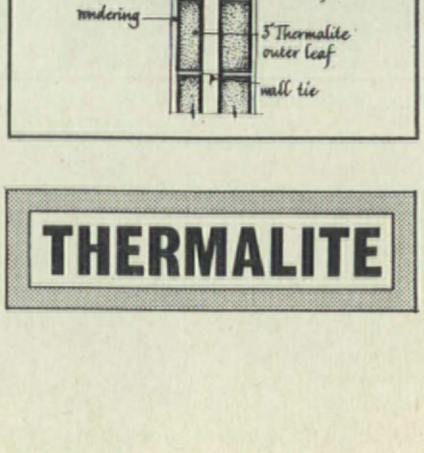

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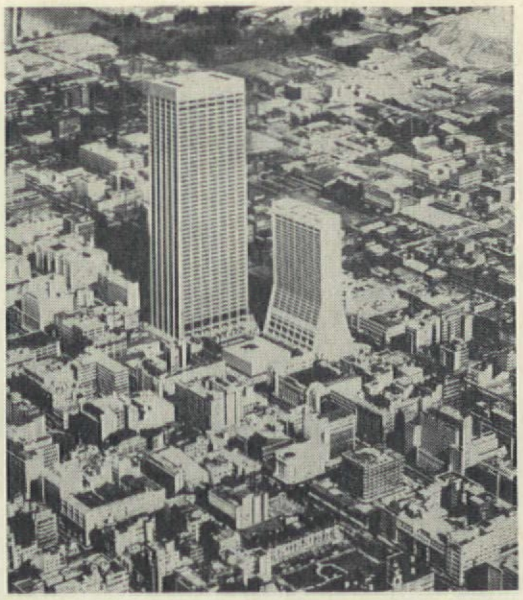
A vision of towers in Johannesburg

The proposed Carlton Centre in Johannesburg **1** by SOM (together with Rhodes-Harrison, Hoffe and Partners of Johannesburg) seems, at first sight, the outcome of a giant fantasia of finance and profit. And indeed it was probably intended to be. The grandest and tallest buildings in town—a 51-storey office block, a 37-storey hotel—would have been an inevitable attraction. Set down on the relatively undeveloped south-eastern fringe of the central commercial and business area, they would have ensured not only a handsome increase in the value of their own site (the old South Africa Brewery), but in that of surrounding sites—that is if the Anglo-American Corporation had been astute enough to buy them. Unfortunately they were not. Architects were called in to work on the giant enterprise long before the traffic consultants. Word was bruited about before anyone realized that though four city blocks were to be united by street closures to form the site it would not be an island unto itself and that to provide adequate parking and access ramps yet more property would have to be acquired. Surrounding owners were gleefully stubborn. The cost of the extra parcels of land virtually eliminated all hope of easy profit. Bad for business but fascinating to moralise about. Anglo-American have been able to underline their civic responsibility in providing ramps and underground access routes and parking for 3000 cars (this, at a moment when Johannesburg planners are about to legislate against the provision of parking in the central area in the hope of reducing the traffic). In addition, Anglo-American publicists have made great play about the increase in the open space available to the public, 3¼ acres of gardens and plazas. Much of this area will be under buildings, most of the rest was in any case accessible to the public in the form of pavements and roadways. Very little is being given away. Not that the enterprise in uniting four city blocks in this manner should be lightly overlooked. A reduction in the number of traffic intersections would certainly ease the traffic congestion aggravated by the tight grid of Johannesburg's old mining-town street pattern. But this must be part of an overall scheme. More problematical is the effect of the development on the nature of Johannesburg's centre. This is cubic, compact and of a particular scale—few buildings are more than 14 storeys high. Even allowing for the montage-maker's license, the SOM towers are in gross contrast to the city's scale and there is a looseness about the relationship between the oddly assorted towers and low department stores that will break the town's texture to no positive resultant effect. The vaunted plazas have little sense of 'place' and the unusual height of the towers will dominate not only the streets but the little other open space that there is in the central area, robbing it of scale and what little sense of amenity it may have. But perhaps the photo-montage is mere kite-flying and there is still time to weld the disparate towers and department stores into a cohesive whole, related to the entire central area and taking the fullest advantage of the unification of four city blocks.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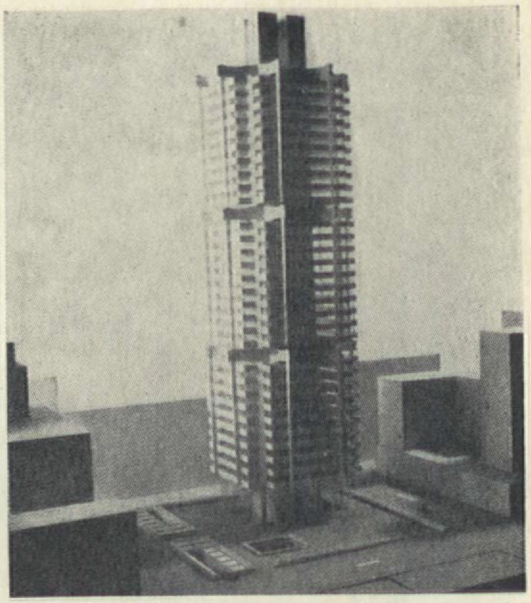

2

At the south-west fringe of the central area something of this nature is being attempted in the new Standard Bank Tower by Hentrich and Petschnigg of Düsseldorf **2**, in association of Stucke, Harrison, Ritchie and Partners of Johannesburg. Here the problem is simplified by the proximity of the site to Hollard Street, which has already been pedestrianized and so provides a point of departure for a new plaza (though the two open spaces are oddly divided by access ramps), but the height of the tower—35 floors—and the looseness of its relationship to surrounding buildings is no less at odds with the nature of Johannesburg's development. Will these two schemes effect a radical change or are they merely odd men out?

SA Architectural Record, February 1966

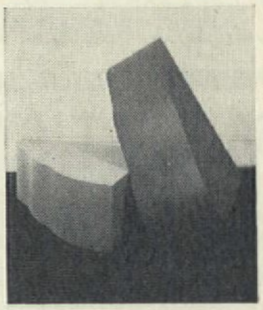
William Tucker

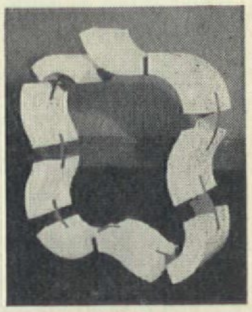
Jasia Reichardt

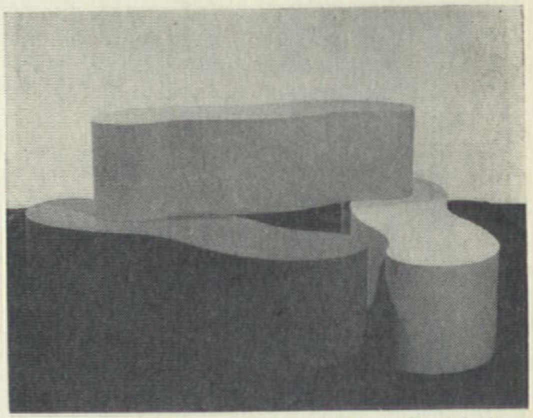
Tucker's sculptures consist of simple multiple shapes related in sequence. The forms are made in plastic and suggest thick slices with curvilinear edges painted uniformly in one colour, some glossy, some matt. The colours are synthetic rather than primary, and muted rather than brilliant. What is remarkable about these works is the dichotomy between the simplicity which the above description suggests and the impact conveyed. The forms themselves bear no associations to either natural forms or artifacts, they could be better defined as an inventory of elements strung together like language. One's response is provoked by the relationship of these forms—two, three, or more elements arranged in both formal and chromatic sequence, with a straightforwardness that makes nonsense of any attempt at analysis as to why such a simple and almost obvious formal theme should work. What is more they are both monumental and sensual.

Since Brancusi eliminated the pedestal as a subsidiary structure by making it a part of the work itself, the pedestal has suffered gradual and eventual total rejection. Today, particularly in the case of those young sculptors who make use of steel construction and plastic casts, one looks at sculpture from a different vantage point. The majority of works in this idiom, and Tucker's among them, are placed directly on the floor, and since few of them are tall, the viewer is likely to look at them from the top.

It is difficult to find either ideological or visual precedents for this sort of sculpture. Until the late 1950s sculpture movements in Britain found their basis in, if not a native, at least a European culture. The generations of Moore and Chadwick represented a sort of logical development in the use of materials, techniques, images and associations from what had gone on before. The movement of plastic sculpture has no such roots. Its roots are more firmly founded in ideas expressed by artists during the past 40 years than the actual objects produced. Ideas often precede their realization, which in its turn may seem irrelevant when the realization is fulfilled. What is strangely relevant in the case of Tucker and the sort of preoccupation he represents is that his work is analogous to a sphere of experience without references to other art or other objects. Closer to the work of contemporary painters than the body of twentieth-century sculpture, it taxes one's responses by questioning the validity of what exactly it is that one looks for in art. What does it help one to know that the names he gives to his works are the names of places in Egypt, that the pieces themselves evoke the impression of Egyptian architecture, or that these strange agglomerations of shapes have any topographical connections at all. This is not necessarily relevant to the problem of confrontation between the sculpture and the sort of equipment and experience one brings to it. One must simply get used to the idea that sculpture, such as Tucker's, cuts across the barriers of expectancy and preconceptions.


Luxor 1966


Orpheus II 1965


Memphis 1965–66

Photos: Errol Jackson

Around Britain—6

The East Midlands

Robert Cullen

Personalities make or break situations. The East Midland is fortunate in having five:
Smigielski—City Planning Officer, Leicester.
Jack Lowe—County Planning Officer, Nottinghamshire.
David Jenkin—Nottingham City Architect.
Henry Swain—Nottingham County Architect.
Arthur Ling—Professor of Architecture and Civic Planning, Nottingham University.

They have all come to the East Midlands in the last two to four years. It is now possible to assess their impact.

The Leicester Traffic Plan is well known, it was a most thorough and comprehensive document; unfortunately it is suffering the fate of many plans which have been first in the field. Unless the Ministry decides to make Leicester a special test case the £130,000,000 required will not be forthcoming, and the whole basis for the plan will have to be reassessed. This is most discouraging and Smigielski, because of his pioneering effort, is a deserving case for special consideration. The Rowlatts Hill Housing, Leicester, is now nearing completion and the four nine-storey blocks have been replaced by two 23-storey towers, which it is claimed are the highest prefabricated residential tower blocks in Europe—a typical Smigielski move. This scheme was conceived in 1962 and the tall towers **1** are an improvement, but the low rise housing **2** does not come up to the original conception. Stephen George is the City Architect who has implemented the scheme, and one suspects that his staff somehow did not put enough love into stages D and E.

David Jenkin, the Nottingham City Architect, has now been in Nottingham for two years. There are no examples of his work on the ground, but he has set up a most interesting and stimulating department housed in a group of converted seventeenth and eighteenth-century buildings. These buildings provide a fascinating labyrinth of spaces eminently suitable for creative work. The office is run as a consortium of groups with strong affinities to private practice. The aim is to create the total environment for a given area, and not to restrict groups to one building type. The groups have the benefit of central services consisting of technical library, cost planning, administrative and programme planning. A Cellar Club provides a regular staff meeting place, and parties are occasionally held with private and other public architects. Monthly exhibitions are held in the entrance hall, providing another stimulus and coming-together of people and ideas. David Jenkin wants his office to be a place where everyone cares deeply about architecture as a built-in condition of everything they do, and where a nine-to-five mentality is non-existent. Dogmatism is discouraged.

The planning position in Nottingham is that there is no plan, but to a certain extent this has given the architects more freedom to analyse situations within their own terms of reference. Broader concepts of densities are non-existent and therefore the architect can make his full contribution towards establishing the density of various sites **3, 4**. This seems a crazy situation, but may result in stimulating architecture.

Jack Lowe, the County Planning Officer for Nottinghamshire, has been working for two years. His main contribution to date has been in forming a landscape policy. He has a planting programme of 10,000 trees per annum. Last year 5000 trees were planted, mainly as a result of liaison with the CEGB. The problem of power generation in the Trent Valley is an enormous one, which several groups of architects are tackling. Jack Lowe has looked at the total problem and sees some hope in terms of a landscape pattern linking the power stations and relating them to their site. Power stations have become the equivalent of the great country houses and the Trent Valley is their landscape setting. The Trent is used for a great number of activities with increasing pressure from the affluent society: fishing (the fish somehow manage to stay alive), sailing, rowing, outings, speedboats, water ski-ing, skin diving, etc. The land along the Trent is rich in gravel, which is being excavated by the acre. This leaves large lakes, and if excavation is increased in depth two or three feet they are suitable for sailing. The possibilities are obvious and for the first time someone is trying to take advantage of the East Midlands greatest natural asset.

Another scheme of cooperation with a great nationalized industry has resulted in the reshaping of colliery dirt tips at Kirkby. Cooperation is rare (where Government grants are not available) between NCB and county council. Unfortunately the NCB are ploughing up acres of other land with undistinguished housing. Five thousand NCB families are due to come to the East Midlands to work the new coalfields by 1970; they deserve a better fate. Alf* may be a man of the earth, but he certainly is not a man of the spirit if the visual quality of NCB housing in the East Midlands provides any indication.

Henry Swain, the Nottinghamshire County Architect, has continued to develop and improve the quality of CLASP buildings. CLASP is still open to criticism on many grounds. There is no doubt that it is much easier to produce prefabricated buildings on larger sites where the building can be set in the landscape **5**. On smaller sites, in dense areas, where the building must face on to the pavement the problem is different and CLASP in its present form could not start to succeed.

The private sector in the East Midlands is disastrously short of buildings of real quality. A large number of the plum jobs go to the London architects or even the Americans, as was the case with Boots Pure Drug Company's new offices†. The result is generally mediocre. One of the major exceptions has been Leicester University where Sir Leslie Martin gave the then up-and-coming men a unique opportunity, resulting in the Stirling and Gowan engineering block and a good hall of residence and Vaughan College, built around and about Roman remains, both by Trevor Dannatt (*AD*, May 1963).

Sir Leslie Martin has now resigned and the future is uncertain. Spies say that package deals are pre-eminent. Nottingham University never had a Sir Leslie Martin. It has had a Sir Hugh Casson—interior nosh-up only; a Sir Basil Spence—all right for engineering; and now a Lord Holford—all right to be consulted when the university is forced to face a particular problem. The result of all this title-coonery is best left to the imagination. Suffice it to say their effect has been minimal, and most of the building has been carried out in the best neo-Georgian that could be mustered from a variety of architect stylists. Deepest felicitations to the new Vice-Chancellor. Arthur Ling will earn his gravy, and a mention, if he can resolve this mess as well as head the Department of Architecture and Civic Planning.

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*Lord Robens
†See page 284


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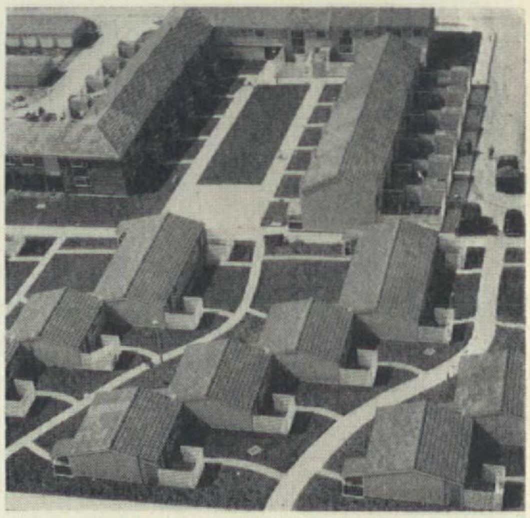
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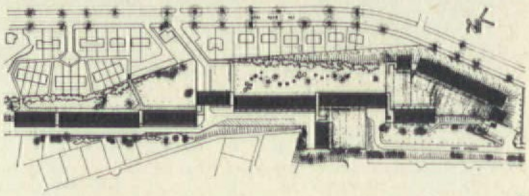
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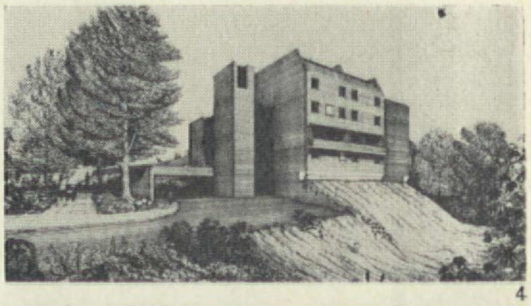
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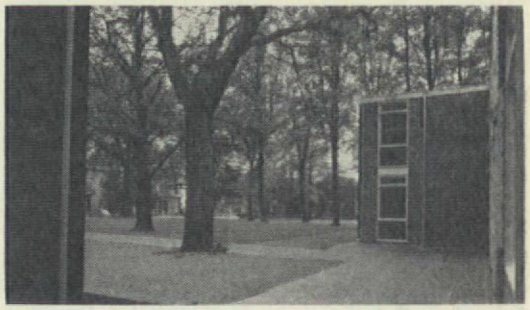
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Photo: 5 Colin Westwood

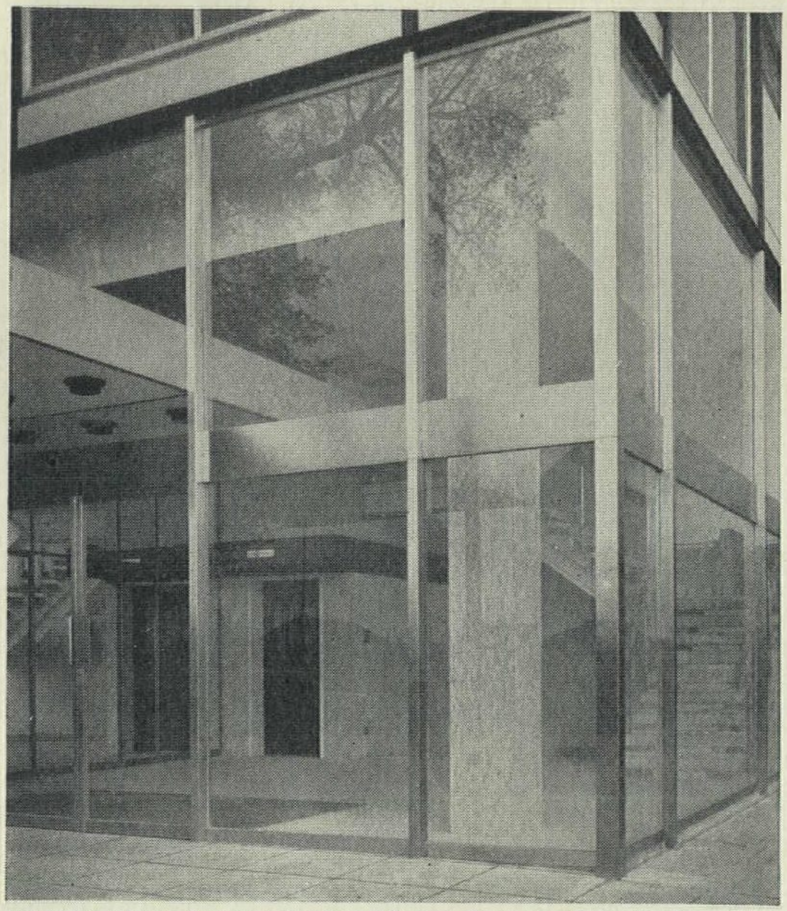
Regional planning course

The Architectural Association School of Architecture offers a new option in Regional Planning in the Post Graduate School, starting in September 1966, and leading to a Diploma in Regional Planning.

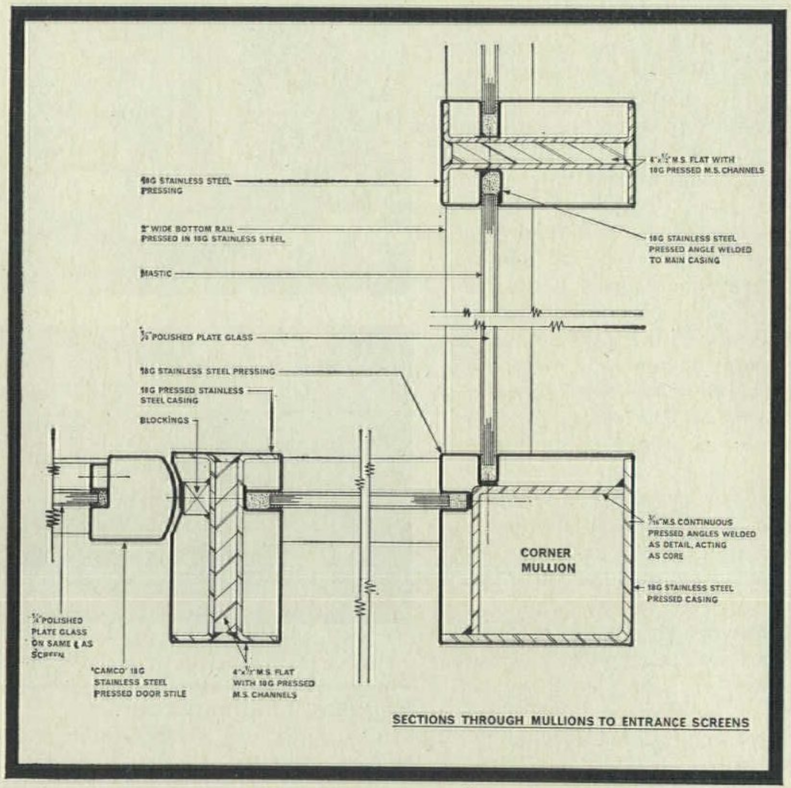
Fees for the course are £415 for the first year and £30 for the second part-time year. The school is recognized by the Department of Education and Science for the purpose of Further Education Awards. Applications to the Head of the Department of Planning, 20 Bloomsbury Sq., London, W.C.1, by June 30th.

Stainless Steel

Slender 'Silver Fox' stainless steel-clad mullions have lasting elegance



The Centre, Feltham. Architects: R. Seifert & Partners. Contractors: R. Costain Ltd. Stainless Steel fabrication: Culford Art Metal Ltd.



SECTIONS THROUGH MULLIONS TO ENTRANCE SCREENS

The Centre at Feltham, built by Hallmark Securities and leased as shops and offices, makes admirable use of the effects which only stainless steel can create. Here, slender mullions of Silver Fox Stainless Steel are contrasted cleverly with the deep-section canopy. Consequently, the building conveys an impression of airiness and light combined with strength and structural efficiency. The main mullions to the screenwork are formed of pressed box stainless steel sections, and the doors are pressed hollow stainless steel sections. The canopy is constructed of rolled steel joists, encased in stainless steel.

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Dans ce numéro

YRM—Yorke, Rosenberg, Mardall

En Octobre 1944, F. R. S. Yorke, Eugène Rosenberg et Cyril Mardall s'associèrent pour monter une agence mais ce n'est pas avant le printemps 1945 que les trois associés purent y travailler à plein temps.

En 1958, lorsque l'association originelle s'augmenta de nouveaux membres, les associés décidèrent que l'agence devait se préparer à la période de croissance qu'ils envisageaient. La décision essentielle était de clarifier le parti architectural de l'agence. Il fut estimé qu'étant donné le nombre de plus en plus élevé d'associés et d'architectes y ayant leur mot à dire, il était nécessaire de donner à l'agence, ne serait-ce que dans ses grandes lignes, une méthode de travail mieux définie, afin d'obtenir des solutions plus homogènes.

En 1959, les associés décidèrent d'un commun accord qu'il était temps d'étudier de plus près les problèmes administratifs de l'agence. Ils firent appel à une firme de conseillers en gestion qui recommandèrent, dans leur étude pilote et entre autres choses, la nomination à plein temps d'un directeur administratif.

Au cours de la croissance du YRM, on craignit naturellement que si chaque architecte ne suivait certaines conventions de travail, ou aboutirait à une sorte d'anarchie architecturale de l'agence. Il était entendu, naturellement, que toute contrainte devait éventuellement susciter une évolution positive et bénéfique et ne devait en aucune façon léser ceux qui avaient quelque chose à contribuer.

On établit une liste des principes fondamentaux qui devaient caractériser les œuvres du YRM.

Le courant architectural dynamique lancé par le mouvement moderne international des années 20 et 30 traçait encore la route à suivre. Mais on se rendit compte, cependant, qu'au cours d'un rel pélerinage, de nombreux pièges devaient être évités et entre autres la tentation de faire des pastiches de l'époque héroïque du mouvement moderne, en se laissant trop influencer par les œuvres d'autres architectes sans chercher à assimiler leurs idées par les 'voies digestives' normales de toute pensée créatrice personnelle. Sans perdre de vue les difficultés d'un tel processus, on attacha beaucoup d'importance à sa réalisation.

L'architecte devrait s'attacher sincèrement aux besoins sociaux et aux problèmes de la communauté.

Il fallait que l'architecte redéfinisse son propre rôle; l'architecte 'prima donna' devait être relégué au passé, le nouvel architecte devant être capable non seulement de dominer mais également de collaborer avec d'autres disciplines afin de fournir une solution complète pour n'importe quel problème.

L'architecture est un art qui exige une concentration totale de l'intellect, ce qui impose nécessairement la recherche d'un ordre rationel et visuel. Il faut avoir pour but les meilleurs critères de rendement technique, mais ce but ne doit être considéré que comme le moyen technique de poursuivre une intention architecturale.

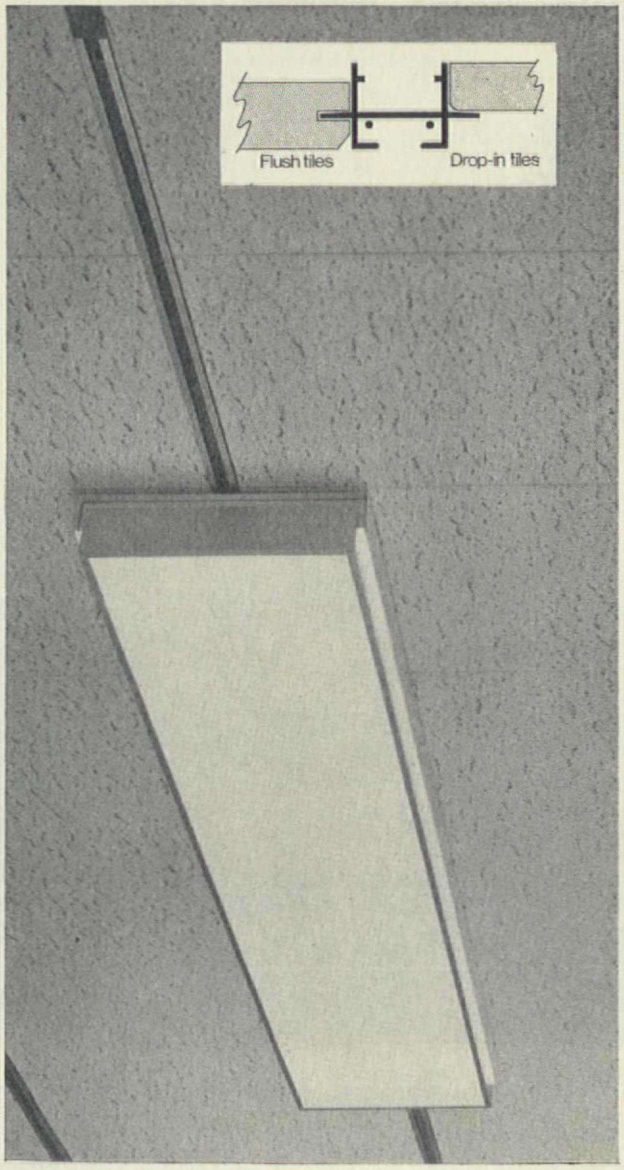
La poursuite de ces impératifs de base, un veritable effort vers le travail collectif ainsi qu'un système de gestion rénové et unifié ont amené l'agence à réaliser un ensemble de constructions qui peuvent être reconnues immédiatement comme œuvres du YRM. Ceci n'aurait rien d'extraordinaire si l'agence était dirigée par la personnalité d'un seul architecte; après tout, il existe actuellement un bon nombre d'exemples de ce genre en Grande-Bretagne.

Cependant il est rare en ce pays qu'une agence relativement importante produise une architecture à la fois cohérente et homogène et qui ait, par surcroît, une personnalité bien marquée. Ceci est particulièrement intéressant si l'on considère le nombre et la variété des architectes concernés, les conflits qui naissent inévitablement avant que l'on ne parvienne à un terrain d'entente commun ainsi que le risque perpétuel que l'un des membres n'impose trop manifestement sa personnalité aux dèpends de l'esprit de l'équipe.

L'expérience de l'agence a prouvé que la meilleure unité de travail est le groupe autonome comportant de 10 à 24 personnes et composé d'architectes, d'un personnel technique et d'assistants.

L'architecte en tête de chaque groupe est pleinement responsable vis à vis de l'association pour l'exécution des projets confiés à son équipe. Il a été decidé qu'aucun groupe ne se spécialiserait pour un type de construction particulier. Les associés estiment que le système des groupes facilite les communications et accelère les décisions tout en stimulant l'efficacité et la responsabilité à la fois du patron et de son équipe.

Dans l'évolution d'une agence, il advient nécessairement une étape significative où il devient économiquement possible d'affecter de nouvelles dépenses indirectes à l'acquisition de certaines connaissances et de certains procédés spécialisés qui peuvent s'appliquer au fonctionnement d'une agence dans son ensemble. Certains développements étaient jusqu'à maintenant pris en charge par des groupes de travail appropriés au sein du YRM mais l'initiative reposera désormais entre les mains de la Section de Rationalisation de l'agence, qui élargit constamment son influence et ses responsabilités. Cette section fut créée pour améliorer le rendement général de toutes les activités de l'agence. C'est un groupe de travail qui, contrôlé par l'un des associés et dirigé par un architecte, fait appel aux connaissances spécialisées de tous. Ce groupe est chargé de rationaliser toutes les activités. Ses directives excluent cependant toute recherche fondamentale, ce domaine devant, semble—t'il, être laissé à des organisations plus importantes et plus appropriées. Ce programme a pour priorité de s'occuper des processus les moins rentables et de ceux dont l'expérience prouve qu'ils sont le moins bien accomplis. Il fut constaté que ce programme de priorités s'appliquait à tous les types de constructions. La Section fournit deux sortes d'informations, la première indiquant quelles sont les tâches à accomplir et la seconde ce moyen de les accomplir. La première catégorie comprend les guides de travail, les manuels de recherche et le guide de l'agence pour la standardisation de ses dessins techniques; la seconde comprend les specifications touchant au fonctionnement, à l'entretien et au contrôle du matériel et de l'équipement. Toutes les informations sont rassemblées, codifiées et classées par la Section Information, qui fait partie de la Rationalisation et se tient continuellement à jour.



En este número

YRM—Yorke, Rosenberg, Mardall

En Octubre 1944, F. R. S. Yorke, Eugene Rosenberg and Cyril Mardall formaron una sociedad de arquitectos, aunque no fué hasta la primavera de 1945 que los tres socios pudieron trabajar juntos todo el tiempo.

En 1958, cuando la sociedad original introdujo nuevos miembros, fué decidido por todos los socios que la firma debiera prepararse para un previsto período de expansión. La principal decisión fué el clarificar el planteamiento arquitectónico de la firma. Se pensó que era correcto, con el aumento de socios y arquitectos, quienes todos tenían algo que contribuir, que la firma debiera, aunque con libertad, producir una manera mas formal de trabajo, la cual a su vez sería destinada a producir soluciones corporativas.

En 1959, los socios acordaron de que era tiempo de examinar la manera como la firma funcionaba como negocio. Mantuvieron a una firma de consultores en administración, quienes en un estudio piloto recomendaron, entre otras cosas, el nombramiento de un administrador de planta. A medida que YRM crecía, existía el natural temor de que algunos arquitectos que no seguían algunas de las pautas de moderación acordadas serían causa de que cierta forma de anarquía arquitectónica se produjera dentro de la firma. Fué tomado en cuenta, claro está, de que toda moderación debiera conducir hacia un crecimiento y desarrollos positivo y no debería entonces frustrar a aquellos que tenian algo que contribuir.

Ciertos principios fueron establecidos como base para un planteamiento de la arquitectura de YRM.

Una corriente principal arquitectónica, dinámica y en desarrollo, originandose en el movimiento moderno internacional establecida en los años veinte y treinta era todavía el curso correcto a seguir. Fué apreciado, sin embargo, que mientras había en este 'progreso del peregrino' muchas caídas que evitar, v. gr., las tentaciones de crear copias del 'período heróico' del movimiento moderno, ser asimilado en lo que otros arquitectos estaban haciendo sin permitir que sus principios arrojen la información através del sistema digestivo de la conciencia arquitectónica de cada uno. Fué entendido lo difícil que este proceso puede ser, pero una gran importancia fué dada a su función.

Una verdadera simpatía debe existir por las necesidades sociales y por los problemas de la comunidad. Era necesario para el arquitecto retasar su rol: el arquitecto prima-donna debiera ser un hombre del pasado, el nuevo arquitecto debiera ser uno que conduce, pero que también colabora con otras disciplinas para producir una solución total para cualquier problema.

La arquitectura es un arte que requiere el máximo uso del intelecto el cual a su vez demanda una comprensión de la necesidad de desarrollar un sentido racional y visual de orden. El objetivo debiera ser la más alta norma de ejecución técnica—este objetivo para ser visto solo como un medio técnico para alcanzar un fin arquitectónico.

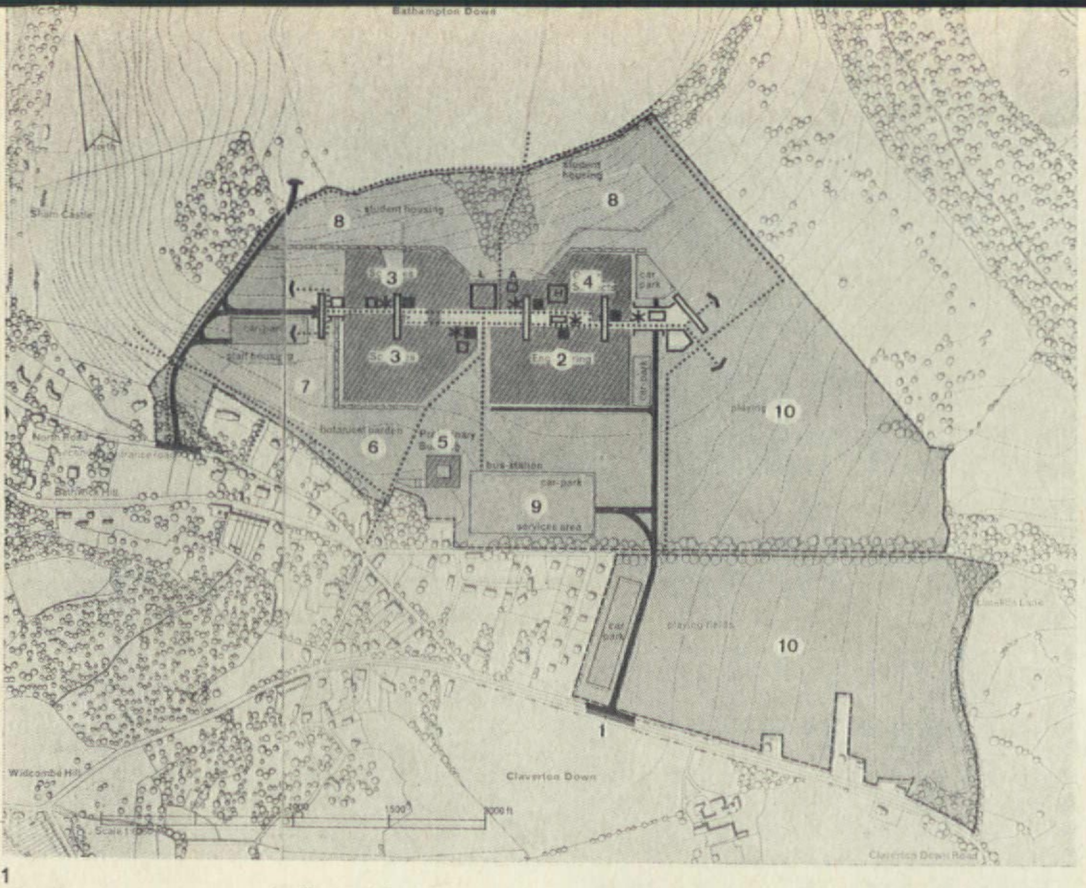
La búsqueda de estos credos básicos—un esfuerzo real para trabajar en forma corporativa y de un proceso de decisión revisado y unificado, ha conducido a la firma a producir un volumen de edificios los cuales pueden ser reconocidos como la obra de YRM. Esto no sería nada único si la firma fuera dirigida por solo una personalidad arquitectónica; después de todo hay muchos ejemplos de este tipo de asociación en Gran Bretaña.

Sin embargo, es raro en este país que una sociedad comparativamente grande, produzca arquitectura ambas, consistente y coherente la cual, al mismo tiempo, tiene una identidad reconocible. Esto es particularmente interesante cuando uno toma en cuenta el número y variedad de personalidades arquitectónicas participando, los conflictos que se presentan hasta que un campo es establecido y el riesgo constante del individuo sobre-proyectando su personalidad a expensas del group corporativo.

En la práctica, la oficina ha encontrado que la mejor unidad de trabajo es un grupo independiente, variando en tamaño de 10 a 24 personas incluyendo arquitectos, personal técnico y de secretaría.

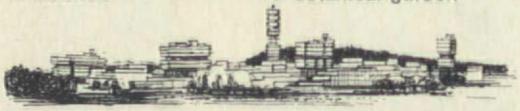
El arquitecto a cargo del grupo tiene completa responsabilidad ejecutiva frente a los socios, en lo que respecta a la producción de las obras asignadas a su grupo. Es la intención que los grupos no se especializen en ningún tipo de edificios. La sociedad ha encontrado que el sistema de grupos acorta las líneas de comunicación y la cadena de decisiones y permite el desarrollo de la habilidad y responsabilidad en ambos, el jefe y su equipo. Hay un punto significativo y necesario en el crecimiento de una firma cuando es económicamente posible aceptar esos costos adicionales y indirectos asociados con el desarrollo de conocimientos especializados y de procedimientos los cuales pueden ser aplicados a una firma en su totalidad. Ciertos desarrollos han sido en el pasado sugeridos por los mismos grupos dentro de YRM, pero en el futuro estos serán iniciados por la Sección de Racionalización de la firma, la cual está constantemente expandiendo su campo y responsabilidad. Esta sección ha sido establecida para mejorar la ejecución total de todas las obras en la oficina. Es un grupo de trabajo, controlado por un socio, encabezado por un arquitecto, y obteniendo el conocimiento especializado de otros. El trabajo del grupo es la racionalización de todas las tareas conocidas. Su tarea, sin embargo, excluye toda investigación fundamental. Se estima que esta zona debe ser dejada a organizaciones mas grandes y mas apropiadas. Las prioridades del programa han sido establecidas para tratar con esos procedimientos que son pérdidas de tiempo o aquellos que la experiencia ha demostrado que son malamente ejecutados. Se descubrió que este programa de prioridades es aplicable a todos los tipos de edificios. La sección produce dos tipos de documentación, una que muestra que tareas tienen que ser ejecutadas y la otra como ejecutarlas. La primera categoría cubre, Guia de Obras, Manuales de Diseño, y la Norma de la Oficina para la Producción de Dibujos Técnicos; la segunda cubre Especificaciones para la ejecución, mantención y dirección de materiales y equipo. Toda información es comparada, codificada y archivada por la Sección de Información, la cual es parte de Racionalización y está continuamente en revisión.


SfB. D13
SYNTHETIC RESINS
IN THE
BUILDING INDUSTRY
CIBA



1

1 entrance
2 engineering
3 science
4 other subjects
5 first building
6 botanical garden
7 staff housing
8 student housing
9 parking
10 playing fields



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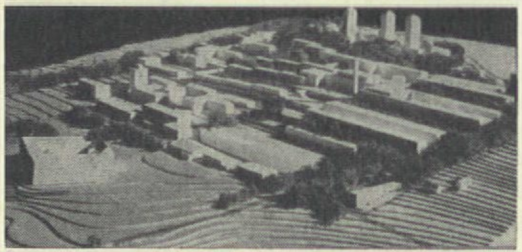

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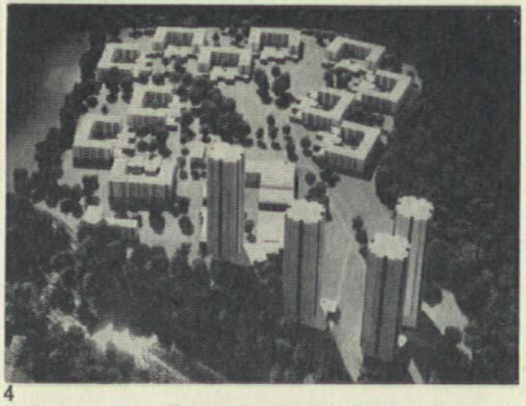


4

New universities

James Collier

In the University of Bath Development plan **1, 2**, Sir Robert Matthew, Johnson Marshall and Partners have taken part in the current rethinking of the nature of universities and added to the work done on Essex, Lancaster, etc. The academic structure based on schools of study with courses designed to overlap into several schools, is designed to bring a wide range of contacts to the students and consciously encourage the civilizing process at all levels.

Each school has its own social nucleus which will form the focus of some cooperative actions. The architects have introduced living accommodation, in flats and rooms, adjacent to varied restaurant and club bases around which other social groupings will occur. All the elements grow from a central deck which spans the main service spine, producing an urban complex.

The siting of such a complex social mechanism in a rural setting reminds one of a delicate timepiece under a glass dome which could run down and could be easily forgotten. It is fair to say that this particular mechanism by its nature will be sensitive to all internal and the actively encouraged external pressures to a degree which will make it self-winding.

More doubts must be expressed about the development plan **3** for the University College of Wales at Aberystwyth prepared by Ivor Dale Owen of Sir Percy Thomas and Son. It would seem that the nature of the university has not been redefined, despite the fact that both the town and university will be radically changed by the proposals. By contrast with Bath, the public footpaths have been diverted round the site and halls of residence are built in a residential zone. At its heart the plan exhibits a chapel court, a vertical feature, and a series of wide viewing platforms facing the bay, whilst the stated objectives of the plan are an architectural theme, a compact development, traffic segregation and landscape integration. The plan suffers from a lack of basic direction, for even if these aims are achieved they could equally apply to an industrial estate or a chalet layout.

The 23-acre site for the Hillhead of Seaton residential development for Aberdeen University is north of the city and is bounded to the north and west by the River Don. At its highest point the site is 90ft above the river Don and steep wooded banks run down to the river. The brief to the architects George, Trew and Dunn was to design a 'University Village' to house 3000 students when fully developed, with space for shops, a library and other communal buildings.

The development is to be phased and the first phase **4** is to start building in the spring of 1966. This will consist of three residential courtyard units, each housing 164 students, and the first phase of the communal block.

This courtyard development, with space in the centre for future 'public' buildings, will house about 2000 students. To leave space on the site, the remaining 1000 students will be housed in four point blocks, 28 storeys high, arranged in an informal group on the bluff at the bend of the river.

Slightly below the knee

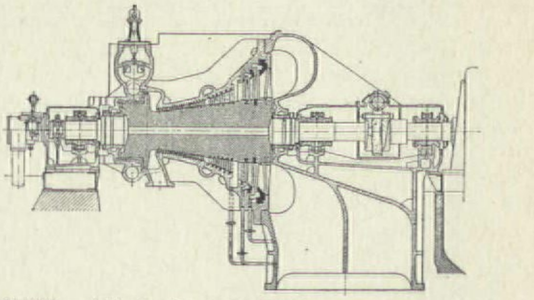
Thoughts on architecture and YRM

Warren Chalk

Science and technology do not have to be antithetical to individualism. To hold that they must be antithetical, as many European intellectuals do, is a sort of utopianism in reverse. For a century Europeans projected their dreams into America: now they are projecting their fears, and in so doing they are falling into the very trap they accuse us of. Attributing a power to the machine that we have never felt, they speak of it almost as if it were animistic and had a will of its own over and above the control of man. Thus they see our failures as inevitable, and those few who are consistent enough to pursue the logic of their charge imply that there is no hope to be found except through a retreat to the past.—The Organisation Man *

Anyone who is aware of or is involved in the fantastic managerial and administrative burden of running a large architectural practice will not hesitate to salute the efforts and achievement of the Yorke, Rosenberg, Mardall office. For those of us who do not subscribe to the notion that to be creative, to achieve a high level of architectural intensity and to maintain integrity one has necessarily to go it alone, the YRM achievement provides a model for which we can have nothing but admiration and respect. This organization would appear to be a laboratory for the perfection of available architectural currency both in ideas and methods. Using every means at its disposal, equal weight of consideration is given to the many facets of a project from conception to completion. The aim is technical and functional excellence.

That efficiency of organization and a high standard of performance are commonplace in offices throughout the United States and to a lesser extent on the Continent is true. That this standard of performance is rarely achieved in this country is also true. It is a sad fact that at every level of operation our architectural performance is abysmally low; we don't even know how to draw.



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*William Whyte, Penguin Books

There is so much in architecture that is pedestrian, so much that is backward and atavistic. Nevertheless there are signs that cheerfulness is breaking through, that the problem of the present art/science dichotomy may yet to some extent be resolved. The dogmatic preoccupation with technology on one hand and the instinctive *holier than thou* aesthetic on the other, may return to a state of equilibrium, swept there by an upsurge of impatient talent that finds itself somewhere in between. That architecture has always been technologically based is abundantly clear. However, new attitudes towards accommodating architecture to technology are increasingly apparent. These attitudes first established themselves through a desire for some kind of more technically established discipline and direction in the architectural vacuum that existed immediately after the last war. An equivalent, perhaps, to the disciplines experienced in contact with the war machine. We should be indebted to the dissidents of the period in that, if not having transformed the situation, they did at least make us conscious of our own inadequacies. To the fore was their belief in methodology. Some of this fervour even percolated through into the ever cautious mainstream of opinion. It was absorbed nowhere more noticeably than within the YRM office, who recognized and indeed initiated methods to increase the standards of efficiency and quality of performance. Their intention was clear: in order to be effective, to tackle problems of increasing complexity and to retain any authority, a higher standard of organization and method must be achieved. Coupled to this was another important consideration: the need to establish and sustain a corporate image that would facilitate rather than impede true architectural progression, but at the same time serve to bind together a large office tackling a diverse number of projects and building types. All this YRM has achieved with a remarkable degree of success.

It is apparent that to maintain efficiency it is imperative to put one's house in order and this YRM have done—literally. Due to the inadequacies of architectural training YRM is in effect a teach-in office, resolving at first hand the difficulties thrown up with the coming together of different specialists who need to be closely integrated and made to work together on existing day to day problems. They were one of the first offices to recognize and act in a positive way to the duality which exists in the organizational structure of a large office. They realized that management techniques are as highly special as is architectural design. One of the most notable achievements was the importance placed on organization and efficiency as liberating factors in providing an ideal creative climate.

But because of their undoubted success we are entitled to enquire whether their sights are in fact aimed high enough—whether their estimate of what constitutes satisfactory architecture is apparent in the final performance.

I hope I may be forgiven for consciously avoiding here the usual formal criticism of specific buildings. I could not attempt to analyse architecture in this manner, my approach being something less than orthodox; more important, I look to the future and am concerned that the highly original organizational brilliance displayed by YRM should give rise to an equally brilliant architectural expression. No matter how commendable their achievement to date may be, it would appear to be essentially a mopping up operation.

I am not a believer in the omnipotence of technology, nor do I detect any special magic in organization. It could be argued that there has already been too much attention paid to peripheral matters in architecture and too little attempt to deal with the central more important issues. The standard and quality of a building are meaningless if the content is wrong.

It is my continuing belief that technology should be employed creatively and that this shifting of emphasis would establish a changing relationship to the source of architectural knowledge. What is looked for in the final analysis is not how far the architect has failed as a technician but how far he has succeeded as an artist.

It is the manner in which a total architectural problem is solved and with what degree of clarity and force that will mark its architectural quality. The architect cannot stand on one side of the fence producing factual and objective architectural statements alone.

I cannot believe that if equal weight is given to every facet of a problem, incorporating every available technique something less than revolutionary will emerge.

On close examination the work of YRM does not appear to disclose a future, there seems little indication of what might be, no hint of some greater achievement just round the corner. One is not left in anticipation of the next instalment. Possibly due to the doctrinaire functionalism, the centristic formal vocabulary, the assembly and manipulation of propositions in relation to a hard brief, known and tested materials, techniques and structural methods, a danger arises. It is in the rigid acceptance of an apparently complete and logical solution which can no longer be adjusted to receive new information. We must always strive to leave the door open—to allow for unsuspected information.

One finds at YRM aesthetic attitudes firmly in support of what has been described as the Heroic Period of Modern Architecture. In fact, there is a tendency to wear this aesthetic skirt slightly below the knee. It is disconcerting but hardly surprising (due to its transatlantic overtones) that an office of this calibre should subscribe to a design idiom close to the formalism that is evident in the American architecture of the last few years—SOM and, of course, Mies van der Rohe.

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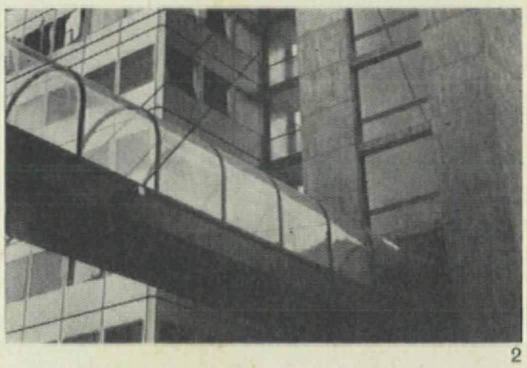
1 *Mies v.d. Rohe* **2** *Schneider-Esleben*

It could be argued that this single-minded concentration on organization, on forming a corporate identity and on quality is sufficient achievement. One would be satisfied were it not for the awareness of an as yet, great untapped potential. What worries me is that at this stage there are no masterpieces, that the bland acceptance of the functional tradition, of architecture as something ordered, exclusive, separate and distinct from life does not measure up to their enlightened approach in other fields.

The present strength of YRM would appear to be based on assumptions built up according to experience and it may be expedient but overcautious to continue to use them. Surely with great booting characters in the driving seat one should expect great booting architecture. If we concentrate on current problems of design, on practical difficulties of performance and detail alone, and do not worry about invention and ideas we are not completely fulfilling our role. Eventually we will be overtaken.

Anonymous teamwork should produce anonymous architecture and yet YRM's work is not anonymous in the way that say the Seagram building is anonymous. But more important and imperative to their eventual survival is that they get their finger back on the pulse. I venture to suggest that only then will they discover they have made an inaccurate assessment of the strength and logic of what I call *the new thing*—the attempt to break new ground, with emphasis on increased communications and impermanence, grasping freshness, excitement, quick change and newness for its own sake, at odds with the idea of architecture as monumental veering towards the expendable, the cheap and the mass-produced. All this in the face of dogged determination on the part of architects, town planners, educationalists, clients and the building industry, to maintain the *status quo*, and in the teeth of architectural pundits (bar one) who, stuffed with opinions about the significance of Sullivan and Frank Lloyd Wright, remain unaware of what is in fact happening.



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I am aware that the agony of trying to operate within a liberal profession which has failed to come to terms with the twentieth century, will continue. I am convinced that YRM should not only encourage within its ranks research into methodology and the rest, but should attempt to prepare itself for the future. We have all witnessed the mushrooming up of 'name' offices riding the crest of some stylistic wave only to submerge within a fashionable lifetime. Finally, I would suggest that a possible solution lies in a loosening of dogmatic attitudes. It is worth getting our priorities in the right order. Mies van der Rohe (it would be an impertinence to call him Mies) has said, 'The important question to ask is not "what" but "how".' On the other hand, Peter Smithson has countered, 'At the present time the problem is "What" and not "how".' But surely the questions have always been what is "how" and how is "what".

The work of Yorke Rosenberg Mardall

In October 1944 F. R. S. Yorke, Eugene Rosenberg and Cyril Mardall formed an architectural partnership, though it was not until the spring of 1945 that all the three partners could work full time. For a few months their first office was at 9 Ashley Place, SW1, and then they moved to 35 Welbeck Street, W1. A growing practice caused the partnership to move to No. 2 Hyde Park Place, W2 in the November of 1947 where it remained, with expansion into nearby buildings, until 1961.

In December 1961, together with three more partners, Randall Evans, David Allford and Brian Henderson, the partnership moved to Greystoke Place. The offices at Greystoke Place (illustrated below) were designed by Yorke Rosenberg Mardall for their own use on the site of a blitzed school. As a result of subsequent expansion of the practice it has again been necessary to acquire adjoining office space.

Photo: Colin Westwood

The following senior architects and designers, in addition to the partners and the office manager, participate in sharing the firm's profits:
T. Addison, DesRCA, joined 1960; K. Box, ARIBA, joined 1950, made associate 1959; K. Kapolka, ARIBA, MSIA, joined 1951; C. Kitchen, joined 1946, made associate 1959; W. Launchbury, ARIBA, joined 1956; W. Lucas, ARIBA, joined 1948, made associate 1959; A Parry, ARIBA, joined 1948; J. Penoyre, ARIBA, joined 1946, made associate 1948; M. Richmond, ARIBA, joined 1965; P. Rickman, joined 1944 to 1949 and again in 1955; J. Ross, B.Arch, ARIBA, Dip.TP, AMTPI, MLA, joined 1956 to 1958 and again in 1963; J. Snell, ARIBA, joined 1950, made associate 1959; J. Vulliamy, ARIBA, joined 1949, made associate 1959; I. Wilson, ARIBA, joined 1945, made associate 1947; F. Woodhead, ARIBA, joined 1964; G. Young, BA, Manager, joined 1960.

F. R. S. Yorke, CBE, FRIBA

Born December 1906 at Stratford-on-Avon.
Architectural training at the Birmingham School of Architecture.
Founder member of the MARS Group.
Author of *The Modern House*, *The Modern Flat* (with Frederick Gibberd).
Editor of *Specification* until 1962.
Started a private practice in 1931.
In partnership with Marcel Breuer 1935–1938.
Founded partnership with Eugene Rosenberg and Cyril Mardall in 1944.
Died 1962.

Eugene Rosenberg, FRIBA

Born February 1907 in Czechoslovakia.
Architectural training in Prague and Paris.
In private practice in Prague 1934–1938.
Member of the MARS Group.
Partner of Yorke Rosenberg Mardall since 1944.

Cyril Sjöstrom Mardall, FRIBA

Born November 1909 in Finland.
Architectural training at the Northern Polytechnic and the Architectural Association.
In private practice in 1937 while part-time member of the AA staff.
Member of the MARS Group.
Partner of Yorke Rosenberg Mardall since 1944.

Randall Evans, FRIBA

Born October 1908 in New Zealand.
Architectural training at Canterbury University College, NZ.
Arrived England May 1936; joined F. R. S. Yorke and Marcel Breuer as their assistant.
War service 1939 to 1945.
Joined Yorke Rosenberg Mardall on demobilization and was made an associate in 1947.
Partner of Yorke Rosenberg Mardall since 1958.

David Allford, ARIBA

Born July 1927 in Sheffield.
Architectural training at Sheffield University 1944 to 1945 and 1948 to 1952.
Joined Yorke Rosenberg Mardall in 1952.
Partner of York Rosenberg Mardall since 1958.

Brian Henderson, ARIBA

Born October 1928 in Edinburgh.
Architectural education at Edinburgh College of Art 1947 to 1952.
Joined Yorke Rosenberg Mardall in 1956 and was made an associate in 1959.
Partner of Yorke Rosenberg Mardall since 1961.

Photos of partners: Sam Lambert

Chronological list of works

Year	Name of job		Client
1947	Luccombe house, I. of W.		F. R. S. Yorke
	Cowley Peachey, housing		Linden Doors Ltd.
1948	Sigmund Pumps factory, Gateshead	1	North East Trading Estates
1949	St Thomas's Hospital, London, temporary out-patients department		St Thomas's Hospital
	Shebbear College, Devon, boarding school alterations (further additions until 1963)		Methodist Education Committee
1950	Barclay Secondary School, Stevenage	2	Herts CC
1951	Southsea, department store (abandoned)		John Lewis Partnership
	House at Londonderry (in collaboration with Corr and McCormick)		Dr Cole
	King's Langley, local authority housing		Hemel Hempstead RDC
	Susan Lawrence primary school and Elizabeth Lansbury nursery school, Festival of Britain, Live Architecture Exhibition		LCC
	Brynmawr, housing		Brynmawr Housing Society
1952	Sir William Nottidge school, Whitstable extended 1957		Kent CC
	Sish Lane housing, Stevenage	3	Stevenage Development Corporation
	Merthyr College, extended 1956/62/66		Borough of Merthyr Tydfil
1953	Building Trades Exhibition stand	4	Williams and Williams Ltd.
	The Mill, Wootton, conversion to house		F. R. S. Yorke
	Warren Wood Secondary School, Rochester		Kent CC
	Upholland Grammar School, Wigan, extended 1959		Lancashire CC
	West Park Secondary School, Stourbridge		City of Leeds
	Southlands Teachers Training College, Wimbledon, assembly hall		Methodist Education Committee
	Sheerwater Primary School, Woking		Surrey CC
	Causeway Green Primary School, Oldbury		Worcestershire CC
	North Mimms, boys and infants school further additions in 1956 and 1962		North Mimms School Managers
1954	Steddall's warehouse, London, alterations		Steddall & Co. Ltd.
	Birchen Coppice Primary School, Kidderminster		Worcestershire CC
	Queensmead Secondary School, Ruislip	5	Middlesex CC
	Loughton Garage, bus depot	6	LTE
	Gt New Street offices, London (project)		Hammerson Group of Companies
1955	Tudor House, Grayshott, for aged infirm, abandoned		Jewish Board of Guardians
	Kerris, Mousehole, Cornwall, conversion of chapel to artists' studio		Paul Feiler
	Williams & Williams offices, London (project)		Williams & Williams Ltd.
	Quarles Secondary Modern School, Romford		Essex CC
	Leeds Technical College, master plan, further stages 1958 and 1960		City of Leeds
	Mark Hall local authority housing, Harlow		Harlow Development Corporation
	Haileybury Boys Club, further stage 1962	7	Haileybury Guild
	Bewdley Secondary School	8	Worcestershire CC
	Kirkwall Place local authority housing		Borough of Bethnal Green
1956	St Paul's area development (project)		
	Boxgrove house type, for development		Boxgrove Houses Ltd.
	Wootton Rectory, Oxfordshire		Reverend Struan Robertson


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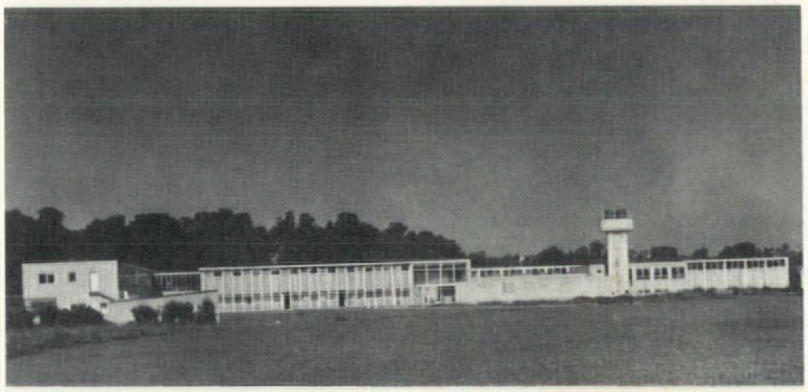
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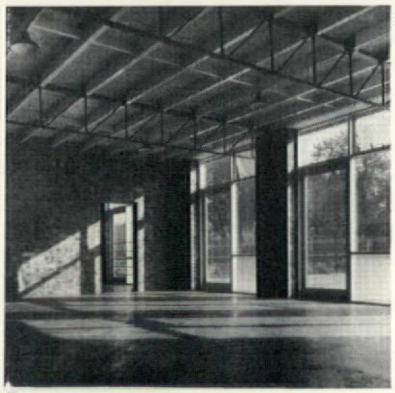
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1956	Jack Straw's Lane house, Oxford		Dr Jacobus
	Tyrrell & Green store, Southampton extended 1958		John Lewis Partnership
	Dick Sheppard School, Tulse Hill	9	LCC
	East Anglian Girls School, Bury St Edmunds, alterations and additions further additions 1958/59/63		Methodist Education Committee
	Bradfield Secondary School, extended 1963		West Riding CC
	Sigmund Pumps, Gateshead, factory extension (project)		North East Trading Estates
1957	Southlands College, Wimbledon, lecture block and dining extension		Methodist Education Committee
	Temple Moor Grammar School, Leeds	10	City of Leeds
	Stanley Outwood Secondary School		West Riding CC
	Jewish Theological College, Montague Sq		Jews' College
	Oak Park Secondary School, Havant, extended 1962		Hampshire CC
	115 Gt George St, London, house		Philip Harben
	Dawley Secondary School, extended 1964		Salop CC
	Berlin Interbau housing project with Werner Düttman		
	Bromsgrove Education Centre, master plan		Worcestershire CC
	Basildon Timberlog Secondary School, extended 1962		Essex CC
	St Paul's Secondary School, Addlestone		Surrey CC
	London (Gatwick) Airport, first stage		Ministry of TCA
1958	Unilever House, Hamburg, competition		Unilever Ltd.
	Wokingham Infants School, competition		Berkshire CC
	Jewish Board of Guardians, offices, London		Jewish Board of Guardians
	Finnish Seamen's Mission, London	11	FSM Society
	Chaucer Secondary School, Sheffield, extended 1964		City of Sheffield
	Carmel College, Wallingford, extensions	12	Carmel College Ltd.
	Brixton Synagogue Hall		United Congregation
1959	House at Longstock		J. Spedan Lewis
	Elephant and Castle (project)	13	
	World Health Organization Offices, Geneva, competition		
	Wooden Furniture Competition, office tables and desks, first prize (shared)		TDA
	Formation Furniture, office tables and desks, made by Bath Cabinet Makers Ltd.		
	Roman Road local authority housing	14	Borough of Bethnal Green
	High Park School, Stourbridge	15	Worcestershire CC
	St Paul's, Chertsey, alterations to school hall		Surrey CC
	Brays Grove Secondary School, Harlow		Essex CC
	Bromsgrove College, extended 1964		Worcestershire CC
	Club Trades Fair stand		Tennant Bros. Ltd.
	Churchill College, Cambridge, competition		
1960	Watford Shopping Centre (project)		R. H. O. Hills Ltd.
	Rothwell Secondary School (first stage 1956)		West Riding CC
	Warslow School (Civic Trust Award)		Staffordshire CC
	United States Embassy, London with Eero Saarinen Associates		State Department, USA
	Supasave store, Southend		Keddies Ltd.


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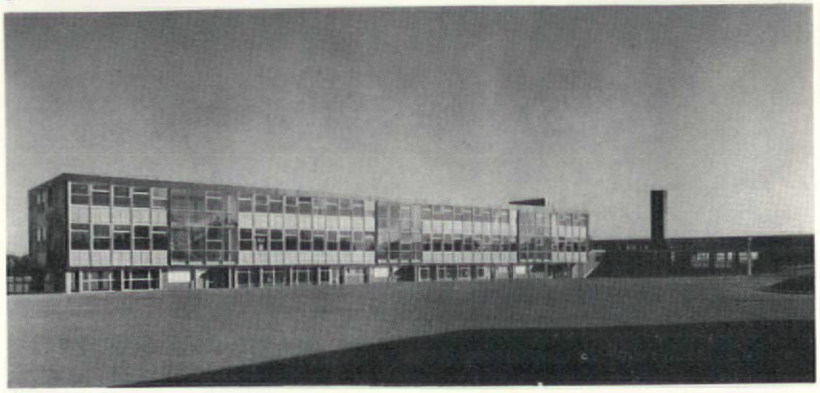
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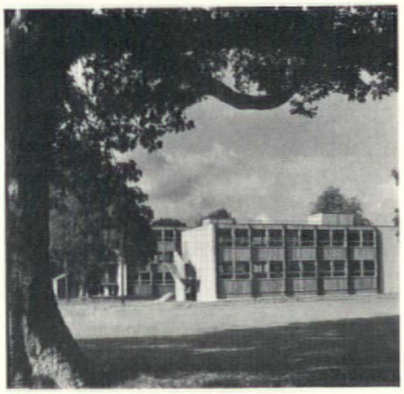
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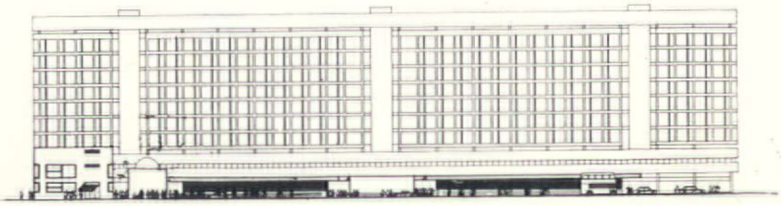
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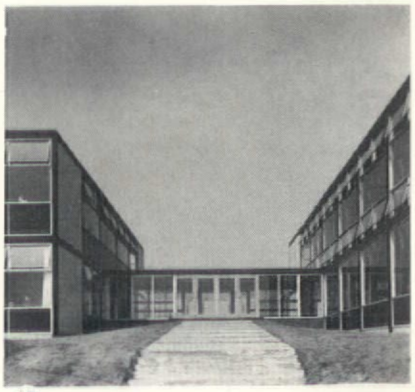
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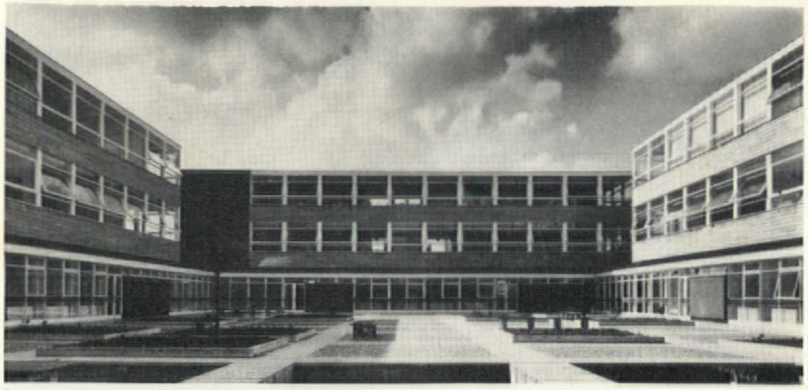
1960	Staincliffe Hospital, geriatric unit		Leeds RHB
	Altnagelvin Hospital		Northern Ireland Hospital Authority
	Harlow Passmores Secondary School	1	Essex CC
	House at Petersham, project		D. Allford
	Brierley Hill Secondary School		Staffordshire CC
	Rolls Royce offices, Derby, project		Trollope and Colls for Rolls Royce
	London (Gatwick) Airport, TEE building		Ministry of Aviation
1961	House at Shamley Green		N. Payne
	Royal Masonic School, Ascot, project		Royal Masonic Institute
	Bromsgrove High School		Worcestershire CC
	Hob Green Primary School		Worcestershire CC
	Own offices, Greystoke Place, London (London Architecture Bronze Medal 1961, Civic Trust Award 1964)		YRM and Norwich Union Insurance Societies
	Crawley Hospital, maternity and outpatients		SW Met. RHB
	Kew Bridge development over railway station, project		Southern Region, BR
	Creekside refuse disposal depot, London, report and project		Borough of Deptford
	Wooden Furniture Competition, office storage units, first prize		TDA
1962	Kuwait Airport, master plan		PWD Kuwait
	Elliott Bros., welfare building (project)		Elliott Bros. (London) Ltd.
	Rotameter factory, Croydon (project)		EA Quality Automation
	Cambridge University Library (project)		
	Southlands College, Queensmere hostels, lecture block and gymnasium	2	Methodist Education Committee
	Ark house, Rochford		D. Keddie
	Crawley Hospital, staff residences		SW Met. RHB
	Barstable Grammar School, Basildon		Essex CC
	Formation Furniture, office storage units made by Bath Cabinet Makers Ltd.		
1963	Shebbear College, Devon, science block		Methodist Education Committee
	Stamford House, London, swimming pool		LCC
	Rolleston Secondary School	3	Staffordshire CC
	Rochdale College, teaching and communal block	4	Borough of Rochdale
	Dawley School, schemes for redevelopment		Salop CC
	Stevenage warehouse, with Felix Candela		John Lewis Partnership
	Luton Brewery redevelopment	5	Taylor Woodrow Industrial Estates
	House at Lacey Green, Bucks		T. R. Evans
	Johnson's factory and offices, Wokingham		A. Johnson & Co. Ltd.
	Harlow Training Centre	7	Essex CC
	Cole Bros. store, Sheffield		John Lewis Partnership
1964	Southlands Flats, accommodation at teachers training college		Methodist Education Committee
	Blackpool central area (project)		Taylor Woodrow Group
	Londonderry Hospital, staff residences		Northern Ireland Hospital Authority
	Kidd's store, Leeds		Kidds Ltd. (Ryman Group)
	Keddies store, Southend (Civic Trust Award)		Keddies Ltd.
	Crawley Hospital, temporary buildings		SW Met. RHB
	Luton Airport, development report	14	Borough of Luton
	Clements store, Watford	6	Clements Ltd.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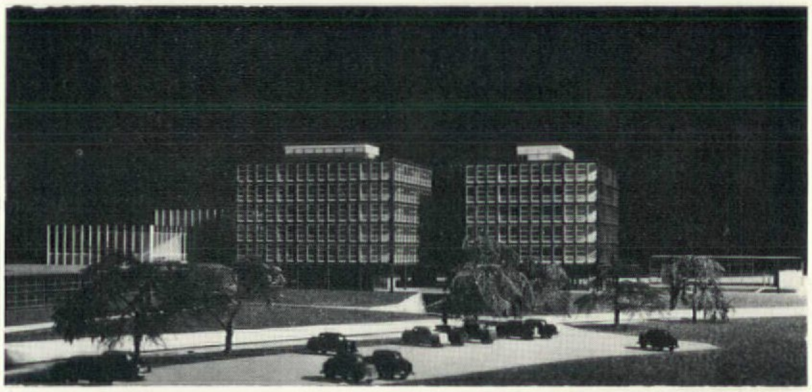
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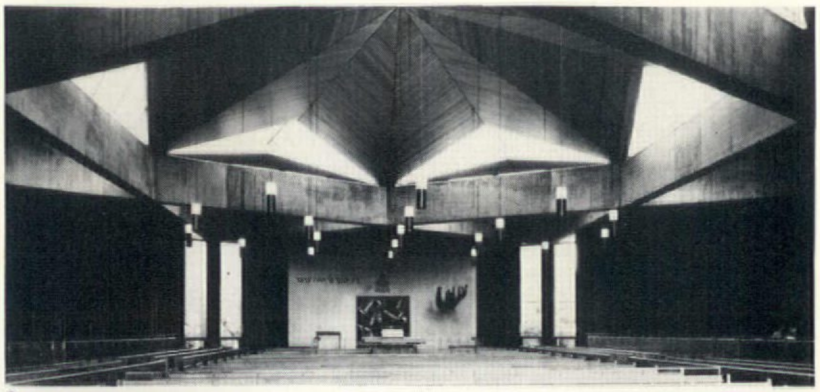
1964	Blythe Bridge Secondary School		Staffordshire CC
	Belfast Synagogue	8	Belfast Hebrew Congregation
	Mildmay Secondary School, Aveley	9	Essex CC
	Adler Street, London, unit workshops		GLC
	Taylorian Institute, Oxford, modern languages faculty (project)		University of Oxford
1965	Rochdale College workshop block		Borough of Rochdale
	Stevenage warehouse offices		John Lewis Partnership
	Bakewell Secondary School (project)		Derbyshire CC
	London (Gatwick) Airport, stage II		Ministry of Aviation
	Smestow Comprehensive School		Staffs CC, Borough of Wolverhampton
	Romford Technical College		Essex CC, Borough of Havering
	Chalvedon Secondary School, Basildon		Essex CC
	Liverpool University, Department of Electrical Engineering and Electronics		University of Liverpool
	Hull Royal Infirmary, nurses training school		Leeds RHB
	German Sailors' Home, London	10	The Trustees
	Crawley Hospital, nurses home and school	11	SW Met. RHB
	Gibbons Road Secondary School, West Willesden (project)		Middlesex CC, Borough of Brent
	Offices at Lambeth (project)		St Thomas's Hospital
	Kuwait Airport, control building		PWD Kuwait
1966	Hamble College of Air Training, residential buildings (project)		College of Air Training (Properties) Ltd.
	Ada Street, London, unit workshops	12	GLC
	Cadell Street, London, local authority housing	13	Borough of Tower Hamlets
	Borehamwood factory extension		Elliott Bros. Ltd.
	Leek Secondary School, Staffordshire		The Trustees
	Luton Airport, temporary terminal		Borough of Luton
	St Thomas's Hospital, London, stage I, with hospital staff architect		St Thomas's Hospital
	Warwick University, development plan revision, Molecular and Engineering sciences building, First Hall, Boilerhouse		University of Warwick
	Elliott's factory, Rochester		Elliott Bros. (London) Ltd.

Under construction

Avalon offices, Bath	Yatton Furniture Co.
Bacton Street local authority housing	Borough of Tower Hamlets
Bath Cabinet Makers factory	Bath Cabinet Makers Ltd.
Boots offices, Beeston, with SOM	Boots Pure Drug Co.
Cottam Power Station	CEGB
Crawley Hospital, stage II	SW Met. RHB
London (Gatwick) Airport, general aviation terminal	Ministry of Aviation
Hull Royal Infirmary and nurses home	Leeds RHB
Ilford Training Centre	Borough of Redbridge
King Edwards Road, Hackney local authority housing	GLC
Lambeth Hospital, operating theatres	St Thomas's Hospital
Leeds Colleges, stages IV and V	City of Leeds
Newcastle Airport, terminal building	N.E. Regional Airport Committee
Old Street, London, concourse	GLC, LTE
Redhill Hospital, wards, labs and housing	SW Met. RHB
Sceptre Road housing, Bethnal Green	Borough of Tower Hamlets
Stamford House, London, remand home	GLC, Borough of Hammersmith
Uxbridge Technical College, extension	Borough of Hillingdon
Willesden County Secondary School	Borough of Brent
Milkwater House, Pewsey	D. Allford
Queensmead Secondary School, Ruislip	Borough of Hillingdon
Addlestone School, stage II	Surrey CC
Bray's Grove School, Harlow, stage II	Essex CC
Maynard Road, Bermondsey, local authority housing	GLC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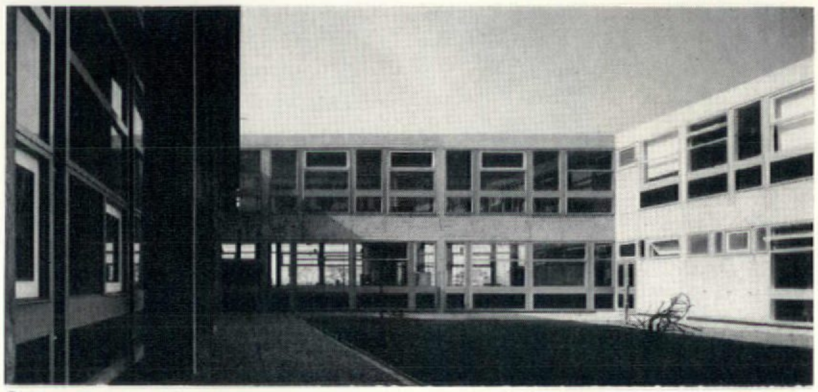
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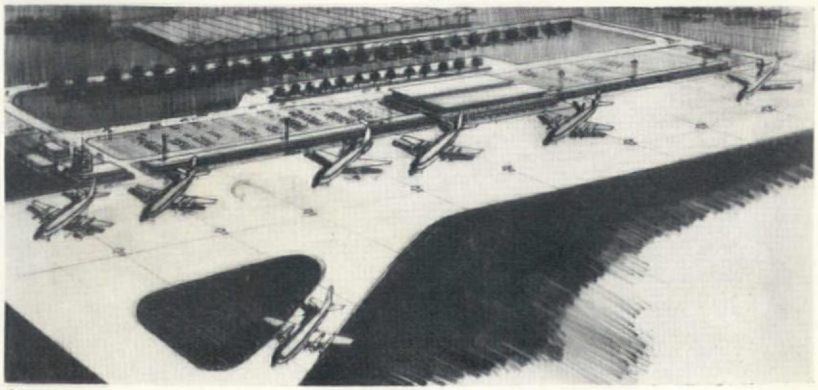
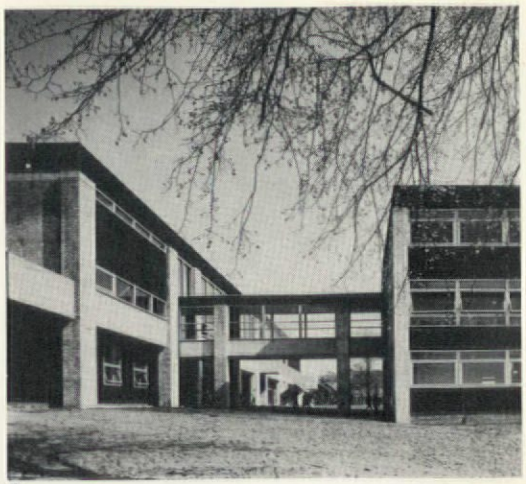

14

The chronological job list shows that since 1944 the scope of YRM's work has mainly covered the following fields:

Schools and educational buildings

eg Basildon Grammar School **1**
Blythe Bridge School **2**
Chaucer Comprehensive School **3**
Leeds Central Colleges **4**
Rochdale College **5**

1



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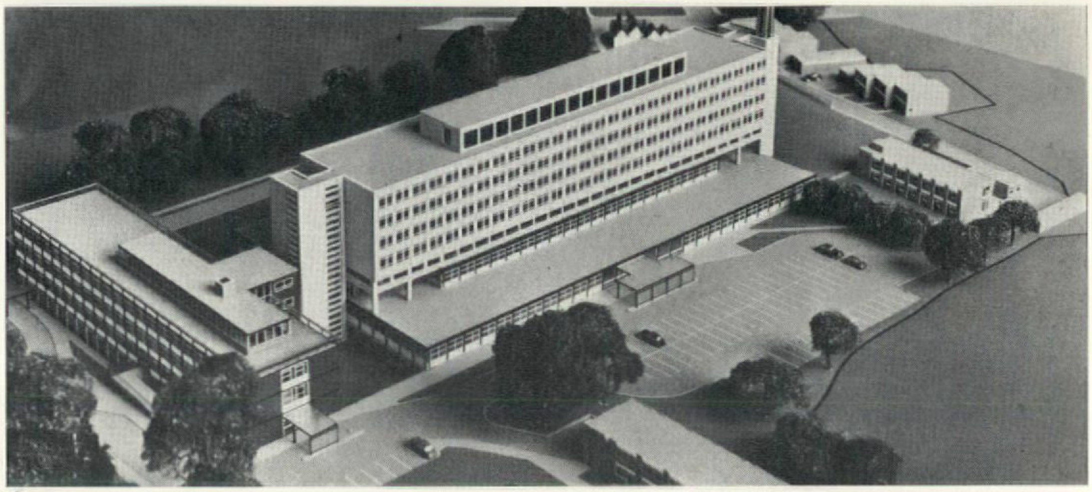
Hospitals

eg Crawley Hospital Stage I, II **6**
Hull Royal Infirmary **7 8**
United Oxford Hospital **9**



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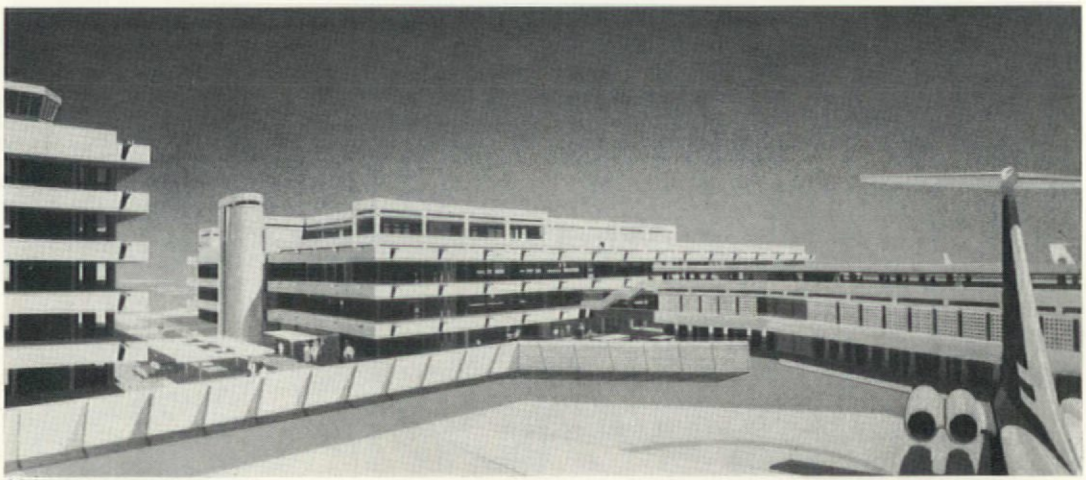
Airports

eg Kuwait **10**
Gatwick **11**
Newcastle **12**



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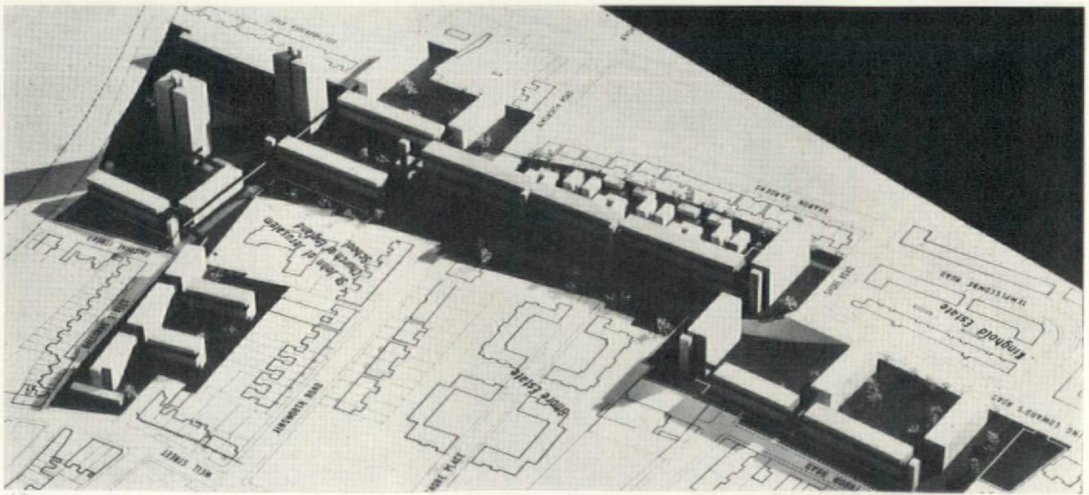
Housing

eg King Edward's Road **13 14 15**
Maynard Road **16**



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Photos: 1 de Burgh Galwey; 2, 3 & 12 Henk Snoek; 4 Peter Pitt; 5, 7 & 10 Sam Lambert; 9 J. Donat; 13, 14 & 15 Stewart Galloway


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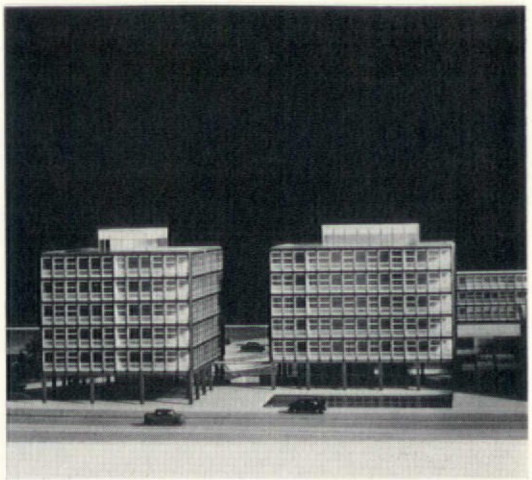
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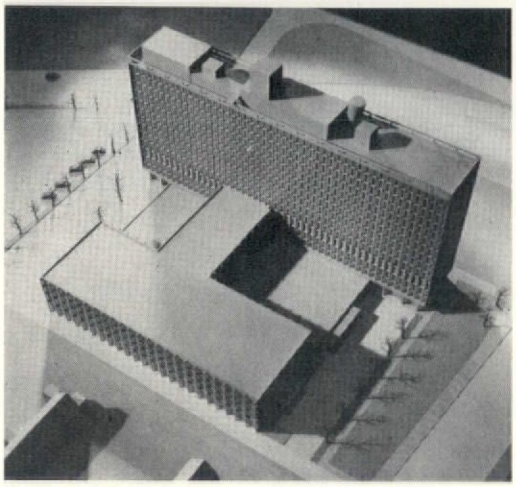
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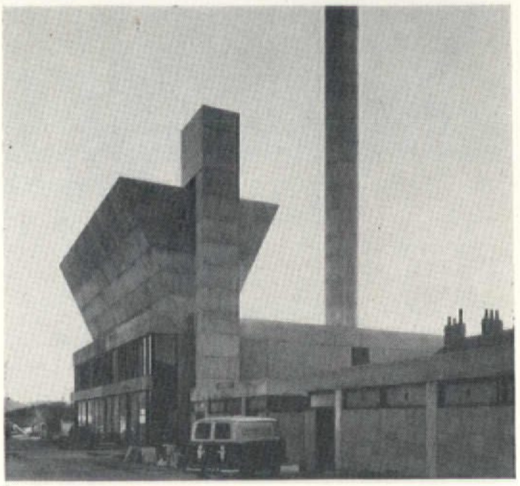
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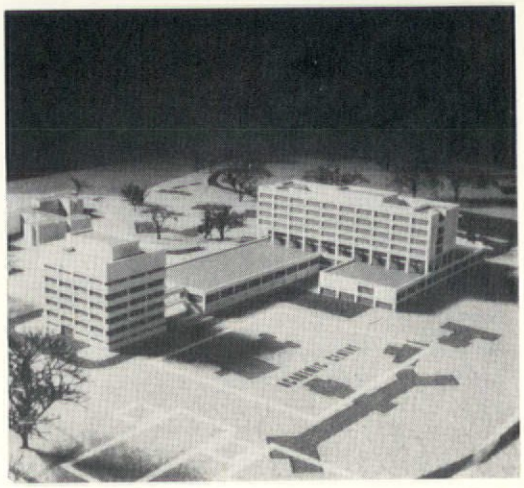
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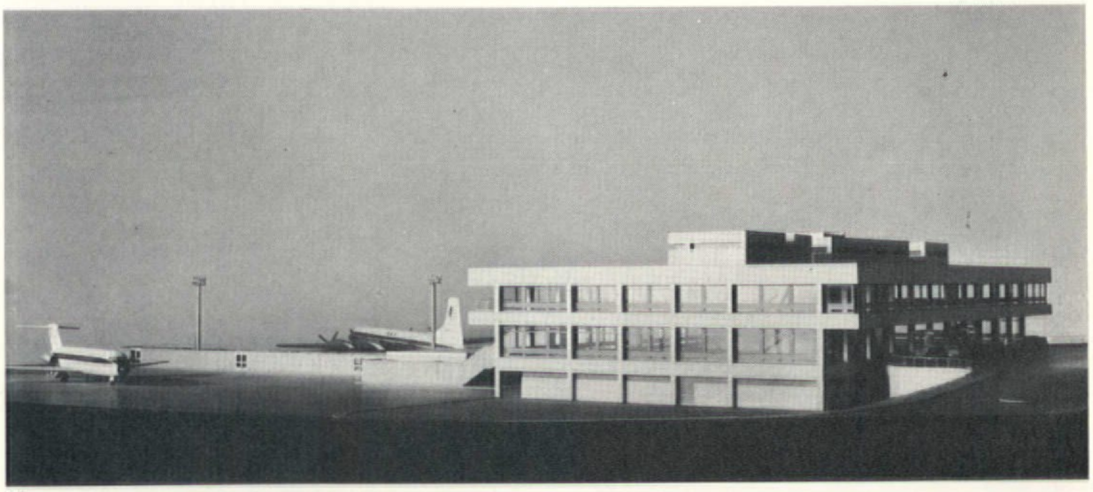
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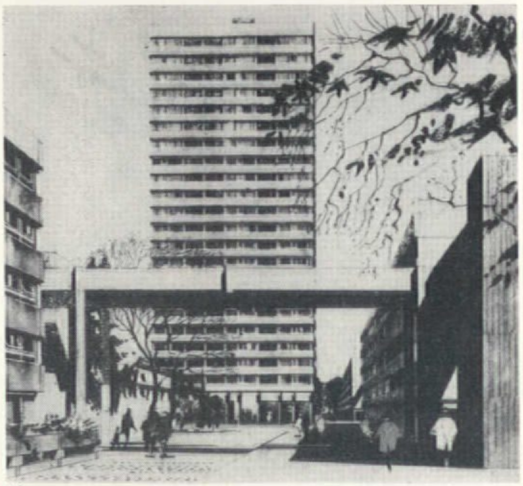
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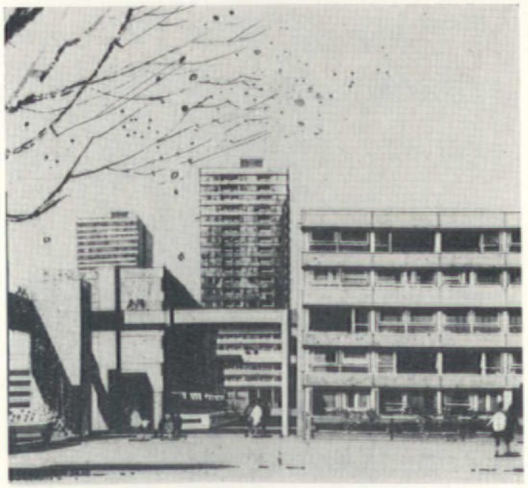
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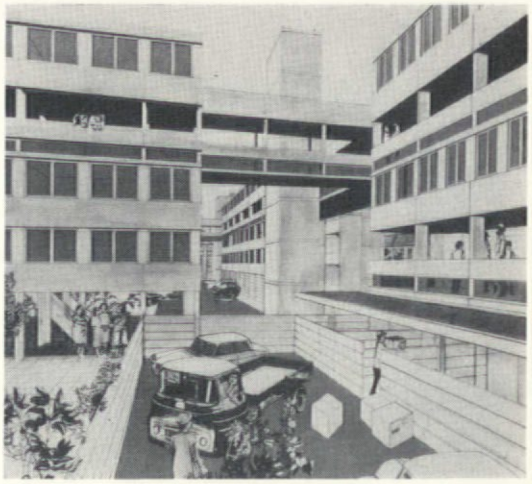
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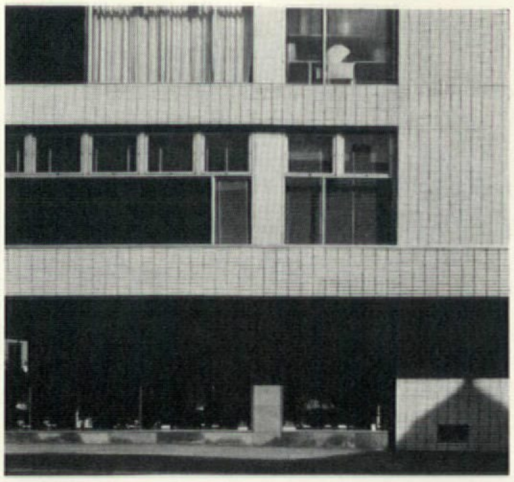
In addition to the four main fields illustrated on the previous pages which have been almost entirely sponsored by the central or local government, the firm has endeavoured to maintain a balanced practice. Working with private clients and public authorities the office has completed schemes for:

Department stores

eg Cole Brothers, Sheffield **1**
Keddies, Southend **2**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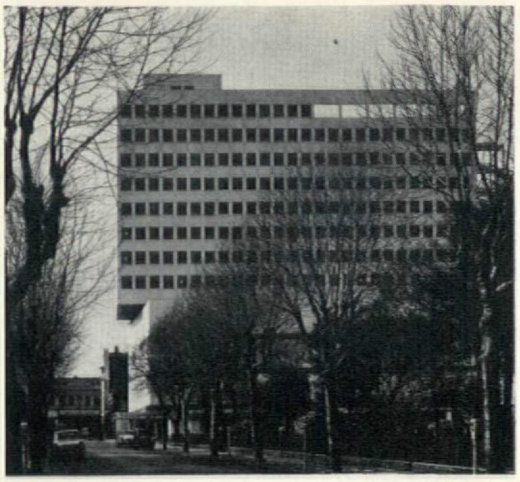
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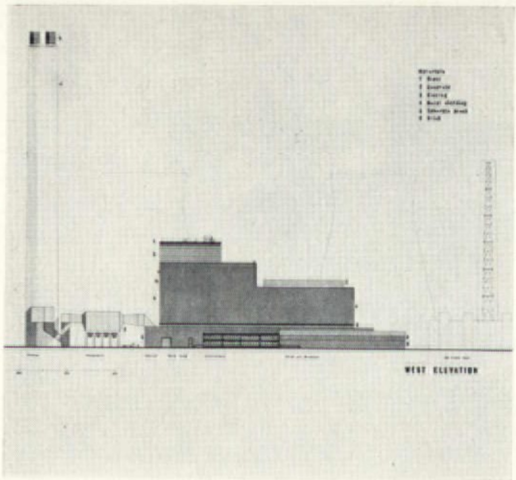
A power station

eg Cottam **3**

Magistrates courts

eg Manchester **4**



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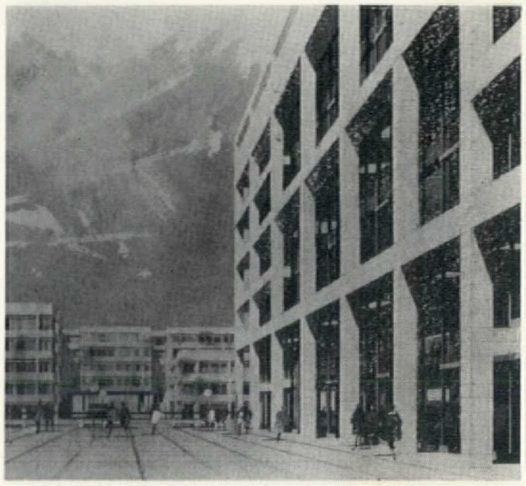
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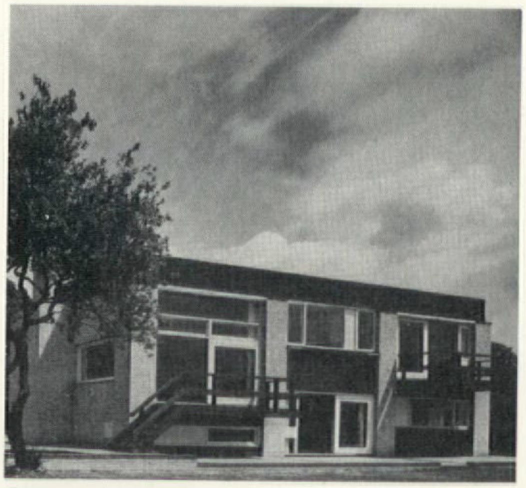
Private houses

eg Keddie House **5**
Evans House **6**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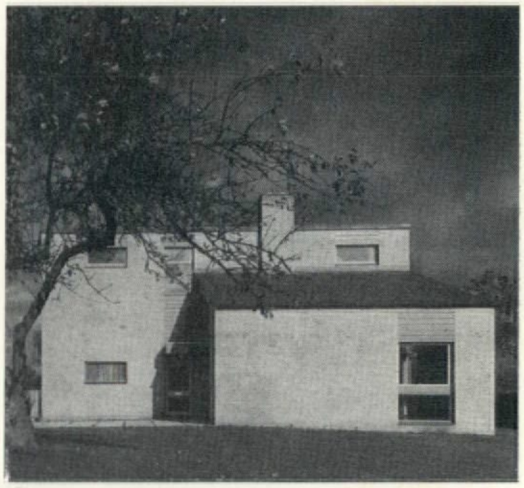
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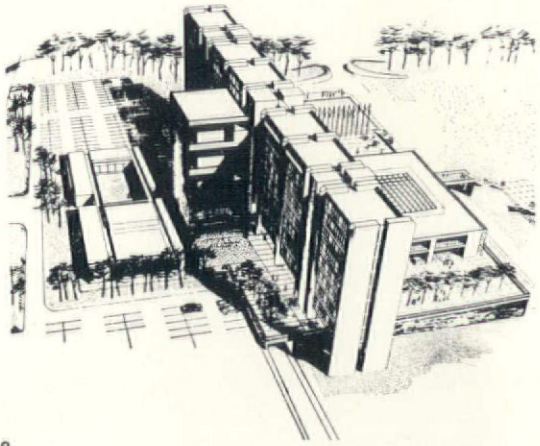
Furniture

eg Formation Furniture **7**


7

From time to time the firm has been asked to participate in forms of limited competition. Although none of the schemes were adjudicated prize winners, these schemes—relegated to the realm of architectural exercises—have, from the firm's point of view, been well worthwhile. Many new ideas and innovations appearing in subsequent work stem from these competitions.

eg Churchill College
New Headquarters for WHO, Geneva **8**
Lever House, Hamburg **9**
Blackpool City Centre **10**



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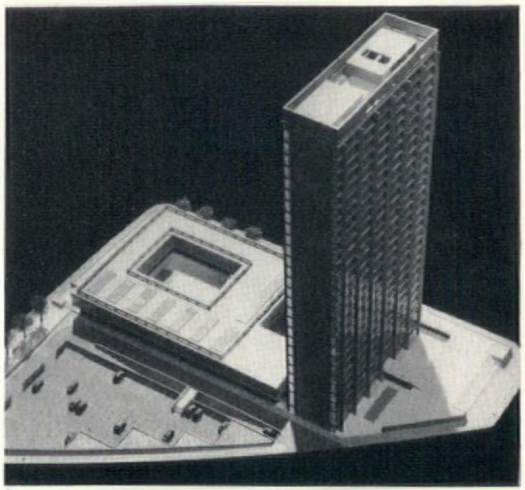

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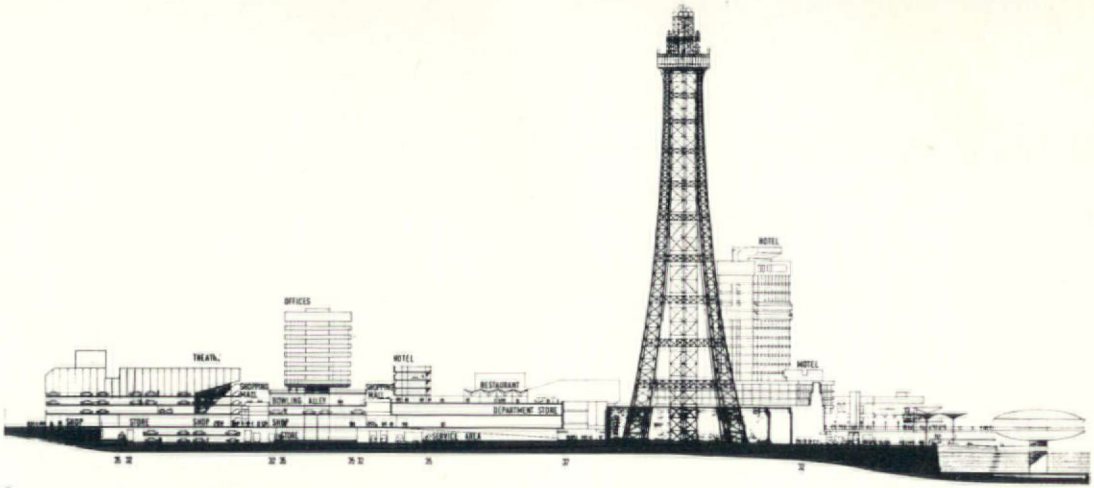
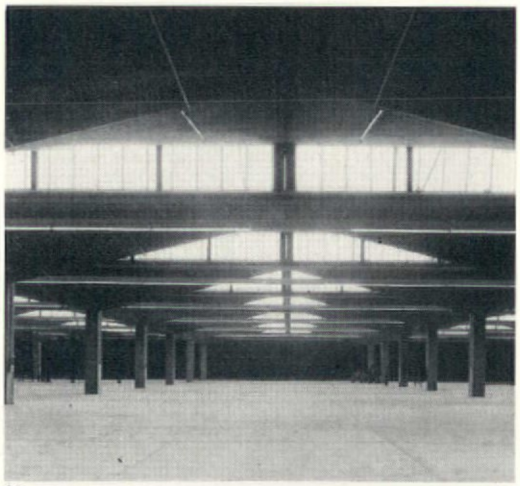


10

The YRM partnership has always enjoyed the notion of collaborating with other architects and engineers who have a similar approach to the problems of architecture. By the very nature of such undertakings, some of these acts of collaboration have been more successful than others.

eg US Embassy with Eero Saarinen
John Lewis Warehouse with Felix Candela **11**
Boots Headquarters with Skidmore Owings and Merrill **12**



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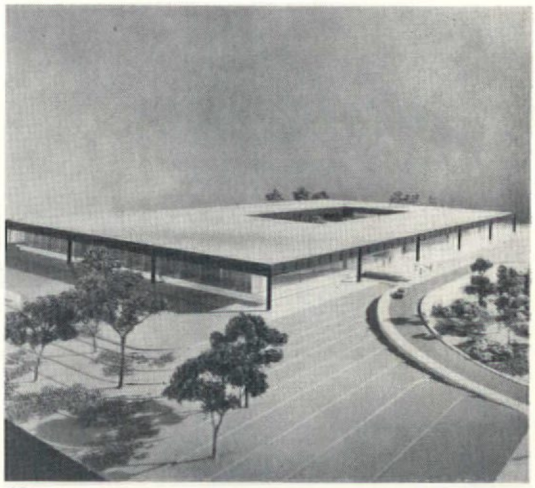
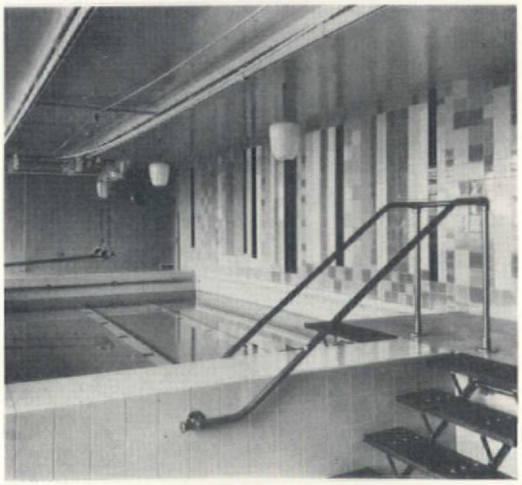


12

In common with other architects, the partners of YRM are interested in the possibilities of associating works of fine art with their buildings. In nearly every case the most successful examples have been those where the works are in no way integral with the fabric of the building.

eg Londonderry Hospital **13**
University of Liverpool
Gatwick VIP Suite **14**



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14

Photos: 1 & 13 Sam Lambert; 2, 5, 6 & 11 Henk Snoek; 9 Machinery; 14 John Donat

YRM statement of principles

At the time when the original partnership brought in new members it was decided by all the partners that the firm should prepare itself for an envisaged period of growth. The main decision was to clarify the architectural approach of the firm. It was thought correct that, with the increase in the number of partners and architects who all had something to contribute, the firm should, however loosely, produce a more formal way of working, which in turn would be aimed to produce corporate solutions.

In 1959 the partners agreed that it was time to take a closer look at the way the firm worked as a business. They retained a firm of management consultants who, in a pilot study recommended, amongst other things, the appointment of a full time manager. With the consultants' assistance this appointment was made in mid-1960. The new manager, whose career had been in organization and methods, carried out—together with the consultants—a more intensive survey of the administrative procedures of the office. Since that time procedures and organization have been consistently under review.

As YRM expanded there was a natural fear that individual architects not following some agreed lines of restraint would cause a form of architectural anarchy to exist within the firm. It was, of course, appreciated that any restraints should lead to positive growth and development and should in no way frustrate those who had something to contribute.

A number of beliefs were established as a basis for a YRM approach to architecture.

A dynamic and developing architectural main stream, originating from the modern international movement as established in the 20s and 30s was still the correct course to follow. It was, however, appreciated that while on this Pilgrim's Progress there were many pitfalls to avoid, eg the temptations of creating pastiches of the 'heroic period' of the modern movement, getting too absorbed in what other architects were doing without letting their statements feed back through the digestive tract of one's architectural conscience.

A real sympathy should exist for the social needs and problems of the community.

There was need for the architect to reassess his role; the prima donna architect should be a man of the past, the new architect should be one who leads, but also collaborates with other disciplines to produce a total solution to any problem.

Architecture is an art that requires the maximum application of one's intellect, which in turn demands an understanding for the necessity to develop both a rational and visual sense of order.

The aim should be the highest standards of technological performance—this aim to be seen only as a technical means to an architectural end.

The pursuit of these basic beliefs—a real attempt to work in a corporate manner and a revised and united decision process—has led to the firm's producing a corpus of buildings which can be recognized as the work of YRM. There would be nothing unique in this if the firm were directed by a single architectural personality; after all, there are many examples of this type of practice in Great Britain.

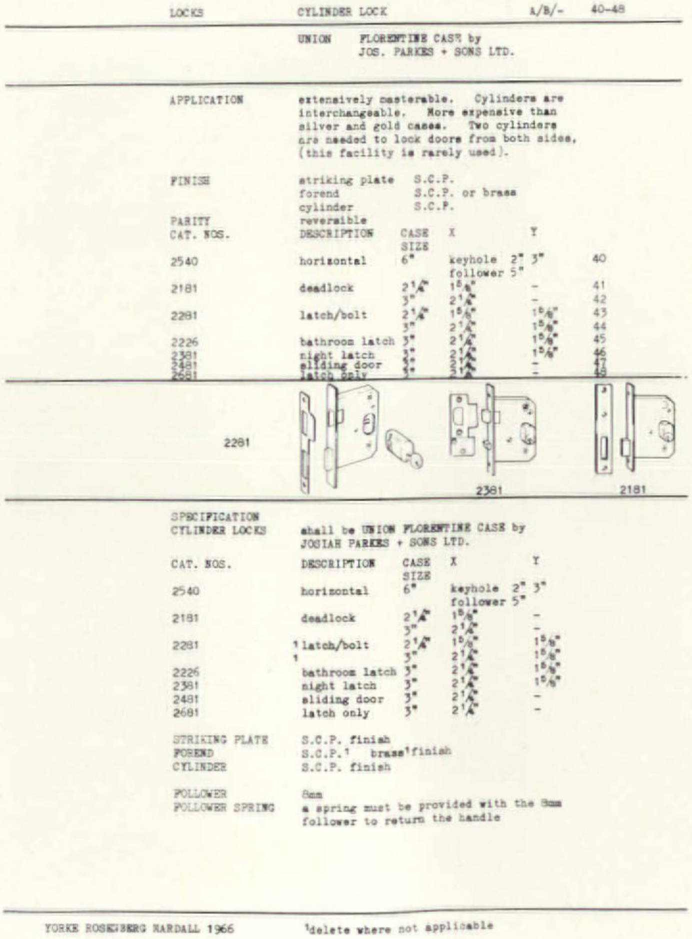
However, it is rare in this country for a relatively large practice to produce both consistent and cohesive architecture which, at the same time, has a recognizable identity. This is particularly interesting when one takes into account the number and variety of architectural personalities participating, the conflicts that can arise until common ground is established and the constant risk of the individual over-projecting his personality at the expense of the corporate body.

It was agreed by the partners when conditions for change were being considered that there must be a unity of policy, both for design and technology. The partners now operate as a single policy-making body. To each partner is delegated responsibility for particular projects and also for specific administrative and technical areas. These roles, however, are executed in accordance with the objectives determined by the partnership as a whole.

In practice, the office has found that the best working unit is the self-contained group, ranging in size from 10 to 24 persons including architects, technical staff and clerical assistants. The group architect has full executive responsibility to the partnership for the production of the jobs assigned to his group. It is the intention that groups should not specialize on any particular building type. The partnership finds that the group system shortens lines of communication and the decision chain and permits the development of ability and responsibility in both the leader and his team.

There is a significant and necessary point in the growth of a firm when it is economically possible to accept those additional indirect costs associated with the development of specialist knowledge and procedures which can be applied to a firm as a whole. Certain developments have in the past been sponsored by *ad hoc* working parties within YRM but, in future, these will be initiated by the firm's Rationalization Section which is constantly expanding its scope and responsibility. This section has been established to improve the total performance of all jobs in the office. It is a work group, controlled by a partner, headed by an architect, and calling on the specialist knowledge of others. The group's work is the rationalization of all known tasks. Their brief, however, precludes any fundamental research. It is felt that this area should be left to larger and more appropriate organizations. The priorities of the programme have been established to deal with those procedures which are time-wasting, or those which experience has shown to be badly performed. It has been found that this programme of priorities applies to all building types. The section produces two kinds of documentation, one which shows what tasks have to be performed and the other how to perform them. The first category covers Job Guides, Design Manuals and The Office Guide to the Production of Standard Working Drawings; the second covers Specifications for the Performance, Maintenance and Supervision of Materials and Equipment. All information is collated, coded and filed by the Information Section, which is part of Rationalization and is continually under review.

The Partnership has recently arranged that all senior members of the firm should attend a fortnightly seminar. This is a positive attempt to ensure that the firm's senior staff are kept informed of current procedures and methods. In turn, it is the individual responsibility of those senior members to ensure that relevant information is passed on to their staff. The seminars are taken by either outside specialists or members of the firm. The latter alternative is preferred as it is felt that the individual will benefit from the challenge of preparing a paper which is expected to be both erudite and practical.



LOCKS CYLINDER LOCK A/B/- 40-48

UNION FLORENTINE CASE by
JOS. PARKES + SONS LTD.

APPLICATION extensively masterable. Cylinders are interchangeable. More expensive than silver and gold cases. Two cylinders are needed to lock doors from both sides, (this facility is rarely used).

FINISH
striking plate S.C.P.
forend S.C.P. or brass
cylinder S.C.P.

PARITY reversible

CAT. NOS.	DESCRIPTION	CASE SIZE	X	Y	
2540	horizontal	6"	keyhole 2" follower 5"	3"	40
2181	deadlock	2¼"	1⅝"	–	41
		3"	2¼"	–	42
2281	latch/bolt	2¼"	1⅝"	1⅝"	43
		3"	2¼"	1⅝"	44
2226	bathroom latch	3"	2¼"	1⅝"	45
2381	night latch	3"	2¼"	1⅝"	46
2481	sliding door	3"	2¼"	–	47
2681	latch only	3"	2¼"	–	48

2281

2381

2181

SPECIFICATION
CYLINDER LOCKS shall be UNION FLORENTINE CASE by JOSIAH PARKES + SONS LTD.

CAT. NOS.	DESCRIPTION	CASE SIZE	X	Y
2540	horizontal	6"	keyhole 2" follower 5"	3"
2181	deadlock	2¼"	1⅝"	–
		3"	2¼"	–
2281	¹latch/bolt	2¼"	1⅝"	1⅝"
	¹	3"	2¼"	1⅝"
2226	bathroom latch	3"	2¼"	1⅝"
2381	night latch	3"	2¼"	1⅝"
2481	sliding door	3"	2¼"	–
2681	latch only	3"	2¼"	–

STRIKING PLATE S.C.P. finish
FOREND S.C.P.¹ brass¹finish
CYLINDER S.C.P. finish

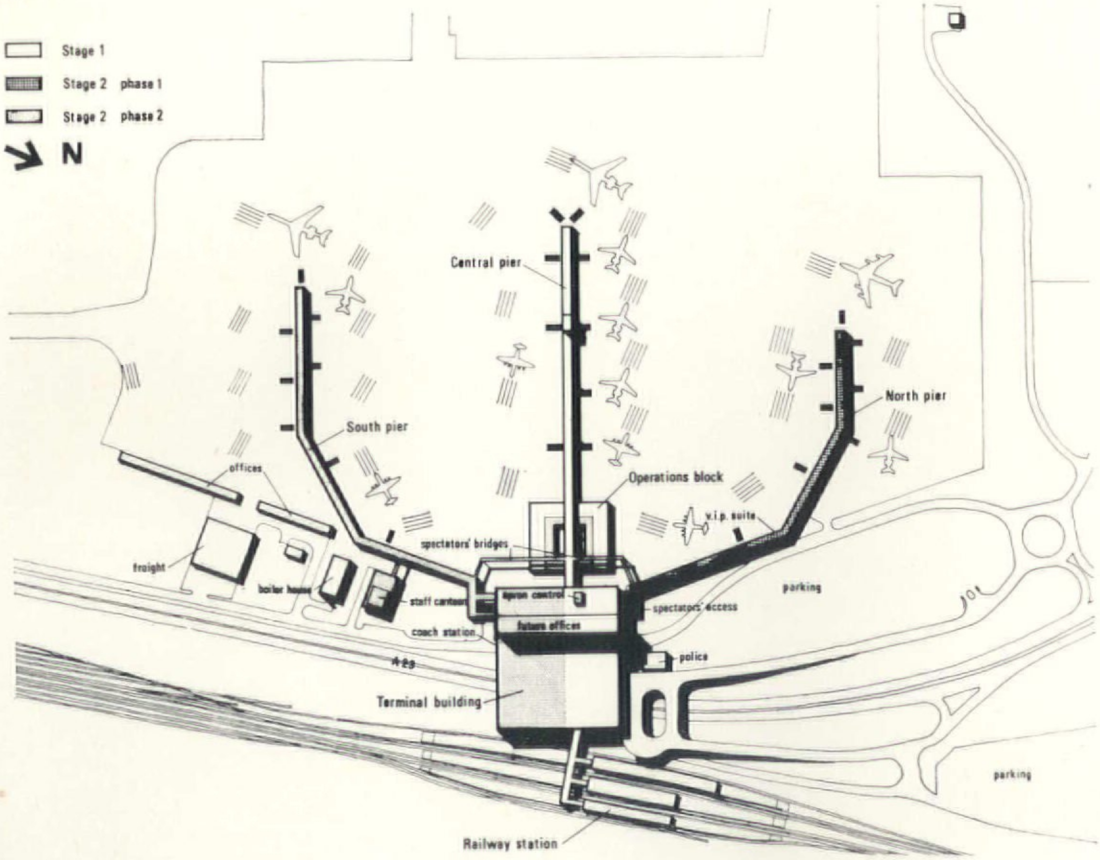
FOLLOWER 8mm
FOLLOWER SPRING a spring must be provided with the 8mm follower to return the handle

YORKE ROSENBERG MARDALL 1966 ¹delete where not applicable

Typical page from the YRM Design Manual

1

2



London (Gatwick) Airport

Consulting engineers: Sir Frederick Snow & Partners

The completion of the second stage of development concludes an important phase in the growth of Gatwick, the second of the international airports serving London.

The airport, situated on the borders of Surrey and Sussex, between Horley and Crawley, 25 miles south of the centre of London, was the first in Europe to use the pier system of passenger handling and the first in the world to integrate air, road and rail transport. The first stage of development, which was completed in 1958, was provided as:

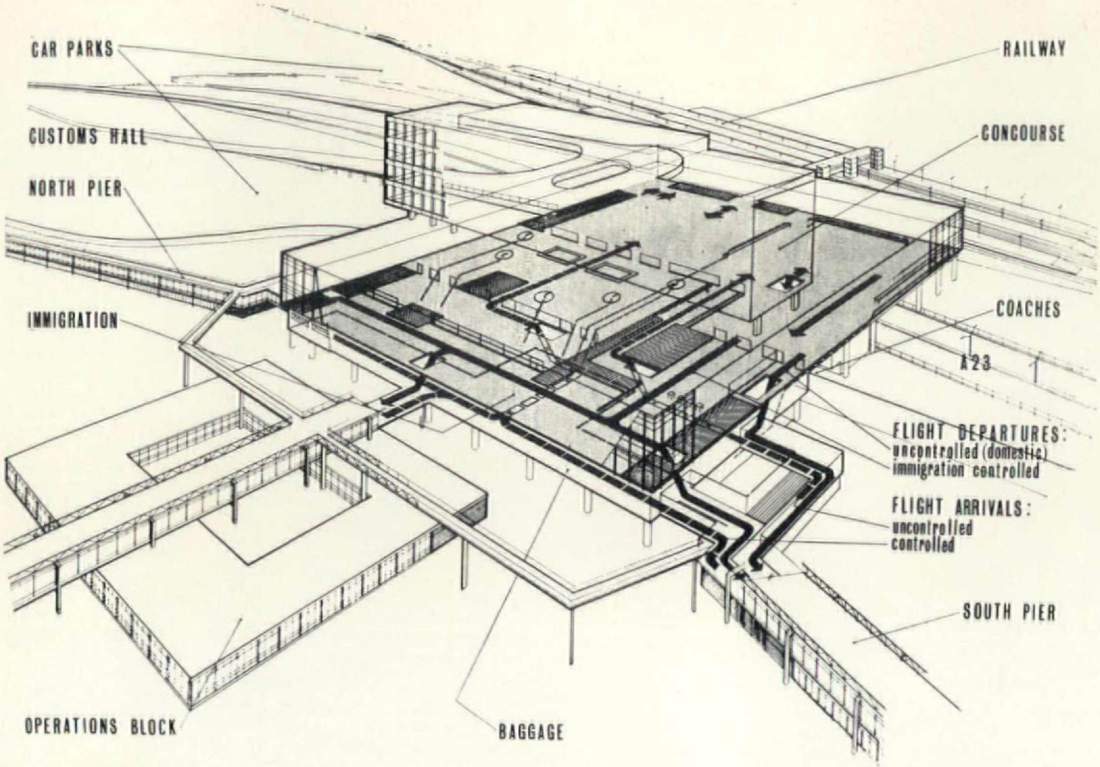
an overflow for short-haul and medium-haul services, mainly to the south, which London (Heathrow) would eventually be unable to accommodate;

a bad weather alternative for Heathrow;

a base for independent operators.

1
Aerial view of the new airport building, showing how it adjoins the railway station and straddles the main road from London to Brighton
Photo: A. Handford

2
Block plan



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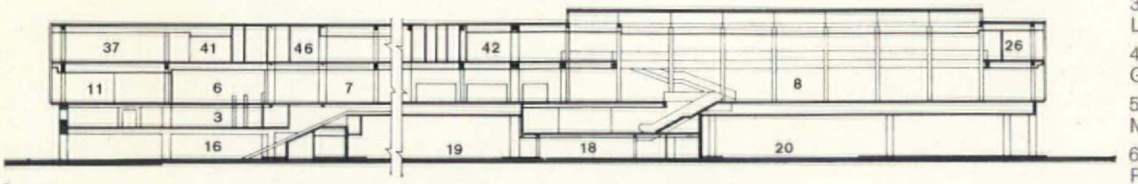

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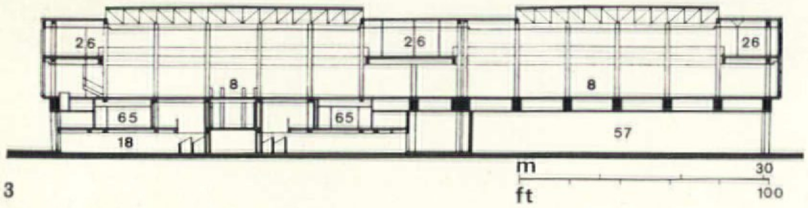


3

1
Perspective diagram with passenger flow lines

2
Cross-section through concourse halls

3
Longitudinal section

4
Ground floor plan

5
Mezzanine floor plan

6
Perspective sketch of the building as it is intended to be completed with an office block

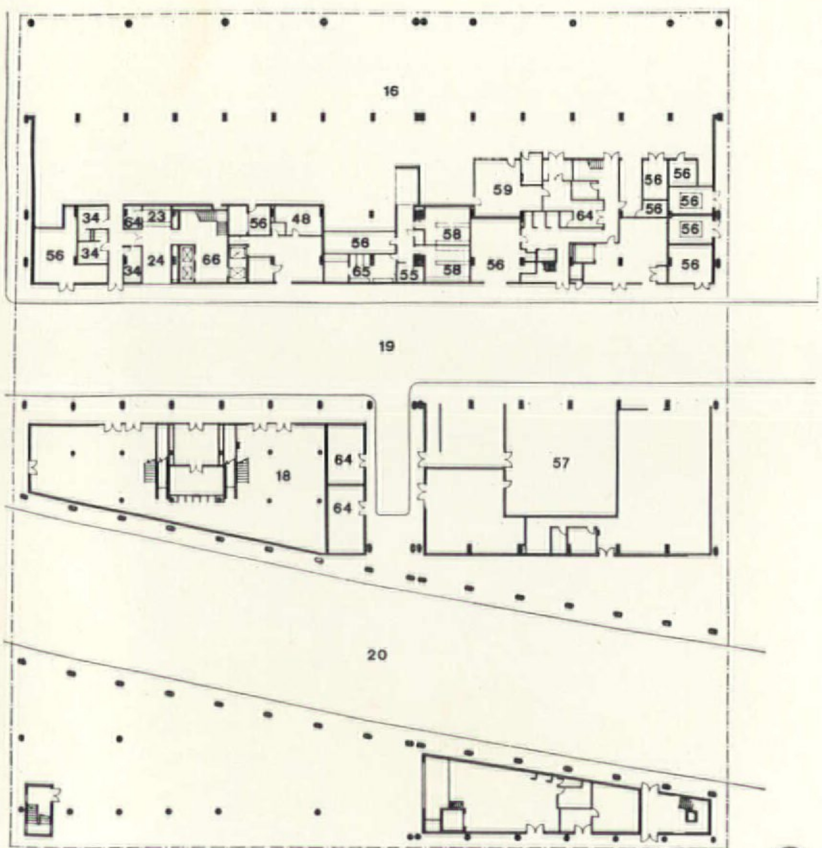
7
The terminal building from the south pier with the outline of the proposed office block

8
Concourse level plan

9
Restaurant level plan

Photo: J. Donat

4



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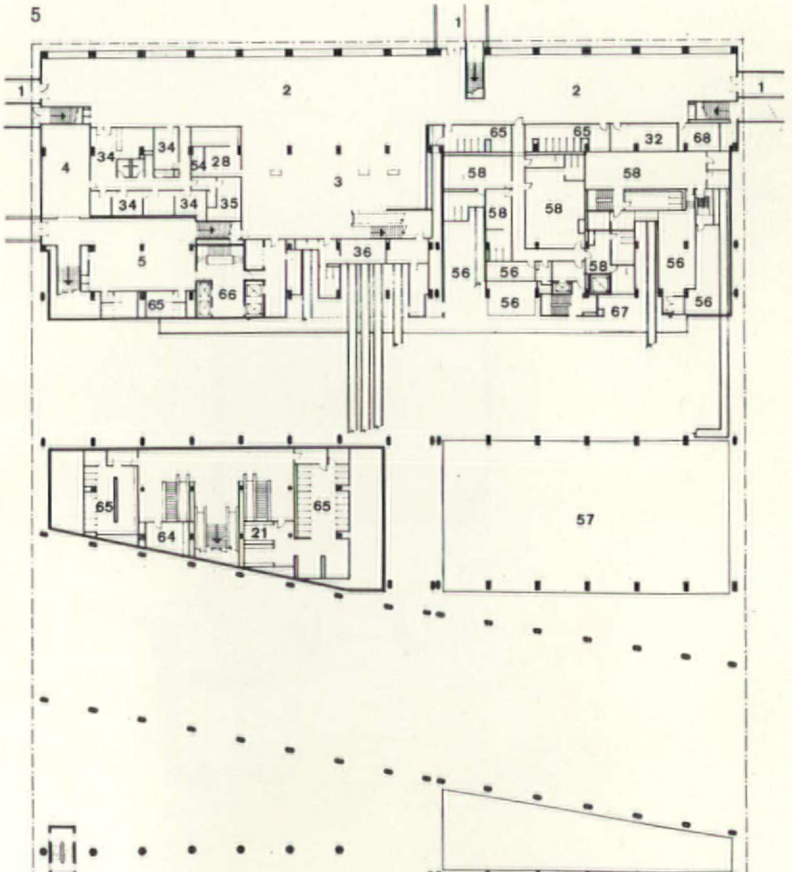

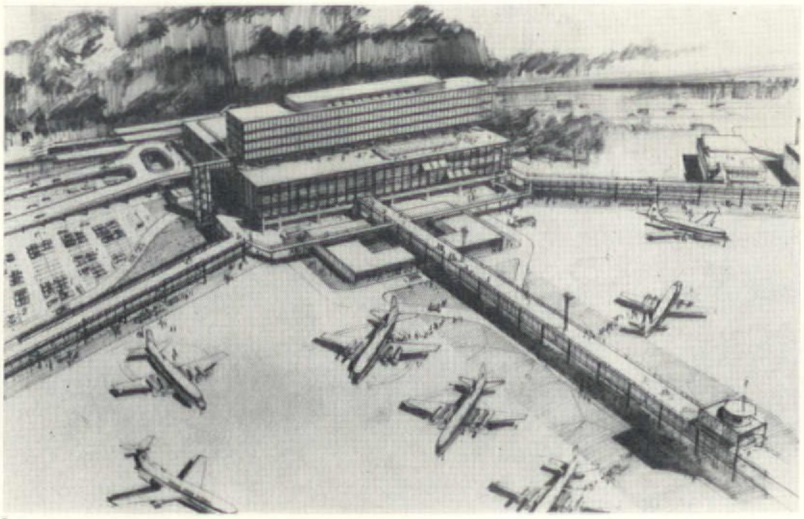

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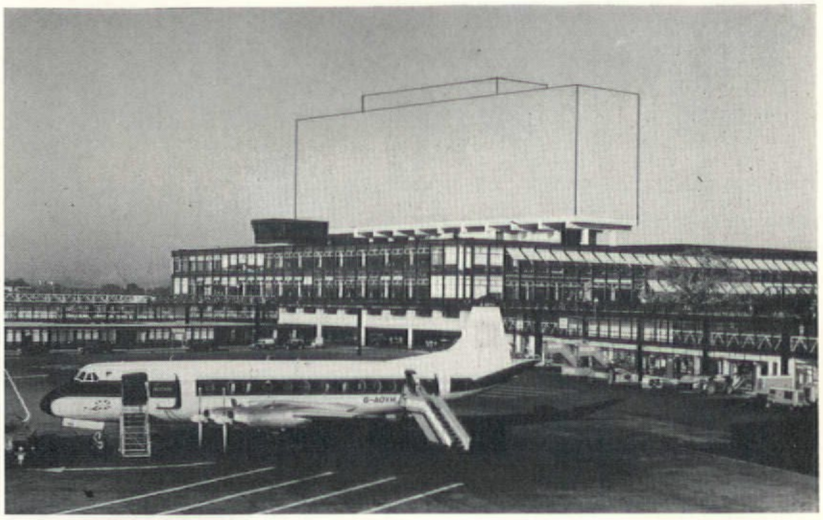
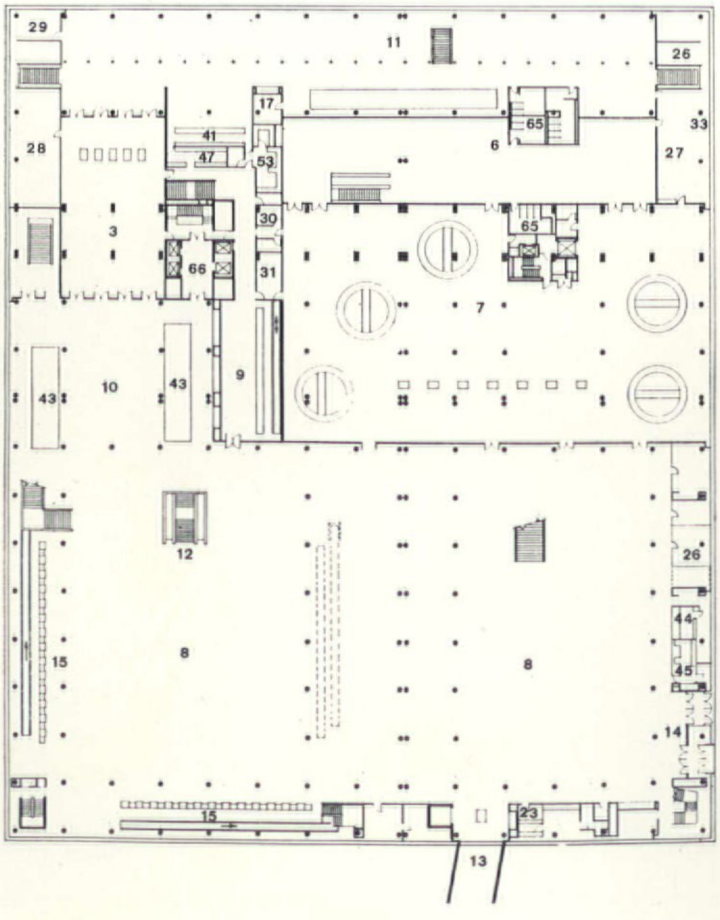


7

Key to plans and sections

1 access to pier
2 waiting airside arrival
3 immigration hall
4 health check waiting
5 uncustomed departure waiting
6 holding lounge
7 customs hall
8 concourse
9 customs departure inspection and uncustomed arrivals baggage claim
10 departure lobby
11 airside departure waiting
12 access to coaches
13 access to station
14 access to road flyover
15 check-in desk and baggage conveyor
16 baggage handling
17 duty free shop
18 coach station
19 service road
20 A23 road
21 powder room
22 airline reception suites
23 inquiries
24 entrance lobby
25 bridge
26 offices
27 HM customs office
28 immigration office
29 chief immigration officer
30 search room
31 shipping merchandise control
32 special branch
33 customs preventive officer
34 health department
35 staff
36 rest room
37 airside lounge
38 restaurant
39 call order restaurant
40 bar lounge
41 buffet
42 balcony lounge
43 shops
44 post office
45 bank
46 kitchen
47 food store
48 liquor store
49 sandwiches and snacks
50 crockery
51 linen
52 servery
53 washing and preparation
54 dark room
55 drying room
56 plant
57 GPO block
58 locker room
59 staff mess
60 staff dining
61 manager
62 chef
63 cloaks
64 store
65 w.c.s
66 lift lobby
67 duct
68 cleaner
69 void

8



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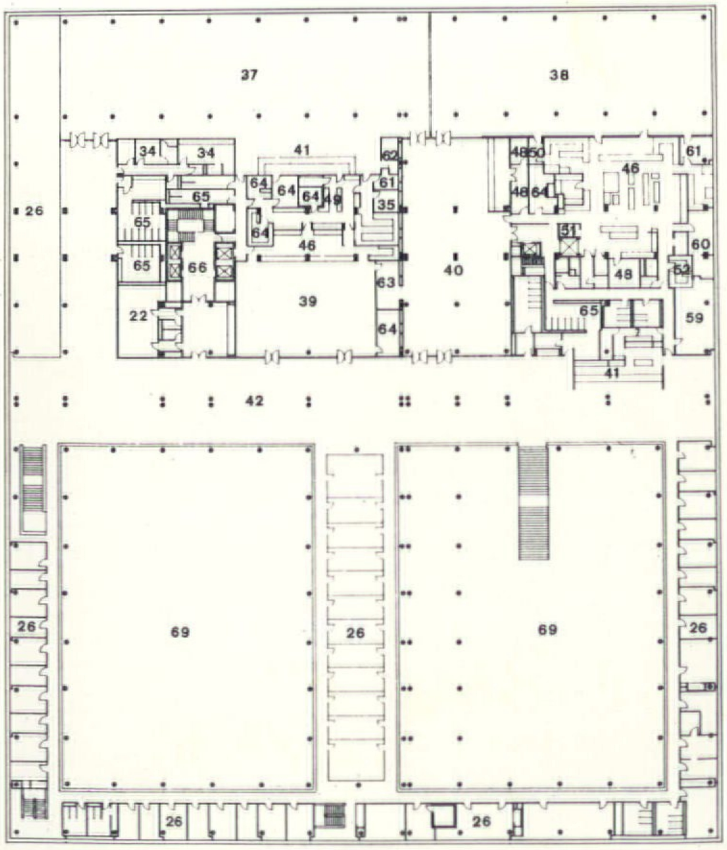

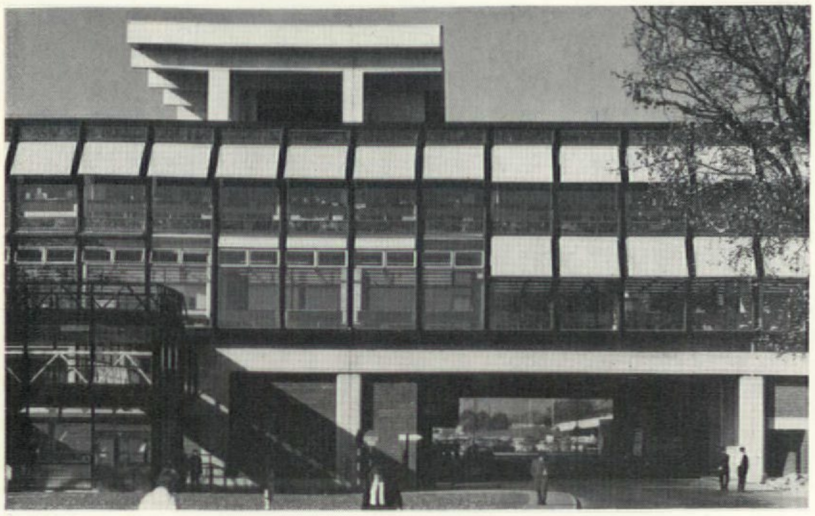

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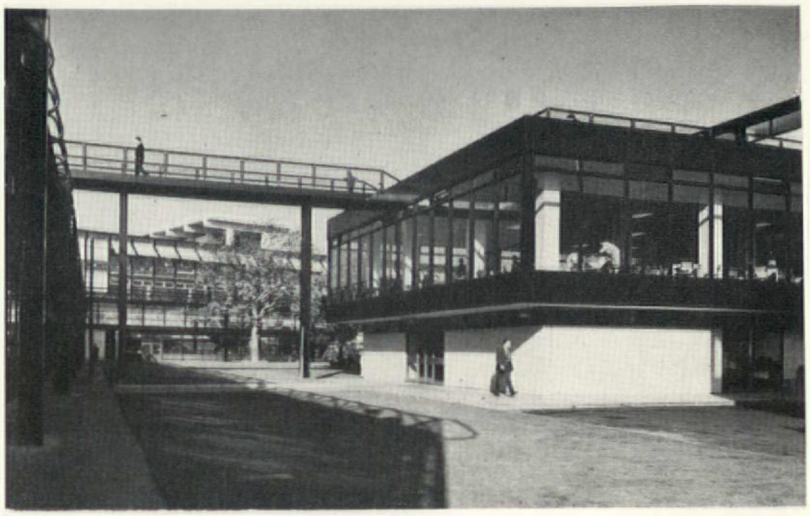

2

Although the new airport has only been in operation since 1958, the site has a long aeronautical history, for in 1930 an aerodrome licence was granted for a site a mile to the south of the existing terminal building. This was developed by the construction of a terminal building and a railway station, and the new airport was opened in June 1936.

Plans to establish a modern airport on the site were first announced in 1952 and planning work began in 1955 when the Ministry of Aviation appointed Frederick S. Snow and Partners as the co-ordinating consulting engineers for the whole development and Yorke Rosenberg Mardall as architects.

The development was planned to take place in three stages. The first stage included a single 7000ft runway, a terminal building and associated aprons, taxiways and ancillary buildings. A single central pier linked the terminal building with the aprons where 21 aircraft parking stands were available, 11 of which were adjacent to the pier. The new railway station on the main London–Brighton line, had direct access to the concourse of the building by means of a foot bridge. The main London–Brighton road (A23) was diverted to pass beneath the terminal building and road traffic had direct access, by flyover, to the concourse level. Construction began in 1956 and the project, which cost approximately £7 million, was opened on June 9th, 1958.

In 1962 the number of passengers through the London airports group was approximately eight million and it is expected that this figure will be more than doubled by 1970. It was then anticipated that the number of passengers through Gatwick would rise from the 1962 figure of about one million to nearly two and a half million by 1970.

As the forecasts of passenger and aircraft movements showed that the Stage 1 terminal building, the pier and the aprons would be unable to accept the heavy summer traffic and large-scale winter diversions from Heathrow, the planning of the major works in the second stage of the airport's development was commenced in 1961.

The north pier and additional apron areas were completed in 1963 at a cost of approximately £700,000.

It is expected that the future development of the airport will include the construction of a second runway parallel to, and north of, that existing. An office block will be constructed above the terminal building, the first floor of this has been provided as it also serves as a roof to the plant and lift rooms. The passenger handling facilities

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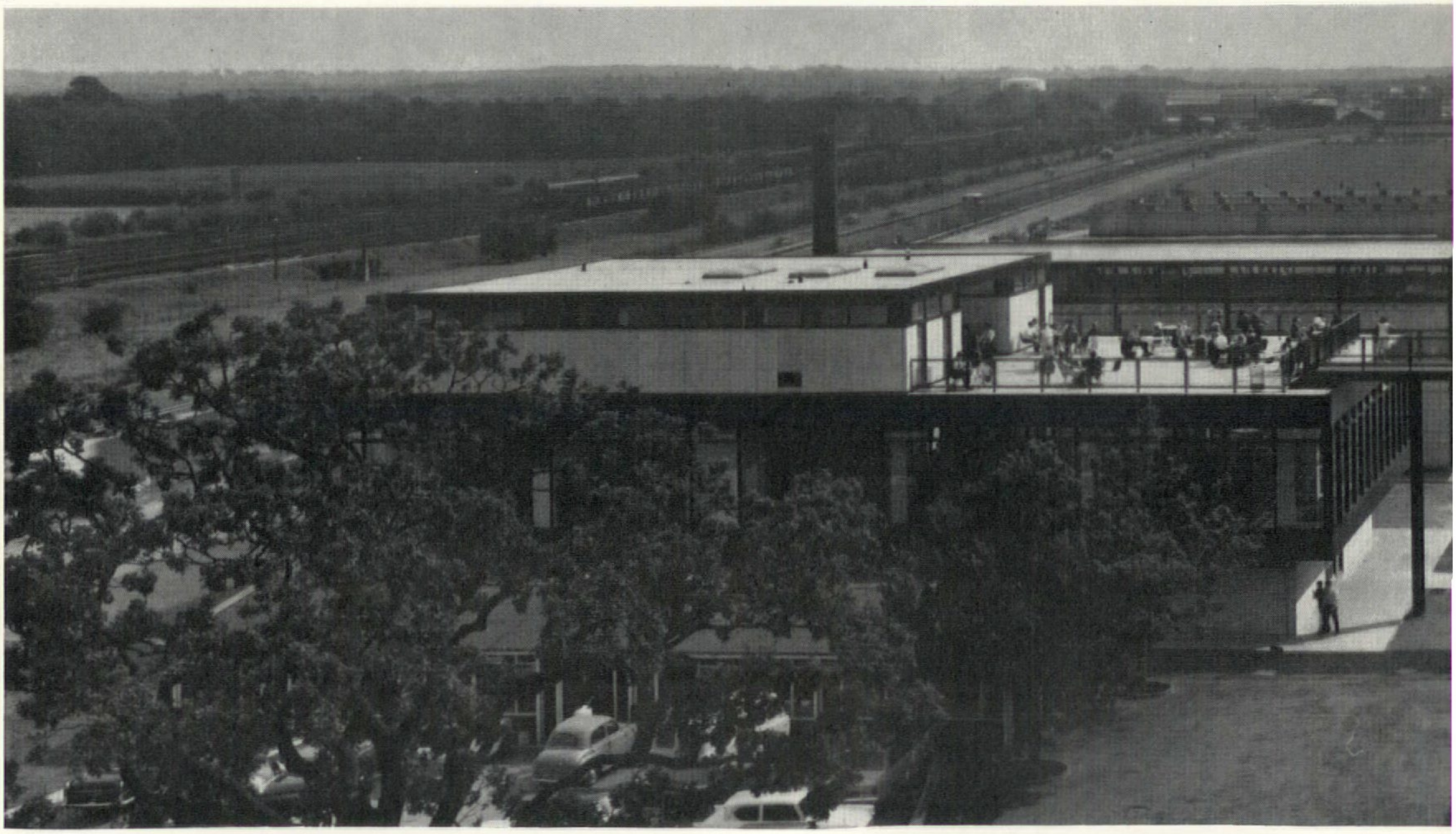

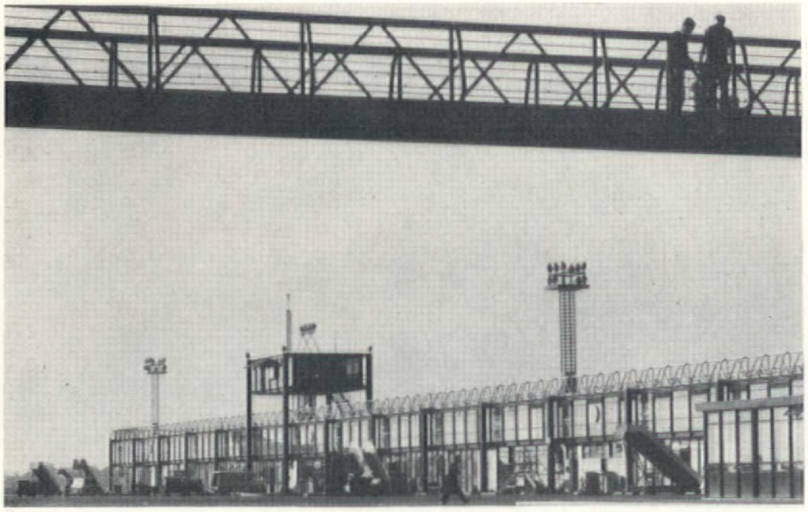

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in the terminal building will be extended, as also will the associated facilities, such as car parks and baggage handling.

To determine the basic design data for the new buildings and associated facilities the forecasts of the future annual numbers of passengers had to be analysed in detail to ascertain the hourly flows of incoming or outgoing passengers, and the proportions of domestic and international traffic; the baggage load of each passenger and the probable average aircraft load were assessed. In addition, to establish the demand for areas within the building, it was necessary to know the time taken to handle passengers through the several processes and their probable waiting time for aircraft. The proportion of passengers arriving by car, coach and train was also estimated as was the number of accompanying visitors. As the airport attracts many spectators, the anticipated number was assessed so that adequate facilities could be provided. To meet the forecast increase in the airport staff, further space was required for offices, car parks and canteens. The consultants prepared the basic data in July 1961 and the detailed planning work then began.

The planning of the terminal area was limited by the existing Stage I development. A further important factor was the need to keep the airport in full operation during the construction phase; this entailed designing the extension in a way that would allow it to be used during the winter months whilst the existing building was being altered to form one new terminal. As the whole project had to be in use for the summer traffic of 1965, the programme for the design and construction phases required careful and detailed planning.

1
The terminal from the south. The service road passes under the building

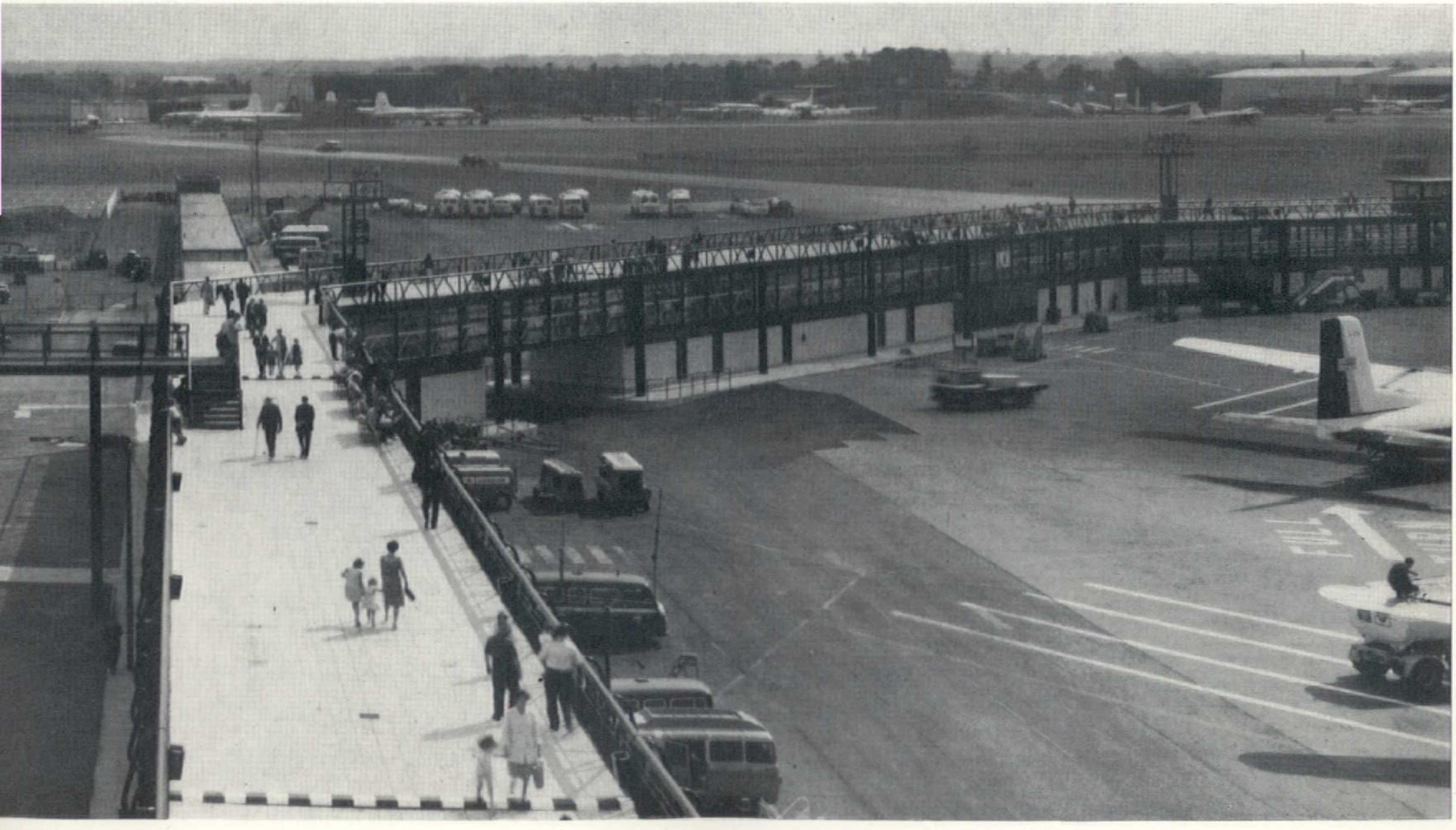
2
The terminal seen from the south under the link bridge from the south pier to the staff canteen on the right

3
The central pier seen beyond the pedestrian bridge that links it to the south pier

4
View along the deck of the north pier

5
View along the south pier, with the staff canteen on the left

Photos: 1–4 J. Donat; 5 Architect's Journal



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The building is designed to avoid confusion between the flows of departing and arriving passengers.

Departing passengers reach the main concourse on the first floor from the station footbridge, if they arrive by train, or from the flyover link with the A23 if they come by car. Passengers arriving by coach reach the concourse by escalators from the ground level coach station. They then check in at the airline desks and may then remain with their friends in the concourse or its associated bars and restaurants until their flight is called. Baggage is despatched from the desks by conveyor to the ground floor handling area. A third line of desks and a conveyor are planned to take future additional traffic.

When flights are called, all international passengers pass through immigration control into the airside lounge at concourse level where buffet facilities are available. Passengers either remain here until a further announcement is made or they proceed directly along one of the three piers from mezzanine level to the appropriate gate. There are waiting areas at the gates, but usually passengers are escorted directly from the gate to the adjacent aircraft. When outbound customs examination is needed the reversible domestic arrivals baggage conveyor is used. Passengers on domestic or Common Travel Area flights proceed to their aircraft along the south pier, which is divided to separate them from international passengers. Waiting and assembly areas are available at apron level and additional waiting areas are available at mezzanine level.

Arriving international passengers walk from their aircraft to the adjacent pier gate and then to the arrival lounge in the terminal building at mezzanine level. From here they pass through immigration control and, if required, port health checks. They then proceed by escalator to a holding lounge at concourse level where they await the arrival of their baggage in the adjoining customs hall. Passengers collect their baggage from one of the three conveyor-fed carousels in this hall and after customs examination pass into the main arrivals concourse where there is direct access to trains, cars or coaches. Arriving domestic passengers use the south pier stands and enter the terminal building at mezzanine level from this pier. They proceed to the domestic baggage claim area at concourse level and then into the main arrivals concourse.

Amenities for passengers, some of which are also for use by visitors, now include a called-order restaurant, a lounge buffet and an airside buffet in addition to a restaurant, cocktail bar and balcony buffet. There are many airport shops in the departure concourse, and two banks and a post office. There is a new powder room and accommodation for nursing mothers.

Additional accommodation has been provided for the airport management and for the customs, immigration and port health authorities. More offices for airlines are provided on the balconies and the 'bridge' between the two concourses at restaurant level.

Each of the piers is used on three levels. The undivided first floor of the north pier, and subsequently the centre pier, is used for international passengers only and includes waiting areas. The south pier is partitioned at first floor level to separate domestic and international passengers and the waiting areas are at ground floor level. The apron level of all three piers, where not used for passengers, accommodates offices and apron service workshops.

Spectators have a separate access to the roof level of the piers. Toilets and shelters are provided and a bridge from the south pier to the staff canteen building will give access to a roof buffet.

The new canteen, to the south of the terminal building, provides facilities for the airport staff at first floor level. The ground floor is used for offices and bonded stores. The operations block, at the root of the centre pier, has been extended to provide more offices for airlines and aircrew services. The new ground movement control centre is on the roof of the terminal building.

Where possible provision has been made for the future increase in the number of passengers. Some areas, at present used for offices, will be opened up when the roof office block is constructed.

The reinforced concrete structure, which is exposed within the building, spans the A23 London–Brighton road and the airport perimeter road using 6ft deep 60–70ft long pre-stressed 'L' shaped beams which were post-tensioned in position. Most of this work was carried out at night when traffic could be diverted through the building area for short periods. As the beams weighed up to 31 tons, two mobile 25 ton cranes were used with 40ft jibs. The main structure,

3

including the steel trusses to the raised roof section over the concourse, was finished in May 1964 and the waterproofing was completed by the erection of the steel mullions, hard-wood frames and glazing.

From May to November work was concentrated on the installation of the electrical, heating, ventilating and mechanical services and the many types of finishes; this necessitated the close programming of the work and materials deliveries of 14 nominated sub-contractors as well as over 40 sub-contractors appointed by the main contractor.

The main electricity supply is from a new substation which has been established beneath the south pier. The standby supply is from a 500 kW automatic start diesel-alternator set which, under mains failure conditions, energizes all essential loads and approximately 25 per cent of the general lighting. Emergency lighting comes into operation for approximately 25 seconds from the time of mains failure until the standby plant is ready to accept load.

There are five new escalators between the ground, mezzanine and concourse floors, and a staff lift and a goods lift. A shaft is provided for

293▷

1
View from the crank in the north pier

2
View down the concourse with the check-in desks under the gallery on the left

3
View across the concourse with the escalators from the passenger coach station in the foreground

4
View of the concourse from the balcony, giving some idea of the first impression of coach passengers arriving at the top of the escalators

5
The departure lobby; the immigration hall beyond

Photos: J. Donat

4

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◁292

two further lifts when the roof office block is constructed. Seven new conveyors transport baggage between the concourse floor, and the ground floor handling area using the void between the beams spanning the roads. Incoming baggage is delivered to three 24ft diameter rotating turntables in the customs hall. All the heating services are supplied through calorifiers served with the high temperature hot water generated and distributed from the main boiler house to the south of the terminal building. The heating and ventilation in the buildings is provided by four systems. Low pressure hot water heating installations serve steel radiators around the perimeter of the buidings to counteract the heat loss from the large windows; these systems are zoned for optimum operating conditions. The main concourse floor incorporates low temperature embedded floor coils and the concourse and all main public areas are provided with plenum installations to ensure adequate ventilation; in winter the air is tempered before being supplied to the rooms. All kitchens, buffet bars and toilets are provided with mechanical extract systems to ensure the rapid removal of fumes and odours.

The finishes have been chosen bearing in mind the need to reduce to a minimum the maintenance and cleaning costs and to harmonize with those already existing. The main floors are of precast terrazzo in passenger areas at concourse level, ceramic tiles are used in other areas and carpets in the restaurant and lounges; certain service areas have granolithic floors. Wall finishes include ceramic tiles at concourse level, marble mozaic to restaurant and buffet areas and glass mozaic to toilets, stair wells and lobbies. The glazed screens and balustrades are anodized aluminium. Demountable partitions are used for temporary accommodation and where flexibility in office layout is needed. Ceilings are generally suspended acoustic tile except over the main concourse where anodized aluminium sheets are used, and in the buffets and bars where ceilings are of fibrous or acoustic plaster. The furniture and fittings were chosen or specially designed for the particular environment.

Passengers started using the extension in November 1964 and, whilst work continued on the balcony areas, the emphasis switched to the work to be carried out in the existing building. This work was mainly associated with alterations to the services but also involved structural changes. The balcony areas of the extension, including the new restaurant and buffets, were handed over at the end of April 1965 so that the existing restaurant and kitchen could be altered.

1
Airside lounge at restaurant level

2
Departure lounge at concourse level. Open staircases lead from here to the mezzanine level and on to the piers

3
The airside lounge at concourse level with the holding lounge beyond

4
Detail of the chairs and white laminated counter in the call-order restaurant

5
Interviewing room adjoining the VIP lounge

Photos: 1–4 J. Donat; 5 S. Galloway

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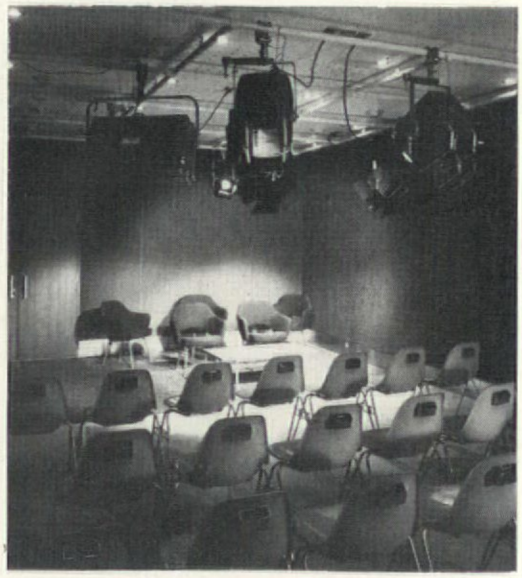

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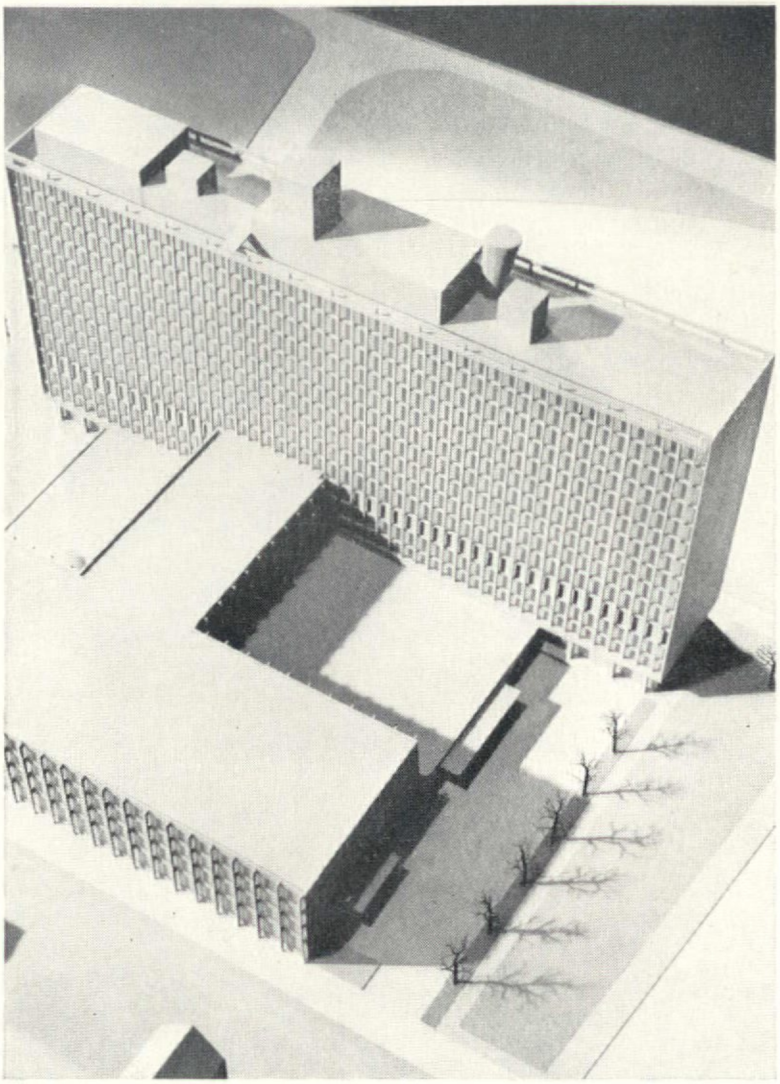


University of Liverpool

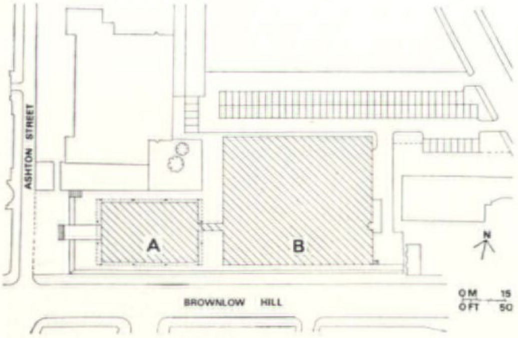
department of electrical engineering and electronics

Engineers: Clarke Nicholls and Marcel

The new building for the Department of Electrical Engineering forms a part of the extensive development of Liverpool University over the last decade, the overall plan for which was prepared by Professor Myles Wright.

The Department has been established for some time in the University and experience was therefore available for the preparation of a very precise and forward-looking brief. In collaboration with the architects the Department were able to provide a very detailed space programme and highly developed schematic layouts of all principal areas. Amendments to the original requirements were few and the sketch plans submitted to the client were subsequently modified only in detail. A specific sum of money was available for the project and the extensive needs of the Department dictated severe limitations to the ancillary and circulation area.

The irregular shape of the site imposed restrictions on building heights and formations and the additional need, as a part of the master plan, for a termination to Beckford Street North lead to the general disposition of the two principal blocks. The activities of the Department fall into four separate but obviously related categories: administration and staff accommodation, teaching (undergraduate), research (staff and postgraduate) and supporting technical services. There was an intimate link between the first two categories and from the outset they were combined to form the terminal block referred to, accommodating the entrance foyer, assembly hall, teaching laboratories, library, staff and administration offices. (Block A on the site plan.) Research requirements presented several specialized demands: spaces with variation in height from 10ft to 30ft were needed; certain laboratories produce sounds similar to that of a small field gun, others needed the proximity of generators and all required sophisticated and complex forms of electricity supply. It was important for the technical workshops to have easy access to the laboratories, for much



1
Site plan

2
North-west corner of block A with the high voltage research laboratory in the distance

3
West end of block A overlooking Ashton Street

4
South-east corner of block A with the two links to the four-storey building on Brownlow Hill

5
South-west corner of block A with the bridge from Ashton Street to the main entrance

6
South elevation of block A

Photos: Henk Snoek

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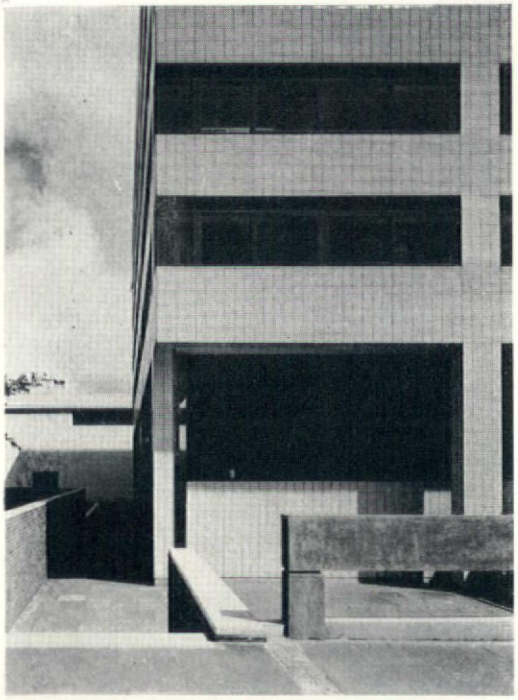

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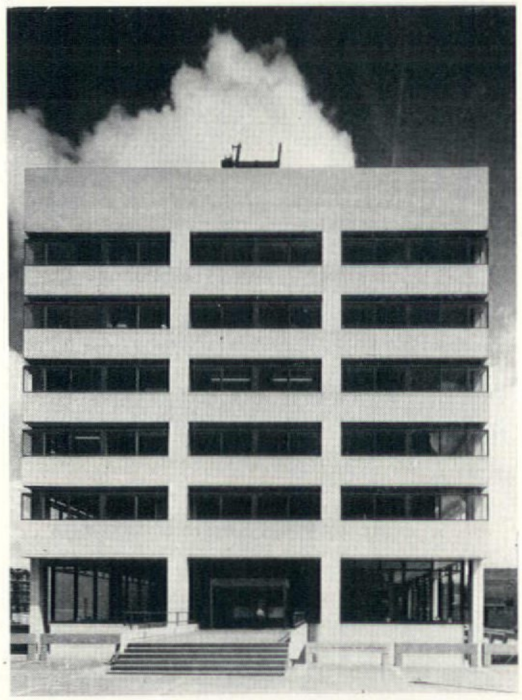

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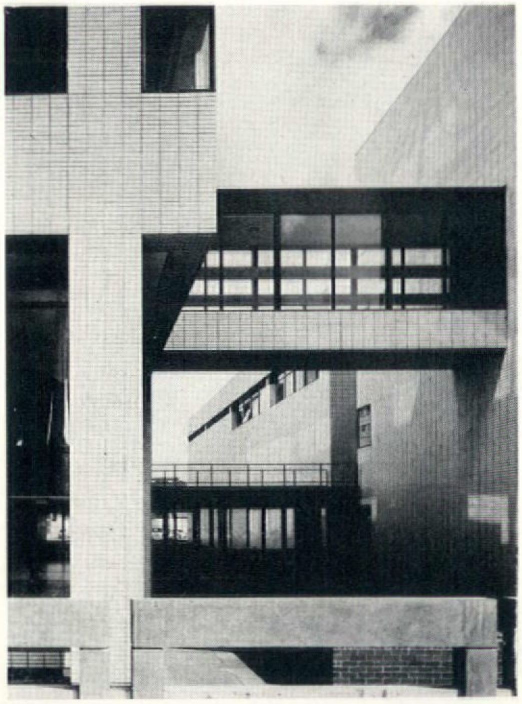

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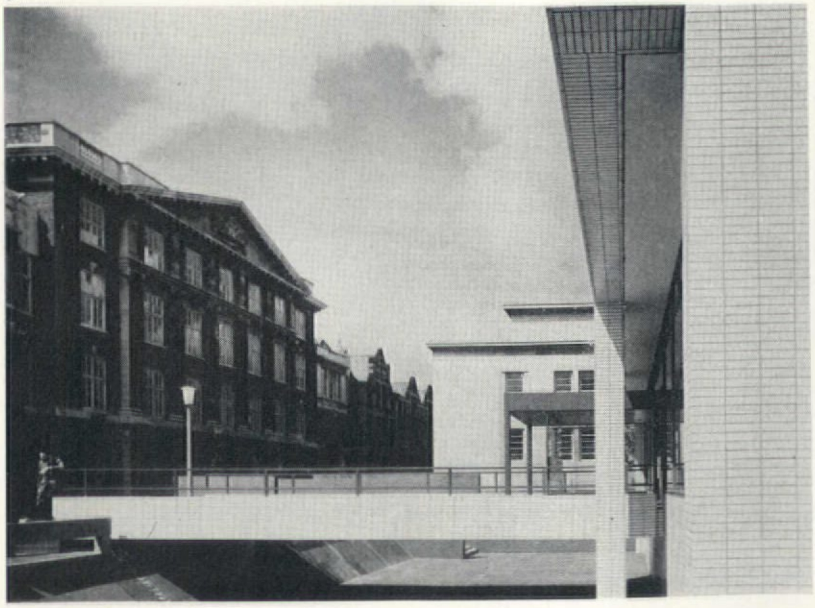

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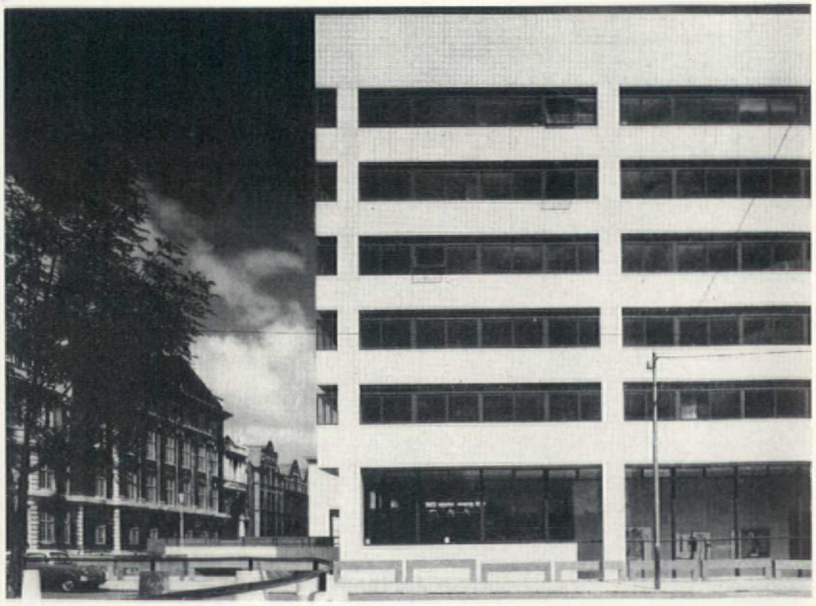

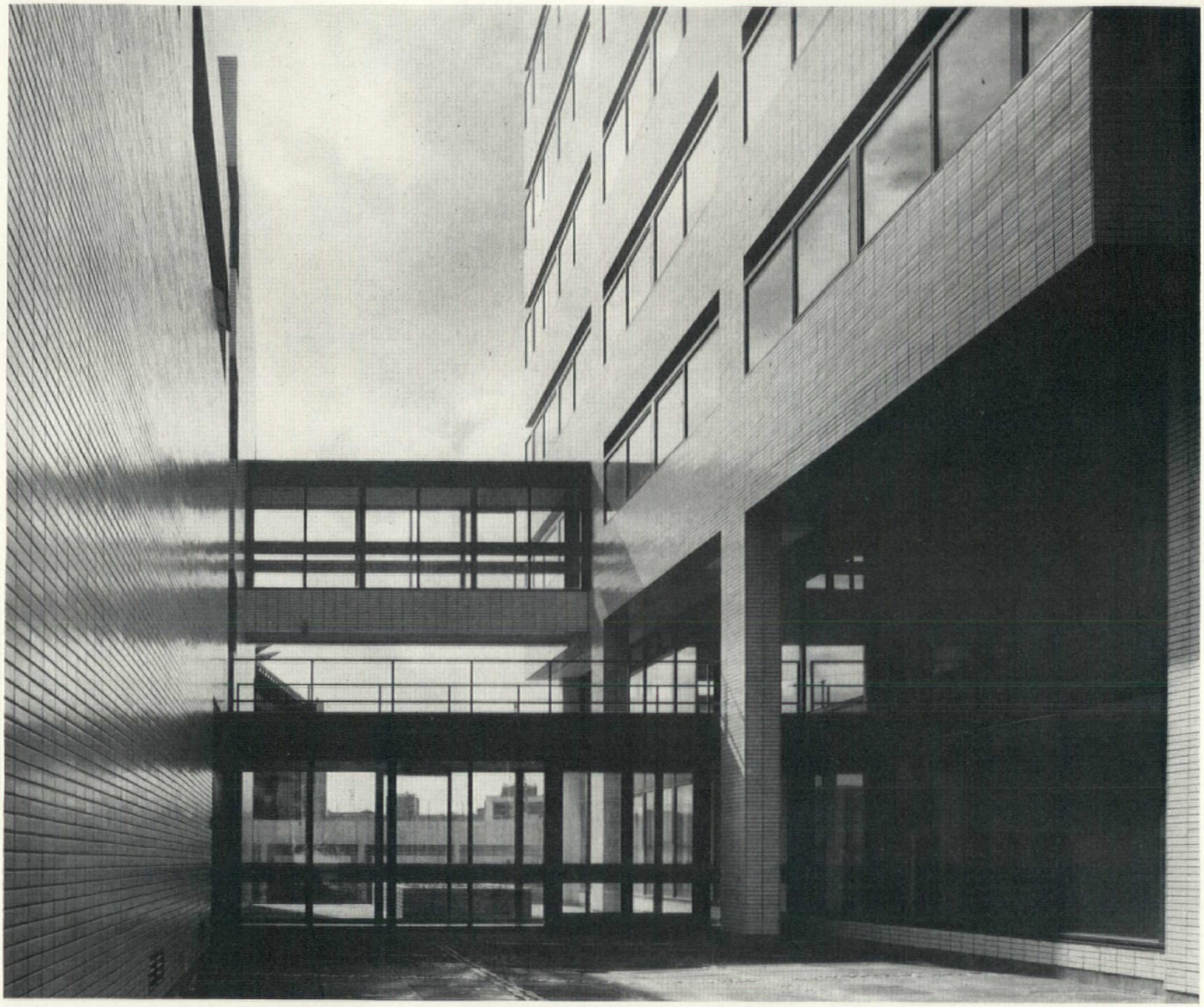

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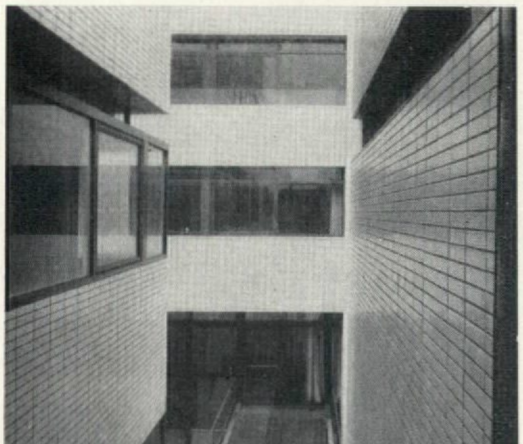

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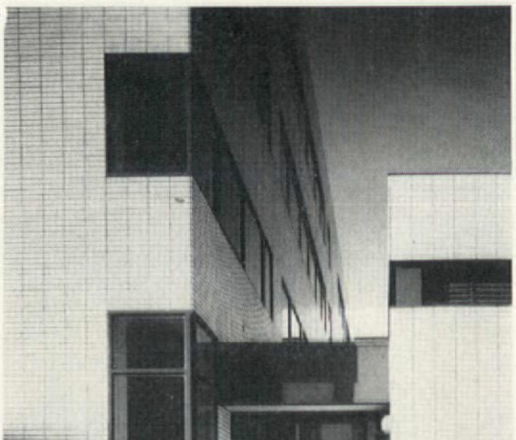

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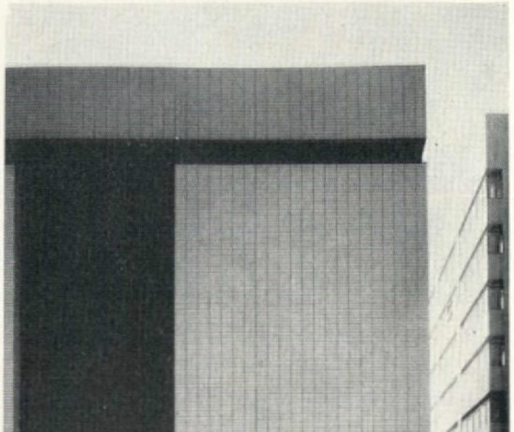

experimental equipment is made by the Department's skilled technicians. These areas were planned in a separate building, Block B, linked to Block A by a bridge at second floor level and also at ground level. The sub-division of this block into three units (B1—four-storeys, B2—three-storeys and B3—one-storey) resulted primarily from the relationship of large height laboratories to each other. Early in the preparation of the scheme the external ceramic facing tile was chosen and this dictated the basic plan and structural module of 9¾in.

The building frame is *in situ* r.c. construction on mass concrete bored pile foundations. Floor slabs for Block A are of hollow pot construction. On Block B where there are considerable runs of uniform clear spans, a precast beam and plank construction was used.

External finishes: two principal materials were used. All solid areas were covered with a white ceramic tile measuring 2½in × 9¾in laid horizontally. All the areas to be tiled were designed to ensure that no tile on the external face would need to be cut. The tiles are bedded on to a screed in all cases and are pointed with a premixed propriety material, expansion and movement joints being filled with a polysulphide mastic. All windows are fabricated from purpose made pressed metal sections, galvanised and painted. In the larger areas the mullions are reinforced with mild steel sections.

The electrical sub-contract for the building was one of extreme complexity since, apart from normal requirements, the users required the availability of many different forms of electrical supply in all teaching and research laboratories. Considerable advice and cooperation from the Department was necessarily available.

Apart from full air conditioning to the main assembly hall, Block A is heated by hot water convectors under the perimeter window cills, together with supplementary plenum supply and extract in certain key areas. Hot water for all purposes is supplied by a boiler plant in an adjacent building. Block B is heated by conventional radiators for economy reasons with fan convectors used in circulation areas and high-ceiling laboratories.

Specialized services to all research laboratories include circulated cooling water, oxygen, town gas and compressed air.

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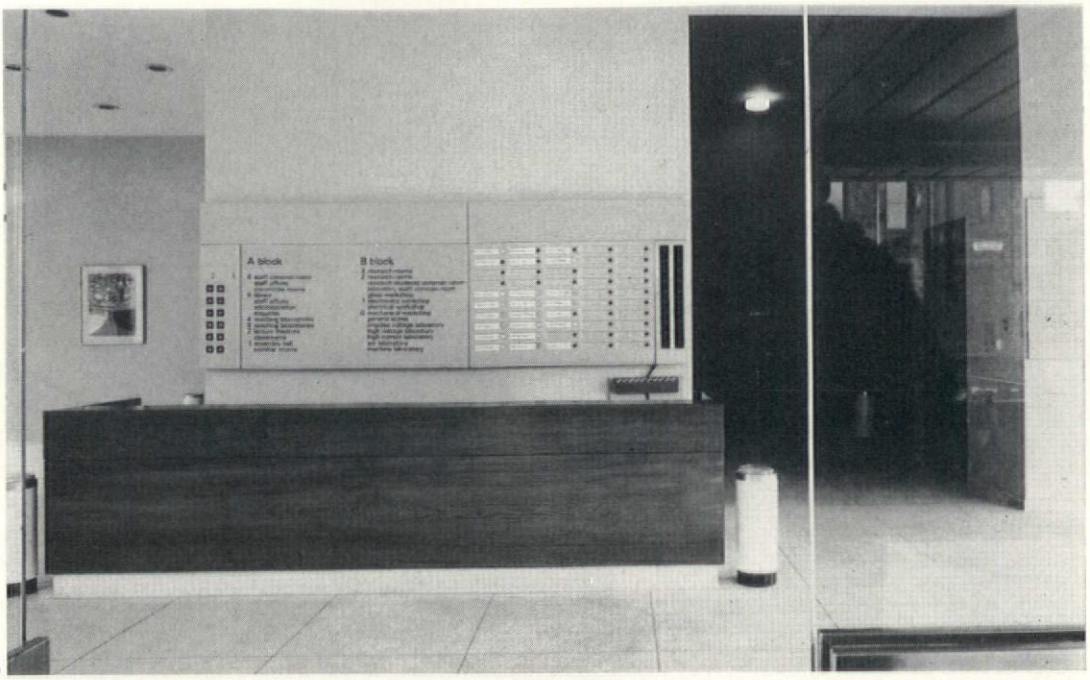

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1
Links between the workshop and block A seen from the north

2
Block A and roof of link seen from the break between the four-storey workshop building and the high voltage research laboratory

3
Junction between the four-storey research building and the machine laboratory, from the east

4
North elevation of the high voltage research laboratory with the high block A on the right

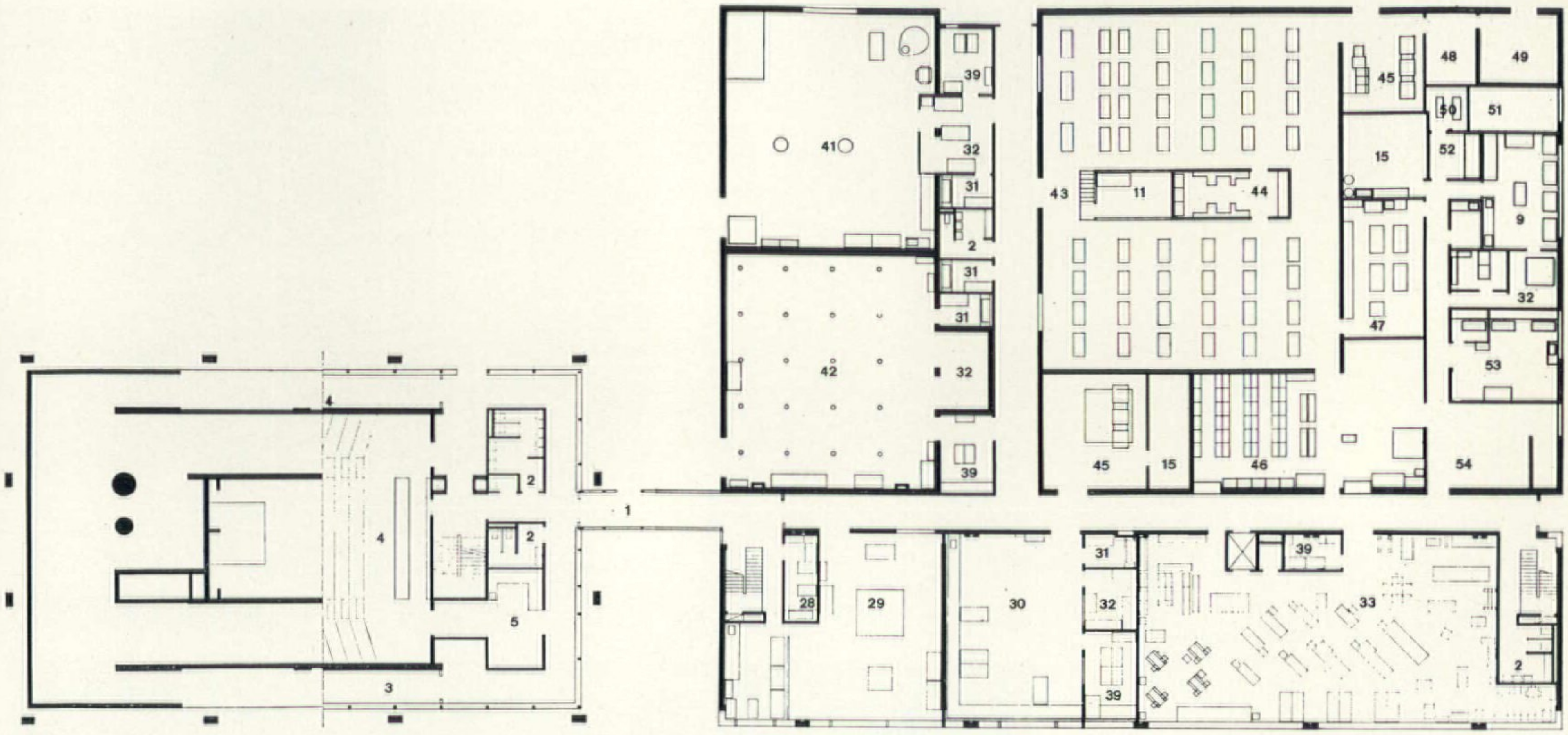
5
Desk in the main entrance hall

6
The main entrance hall, looking north

7
Stair from the main entrance hall to the gallery on the north flank of the lecture hall

8
Detail of the main staircase

Photos: Henk Snoek



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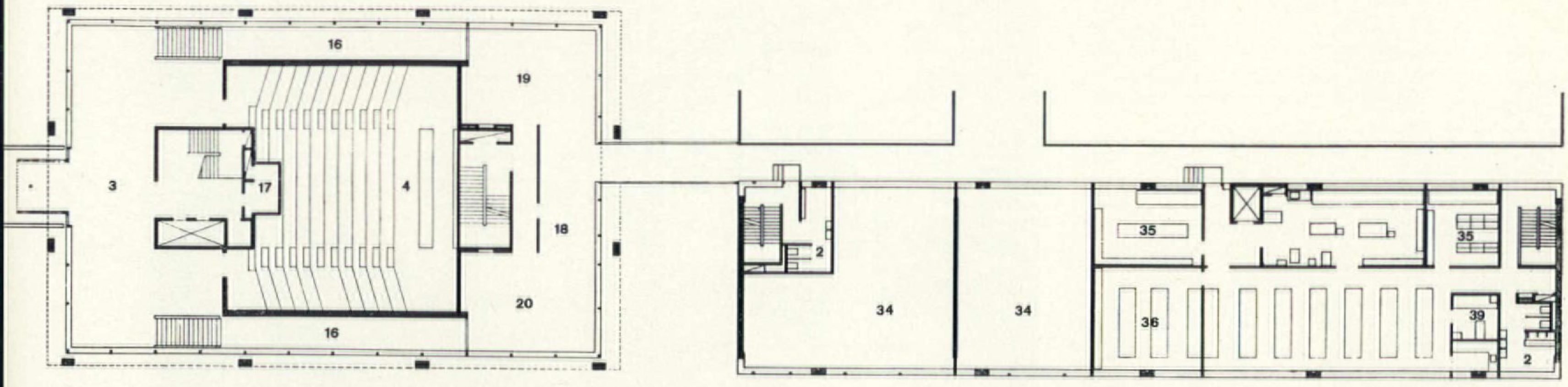

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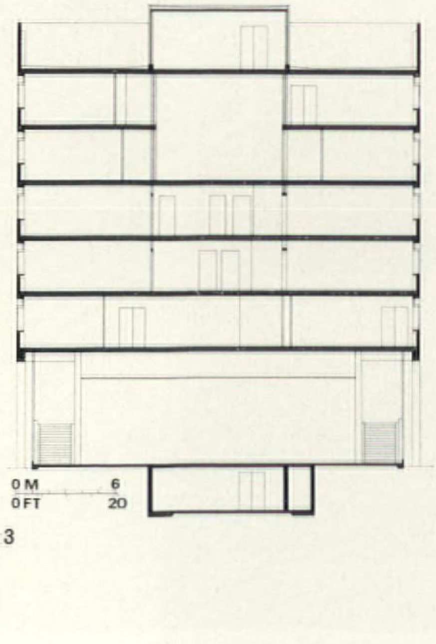

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1
Ground floor plan

2
First floor plan

3
Cross-section through block A

4
Second floor plan of blocks A, B_1, B_2

5
Third floor plan of block A

6
Fourth floor plan of block A

7
View from the research seminar room in block A to the gallery on the south flank of the lecture hall

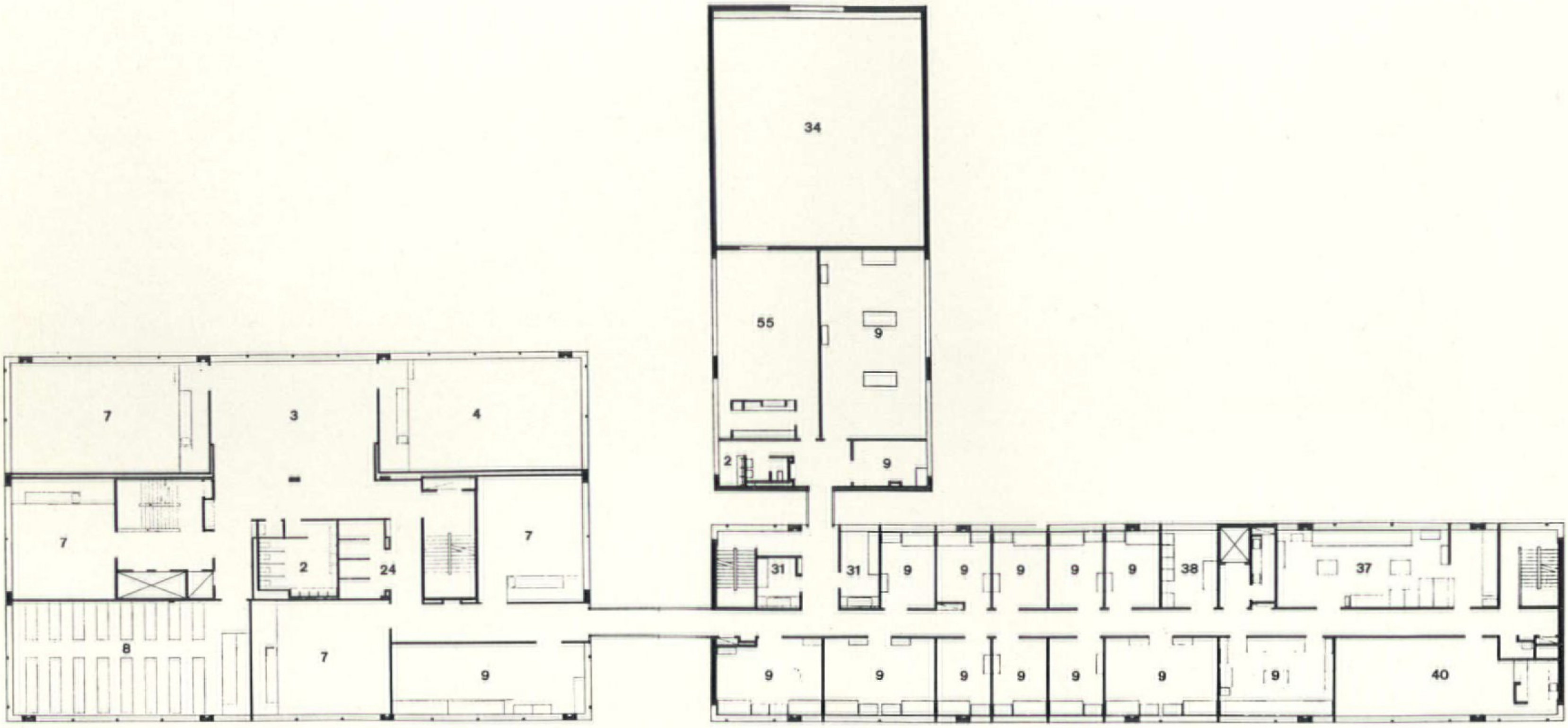
8
The library on the fourth floor of block A

9
High voltage research laboratory, block B_2

Photos: 7 & 8 de Burgh Galwey; 9 Henk Snoek

Key to plans

1 link
2 w.c.s
3 lobby
4 lecture theatre
5 preparation
6 lecturer
7 lecture room
8 drawing office
9 research
10 general laboratory
11 supervisor
12 technician
13 lockers
14 clean-up
15 battery
16 gallery
17 projection room
18 tuition
19 post-graduate tutorial
20 research seminar
21 library
22 reading room
23 librarian
24 cloaks
25 technical staff
26 filing and stationery
27 women's restroom
28 microphotometers
29 high voltage D.C. research
30 arc research
31 dark room
32 control
33 machine tool workshop
34 void
35 apparatus store
36 electronic workshop
37 glass workshop
38 students glass workshop
39 office
40 technical staff cmn. rm.
41 high voltage research
42 high current research
43 machine laboratory
44 store
45 generator
46 machine and general store
47 machine research
48 switch room
49 substation
50 compressor
51 garage
52 paint spray
53 welding and brazing
54 lifting tackle and packing
55 research students cmn. rm.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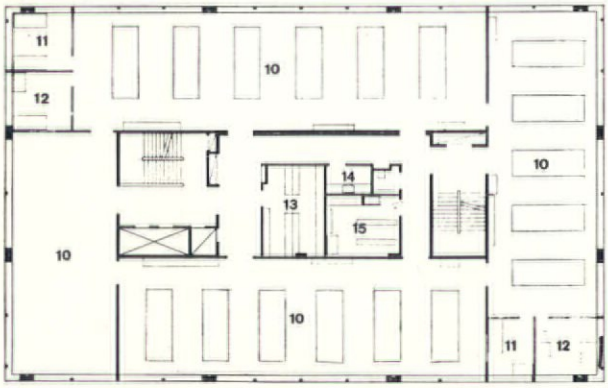
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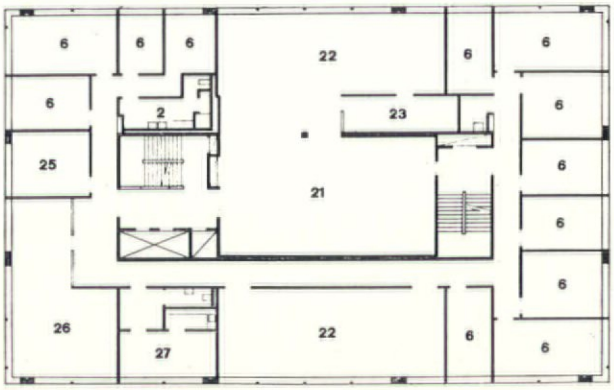
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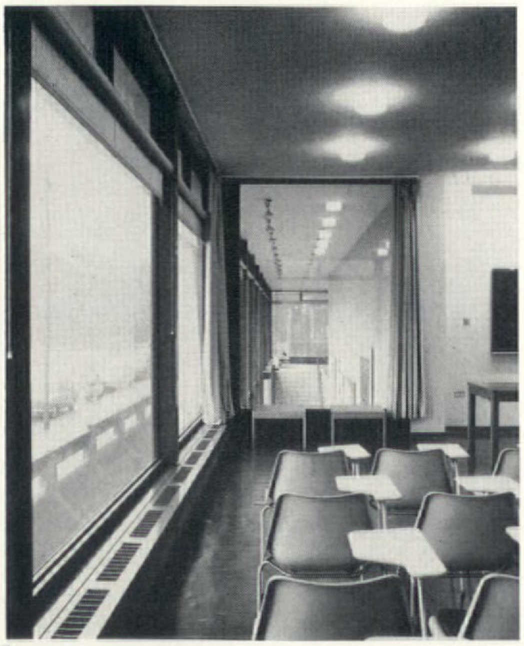

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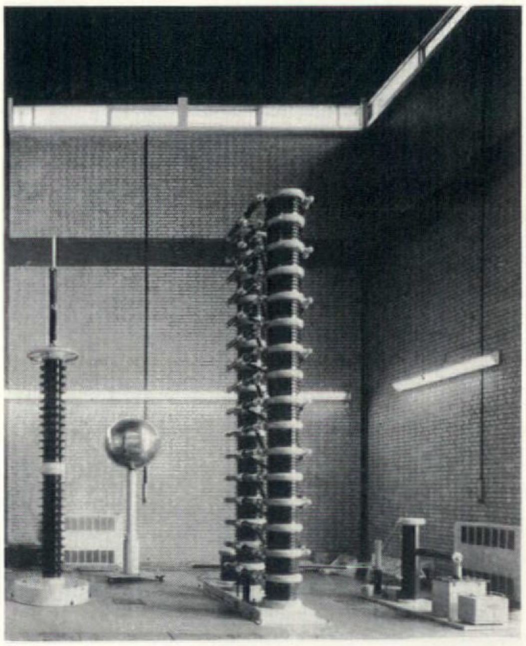

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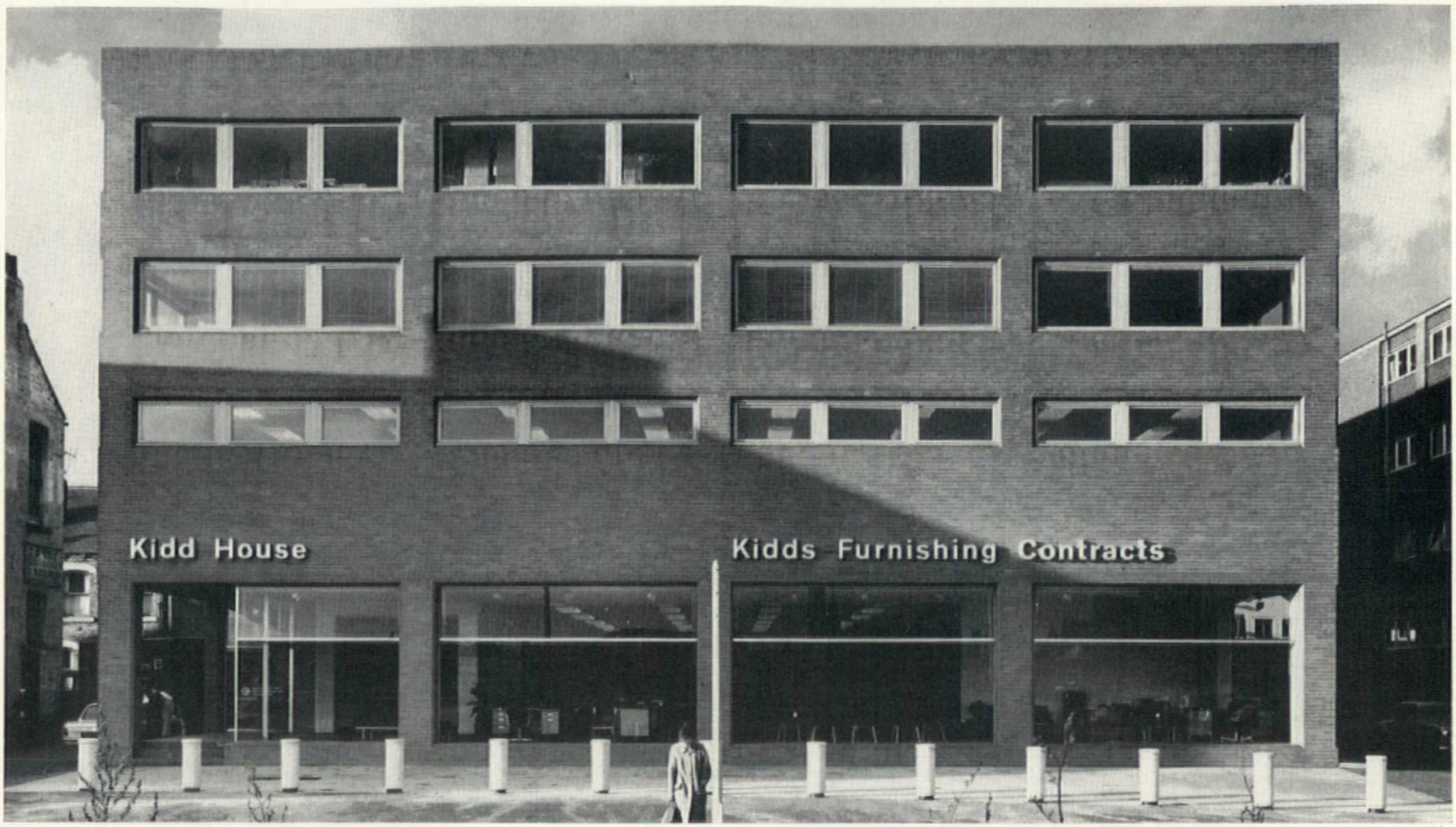

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Kidd house, Leeds

The client required a building of which two floors could be occupied by Kidds Business Service for the purpose of displaying furniture and fabrics, the remaining two floors to be let until expansion made it necessary for Kidds to occupy the whole building. Strict cost restrictions were imposed of £3 per ft², excluding shopfitting for the ground and first floors; actual cost including all shop fitting, was £2 17*s* 9*d*.

A concrete frame was designed to give large areas for the purpose of furniture display. To provide a tough finish to the Leeds atmosphere, Accrington bricks were chosen as being ideal within the cost plan figure. Heating is by electric under floor. All internal walls are plastered paint. Building completed: September 1964. Contract sum: £92,848 7*s* 11*d*.

1
Elevation to Whitehall Road

2
Typical detail at window head
1 dpc
2 Accrington facing tiles
3 wire ties at joints
4 brick head cast *in situ*

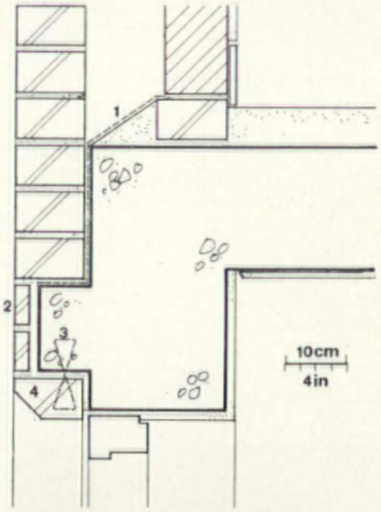
3–5
Details of exterior brickwork

6, 7
The entrance on the south corner

8, 9, 10
Ground floor plan, typical floor plan, section

11
Entrance

12
Showroom



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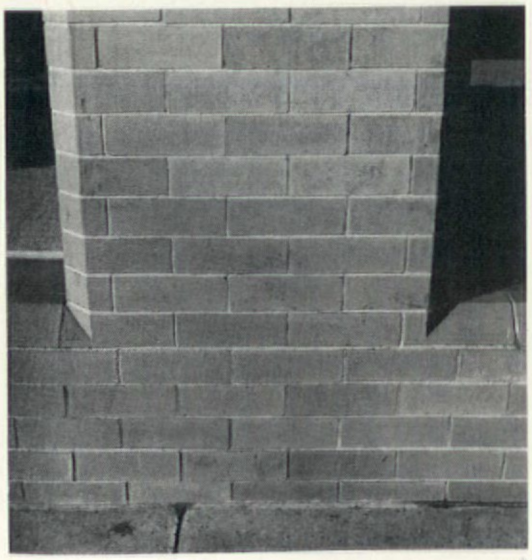

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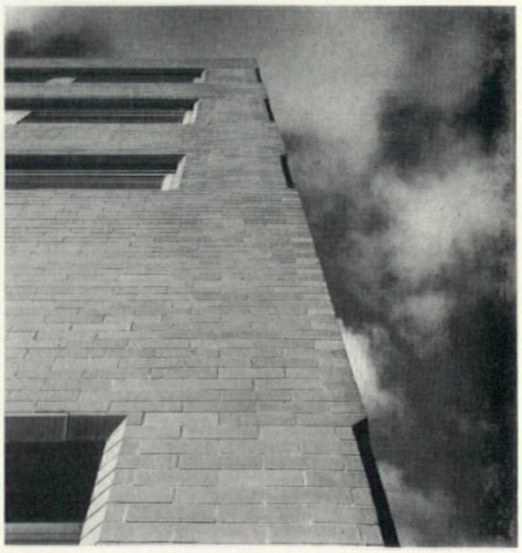

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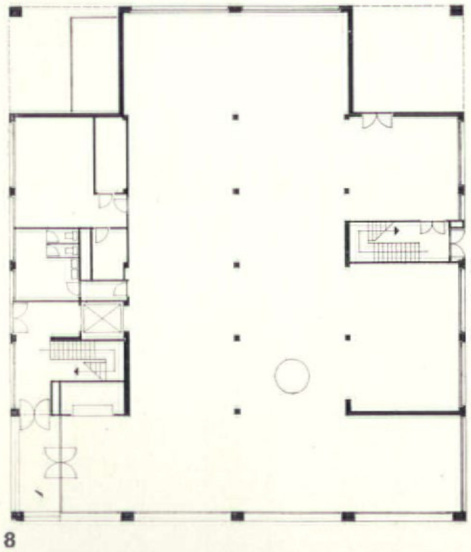

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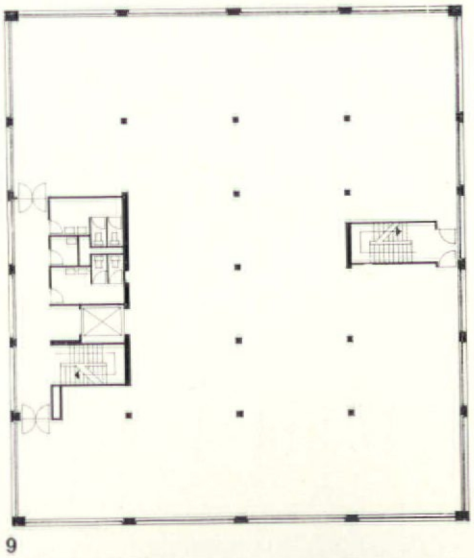

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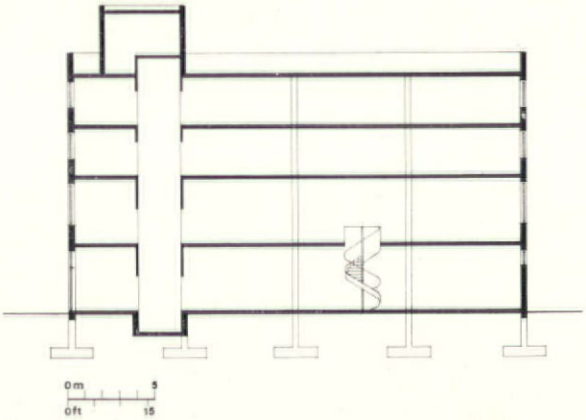

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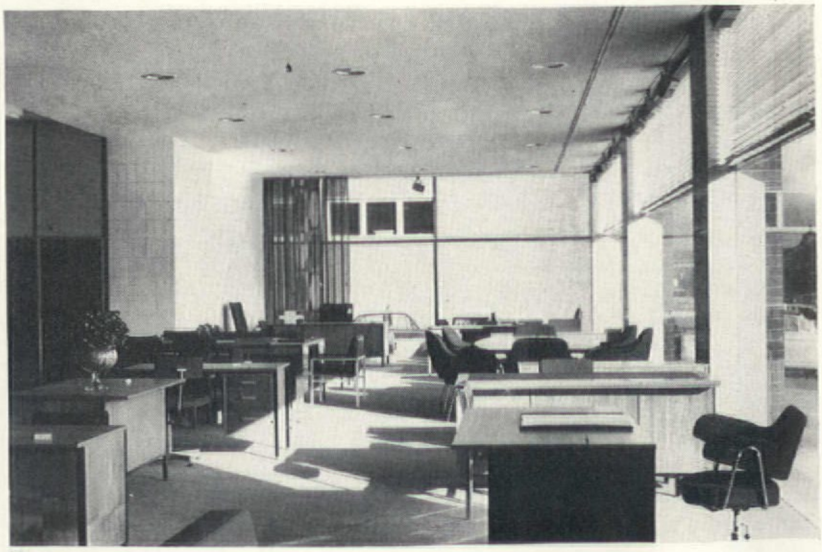
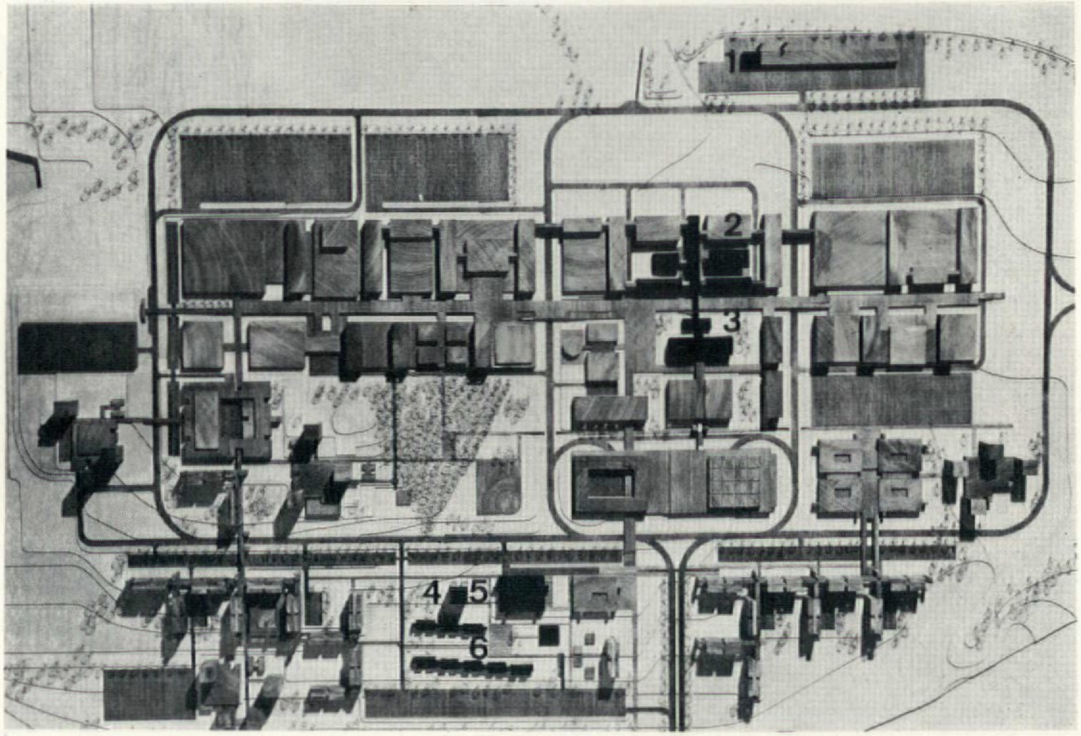
Photos: 1, 3, 4, 5, 7 & 12 Sam Lambert; 6 & 11 Vic Kettle

11



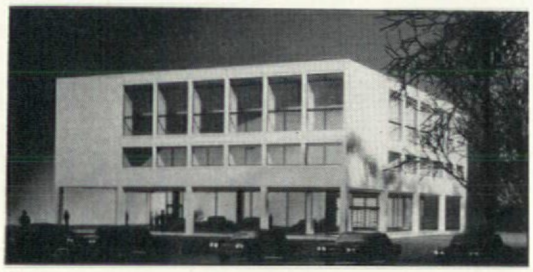
12

University of Warwick



1

1
Layout model of Warwick University based on a development plan showing the position of the first stage buildings indicated in black
1 boiler house
2 molecular and engineering sciences, stage I
3 library
4 Benefactor's residential building
5 social building
6 first hall of residence



2

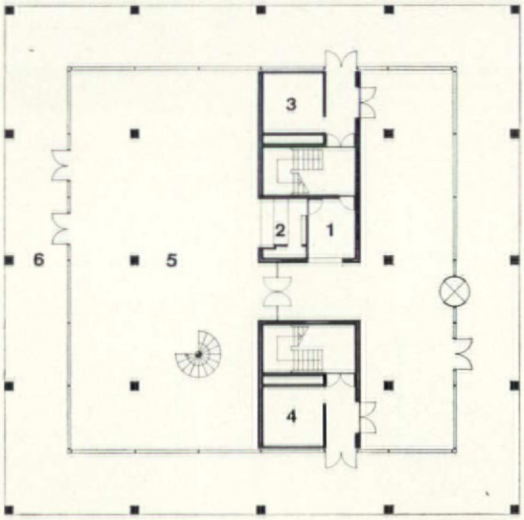
Benefactor's residential building

The building, which is being financed by an anonymous benefactor, is to provide living accommodation in particular for students coming to the university under an exchange arrangement with American universities, and to create a favourable environment in which American and British students may live and meet together. It is also intended for the use of international conferences and the entertainment of distinguished academic visitors.

Standards of accommodation and construction are to be higher than those normally provided in a hall of residence built from public funds, and the effect is to be a building of high architectural quality.

It was considered desirable for privacy to raise all the bedrooms above ground floor level and, in order to accommodate the required number without exceeding a walk-up limit of two-storeys and without producing a low building of excessive plan area, the top two floors have been designed as two-person two-level 'studios'. The principle of double rooms is traditional in American universities, and treating these as vertical rather than horizontal units exploits the spatial possibilities. In addition, the arrangement provides on a more generous basis accommodation for single visitors or for married students.

2
Model of Benefactor's building
3, 4, 5 & 6
Ground, first, second and third floor plans
Photo: 2 Henk Snoek



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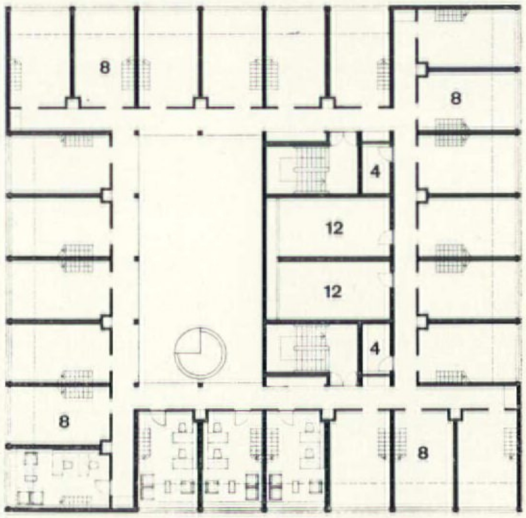

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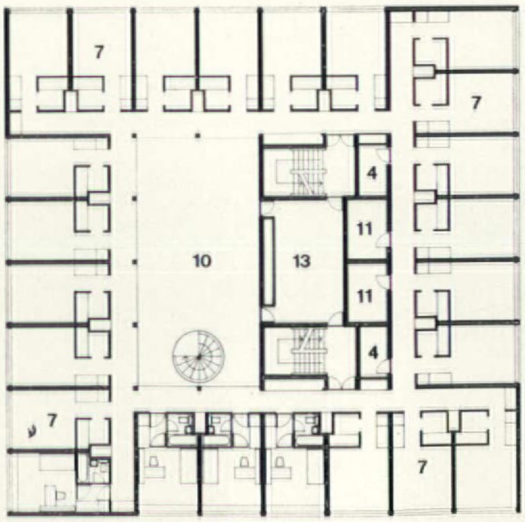

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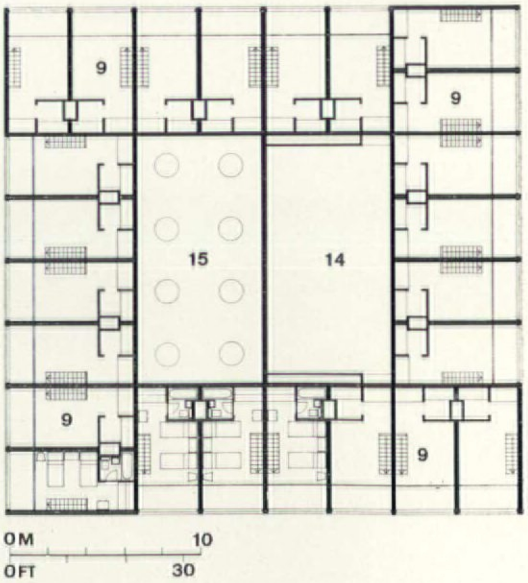
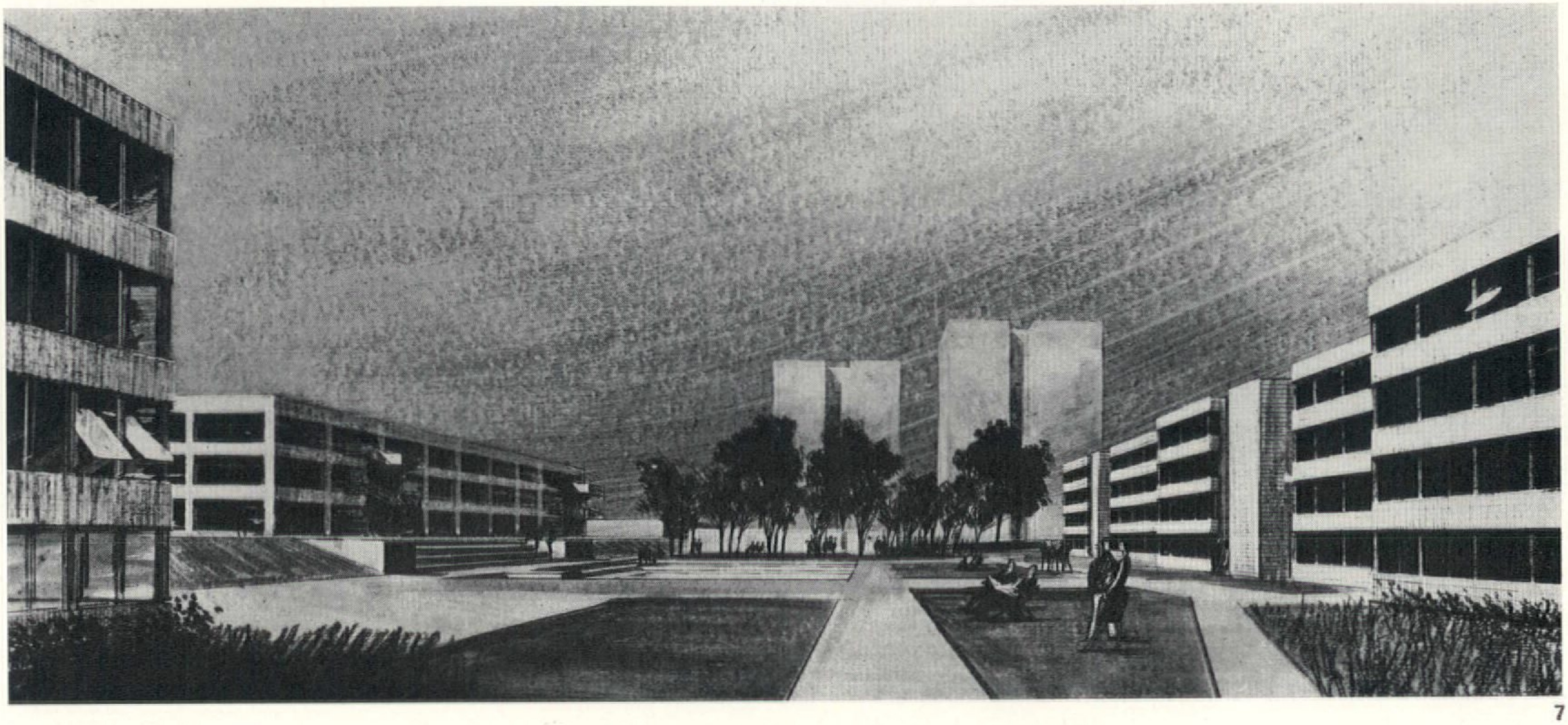


Key to plans of Benefactor's building

1 enquiries
2 bar
3 porter
4 store
5 lounge
6 terrace
7 single room
8 double room, lower
9 double room, upper
10 reading room
11 kitchen
12 kitchen and utility
13 TV room
14 plant
15 roof over reading room



7

First hall of residence

Consultant Engineers: Sir Frederick Snow and Partners

Structural Engineers: Felix J. Samuely and Partners

Foundations for the first hall of residence for the new University of Warwick began on site in May 1965 and the buildings are scheduled to come into use in October 1966. The approximate cost of the project is £1,000,000.

The hall is composed of three basic units:
A social centre serving both students in residence and those living out.
Single study bedrooms for 442 students.
Staff housing.

Student residential blocks: single study bedrooms for 442 students with 10 academic staff flats are provided in two long blocks containing 190 rooms and 315 rooms respectively.

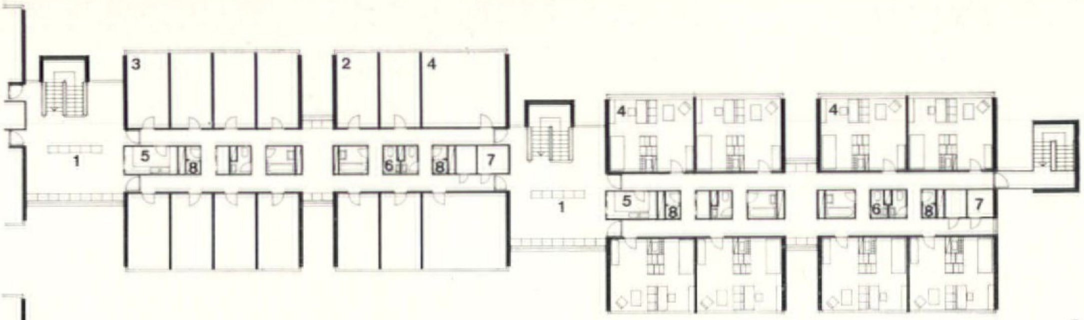
The blocks are four-storeys high and 'stagger' on plan to follow the natural contours of the site.

The social centre serves the social and dining needs of 1200 students, both resident and non-resident.

7
Perspective of first hall of residence

8 & 9
Typical plans showing grouping of rooms in the hall of residence

10, 11 & 12
Social building, ground, first and second floor plans



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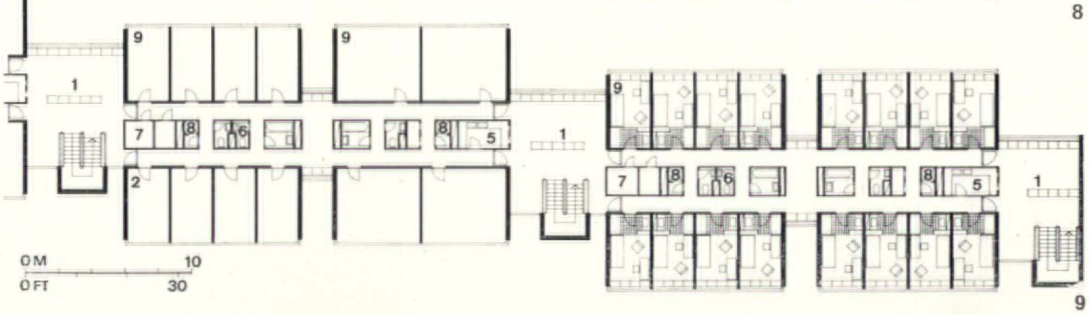
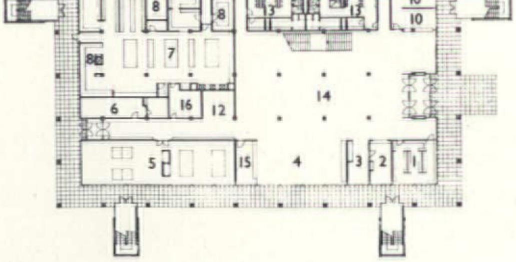


9

Key to residence plans
1 lounge
2 guests
3 study beds
4 academic staff
5 pantry
6 w.c.
7 boxes
8 shower

Key to social building plans
1 shop
2 porter
3 telephones
4 coffee bar
5 billiards/table tennis
6 launderette
7 kitchen/preparation
8 store
9 plant
10 office
11 changing room
12 cloaks and lockers
13 w.c.s
14 lounge
15 servery
16 wash-up
17 bar lounge
18 snack bar
19 cafeteria
20 television
21 post-graduate cmn/rm
22 staff dining
23 SCR/private dining
24 workroom
25 music room
26 craft room
27 dark room
28 library
29 committee
30 sewing
31 consulting
32 open court
33 void



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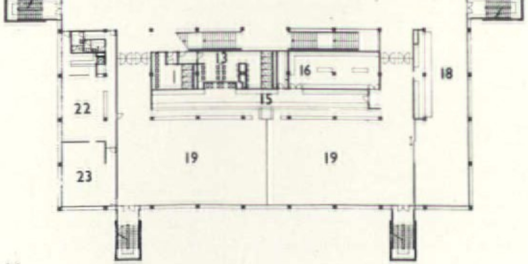

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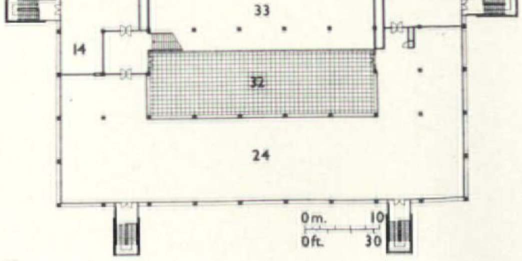

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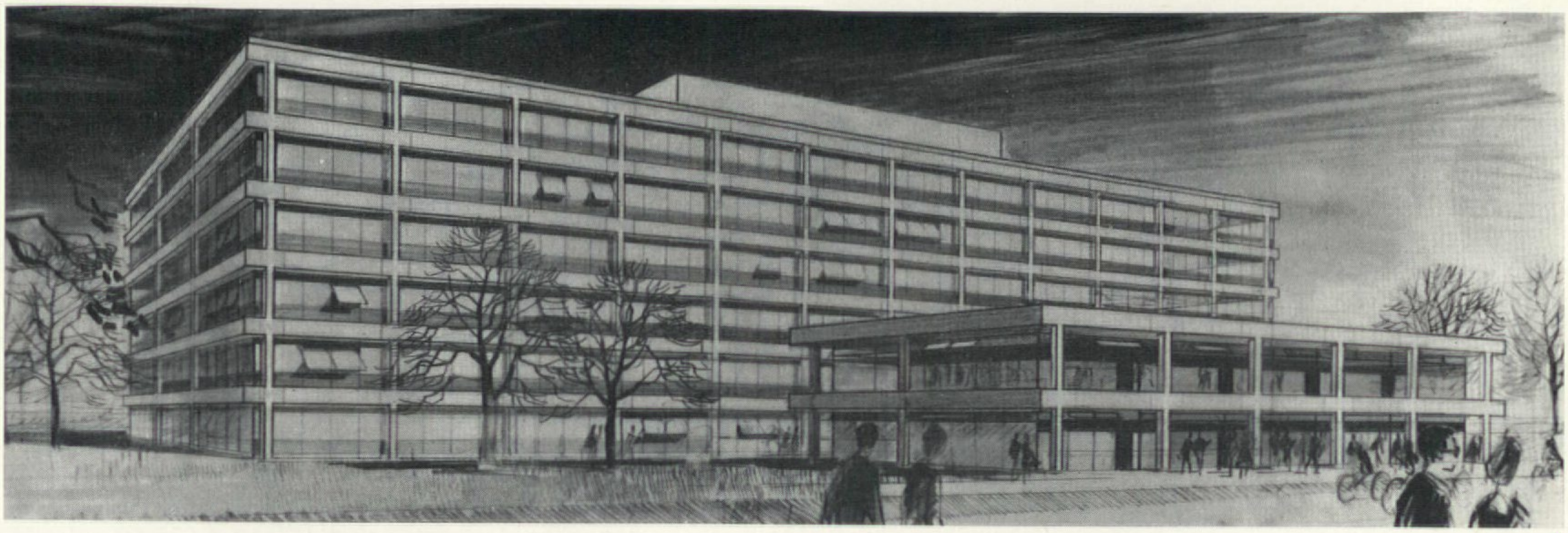


1

University of Warwick library

The building has been designed to meet anticipated requirements for the library for some years; in the early stages the two upper floors will be used for teaching purposes and will be converted for use as part of the library when required by the growth of the University.

Work on the site started towards the end of October 1964 and the building is programmed for completion in the summer of 1966 so as to give time for it to be furnished and equipped ready for use by October 1966.

The ground floor of the main building is mainly used for staff working areas, storage and seminar rooms. The first floor contains the main public areas which are approached at this level by a bridge over the road which separates the library from the science buildings.

From the first floor there is access by stairs and lifts to the upper library floors.

The library floors are designed as open usuable areas except for the spaces needed for stairs, lifts, services, etc.

Books will be kept in shelving adjoining and open to the reading areas (except for a small proportion of closed access storage for special books).

The structural frame is insitu reinforced concrete; columns in external walls are at 20ft centres and carry 3ft deep beams which support the floor loads.

Internal supports are provided by reinforced concrete columns in the walls of the service cores, and intermediately.

Floor and roof slabs use precast concrete planks. Foundations are mass concrete bases carried to a depth of about 9ft generally.

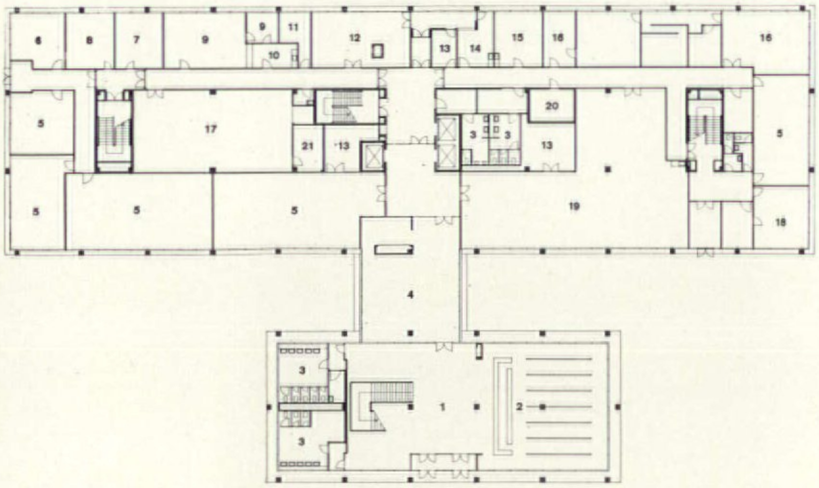
The framework formed by the columns and beams forms a flat surface which is to be finished with glazed tiles 9in × 3in nominal.

The full opening between columns and from floor to ceiling is filled by aluminium window units. The windows are double glazed, horizontally centre pivotted; panels below are vitreous enamelled and incorporate convector heaters on the inside.

1
Perspective

2, 3, 4 & 5
Ground, first, second and third floor plans

Key to plans
1 entrance hall
2 coats
3 w.c.s
4 coffee bar
5 seminar
6 office
7 newspapers
8 research
9 staff common room
10 pantry
11 rest room
12 delivery and despatch
13 plant room
14 porters
15 cleaners
16 photographic department
17 closed access bookstack
18 microfilm reading
19 bindery
20 strong room
21 book conveyor
22 reading
23 open access bookstack
24 carrels
25 store
26 temporary teaching space
27 control
28 reserved book store
29 special subject bookstack
30 periodicals
31 government publications
32 accessions
33 cataloguing
34 listening room
35 references
36 catalogue
37 consultation
38 librarian
39 telex



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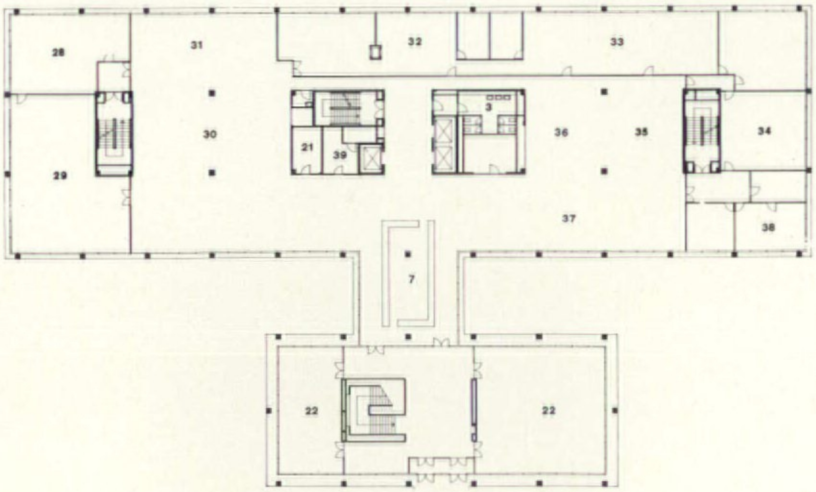

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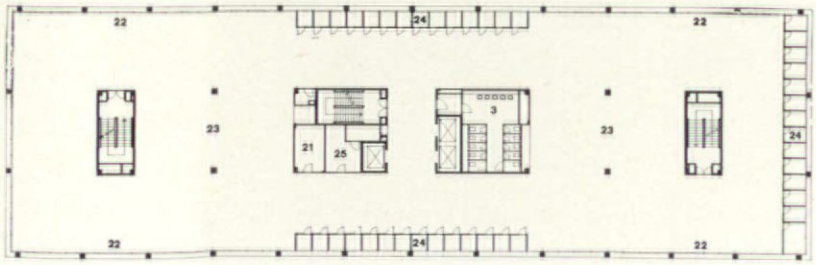

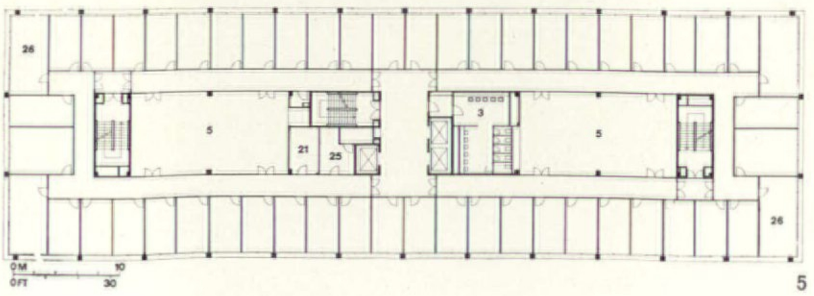

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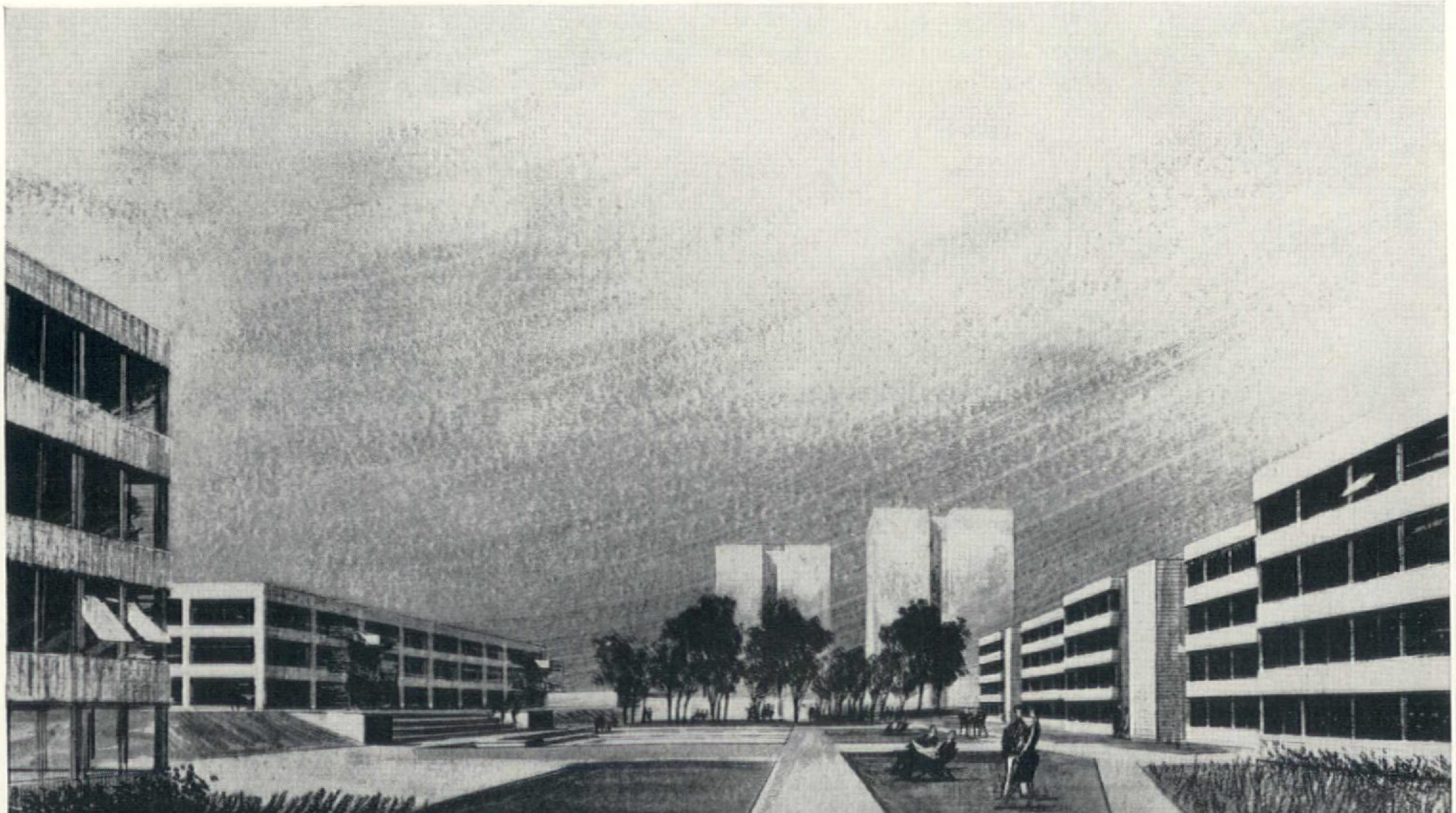

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The Formation Storage System has been specially designed to cater for any situation demanding a flexible storage, in particular Universities, Schools, Hospitals and Offices. The system is based on the 4″ module and consists of a comprehensive range of storage units and shelves which can be assembled either free-standing separately or one above another, or suspended from vertical wall-fixed channels.

Dimensions All units available in standard widths of 4′ 0″, 2′ 0″ and 1′ 8″, and either 2′ 0″, 1′ 8″, or 1′ 0″ deep.
Cabinets are available in heights of 5′ 8″, 4′ 8″, 2′ 4″ and 1′ 8″.

Construction Cabinets are veneered 18 mm particleboard with solid Abura lippings. The 5′ 8″ and 4′ 8″ high models are knock-down using a flush fitting black plastic cap; all other cabinets are of fixed construction.
Shelves constructed of 18 mm Laminboard, edge veneered.

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(1) Veneer—light Maple colour exterior, Moabi veneer interior and backs, all finished with a clear satin acid catalyst lacquer to give a heat, scratch and acid resistant surface.
(2) Paint—acid catalyst lacquer paint, colour BS. 4.047.

Doors Constructed of veneered 15 mm particleboard with solid Abura lippings. Either veneer or paint finish.
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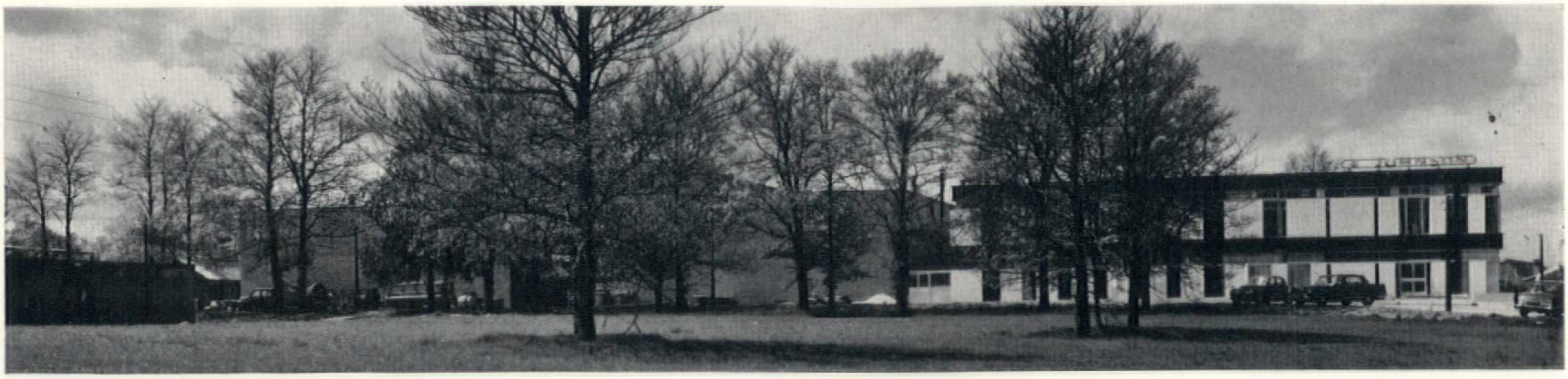


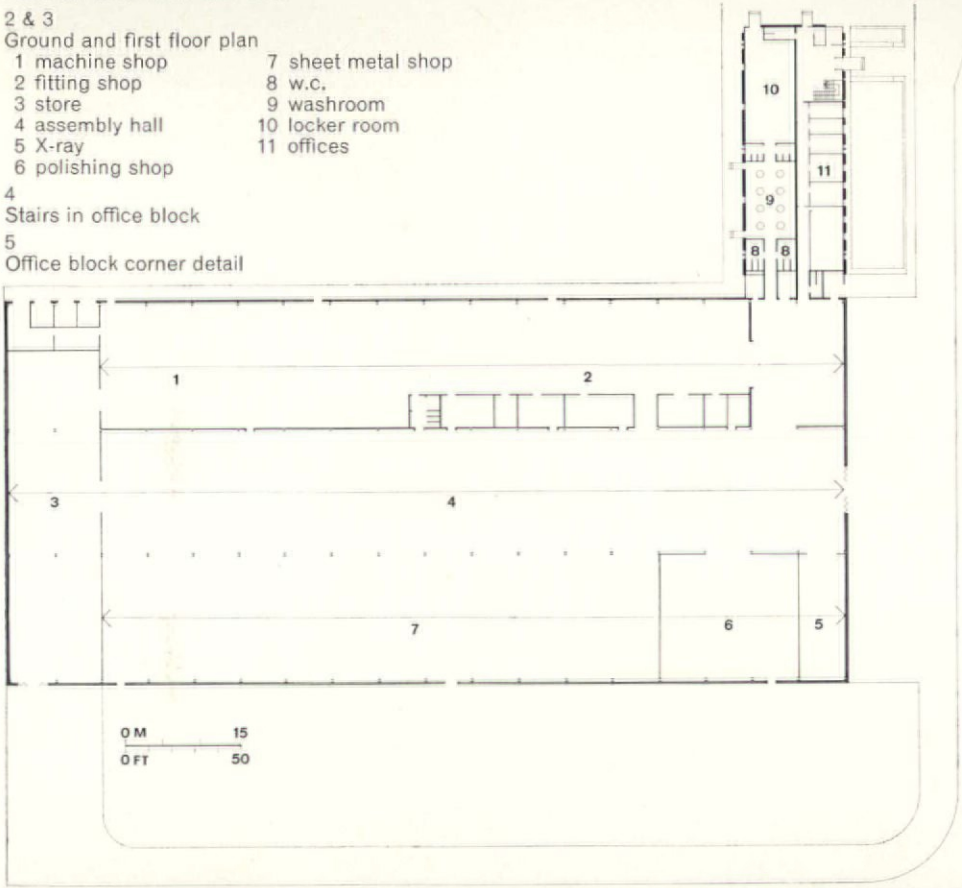
1
General view from the east

2 & 3
Ground and first floor plan
1 machine shop
2 fitting shop
3 store
4 assembly hall
5 X-ray
6 polishing shop
7 sheet metal shop
8 w.c.
9 washroom
10 locker room
11 offices

4
Stairs in office block

5
Office block corner detail

2



3

A. Johnson & Co., Wokingham

Engineers: Clarke, Nicholls and Marcel

The first stage of the new factory for A. Johnson & Co., manufacturers of stainless steel equipment, has been designed in three bays, each of 55ft span, with a central bay for assembly of 33ft height.

The amount of natural light was to be restricted to prevent glare on the working surface of bright stainless steel.

Heat is provided by six large oil-fired space heaters.

In addition to the fluorescent lighting, power, compressed air and pressurized water was provided.

External walls were built in blue brick facing with an inner skin of precast concrete blocks.

Roof: 3in wood wool slabs, with screed and roofing felt.

Floor: a metallic aggregate was added to the floor finish.

Broad flange steel stanchions at 20ft centres with lattice trusses 3ft deep, spanning 55ft, are used in the workshop area. The office block has a steel frame with stanchions at 40ft centres with 3ft deep beams on the perimeter, with lattice beams giving an entirely free floor space and adequate depth for services between the suspended ceiling and finished floor or roof.

Photos: Colin Westwood

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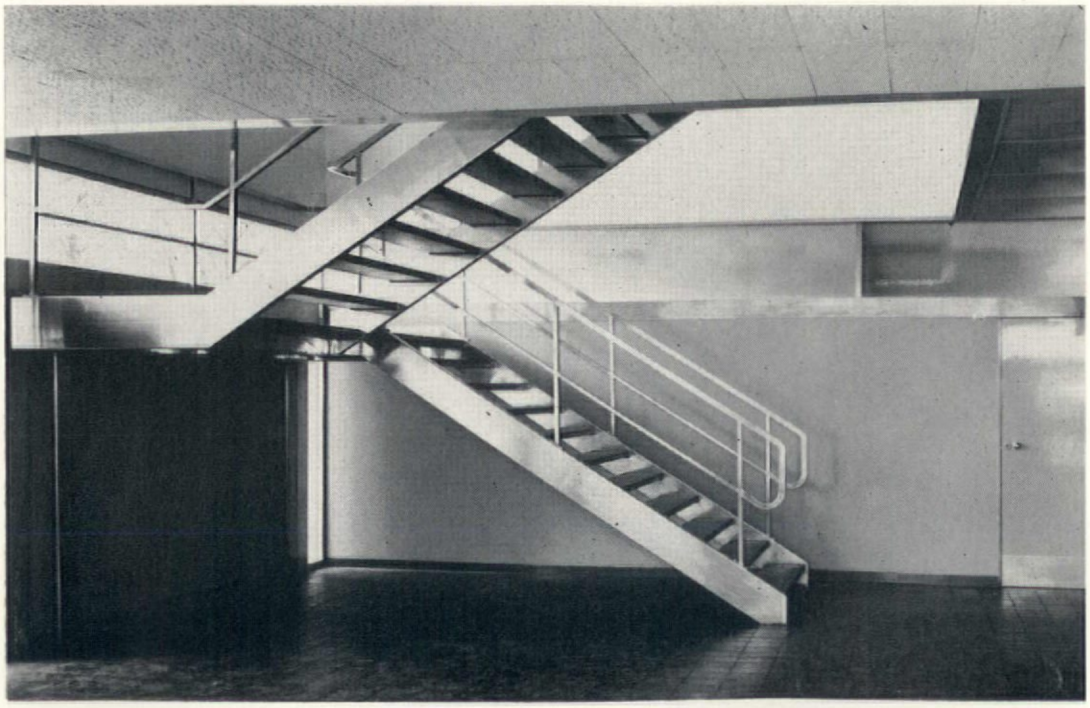

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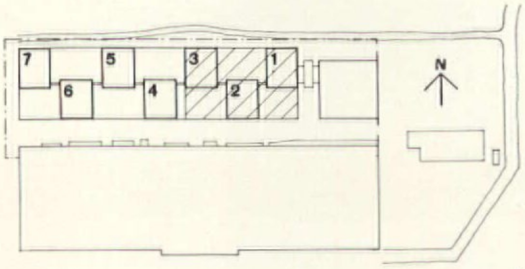
Elliott Automation, Rochester, Kent

Engineers: F. J. Samuely & Partners



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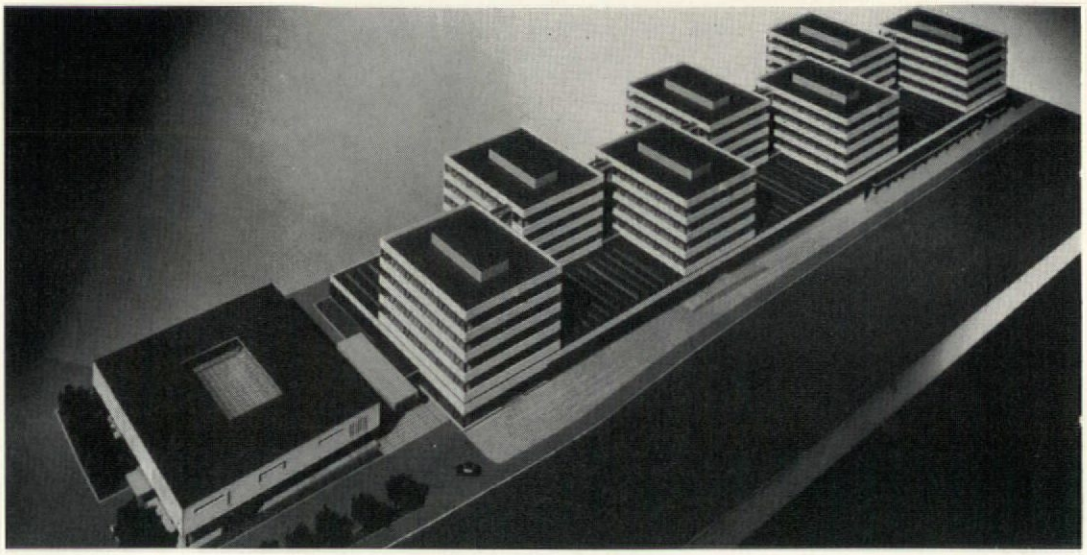

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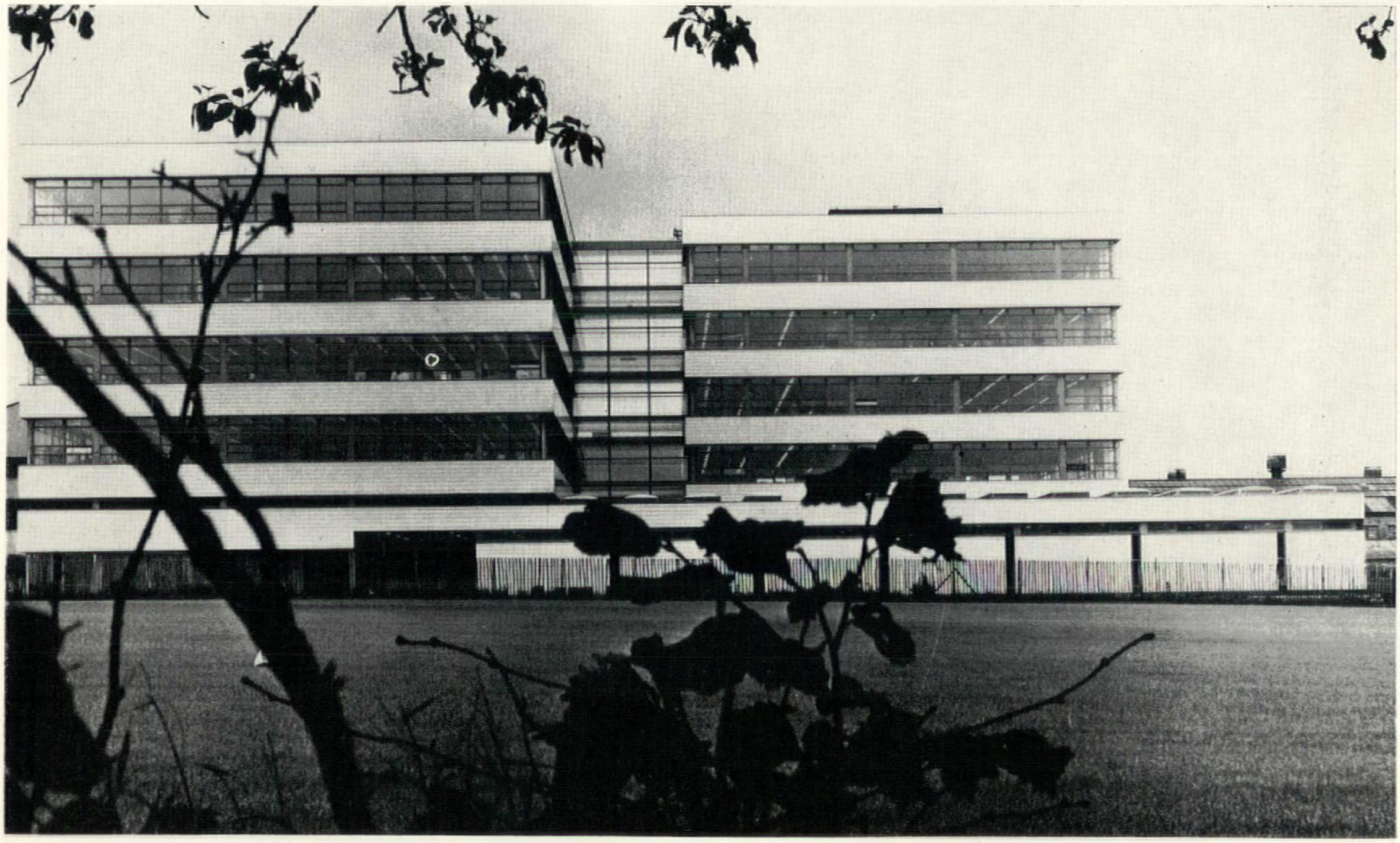

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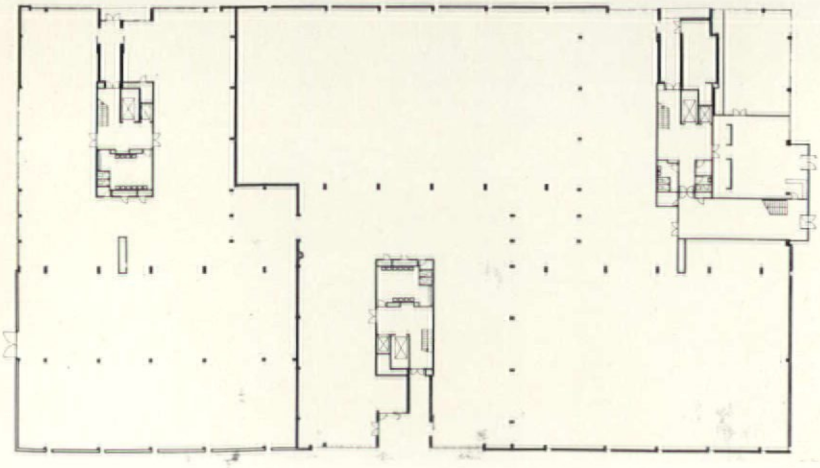

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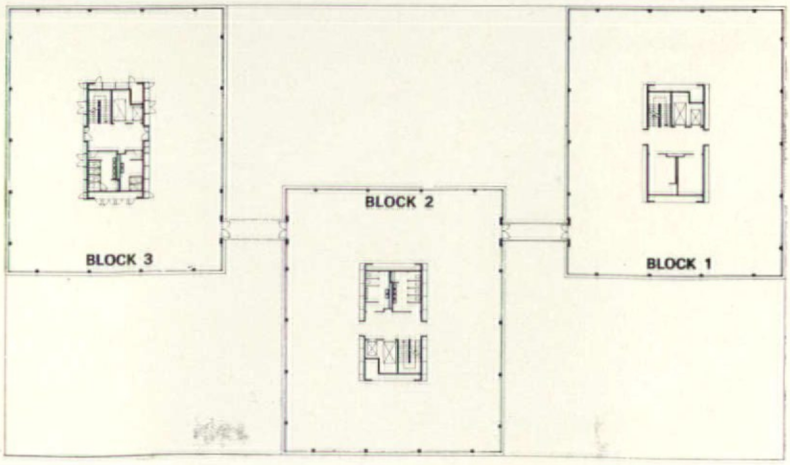

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The building is for design research and production of electronic equipment and components, including computers. Most of the components manufactured are very small. The complete assemblies, however, can be large. The production of small components is mostly confined to the upper floors, as are the design and research departments. Assembly of large components and relatively heavy machining is done on the ground floor.

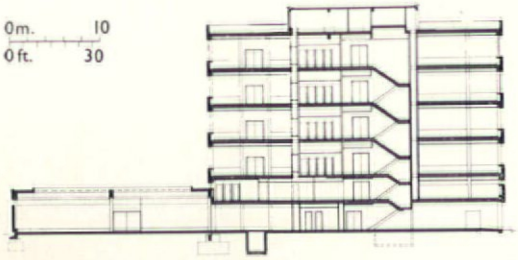
The working conditions in the upper production floors differ very little from those of an office building except that a high level of general illumination (60 lumens) is required for fine work. It is also desired that any part of these floors can be made at will into a 'clean' area, for the production of extremely delicate components, from which dust particles down to a magnitude of 1 micron have to be excluded. For this condition it is necessary to provide for complete air-conditioning and to avoid all possibility of dust-traps.

The assembly areas on the ground floor require conditions equivalent to normal light industry.

The design and production staff are organized into divisions, each division undertaking a separate task or tasks. Divisions vary considerably in size. It is important that workpeople should not have to pass through the working area of other divisions on their way to their place of work. This condition is met by a mezzanine corridor, accessible by stair from the staff entrance, linking all blocks and serving staff cloakrooms. Security arrangements are in force.

Tower blocks have a reinforced concrete frame with coffered *in situ* cross-reinforced floors designed for a load of 150lb per ft²; the central core has 6in r.c. walls; loads are taken on r.c. pad foundations. The sub-soil is chalk.

Ground floor assembly areas have reinforced concrete post-stressed T beams at 10ft 0in centres span 70ft 0in, with continuous cast glass rooflights between them, onto perimeter beams carried on 12in × 12in columns at 20ft 0in centres. Infilling panels are of concrete block cavity walling.



9

1
Block plan of proposed building with stages 1, 2 and 3 shown shaded

2
Model of proposed building from the north-east

3
Towers of stage 1 and 2 seen from the north

4
Ground floor plan, stage 1, 2 and 3

5
First floor plan

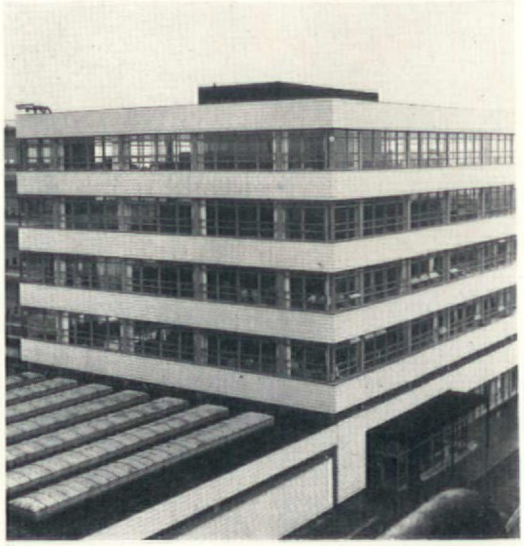
6
Stage 1 from the east showing the main entrance

7
Towers of stage 2 and 1 from the east

8
Link corridor between towers of stage 1 and 2

9
Cross section

Photos: 2 Henk Snoek; 3, 6 & 7 M. Scudamore; 8 E. J. Reynolds



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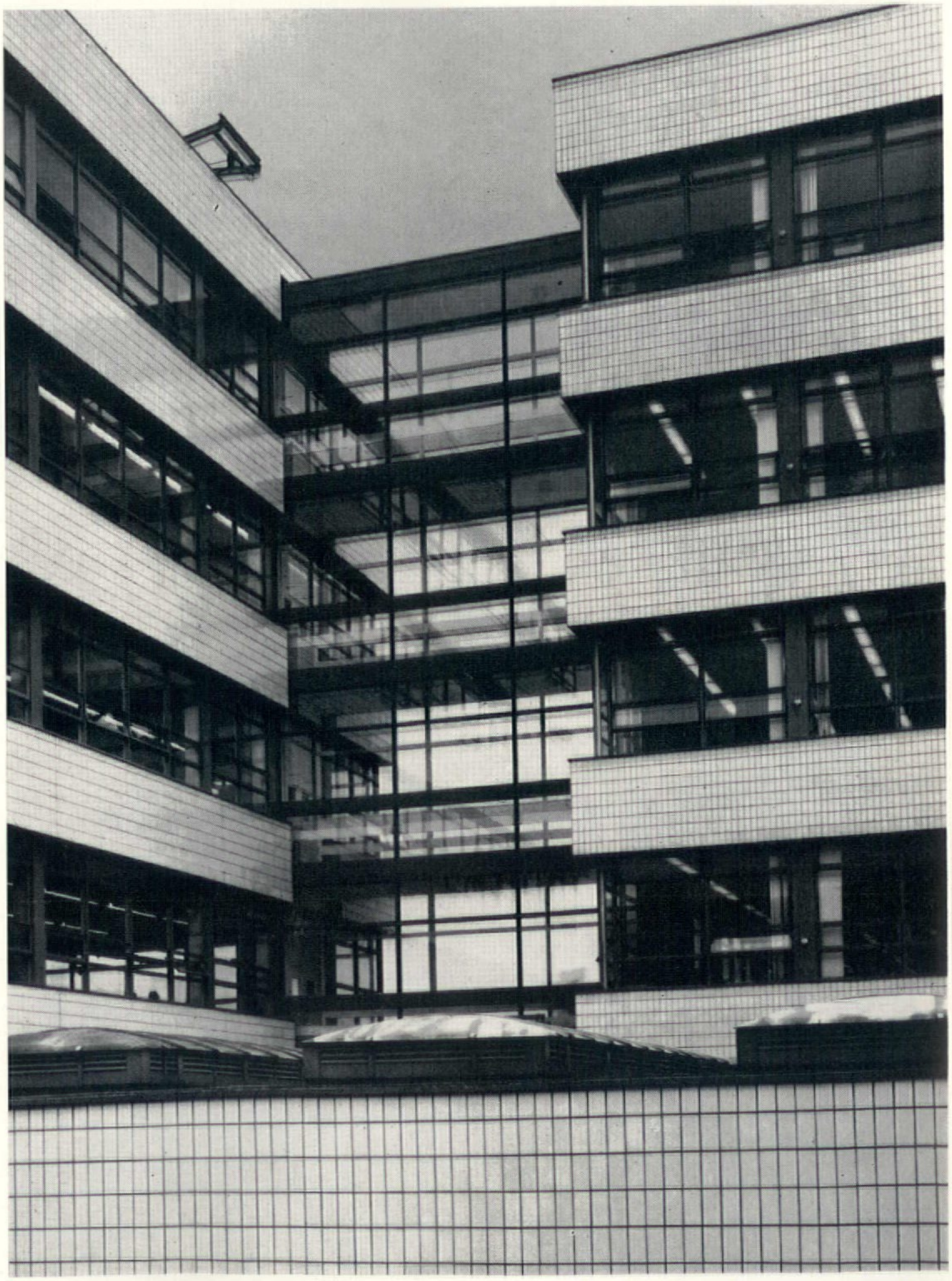

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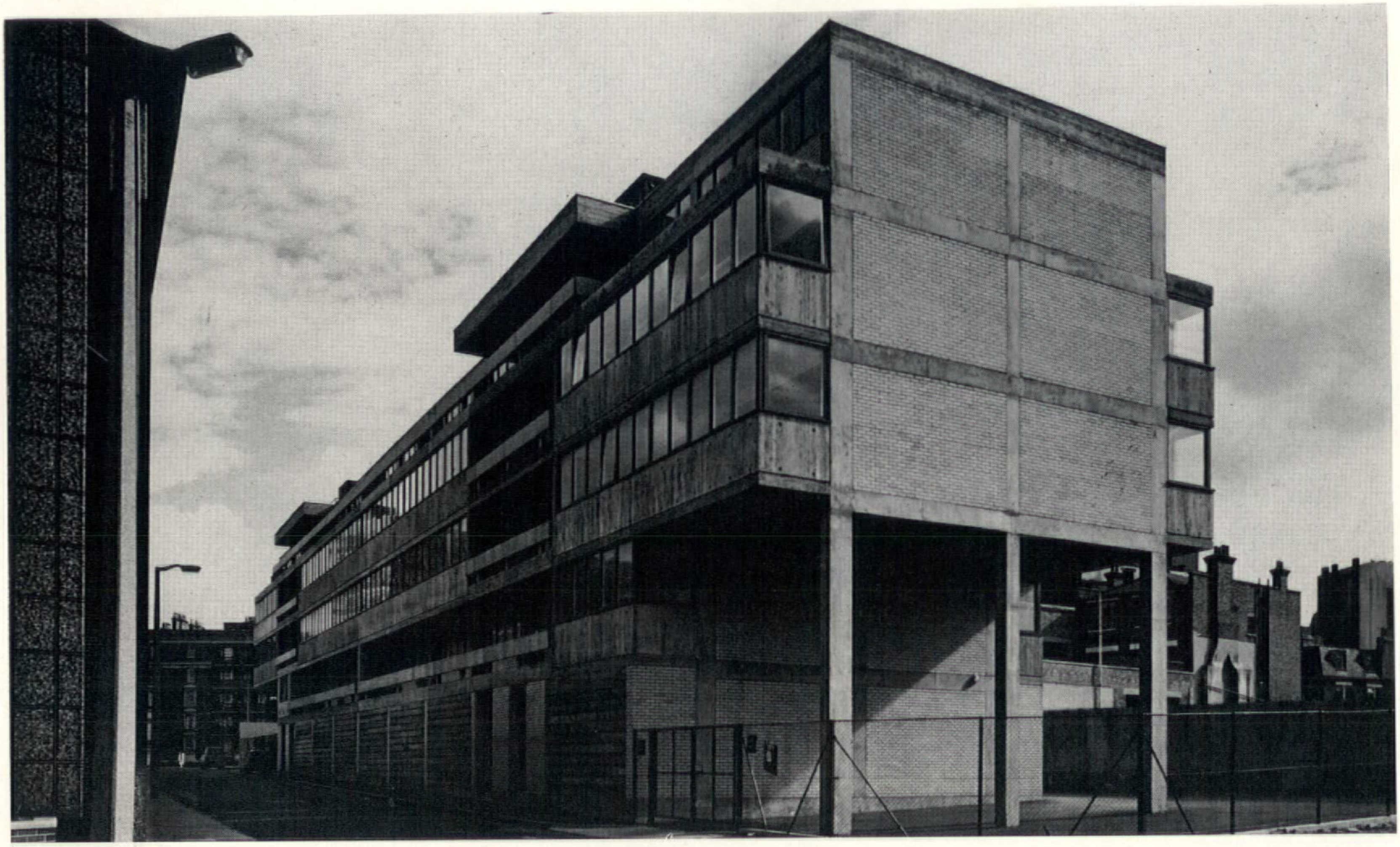


1

1
View from the north, looking down the Adler Street façade

2
View from the west

3
Ground floor plan

4
Second and third floor plans

key
1 lobby
2 duct
3 refuse store
4 cleaner's store
5 transformer room
6 workshops
7 access balcony

Photos: Sam Lambert

Adler Street unit workshops

Accommodation was required by the LCC Valuer's department in the form of lettable workshop or factory space, offering rehabilitation to small East End trades displaced by large redevelopment programmes.

The workshop units have been arranged to provide maximum flexibility for letting, with provision for sub-division or grouping of units if necessary.

The 17in and 19in diameter bored piles support a five-storey reinforced concrete frame, with cantilevered areas to facilitate the inclusion of access balconies and galleries to serve the smaller units on first and fourth floors.

The floors are solid concrete slabs designed to factory loading standards.

The concrete frame has been left exposed generally and sawn board shuttering has been used externally.

Brick infill panels are Heather Flint White Ryarsh facing bricks.

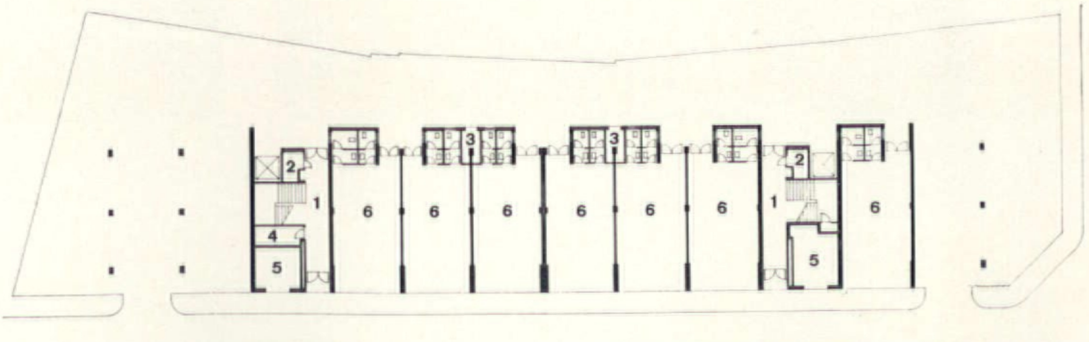
Internally, fair-faced common brickwork has been painted and in the workshops fair-faced concrete soffits, columns and thermalite block walls have been painted in 'Factory White' spirit paint.

All floors are in granolithic finish.

Heating is provided by electrically-operated space heaters in each workshop unit.

The contract sum was £110,430.

Building commenced on April 1st, 1963, and was completed on August 27th, 1964.



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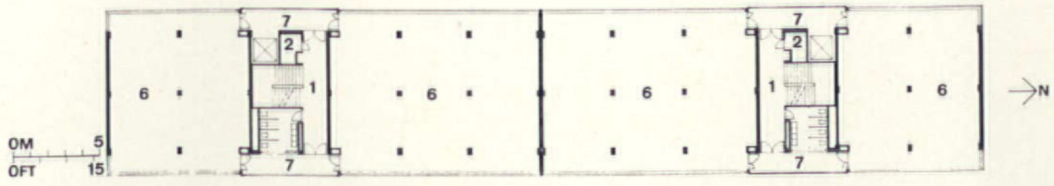

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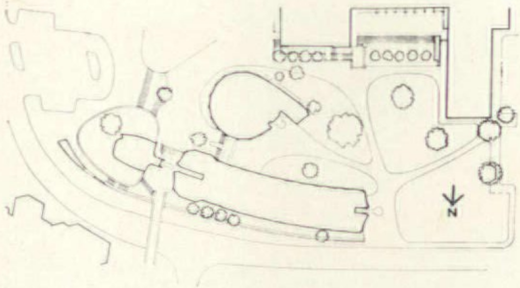


1

Birmingham University Faculty of Commerce and Social Science

Howell, Killick, Partridge and Amis

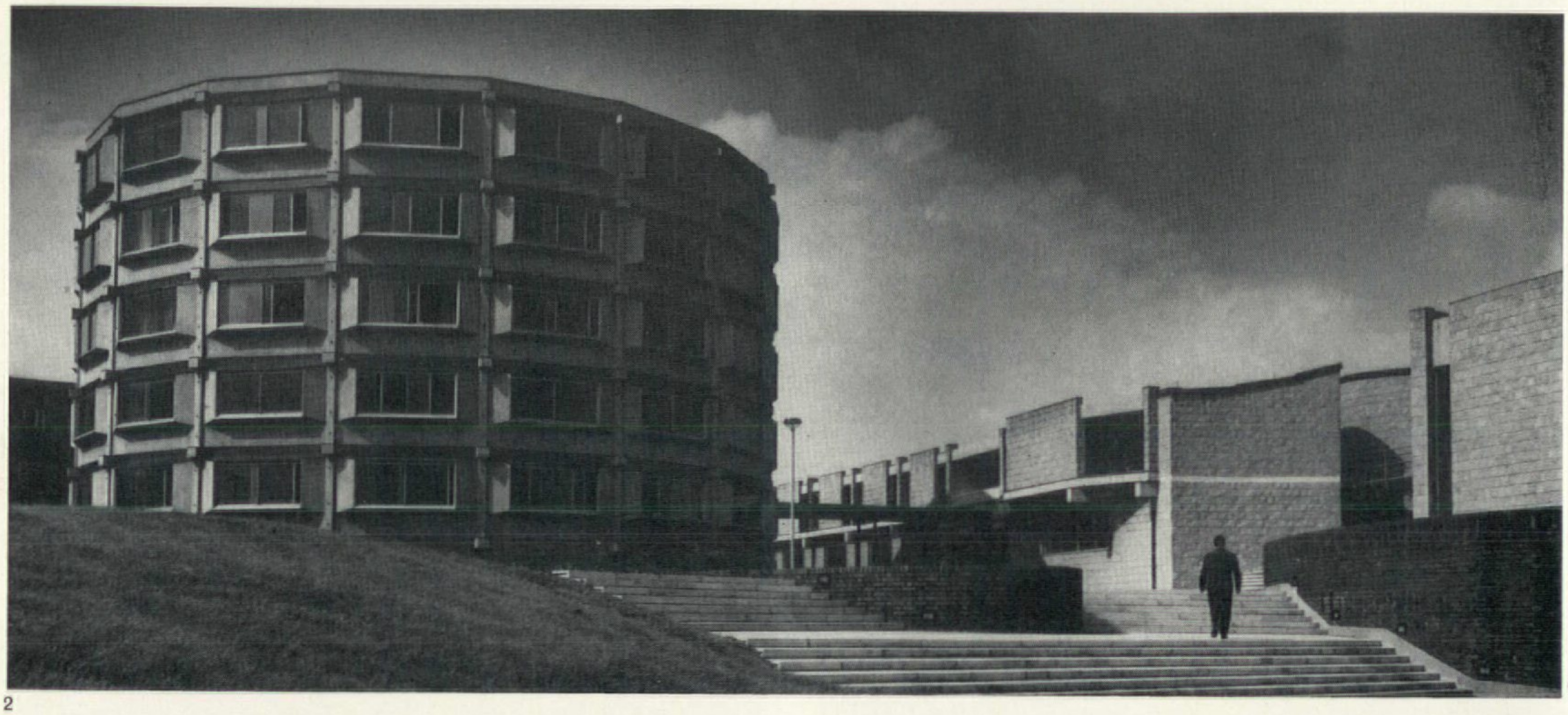
Partner in charge W. G. Howell

All photographs Eric de Maré

The estate architects (Casson, Conder and Partners) had allocated a site on their development plan for the faculty, adjacent to the recently constructed Arts Faculty and just inside the ring road which at that time was to form the northern boundary of the campus. The estate architects suggested that as the new building would in part form a north wall to the campus, this might become manifest in the design.

The Faculty concentrated most of its emphasis at briefing stage on correct zoning and on sound insulation. The zoning brief consisted of a tentative arrangement by floors, anticipating a four-storey solution. This put all the staff rooms on the top floors, the teaching rooms on the first floor and the students' reading rooms, common rooms, and cloakrooms on the ground floor.

The finished building is grouped not by floors but by blocks into dense traffic areas and a dispersed traffic area. All the staff rooms (and



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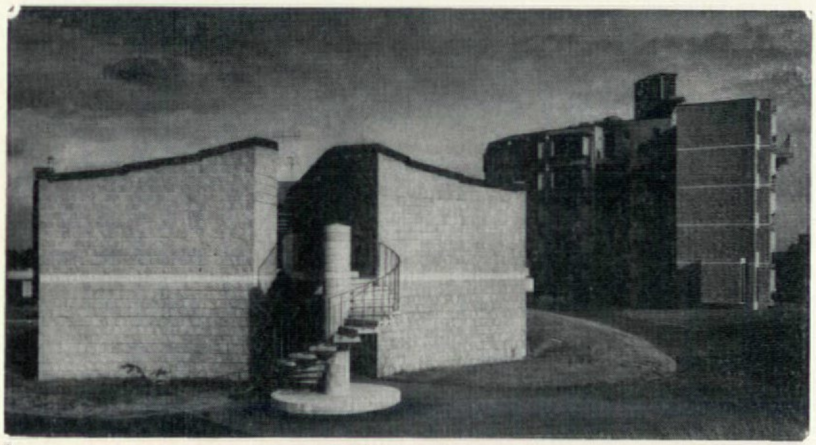

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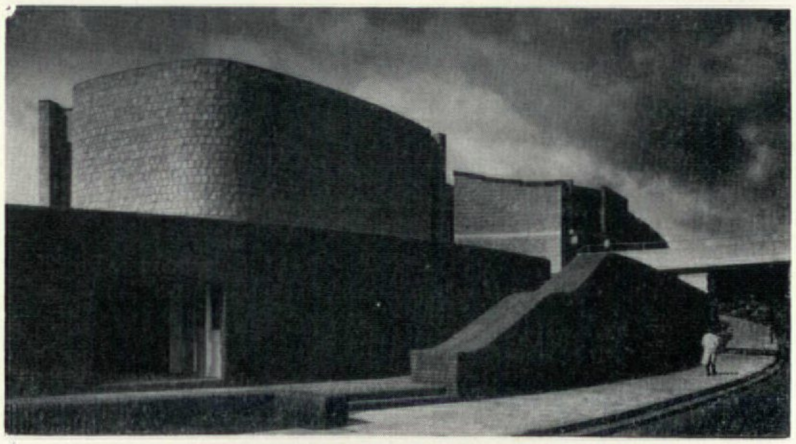

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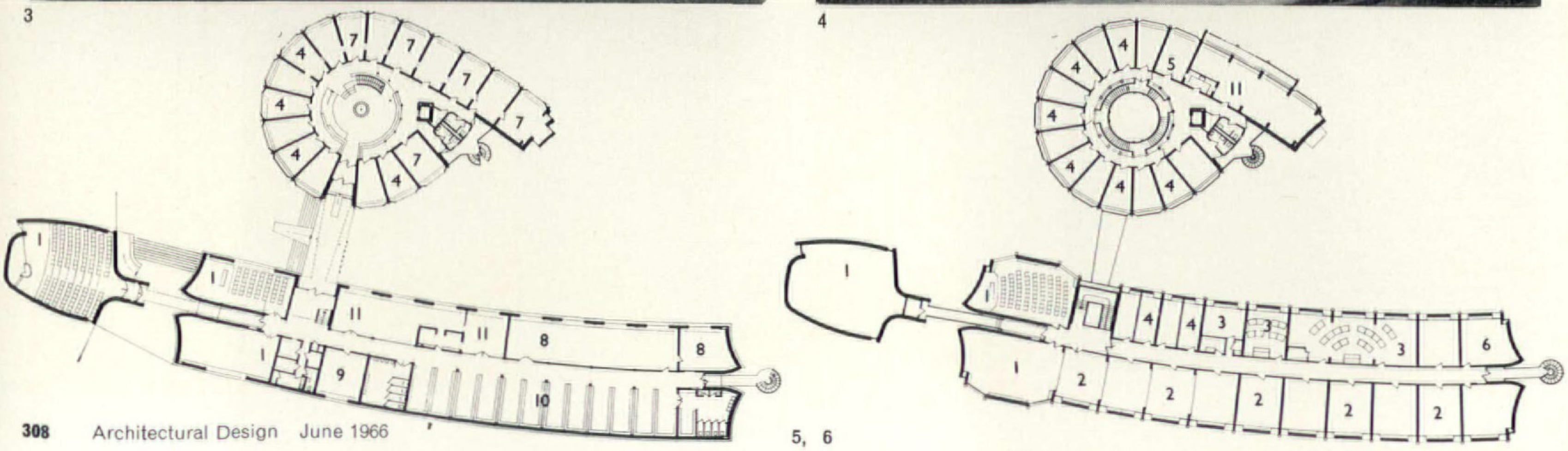


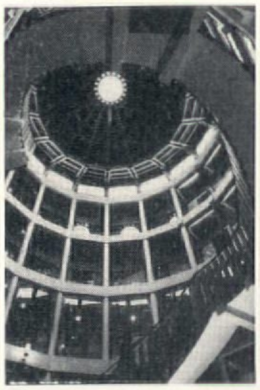
5, 6

therefore the staff common room) and the administration are grouped in a five-storey block and lecture rooms and seminar rooms are in a two-storey teaching block.

The geometry is fundamentally an assembly of straight lines which makes sense technologically. The building is a series of straight brick walls, *in situ* slabs, straight beams and rafters, linear precast units. The exceptions are the end walls—the special situations—which are curved, but do in fact consist of little rectangular blocks which can easily be laid to a curve which is large relative to the size of the block.

Cladding and split concrete blocks are granite aggregate with silver sand and white cement. The split blocks were purpose-made to a nominal 8in × 8in to the architects' requirements. Sloping roofs are Nuralite with stepped joints lead-fashion. Windows are aluminium alloy.

Internally all bricks, thermalite and concrete, are unplastered and painted with two coats of emulsion paint. All circulation areas have wood-wool ceilings, used as permanent shuttering and painted dark brown. Rooms have boarded formwork soffits painted white. All timber is British Columbian pine. Flush doors are painted bronze green. Floors are lino or Bulgomme-Silence. Rooms have fitted sisal carpet.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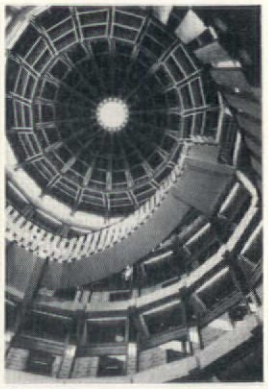
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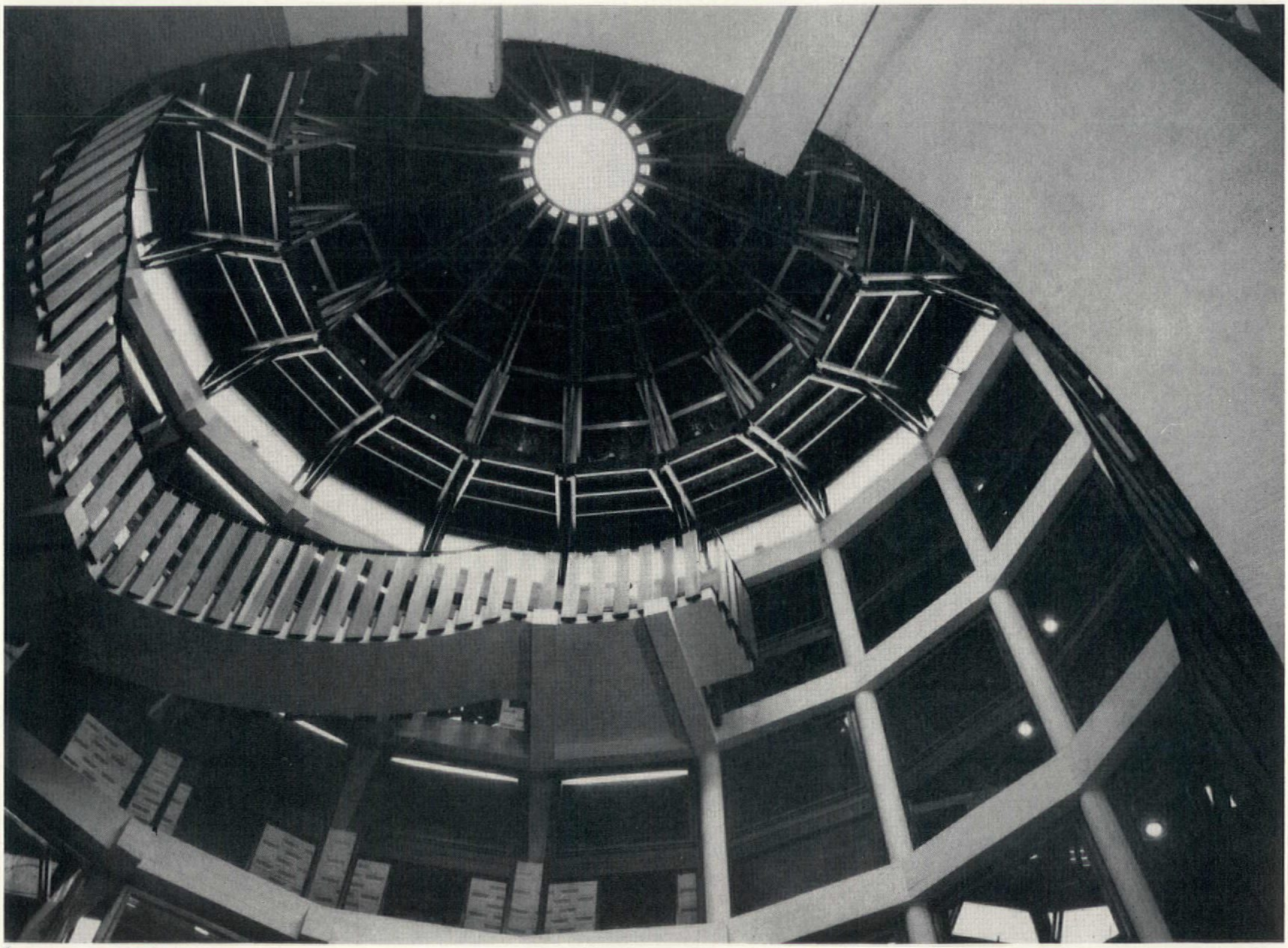
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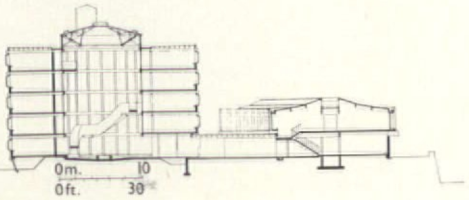
Key to plans
1 lecture hall
2 seminar room
3 language laboratory
4 staff room
5 women's rest room
6 research laboratory
7 offices
8 reading room
9 committee room
10 locker room
11 common room



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1
Site plan

2
Approach from the east

3
View from the west

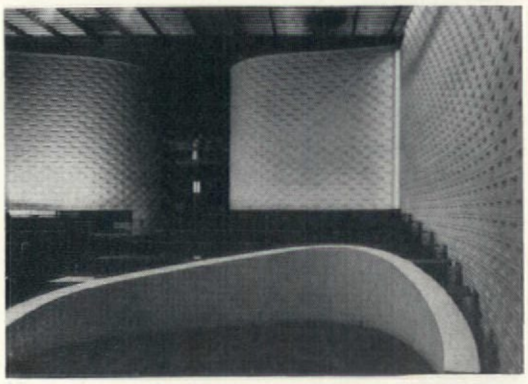
4
View from the University ring road

5 & 6
Ground and upper level plans

7, 8 & 9
Well in the staff block acting as a unifying location

10
Section

11
Main lecture hall from the rostrum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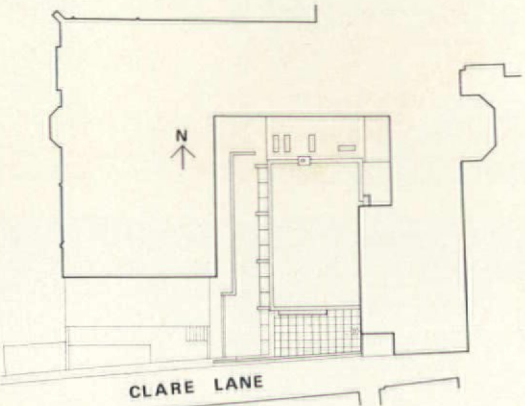
Trinity Hall, Cambridge

New social building for Fellows

Trevor Dannatt

Assistant Colin Dollimore

All photographs Edgar Hyam



1

Owing to the increased number of Fellows of the College existing social accommodation became inadequate for their use and it was therefore decided to demolish the existing somewhat undistinguished Combination Room building and build anew on its site—taking in adjacent waste space to provide a generous Combination Room, and a first floor 'Parlour' with adjacent roof terrace. In addition new toilet facilities and an improved approach were required.

The Combination Room is used for meals, principally Fellows' luncheons, for College meetings, occasionally as an ante-room to Hall, for various social occasions, recitals, etc. The 'Parlour' is used as a private retiring/coffee/reading room.

The site is extremely limited and bound on all sides by existing buildings, thus one of the principal problems was the lighting of the Combination Room from the narrow courtyard left by its construction. Despite restrictions it has been possible to design a generous well lit room with subtle spatial effects and rich character and opportunity was taken to realize a complete exterior/interior building conception (including direction of furnishing).

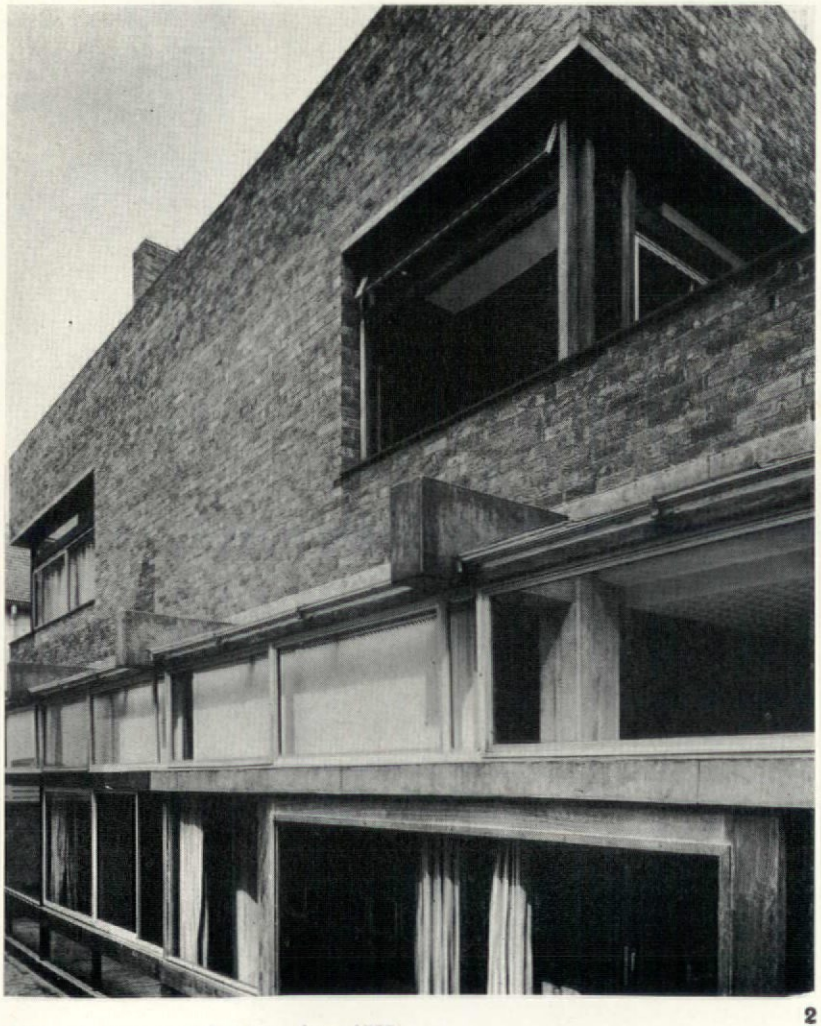
The main space of the Combination Room on the ground floor and the main line of the building is defined on the courtyard side by the three columns. The main space extends about 4ft beyond the columns into what might be termed a continuous bay window beyond the line of the building proper. This sub space is split horizontally by a slab at 6ft 6in level which, apart from its spatial purpose and effect on scale, helps screen the room from overlooking windows at high level. Also the top of the slab reflects natural light on to the ceiling. This side of the room is thus entirely enclosed with vertical glazing which returns as sloping glazing at main ceiling level.

From the Combination Room on the line of the entrance an easy stair rises to the 'Parlour' and adjacent terrace. A fence-like balustrade screens the stair from the room.

The structure is a partial r.c. frame combined with existing load-bearing walls. The three r.c. columns on the window side support cross beams, two of which are carried at their opposite ends by hangers (from roof beams) permitting the stair opening to penetrate the structure without further columns. One hanger continues down to stiffen the side of the stair (steel strings, timber infill), the third beam carries through to bear on the rear wall. On the outside face three columns support a roughly T-shaped concrete beam wall (faced with brickwork) which permits the cut away corners of the 'Parlour'. The roof is spanned with two cross beams and finished with joisted construction.

The roof terrace (over the sitting space of the Combination Room) has a concrete slab finished with tiles. The 'Parlour' floor over the main space of the Combination Room consists of oak strip on battens floating on glass silk, on wooden boards, fixed to joists which span the three bays. These joists, of Oregon pine, are exposed to view, as the main ceiling of the Combination Room. Joists are about one foot apart and artificial lighting consists of lamps in batten holders on a random spacing between the joists, screened by simple wood louvre nests. There are no fittings as such and the effect of this combination of exposed concrete and timber structure integrated with lighting is richly decorative—providing at night light of suitable intensity, warm and convivial.

Lighting over the sitting bay is incorporated in the grid of small squares which emphasizes the different space and provides sound absorption. At the entrance end of the room there is a service fitment, screened when not in use by a vertical tambour shutter. Extract ventilation is incorporated over this. Heating is by fan convectors, plus floor heating in the brick paved strip of the 'bay'.



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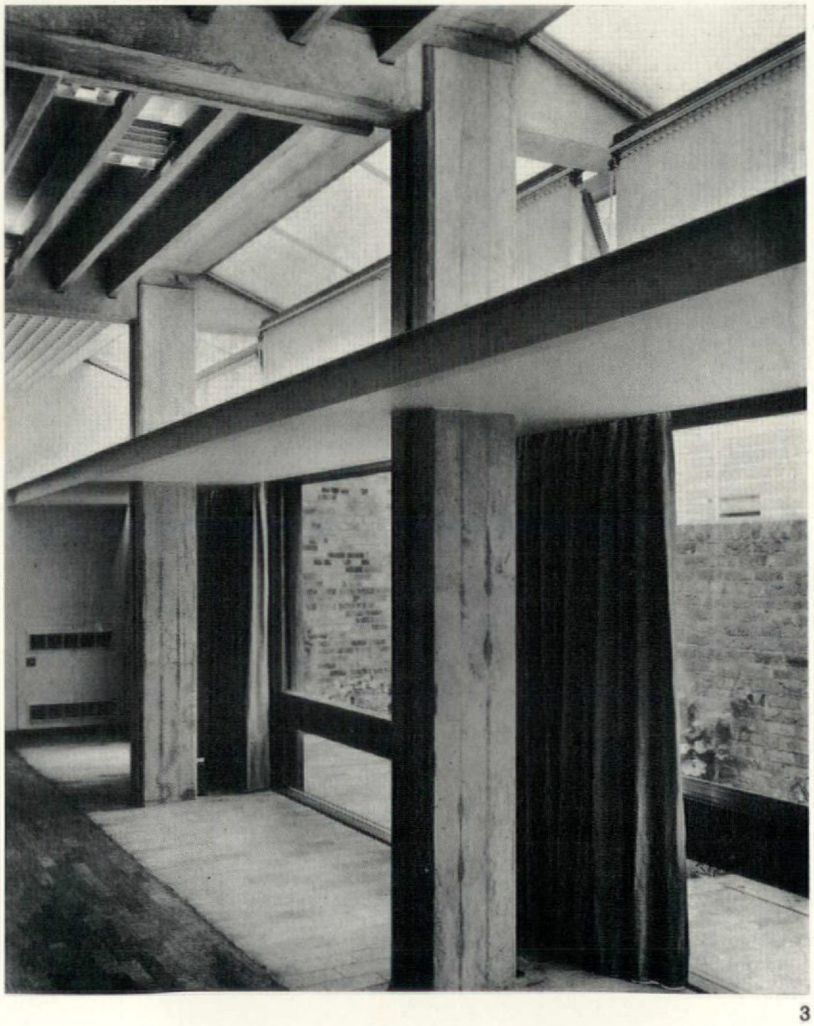

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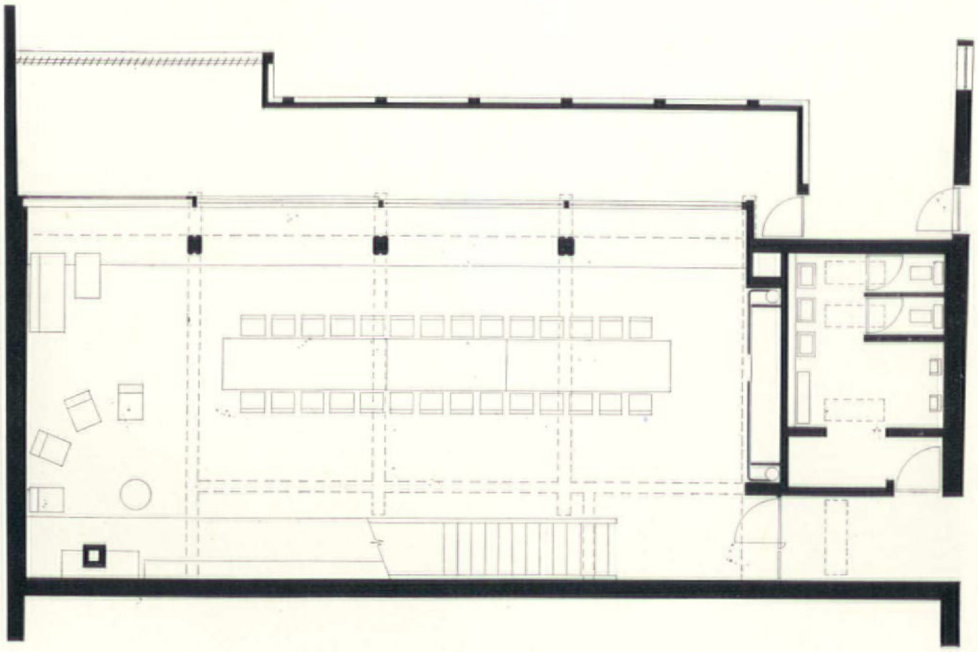

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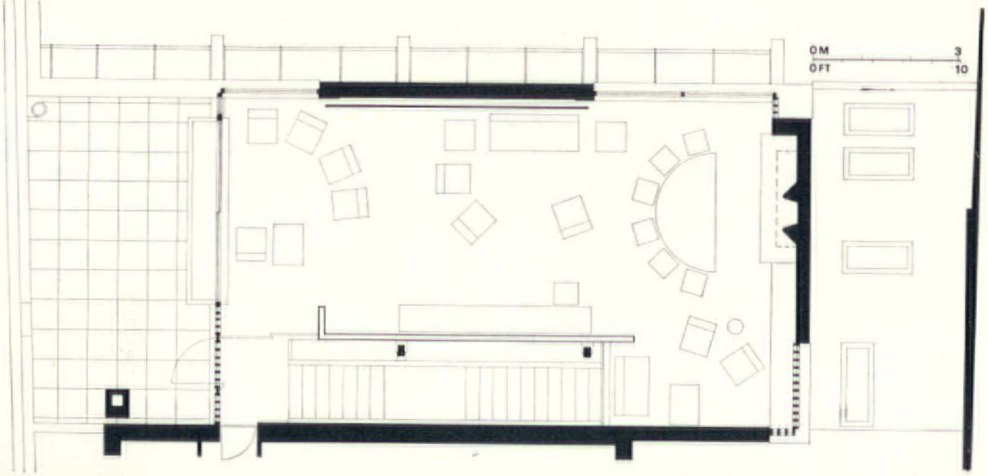

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1
Site plan

2
Detail of exterior showing glazing of Combination Room and window to terrace

3
Detail of Combination Room window wall and structure

4
Ground floor plan, Combination Room

5
First floor plan, Parlour and roof terrace

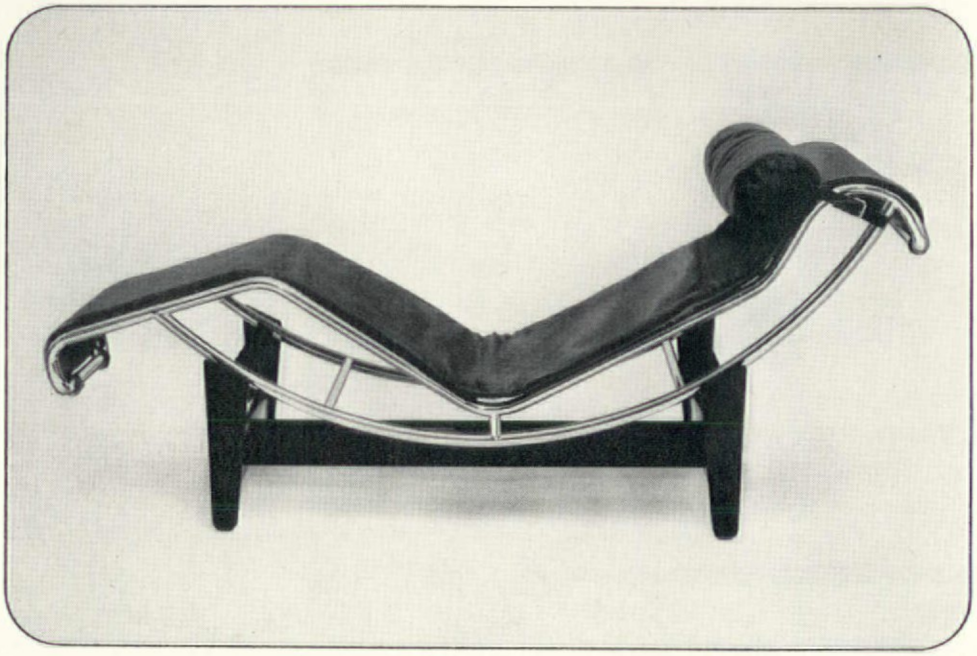
6
General view of the Parlour looking towards the fireplace

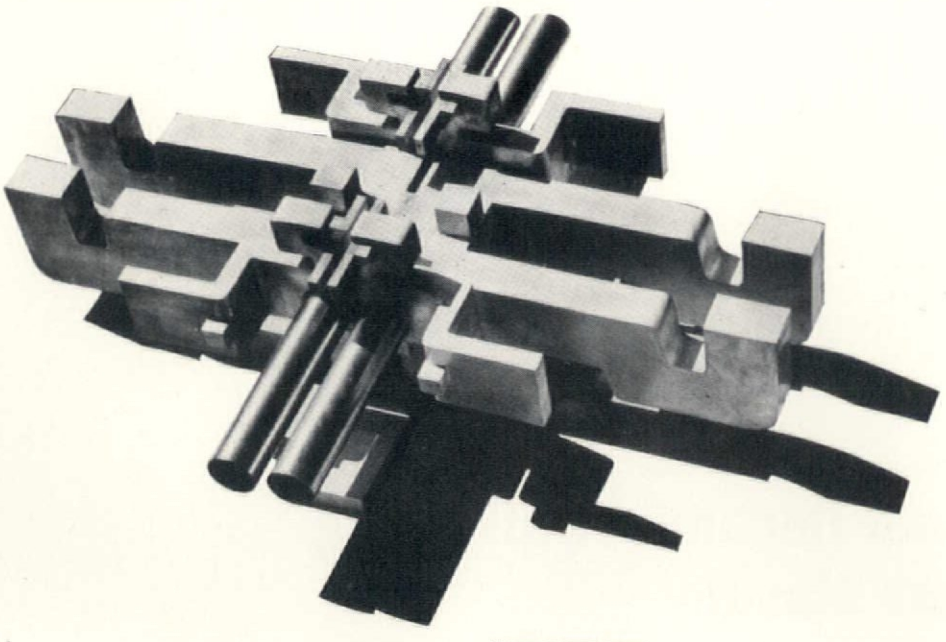
7
View into Combination Room from entrance, stairs on left leading to roof terrace and Parlour over

8
Fireplace in the Combination Room, the ceiling over the sitting area corresponding to the terrace over

7

8





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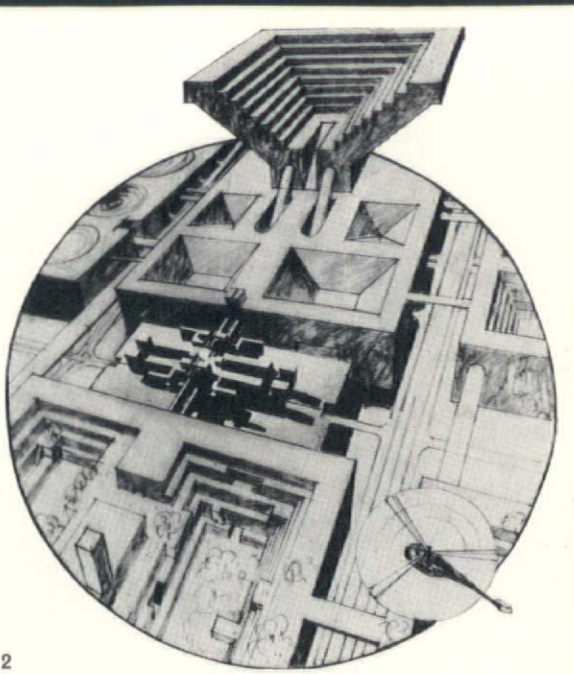


2

IDEA—International Dialogue of Experimental Architecture

1
Hans Hollein, model of a communications centre, determining the form of the City as a Continuous Structure. 1962–63

2
Hans Hollein, sketch of Valley City with the communications centre from the earlier project. 1964

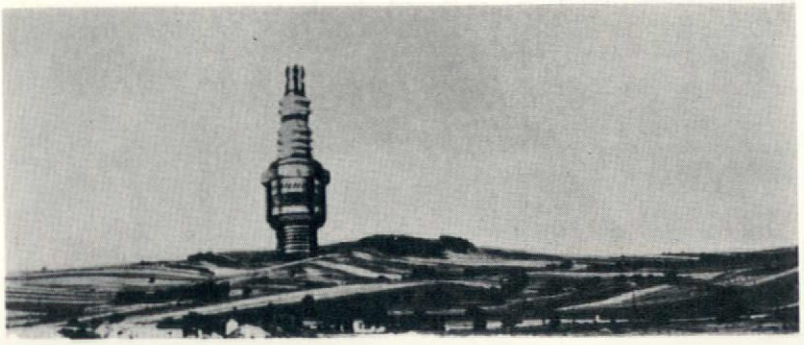
3
Hans Hollein, highrise building—Transformation/Transposition study. 1964

4
Hans Hollein, Aircraft carrier city. 1964

5
Hans Hollein, Carrier city, embedded

Vast, sprawling, constructivist cities, on and under the ground; great floating islands and underwater settlements, all conceived and presented with a gusto and utopian vision that is in no way marred by mere bad drawing or inept and ungrammatical language: of such stuff have architectural dreams been made during the past ten years. There have been similar dreams and present-day dreamers have greatly admired their visions, but one notices in the sheer bent for repetition in the new designs, the emphasis on the capsule dwelling and the accompanying frenzied denunciation of our present ideas of living, a new and hysterical obsession. Ionel Schein designed his first capsule for the Exposition des Arts Menagères in 1955. Arthur Quarmby's plastic capsules have no less venerable a history. Yona Friedman's series of space frame cities have been appearing in *Architectural Design* since 1960. Throughout Europe architects have been experimenting with the themes of the city and its appropriate living cell—Claude Parent, Paul Virilio, Joseph Weber, Hans Hollein (whose work is illustrated on this page), Cedric Price and the Archigram group are now familiar way-outers. They are obsessed. But they are not mad. Nor are they eccentrics conjuring up private worlds of their own. On the 10th and 11th of this month they are to meet at Folkestone to discuss their work together with students, other architects, designers and a whole gallimaufry of poets, painters and producers. Anyone, almost, is welcome. There is to be an exhibition at the New Metropole Arts Centre (president: Sir Kenneth Clark) of an array of visionary designs—suitably blown up to larger than life size. In this way it is hoped that the field of experimental work may be developed to a stage of greater definition and maturity.

3



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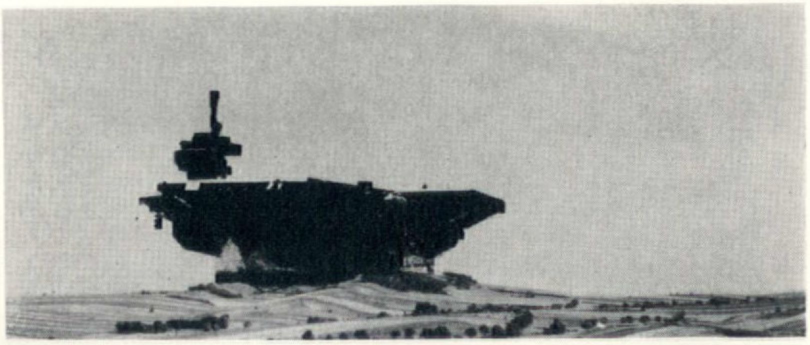

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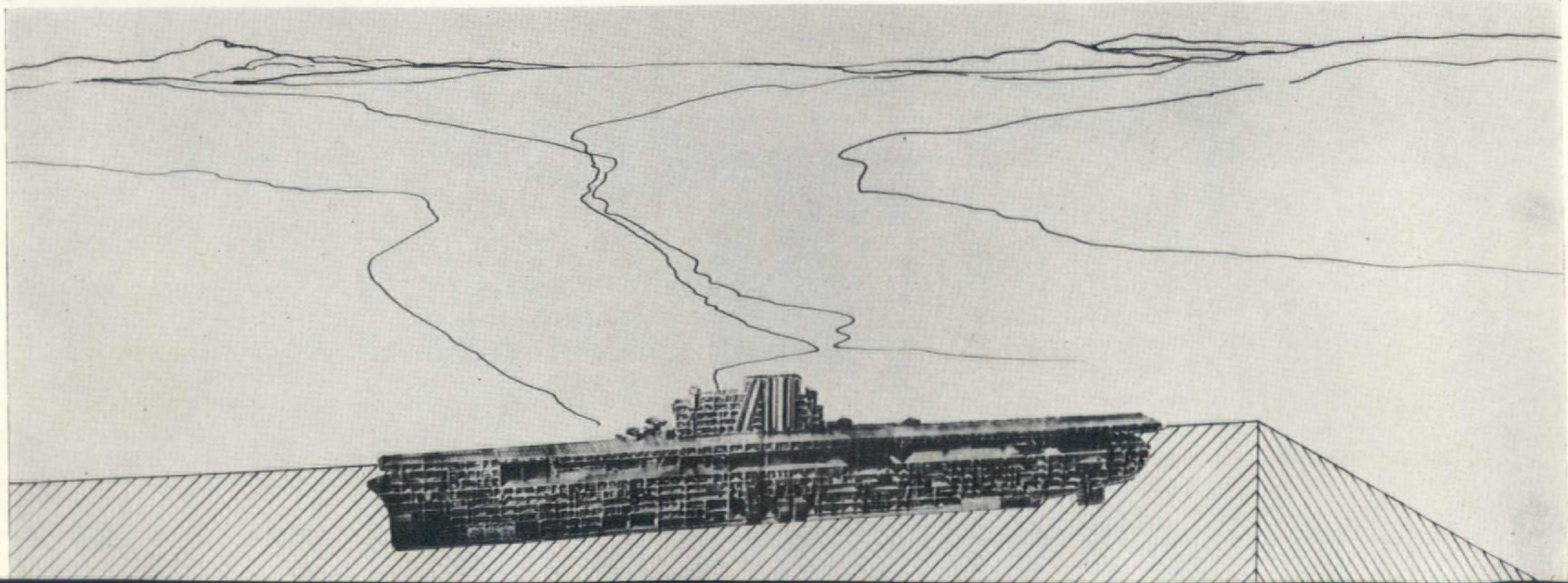
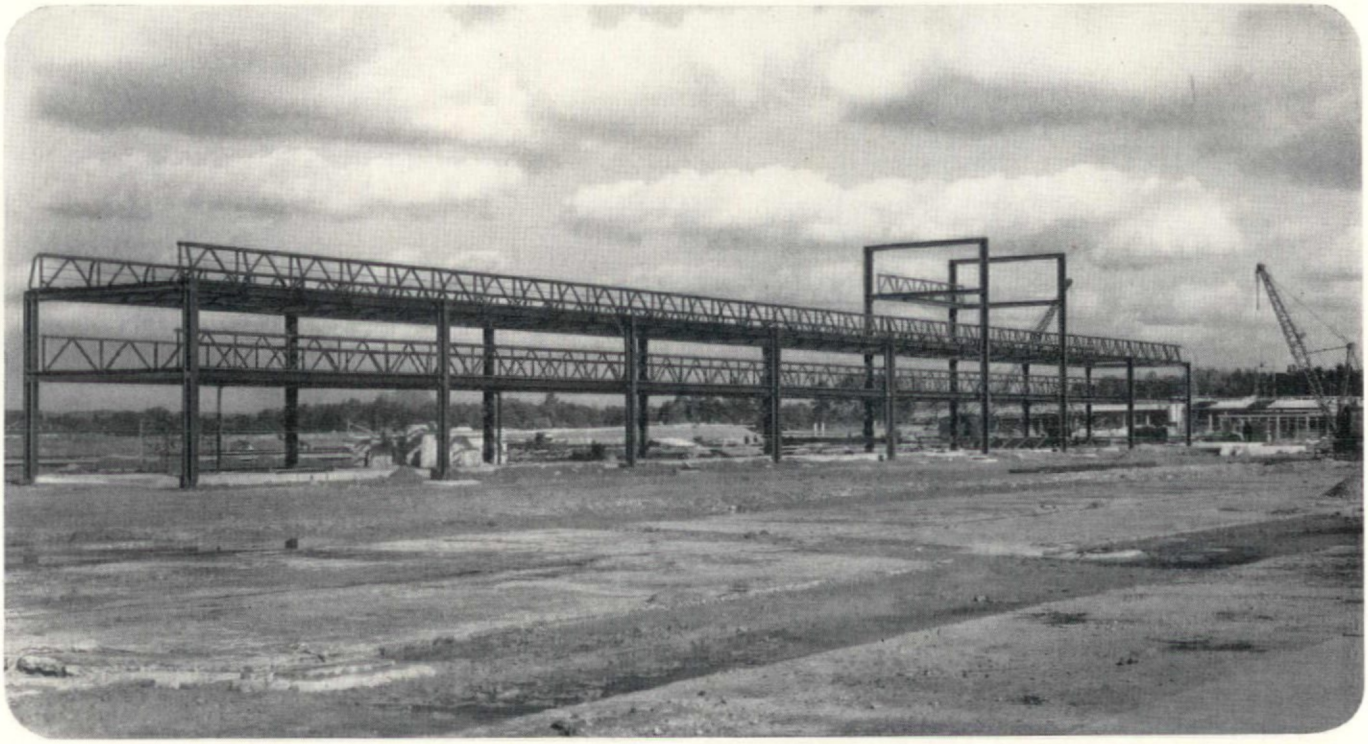
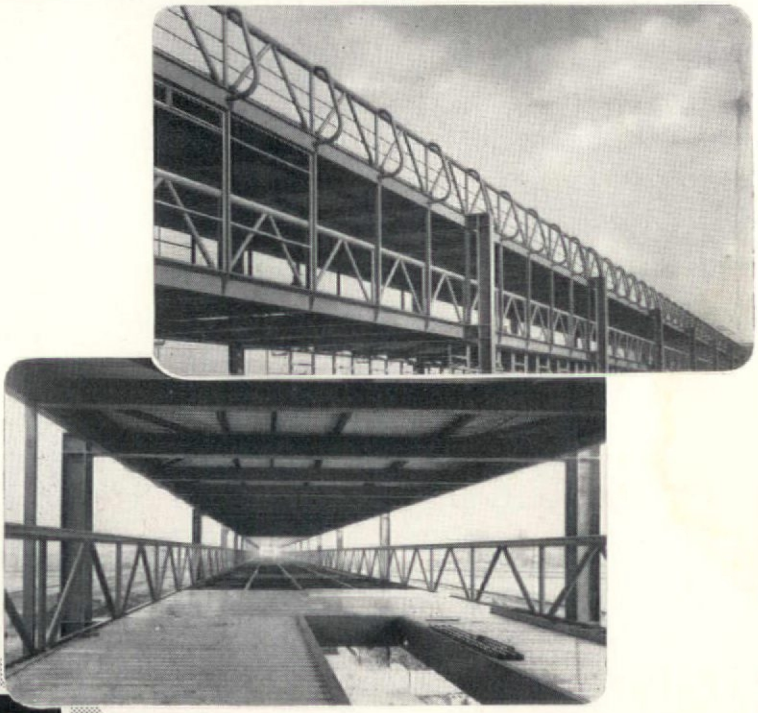


GATWICK AIRPORT





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Fleet Road Re-development, Hampstead, London
Architect: C. E. Jacobs ARIBA
Housing Architect, Borough of Hampstead
Main Contractors: John Laing Construction Ltd.

This housing development at Fleet Road, Hampstead, consists of five two-storey blocks and two 15-storey blocks, providing a total of 179 dwelling units. An interesting feature is the two-storey car park, the roof of which serves as a children's playground.

The 15-storey blocks have reinforced concrete frames with cavity brick cladding and are supported on under-reamed piles. There is a central shaft for services and access to the flats and the roof. The boiler house, which provides warm-air central heating for the entire development, is situated on the roof of one of the blocks.

The roofs of the tall blocks and the balconies to each flat were finished with Permanite Asphalt laid in two coats on an underlay of Black Sheathing Felt. Permanite Paving Asphalt was used for the car park roof, to provide a hard-wearing surface for the children's playground.

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Design

Design awards, 1966

In selecting the eleven Design Centre Awards for 1966, the tenth and last year of the series, the selection committee particularly looked for products which showed some original development in their own fields. In view of the CoID's decision to extend its awards scheme from 1967 onwards to include engineering equipment and capital goods, the committee was glad to find several products with technical or engineering interest coupled with high standards of industrial design.

The award-winning products were

1 the 'Quartet Major' range of display lighting made by Rotaflex Ltd, designed by Robert Heritage, who was also awarded for this design the British Aluminium Design Award of £5000, which is the largest sum offered in Britain for a design competition.

2 A fluorescent desk lamp made by Best and Lloyd Ltd.

3 Individual hot plates made by Simplex Electric Co. Ltd.

4 Allgood's range of architectural ironmongery 'Modric'.

5 Pye radio available for either monaural or stereophonic reception.

6 The 'Thrift' cutlery commissioned by the Ministry of Public Building and Works.

7 The Race 'Flexible' chair.

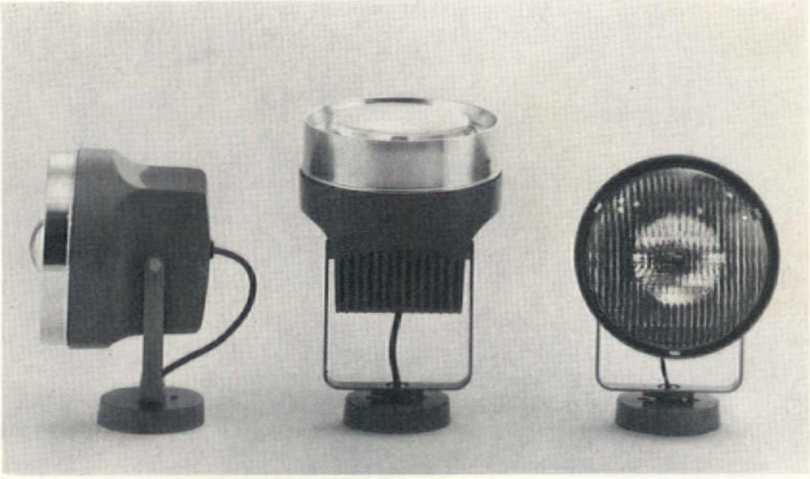
8 A range of Govancrofts 'Hamilton' stoneware.

9 The Hotpoint 'Automatic 1501' washing machine.

10 The Barbican handrinse basin made by Twyfords.

11 STC dial and push button telephones.

The 1966 Duke of Edinburgh's Prize for Elegant Design has been awarded to Andrew Grima for the contribution he has made towards winning a new international reputation for modern British jewellery **(12–15)**.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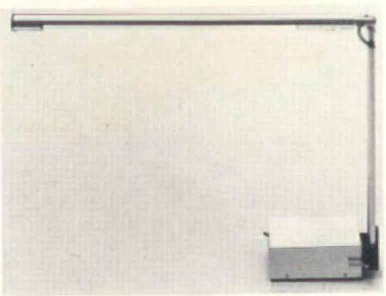
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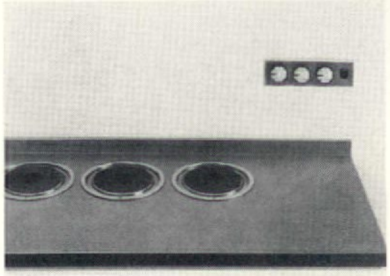
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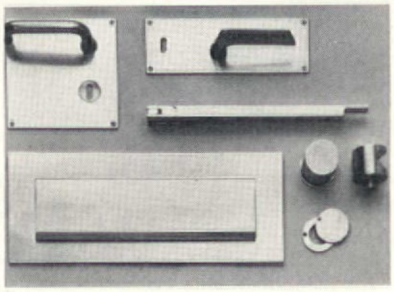
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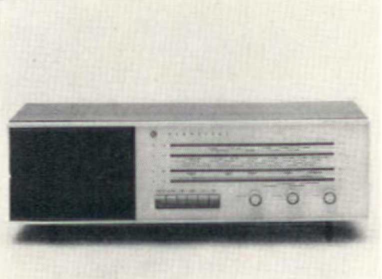
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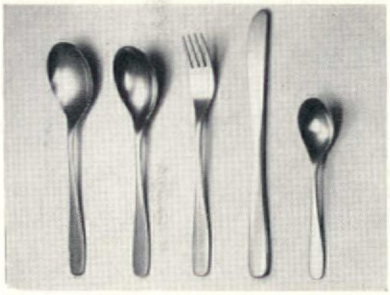
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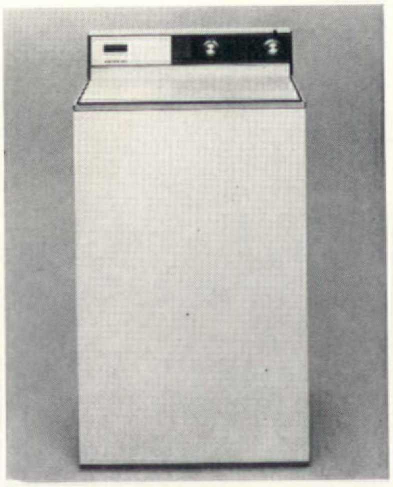
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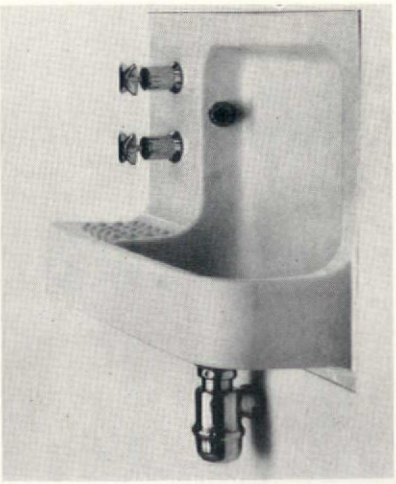
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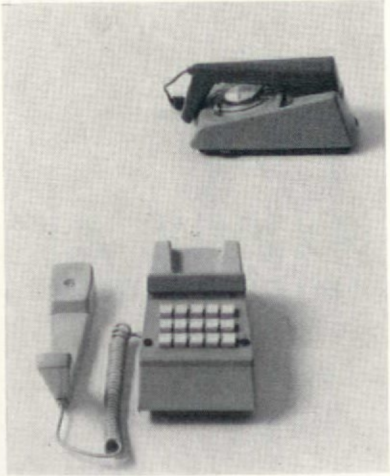
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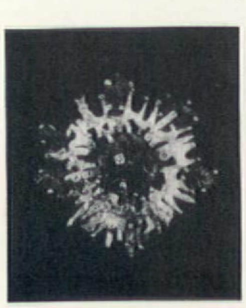
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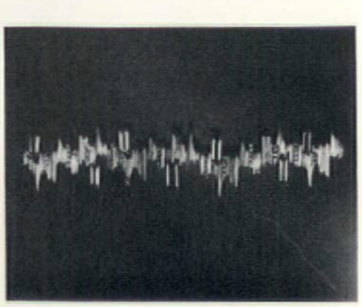
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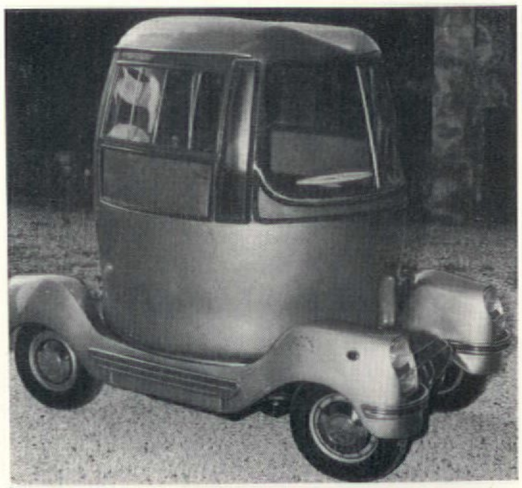
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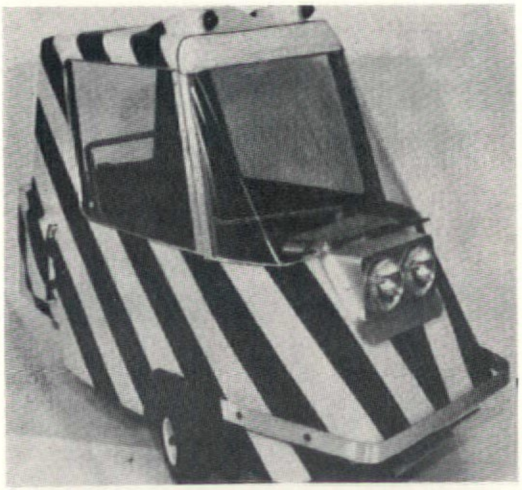
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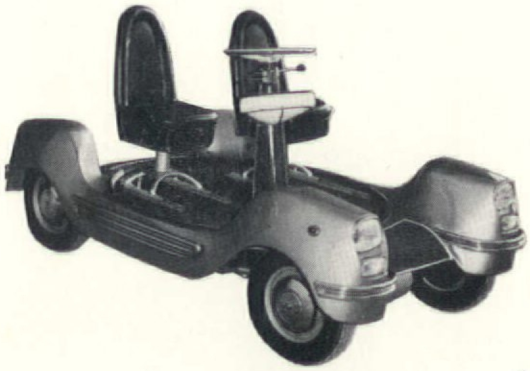
Mini transport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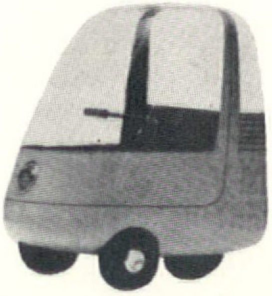
1, 2 & 3 Urbanina—a small Italian car designed by the Marquis Piergirolamo and the engineer Narciso Cristiani to reduce the amount of space occupied as much as possible. The two-seater body swivels on a circular turntable independently of the wheelbase, so that the driver and passenger can get out on any side.
There is a two-stroke engine, one cylinder of 175cc which, with a Dall'Orto carburettor does 33 kilometers to the litre of petrol. The starter is electric. Cooling is by air.
The car is just under 6ft long (4ft shorter than a Mini) and just over 4ft wide, which means that it can be parked with great ease. Weight is 600lb. *Photos: G. Calugi*

4 & 5 The Scamp, developed by the aircraft firm Scottish Aviation, is electrically driven, plugging in to cheap off-peak electricity for power, giving running costs of about $\frac{1}{2}$*d* per mile. Length 7ft, width 3ft 10in, height 4ft 6in.
Turning circle is $16\frac{1}{2}$ft, with a kerb weight of under 1000lb. Maximum speed 35 mph, cruising speed 30 mph. *Photos: Electricity Council*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6, 7 & 8 Douglas Stout power chair prototype, built at the Institute of Design, Illinois Institute of Technology. Powered by a $4\frac{1}{2}$ hp cycle engine it is capable of speeds up to 45 mph. There is no suspension apart from the rubber mounted seat. Length 5ft, width 3ft.
To test the dynamics of driving, a plywood test body was constructed **7**, stripes and lights being added to make it more visible on the roads, but the production car is intended to be more like the model **8**

9 Winn city bike, electrically powered. Top speed 25 mph, range before being repowered 15 miles, cost is likely to be £95. Manufactured by Telearchics.

10 Trident, by Peel Engineering, electrically powered. A fourwheel one- or two-seater car, 6ft long, 3ft 6in wide, operating on two 12V batteries with a carbon pile regulator. Maximum speed 35 mph, range 40 miles before being repowered by plugging into mains.

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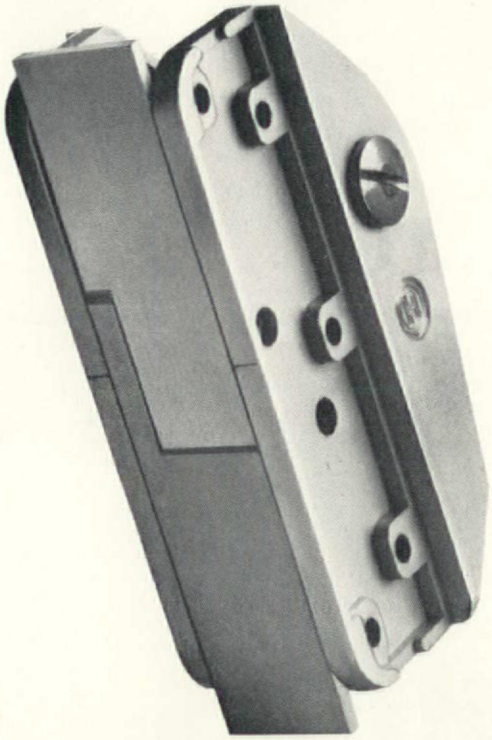

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Product analysis 7

Timber windows

Alexander Pike

Before the war the requirements for low-cost housing were satisfied by standard timber windows functioning at what would now be considered low efficiency. For other situations timber windows were most frequently designed by the architect, and in spite of elaborate grooves, throatings and weatherings, were often not much better. In recent years an increasing awareness of the complexity of function of the window, particularly in relation to the acceptance of better standards of heating, has resulted in the demand for improved window design. This has led to a closer study of products from the Continent, and in particular Scandinavia, where experience is extensive and stringent performance specifications are applied.

Thus whilst the window as an element is relatively more expensive than formerly, we generally enjoy the benefits of a better product, but we should not ignore the fact that the window is still too often the weakest point in the walling system and assume that there is small scope for improvement in design.

Materials standards regulations

The British Standard for timber windows is BS. 644 *Wood casement windows* and provides a satisfactory product for economical work—but it nevertheless falls far short of the standards we should be demanding and would not meet the officially approved Scandinavian tests. It may be argued that our weather conditions are not sufficiently severe to warrant the imposition of these standards, but it does not call for a long memory to recollect that our climate is one of extremes and that we are constantly experiencing heat waves and severe cold spells, during which the use of supplementary heating, more often than not due to excessive heat loss, causes the recurring power cuts.

The comparable Swedish Standard SIS 81 81 02 *Wooden windows—quality requirements* is far more specific in terms of quality of timber and construction, and the Norwegian Building Research Institute has standard test for grading the degree of air penetration through the joints.

Criteria for design

Natural lighting

Once the sole or major criteria for a window, natural lighting is now merely an ingredient in a formidable list of interacting factors. Cheap glazing and a predilection for large glazed areas have ensured that a sufficiently high intensity of natural lighting can be achieved for any building. Indeed, the facility with which these large areas can be provided can create adverse conditions if employed without due consideration for other factors which may be far more important, and the advantages of a high intensity of natural light and good outlook can be nullified by the discomforts of excessive glare, solar gain and heat loss.

The quality and intensity of natural lighting is constantly fluctuating and latitude, time of day, season and weather conditions are influencing factors. The figure taken as the basis for daylighting calculations in the British Isles is 500 foot candles, the illumination from a heavily overcast sky, but this is exceeded for more than 80 per cent of the year. The calculated daylight factors for most buildings are therefore much lower than will actually be experienced, and this should be considered when assessing window sizes

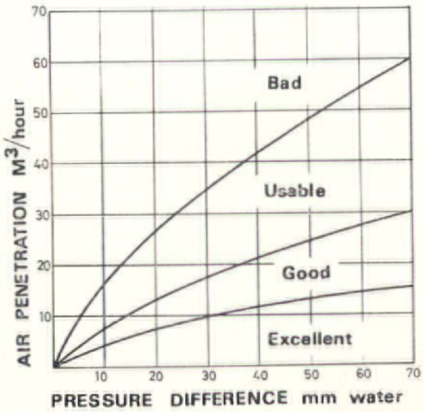
Outlook

The more widespread provision of air conditioning attaches greater importance to the window as a medium for contact with the surrounding environment. Sizes and positions of mullion and transome members can influence the outlook and must be carefully considered. Where opening lights are provided particular attention should be given to the obstructions caused by the framing members of the windows in the open position. Sill heights should be considered in relation to the normal eye level for the majority of the period of occupation.

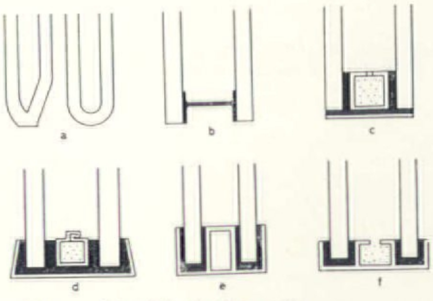
Heating and heat loss

Heating due to solar gain is most frequently and more adequately dealt with by the general design of the building and a wide variety of alternatives are available (Windows, General, *AD*, May 1966).

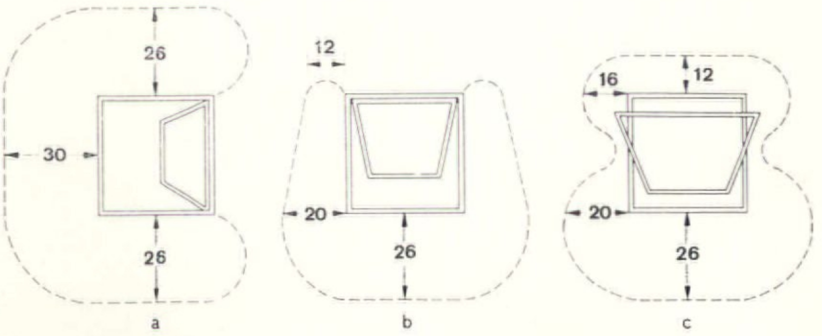
Heat losses through windows can occur in a variety of different ways, principally by transmission through the glass, but also by heat transfer through sashes, frames and the joint between back of frame and the wall reveal. Losses also occur by ventilation through air leakage between meeting members and although it is usually pointed out the heat flow in these circumstances is attributable to excessive air pressure, it is under these conditions that the defective designs are most troublesome. The graph below shows the grading for degree of air penetration prepared by the Norwegian Building Institute.



The desirability of double or triple glazing to combat heat transmission through the glass is well known, but it should be remembered that the amount of daylight transmitted is affected by the number of panes of glass. Approximately 10 per cent of the intensity of daylight is lost by absorption and reflection when the light passes through each sheet of glass. Double glazing units are available in several different forms some of which are indicated below.



Forms of double glazing units



Areas of wall cleanable from inside with various forms of opening light

The early faults of some of the sealed types have now been rectified and failures are rare. The one-piece units now available in this country after long use in the USA, are claimed to possess the advantage of additional strength, due to the structural form, permitting the use of lighter glass for any given area of glazing. The natural movement of timber precludes the design of air-tight joints between opening members without the use of gaskets. Considerable attention has been given to this detail and a large number of effective alternatives can be obtained. In conjunction with those forms of gasket it is essential that the ironmongery is capable of effectively closing the window at all points. Joints between back of frame and reveal can also be covered by a similar form of gasket.

Maintenance and cleaning

Maintenance-free finishes, loosely defined as those requiring renewal not more frequently than every 15–20 years and requiring only occasional cleaning, are preferable, but must always be related to the capital outlay available. Painted finishes will always impose a commitment to repainting and in urban areas atmospheric pollution can cause rapid deterioration. Windows in which the airtight gaskets must meet with some precision should have fixings, pivots, etc., of high quality to minimize the necessity for replacement.

The cleaning of windows is a subject which frequently arises at a stage in the design too late to permit appropriate alternatives to be sought. The method to be employed for window cleaning should be decided at an early stage in the design. For multi-storey buildings three basic alternatives are available: the suspended cradle, demanding structural support and appropriate detailing of the window; projections or balconies, providing external cleaning access at each floor; opening windows permitting all cleaning to be carried out from inside.

Projecting slabs imply structural and aesthetic limitations and can be excluded from general consideration. Suspended cradles can be used to provide total cleaning from outside, or for cleaning partially from the inside and partially from the outside. Window installations designed for cleaning totally from the inside will have the maximum number of opening lights and result in increased capital costs. Attention must be given to the areas capable of being cleaned adjacent to the opening light, which can vary considerably with the type of window. When assessing the viability of a suspended cradle system, consideration must be given to its usefulness for the cleaning and general maintenance of the exterior of the building as a whole, and the cost savings by the substitution of fixed lights for opening lights may amplify the justification for air-conditioning.

Ergonomics

In contrast with the timber windows for low-cost building which are available in a range of standard sizes, the better quality products standardize a principle, and generally manufacture in sizes to customers requirements. The ergonomic problems related to sill and transome heights therefore come under the control of the architect. However, the operation of the window, in terms of safety and convenience is still the responsibility of the manufacturer. Opening mechan-

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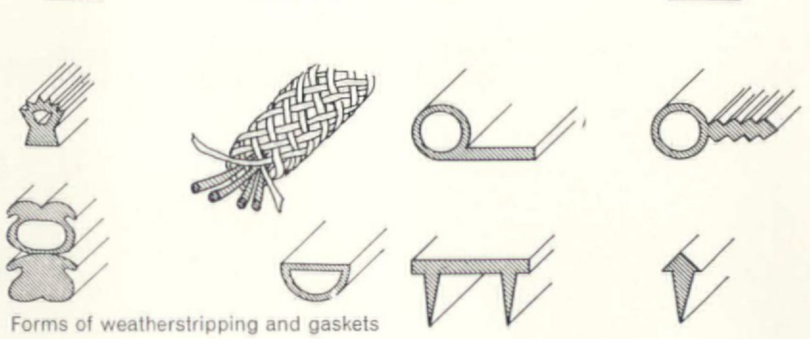
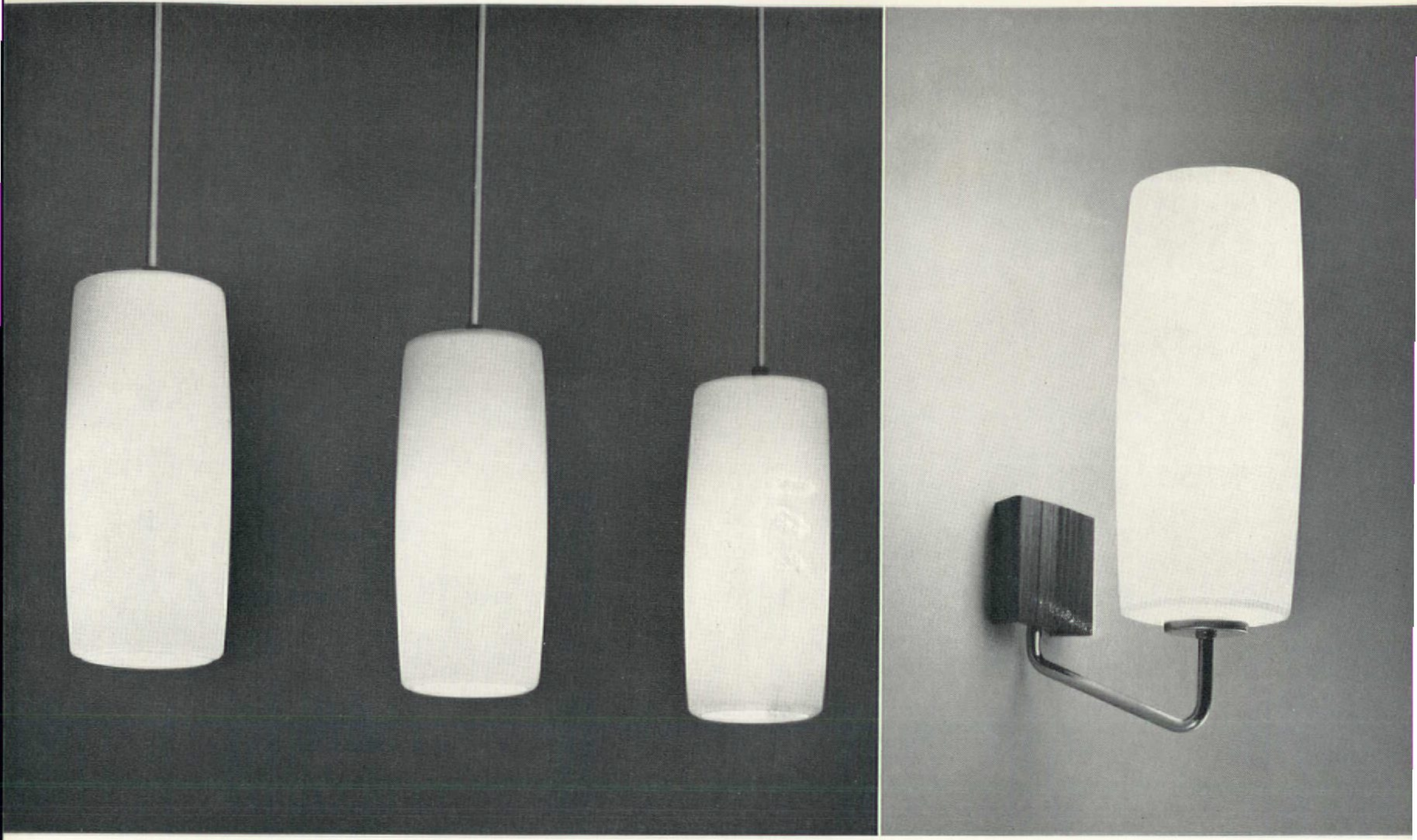
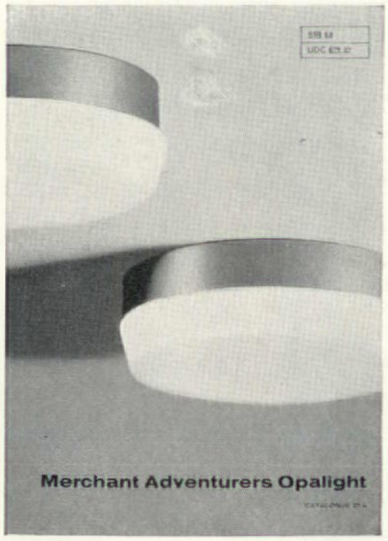


Forms of weatherstripping and gaskets



Versatile 1620 series single and multilight units from Opalight catalogue 21A



Merchant Adventurers Opalight

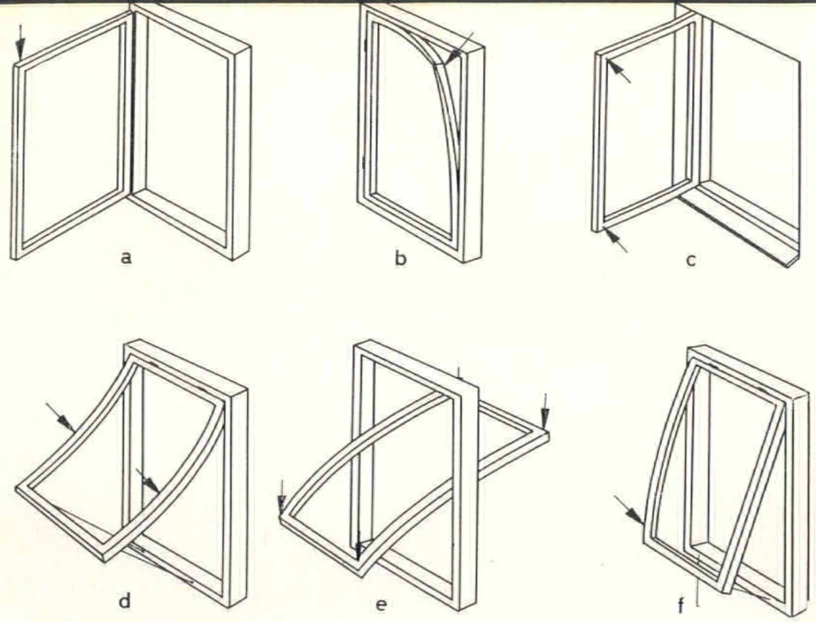
Opalight 21A

This publication illustrates
with photographs,
dimensional drawings
and prices, some
450 MA lighting fittings
using opal glass diffusers
and provides an indispensable
guide to the best ranges
in Opal lighting today

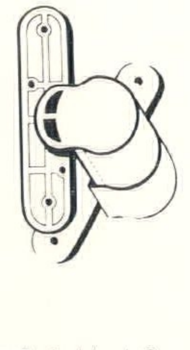
MA LIGHTING

Merchant Adventurers

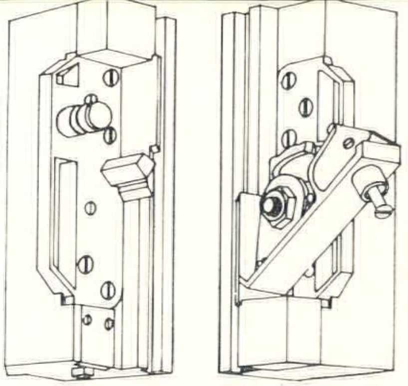
Head Office:
Feltham, Middlesex (FEL 3686)
London Showrooms:
231 Tottenham Court Road W 1



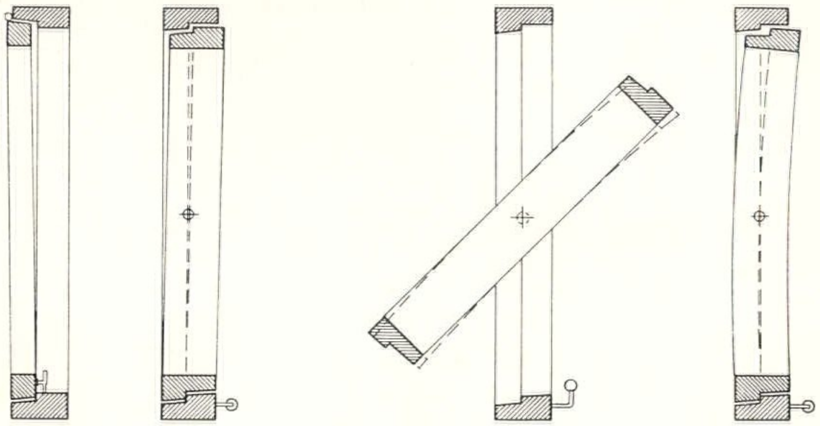
Loadings imposed on various types of window



The Unitas 5 pivot by J. Gerrard & Sons. Pressure cast in zinc alloy with adjustable friction through 180°



The Silux pivot by Cawood Wharton in Zamac 2 alloy. Friction control through 180° but permitting 4in free movement of sash before friction commences, for ease of opening



Deformation of sashes causing loss of efficiency

◁315

isms and ventilation control systems must be carefully considered in relation to the mode of operation. Pivots with initial stiffness for the first few degrees followed by an excessively loose movement can be extremely dangerous, particularly when associated with a low sill height.

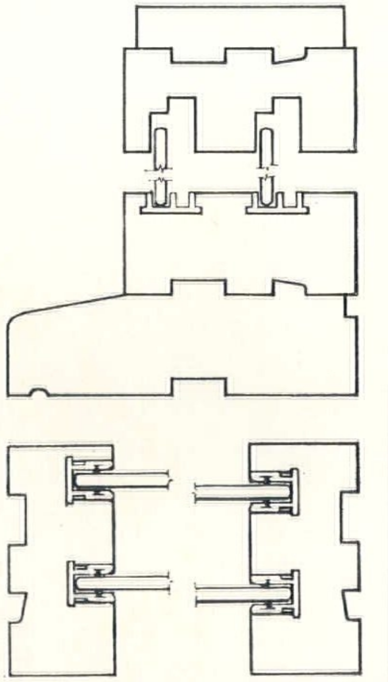
Mechanical performance

The practical efficiency of the entire window can be marred by deficiencies of hinges, pivots, fastenings and opening mechanisms and these must always be matched to the standard of the window itself. Pivot mechanisms can vary widely and as they are subjected to heavy use over a long period all but the best are prone to failure. Their importance is such that the demand for test results is justified. The large windows which have gained popularity in recent years imply the possibility of more movement and distortion of the sections with a consequent loss of efficiency of the weather and air-sealing properties of gaskets. The significance of the locking mechanism therefore gains in importance and single or double point fixings may no longer be satisfactory.

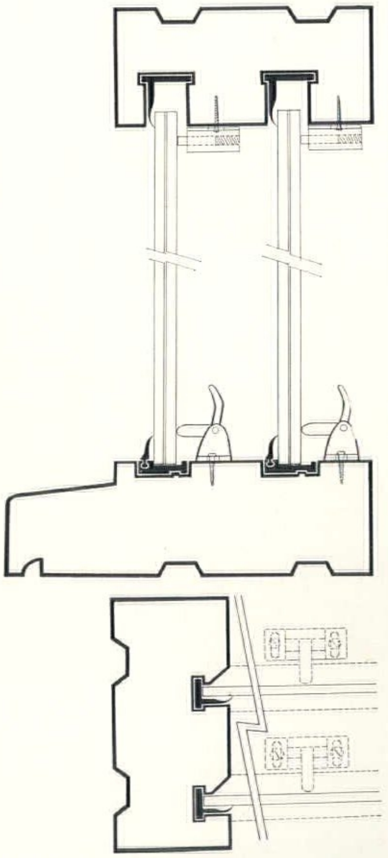
Structural performance

The stresses in the simple side hung casement window are simple, and are to a large extent resisted by the structural support imparted by the glass. The more complex forms of window now available are subjected to complicated stresses and frequently derive little support from the glazing. When assessing the relative economic advantages of different makes of window it is essential that the basis for comparison should be similar. Reductions in cost achieved by the use of smaller sections can often be false economics. Complicated espagnolette fixings may entail severe reductions in sectional area, and although the ironmongery itself may materially strengthen the section, this is not necessarily invariably the case. This is a feature that should be thoroughly checked.

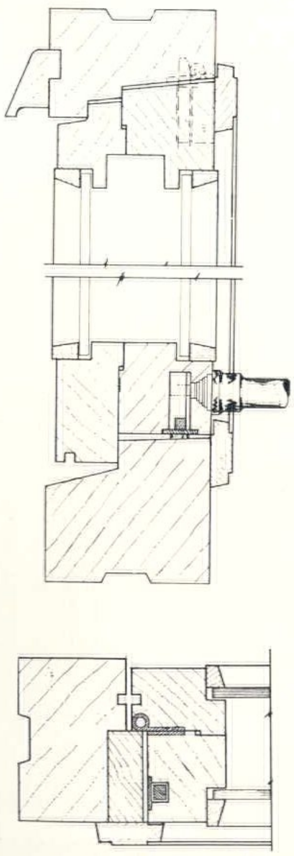
▷317



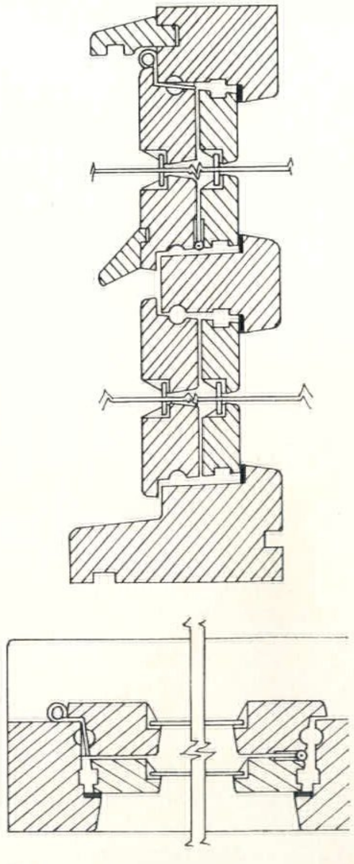
Modolite double glazed horizontal and vertical sashless sliding windows by H. C. Janes. Frame in Californian redwood. Sill track in rigid vinyl, jamb section in vinyl housing double woven pile weatherstripping



Quebec horizontally sliding window by the Sashless Window Company. Heavy section frame in European redwood housing rigid vinyl tracks supporting $\frac{3}{16}$in glass. Flexible vinyl weatherstrip maintains contact with the face of the glass on all four sides. Available in single or double glazed versions



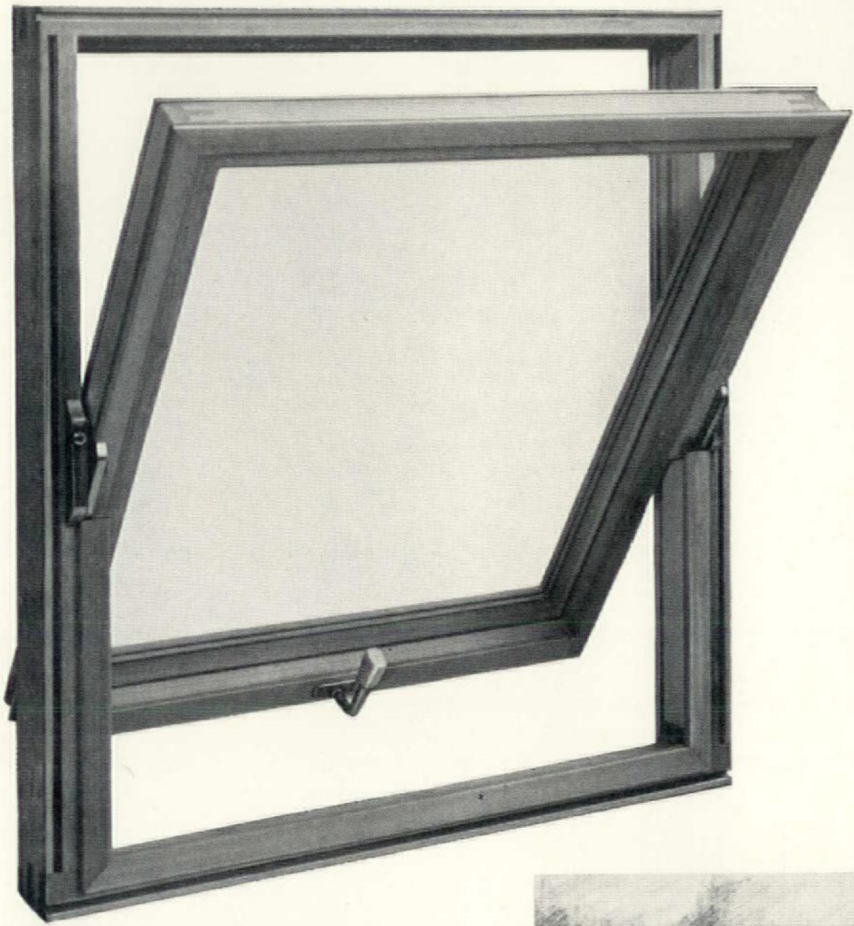
Gerrard Unitas GU.10.V horizontally pivoted window by J. Gerrard & Sons. Suitable for sashes up to maximum weight of 375lb. Pivot in malleable cast iron of the two-stage dual axis type, friction controlled with a brake stop at 22°, after which a screw turn permits the sash to rotate to 180°. Locking by four- to seven-point espagnolette



EJMA standard double casement windows by members of the British Woodwork Manufacturers Association. Coupled casement hinged together and secured by a self-locking catch. There is no standard range of types but they can be made up to suit architects' requirements

THE Berkeley DOUBLE GLAZED WINDOW

with the patent Balanced Pivot Hinge



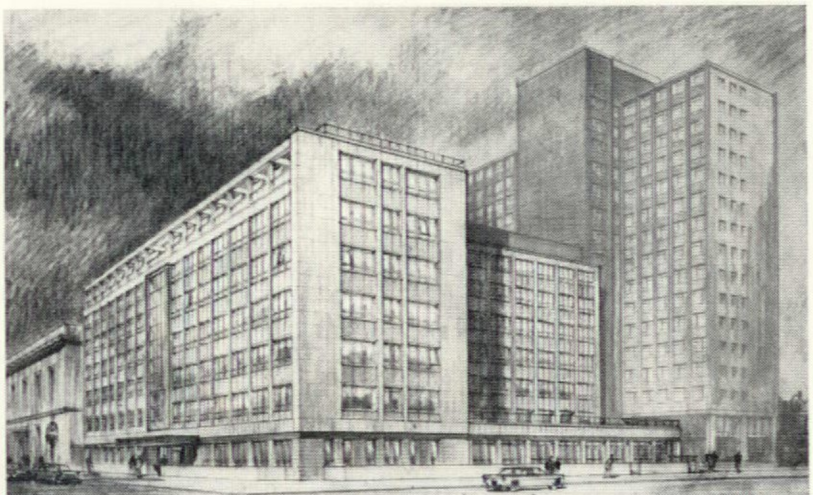
DOUBLE GLAZING

at its most efficient!

The Berkeley comes from the original home of double glazing—Norway, and represents the most advanced development in this type of window. The special construction enables it to be fitted quickly and easily and maintenance is a simple matter. Wherever double glazing is contemplated, specify the Berkeley for fine appearance and lasting dependability.

CAN BE CONSTRUCTED TO ANY SIZE

The unique, specially balanced pivot hinges of the Berkeley Double Glazed Window permit it to traverse 180 deg. and to be held securely at any angle within the arc. This affords maximum adjustability, provides any desired degree of ventilation and facilitates cleaning. Furthermore, the design of the hinge eliminates the possibility of wear impairing the functioning of the window.



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Architects: Messrs. Adams, Holden & Pearson.

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Write for informative leaflets.

An effective but economical type of acoustic tile for suspended ceilings or wall cladding, the Berkeley is made from 24 SWG zinc coated perforated mild steel containing 1 in. thickness of mineral wool. Simple to erect.

Acoustics & Insulation Engineering Ltd.

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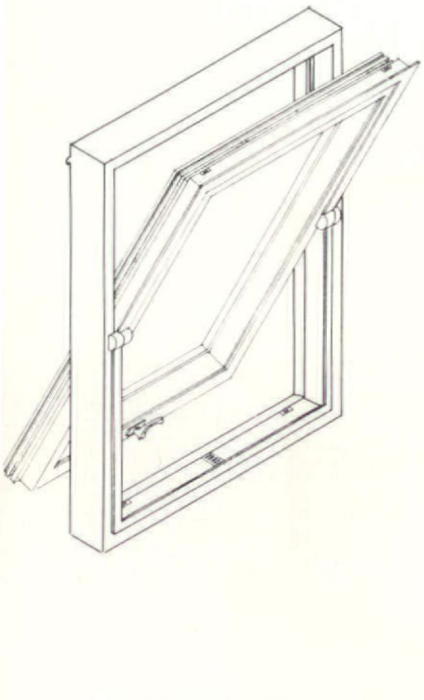

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Aesthetics

Most of the better quality products derive a simple aesthetic from a straightforward fulfilment of function, but in some instances windows which have had extensive technical consideration are poorly treated visually and small discrepancies between the planes of frames and opening lights sometimes appear accidental.

Manufacturers' approach

The market for timber windows is served by such a large number of firms that a consistent approach can hardly be expected. There are however, two main groups that can be identified with positive attitudes to design.

The British Woodwork Manufacturers Association, producing the EJMA ranges, have a constant programme of research and study investigating the following aspects of design:

Weather tightness
Durability and maintenance
Strength
Heat insulation
Solar radiation and ventilation
Sound insulation
Cleaning and safety
Glazing
Sizes, types and shapes of windows

The degree to which these ranges meet market requirements may be judged by the fact that members of the Association are providing windows for two out of every three dwellings being built, but as the housing market can hardly be considered as discriminative, a survey of user opinion might be more revealing.

The second group consists of firms marketing products either imported from the Continent or manufactured under licence in this country. In most cases these are windows tried and proven abroad in climatic conditions far more severe than those experienced here, and whose performance can be supported by test results. These marketing firms clearly take an intelligent and conscientious interest in the design and development of the product and maintain close contact with the manufacturers.

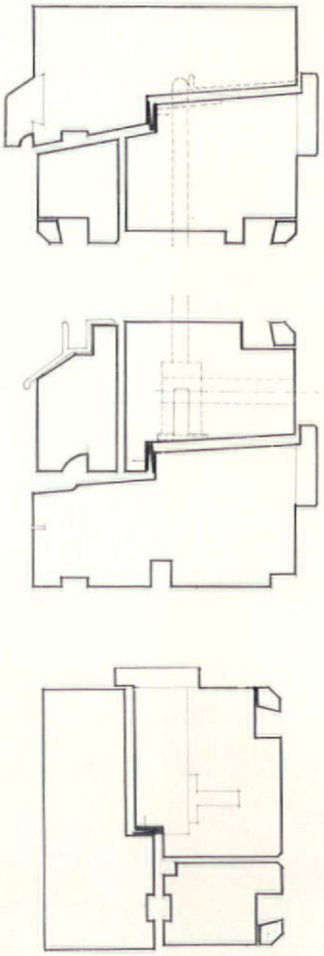
Criticism

The market is one of extremes. The better products are very good, and the worst very bad. Whilst the architect will obviously be able to differentiate between the two he may often find it difficult to discriminate between the better quality products and decide which window satisfies his particular requirements. In this connection manufacturers and marketing firms could assist by publishing the results of tests and by specifying performance standards in terms of air penetration, thermal and acoustic insulation, quality of ironmongery, etc.

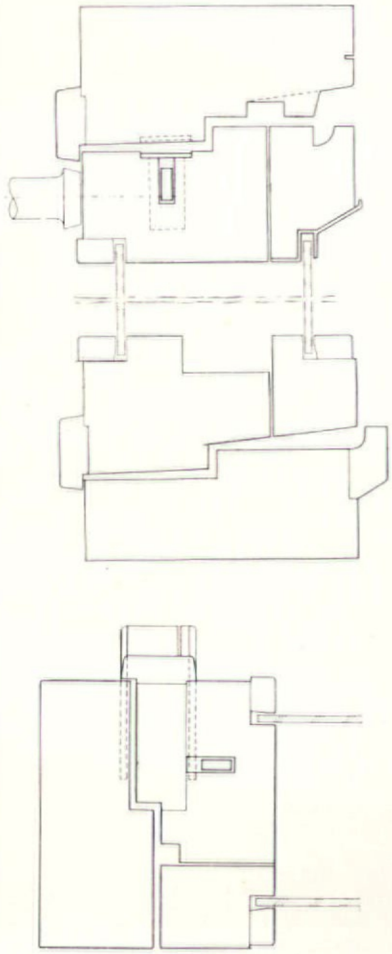
The future

We still look on the window as a transparent section of wall and control its functions with some difficulty. The considerable amounts of solar energy available at the window plane are not merely ignored, but become a positive problem, preoccupying our attention with methods for shading or obstructing. No attempts are made to use the window to trap and store this energy for feeding into the heating and air-conditioning services of the building. It is perhaps unfair to expect window manufacturers to initiate this type of development and we should look to the architect to stimulate interest in this direction.

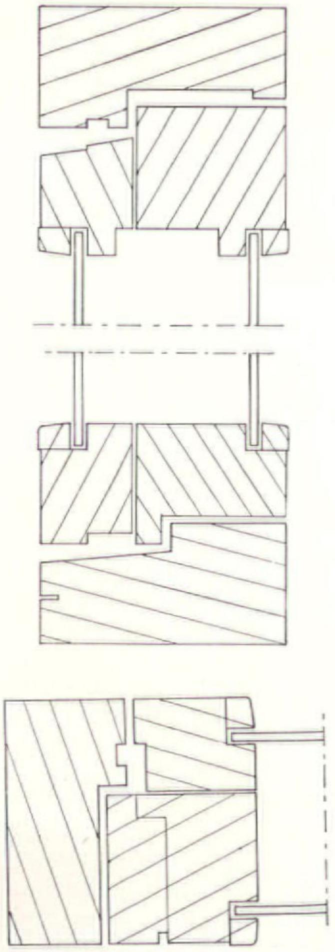
Research into the use of photochromic materials for the production of self-darkening glass is still in a very experimental stage but results indicate that at some time in the future we may solve all the problems associated with glare, dazzle and solar gain by the use of one material.



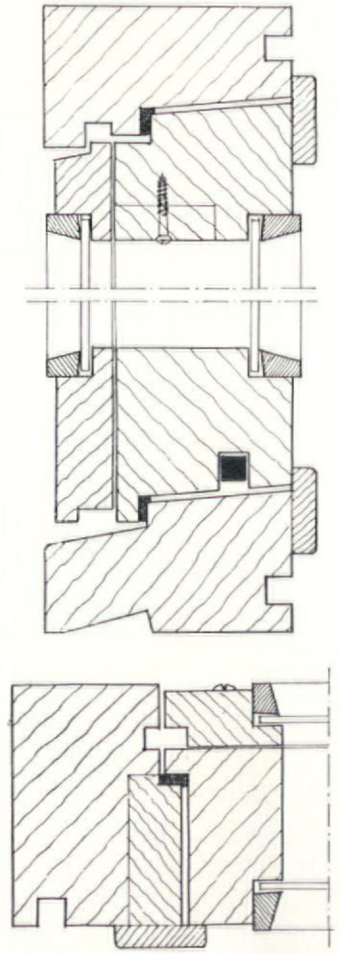
Silux horizontal pivot window by Cawood Wharton. Available in Swedish redwood; Swedish redwood with outer sash and 6mm facing to frame in Burma teak; solid Burma teak; laminated redwood with outer sash in box section aluminium and outer frame clad in aluminium. Maximum size, 40ft^2. Adjustable friction pivots fully reversible through 180° with concentric mechanism requiring no lubrication. Pivot permits 4in movement of the sash before entering upon friction. Window can be locked open in six positions to allow ventilation with complete security. Scissors stays to restrict opening can be provided. Four- or five-point espagnolette bolts according to size of sash



Reventa horizontally pivoted window by Proctor and Lavender. Available in Swedish redwood; Teak; Utile; Swedish redwood frame and inner sash with frame faced with 8mm teak and external sash completely of teak; Swedish redwood frame and inner sash frame faced in extruded aluminium and external sash completely of aluminium, with copper or stainless steel as alternatives in lieu of aluminium. Pivots can be either two axis with friction over 25° or fully frictional with safety stops at 20° and 105°. Both permit full reversal of the window. Locking is by four- or five-point espagnolette and night security position is incorporated

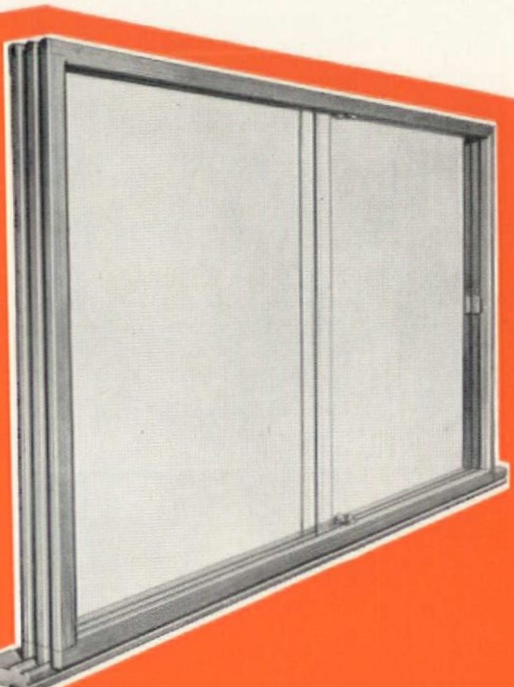


Carda horizontally pivoted window by Holcon. Closed cell foamed neoprene gasket. Fully adjustable friction pivots supplied without a restrictor device, on the basis that a separate restrictor is simpler and stronger, can be placed in the most suitable position and relieves the pivot mechanism from unnecessary strain. Multipoint locking by espagnolette. The recently introduced Cardette window intended principally for the domestic market departs from standard locking practice, and is so designed that when the handle is turned the sash itself actuates the locking mechanism and achieves multipoint locking without an espagnolette



Berkeley horizontally pivoted window by Acoustics and Insulation Engineering. Available in a variety of softwoods and hardwoods, or in combination with a 1in hardwood facing. Maximum size approximately 40ft^2. Normally made as dual sash units but can be manufactured to accept double glazing units. The pivot operates mainly on a principle of balance, with part friction, which is claimed to reduce wear on the mechanism and maintain stability throughout 180° rotation. The sash head is provided with grooves to conceal a Venetian blind box. Gaps between sash and frame sealed with neoprene weather strip

Modolite's latest range!



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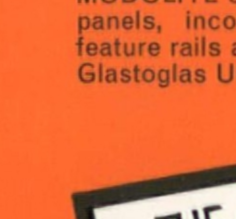
in Californian Redwood

This extensive new range, which falls naturally into the existing MODOLITE system, embodies many special features to stimulate an imaginative advance in window design.

Made throughout in Californian Redwood this Sashless Double Glazed Range is based on the well established MODOLITE coupling system and for composite window panels, incorporates door frames, boarded panels, feature rails and fixed lights with Pilkington's "Insulight" Glastoglas Units.

THE ***FIRST*** VERTICAL SASHLESS DOUBLE GLAZED WINDOW IN TIMBER



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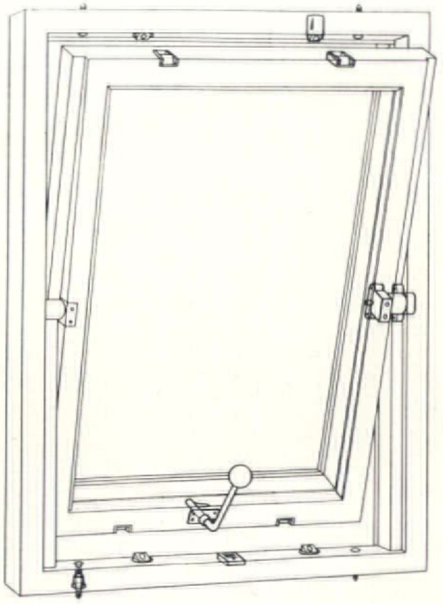
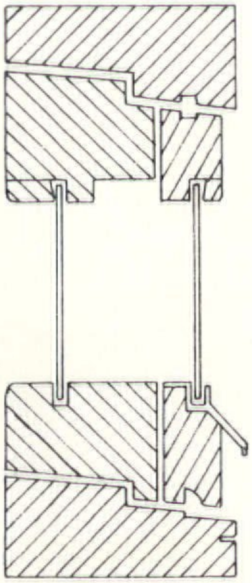
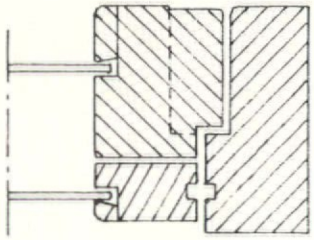
H. C. JANES LIMITED BARTON, BEDS. Telephone: HEXTON 364 (6 lines)





The Magnet RDG Window by Magnet Joinery Sales Ltd. Manufactured in Swedish red wood, Columbian pine, Hemlock or Western Red Cedar. Pivot of non-ferrous alloy with adjustable friction wedges. Sash retained at four points by spring-loaded plungers, adjustable to provide a tight seal at the plastic weather stripping. Locking by handle at one point only, with striking plate to give two-position ventilation with full security



Some makers of timber windows

Cawood Wharton & Co.,
Building Components Div., Southlands,
Harrogate, Yorks.

Beves Joinery Ltd,
Harbour Way, Shoreham, Sussex

J. Gerrard & Sons Ltd,
Century House, Pendalbury Road,
Swinton, Manchester

Price Bros. & Co. (Penarth) Ltd,
18 Station Road, Penarth, Glam.

Acoustics & Insulation,
82–90 Queensland Road, Holloway,
London N7

H. C. Janes Ltd,
Barton, Beds.

Holcon Ltd,
21 MacKenzie Street, Slough, Bucks.

J. Honour & Son (Joinery) Ltd,
Tring, Herts.

The British Woodwork Manufacturers Association,
Sackville House, Piccadilly, London W1

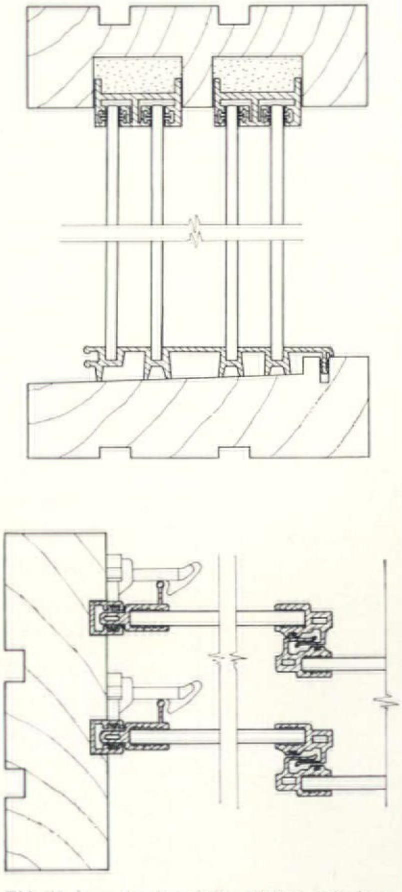
Proctor & Lavender Windows Ltd,
Bridge Estate, Lode Lane, Solihull,
Warwickshire

N. F. Ramsay & Co. Ltd,
59–61 Theobalds Road, Holborn,
London WC1

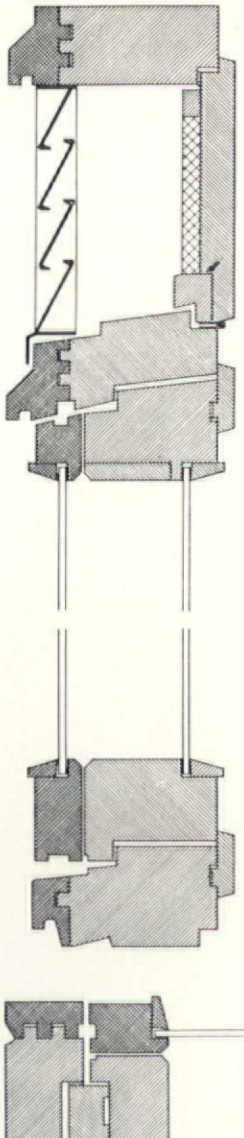
The Sashless Window Co.,
Tannery Lane, North End, Northallerton,
Yorks.

Magnet Joinery Sales Ltd,
Royd Ings Avenue, Keighley, Yorks.

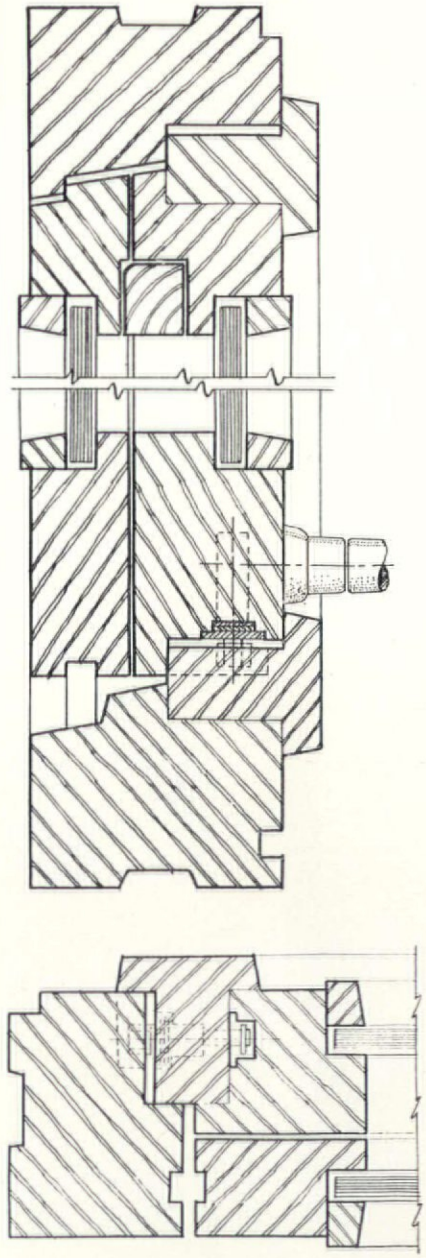
Allan Brothers Ltd,
Tweed Saw Mills, Berwick-on-Tweed



PH de luxe horizontally sliding window by Price Brothers. Western Red Cedar frame housing sill and head tracks in rigid vinyl. The head track is backed by polyether foam exerting even pressure to provide rattle-free operation. Vinyl jamb sections are fitted to glass and housed in double woven pile weather-stripping. Available in single or double glazed versions



Velfac horizontally pivoted window by Allan Brothers. In softwood or hardwood or with teak or aluminium facing if required. Pivots completely concealed. Locking by five-point espagnolette



The Bevlux window by Beves Joinery Ltd. Double glazed, available in softwood or hardwood, adjustable friction pivots rotating through 180°. Locking by five-point espagnolette

'Building'

(formerly 'The Builder')

is again sponsoring an Advertising Design Competition

Manufacturers, advertising agents and consultants producing advertisements for the promotion of building materials, products or services in technical journals within the building industry are eligible to enter. The competition aims to improve communications within the building industry and is to be judged by leading figures from the professions concerned with specifying materials and services.

Entries must be submitted by advertisers, their agents or consultants. They must be full page advertisements to A4 size, either singles or two or more linked full pages, which have been published in a technical periodical serving the Building Industry within twenty-four months ending Friday, 1st July 1966. Awards will be presented in six categories covering both black and white and colour advertisements.

The Judges:

Hubert Bennett, FRIBA

Hector McDonald, DipArch(Abdn), ARIBA

G. W. Kirkland, MBE(Mil), MInstCE, MIStructE, FIArb

Peter Grafton, FRICS, FIArb

Peter Trench, CBE, JP, BSc, FIOB

Awards will be announced and Certificates presented at the Building Centre during September, 1966, and subsequently other Building Centres.

Conditions and entry forms obtainable from the Chairman,
The Builder Limited,*
4 Catherine Street, Aldwych, WC2.
Closing date: 1st July 1966.

* publishers of the newspaper 'Building'

Trade notes

Alexander Pike

To obtain additional information about any of the items described below, circle their code numbers (M1, M2 . . . etc.) on the Readers' Service Card inserted in this magazine.

M1 Tungsten iodine floodlight, 500W 1

Revo Electric Co. Ltd., Groveland Road, Tipton, Staffs.

Revo specialize in street and sports floodlighting, and their range complies with the 1960 Wolfenden Report and the Illumination Society report.

M2 Heart unit 2

Redland Group, 42 Kingsway, London, WC2

The Redfroy service duct Mark III by Eastwoods Froy Ltd., for use in medium to high rise constructions, incorporates connections to bath, w.c., and wash basin, and mirror position.

M3 Breathing ceiling

Monsanto Chemicals Ltd., 10–18 Victoria Street, London, SW1

For the computer suite of the Prudential Assurance Co. Ltd., thermostatically controlled air is introduced between a false and a structural ceiling and distributed through injection slots in a hamina ventilating acoustic suspended ceiling (by H.T. Ceilings Ltd.). Heat transfer to and from the air in the ceiling void is prevented by 1in expanded polystyrene board by Jablo Group Sales Ltd. of Waddon.

M4 Streamflow fan

Smiths Industries Ltd., Air Moving Products, Witney, Oxford

Streamflow units are available in ten rotor diameters each with a standard module length of 36in. The tangential flow rotors are made of zinc plated steel. Smiths also manufacture axial flow fans with 2⅝in or 4¼in diameter by 7in long aluminium or steel rotors.

M5 Flame retarding paint

Trade Coates Ltd., Great Western Trading Estate, Park Royal Road, London, NW10

Trade Coates have produced two new data sheets describing their services and methods of paint application. The first describes the curtain coating process, the second, the most successful flame retarding paints for this process.

M6 Downflow heater

Bering Ltd., Dorman Road, Camberley, Surrey

Bering have added a new 'Downflow' version to their 'Super' range of oil-fired warm air heaters for industrial buildings. Advantages claimed are: space saved by positioning high in otherwise useless space, combustion and recirculation outlets high above floor level, complying with regulations concerning volatile vapour storage outputs of 160,000 and 350,000 Btu/h.

M7 Fire retardant skylight

Universal Asbestos Manufacturing Co. Ltd.

have introduced wire-reinforced Aspect PVC sheet in Standard 6 asbestos cement profile. It is fire retardant and resistant to light degradation, weather and impact. Nominal width 3ft 6¾in, length 4ft 0in to 8ft 0in. Price per 5ft 0in length: £3 6s 8*d* compared to £2 19*s* 5*d* for similar size sheet of normal grade material.

M8 Endless acrylic sheet

Swedlow Inc., 12605 Beach Boulevard, Garden Grove, California, USA

Swedlow, acrylic aircraft transparency maker, can now supply 'Swedcast 300' acrylic sheet in any length and any width up to 4ft 0in. The sheets may be flat, clear, coloured, corrugated, prismatic, matte or patterned without any postforming. He predicts that his new casting process will make acrylic sheet competitive with many less expensive plastics.

M9 Humidifier

Felvic Marketing and Sales Co. Ltd., 70 Carolina Road, Thornton Heath, Surrey

The Felvic Airlux Humidifier is claimed to be the world's first portable electric air humidifier incorporating an infinitely variable moisture output, adjustable from 5 fl oz to 25 fl oz per hour. Cost £24.

M10 Statigrip

Harvox Industries Ltd., 30 Church Lane, London, E11

Statigrip, a new file, holds paper, notes, etc. electrostatically. Cost 9*s* 11*d*.

M11 Packaged oil burner

Vapour Heat Ltd., 3 Church Terrace, Richmond, Surrey

The Vapourheat '85' is fully automatic. Output is 70,000/85,000 Btu/h and oil consumption is 4½/5½ pints/hour. The oil burner and control box assembly is made and fitted as one unit and can be easily withdrawn for maintenance.

M12 Mini-skirting trunking

Davis Sheet Metal Engineering Co. Ltd., 27–37 Garman Road, Tottenham, London, N17

This trunking, for domestic or small office use, is 3in high, ⅞in deep and has secret fixing. Socket outlets of any standard type may be fitted. It can also take a few telephone wires.

M13 Fan coil heater 3

Dunham Bush Ltd., Farlington, Portsmouth, Hants.

The Dunham Bush Series H. Fan Coil Heater is designed for industrialized building. The casing is of standard size $78\frac{3}{16}$in high × 47¾in wide. All maintenance can be carried out through the access doors.

M14 Barbican basin

Twyfords Ltd., Africa House, Kingsway, WC2

The 'Barbican' hand-rinse basin is intended for flush vertical mounting inset into the wall with concealed plumbing. It measures 20in × 16in and projects 6in from the wall face. The soap tray is raised to cover a toilet roll holder. The basin can be supplied with fittings at right or left.

M15 Chain hoist

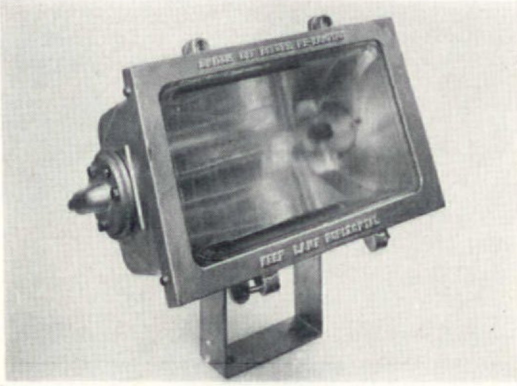
Anderston Clyde Engineers Ltd., Bradshaw, Bolton, Lancashire

The Colossus Electric Chain Hoist is available in four models with capacities ¼, ½, 1 and 2 tons, the 1 ton unit selling for £83 10*s*. The hook-to-hook measurement is 15in. The power pack is totally enclosed.

M16 Air duct calculator

Air Flo Heating Supplies Ltd., Bruce Grove, Wickford, Essex

The Morton Air Duct Calculator is claimed as a means of obtaining a quick and cheap (15*s*) but accurate method of estimating duct sizes.



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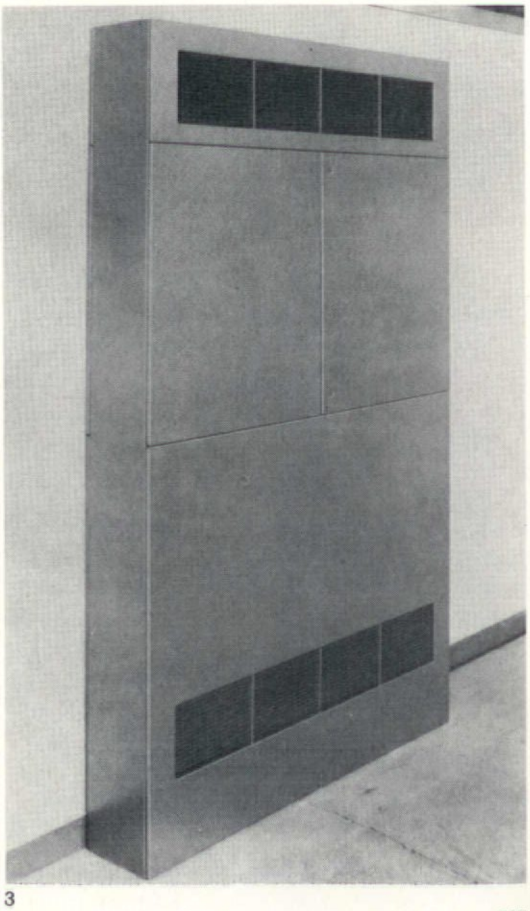

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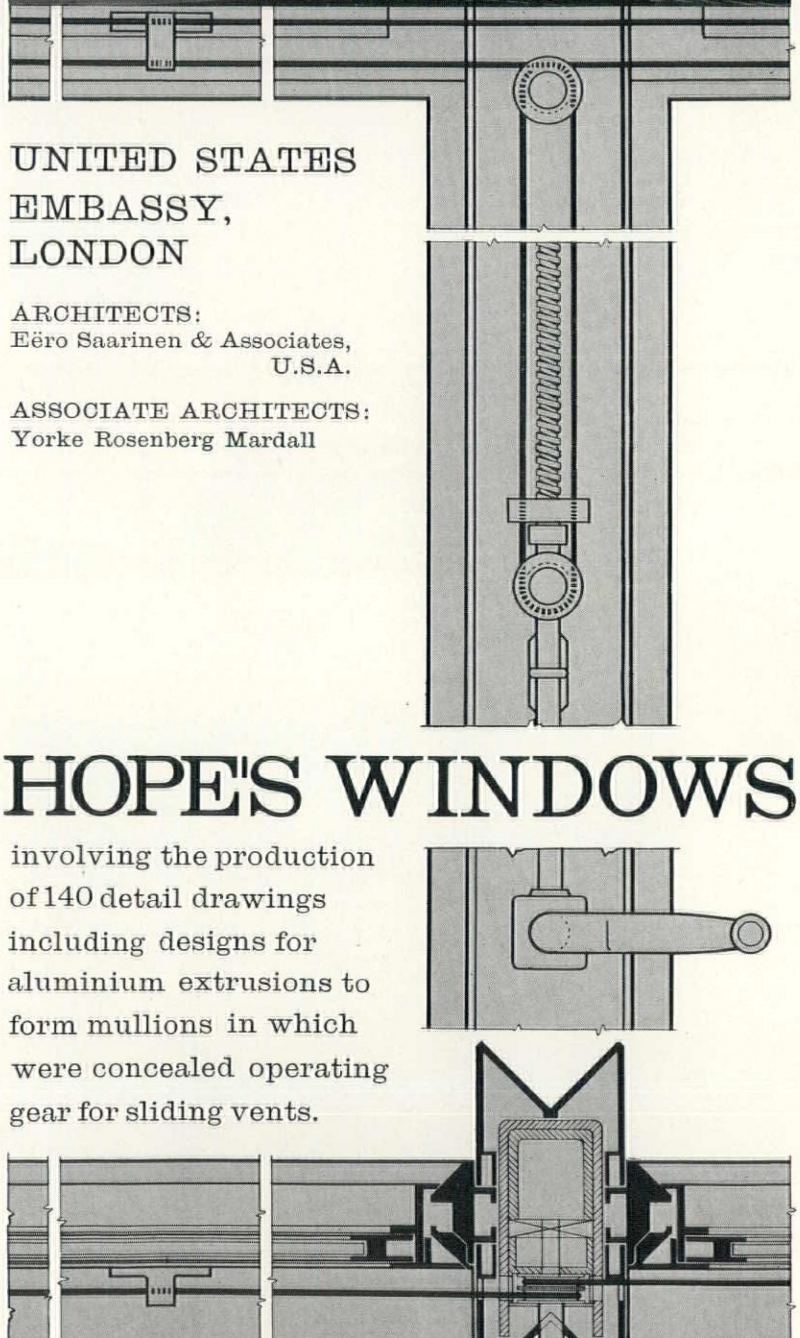

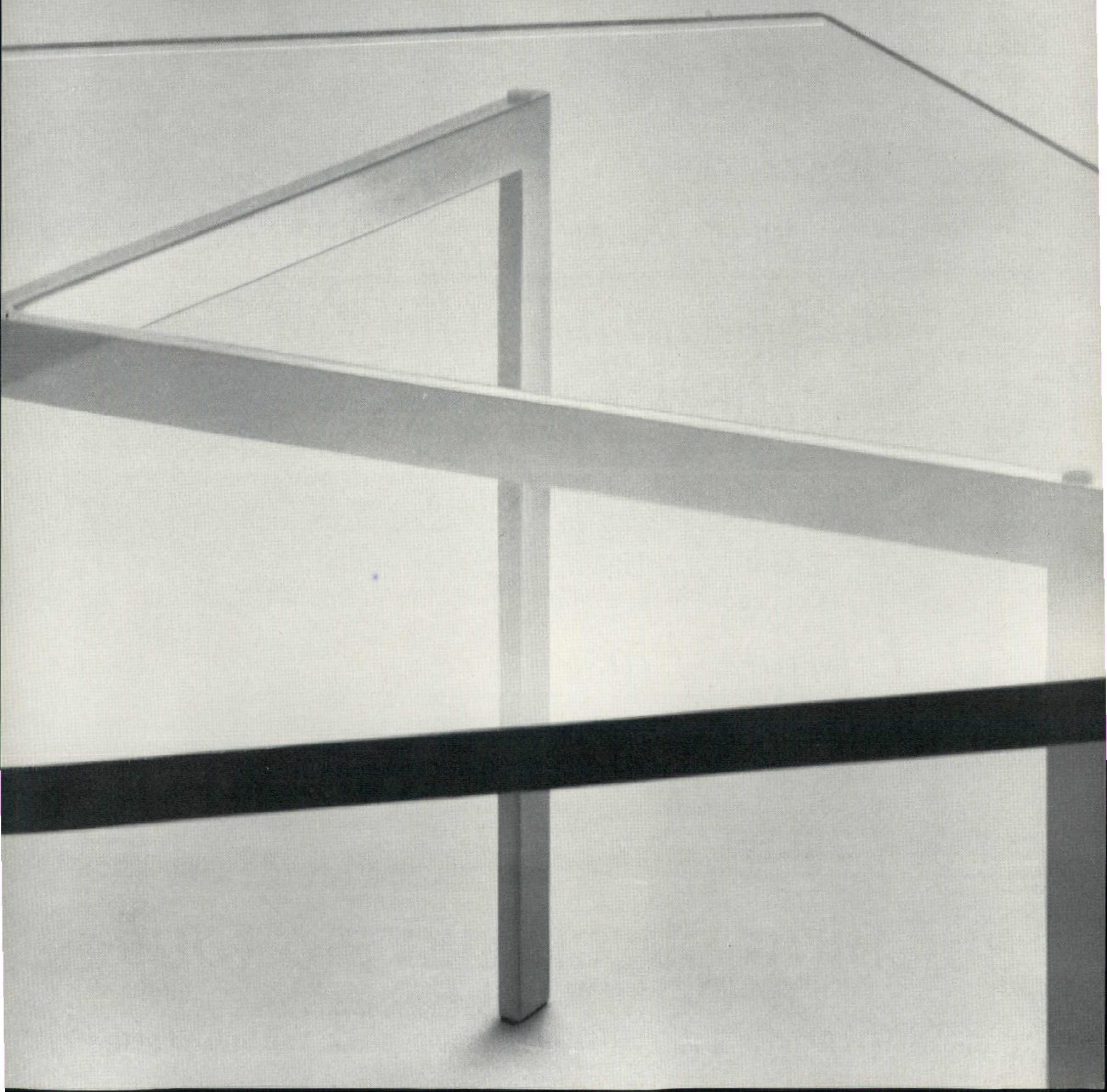

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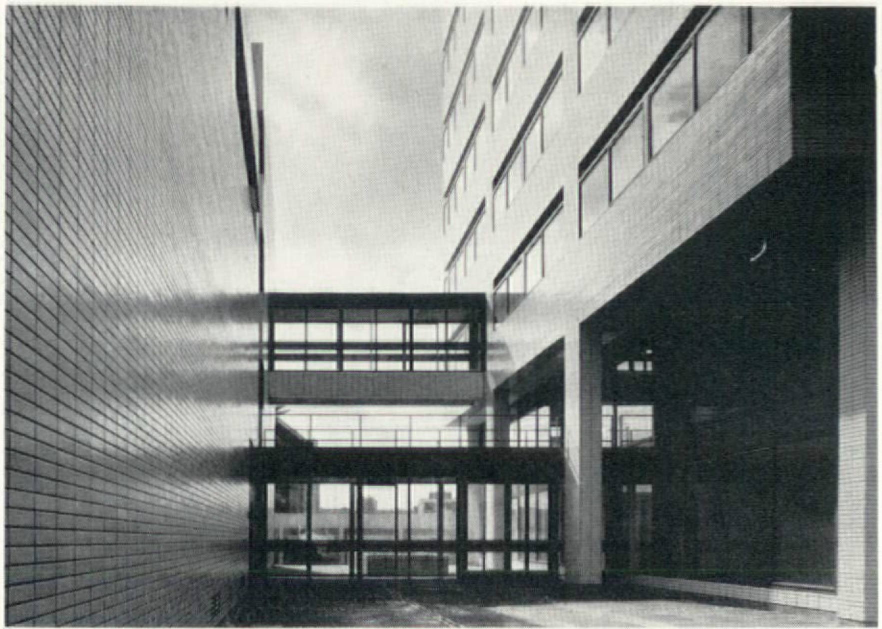

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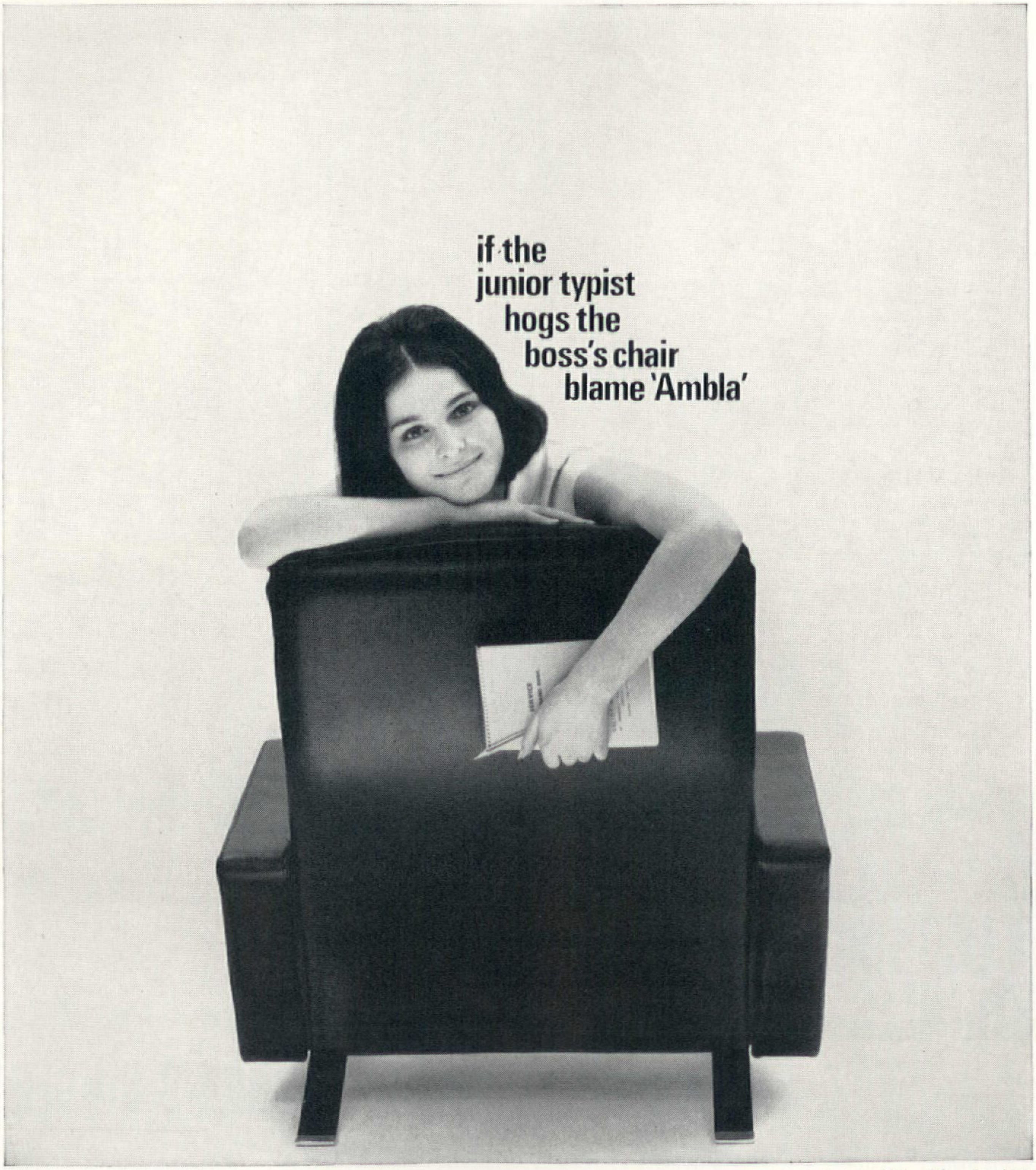

CYAIIa

'Leo' chair by Hille of London Ltd.

HOLOFORM

The British Petroleum Company's new headquarters building, Moorfields, London.

GENERAL DATA:
Height of building: 395 feet. **Curtain walling:** by Morris Singer using 'Holoform' units formed of 'Silver Fox' 316 stainless steel supplied by Samuel Fox & Co. Ltd. **Total weight of stainless steel** 180 Tons. **Architects:** Joseph, F. Milton Cashmore & Partners.

REFER TO BARBOUR INDEX FILE SfB(21)

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Morris Singer & Haskins Ltd. Ferry Lane Works, Forest Road, London, E.17. Telephone: Larkswood 1055.

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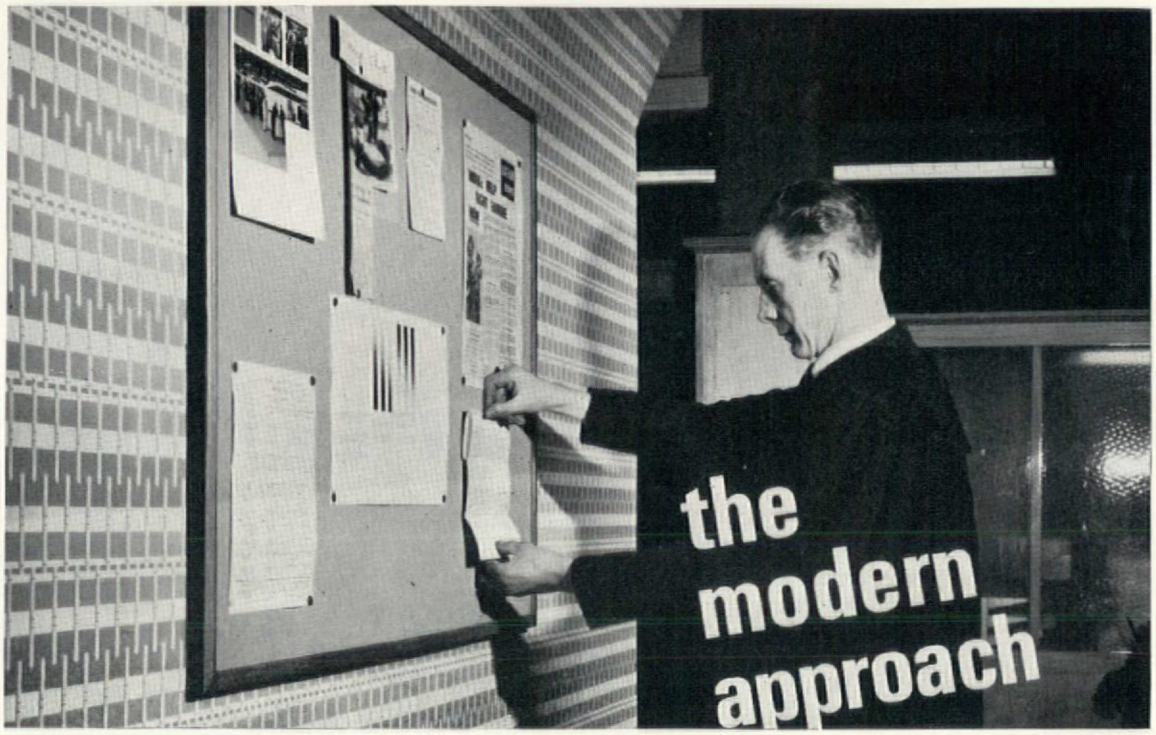

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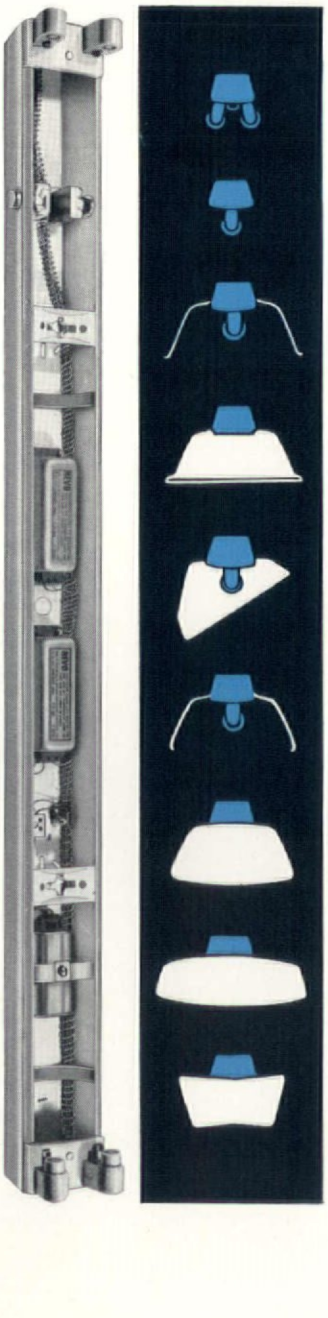

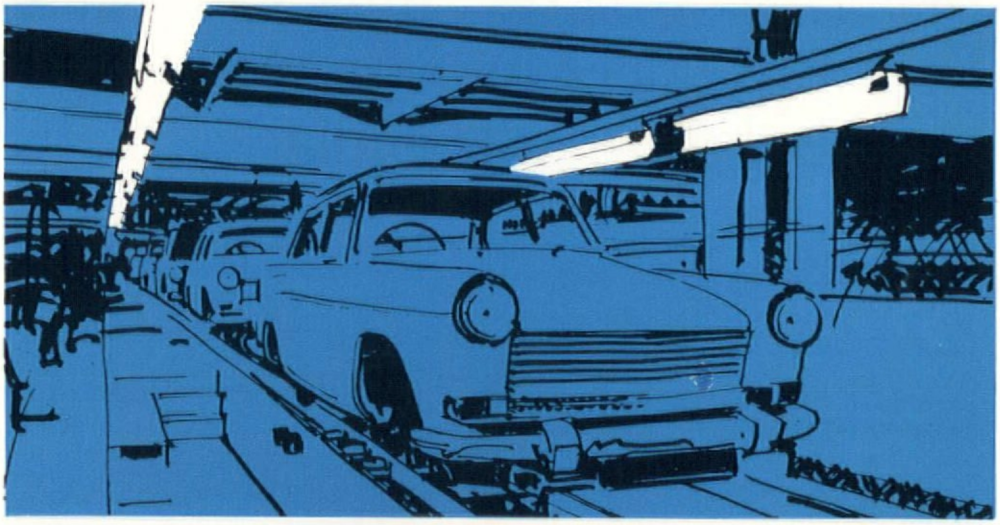

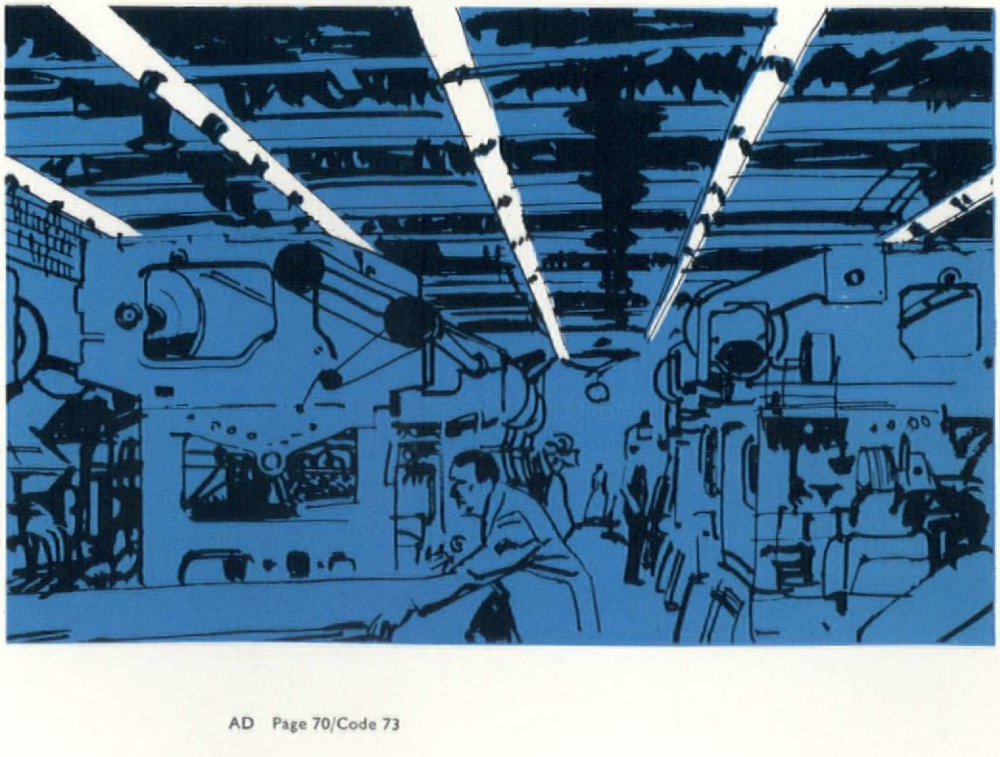

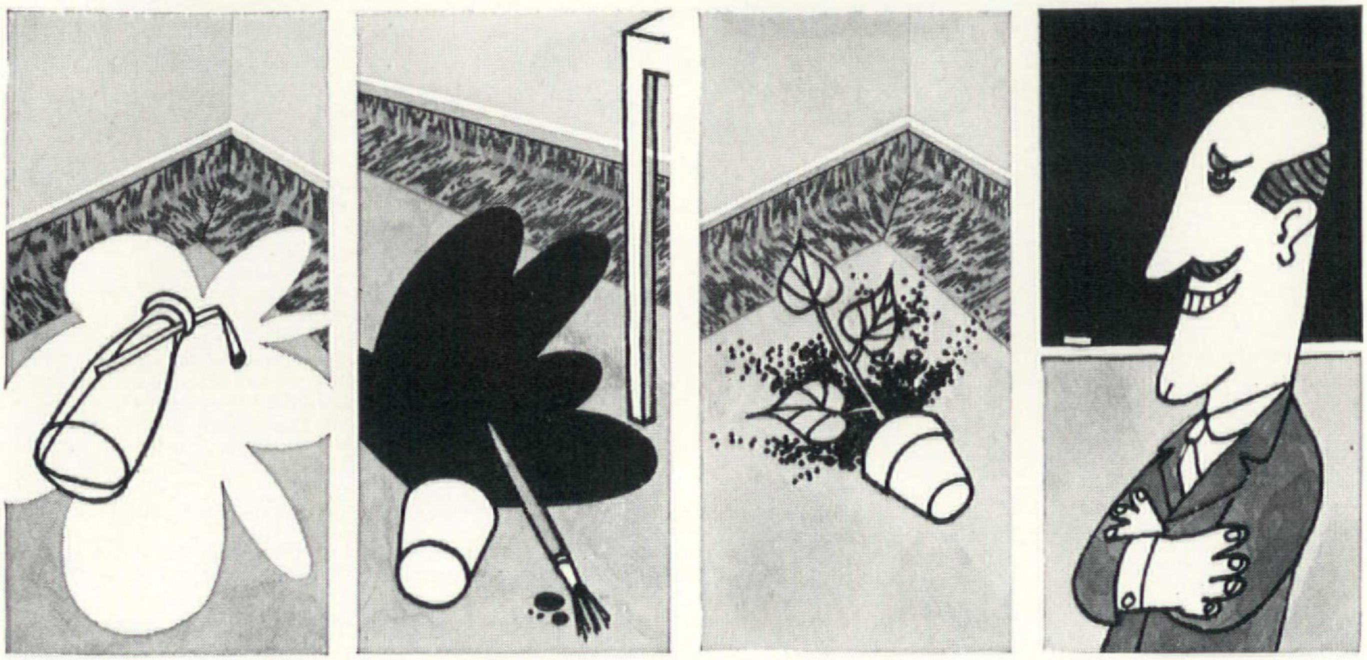

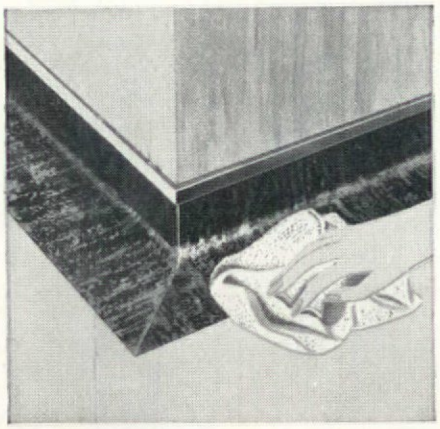

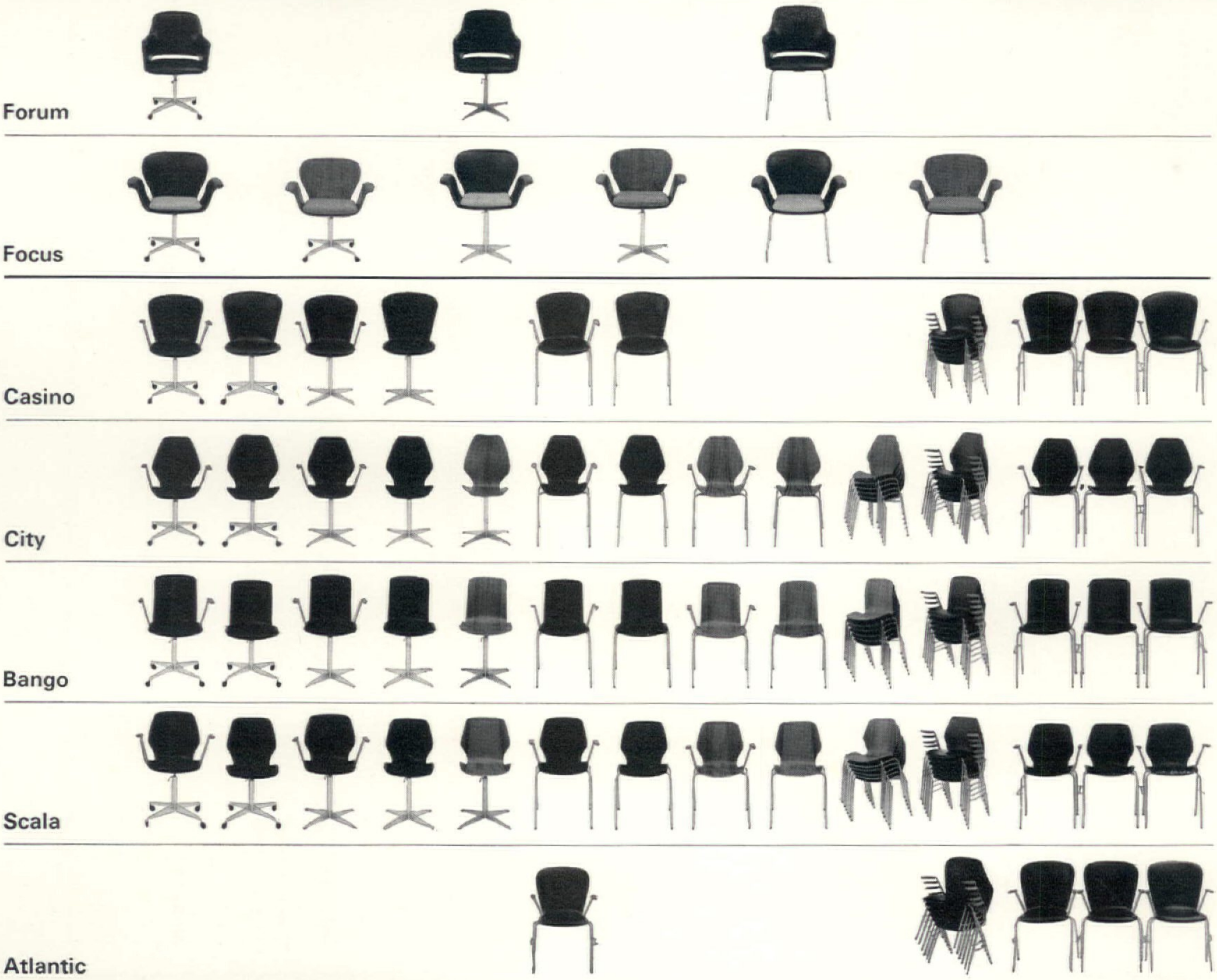
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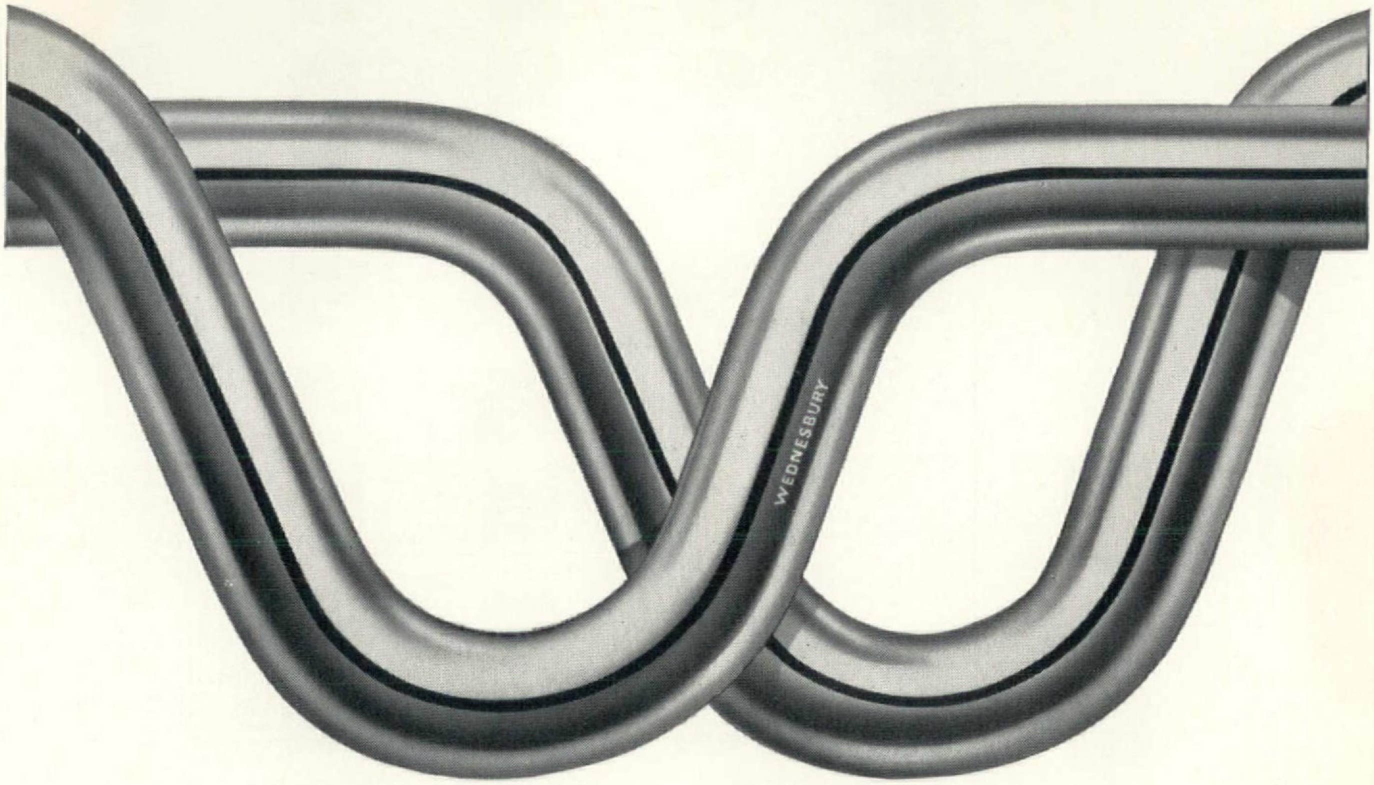

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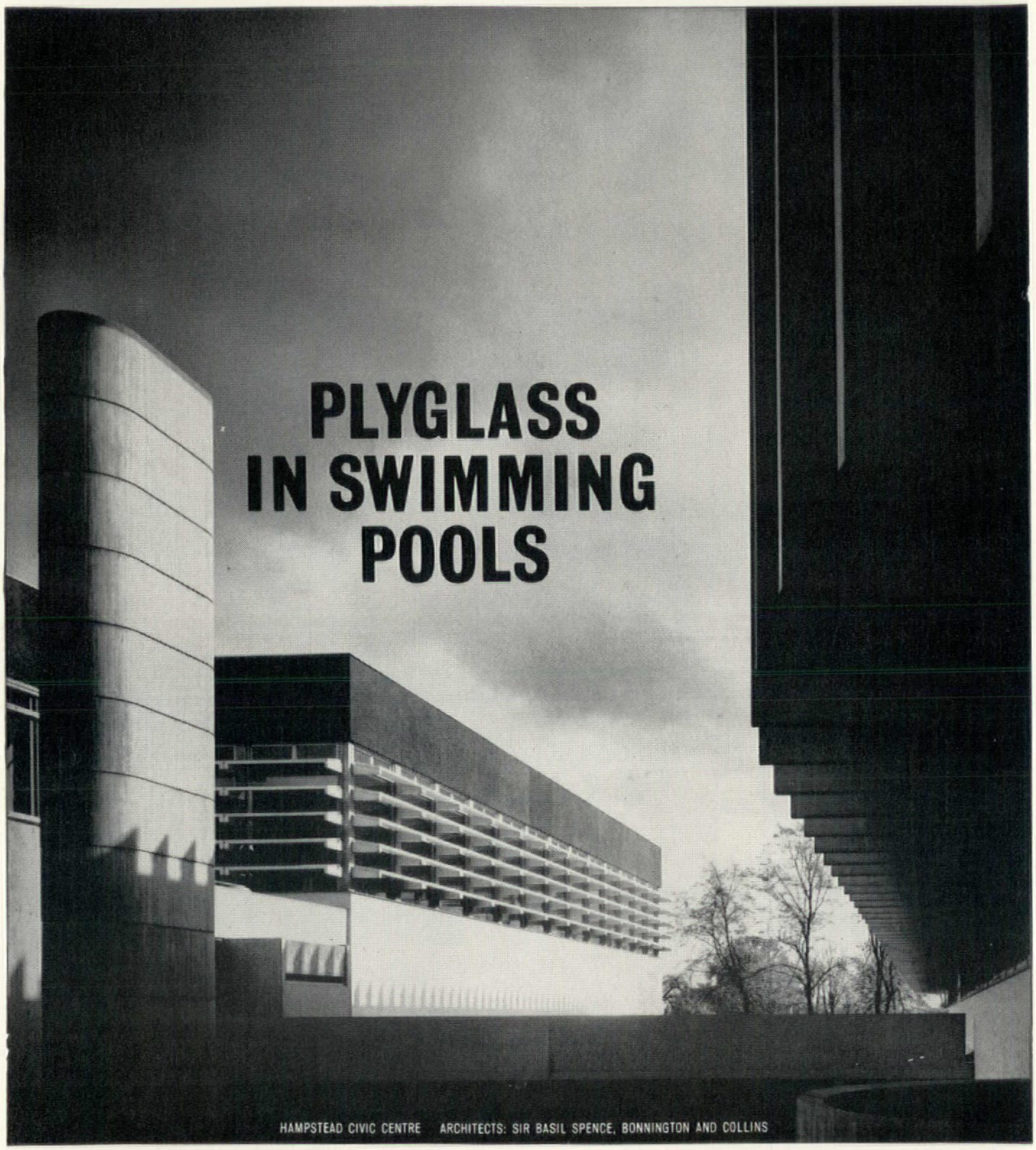

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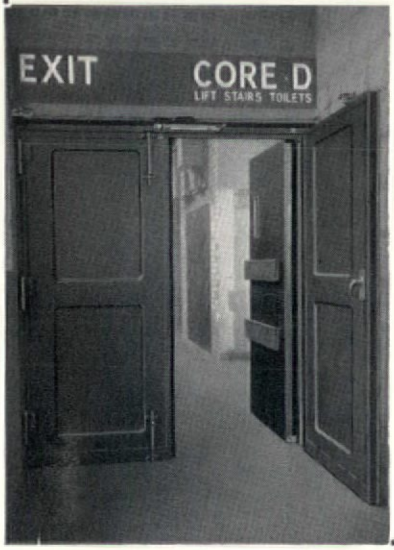

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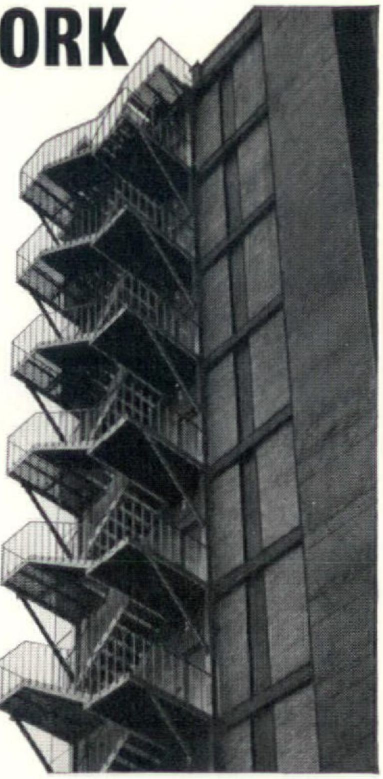

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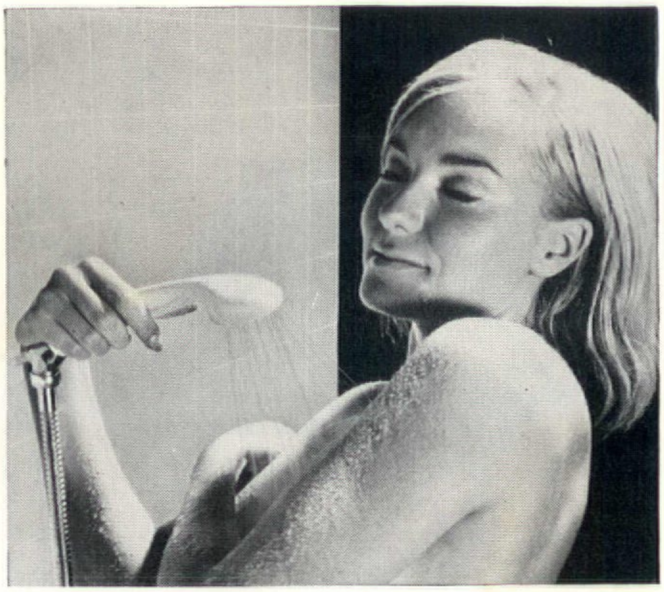

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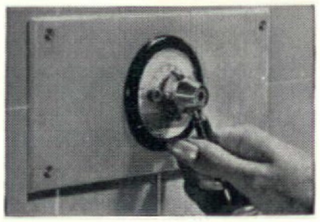

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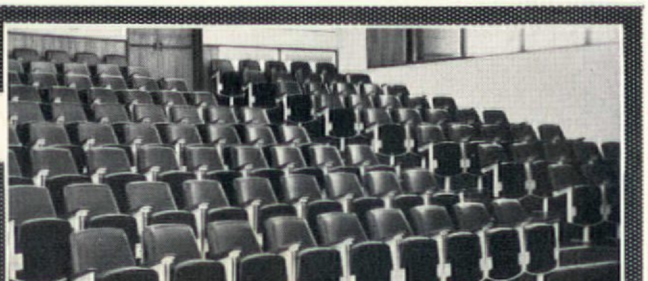

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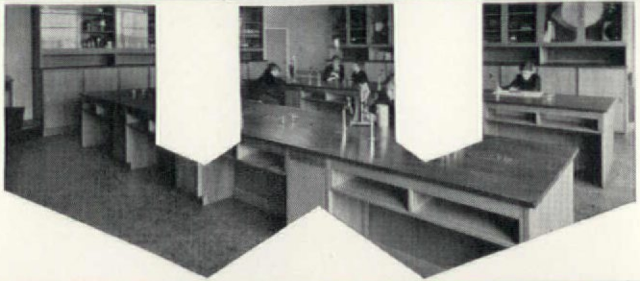

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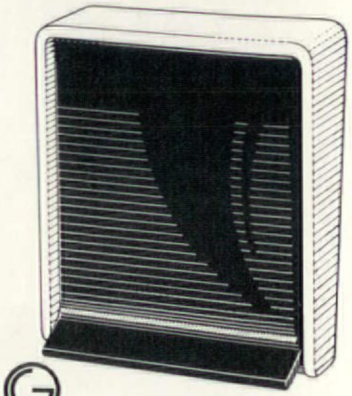

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