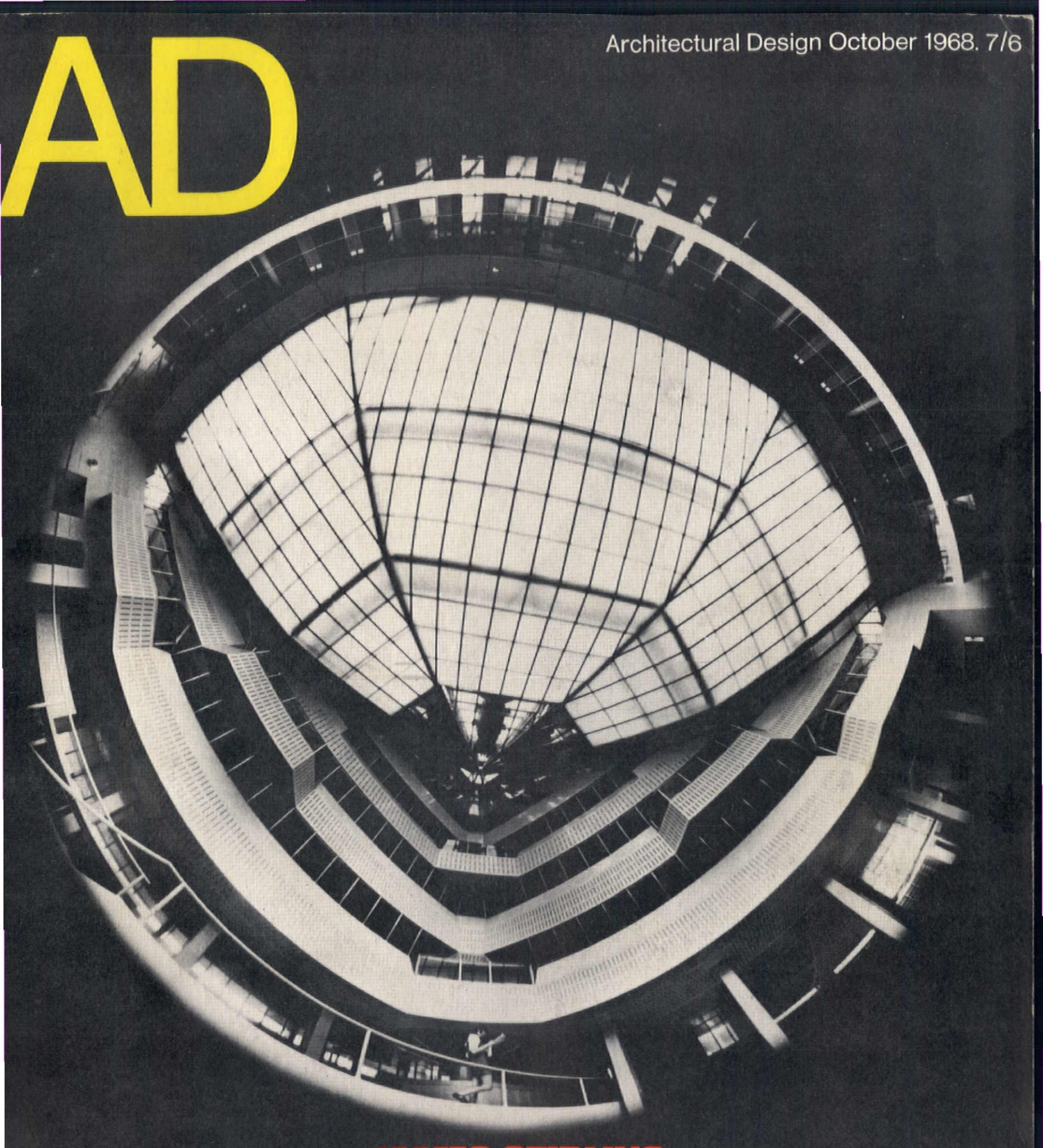
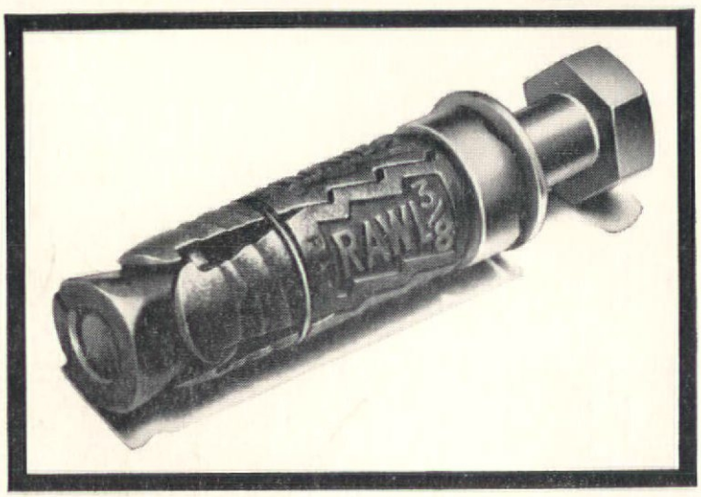
Architectural Design October 1968. 7/6

AD



JAMES STIRLING LATEST BUILDINGS

The 44 second hold-up.



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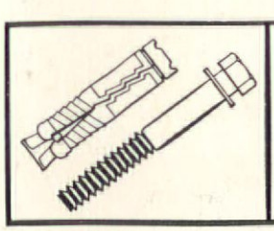
NINETY E17 (⅜" bolt diameter) Rawlbolts fixed, ready for heavy duty, in an hour. We know this because we've done it.

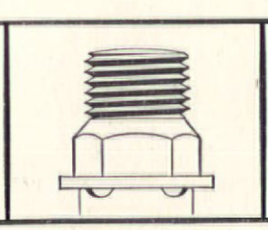
There's no cold chiselling, no grouting-in and no waiting for cement to harden when you use Rawlbolts. You drill the holes with Rawltools or Durium tipped drills, insert the Rawlbolts and tighten up. The equipment fixed is then ready for instant use.

Rawlbolts are available in 55 sizes from $\frac{3}{16}$" to 1" bolt diam. Millions have been used throughout the world on major building and engineering projects.

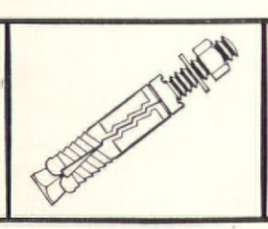
Ask for free full-scale reference chart showing loose-bolt and bolt-projecting types in all sizes.



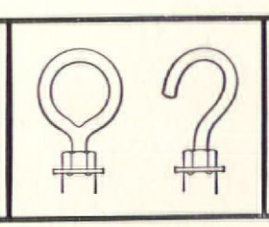
Loose Bolt (floor-fixing – no need to lift equipment).



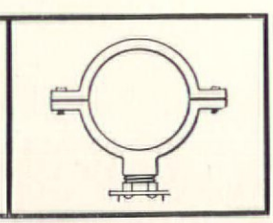
Pipe Hanger Rawlbolt.



Bolt Projecting (wall fixing – equipment can be offered up to projecting bolts).



Hook and Eye Types.



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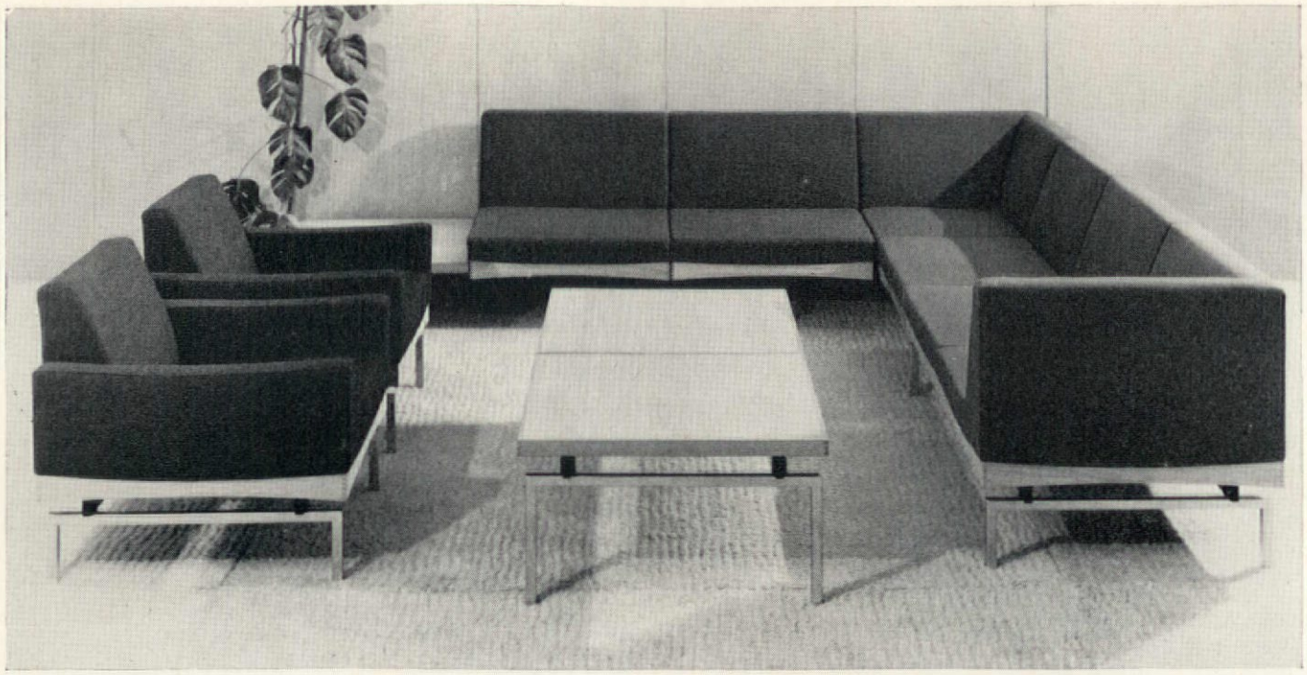

concave modular seating has been developed to provide the many combinations and the flexibility necessary to suit different schemes, from airport lounges and hotel lobbies to offices and small reception areas. Built on a 28½" module it is available on chrome finished steel or teak legs. The concave seat frames can be supplied either upholstered or in teak and the multiple seating units can be fitted with high or low arms as required. Further details on concave moduler seating can be found in the Westnofa catalogue or the system can be seen in our showrooms.

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Colour prejudice at Barrhead?

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Well, things are changing. We've put a lot of thought into the colour problem.

And within the last few years we've come up with the answers.

Savannah for instance. A new colour. A subtle, versatile and acceptable colour. We produced it. You liked it. People bought it.

Encouraged, we brought out Sun King. Success again.

And it won't end there. We're already moving on our next new colour – we're even toying with ideas for the one after that!

And each new colour will be teamed with the best of Shanks workmanship and design.

Meanwhile of course (business is business) we'll grit our teeth and churn out the standard colours just as fast as you ask for them.

To get the full brief on the whole subject just call in our man.

He'll tell you all about the current range, and what we intend to introduce next.

He can fill you in on prices, designs, availability and delivery.

In short, you'll have all the facts in black and white from the most colour-conscious radicals in the business.

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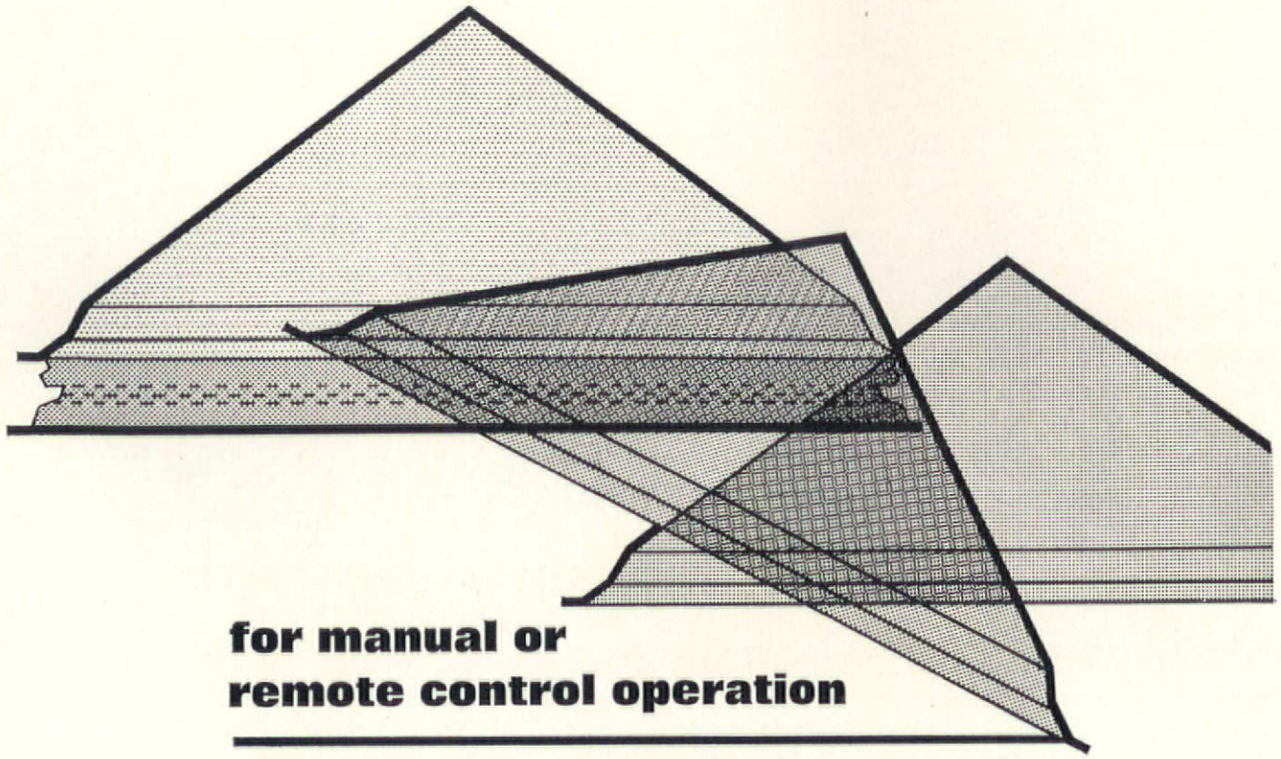

for manual or remote control operation

NEW Low Line ventilator bases for Robin *Lop* Skylights

Low Line Profile

This new range of free flow ventilators uses a low line upstand that for the first time allows you complete design freedom to mix ventilated and non-ventilated skylights in a roof without destroying the purity of an overall roof-line.

Maximum Ventilation with Maximum Daylight

Old fashioned ventilator upstands are not only ugly - but inefficient, for every inch added to the height of the upstand it reduces the amount of light admitted by the skylight. The new low line LOP ventilated bases give maximum ventilation with maximum daylight - they are only 5 inches high - one inch taller than the standard LOP base.

Use this calculation to compare the efficiency of the LOP ventilated base with any other:

$$\frac{\text{Depth of well in inches} \times 20}{\text{Perimeter of well in feet}} = \%\ \text{of light lost}$$

No Risk of Rain or Snow Penetration

LOP ventilated bases are precision made using the highest quality non-corrosive materials under strictly controlled modern factory conditions to give excellent weathering qualities under any climatic conditions. They are so designed that there is no risk of rain or snow penetration.

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Please send details of *Lop* ventilated bases and opening bases.

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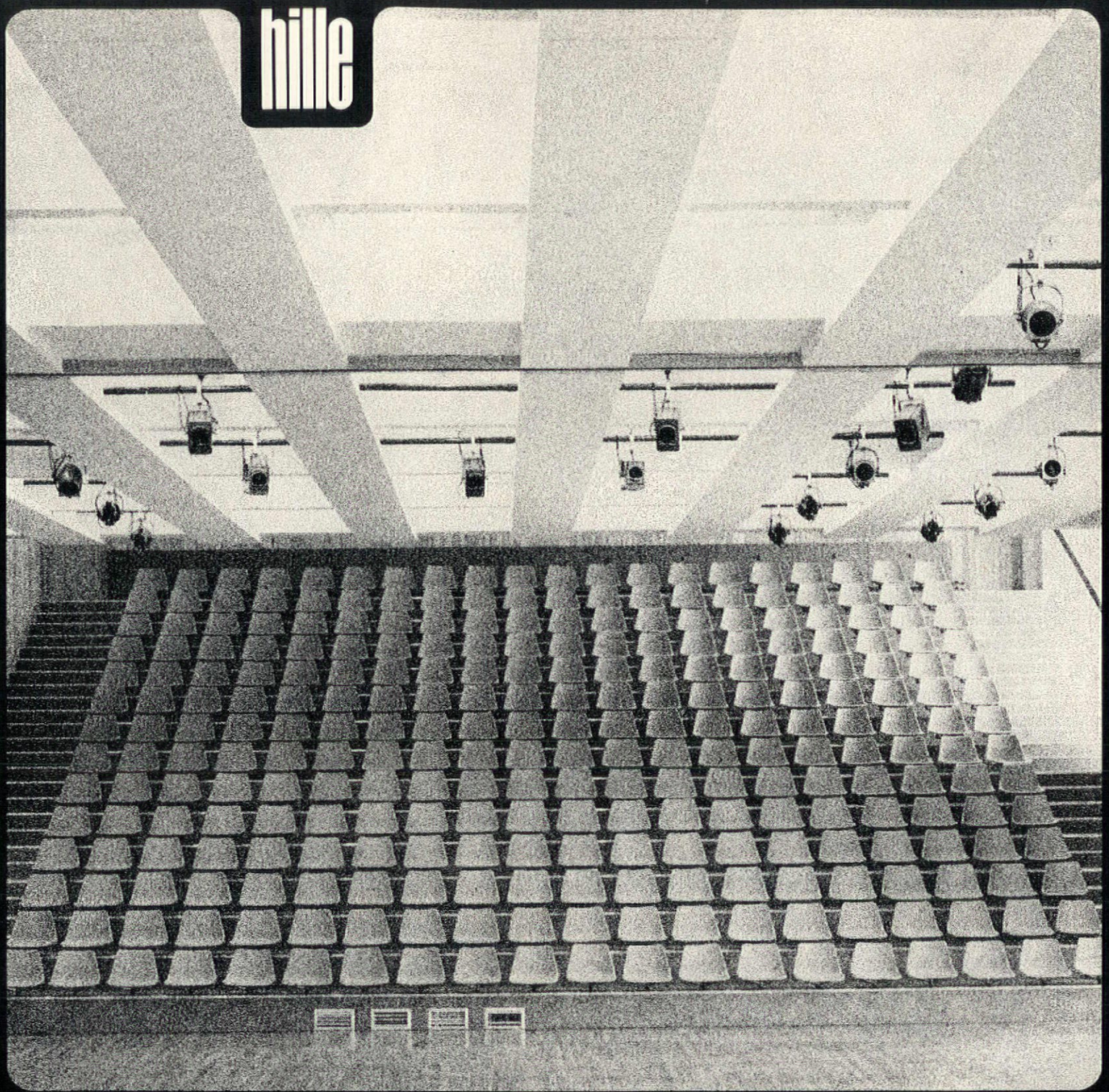

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Please quote this number on your enquiry

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Available in four colours: charcoal, flame red, navy blue, light grey and fully upholstered or with clip-on cover. Send for full details or visit the Hille showrooms. Photograph: Polypropylene chairs mounted on risers at Highbury Grove School. Architects James Cubitts and Partners.

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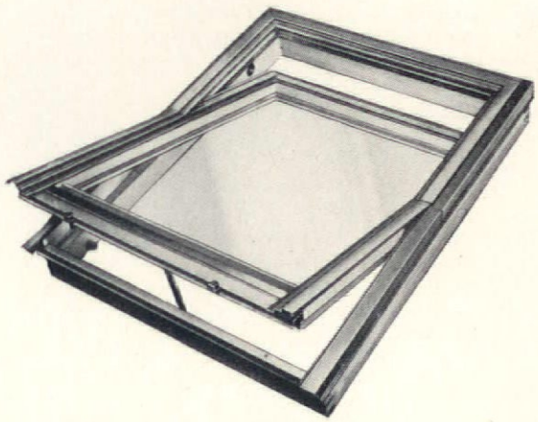
Fixing is by means of angle cleats to rafters or trimmers. The frame and sash are of Swedish pine treated with a clear primer allowing for a natural or painted finish. The whole of the exposed exterior surface is clad with zinc. The sash is coupled for double glazing and is separable for cleaning. A roller or venetian blind can be housed between the panes and prefabricated flashings are available.



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ROOF WINDOWS

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It looks just as good as the last one

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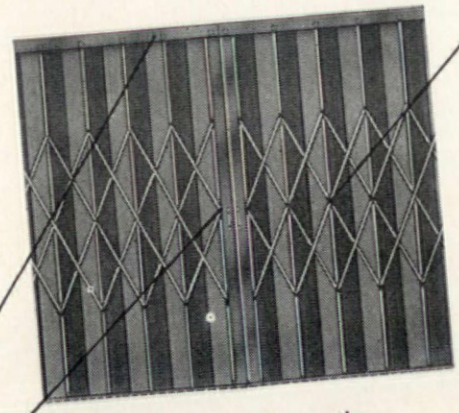
ONE THIRD LIGHTER IN WEIGHT without loss of strength and security, making movement quick and free with greatly reduced wear and less effort.

The lintel above the door carries much less weight: this will show a saving in building costs.

Sensible, strong construction makes the lattice work at the back of the door easily removable for maintenance and repair of accidental damage.

All exposed metalwork rust-proofed and non-corrosive to atmosphere.



Far easier running, finger tip operation—less maintenance required because of smooth, light action, therefore less long-term cost.

More efficient movement means less greasing points, easier servicing.

The RAX 'Wilton' door has been thoroughly tried and tested at the RAX development centre, and is available in single, double or multiple units.

Quick delivery—custom made to suit any opening.

Clip out and send this coupon now for full information on the revolutionary 'Wilton' door by RAX.

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Please send me complete information on the 'Wilton' door.

*Also please send the complete set of RAX literature covering all products.

Tick if appropriate.

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Patent No. 1109530

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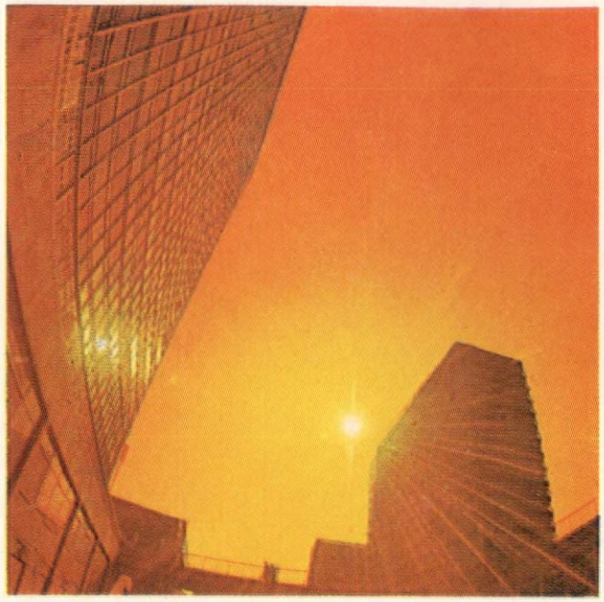

Now there's a new glass to start a window revolution

Pilkington New Spectrafloat

To the architect and designer Pilkington Spectrafloat may well prove to be the most important glass development of the post-war years. The Pilkington development of Float glass revolutionised glassmaking. Now, Spectrafloat, a development of the Float process, provides the beginning of a major change in window design.

It is a glass which reduces the transmission of solar heat. It is a glass which cuts down sky and ground-reflected glare. It has a subtle colour effect. Like Float, it has a permanent fire-finished surface. And it costs very little more than clear Float glass.

In air-conditioned buildings it will reduce both the capital and running costs of the air-conditioning plant. In buildings without air-conditioning, Spectrafloat will make a real contribution to environment.

Properties: Pilkington intend to market eventually a range of Spectrafloat glasses, with different transmission characteristics and colours. Initially one glass is being made: Spectrafloat 50/67 (Bronze) —50% light and 67% total solar heat transmission.

Light: As the above figures show, Spectrafloat will reduce the amount of natural light reaching the interior of a building, but not as significantly as the figures might appear to indicate. Thus, assuming ordinary clear Float glass provides natural illumination in a room up to 20 ft. from the window, the use of Spectrafloat 50/67 only reduces this distance to 16 ft. There will, of course, be a need to pay special attention to the design of artificial lighting.

Glare: Spectrafloat will temper sky glare and ground-reflected glare, giving more comfortable internal visual conditions. Like any transparent glass, it will not combat direct glare from the sun.

View: Perception of the view is little affected. The eye quickly adapts to the colour of the glass.

Double Glazing and Toughening: If advice is needed on any processing, including Double Glazing and Toughening, your Pilkington representative should be consulted.

For further information: If you have a project where you might consider the use of Spectrafloat, the Pilkington Technical Advisory Service is equipped to give the specialist advice necessary, and can be consulted through your nearest Pilkington area office or representative who will supply technical literature and show you samples on request.

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We can supply these Panels in any sections, any timbers of the Architect-Designers' choice.

DECIFON is *the* quality Acoustic Ceiling Panel. It is both incombustible and inexpensive, a light-weight panel weighing only 10 oz. per square foot, elegant and efficient without ugly holes, fissures or slits, and has a washable microporous surface with hard bevelled edges—hence clean butt joints. These fine qualities and a study of official **DECIFON** absorption test figures are the reasons why Architects are confident in specifying **DECIFON** sound absorbing panels.

SYLVATONE: Sound absorbing panels made from fine hardwoods
DECIFON: A quality acoustic panel. Inorganic: cannot warp, twist or rot

Further photographs in colour of SYLVATONE and DECIFON interiors can be seen in our Brochure. Write or telephone for it with samples to:

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This is a Gliksten Mark 12 door

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Both these finishes are incorporated in Glikfold — a space-saving system providing the most economical and efficient form of closure for built-in cupboards and wardrobes. These doors glide easily on spring-loaded pivots, and run in an overhead track designed to eliminate the need for a bottom track without loss of rigidity.

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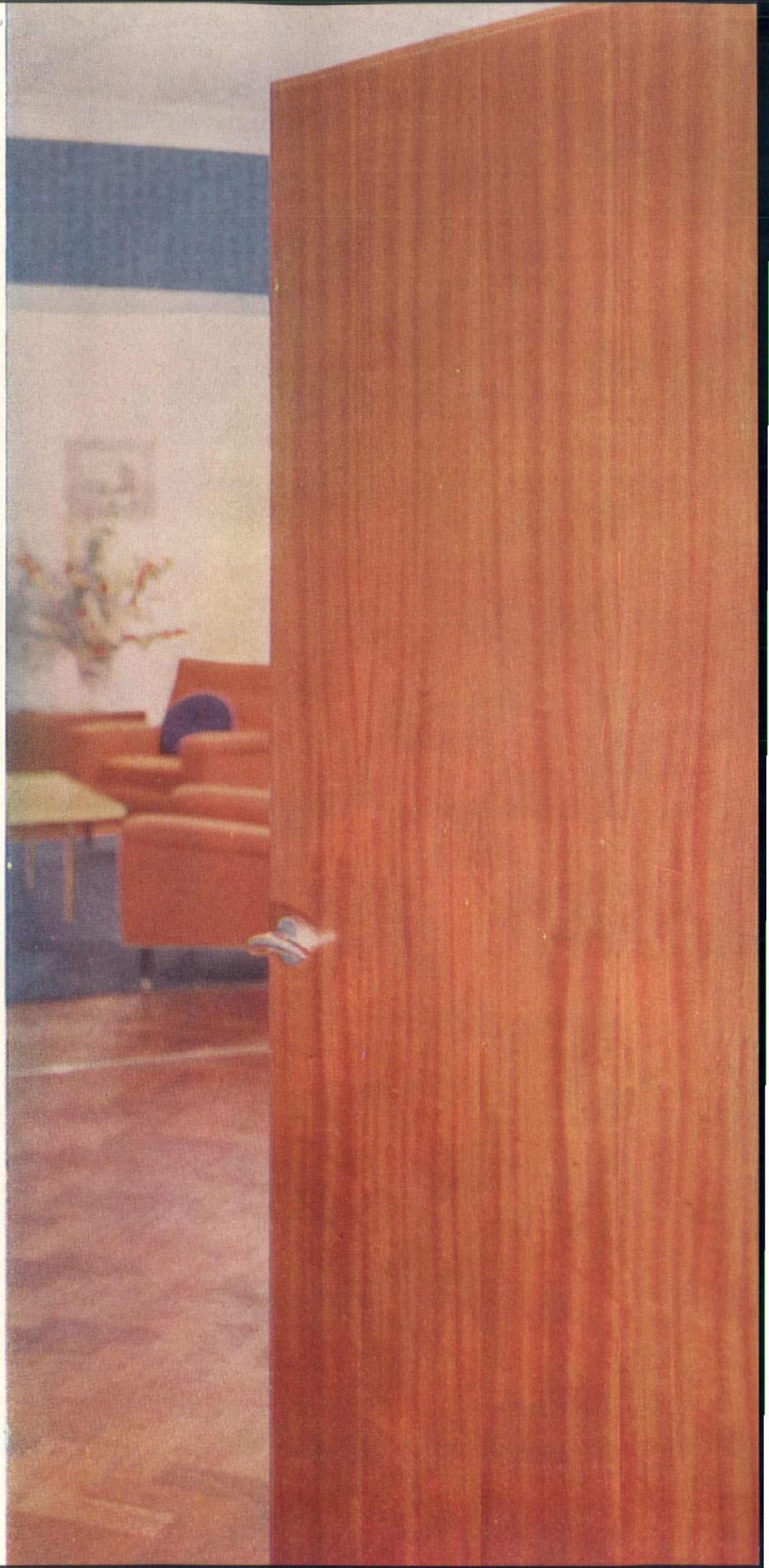

Forum Shopping Centre, Wallsend-on-Tyne. Contractors Token Construction Co. Ltd. Architects J. Seymour Harris & Partners.

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We've lost the green tinge. The patterns are inside the glass so the surface is flat and easy to keep clean. And we've introduced colour on purpose this time.
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PILKINGTON GLASS

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Ford knew this. That's why they're using Kalcolor aluminium from James Booth for their new-projects building at Warley. By 1978, they'll get the full benefit. Kalcolor aluminium has colour built right into the aluminium. So it won't flake off. Can't rust off. And its five modern-living colours are permanent and lightfast. With the colour built in by a unique process Kalcolor aluminium makes ordinary coloured aluminium *look* ordinary. That's why so many important buildings use Kalcolor aluminium.

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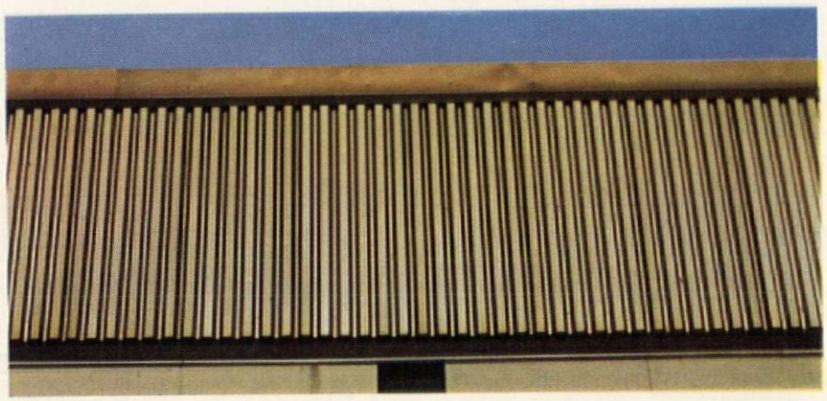

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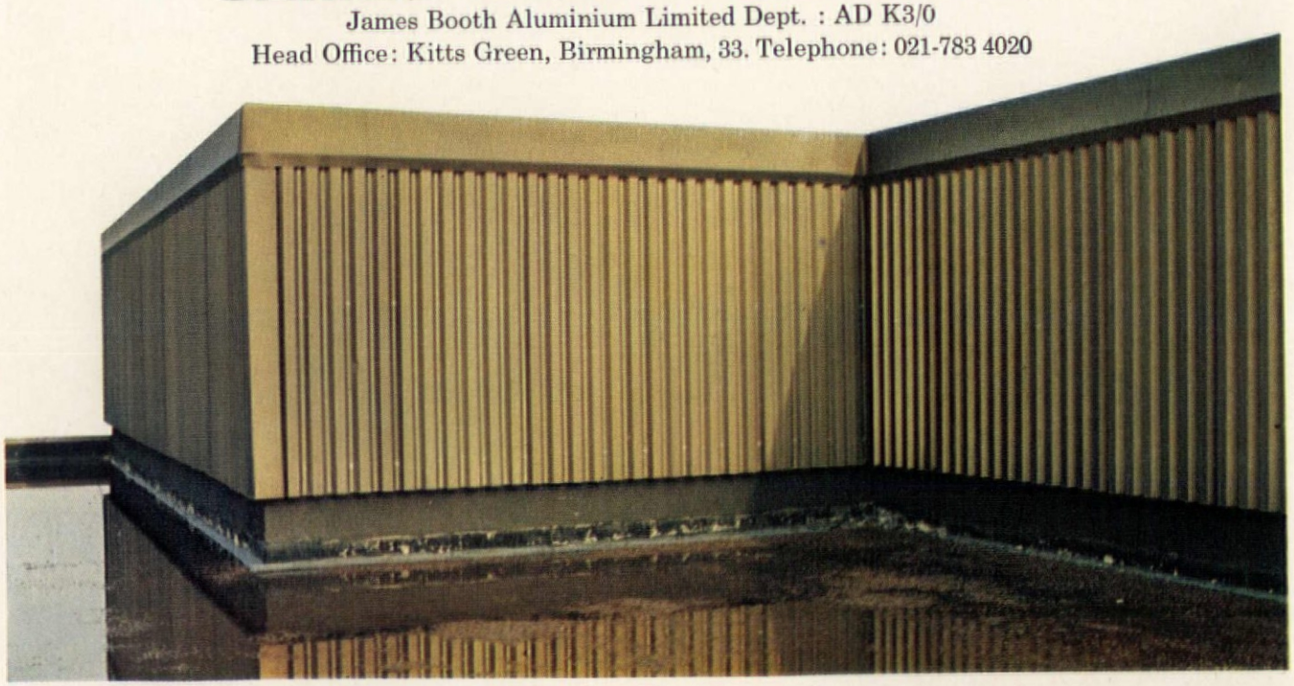

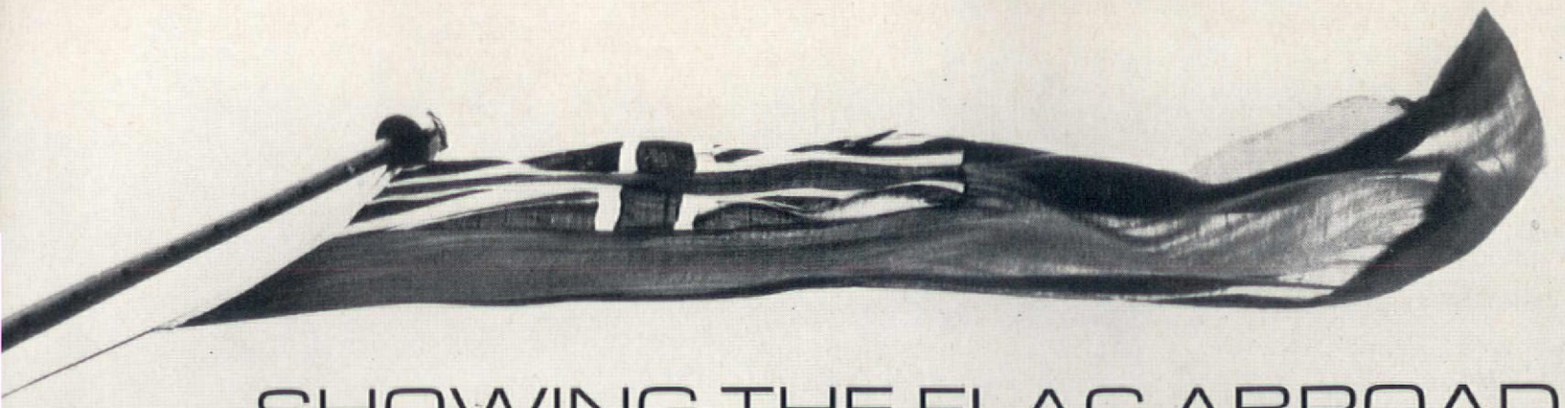

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AD Competition 10/68

What, where, when, whom?

Answer

name of building or construction .....

address .....

date of construction .....

designer (if any) .....

Name of competitor .....

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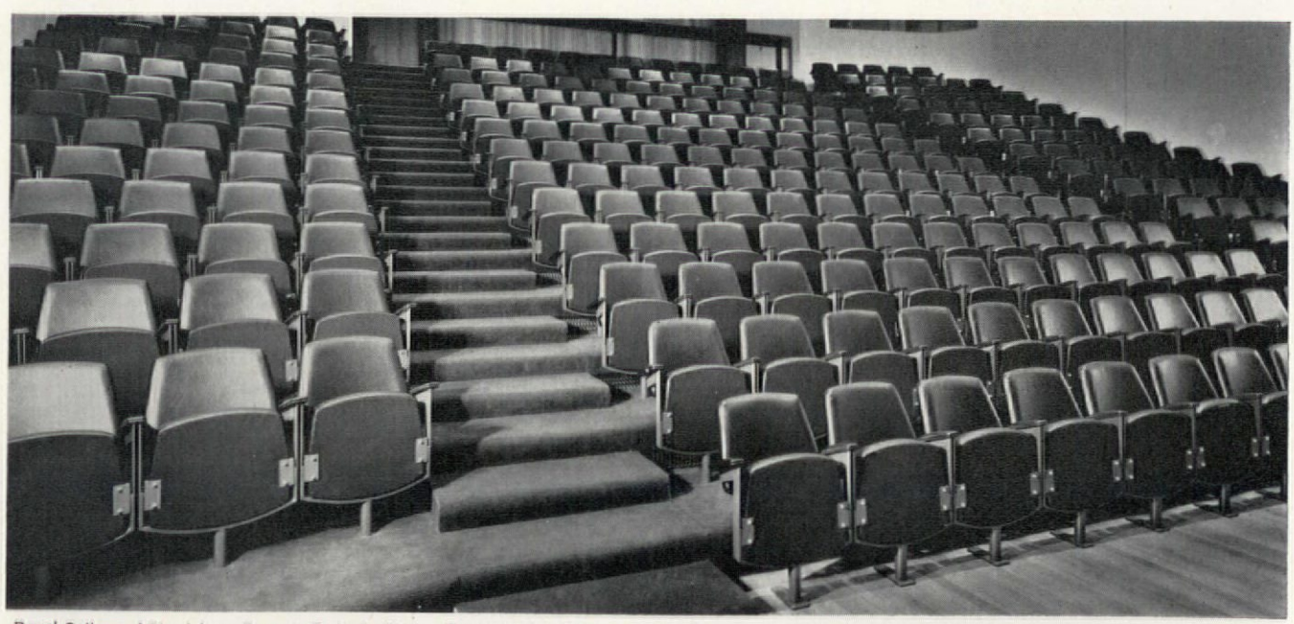

Royal College of Physicians, Regents Park. Architects: Denys Lasdun & Partners.

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Award winning Pedestal chair (The Duke of Edinburgh's Prize for Elegant Design 1965) installed in many theatres, universities and halls in Britain and overseas. A superbly detailed chair offering exceptional comfort. One of a wide range of designs of fixed and retractable seating manufactured by Race. Write for information or visit our showrooms.

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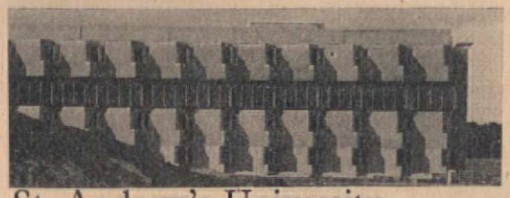
cosmorama

People

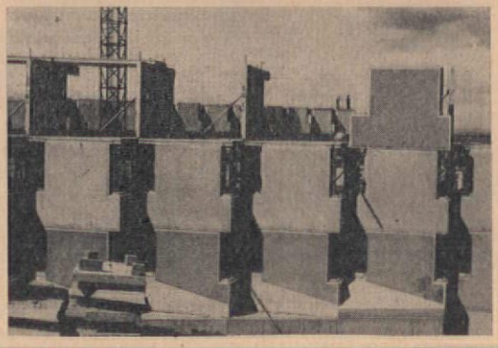
James Stirling (right), architect of the Cambridge History Faculty and Queen's College hostel, Oxford both featured in this issue.

Alvin Boyarsky, Associate Dean of the College of Architecture and Art, University of Illinois, Chicago, who writes in this issue about Stirling's architecture.



St. Andrew's University

Just complete, though not yet landscaped, is the first of James Stirling's residences for St. Andrew's (*AD* 7/66 p. 339). Here a probe is under way—perhaps for future acres of housing at Runcorn—into mass construction assembly techniques using precast concrete.



What Where When Whom

Name the building, address, date of construction and designer. The author of the first correct solution opened in our office on the 25th of this month wins £5. Entry form p. *AD* 20. Mark envelope *Competition*.

Photo: Robert Vickery.

The building illustrated in September was the Crimean Memorial Church (Christ Church), Serdarı Ekrem Sokak 84, Beyoğlu, Istanbul, designed 1857, consecrated on October 22nd, 1868. The designer was G. E. Street. Photo: lent by the church authorities. Winner: Nicholas Taylor.

Community shed

An interesting new prototype community centre, the 'Agora', has been built at Dronten, the Netherlands. Basically a 50m × 70m glazed shed, containing a variable amphitheatre, it can accommodate a wide range of activities—market, sports, dancing, etc., in the former; theatre, concerts, cinema, and conferences in the latter. A restaurant, bar, meeting halls and bowling alley are also provided. It is only the uninspired planning of the fixed elements, accompanied by grotesque junctions, that compromises the directness of the basic structure. This comes as a disappointment, as everything is there for something really good—the photos of the interior in use indicate this. The key to this disappointment is, I think, contained in the hoary old dualism underlying the architect's own comment that: 'The possibilities of this experiment in sociology were so interesting and fascinating to us, that we allowed ourselves to treat the actual *architecture* as secondary in importance.' *David Wild*

Bauwelt, July 8, 1968

Corrections

AD 9/1968, p. 397, Hardy—the exhibition structure illustrated was designed by Tony Hayes, Paul Gillespie and Cliff Horton, not by Matt Andrews and John Lambon, who designed another.
AD 9/1968, p. 409—'it hits us Levittowners just as hard' should have read 'it hits the Levittowners just as hard'.
AD 10/1968, p. 498, M2, Spirrelle Electric Co., 51 Thames St., Sunbury-on-Thames.

Memo: AD Project Awards 1969

Last date for submission: Midnight, October 21st, 1968.
Subject: Servicing buildings.
Jurors: Peter Smithson (architect), Arthur Aldersley Williams (engineering design consultant), StanleyWoolf (chartered surveyor).
Entry forms: available from *AD*.

This month:

The delay in publication of this edition is due to the flooding of our printing works at Tonbridge.

Next month:

The Anatomy of the factory, a primer on the organization, the construction and the integration of services in single-storey factory design. Guest editor, Derek Sugden of Arup Associates.

Pavilions in the Parks

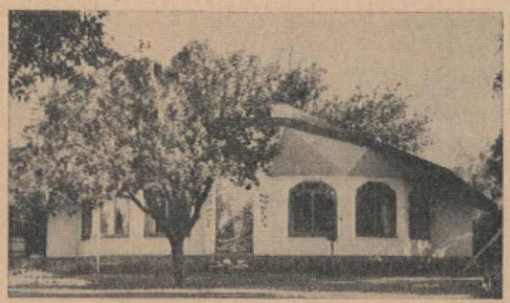
Abetted by the GLC Parks Committee, a group of six artists are setting up pavilions in the parks and on the empty sites of London. The hope is that artists will exhibit their works spontaneously in these pavilions and thus break down the communication barriers between the public and artists. The first pavilions have been put up on a site at the corner of Oakley Street and Cheyne Walk in Chelsea, made available for a period of three months, from August 1st, by the contractors Wates Ltd.

The four types of pavilion erected are all experimental structures—a transparent inflatable dome by Dave Harrison, an opaque inflatable dome by Jeff Shaw of *Event structures*, a fibreglass pavilion by Keith Albarn, and Keith Critchlow's *Octagon House*, made by Tri-Wall Containers Ltd.

The *Octagon House*, made from corrugated paperboard, half an inch thick, in three layers, waterproofed and finished with a resin based coating which contains fine aggregate, giving the board a hard and flameproof surface. The panels come flat and ready surfaced. The edges are folded in and bolted to join the panels. No other framework is used. The floor area is 422 square feet; basic price about £300. The pavilions can be joined together, a function of the close packing geometry which underlies the design.
Photo: Anthony Jenkins

Briefly

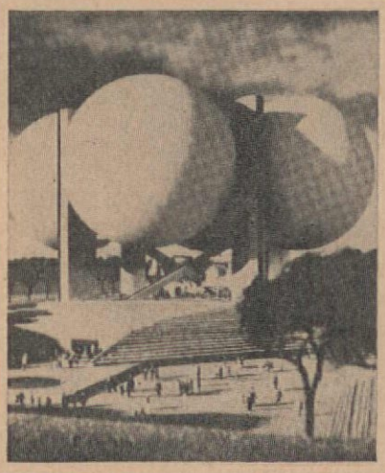
Dial 01-930 F444 for information service from CIRIA (Construction Industry Research and Information Association).

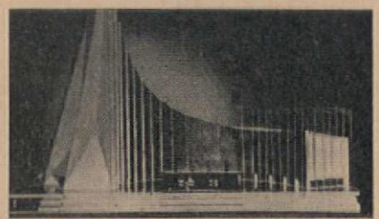


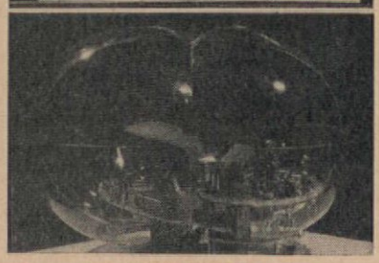
The Rudolf Steiner style survives—a new Kindergarten has been built in the grounds of The New School, King's Langley, Hertfordshire, that recalls, if weakly, the great Goetheanum at Dornach. The building, based on a design by two of the teachers, was supervised by Watts and Young.

Restrained and straightforward though the Bath and Portlands Group's proposed new office building alongside the Abbey of Bath might have seemed to most architects and even to Mr Leslie Nash, Inspector of the Ministry of Housing and Local Government, permission to build has been refused by the Minister, Mr Anthony Greenwood.

In finding that the proposed building had too strong a vertical emphasis to sit against Bath Abbey the Minister was perhaps mindful of Wassili Luckhardt's new town hall in Bremen.
Architektur und Wohnform, January 1968





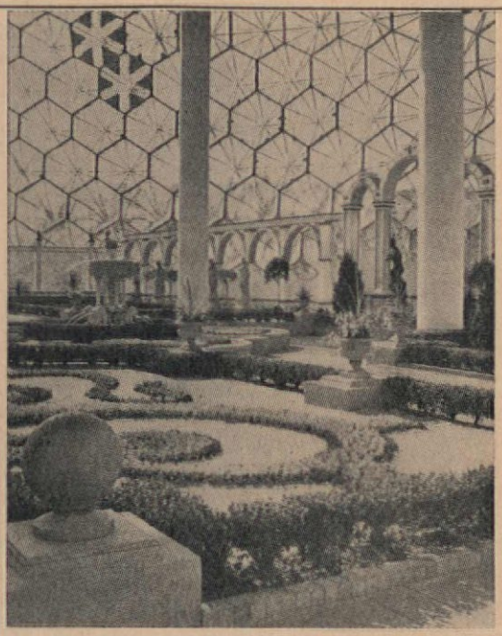


Expo '70

Far left
The US pavilion for Osaka, by Sam Brody and Lewis Davis, was to have been the biggest and most buoyant inflatable ever, but with Congressional cuts in the budget a new design is being prepared within a £4 million budget.
Time, August 23rd, 1968

Left top
The USSR pavilion for Osaka, designed by a team of Russian architects, is to be the largest foreign pavilion at the exhibition—8430 square metres in area. The cost is estimated at £8 million.

Bottom left
One design for the West German pavilion for Osaka by Karl Schwanzer and Robert Gutmann, was for a vast inflated structure, called an Atmospherium.



Buckminster Fuller's U.S. Pavilion at Expo' 67, which was donated to the city of Montreal, has been transformed—almost unrecognizably—into a Biosphere, 'an indoor parkland and aviary'.
Forum, July/August 1968

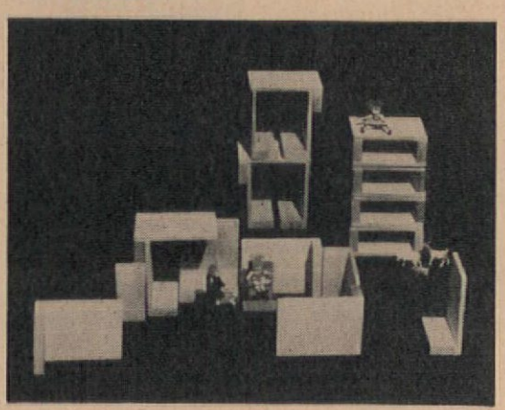
Competition results

Woolgate house sculpture
Sponsors: The Hammerson Group of Companies in association with Reunion Properties Co. Ltd., Westminster Bank Ltd, and the *Sunday Times*.
Winners: Sculptors Antanas Brazdys as well as Stephen Furlonger, Roland Piche and Christopher Sanderson.
Prizes: All received £300. Sculptures by Brazdys and by *one* of the other three sculptors will be placed in the forecourts of Woolgate House in Basinghall Street and Colman Street, London.

Design in the sales age
Sponsor: Formica Ltd.
Winners: Architects David Paul Lucas and Ian Richard Hodgson in association with V. Galliano and M. Parker.
Prizes: £300 each and their designs for a hotel bedroom and bathroom constructed and displayed in London in October and November at the 'Design in the sales age' exhibition at De La Rue House, 84 Regent Street, London W.1.

Plastics lightfitting: Horner's Award
Sponsor: British Plastics Federation on behalf of the Worshipful Company of Horners.
Winner: Martin John Wharnby.
Prize: 200 guineas.

Galt toy
Sponsor: James Galt toy shop.
Winners: Martin John Wharnby and Brian Larkman.
Prizes: £100 each.



Calendar

The ubiquitous fortifications of Vauban are fully documented and exhibited in model form at the Invalides in Paris, May to the end of October.

The Le Ricolais exhibition first shown at the Palais de la Découverte, Paris, in 1965, was on view at the Musée des Beaux Arts, Nantes, from July to September.

A small exhibition of the works of Vladimir Tatlin, organized by Carlo Derkert and K. G. P. Hultén, was shown at the Moderna Museet, Stockholm, from July to September.

The Mies van der Rohe exhibition prepared by James Speyer for the Art Institute of Chicago (see AD 7/68, p. 301) was shown at the Akademie der Künste, Berlin, from August 25th to September 22nd, 1968.

Exhibitions

Autumn	Como (Monte Olimpino)	1st International exhibition of kites, balloons and flying objects	Inf. The editor, *Bit*, via Piolti di Bianchi, 29, 20129 Milan
Till October 27	London	Bauhaus	Royal Academy, Burlington House
Till October 31	London	Pavilions in the park. Art exhibited in lightweight structures	Albert Bdge Embankment, cr. Oakley Street/Cheyne Walk
Till October 31	London	Lighting for living	Design Centre
October 30 to December 29	London	Charles Rennie Mackintosh centenary exhibition	Victoria and Albert Museum
November 6 to 16	London	International Caravan and Camping	Earls Court
Till November 11	New York	Architecture of Museums	Museum of Modern Art
December 2 to 6	London	Engineering materials & design	Olympia
1969			
January 27 to February 8	London	Interfurn 69	Earls Court
February 24 to 28	London	Carpex 69	Earls Court
March 5 to 16	S. Paolo	British Industrial	International Pavilion, Ibirapuera Park
Aprill 22 to 30	London	International Engineering & Marine	Olympia
April 22 to 26	Glasgow	Envirex (environmental engineering)	Kelvin Hall (Inf. Lintex, 224 Grand Buildings, Trafalgar Square, London, WC2)
May 13 to 16	London	Decor International	Empire Hall, Olympia
1970			
January 24 to Feb 1	Hanover	Constructa 1970	Hanover Fairground (Inf. Schenkers Ltd, Royal London House, 13 Finsbury Square, London EC2)
March 15 to September 13	Osaka, Japan	EXPO 70	

Conferences

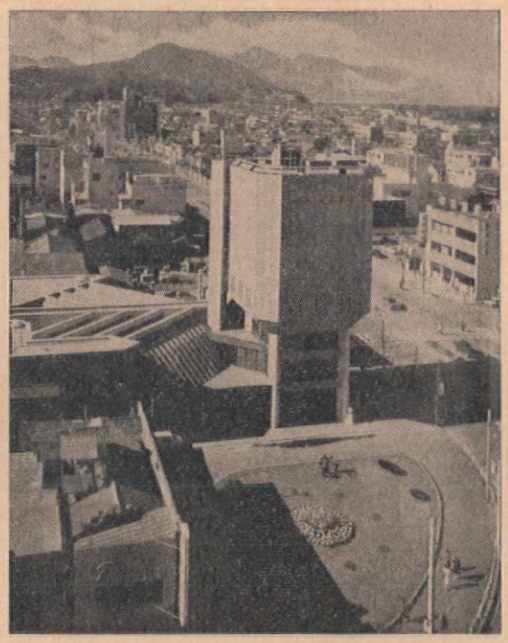
October 8 to 19	Manchester	Building Trades	City Hall
October 20 to 23	Ottawa	Canadian Conference of Housing	Inf. Canadian Welfare Council, 55 Parkdale, Ottawa 3
October 9 to 15	Düsseldorf	Interkama 68 (International Conference and exhibition on technique of measuring and automization)	Inf. 4 Düsseldorf 10
October 21 to 23	Budapest	2nd Conference on Industrial Architecture	Inf. Sec. of Scientific Soc. for Building, Budapest V, Szabadság tér 17.
October 23 to 24	London	National Conference of the Town and Country Planning Association	Guildhall
October 29 to 31	Brighton	National Housing and Town Planning Council, annual conference	Inf. F. J. Berry, 11 Green Street, London W1Y 4ES
November 11 to 15	York	Building Economics	Inf. Institute of Advanced Architectural Studies, The King's Manor, York
November 13 to 15	London	International reinforced plastics conference	British Plastics Federation, 47–48 Piccadilly, W1
November 15 to 17	London	Art, technology and society	Inf. DIA, 13 Suffolk Street, London, SW1
November 20 to 26	Milan	10th International convention/exhibition of automation & instrumentation	Inf. FAST, piazzale Rodolfo Morandi 2, Milan
1969			
February	Roorkee (UP), India	Environmetal physics as applied to buildings in tropics	Inf. Central Building Research Institute, Roorkee (UP), India
April 21 to 25	Southampton	International conference on structure, solid mechanics & engineering design	Inf. Concrete Society, Terminal House, Grosvenor Gardens, London SW1
May 17 to 23	Amsterdam	6th International Congress of the Bureau International du Béton Manufacture (BIBM)	Inf. British Precast Concrete Federation, 9 Catherine Place, London SW1
June	Amsterdam	6th Congress of International Prestressed Concrete Bureau	Inf. Simons, Bd A. Reyers, Brussels 4
July 2 to 6	York University	RIBA Annual Conference	Inf. RIBA, 66 Portland Pl., London W1
October 10 to 15	Buenos Aires, Argentina	10th UIA Congress	Inf. UIA Secretary, RIBA, London
Autumn	London	ICSID international congress	Inf. COID, 28 Haymarket, London SW1

Competitions and awards

RSA Industrial design bursaries	Entry forms by October 14	Assis. Sec. (Bursaries), Royal Society of Arts, John Adam Street, London WC2
Du Pont show house for Ideal Homes Exhibition	Entries by October 31. Prizes £1000, £600, £400, Also £500 supervision fee	Inf. Roger Lewis, Du Pont Co (UK) Ltd, Du Pont House, 18 Breams Buildings, London EC4
1969 Study in the USA for 12 to 21 months	Applications for entry forms before November 4	Inf. Harkness Fellowships (UK), 38 Upper Brook Street, London W1Y 1PE
Construction Industry technical literature	Entries by November 6	Inf. Building Centre Trust, Store Street, London W1
Caravan design (Ralph Yablon Award)	Entries by March 31 1969 Prizes £750, £150, £100	Inf. NCC Caravan Competition, Exhibition Dept., Temple House, Temple Avenue, London E.C.4

Study tours

1969			
Undecided	South Africa and Australia		Inf. Concrete Society Ltd, Terminal House, Grosvenor Gardens, London SW1
February 3 weeks	Brazil	From England via Zurich (£390)	Inf. Moxley, Jenner & Ptners, 7 King Street, Bristol, BS1 4EJ



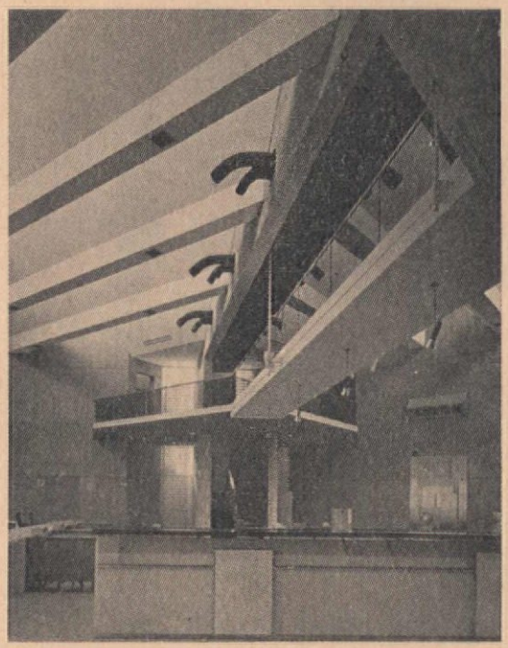
Fringe Metabolism

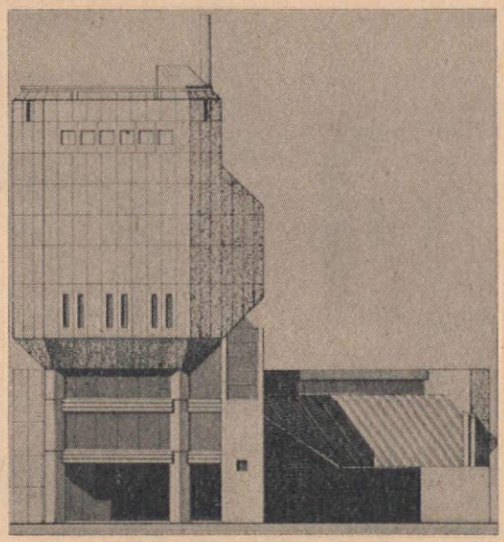
Kenneth Frampton

The role of being a fringe metabolist appears to impose few limitations upon the practice of so-called 'commercial architecture' (cf. Y. Friedman). In spite of its power house iconography, the Fukuoka Mutual Bank in Oita, Japan, by none other than Arata Isozaki, is well within the time-honoured monumental bank tradition, at least in its external aspect. Its composition and to some extent its imagery approaches architectural caricature. Western architects will be tempted to interpret the similarities of its forms to the Stirling and Gowan Leicester engineering laboratories, as something of a dubious 'in-joke'. This particularly applies to the clipped corner tower whose massive 'high-rise' volume appears to contain nothing but some plant rooms and a 50-seat conference hall.

The 'hanger'-like banking hall itself, obsessively interrupted by flying galleries, stairs and mezzanines, is a *tour de force* in metabolic expression. The central *passerelle*, whose illuminated ceiling changes colour according to the time of day, positively invites agitation and movement. The complementary decor is flash, light and at times openly vulgar, in short quite equal to the quality of brilliant exuberance that one has come to expect from the *ateliers* of Milan. For the rest, one is left wondering (*a*) what happened to the intellectual metabolists, and (*b*) why must such gaiety find itself almost repressively encased in such ponderous formalism.

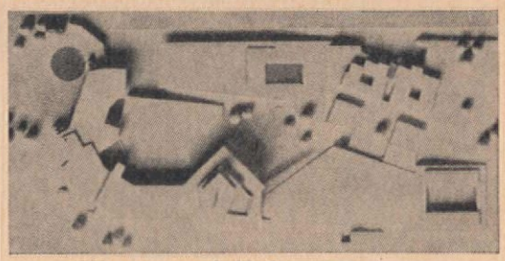
***Kenchiku Bunka*, March 1968**
***Japan Architect*, 141, May 1968**





Scale

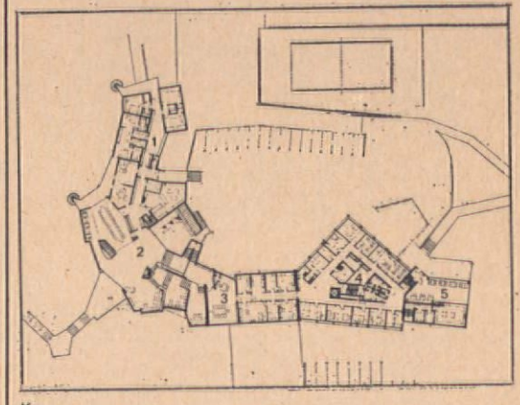
Low-cost, subsidized housing is rare enough in Italy to merit attention whatever its quality; when it is of the grandeur and coherence of Luigi Carlo Daneri's new quarter at Forte di Quezzi on the hills above Genoa, it presumably is worth a visit. ***Casabella* 325**



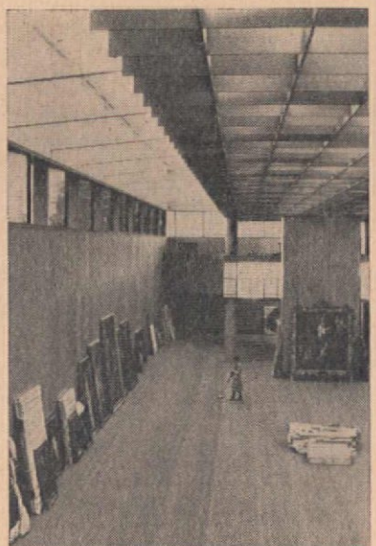
Brazilian establishment

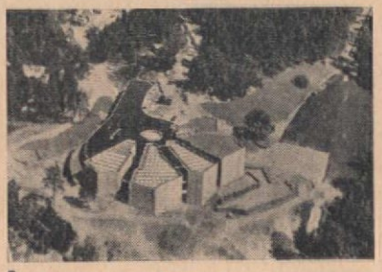
Brasilia is at last being recognized both by Brazilian bankers and foreign governments as an established fact. Having temporized about investing large sums in the new capital they have finally determined to commit themselves. The French embassy designed by Le Corbusier before his death (see *AD* 5/65) is to be built by his successor Jullian, and Hans Scharoun's extensive expressionist structure for the West German embassy has already started. Both the French and German embassies have been enlarged since they were first planned—the German one having doubled in size. During the same period the British have reduced their embassy programme by half and despite the promising appointment of Peter and Alison Smithson, little has been heard of the project.

***L'Architecture d'Aujourd'hui*, December 1967, January 1968.**



Key:
1 ambassador's apartment; 2 reception rooms; 3 ambassador's office; 4 chancellery; 5 canteen.





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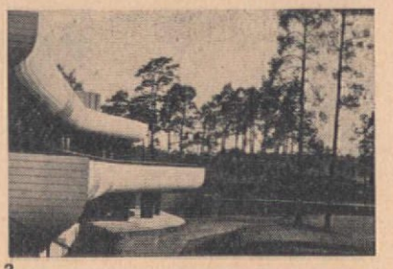

3

New Art Galleries

Melbourne art centre 1, by Roy Grounds, due to be finished in 1972.

Sonja Henie and Niels Onstad art centre at Hövikodden, near Oslo, designed by Jon Eikvar and Svein Erik Engebretsen. 2, 3 *Photo:* Eikvar og Engebretsen.

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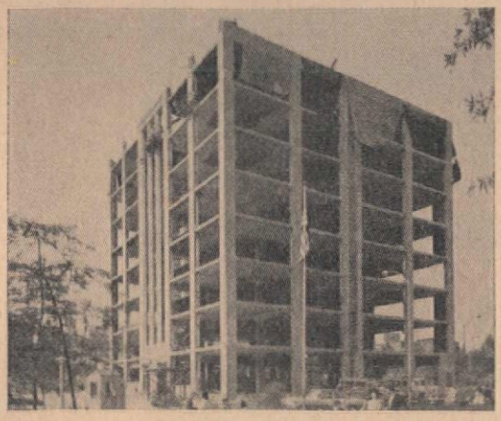


New architecture for old

Long Island University, Brooklyn, has for long been housed in a motley collection of remodelled buildings —among them an old cinema, a motor car showroom and a printing plant. But the authorities have been disturbed by this lack of coherence. Determinedly they have sought a corporate image. And in the architectural firms of Davis, Brody and Associates and Horowitz and Chun they have found the genius who can provide a new architecture for old—at a minimal cost. The forty-three-year-old printing plant has been stripped down to its sturdy structural frame and clothed anew in brick. The result is a stylish, mid-60's architectural lump. So entranced have been the authorities with this new Humanities and Social Science building (and the AIA who gave it an honour award) that they have commissioned the architects to renovate thus the whole campus. Since the presentation of the design, however, there has been official disagreement on the future of the campus. The renovation planned (*see below*) might not be further extended.

Forum, June 1968

John Hancock Centre, Chicago

For the time being the setting of the Hancock building in Chicago is that of a vast outdoor room or lobby which will act as a termination to the city's major shoppin g arcade along North Michigan Avenue. Inside the space, which will be given life by the surrounding clusters of activities, the geometric form of the Hancock Centre, with its structurally determined diagonally corseted frame stands apart, dominating the throwaway wedding cake water tower and its pumping station extension which are the surviving vestiges of the old Chicago, and which bear witness to the engineering achievements of the mid-nineteenth century.

But what kind of building is this which is so strategically located, so very tall, so elegantly built, and which not only overwhelms its own micro-environment but which alters the profile of the city itself? Who commissioned it and what kind of men conceived of it in such a peculiarly strict, intense and uncommunicating manner? It is unmistakably a Chicago building, more easily attributable to the place than to its particular author.

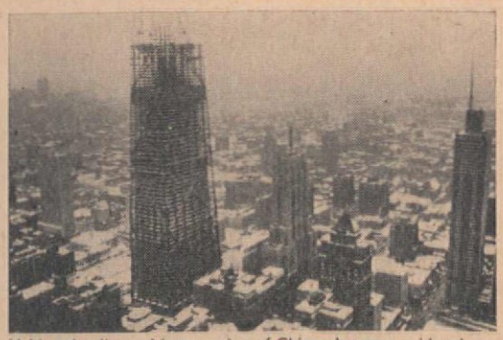
Paul Borget, the French traveller at the turn of the century had these perceptive remarks to make about the patron, the architect and the commercial nature of Chicago buildings: 'At one moment you have around you only "buildings"'. They scale the sky. The architect who has built, or rather who has plotted them, has renounced embellishments. He has frankly accepted the condition imposed by the speculator; multiplying as many times as possible the value of the bit of ground at the base in multiplying the supposed offices. It is a problem capable of interesting only an engineer, one would suppose. Nothing of the kind. The simple force of need is such a principle of beauty, and these buildings so conspicuously manifest that need that in contemplating them you experience a singular emotion. The sketch appears here of a new kind of art, an art of democracy, made by the crowd and for the crowd, an art of science in which the certainty of natural laws gives to audacities in appearance the tranquility of geometrical figures.

Democracy is in need of new frontiers. The old American dream is dead. For many, rugged individualism seems increasingly a thing of the past. There is a growing despair, a lack of hope, a wide disparity between individuals and groups; frozen violence is becoming more liquid, as witnessed by ambiguous wars, social drop-outs, rioting in the streets, physical decay, hunger, unemployment and assassinations. There is a need for a new symbolism and vision which architecture and city building can provide. The building, characteristic of many other projects in prestigious parts of Chicago, by its insistent nineteenth century *laissez faire* attitude, its maximum use of the lot, its greedy reliance on the existing network of services and transportation, and its preference for affluent commercial interests and high income, childless, middle-aged families, inevitably will cast a big shadow.

It is not so much the building's great height which is troubling. Rather, it is the image of teams of process-oriented silent technicians, calculating the most profitable use of land, materials, strategies of investment, producing an architecture—received Miesian aesthetic aside—which lacks vision and refuses to comment on the general problems of our time.

When Le Corbusier visited New York in the mid-1930s, he complained that the New York skyscrapers were not tall enough. He, of course, spoke from a prepared European tradition of revolutionary social thought and an image of an ideal city, in which every building, every space, every stick of furniture, was infused with a vision of a new and socially just order. In the United States, however, the revolution has already transpired (1776 and all that), and therefore social justice, the good life for all, etc., are just around the corner, and all activity may be taken as reassuring evidence that at some point, some one is fulfilling their inalienable post-Utopian right. One wonders.

Alvin Boyarsky

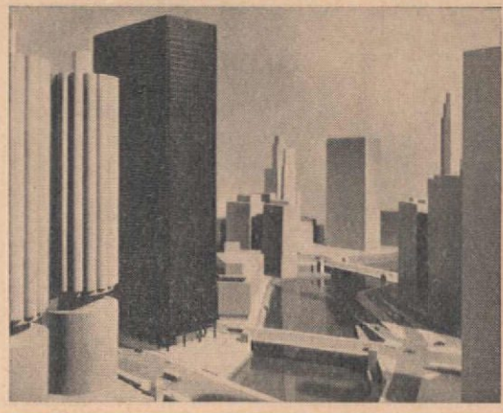


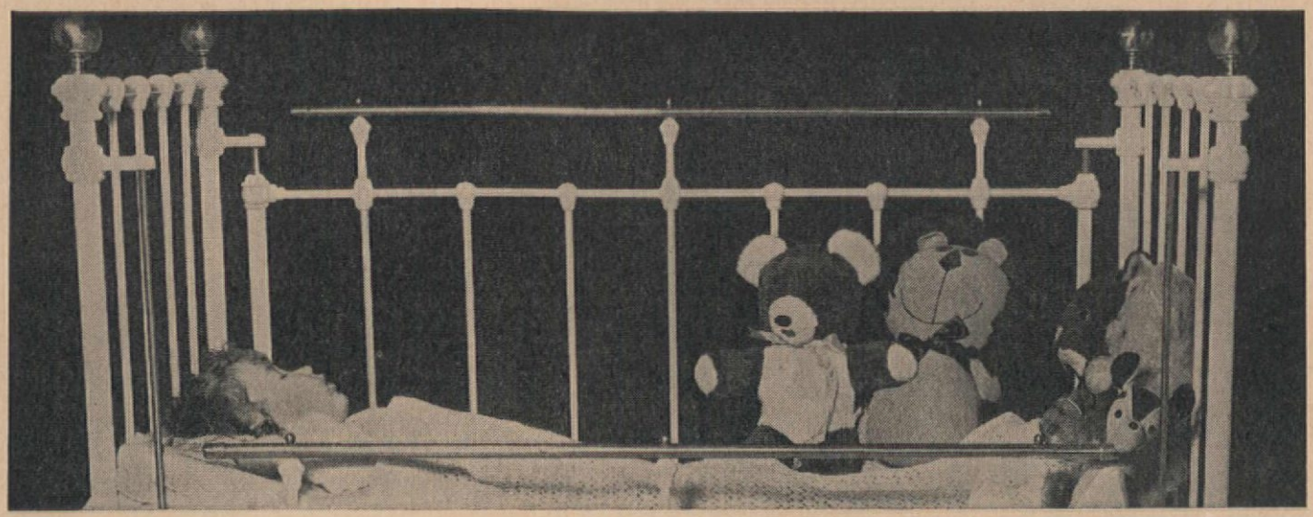
Making the diagonal intersection of Chicago's tartan grid and Lake Michigan. Skidmore, Owings and Merrill's 1100 ft John Hancock Centre (see AD 4/68 p. 149) gives form to the city's bustling, near north Gold Court, approximately one mile from the city centre.

Twenty years of Chicago building history wink at each other along E. Chestnut—in the foreground 880 Lake Shore Drive by Mies van der Rohe, 1948; centre, De Witt Place apartment tower by Skidmore, Owings and Merrill, an early essay in sheer wall construction, and, in the rear, their John Hancock Centre now under construction, which will add approximately 700 apartments and 40 floors of offices to an already densely packed area.

Four-square

No matter what the vagaries of the site, no matter what the surrounding forms, the Mies formula for Chicago remains the same—a rectangular tower, steel mullioned and bronze tinted, poised on rectangular columns above a windswept plaza. The latest published design by Mies van der Rohe—in conjunction with C. F. Murphy Associates—is for a 52-storey (275 × 125ft) tower for IBM, between State Street and Wabash Avenue, on the north bank of the Chicago River, adjoining Bertrand Goldberg's Marina City. The two buildings are, of course, worlds apart.





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How to get involved without understanding McLuhan

Was McLuhan correct with his theorem *As people become involved the less they know*?

An astonishing eye-opener onto this decade is the run-away appetite for marching, boycotting, slogan-carrying demonstrations by ordinary people. All over the world people are protesting their right to be declared human. Aggression may be an essential part of the life-preserving instinct, satisfying to some extent a desire for self determination through strength. But is muscle flexing the answer?

In the crazy-headed, confusing mess of the sixties, protest has become a commonplace.

Students burn draft cards, wear buttons urging the appeal of everything and anything; complete sexual freedom, the legalization of marijuana, you name it.

The protests in England at LSE, Essex University, Guildford and Hornsey schools of art, indicate outrage at injustice and irrelevance in not only education but the whole political and social structure of society.

With some of one's most beautifully groovy and respected friends involved it isn't easy to form opinions. Yet, as a 'don't know', one suspects that individual thought and action are still more potent than the dissipation of energy through collective demonstration.

And even if this is not true, often the motivation and thought behind demonstrations is of greater value and importance in indicating direction, than the actual protest operation. But this is not to remain apathetic. No one can predict the future for sure and not for nothing is the tidal wave of student unrest sweeping the globe.

A student revolt of such massive proportions is a phenomenon of world importance. Is everyone a solitary soul? Who has ever really communicated with anyone else?

As the world moves from hardware to software, and its citizens from robots to human beings, there is a breakdown in communication, resulting in an upsurge of discontent, a genuine insurrection against society as now organized.

Rising from the confusion in various degrees of dumb to bright are some disturbing and challenging might-as-well-laugh-as-cry statements and attitudes. They demand to be studied, analysed, and understood whether by other students, educators, politicians, or the public at large, in order to understand more fully the magnitude of disparity between what people think is happening and what should really happen.

These students are the vanguard of a wave of radicalism more intense than anything seen throughout the world since the 1930s.

But what is it all about? Where are we really going?

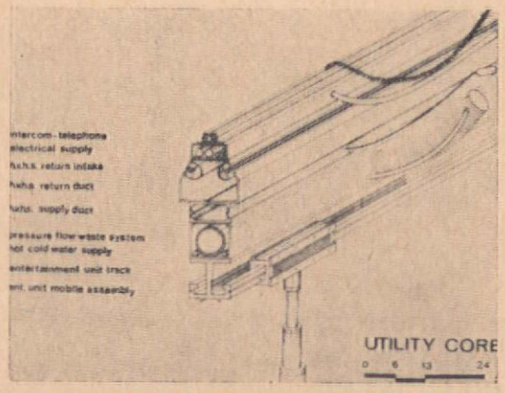
Andy Capp socialism certainly isn't the answer. Even David Greene's world of the solid gold sound of KSC (see *AD* 7/68) is becoming tarnished. Wherever it's at, this anarchist mood has permeated into architecture through the underground press.

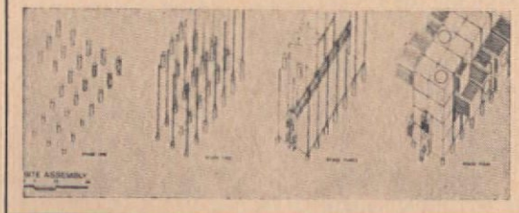
Polygon, *Klip-Kit*, and *Archigram* have used gesture, slogan and example to hit out at and discredit existing mainstream banalities. Around the world the mental windows are opening to the realization that it is no longer imperative to be square in order to succeed. Although Mario Savio's student revolt at Berkeley in the autumn term of 1964 probably started the whole thing, virtually nothing parallel in architecture has happened in the United States, so that it is encouraging to find two young American hopefuls, flying in the face of inanity.

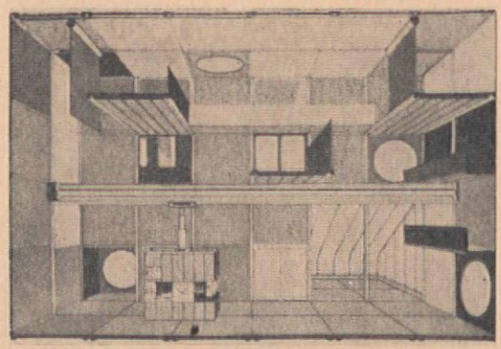
Authors of 'Crash City', experiments in radical life, and TRACT (*shown here*)—a component housing system 'designed to be designed by you'—Doug Michels and Bob Field have been zooming around the United States spreading their word.

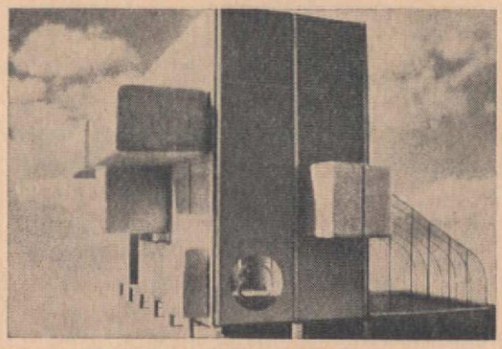
Using dynamite lettering, big fat fold-outs, flip packages, and mind blowing slide shows with Huntley Brinkley type commentary, they deserve more than just passing attention. They suggest an alternative to the barren professional stranglehold on the current American architectural scene. A final thought, is John Lennon's blank, virgin-white protest button, more prophetic than we might at first suspect?

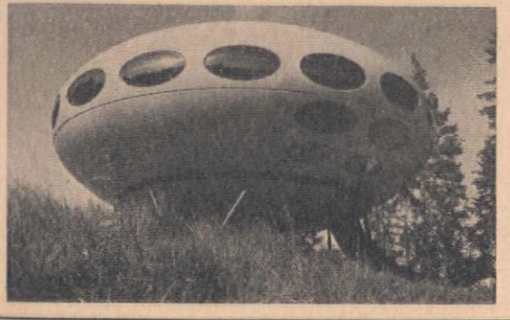
Warren Chalk, September 1968







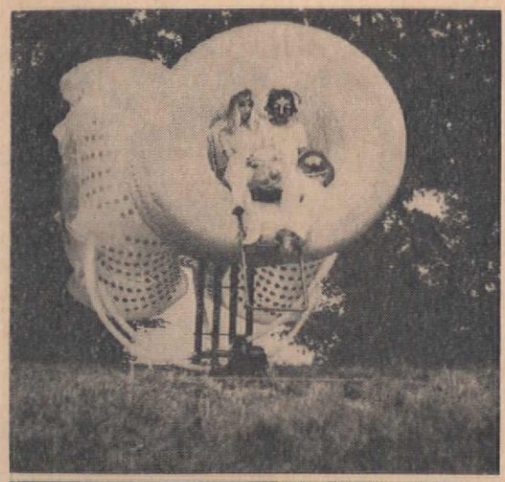


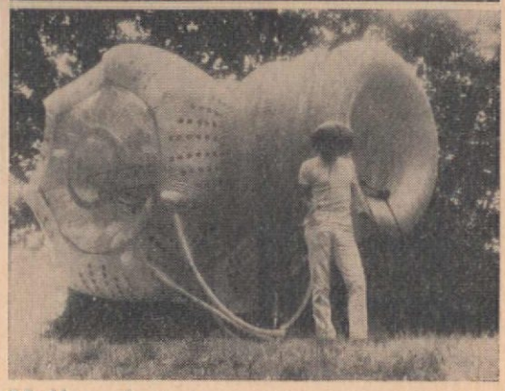


Finnish saucer

A glass fibre week-end cottage, designed three years ago by the Finnish architect Matti Suuronen.

The sphere has a diameter of 26 feet and a floor area of 269 square feet. Seats and beds are built-in. The sandwich construction, developed by Yrjo Ronkka, is similar to that used for aeroplane wings, using polyurethane as an insulating material between a double shell. The building has 36 sections and weighs less than two tons. The price, including furniture and site delivery is in the region of £3,500, though this might be reduced. Makers are Oy Polykem, marketers are Lomanotko Oy.

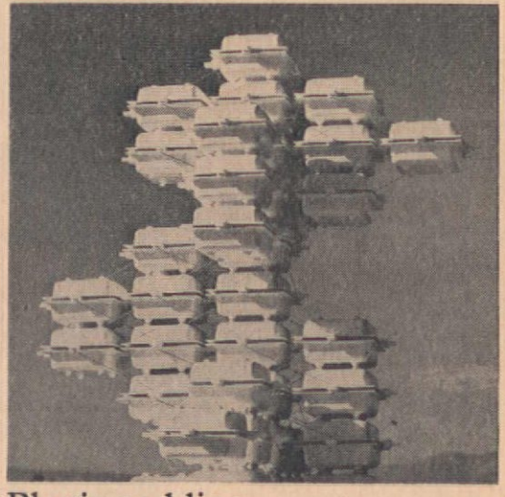




Yellow heart

The Hans-Rucker-Co. of Vienna (Laurids, Zamp and Pinter) has produced another activity stimulator—a Yellow Heart or pulsating space for two people (see *AD* 3/68, p. 100, for their earlier experiments). This pneumatic structure, with a metal supporting frame, consists of an entrance lock and a main volume which is filled with transparent pvc bubbles that are constantly inflated and deflated. The bubbles are called plus-minus cells. The ever-changing volume of these plus-minus-cells within the expanding and contracting volume of the enveloping structure is said to evoke the rhythm within the human heart, hence the name. The singular spatial experience is heightened by giving the inmates helmets with changeable coloured glasses and built-in stereo headpieces through which jumbled sounds are relayed.

Photos: Gerald Zugman



Plastic podding

Wolfgang Döring of Dusseldorf suggests a structure of plastic living units, grouped together in pairs, one on either side of combined horizontal beams and service cores. The general stability of the structure is achieved with diagonal wiring.

Photo: Rolf Schweter.

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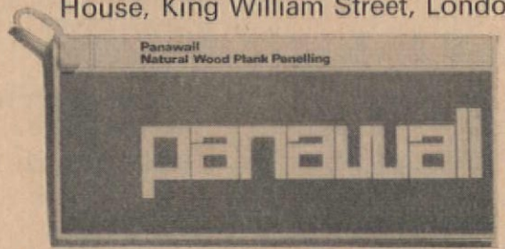

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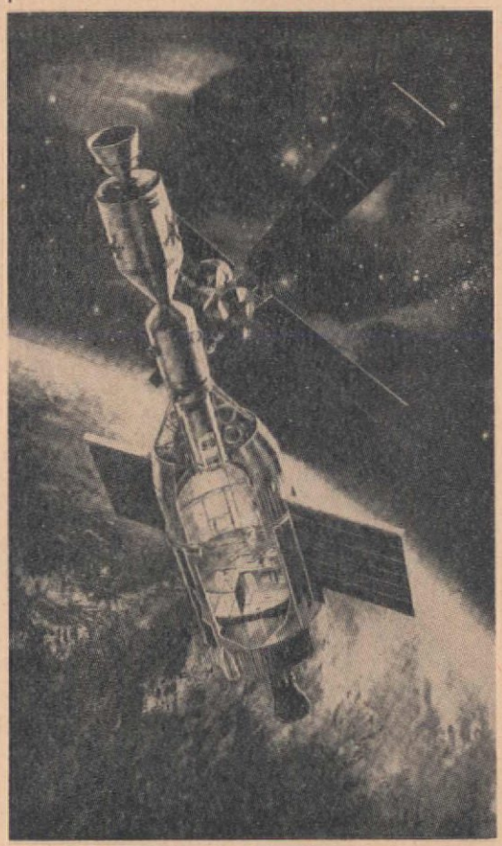
Home in space

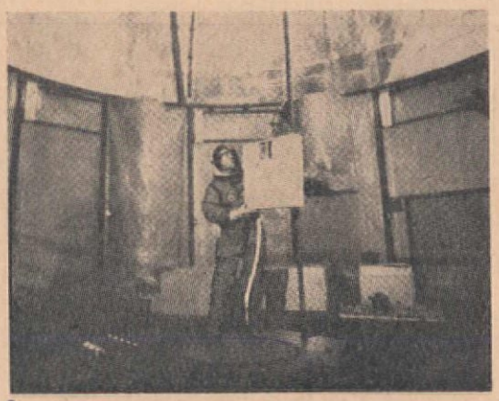
NASA's *Voyager* programme, which was to have made unmanned landings on the planets, has been cancelled and the second decade of American space exploration is in doubt, but the *Apollo* programme is being actively pursued. By late 1969 the first US astronauts should have returned to earth with a sample of lunar material. The following year the first long and purely scientific manned investigation of the space environment will take place. The Orbital Workshop will consist of the empty hydrogen tank of a spent S–4B second stage *Saturn I* rocket. **1** All traces of fuel will be flushed out and the three astronauts who will carry out the first 30-odd experiments will dock with the empty tank, hand out food and equipment from a docking adapter, and set about converting the tank into their living and working quarters. Gravity will be zero, but there will be a 'shirt sleeve' environment. The 22ft diameter tank will already be divided horizontally by an aluminium grid, which will act as the floor for both living and working quarters. **2, 3** Astronauts in each compartment will be walking feet to feet in shoes with triangular metal 'projections fitting into the grid. A fireman's pole will link the spaces. Holes drilled in the structure of the fuel tank will enable the astronauts to fix equipment, snap electric lights into place and position fabric sheets for ceilings and partitions. The conversion is expected to take the three men 30 hours.

The mock-up of this Orbital Workshop, built by the McDonnell Douglas Corporation at the Marshall Space Flight Center in Huntsville, Alabama **3**, has a marvellously direct and tasteless air; no one would suspect that a tutored designer had fashioned the trappings. Yet no less a man than Raymond Loewy, creator of the Coca Cola bottle, the Parker 51 pen, etc., has acted as consultant to NASA. He has changed the walls from green to gold, and has suggested that each member of the crew and his gear be identified by a colour. But, however limited his influence may thus far have been, his published sketches **4, 5** show that he is determined still to make NASA go the way of all the aircraft companies—design will be seen to smooth the guts out of everything.

Science Journal, June 1968, *Newsweek*, June 10th, 1968.

1





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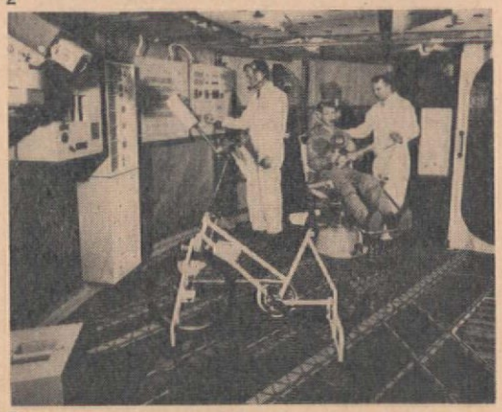

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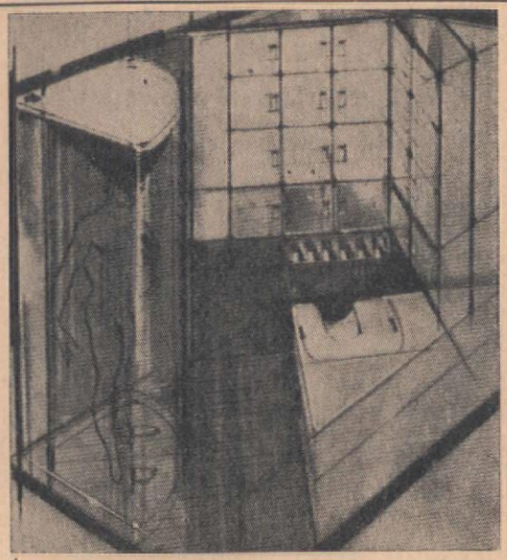

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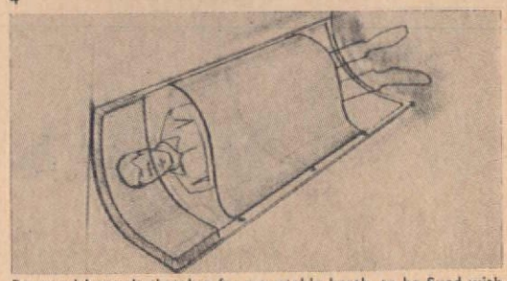
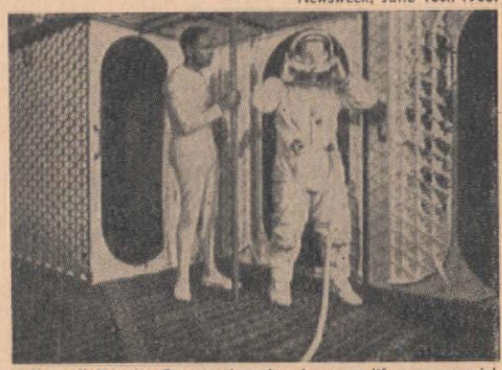


Raymond Loewy's sketches for a portable berth, to be fixed with snaps and magnets, and a bathroom with a w.c. that uses air currents to replace gravity and a 'weightless' shower in which an astronaut can bathe while water droplets circulate around him. Most washing, however, will be done with a damp cloth.

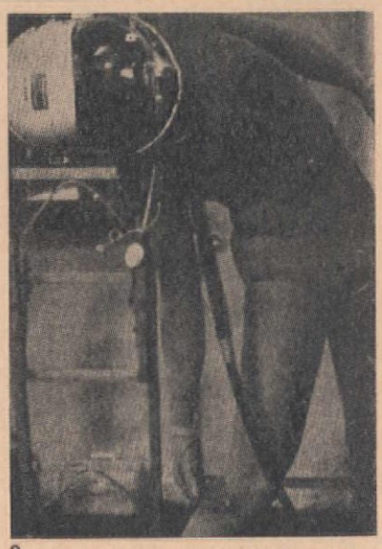
Newsweek, June 10th 1968.



McDonnell Douglas Corporation closed system life support trial, in which university students existed for 60 days on water and oxygen reclaimed from their own metabolic waste. 90–95 per cent of their urine and perspiration was recovered for drinking water, using an evaporation unit, a charcoal filter and a condenser that reclaimed moisture directly from the crew and cabin air.

Science Journal, June 1968.

1



2

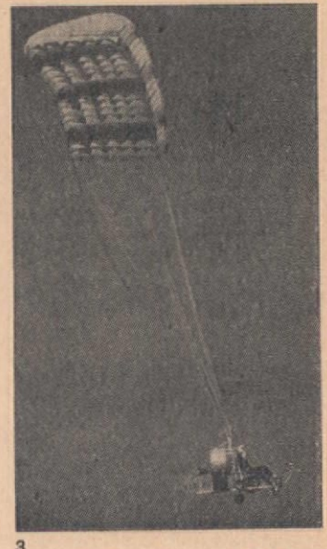
1 The Honeywell Systems and Research Division at Minneapolis, under contract to the US Navy's Aerospace Crew Equipment Laboratory, have designed a liquid cooled flight suit with automatic temperature control. The system incorporates four skin temperature sensors, fluid control modules and a bias control (for set point adjustment), all mounted on a string undergarment. An independent refrigeration unit supplies cold, constant temperature fluid to the bias control, sensors and control modules. An external heating unit provides warmth when the pilot's physical activity is too low to supply sufficient natural body heat.

Tests have shown that skin temperature can be kept almost constant, at rest or at various levels of activity.

Science Journal August 1968

2 A new type of space suit, a Space Activity Suit (SAS) developed by Dr Paul Webb, which is neither pressurized nor provided with a cooling system. It consists simply of an extremely tough but porous elastic leotard that provides mechanical support for the body in a vacuum, allowing it to sweat as usual and to carry out a far greater range of movements than the cumbersome conventional suit. *New Scientist*, May 23rd, 1968.

3 A parafoil, designed by Domina Jalbert, which unfolds like a parachute, but which permits a far greater degree of sensitive handling. The pilot can travel at 25 m.p.h., turn the superkite like an aeroplane and brake to zero for a soft landing. A cargo carrying version is designed to steer itself onto a radio beacon and land accurately in any visibility. *Life* September 16 1968



3

Design and Process

David Usborne

A random sampling of current architectural journalism is almost bound to produce one of these words—flexibility, obsolescence, growth, change, mobility, response, control, transience, indeterminacy. A similar sampling of advanced architectural graphics will reveal the visual equivalents of these concepts in exploded axonometrics, comic-strip frames illustrating growth processes, critical path networks, the frequent use of tower cranes as symbolic images of impermanence and everywhere the ubiquitous arrow indicating some variety of movement **1**.

Something is obviously preoccupying the collective architectural mind. What is it? In a word: Time. It is as though architects, by tradition concerned only with the three dimensions of space, had suddenly become aware of the fourth dimension of time. This preoccupation with four-dimensional problems is evident at all levels of architectural opinion from the academic and scientific to the frankly visionary. Though Peter Cowan, Peter Cook and Dr John Weston might not feel that they have much in common, this factor links the work of the Joint Unit for Planning Research on growth and change, and the Building Research Station's developments on operational Bills of Quantities with Archigram's proposals for a flexible and responsive physical environment.

'Space-Time' has a familiar sound. Sigfried Giedion and Moholy-Nagy have claimed it already. However, the situation has developed since they wrote.

It is an interesting coincidence that at almost the same time as the theorists of the design profession began talking about dynamism and expendability in architecture, the practical, scientific men began serious study of the way in which buildings change and deteriorate. *The life experience of seventeen railway stations*, a report published in 1917 by the A.S.C.E., is, according to Peter Cowan, the earliest reference to the physical deterioration of buildings.

Giedion's *Mechanisation Takes Command* is more interesting than *Space, Time and Architecture* as a development of the space-time concept precisely because it concentrates on the scientific research into motion by Marrey **3**, Muybridge and Gilbreth and the early developments of the automatic assembly line by Oliver Evans, J. G. Bodmer and Henry Ford.

It is Moholy-Nagy, however, who in *Vision in Motion* actually makes explicit the connection between the theory of space-time and the activities of production planning and military strategy. There are obvious echoes in this of the Futurist adulation of the engineer as the man of the future. But Moholy-Nagy identifies a new sort of engineer, the production engineer, who is concerned less with *what* is produced than with *how* the production-line is set up and *how* it operates; a man for whom the problem of object and process are indistinguishable. Moholy-Nagy was convinced that in the kinetic, time-spatial world of the future, all problems would be of this nature.

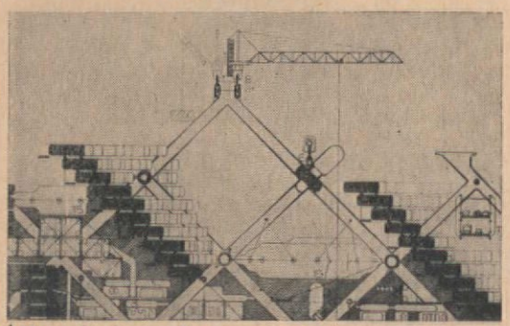
As a designer he was interested in how such complex situations could be represented visually and he suggests a whole battery of techniques including phantom x-rays, photomontage and stroboscopic motion projection, which might be used. What he did not foresee was that with the development of computers the planning and control of four-dimensional processes would become a mathematical rather than a visual discipline **4**.

The history of the last 20 years had proved Giedion and Moholy Nagy prophetic. It is becoming increasingly clear that we need to stop thinking about the future of the environment in terms of static, physical plant and to start thinking of it in dynamic and strategic terms as a process of continuous change.

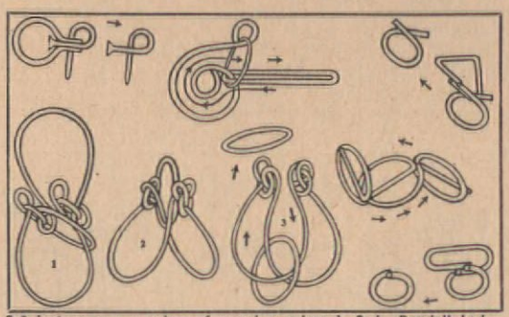
This may be more difficult for architects than they suspect. A training which concentrates on the three-dimensional object as the proper end of all design activity is liable to render designers incapable of understanding—let alone of organizing—four-dimensional processes.

It seems likely that the failure of architects effectively to control the development of industrialized building in this country is partly a result of their reluctance to get involved with the process problems of production and assembly. The comprehensive design of a building system *must* involve the partial rethinking of the processes of the production of components and of their assembly into a building. To leave the production and assembly problems to the process experts is, in effect, to invite them to design the building. What is wanted is creative cooperation between the designer and the production controllers, system analysts, O & P men who will work with him. This can only happen if the former understands the disciplines and the language of the latter. Although most schools of architecture recognize the need for students to learn enough building science, structural engineering and building economics, to enable them to evaluate the contribution of the specialists, few of them have, as yet, recognized the centrality of the process problems or the need to train students to understand them.

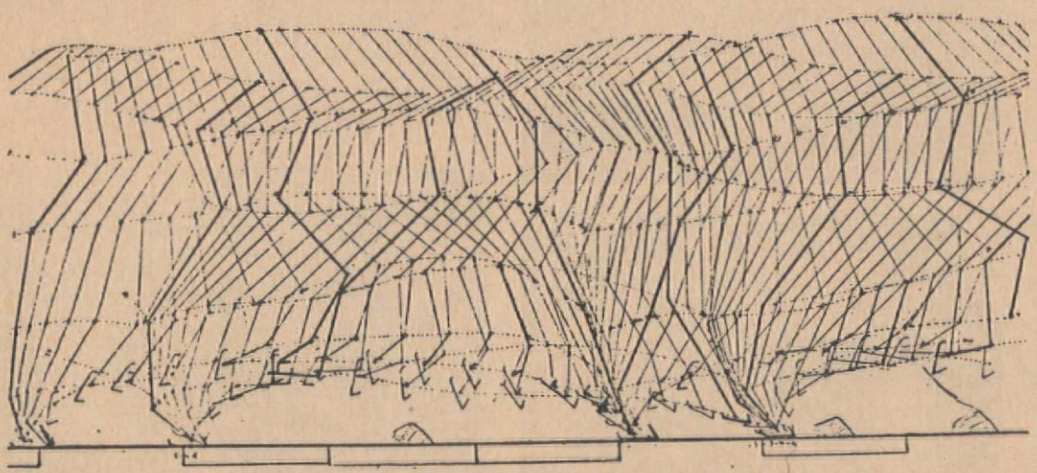
Designers have an advantage in this situation which is not possessed by the process experts. Because their training encourages a synoptic and abstract approach to problems they are better able to grasp the principles of any subject and to proceed from these to a detailed application. The process subjects are as yet too new for any attempt to have been made to see them as a unified group. This is why Giedion and Moholy-Nagy's books are so important. They are like rough, preliminary maps of a new country. But there is a pressing need for the maps to be redrawn to include the information and techniques developed in the rapidly developing fields of operational research, computer technology, production control, space research, etc. Designers seem to be in the best position to do this. Unless they do it, it seems unlikely that they will have much to offer towards the planning and coordination of the environment of the future.



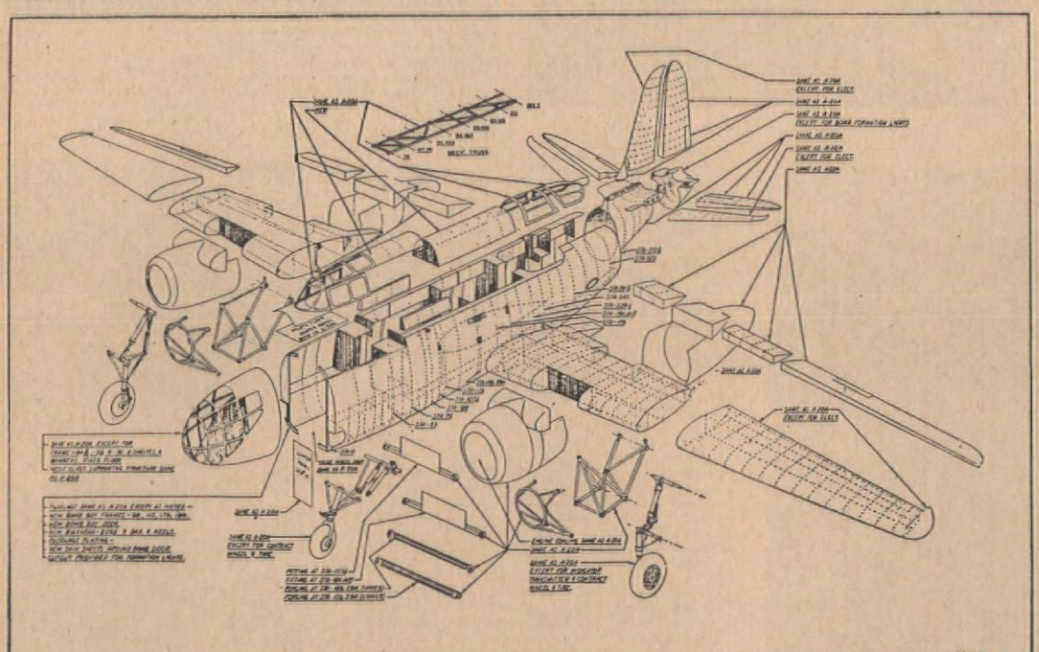
1 Plug-in City Section. The iconography of dynamism. *Archigram.*



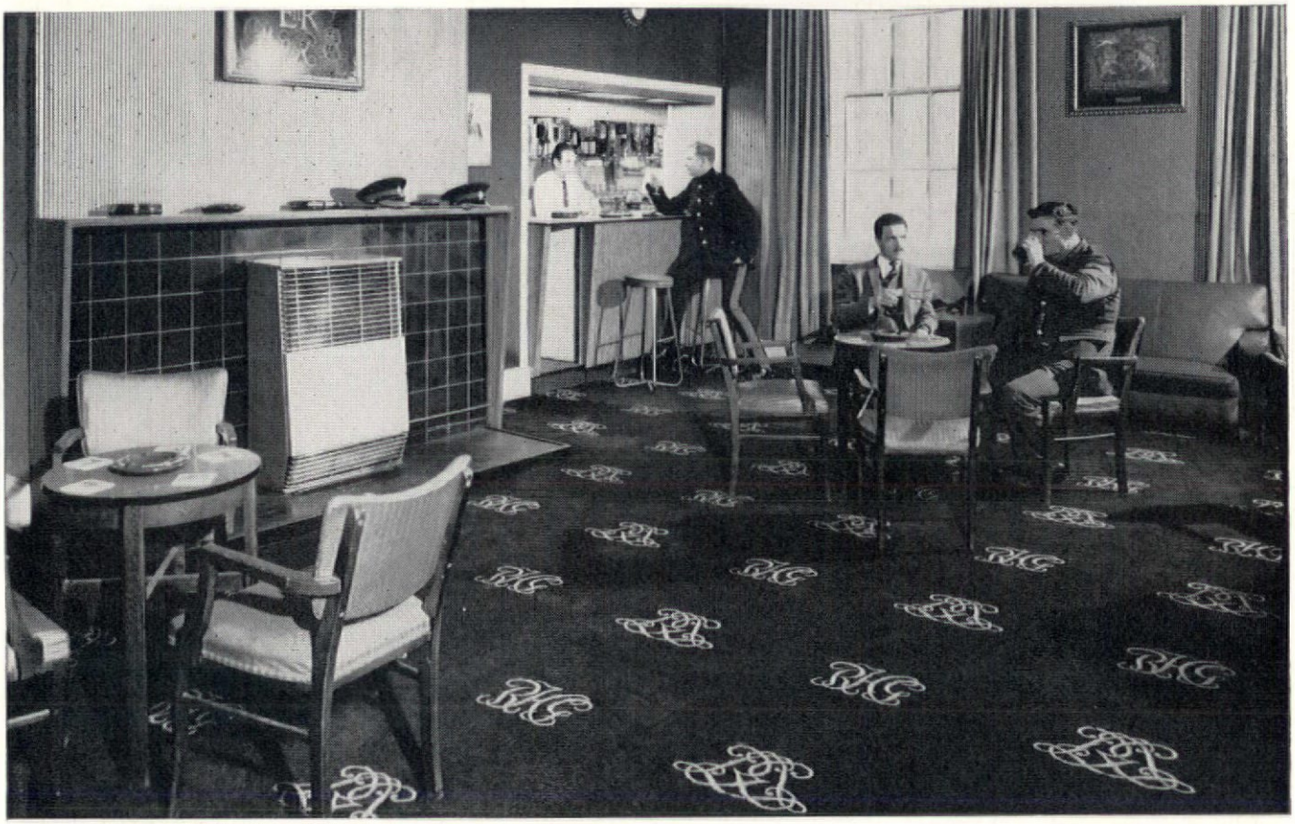
2 Solutions to a number of metal puzzles; J. & L. Randall Ltd. These could be prototypes for educational exercises.



3 Record of the movement of a galloping horse. E. J. Marrey. *Du mouvement dans les fonctions de le vie* Pairs 1868.



4 Aircraft Production Illustration. Preliminary production breakdown drawing of a D.B.7 B., George Tharratt. *Aircraft Production Illustration*. N.Y. 1948. Moholy-Nagy discusses this attempt to illustrate the four-dimensional problems of assembly in *Vision in Motion*.



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81

MFEI

GLC housing, London

A. & P. Smithson

Three small sites in the area of Robin Hood Lane, Tower Hamlets, became available for redevelopment by the London County Council in 1963.

Later, the Greater London Council decided to speed up the clearance and demolition of a large group of obsolescent tenements—Grosvenor Buildings—on one of the adjacent sites. The original brief was withdrawn and a new site and brief to Parker Morris standards given the architects in the spring of 1966.

On the east of the enlarged site is the London Motorway Box, running in a cutting as it emerges from under the Thames, in the old and new Blackwall Tunnels. On the west is Cotton Street—the main surface feeder-road to the Isle of Dogs and to the north the East India Dock Road, now six lanes wide.

The housing site at Robin Hood Lane is thus exposed to traffic on three sides. The site has therefore been organized to create a 'stress-free' central zone, protected from the noise and pressures of the surrounding roads by the buildings themselves. In this stress-free zone there is no vehicular movement whatever. There is a quiet, green heart which all dwellings share and overlook.

On the fourth side, the old Poplar High Street is relatively free of traffic movement, and building development to the south is low.

For the wall-like arrangement of the buildings a special dwelling-type was developed, in which the access decks and the living rooms are on the 'outside' nearest the noise, and the bedrooms and dining-kitchens on the 'inside', away from the noise.

However the GLC Housing Committee insisted quite reasonably that the sound level in the living-rooms with windows partly open should be below that recommended in the Wilson Report which gives permissible noise levels in the living-rooms and bedrooms of dwellings in busy urban areas as Day: 50 dBA; Night 35 dBA. The GLC's Scientific Officer carried out a noise survey on the roads around the site. From these measurements the worst '10 per cent noise level' anywhere on the face of the proposed new buildings (assuming no protection other than distance between buildings and road) was, simply expressed: 70–75 dBA during the day. Wilson Committee level required inside: 50 dBA. 'A partly open window' gives a reduction of 10–15 dBA. The reduction from planting but not walls, could be assumed to be 5 dBA. The final required reduction was thus 5 dBA.

This was bettered by having an acoustic absorbent lining at the window head; a projecting sill to deflect direct sound from entering the horizontal centre pivot windows in their checked open position; a system of projecting mullions to protect the side of the same windows and to prevent sound travelling across the façades and from dwelling to dwelling; and a 10ft high 'acoustic wall', canted over at the top to reflect noise back into the traffic.

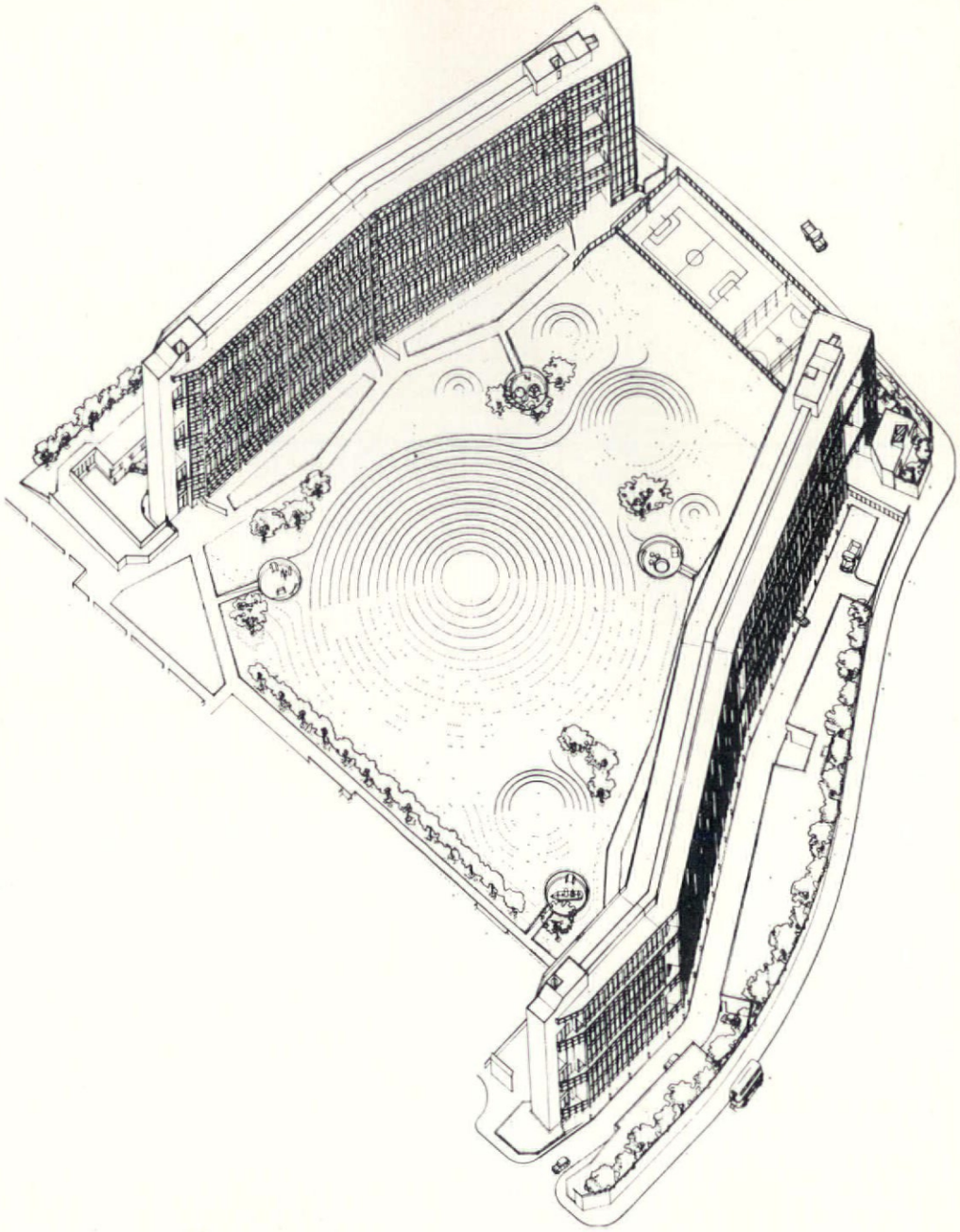
The site was zoned by the GLC planners for residential use at a density of 136 persons to the acre. There is an 'open-space deficiency' in the area, and the large definable open space of the layout is part of the planning requirement to provide two-thirds of an acre per thousand persons out of residential land.

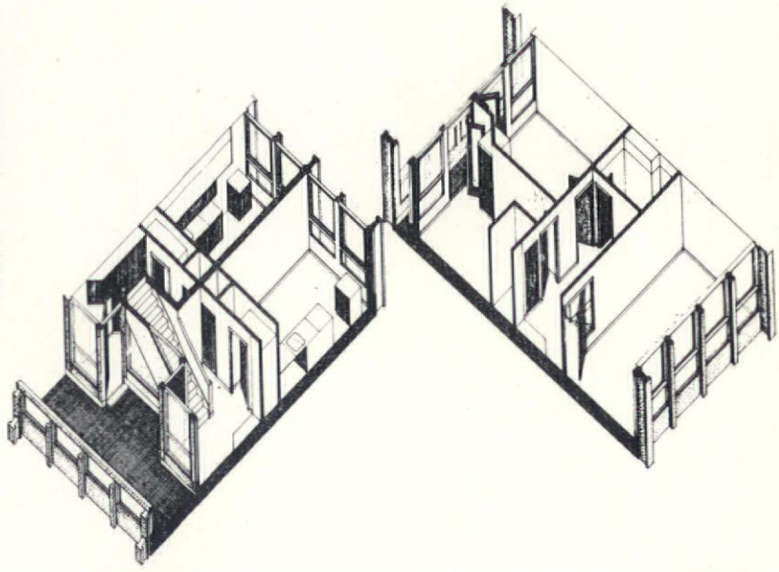
An existing market and shopping area at Lansbury (built as part of the 1951 'Festival of Britain' exhibition) is to be found about two hundred yards westward along the East India Dock Road, and a parade of eleven shops in the Poplar High Street within a few yards of the southern boundary of the site. To these existing facilities and to the local bus connections the main flows of people from the site are directed.

For the first stage of the development, the calculated gross area for housing was 4·922 acres which at a density of 141·8 p.p.a. gives a site population of 698.

About 70 per cent of the dwellings have garages, the remainder will be added as demand builds up by completing the part shown in the drawings as a hard-play area. There is parking for visitors and guests.

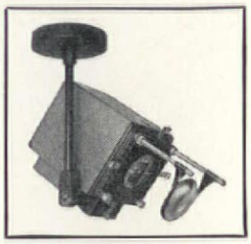
All parking, servicing, storage, etc., takes place in a 'moat' below garden level, but still in the open air and therefore naturally ventilated and lit—using an idea first developed by the Smithson's for their Mehringplatz project in 1962.





Above: *Axonometric of general lay-out, Stage 1*
Large central green space protected by the buildings, the buildings themselves protected by an 'acoustic wall' at the pavement's edge with trees behind, and specially designed windows and mullions. Servicing and parking take place in a 'moat' between the buildings and the roads.

Right: *Axonometric of a three-person dwelling*
Kitchen at same level as access deck, living-room on noisy side allows for two zones of use as it is long and thin and lit from the long side. Façade mullions are part of the scheme's protection against noise.



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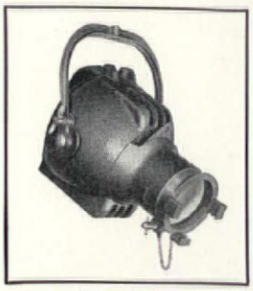

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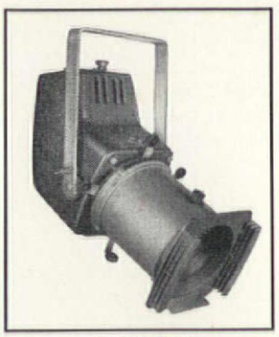
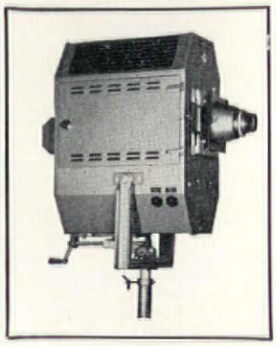


1000 WATT
Patt 263 Profile Spot



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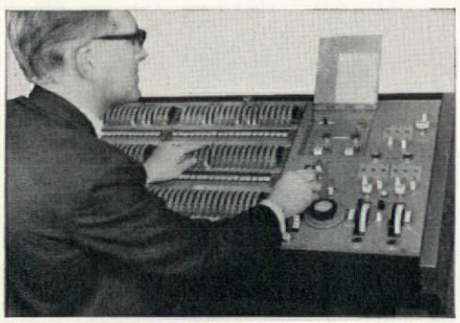
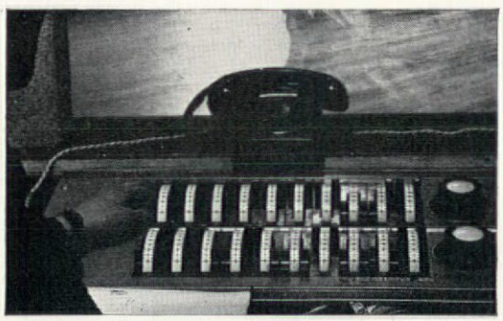
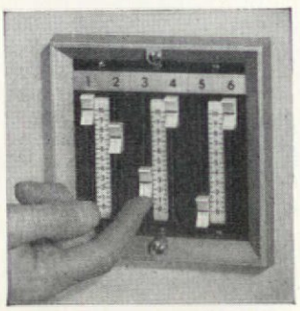


The latest Strand control is the IDM (Instant Dimmer Memory) System which is now going into the London Coliseum. This can provide 250 presets with recording and playback facilities on all channels.



An economic 2-preset system, as this one supplied to a Northern Variety Club, has 20 channel levers and is installed at the rear of the auditorium with a clear view of the stage.

Strand make all sizes of preset controls. The Ten/20 shown here is portable with the variable load thyristor dimmers built in. No separate dimmer room is needed.



Strand also produce miniaturised electronic controls which can give infinite regulation of light intensities required for room lighting in restaurants, clubs and similar architectural lighting situations.

The Strand SP Control system provides control facilities for up to 80 dimmer channels. Illustrated is one for 60 dimmer channels installed for theatre use and providing 3 presets and push button switching to each channel.

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Structural anthropology,
Claude Lévi-Strauss, Allen Lane. The Penguin Press. 50s.
The very nature of those structuralist studies which form the theme of this book gives it an interest to those who work outside the field of social anthropology and offers an excuse for the amateur reviewer; for one of the claims that Lévi-Strauss makes for this type of study is that it tends to break down the traditional barriers between different disciplines. In fact, not only are the techniques that he uses themselves borrowed from other disciplines—particularly those of structural linguistics and communication theory; but they are applied by him to an enormously wide range of cultural phenomena, from mythology and language, to cooking and fashion, besides his own special field of primitive kinship systems.

At the obvious risk of over simplification, one might say that Lévi-Strauss is concerned with the discovery of the universal laws which underlie all cultural forms. He believes that it is possible to make formal and abstract models of them which are both 'empty' (in the sense that they penetrate beneath their ideological justifications) and explanatory (in the sense that they articulate the laws of the human mind). He tries to develop a method of analysing affective phenomena such as myth and art which avoids the twin dangers of destroying what is being studied, and of becoming absorbed by it.

In some ways his thought resembles that of the idealist philosophers. There is, in all he says, an undercurrent of dissent from the empiricism and inductivism which forms the basis of much modern scientistic thinking. He does not believe that it is possible to understand culture in terms of a naturalism which would logically end up in a theory of stimulus/response; to him the way in which the mind processes the data of experience is as important as the data themselves. His work is an example of the way modern thought, using impeccably scientific method, has turned the tables on the mechanistic thought of the nineteenth century, and it has close affiliations with the work of Cassirer, Morris and Kohler in their respective fields.

The interest that this book holds for architectural theory lies chiefly in its thesis that all cultural systems are ways of communicating ideas on a symbolic level, including systems normally thought of as technological and functional and subject to a behaviouristic explanation. This view explains, if it hardly justifies, the cry of 'Levistrology' which comes from his cutico, architectural or otherwise. Some of this criticism seems to be based on a misunderstanding of his use of formal models. This formalism is mathematical and is concerned with relations; it is not identical with artistic formalism which is a mixture of form *and* content—a system of 'norms' whose aim is to preserve a cultural system rather than to explain it. (Lévi-Strauss makes the point, however, that any study of a cultural system must take account of the conscious 'norms' by which that culture 'explains' its own system.)

The attitude of Lévi-Strauss towards form seems to be at the root of much of the enmity that he arouses in empiricist circles. The notion of form implies a capacity for, and an enjoyment in, abstraction, the reality and usefulness of which is denied because it exists on a different level from that of common-sense experience. He assumes that it is not only legitimate to make abstract models of cultural phenomena, but that the models themselves have formed part of the mental equipment of the members of the culture being studied; that the discovery of patterns is not just an idle and enjoyable game, but an investigation of the secret source of the random and affective phenomena that culture presents to the superficial observer.

It is true that Lévi-Strauss does not, either in this book or elsewhere, give us a fully worked out theory. His thought tends to be brilliant and fragmentary—to suggest lines of study rather than to pursue them; and its occasional obscurity, though often the result of the technical nature of the material, sometimes seems to be gratuitous. But he possesses the rare value of opening new and exciting avenues of thought, and he illuminates with a sharp ray the available mass of anthropological data. *Alan Colquhoun*

The great ages of world architecture
Studio Vista. 1968. 25s. *each.*
Greek, R. L. Scranton; Roman, F. E. Brown; Medieval, H. Saalman; Pre-Columbian, D. Robertson; Gothic, R. Branner; Renaissance, B. Lowry; Western Islamic, J. D. Hoag; Chinese and Indian, N. I. Wu; Japanese, W. Alex; Baroque and Rococo, H. A. Millon; Modern, V. Scully; Early Christian and Byzantine, W. L. Macdonald.
This series first appeared in Charing Cross Road five years ago, published in hardback in America. It has now been reissued with shiny white paper covers. Each book has a standard format: 40 pages of text, 64 pages of illustrations in gravure on slightly cream paper, a bibliography and index.

The coverage, both of the series and of each Age, and the quality of the texts, is uneven, some of the essays reading as though written for other occasions and then compressed or expanded into the standard 10,000 words. Each book suffers from having had to make a *gestalt* out of material which, like the architecture of Islam, may have had a discontinuous or random development.

Scully's 'Modern', perhaps necessarily the most contentious, must give, to someone unaware in advance of his preoccupations, a very curious notion of what modern architecture might be about. The visionary, revolutionary and technical surge of the twenties is played down to stress the continuity of cave, megaron and temple forms and 'acts in the landscape' in the work of Wright and later Le Corbusier, and buildings with frames will not really fit into this framework.

The Indian Age, paired with Chinese, while riveting, concentrates entirely on the development of the Hindu *chaitya* and *stupa*, excluding all secular and eastern Islamic buildings.

Because the series is American, it is good to see some conventional European art-history patterns upset (the importance of English Gothic is lessened by continual cross-referencing to contemporary French work, and the Cathedral at Palma, Majorca included), and subjects like the Pre-Columbian urbanism of central and south America included. But, because of the rigid categories of the Great Ages, the Mesopotamian, Egyptian and any other pre-Greek civilizations are missing.

There is no other series available, though, which allows one to choose thus among The Great Ages as if they were expensive (25s *each*) chocolates.
Christopher Woodward

Prince Albert and Victorian taste
Winslow Ames, Chapman & Hall, 84s.
Mr Ames sets himself the mammoth task of assessing Prince Albert's influence on the taste, the architecture, the artefacts and the art education of his own time, and indeed on the remainder of his wife's reign. His life spanned the period known to Victorian historians as High Victorian, and Mr Ames analyses the influences which went to create taste before the Prince arrived, and how the Prince influenced the taste of the new rising middle classes—his influence on the established aristocracy was less immediate and smaller. Not everyone will agree with the division of taste into Lusso, Grec, and Olden Style in 1840, or into Donnish, Parvenu and Sincere after 1861, but it is a brave and entertaining attempt to reduce English taste to some sort of system.

The Prince's effect on the Royal Family's own collections and on the Royal Household is better known and easier to summarize, though even Mr Ames does not give him enough credit for the rescue of George IV's fine furniture and fittings from the Brighton Pavilion. His own purchases of important early Italian pictures and his organization of the existing royal collections are well described, as are his attempts, sometimes frustrated, to obtain important works of art for the nation.

The Queen and the Prince were of course, responsible for more royal residences than any other sovereigns, and the building of Osborne and Balmoral, and the extensions and alterations to Buckingham Palace and Windsor are described in detail, though the division of responsibility between royal clients, parliamentary commissioners, and the various architects and builders, could be clearer.

The book is generously illustrated, and an illuminating study of one aspect of Prince Albert's life; however, it only underlines the need for a comprehensive up-to-date biography. *Hermione Hobhouse*

Publications Received

Illustrated international architecture. 2nd volume
D. van der Kellen and H. Blankenstijn. 576 *pp. Ten Hagen NV, Den Haag.*

Team 10 Primer
Ed. Alison Smithson. 112 *pp. Studio Vista Ltd., London, N.*19. 45s.

American building—material and techniques from the colonial settlements to the present
Carl W. Condit. Ed. Daniel J Boorstin. 329 *pp. The University of Chicago Press, London, WC*1. 90s. ($10.00).

1868–1968. Architecture in California
David Gebhard and Harriette von Breton. Art Galleries University of California, USA.

100 years of campus architecture
Allen S. Weller. 62 *pp. University of Illinois Press, Urbana, Ill.* $2.75.

Coste d'Italia dal Gargana al Tevere
Marcello Colitti. Ente Nazionale Idrocarburi, Rome.

Architettura dei Giardini
Francesco Fariello. 226 *pp. Edizioni dell'Steneo, Rome.*

Gates of Veneto
John Preece and Mario Callegari. John Baker Publishers Ltd., London. 45s.

Ipotesi urbanistiche
Prof Ing Corrada Beguinot. 308 *pp. Fiorentino Editore.*

Regional development policy—a case study of Venezeula
John Friedmann. 279 *pp. M.I.T. Press, London.* 80s.

Moray Firth—a plan for growth
The Jack Holmes Planning Group. 167 *pp. Highland and Islands Development Board, Inverness.* 37s. 6*d.*

Redditch development corporation new town—town centre
Prepared and published by Redditch Development Corporation. Booklet 16 *pp.*

University of Stirling development plan report 1968
Robert-Matthew, Johnson Marshall & Partners, et al. *University of Stirling Ltd.* 2 *gns.*

Homes, towns and traffic
John Tetlow and Anthony Goss. 272 *pp. Faber & Faber, London.* 50s.

Finance and roads
British Road Federation, Booklet 12*pp.* 5s.

New problems in school design. Comprehensive schools from existing buildings. (Bulletin 40)
Dept. of Education and Science. Booklet, 139 *pp. H.M.S.O.* 16s. 0*d.*

Note sula Progettazione Scolastica
Mauro Mugnai and Prof. Guiseppe Gori. 128 *pp. Forma Technica, Florence.*

The building industry and the public client
Proceedings of Conference organized by E.D.C. March 21*st.* 1968. *Booklet,* 24 *pp. National Economic Development Office, London.*

Technical documentation for the building industry
Ed. Piercet Piggot and Lindsay N. Johnston. 306 *pp. An Foras Forbathateoranta, Dublin.* 21s.

BRS annual report for 1967
M.O.P.B.W. Research Station, Intro. R. J. Mellish. Booklet 45 *pp. H.M.S.O. London.* 11s.

Metric house shells—technical supplement
Architectural Div. of NBA—R. C. Purdew and J. Bartlett. Booklet, 52 *pp. National Building Agency, London, WC2.*

Structure systems
Heinrich Engel. 280 *pp. Iliffe Books Ltd., London,* 115s.

Concrete Society—annual report July 66-Dec. 67
44 *pp. The Concrete Society Ltd., London, SW*1.

CIRIA metric conversion factors
Booklet, 12 *pp. Construction Industry Research & Information Association, London, SW*1.

Drawing as a means to architecture
William Kirby Lockhard. 96 *pp. Reinhold, London.* £4 13s. 0*d.*

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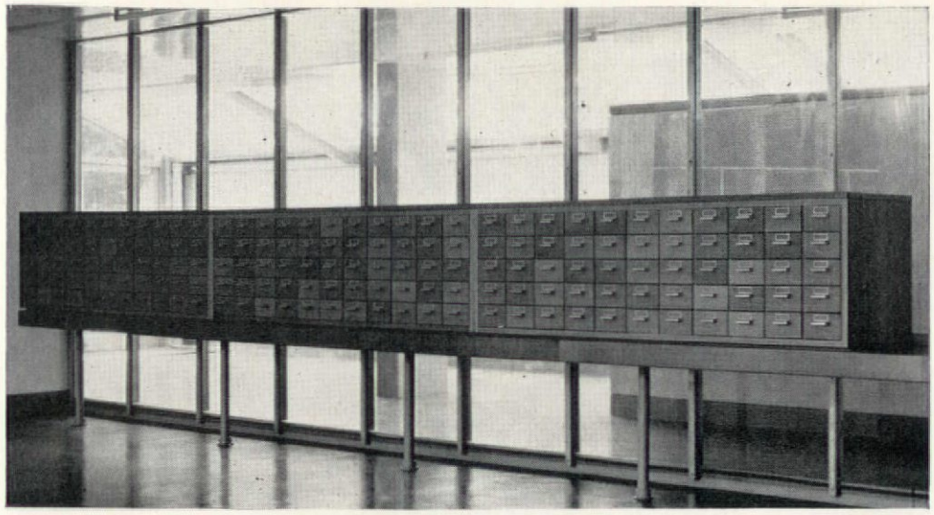

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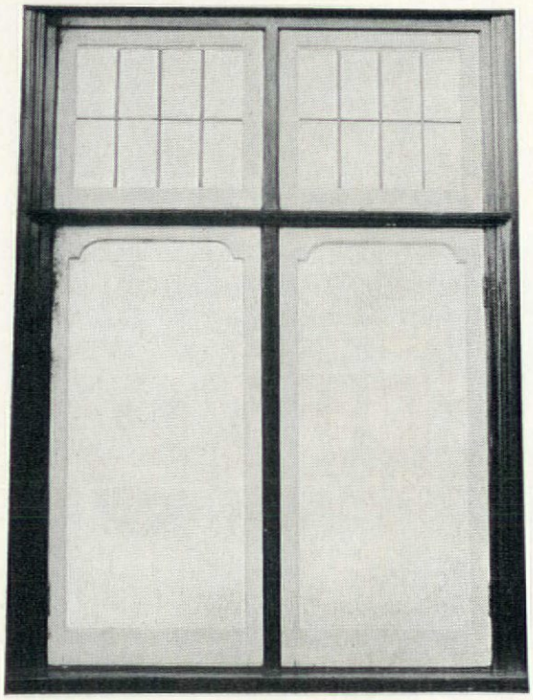

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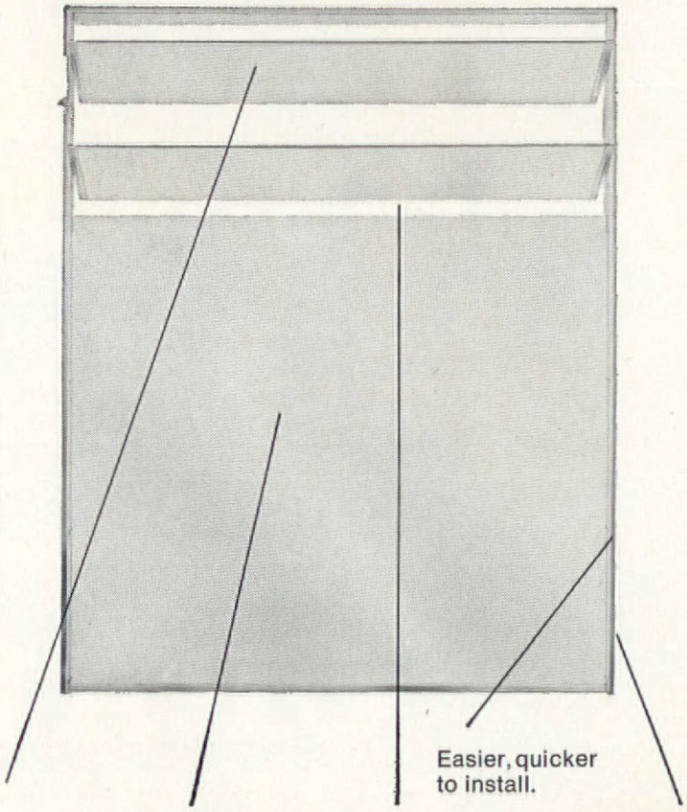

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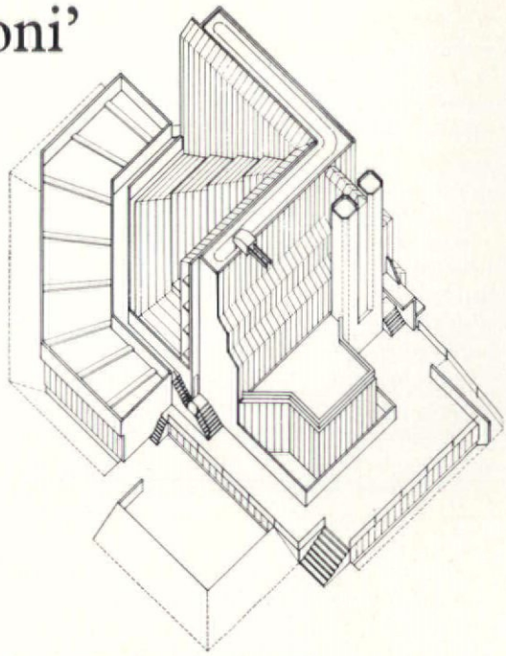
Stirling 'Dimostrationi'

Alvin Boyarsky

Main approach to the Engineering Laboratory, Leicester University



Axonometric of the History Faculty, Cambridge

Yesterday's angry young man is notoriously today's recipient of honours. Crystallizing and giving form to the values and aspirations of a radical post-war generation, James Stirling is universally acclaimed as the massive talent. Not unexpectedly, he has received a mixed reaction from his fellow countrymen.

The establishment, the institutional client and the general public, although addressed directly and courteously, remain uneasily aware of the detachment and ambiguity of meaning with which their every-day activities may have been interpreted.

In a profession today more or less officially committed to Welfare State enthusiasms, the questions posed by the stern, self-righteous defenders of the faith remain. Has this rebellious agitator a programme, a cause, a message for society at large? Where are the ideals, the contributions to efficiency, technique, standardization and teamwork? Is this the raw cult of success, the familiar dash to the top, the pursuit of headlines, a wasted talent misguidedly constructing monuments to itself, playing sensationally upon the emotions of the public and knowingly misleading the young? Is Stirling a man apart, squandering his boundless energies on some uncharted journey, pursuing some private yet mysterious end, and marking his passage with totem poles?

Safely knighted and still presiding, the generation of '51 Festivalia, bankrupt and disillusioned, manfully spearheaded the cosy blanket of Mark I welfare state across the land. Anxious to escape the discomfort of ridicule in an age of all-pervasive scepticism, and observing the proletarian texture of a new force, they gratefully acquiesced. Now, enthusiastically, with their Mark IIs and IIIs, they appear to sponsor the new topologies and freewheeling articulations. They have replaced their cobblestones with concrete decks, their bollards with pipe railings, their tinted renderings with rude brick and concrete, their delicate casements with seemingly untouched wood and their veneers from Scandinavia with as-found finishes. Thus, in their own way, they have returned, they think, the empty gesture which was aimed at them without noting, alas, its irony and its moral tone.

Stirling is the prodigy and destined spokesman for a central group of peers and contemporaries. All-seeing, all-knowing, with the detachment of outsiders, appreciative of sly irony and well-aimed wit, having transformed the ponderous Germanic art historical deliberations (using the *Oeuvres Complètes* as their books) into a delicate instrument with which to revise the state of modern architecture, together they explored the beginning of the road and collectively they share the disbelief about the recent past. Viewing Stirling's recent apocalyptic constructions, each more violent than the last, with startled apprehension, they stand back, gently reproving.

Today's independently grouped *avant-garde* of London young contemporaries—some James Stirling's former students—are armed with the confidence of those assembling a cosmology for a new living city parallelling life and art, and based on a this-is-tomorrow-vision for man, machine and motion. From somewhere in the ark of space-time, and perhaps even beyond architecture itself, they look back to the knife's edge of here and now as if at the antics of some giant Lazarus, arisen from the dead, tirelessly constructing the polygonal dreams—of tubes, props, axles, discs, shafts, exposed bowels of space cast in plaster and draped in skeins of transparent netting—upon which they were nurtured, and they remain nostalgic, alert, and curious.

A seasoned and moralizing observer, Nikolaus Pevsner, while taking in the scene at the Engineering Laboratories at Leicester University, was repelled by the direction of its thrust. Unable to find an order in this dramatic, staged assembly of unexpected props, he sensed 'violent self-expression'. He took comfort in reliving the victories of his beloved pioneers where programmatic order, calm and reason prevailed against the violent expressionism and phantasies of the Poelzigs, Tauts, Mendelsohns, *et al.*, which, oddly, this building had evoked. Simply for him, alas, he concluded that the style of the 'thirties lives on—in spite of all that has intervened!

At this same illusory playground of the mind I felt curiously levitated and inclined to chuckle, as if at a carnival of opposites, a marquee of upside down signs, a montage of half-remembered episodes, where everything was somewhere else and something else. Here in this miniaturized world, where things are normal on a bias, it seemed to me that rest was perpetual motion, a step back a close-up, a shift of emphasis a scale down, and the present a flash-back and a look ahead. I leaned against a strangely oversized utilitarian snorkel above an engineering brick podium which carefully followed the example of the sewers and viaducts of a bygone era, and from which all elements rise. I then overlooked a roof not unlike that of an industrial workshop which appeared to vibrate optically like a Paolozzi grid, as if on the diagonal run of some unleashed centrifugal force which furrowed the ground and drove all elements before it. I mused at its protective membrane of ply glass, which seemed to anticipate shielding those below from exterior repercussions, and the detailed aerodynamic precautions of the projecting delta windows on a 'heavy equipment' module, designed as if to anticipate a setback necessitating the rapid exhaust of fumes. I then noted other analogous principles, such as a propped multi-level workshop, galleried and with provisions for links, and equipped for vertical and horizontal movement of heavy objects, as though expecting a high rate of obsolescence. On the other side of the specially oriented deck, below which fixed equipment, tanks and fuel are kept, is the fragmented clustered tower, as though in the process of being erected. This seemingly constructivist exhibition of carefully articulated parts and details is held together by a similar display of vertical service and selective circulation shafts, as if expressing the distinction between its staged components, delivering the hydraulic fuel from the topmost storage module and providing selective access to the command module of administration, and the rotating auditoria capsules specially air-conditioned, raked for a view and designed 'to resist impact transmission'. Glancing at its transparently airlocked spiral escape stair, and then noting the black topped rocket which was the chimney, I thought I was either at Cape Kennedy or on the Moon. Later, walking away and seeing the 10ft chimney terminal rising above the trees as though discharged and thrown clear, the switch was pulled and I realized that I had been in a timeless zone before a totem to no god and no idol, yet half way between what was and what might be, between myth and mechanism, spontaneity and discipline, naïveté and sophostication, and I marvelled at the flexibility of this installation which, while paying precise attention to the conditions and lessons of our time, was designed, perhaps, to guide an obsolete curriculum towards a lofty goal.

The wry commentator, having contem-

plated 15 years of long, tough, lonely persistence and fierce personal discipline, hidden within a laboriously constructed microcosm of detachment behind which many gates have clicked shut, and sensing a profound substratum of intensive search accompanying the sometimes deliberate, sometimes spontaneous activity, fumbles in preparing his response, and examines the intellectual processes of the man. He brushes aside the almost foolproof protective shell of elaborately contrived, double-edged, ephemeral distractions, all however necessary to the crystallized style. These include:

the inevitable impasto of succulent iconographic morsels quoted from some prestocked, well indexed, autobiographical file where the past and the observable future coincide in the present. Possessing the residual character of tuned-up fossils, fragmented and fused, always functioning in place, they are called upon amongst other things, to evoke the lasting validity of some vernacular English traditions, noting the high points, and riotously aping the clichés of an apparently still-surviving machine aesthetic, and with such elaborate nuances as the Cambridge quarter capsule, for example, which is 'really a controlled climate cushion thermostatically adapting to the weather outside', suggesting the directions to which the sophisticated technologies might be put;

the all-pervasive impious, mannerist delight in precariously undermining the structural *partis*, the organized spatial sequences, the silken metallic finishes, the cubic simplicities, the ethereal realities and delicate sensibilities of the international style, all the while nautically bombarding mercilessly the good ship behind the imagery of a much maligned generation;

a contrived irrationality fed by a false air of anti-intellectual, spontaneously intuitive, frantic improvization;

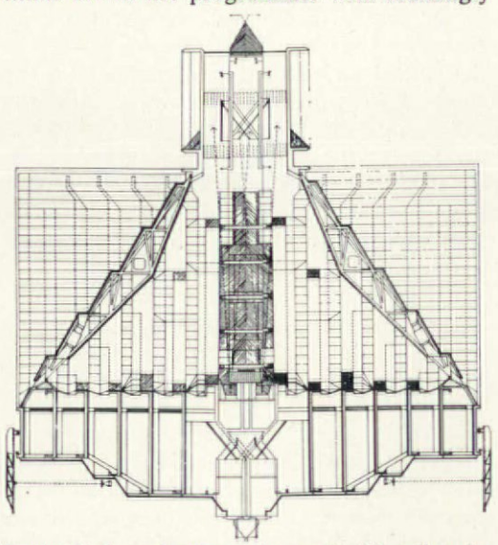
a gritty discordant, mersmerizing, chorus of sharply articulated random-seeming parts, sometimes of independently alluring attractiveness and compelling ingenuity;

a squat, cultivated ugliness and salutary inappropriateness of Victorian working-class costume for any given establishment occasion;

a seemingly heretical disdain for the craft of today's construction, and customary eye-flattering niceties of surface, but not above perfecting and selectively employing yesterday's and, perhaps, suggesting tomorrow's;

the knowing systematic omissions (though often quoted) of growth and change potentials, cybernetic capabilities, life-supporting systems, information retrieval networks, pneu, space hardware and other hip items.

One finds that beneath all this there lies a stubbornly surviving tough yet fecund kernel whose progenies possess the lean tautness of a hard-won inner logic. It is as if the typically *ad hoc* nature of the problems thrown up by an unsure society has been transformed with relish by a powerful anticipatory process of organization into archetypical answers for a less than utopian world and then uniquely adapted to their special role. Reserving the experiments for assemblage and masquing for itself, protesting all the while, a deliberate tripartite battle is fought of self-discipline reinforced by absolute and uncompromising moral views; a guerrilla-like undermining of establishments and traditions; and the prophetic substitution of new sensibilities, new attitudes, new suggestions and new models; using the painterly techniques of our time (cut and paste) and in this way new forms appear to be emerging. Sharing the melancholy belief that nature is in decline and no longer produces the ecological ambience in which great living traditions can be cultivated, it is heartening to find a man (together with a select company of his peers and contemporaries) who, knowing the odds of working in an imperfect world and with the radiant paradise beyond his grasp, is no longer perfecting forms invented to reproduce the Virgilian myth. He has removed himself from the marketplace, and using the figurations which have arisen as part of a continuum from fact to phantasy, has communicated across space and time with the great masters in an effort to continue revising the books for the here and now. No wonder that this ambiguous architecture has as much to do with art as with the customer. No wonder that his mission drives him restlessly in search across the continents, from the gardens of Kew, the waterfront of Liverpool, the moors of Yorkshire, the suburbs of Paris, the launching pads of Cape Kennedy, and the waxworks of Racine. No wonder that each carefully constructed paradigm for our world is a deliberately selected experiment, scientifically controlled, using the antiquated apparatus and flickering paternalistic spirit at hand, sometimes cynically like a Lichtenstein, sometimes whimsically like a Paolozzi. Each series of experiments have been dependent on the last. They seem inevitably to have begun with multicellular de Stijl revivals liberally sprinkled with Dickensian evocations and supported by a corresponding period research into brick and timber techniques and a private mythology of machine tool analogues. They were followed by the current series of hierarchical university faculty installations presented by such universities as Leicester, Cambridge and Oxford, as miscellaneous, multi-use *ad hoc* programmes with seemingly no relationship to any acceptable known whole. The response has been cloaked in a seemingly nineteenth-century British civil and marine engineering technology. While paying homage to lessons learnt from constructivism and research into aluminium, steel and glass sheathing assembly techniques, it is overlaid with a corresponding analogue of space-age hardware and organizational principles. More recently, at the University of St. Andrew's, a probe is now under way, perhaps for the acres of housing at Runcorn, into mass construction assembly techniques using precast concrete. So it is that the historians at Cambridge, once they have recovered from the unexpectedness of their new facility, will find that unwittingly they will become active participants in a carefully organized perception field. They will pass through a propped galleried zone of supporting cells and assembly places into a seemingly magnified and hermetically sealed timeless capsule, which represents the first major space designed by James Stirling.

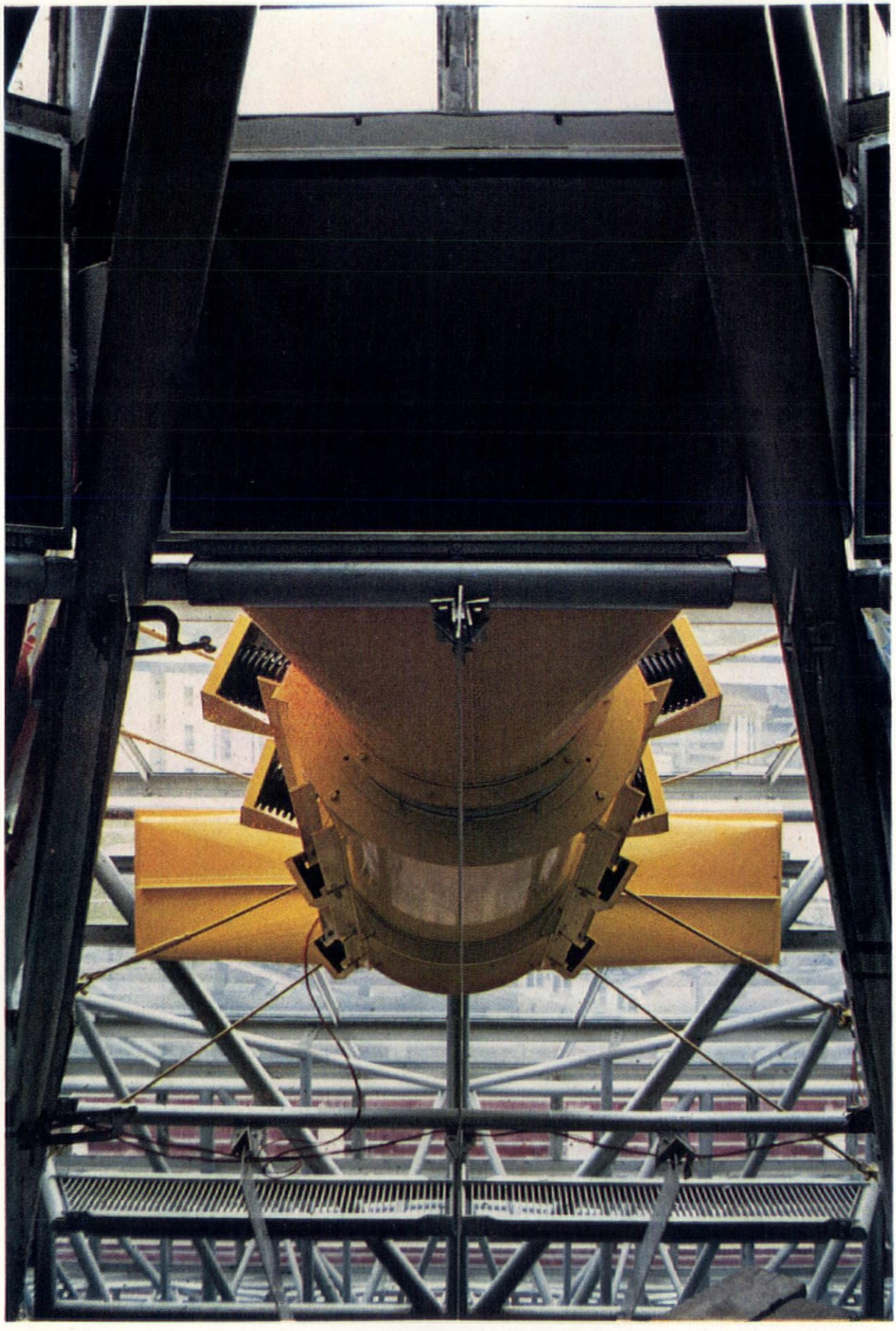


Perusing the plans and sections on the pages that follow, discerning architects will discover evidence of James Stirling's continuing research into the celebrated occasions of our time

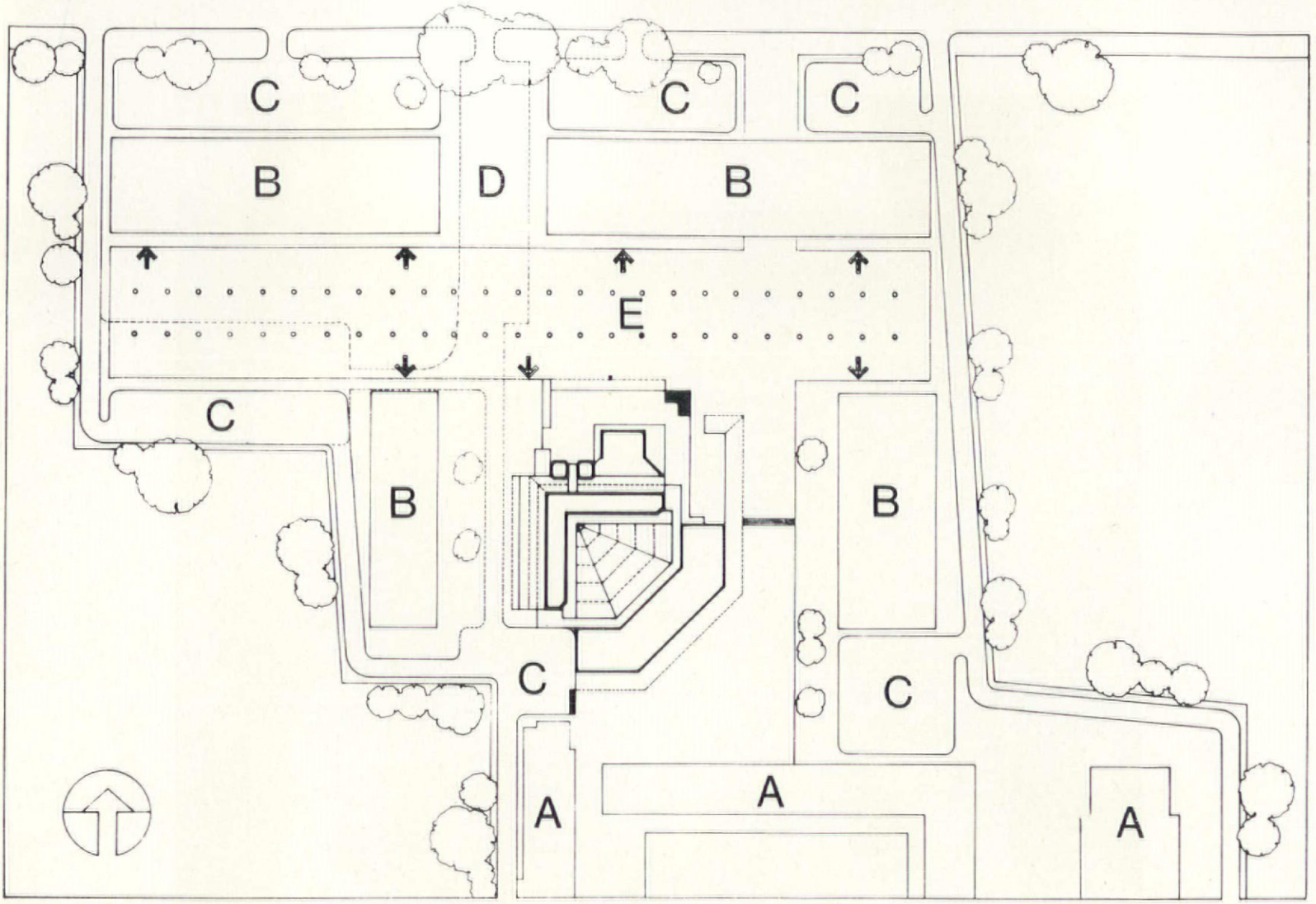
Gombrich in his essay entitled *The Renaissance conception of artistic progress* points out that artists sometimes take on a sense of duty and feel compelled to hand on the torch, making their contribution stand in the stream of history and, not immodestly, notes that this is a strain which historians set in motion. *Ghiberti introduces us most vividly into the mentality engendered by the idea of progress. The artist works like a scientist. His works exist not only for their own sake but also to demonstrate certain problem-solutions*—dimostrationi—*He creates them for the admiration of all, but principally with an eye on his fellow artists and the connoisseurs who can appreciate the ingenuity of the solution put forward.*

It is this pursuit of self-imposed problems and the corresponding skill and energy to reveal their consequences as contributions to the body of knowledge, which has made London a miniature, architectural vortex. This began with the young, post World War II generation at the LCC, in search of a programme which would provide an outlet for new concepts of a modern society in the face of world-wide erosion of ideologies and panaceas, complete abandonment by their elders, a seeming lack of purpose in the great masters of the early modern movement, and a corresponding disillusionment with the first 6 years of welfare state government in Britain (although they would not return to the jungle of capitalism). It was fed by the Independent Group's interest and research into the principles underlying the mass consumer, mobile, advancing technological example of the USA, and the invention of their 'Pop' artistic expression; the theoretical contributions of the Smithsons and their Team X followers; and the selective patronage of Leslie Martin and his entourage. It has fallen to James Stirling to express the revolutionary intentions of a new generation in the medium of hard building, and all this has provided a tradition which makes questioning not only to be expected but *du jour*, which is in its own way moving architecture forward on an international front.

History Faculty, West Road, Cambridge. James Stirling

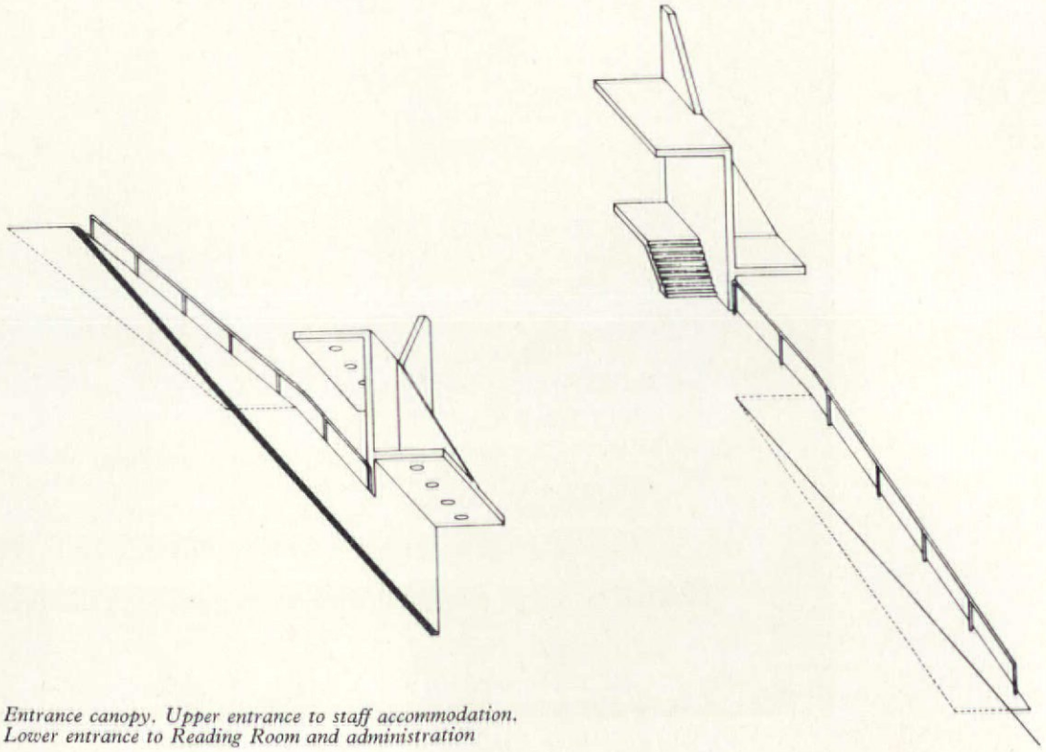


One of the extract machines hanging in the apex of the trusses which span over the Reading Room. The other machines are red and blue



Site plan

Key
A existing buildings
B future building
C car parks all entered from West Road
D temporary car park and vehicle approach
E proposed east-west pedestrian mall with tree planting



History Faculty: Cambridge University
Architect: James Stirling
Associate Partner: Michael Wilford
Structural Engineers: Felix J. Samuely & Partners
Quantity Surveyors: Monk & Dunstone
Services Engineers: R. W. Gregory & Partners
Clerk of Works: A. Cannell

Entrance canopy. Upper entrance to staff accommodation. Lower entrance to Reading Room and administration

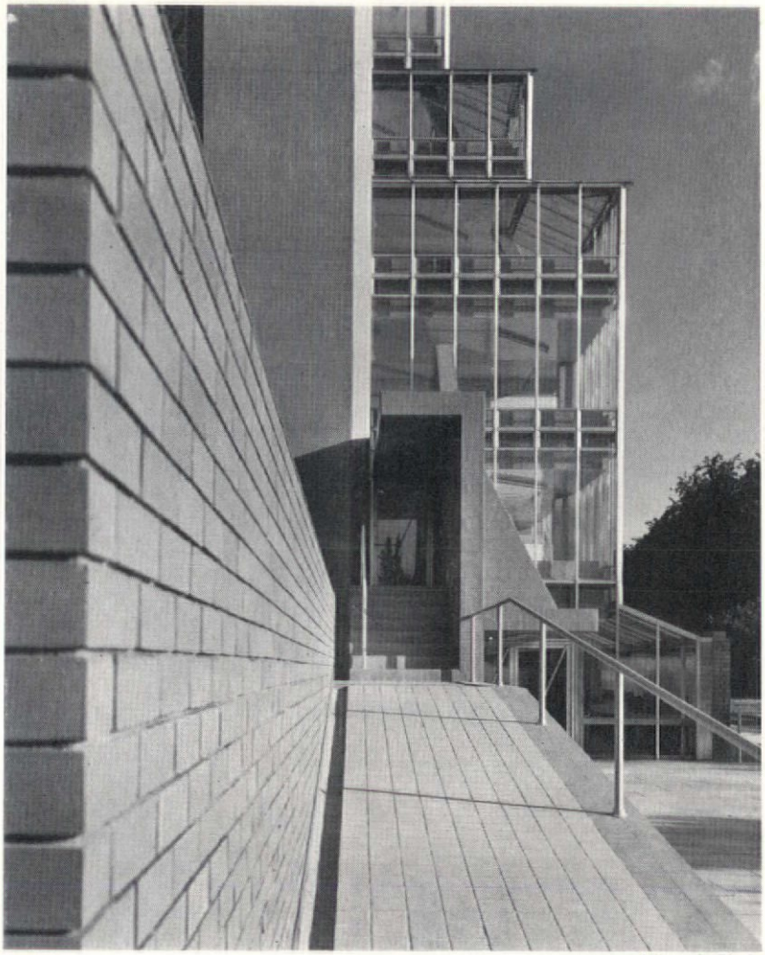


Photo: R. Einzig

The r.c. canopy over the staff entrance (off the terrace) and the main student entrance (at ground level) is faced in red/brown tiles, as are the lift and staircase towers

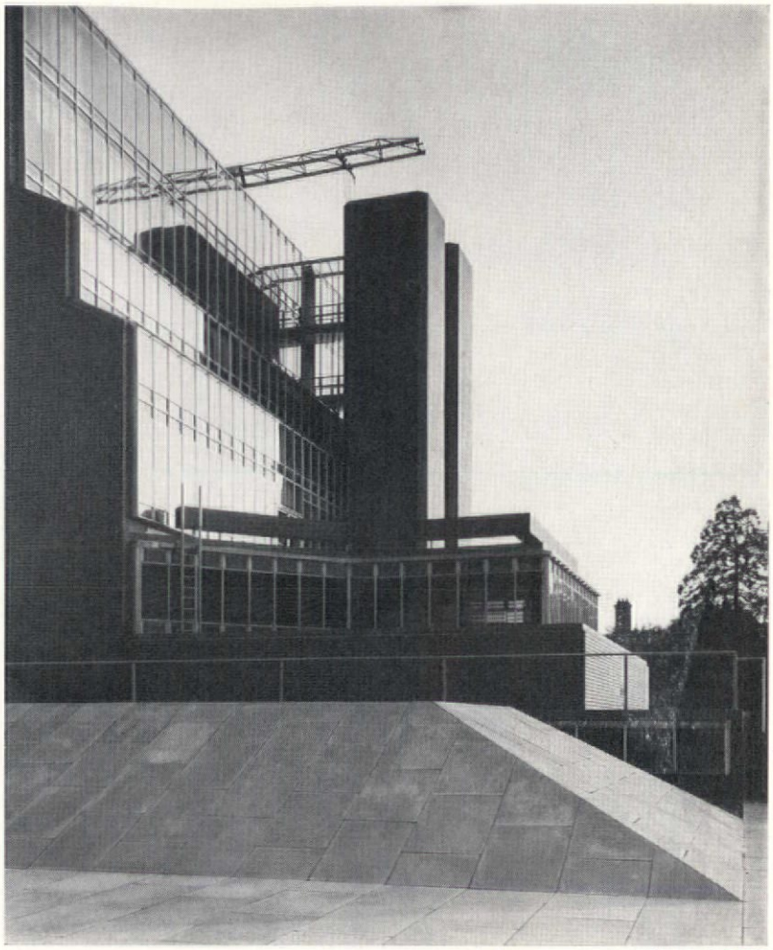
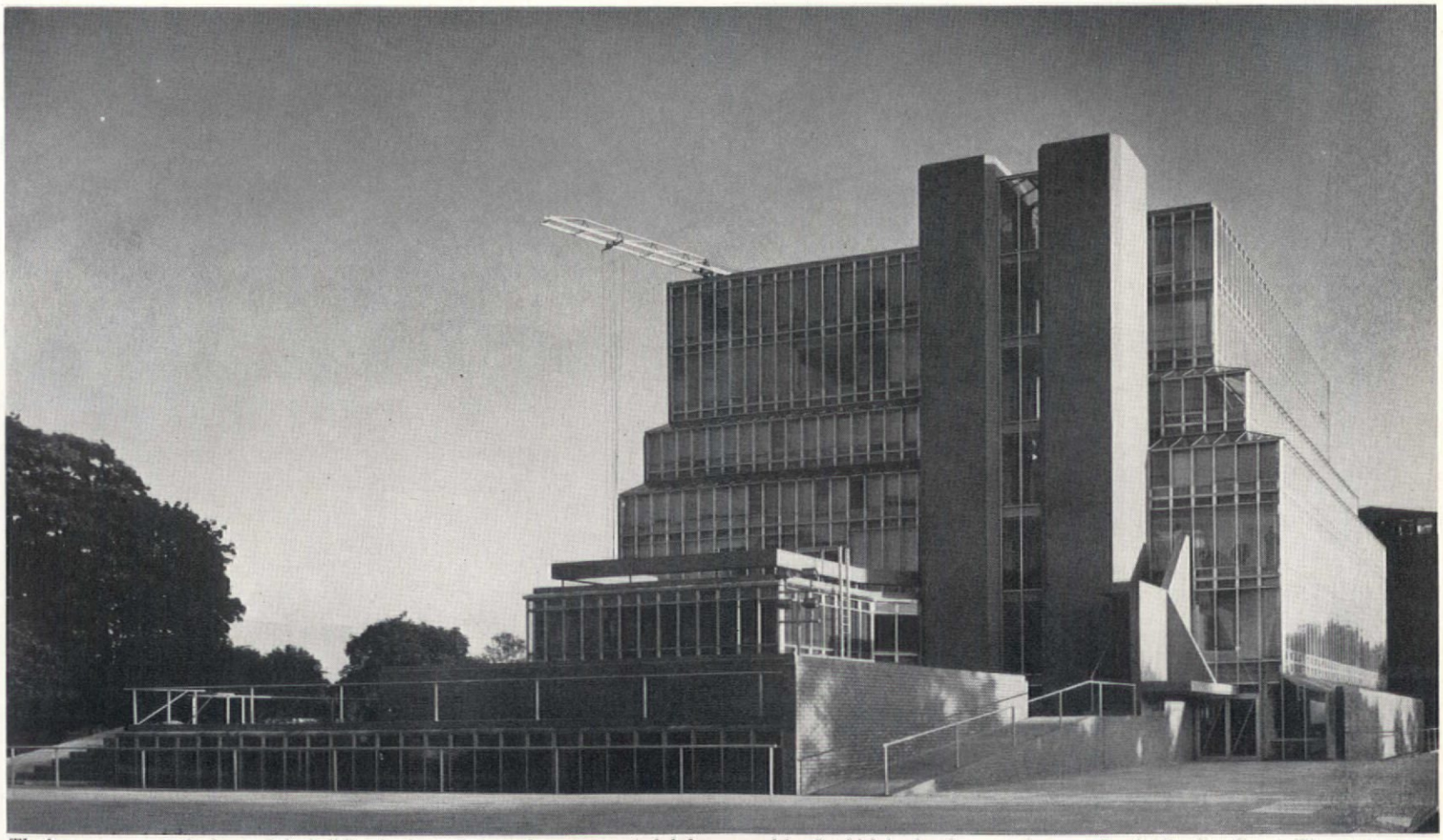


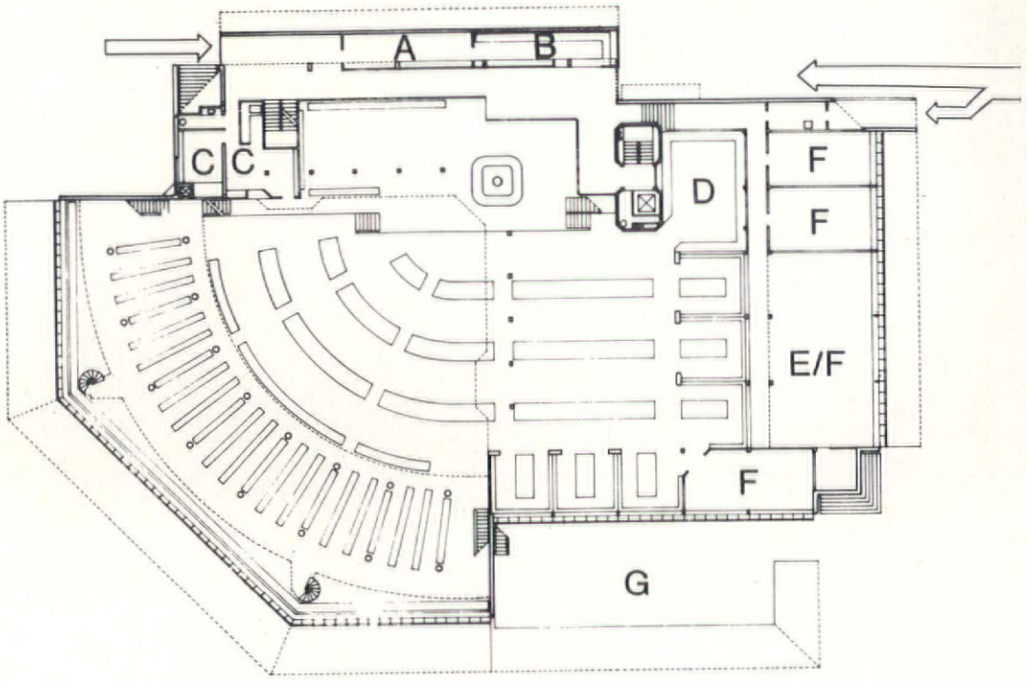
Photo: R. Einzig

The lift and staircase towers have glazed links to the upper floors and from a roof gantry a boat is suspended which can get to all parts of the glass wall surfaces



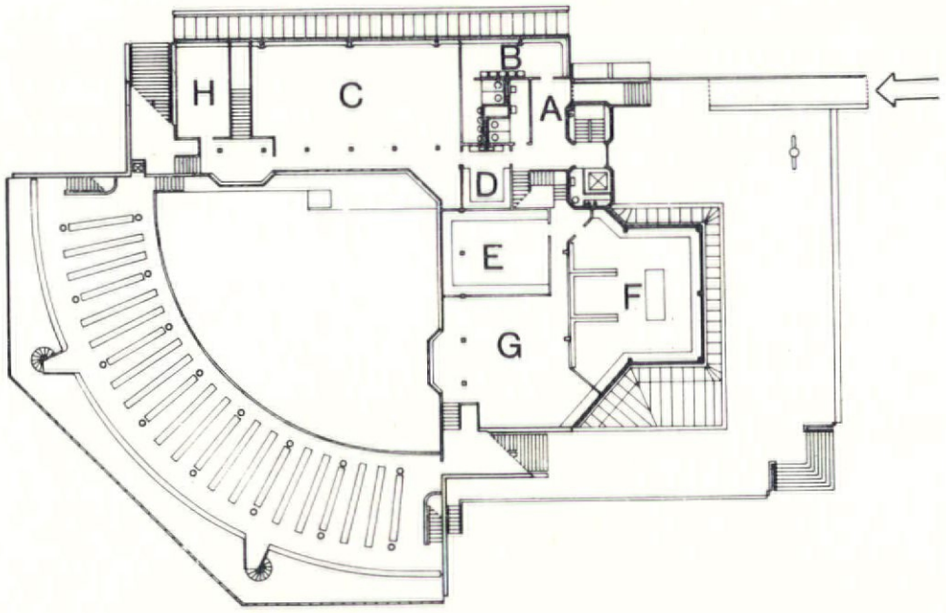
The lower terrace at the front of the building is above the large lecture room (5ft below ground level) which is also the expansion area for the Reading Room. The room overlooking the terrace is a research room for staff use

Photo: R. Einzig



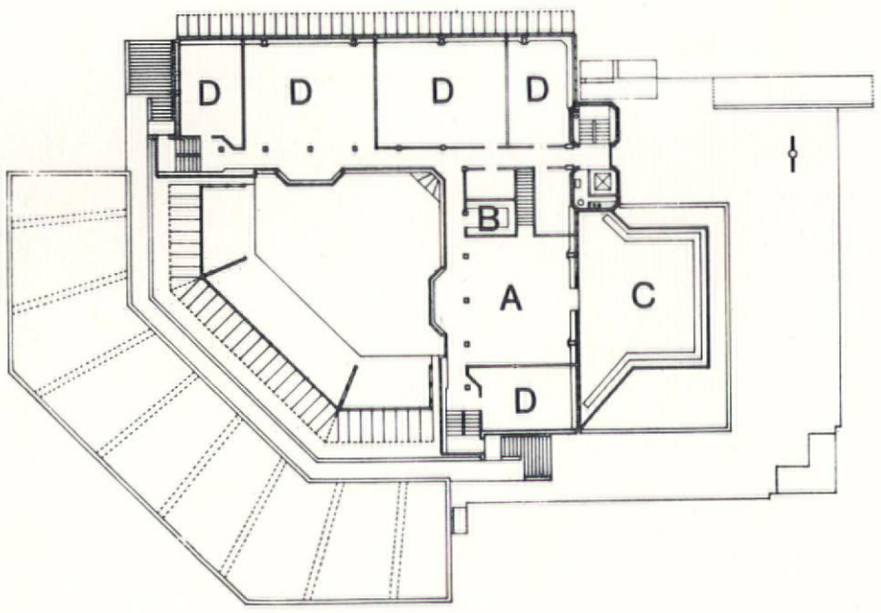
Ground floor plan

Key
A secretary
B enquiries
C librarian and assistant librarian rooms
D typing room
E lecture room—also expansion space for reading room
F seminar rooms
G bicycle bunker



First floor plan

Key
A staff entrance
B staff cloakrooms
C student common room
D tea counter
E microfilm room
F research room
G faculty boardroom
H student meeting room



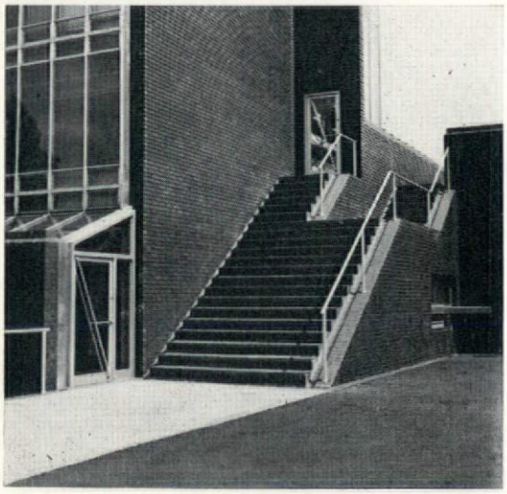
Second floor plan

Key
A staff common room
B tea counter
C terrace to staff common room
D seminar rooms

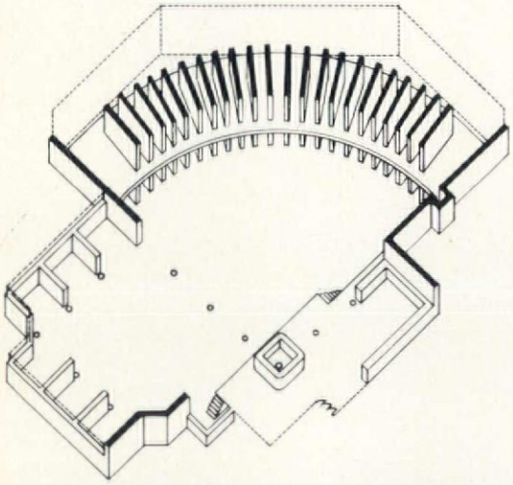
Architect's notes

This building was the subject of a limited competition and, apart from changes in siting, is almost the same as the original project.

The designated site included land directly west of the present building. After the competition it was found that about half the land was not available and the building had to be re-sited at short notice in a more central location and turned from facing east to north, away from the existing buildings of the Sidgwick Avenue Development. Until the campus is further extended the History Faculty will appear somewhat isolated. However, when further development takes place the History Faculty will be established in a position of central importance and the terraces at the front will be fully used for short cuts and circulation routes. A possible development for the northern half of the campus would be to make an east–west mall on to which all new buildings would front.

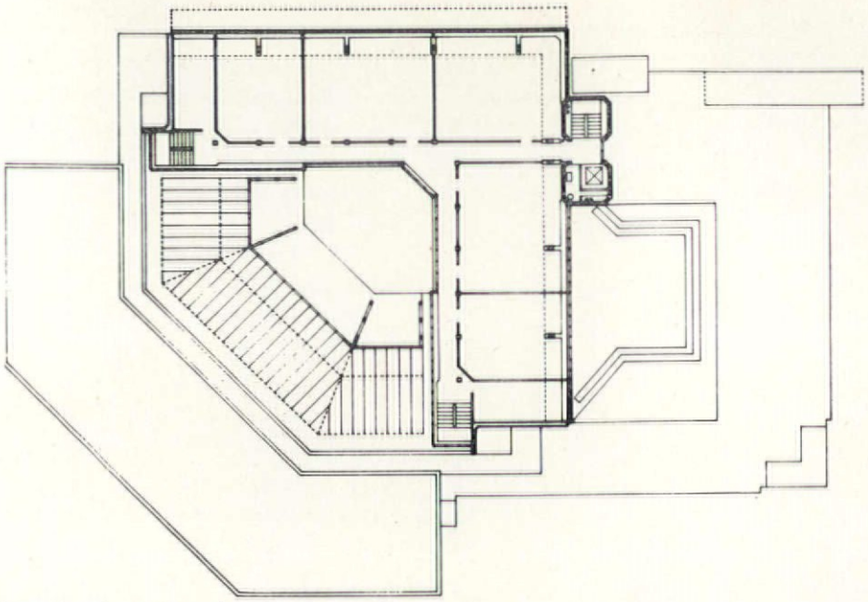


For such a focal position it was necessary to provide multi-directional approaches to the History Faculty. Four entrances have been provided, two of which are at ground level, connected by a corridor. At the front of the building there is also an approach by ramp to the staff entrance and at first floor there are minor entrances (*see above*) at the ends of the 'L'-shaped block adjacent to the common rooms. These can be used by students and staff taking short cuts across the building to the bicycle bunker and the canteen in an adjoining building.

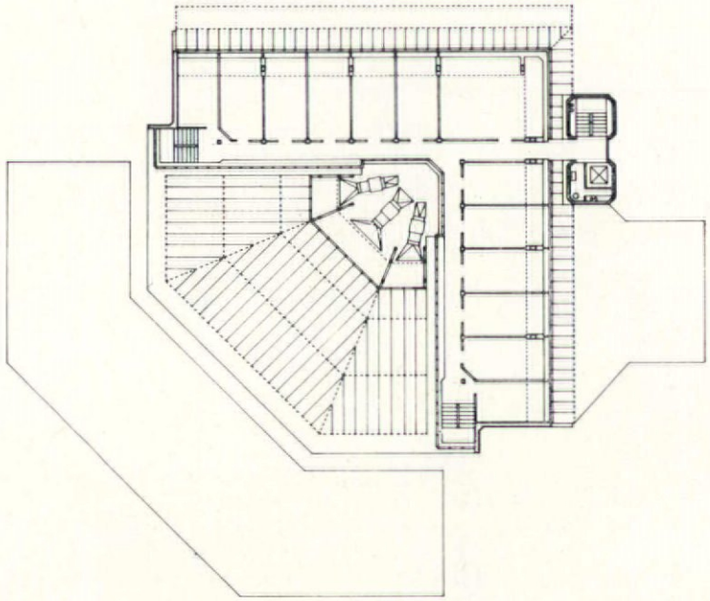


The accommodation includes a Reading Room for 300 readers (12,600 sq ft of shelving) which accounts for approximately half the floor area; the other accommodation is staff, seminar and common rooms.

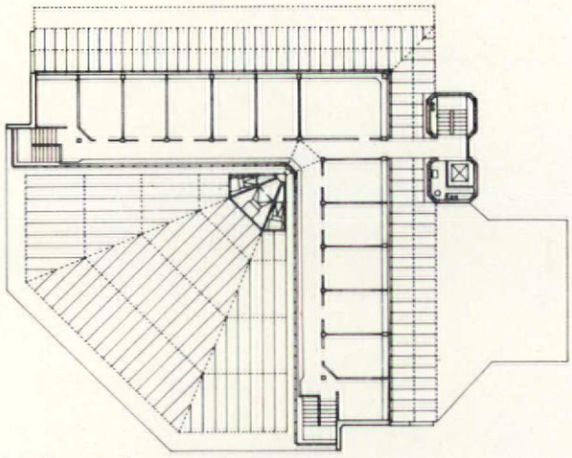
The entrance to the Reading Room opens directly into a control and enquiry area where the catalogues are housed; beyond and 4ft below this level is the Reading Room. The book stack is on two levels and the shelving units fan radially on



Third floor (seminar rooms)



Fourth floor (staff rooms)

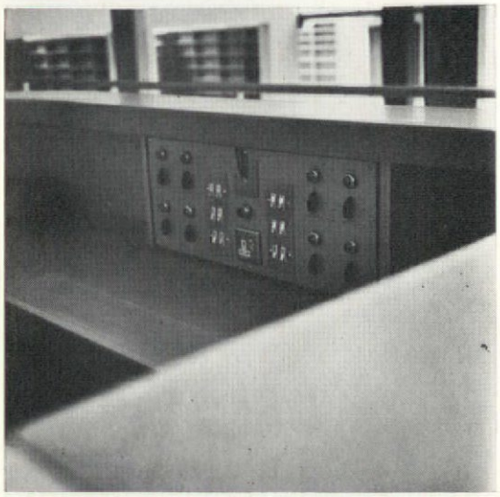


Fifth and sixth floors (staff rooms)

The corner junction of the 'L'-shaped block is above the control desk and the Reading Room floor is half a level below the control and catalogue area. The upstand walls of the corridor/galleries are structural and veneered in acoustic panels of fibrous plaster with absorption slots backed in glass quilt. The corridor/galleries are glazed for acoustic separation from the Reading Room

Photo: R. Einzig

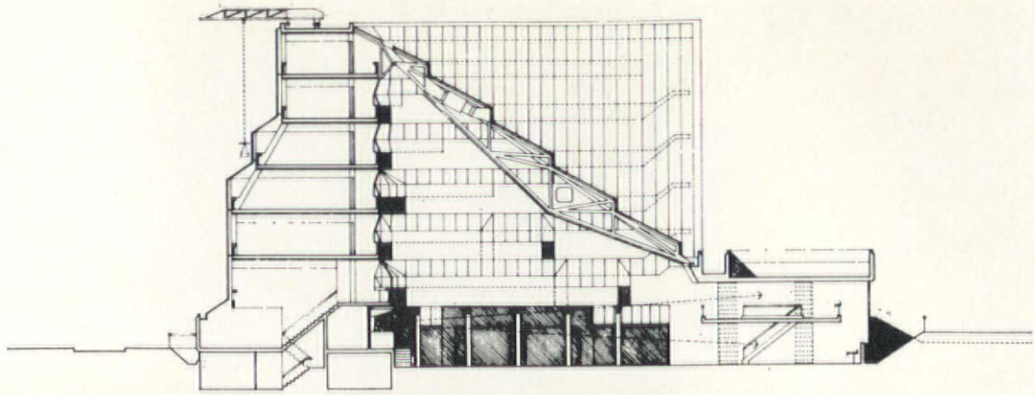
<461
sight lines from the control desk, which thus has total supervision of the Reading Room and book stack. The control desk is also a console from which heating, lighting and ventilation is adjusted. The extract machines at the top of the glazed roof are controlled from this desk (*below*).



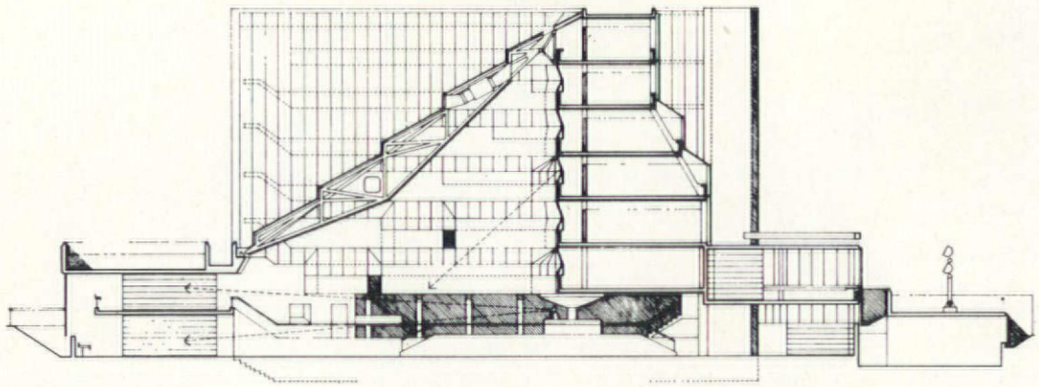
A variety of seating has been provided in the Reading Room either in specialist reading bays (12ft ceiling height) or at large tables in the main area. Beyond the book stack there is a continuous bench top, also for student use. The book shelf units are on two levels and the mezzanine can be approached directly from the control area or from the floor of the Reading Room.

The steel truss roof over the Reading Room has upper and lower glass surfaces with the upper containing adjustable louvres to ventilate the space formed by the roof trusses between the two skins of glass. The roof space is up to 12ft high and, at various levels, there are catwalks providing access to the lighting installation and the extract machines as well as being used for maintenance. The under skin of glazing is translucent, producing shadowless natural light on the Reading Room tables. The rising chimney shape created by the sloping glass ceiling causes heated air rising from the floor to be drawn upwards and disperse through ventilators at the apex of the roof. In hot weather this process is intensified by three separate extract machines.

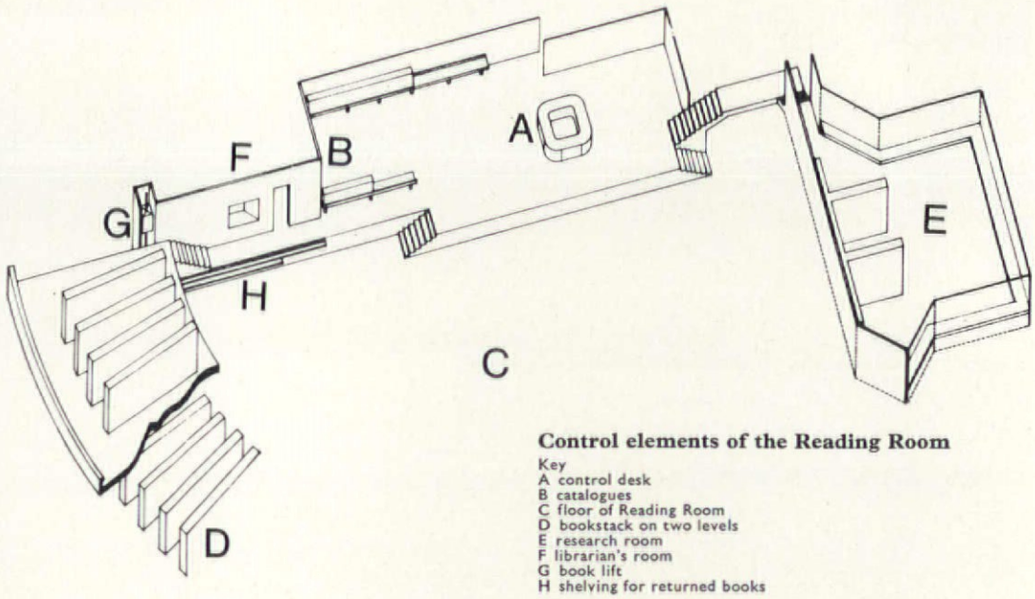
Inside the roof the glass surfaces are cleaned by using long arm vacuum cleaners from the catwalks. The external roof glass is cleaned by way of the gutters (*above*) which act as ladders and expansion joints. These gutters separate the inner façade of the 'L'-shaped block from the glass roof and a ladder running on fixed tracks provides access to all parts of the roof. The glazed ceiling is cleaned from a mobile and demountable scaffold tower during the long vacation as it is necessary to move the reading tables for this operation. The step back glass façade of the 'L'-shaped block is cleaned from a boat which can move at right angles to the building as it is suspended from a mobile roof gantry. 470▷



West-east section

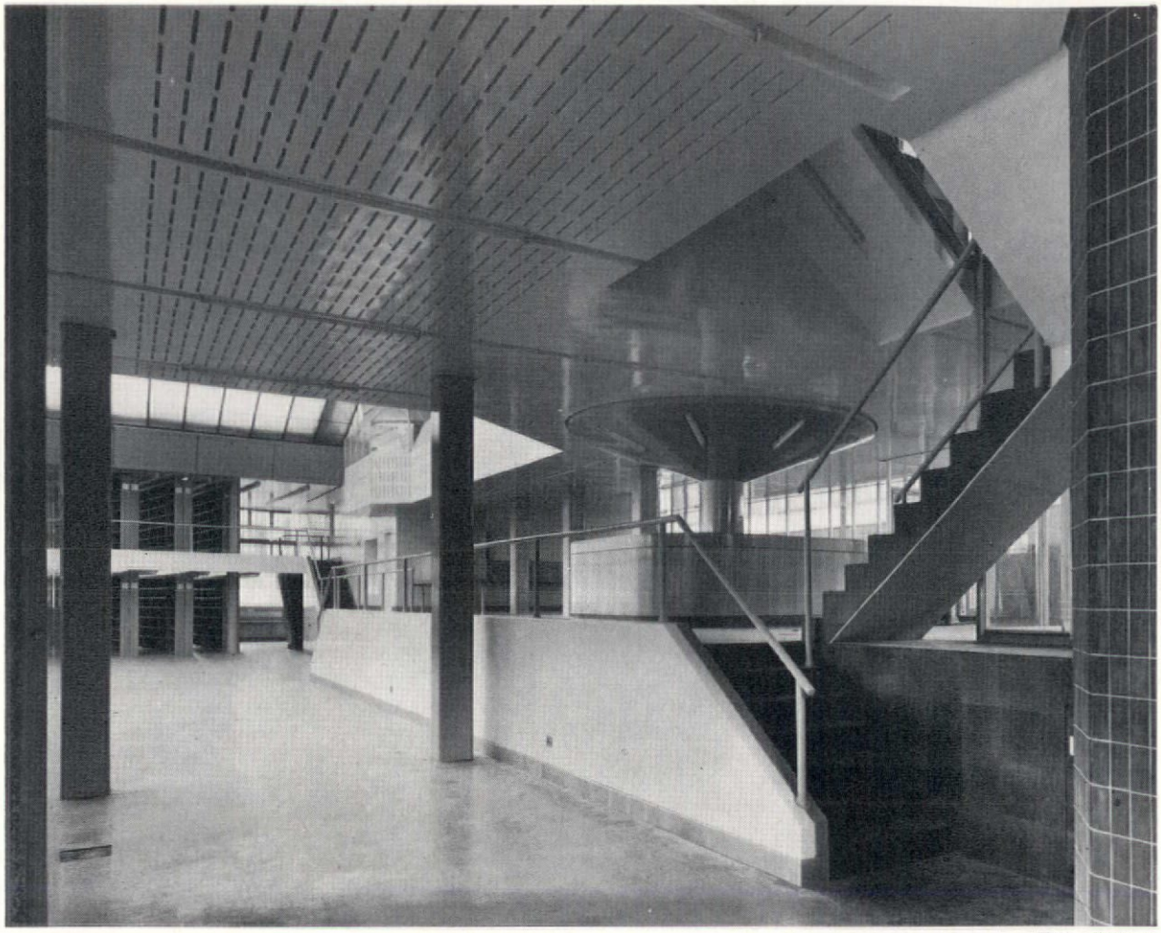


South-north section



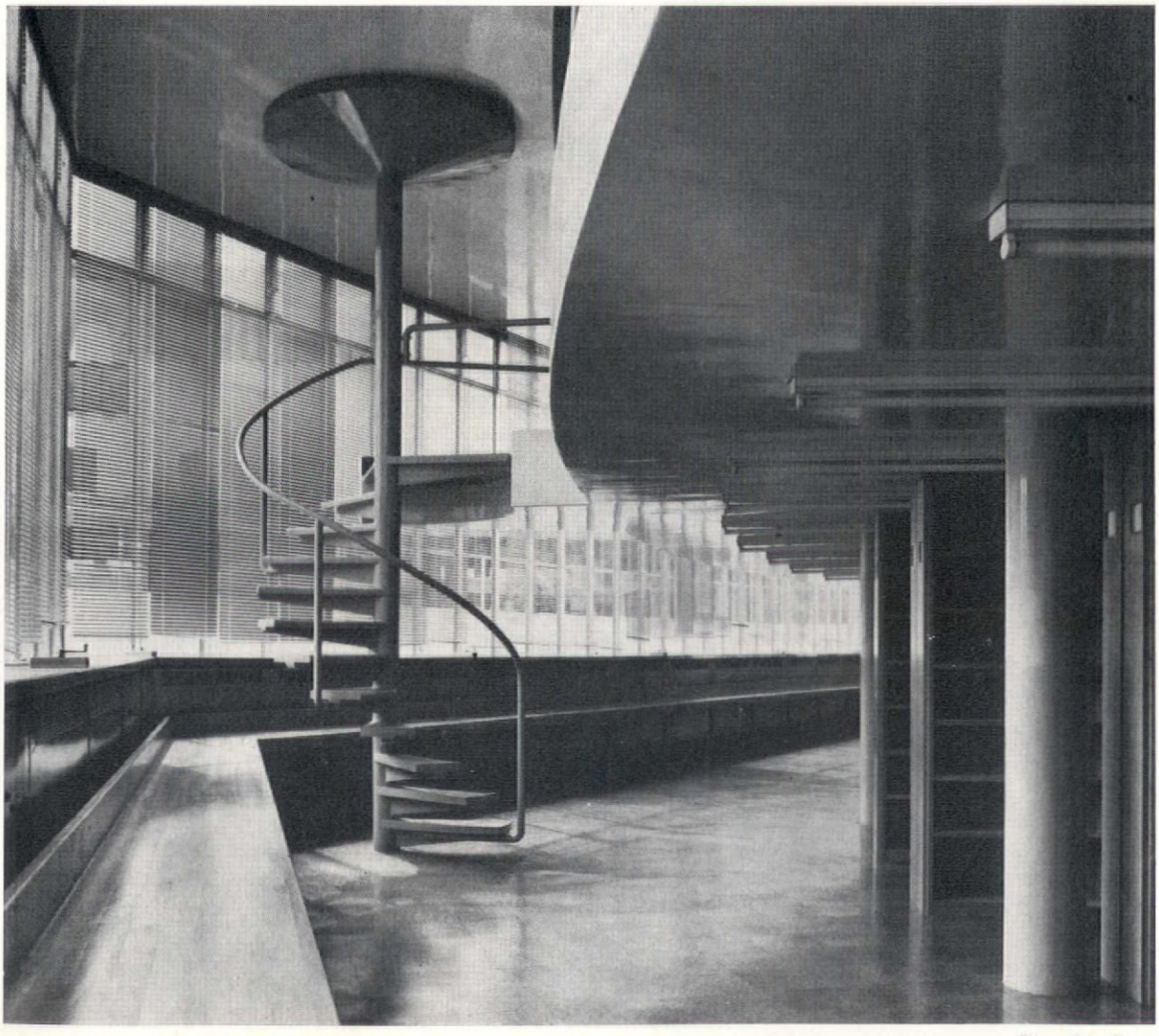
Control elements of the Reading Room

Key
A control desk
B catalogues
C floor of Reading Room
D bookstack on two levels
E research room
F librarian's room
G book lift
H shelving for returned books



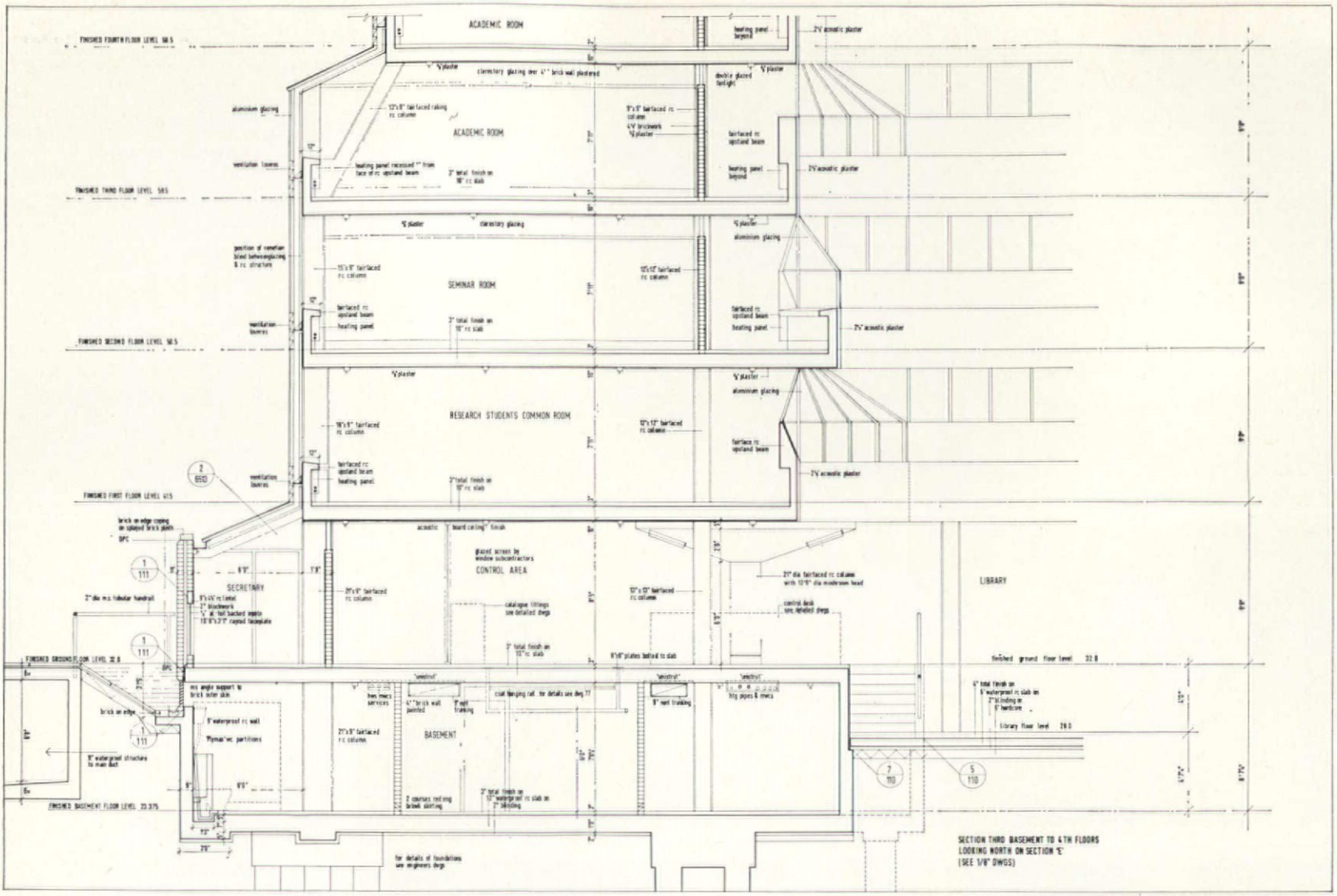
The staircase to the Research Room is accessible via the control desk and the flared column (leaning post) in the control desk supports the junction of the 'L'-shaped block over. It is directly under the point where the roof trusses meet at sixth floor level

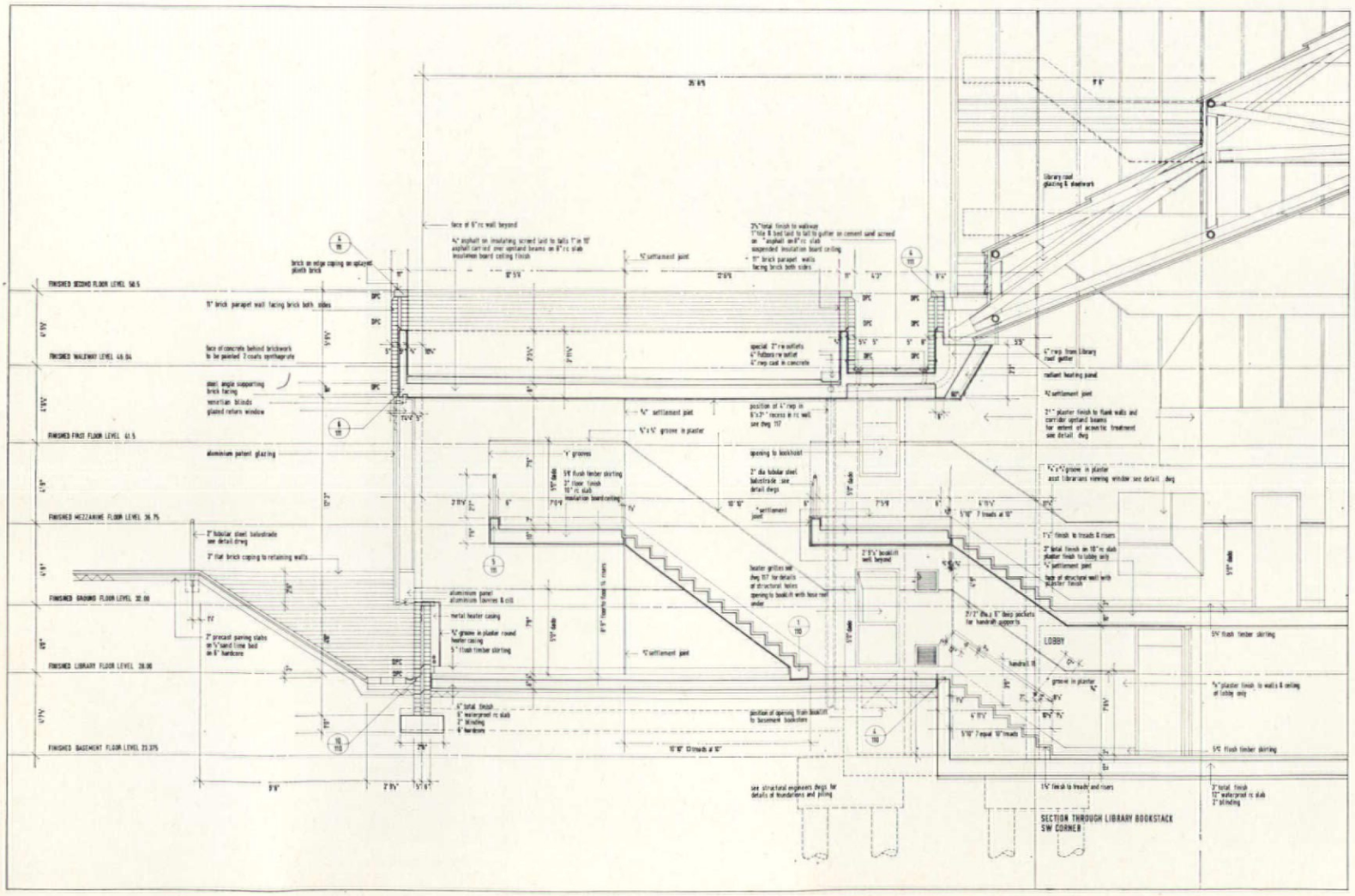
Photo: R. Einzig



The spiral staircases to the upper level of the bookstack are of precast concrete elements with an in situ *core. The staircase is also a column supporting the overhang of the bookstack ceiling*

Photo: John Donat


ACADEMIC ROOM
SEMINAR ROOM
RESEARCH STUDENTS COMMON ROOM
CONTROL AREA
SECRETARY
BASEMENT
LIBRARY
FINISHED FOURTH FLOOR LEVEL 58.5
FINISHED THIRD FLOOR LEVEL 50.5
FINISHED SECOND FLOOR LEVEL 42.5
FINISHED FIRST FLOOR LEVEL 41.5
FINISHED GROUND FLOOR LEVEL 32.8
FINISHED BASEMENT FLOOR LEVEL 23.375
finished ground floor level 32.8
library floor level 29.0
SECTION THRO BASEMENT TO 4TH FLOORS
LOOKING NORTH ON SECTION 'E'
(SEE 1/8" DWGS)


FINISHED SECOND FLOOR LEVEL 58.5
FINISHED WALKWAY LEVEL 48.84
FINISHED FIRST FLOOR LEVEL 41.5
FINISHED MEZZANINE FLOOR LEVEL 36.75
FINISHED BASING FLOOR LEVEL 32.00
FINISHED LIBRARY FLOOR LEVEL 28.00
FINISHED BASEMENT FLOOR LEVEL 23.375
LOBBY
SECTION THROUGH LIBRARY BOOKSTACK
SW CORNER

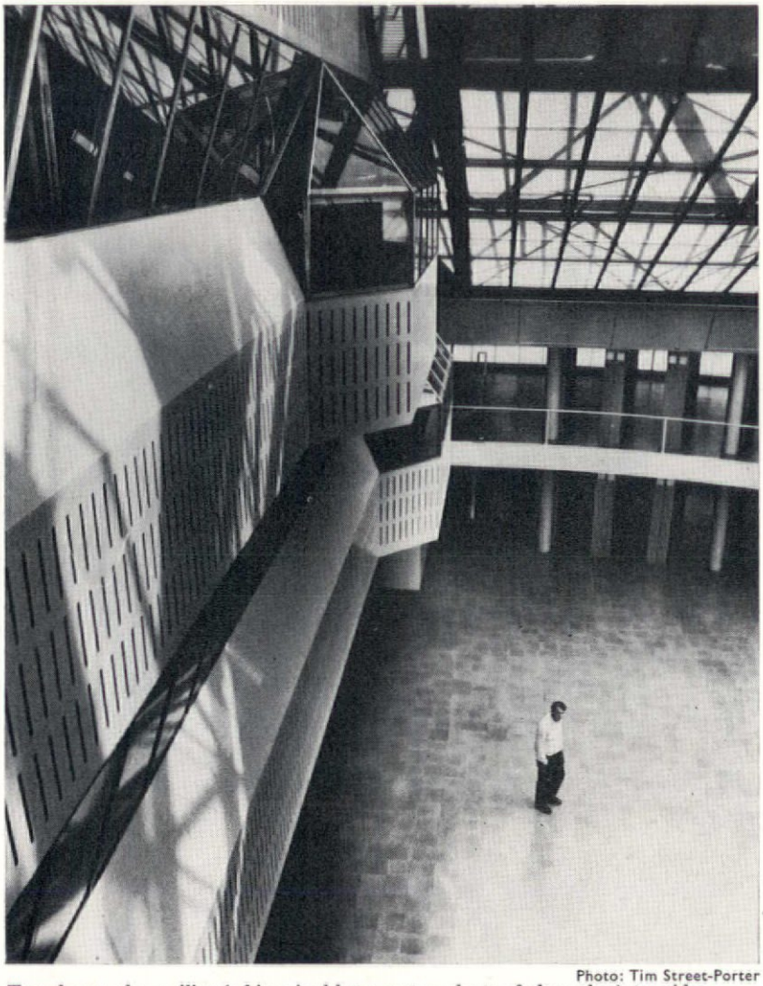


Photo: Tim Street-Porter

Translucent glass ceiling (white vinyl between two sheets of clear glass) provides shadowless daylight in the Reading Room

Photo: Tim Street-Porter

View from control desk (enquiry, supervision, and environmental adjustment) across reading space to radial bookstacks

Photo: R. Einzig

A continuous radiant heater occurs at the junction of the glass roof and the ceiling over the bookstacks. Under-floor heating is provided in the Reading Room. The shaped window on the right is for viewing from the Librarian's room

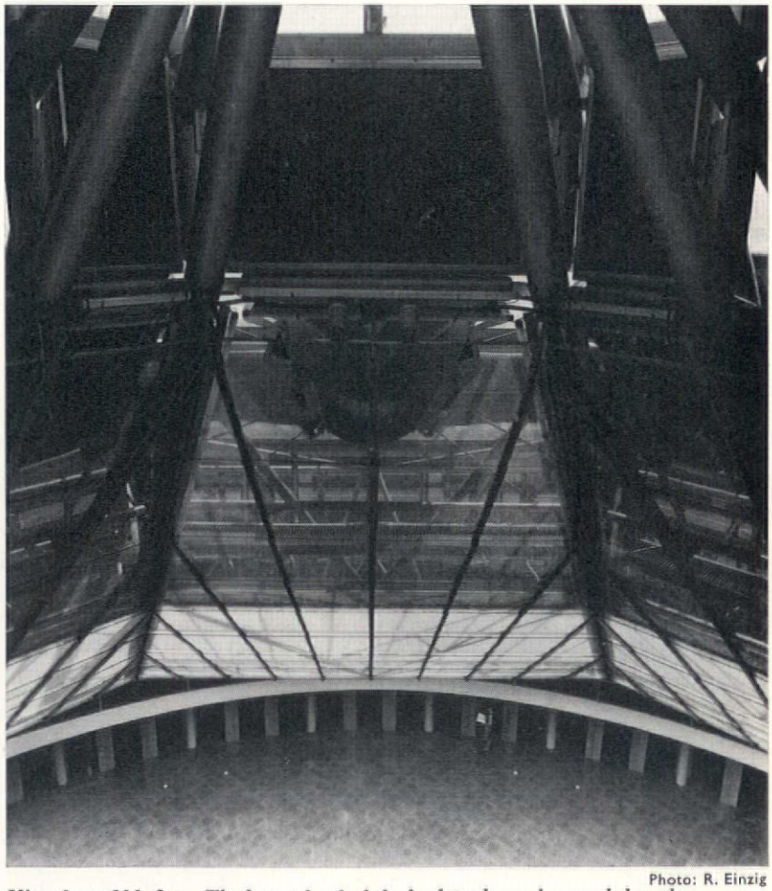
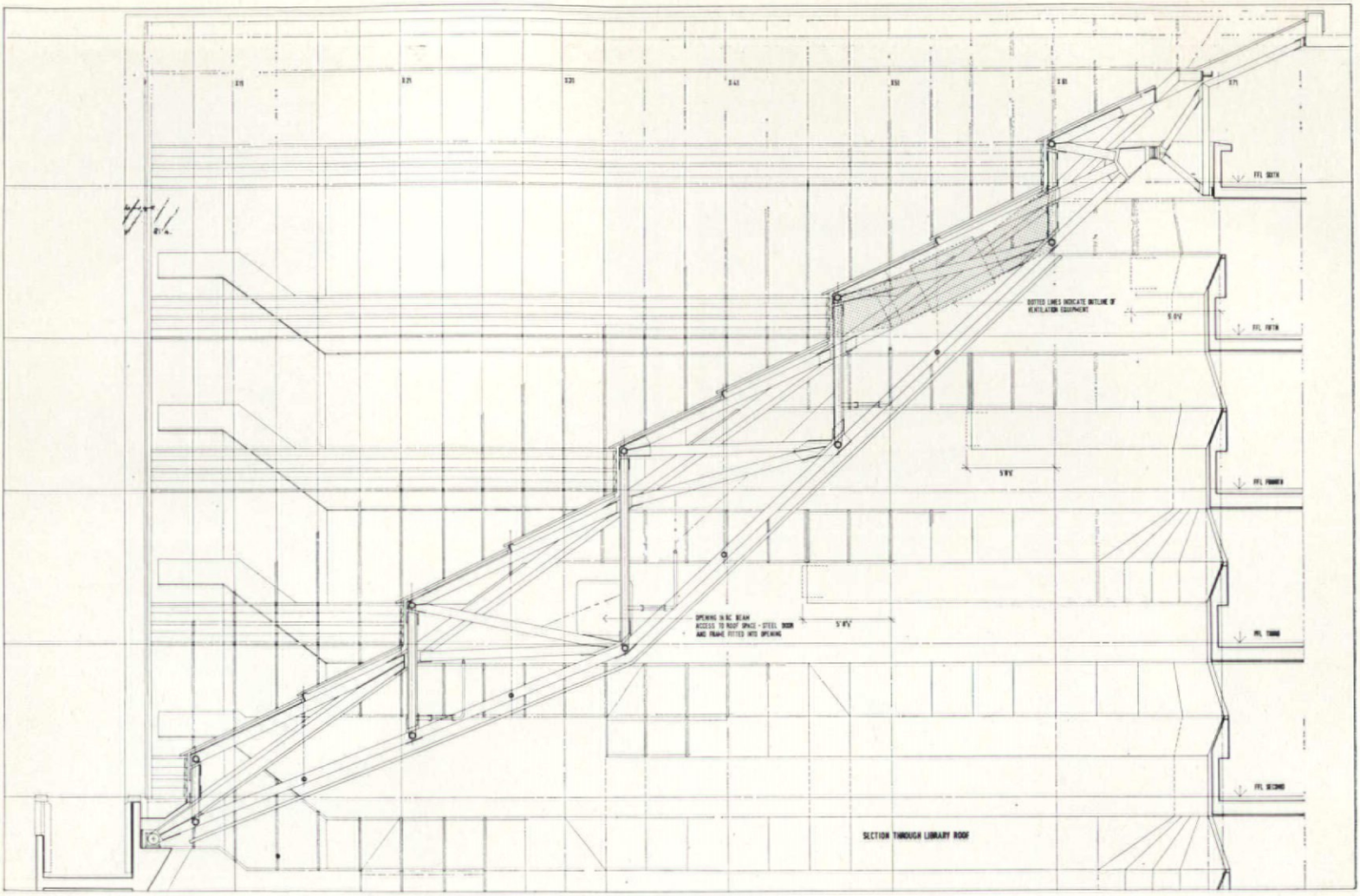
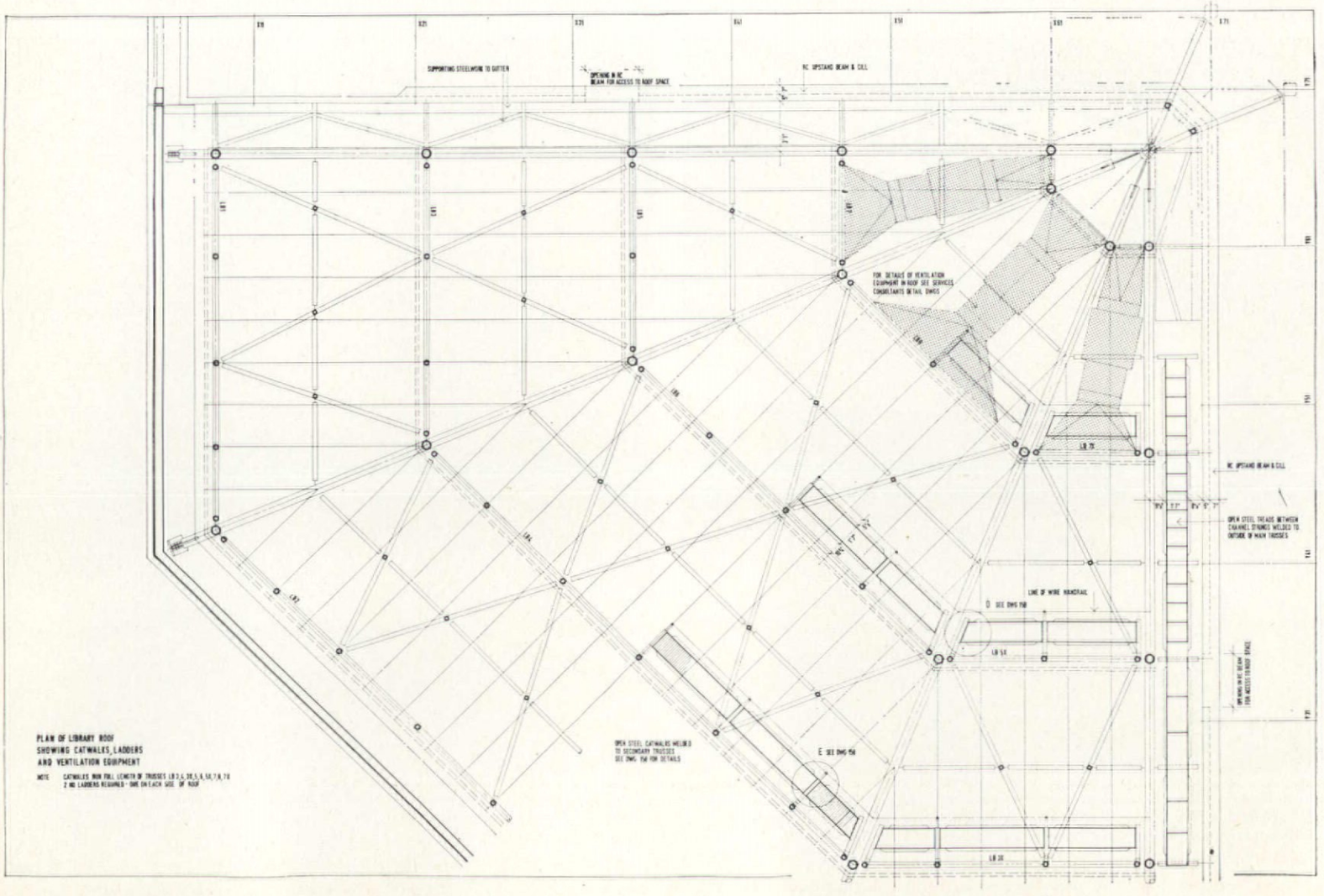


Photo: R. Einzig

View from fifth floor. The lowest level of the bookstack can be seen below the sloping glass under side of the roof



SECTION THROUGH LIBRARY ROOF



PLAN OF LIBRARY ROOF
SHOWING CATWALKS, LADDERS
AND VENTILATION EQUIPMENT

NOTE CATWALKS RUN FULL LENGTH OF TRUSSES L8 3 & 3R 5 & 5R 7 & 7R
2 NO LADDERS REQUIRED - ONE ON EACH SIDE OF ROOF

Photo: R. Einzig

At the point where the four primary trusses come together there are sliding plates which allow the roof to rise and fall according to expansion. Four struts then transfer the thrust from the core back into the superstructure of the 'L'-shaped block

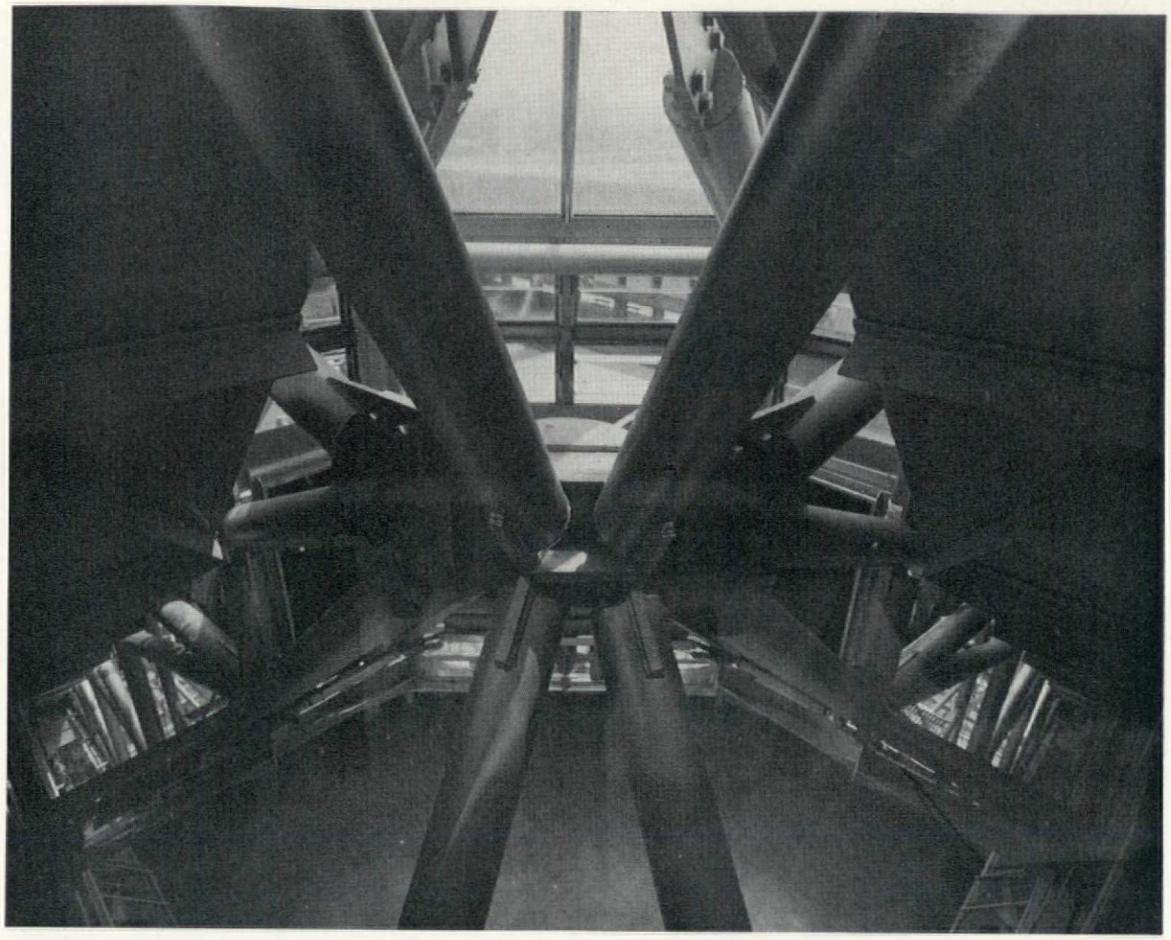
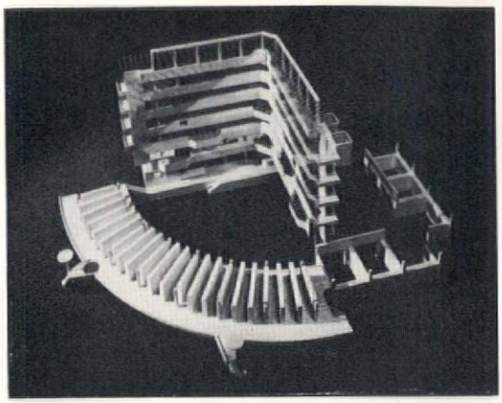


Photo: R. Einzig

A catwalk which rises alongside the corridor walls inside the roof space provides access to other catwalks used for maintenance and cleaning. Above the rising catwalk is the gutter which forms an expansion joint and ladder, providing access to the upper glass surface of the roof

Photo: R. Einzig



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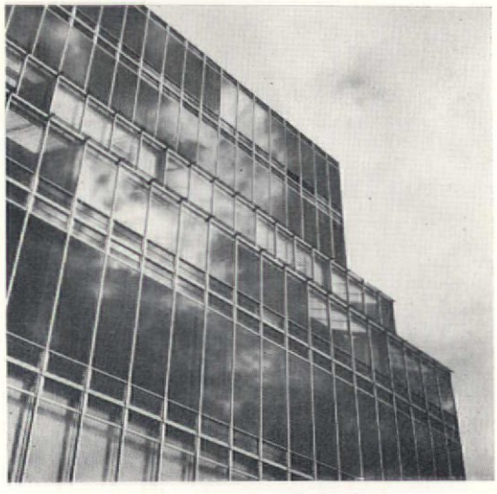
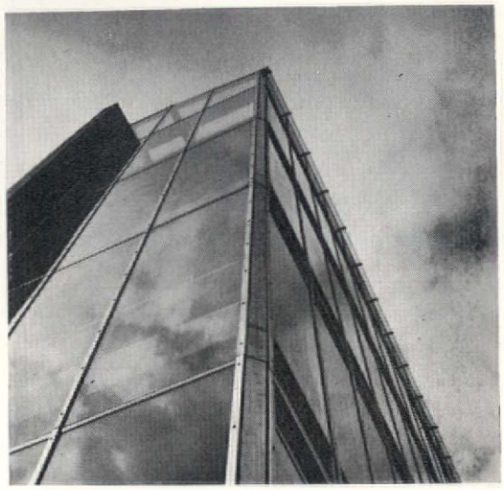
The Faculty considers that close contact between the Reading Room and the other accommodation is essential and the arrangement of corridors as galleries around the Reading Room is a principal factor of the planning. Continuous horizontal windows set into the corridor walls appear under the roof and run around the upper floors above the Reading Room. The corridor windows and the lay-bys, which project into the air space of the Reading Room, allow students in the upper floors to maintain a visual but non-intrusive contact with the Reading Room. The lay-bys also provide standing space allowing students to congregate for seminars without blocking the corridors. The structural upstand walls flanking these corridors are high enough to prevent students circulating in the corridors being seen from the Reading Room. The Reading Room side of these walls are veneered in fibrous plaster with a closer frequency of sound absorption slots at the lower levels

At first floor level there is a special room for research, primarily for staff use, and like the Reading Room is only accessible by passing the control desk. This room overlooks the lower terraces at the front of the building and itself forms a terrace above and adjacent to the staff common room.

The three upper floors of the 'L'-shaped block contain private staff rooms (two sizes) which are sometimes used for tutorials. Below, there are two floors of greater width containing seminar rooms and below this again, a wide floor containing student and staff common rooms. The smallest rooms are, therefore, at the top and the building section widens at the lower levels where the bigger rooms are located, thereby confining the greatest movement of people to the basement (cloaks, lavatories), ground and first floors. The staff and large numbers of students should thus not be in cross circulation. The lift will tend to be used by staff travelling from their rooms on the upper floors to the Reading and research rooms. The mass movement of students between the basement, Reading Room and common rooms will be by staircase. The transition from a thin to a thick building is effected on the exterior by a stepped glass skin. In addition to the stair and lift towers at the front of the building (adjacent to and indicating the main entrances) there are fire escape stairs at each end of the 'L'-shaped block, which are essential elements in the general circulation.



The external surfaces are engineering brick, tile and glass, all hard, reflective, unabsorbent materials compatible with outside climatic conditions. Internally surfaces are sound absorbing walls and ceilings and cork flooring; soft materials compatible with quietness and study.



The structural systems were initially selected as being the most expedient and appropriate for a particular set of problems. The lean-to span of the sloping roof is a steel truss and the layered floor structure of the 'L'-shaped block is of r.c. columns and slabs. The 'L'-shaped block acts as a buttress stabilizing the thrust from the sloping roof and the total building is a stable but asymmetric grouping resolving (and indicating) the various structural thrusts and forces.

The building had to comply with UGC cost requirements. The contract price was £336,750, excluding Reading Room tables, chairs, and other loose furniture.

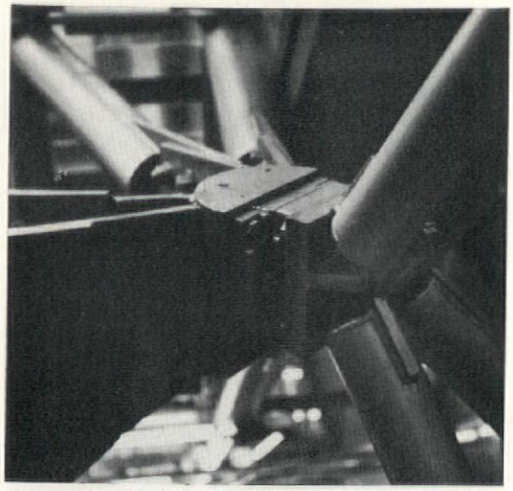
Notes on structure

F. Newby
Felix J. Samuely & Partners

Three distinct yet interdependent structural elements, separated from each other by movement joints, combine to make this building. The largest element is the seven-storey 'L'-block (with a basement under one wing). It is of *in situ* r.c. flat slab construction with external upstand edge beams. Where the outer faces of the building step in, the columns are raking. The horizontal reactions from raking columns and wind loads are carried by *in situ* r.c. flank walls and the stair and lift towers cantilevering vertically from their foundations.

The second element is the two-storey block which connects the two ends of the 'L'-shaped block and is twice cranked on plan to enclose the space forming the book stacks. The construction of this block is also *in situ* r.c. The first floor is a flat slab and the roof is carried by cantilevered beams which are post-tensioned to control deflection on the outer fully glazed elevation. Stability is again provided by flank walls in reinforced concrete, and the block incorporates two post-tensioned spiral staircases (which also give support).

The third element is the glazed roof over the Reading Room. This consists of four raking tubular steel welded latticed girders which are supported at their bases on the inner edge of the two-storey block roof and meet at an apex between sixth floor and roof where they lean against the inner corner of the 'L'-shaped block. The tubes were required to be of constant diameter but the wall thickness was varied as loads allowed. At the apex the combined thrust from the girder is transmitted horizontally through a sliding connection allowing vertical movement on to tubular steel struts which are bolted to the sixth



floor and roof slab. The thrust is then transmitted through the slabs acting as horizontal beams to the end flank walls. The bases of the raking lattices are pinned joints, the thrusts there being transmitted to the flank walls of the two-storey block in a similar manner. The triangular areas between the main raking girders are filled in with secondary and tertiary trusses which support closely spaced glazing rails and are also disposed to act as plan bracing to stiffen the structure.

Notes on services

F. E. Heppenstall
R. W. Gregory & Partners

The services provided a number of interesting engineering problems, particularly in the large Reading Room.

Reading Room

Embedded floor heating coils are used as well as a special steel radiator panel system located at the junction of the large glass roof with the ceiling of the book stack, thus placing the necessary heating equipment in the most advantageous positions while at the same time avoiding taking up valuable floor space.

The steel truss roof over the Reading Room has a double skin glass and vinyl surface in three segments, the centre of which faces south-east where it gets a maximum effect from the sun. The space between the double skin is naturally ventilated by stack effect through adjusting glass louvres at top and bottom of the glass roof. Stack effect caused by the rising slope of the ceiling over the Reading Room naturally ventilates this room.

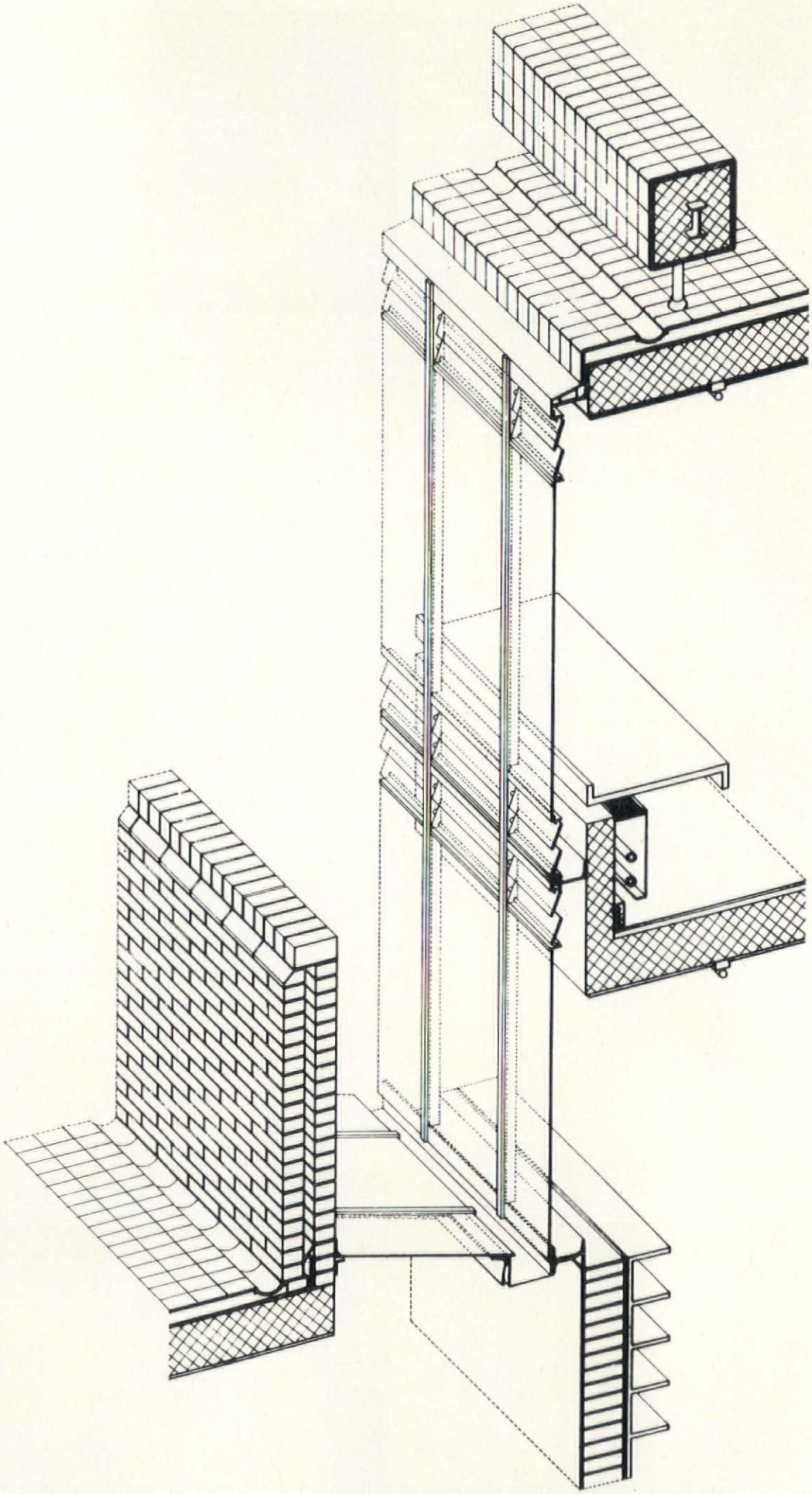
The Reading Room is also force ventilated by three single-stage axial flow fans fitted with silencers which extract air via the apex of the roof which is six and a half floors above the Reading Room. The extract machines are suspended from steel cables and specially designed anti-vibration mountings. Air is drawn through the Reading Room via louvres that are situated in the peripheral glazing at ground floor. The calculated temperature in the Reading Room without the use of the extract system is 90°F during maximum outside conditions. The extract system is designed to limit the temperature rise to 10°F above outdoor temperature under extreme conditions.

Heating supplies

High pressure hot water for heating purposes is obtained from a remote central boiler house and the History Faculty has calorifiers in the basement supplying low pressure hot water to continuous perimeter convector heaters (contained in a structural upstand beam) in the Seminar and Study Rooms in the 'L'-shaped block and also to the Reading Room floor and other parts of the building. Hot and cold water supplies are of conventional design with water storage tanks located below roof level in the head of the staircase tower.

Other installations

For fire protection a dry rising main is installed in the open duct which flanks the staircase in the tower supplying automatic hose reels distributed through



Section through staff research room; staff terrace above and terrace at the front of the building on the left

Top floor corridor. Convector heaters are contained in a continuous r.c. upstand beam which is also a horizontal duct. The tubular steel struts transfer the thrust from the roof trusses into the structure of the 'L'-shaped block

The venetian blinds are used on the underside of the step-out glazing. Ceilings are painted white gloss and raking columns and upstand beams (which are also horizontal ducts and window seats) are painted grey gloss

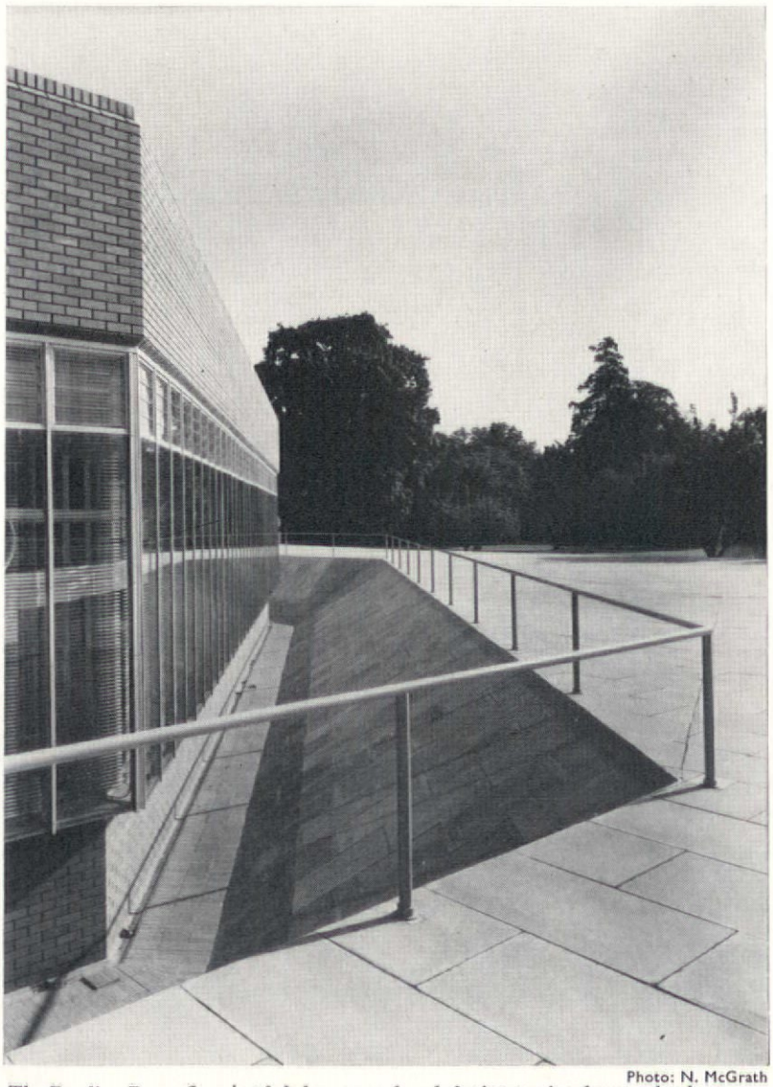


Photo: N. McGrath

The Reading Room floor is 5ft below ground and sloping paving forms a bank up to ground level. View of the two storey flank wall of the bookstack area

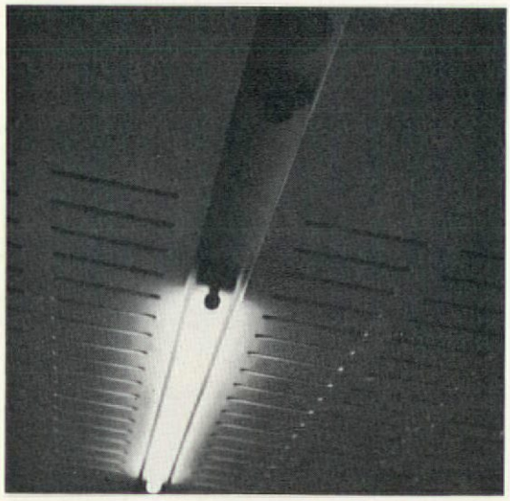
View of north elevation from the glazed link between the towers and the upper floors. Glass louvres at high and low level provide draught free ventilation as they are positioned behind the upstand beams

the building. There are other hand appliances required for the Reading Room protection.

As the basement level is below the level of the surface water drain, a holding tank for rainwater is fitted in the basement with pumping plant suitable to deal with storm conditions.

Electrical installation

A predominant engineering service for this building is the lighting installation (which has also been used architecturally). Bare tube fluorescent fittings have been used almost exclusively and a theme of the lighting has been to provide accent to the building plan. Due to the architect's personal belief that illumination standards in the UK are too low, the IES recommended illumination levels have been exceeded except in the academic rooms where local desk lighting will be used.

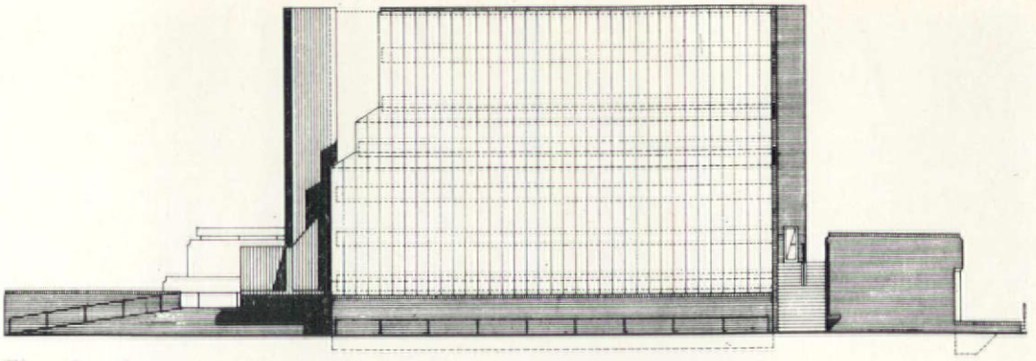


The general lighting in the Reading Room consists of fluorescent tubes clipped to the wiring trunking under the major trusses and within the roof space. The lower vinyl glass skin acts as a diffusing medium and the tubes have been placed immediately below the major trusses outlining the structural elements. The control gear for 142 tubes is housed remotely in a cubicle from which the excess heat is ducted to an adjacent stairway. Considerations of reduced maintenance and replacement problems as well as a reduction of noise and heat, led to the decision to remove the control gear from the roof space.

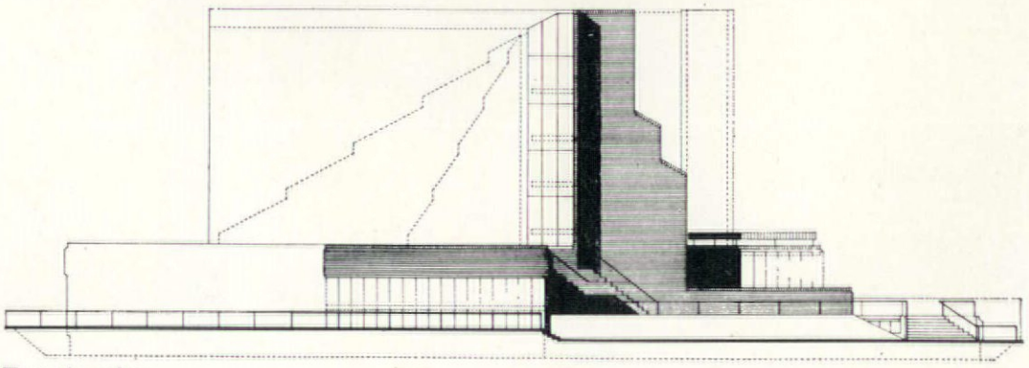
With the exception of the external four-lantern floor-light post, the remaining electrical services follow conventional design with a main cubicle switchboard in the basement feeding a distribution spine in the main staircase.

A PABX system of 10 plus 49 lines serves the telephone needs of the building.

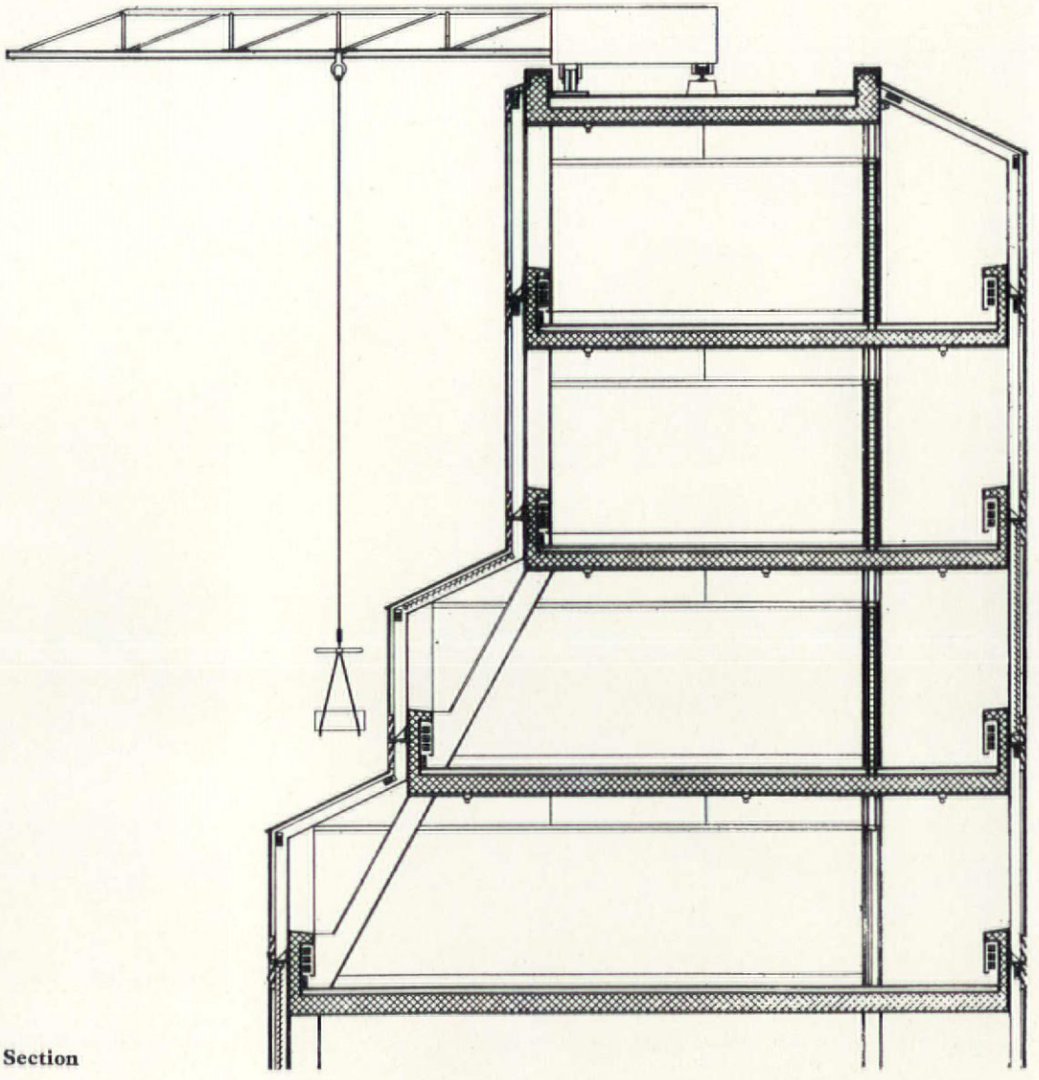
A single eight-person passenger lift and a book hoist with access on three sides serve the passenger and goods requirements; both are underdriven. □



West elevation



East elevation



Section

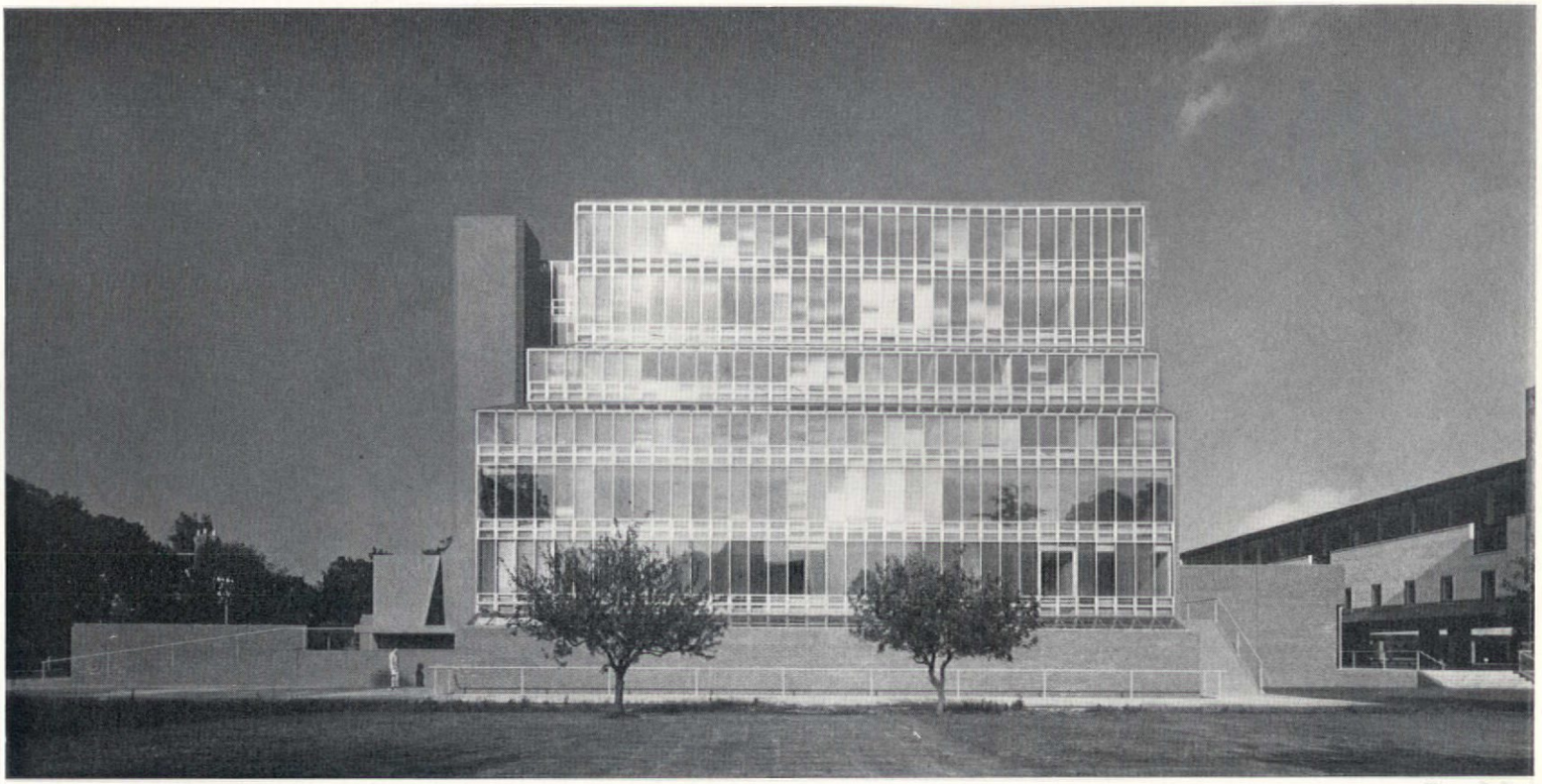


Photo: R. Einzig

West elevation. The brick and tile surfaces are red/brown and the venetian blinds behind the glass are silver. Top floors are small staff rooms and the building increases in width to accommodate seminar rooms and increases again to accommodate the large common rooms

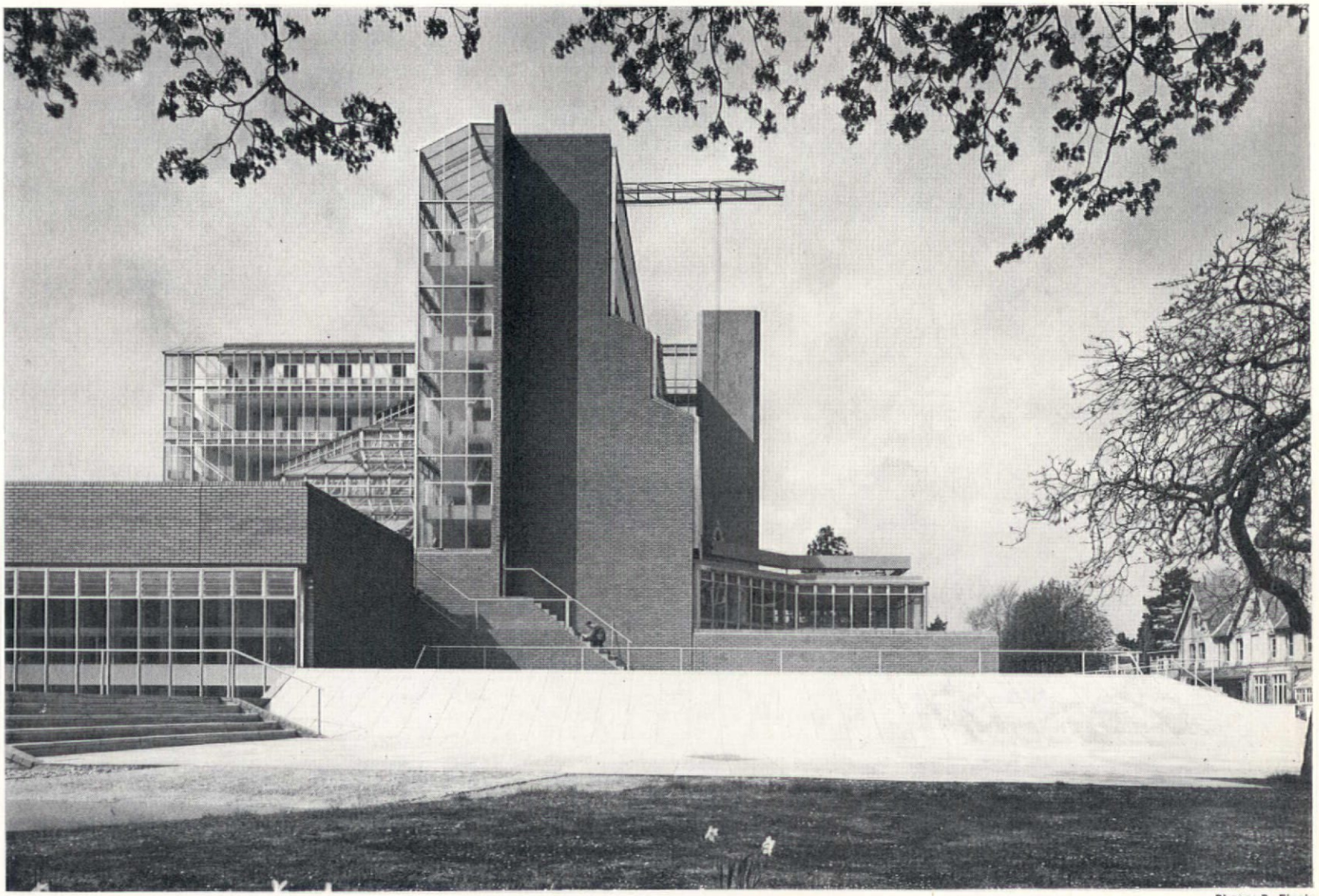


Photo: R. Einzig

East elevation. The sloping paving in the foreground screens the bicycle bunker. The staircase at the end of the 'L'-shaped block terminates the corridors which, as they pass under the sloping roof, become galleries overlooking the Reading Room.

Florey Building, for the Queen's College, in St Clements, Oxford

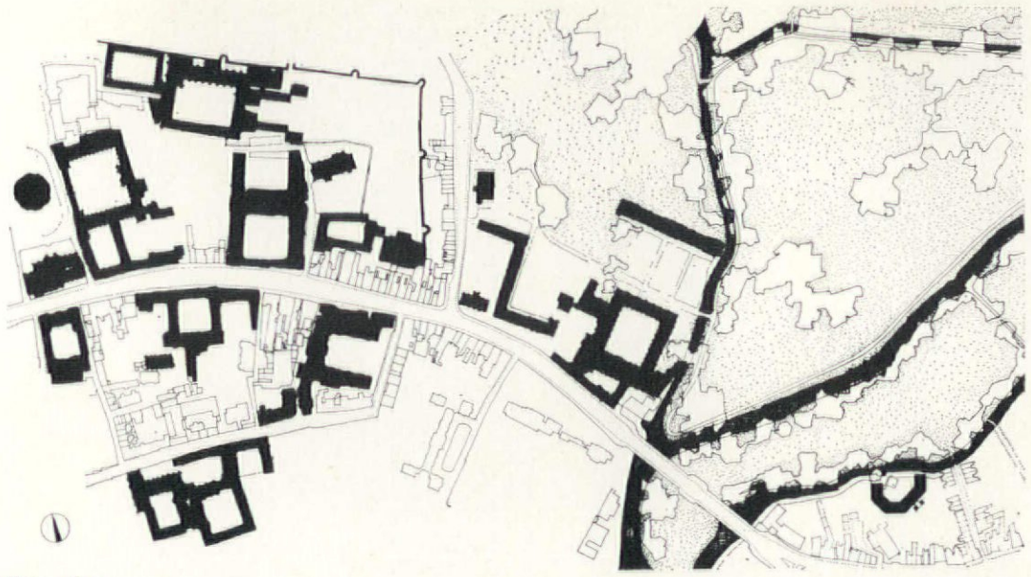
Architect: James Stirling

Senior assistant: Roy Cameron

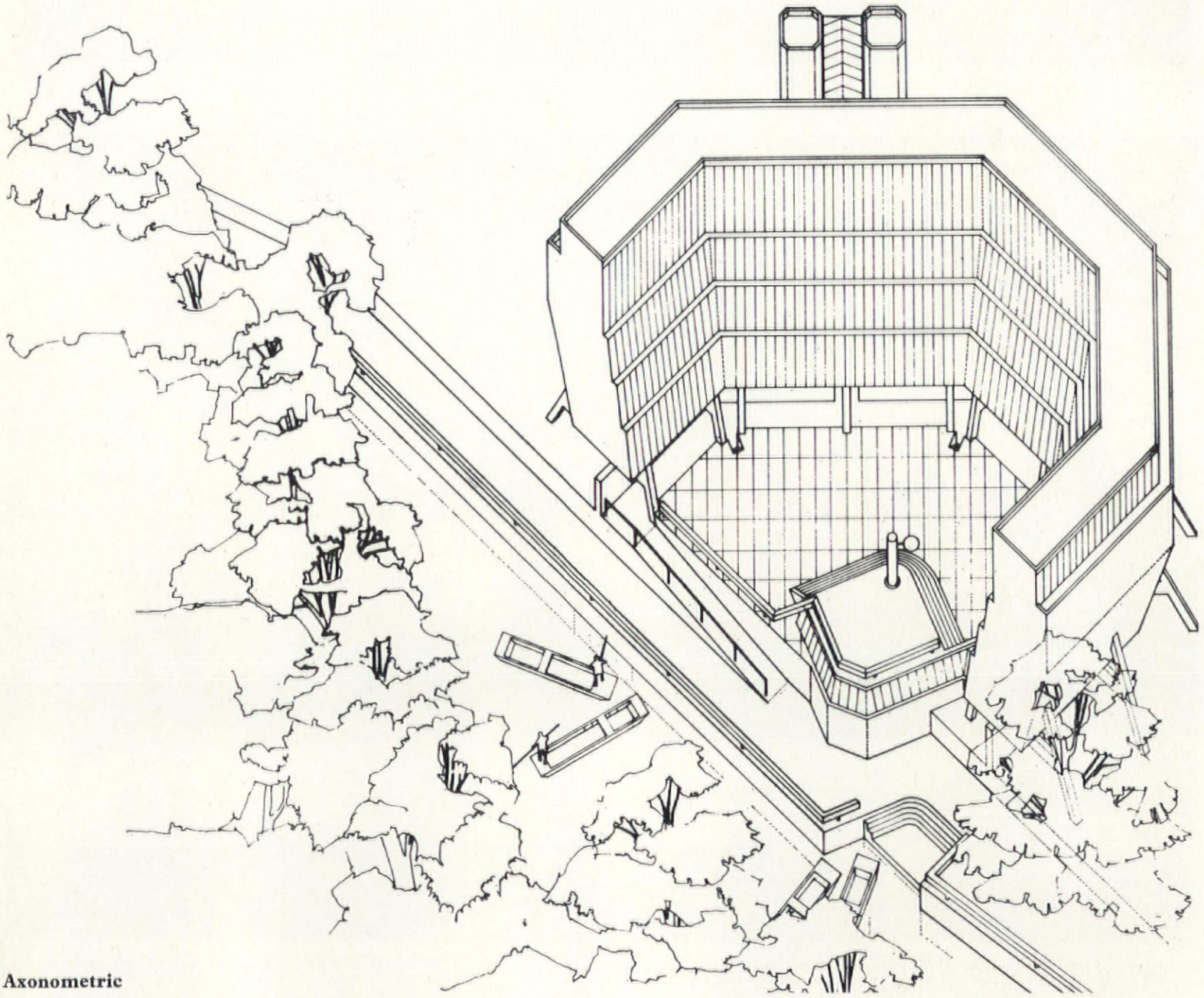
Structural engineers: Felix J. Samuely & Partners

Quantity surveyors: Monk & Dunstone

Services engineers: A. Bressloff and Associates



Site plan



Axonometric

Architect's report submitted to college building committee

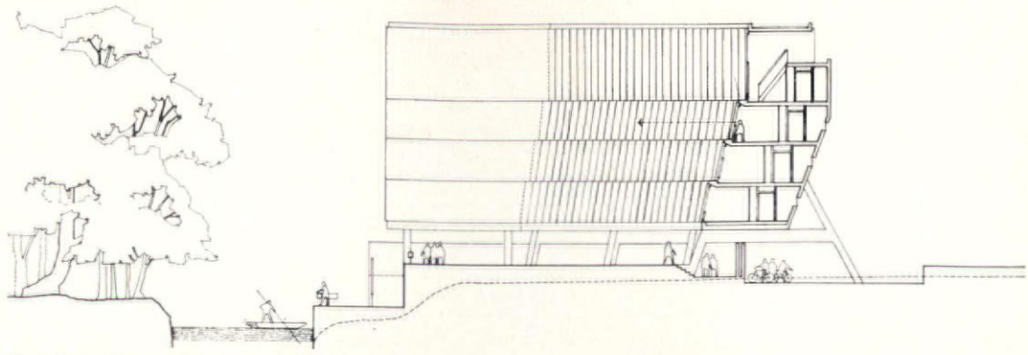
The new building is planned round a court (120ft across and 85ft deep) which is open on the north side to embrace a view of the river and the line of trees on the opposite bank. All the residential rooms are positioned on this inner court side of the building and every undergraduate will be able to see (from his room) across the river and through the trees the sky line of Oxford above the Meadow.

The interior elevations around the court step back at each floor level and the space within the court will perhaps be more similar to an amphitheatre than a traditional college courtyard. The banks of trees along the river edge (55ft to 65ft high) are as high as the new building and will, to some extent, act as the fourth wall, giving the court a feeling of enclosure, particularly in summer. These trees probably need attention and should be inspected by a landscape architect who might advise on thinning and the removal of some trees which may be decaying.

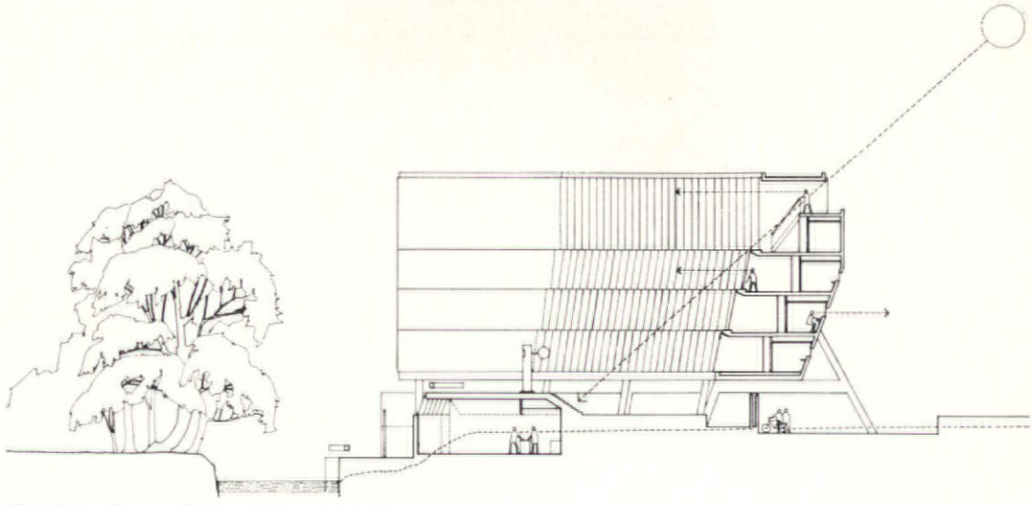
As most of the building mass splays around the court, there is only a short length of façade which faces directly north; all other façades are partly or completely east/west facing and all residential rooms, excluding those facing north (eleven rooms), will receive either early morning or evening sunlight.

There are 74 single rooms for undergraduates, three rooms for research fellows and one apartment for a bachelor fellow—the equivalent of about 80 single rooms. The rooms are accommodated on five floors, the top two floors being planned as a single level of studio rooms (18 undergraduates). A research fellow and a bachelor fellow are also accommodated in these upper floors. The double height of the studio rooms allows for sleeping on the upper level. Through the top floor of glazing on the outward side of the building, sunlight will penetrate into both levels of the studios and also beyond into the court. The combining of two upper floors as one level of accommodation means that in a fire emergency the highest level above the court which has to be reached is 35ft and this can be done with normal ladders without having to make special provision for access by fire vehicles into the court.

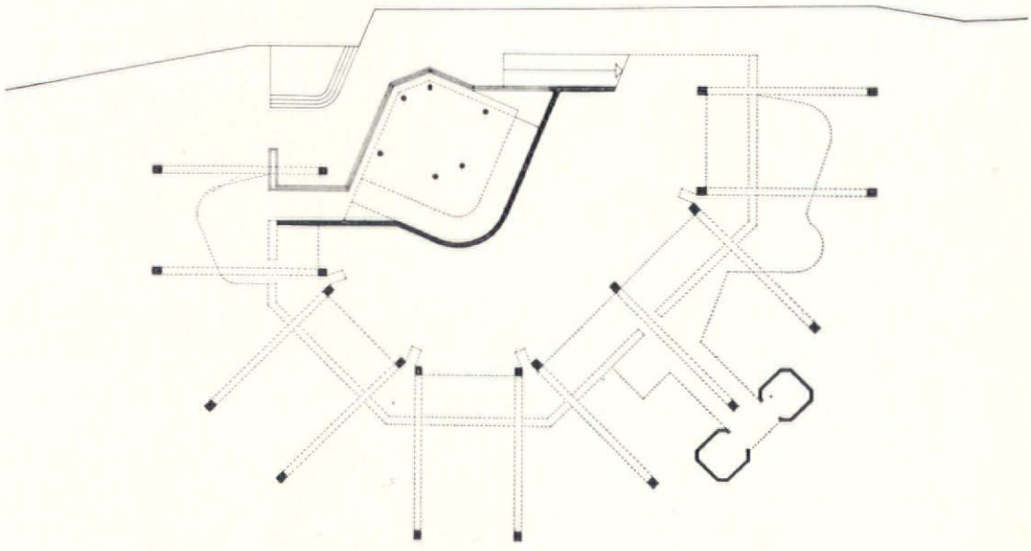
The undergraduates' rooms vary in size between 108 and 244 sq. ft. The minimum width of the regular shaped rooms is 10ft and the minimum depth, excluding storage, is 12ft. This width allows the bed to be placed either across the room or parallel with the length of the room, which allows flexibility in planning the layout of other furniture. The entrance wall is a continuous storage unit containing a wash basin (in every room), book shelves, etc. The window wall, overlooking the court, has roller blinds fixed from floor to ceiling, giving the occupiers total privacy when they are fully drawn up and every variation of opening as they are lowered—to having the windows completely unobstructed. Natural ventilation is provided by hand operated glass louvres



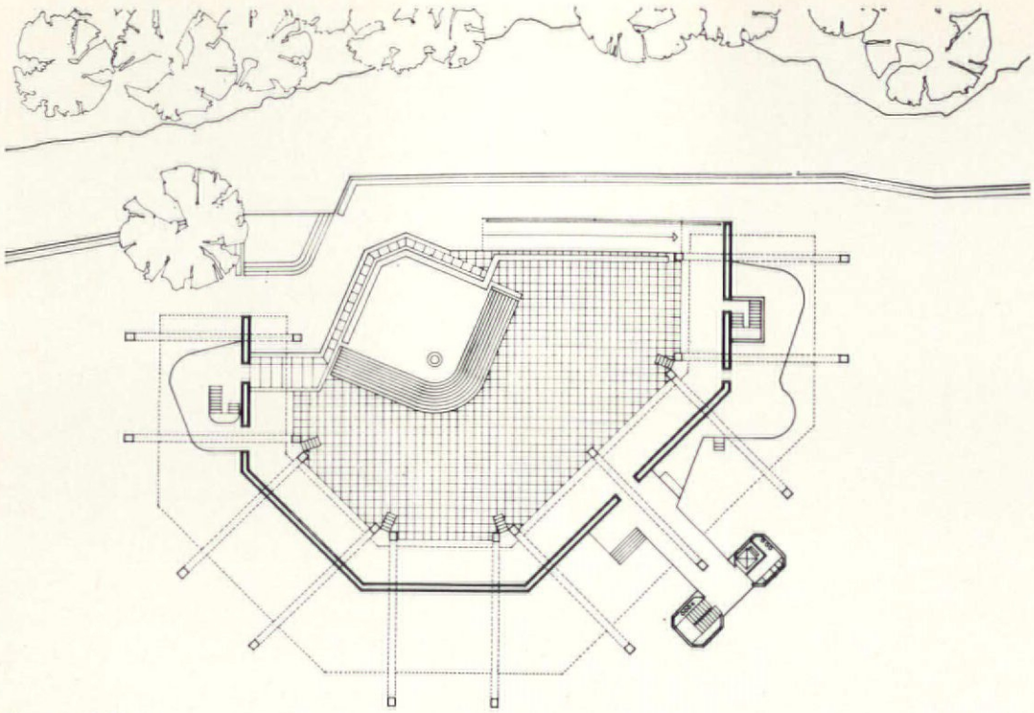
Section through courtyard



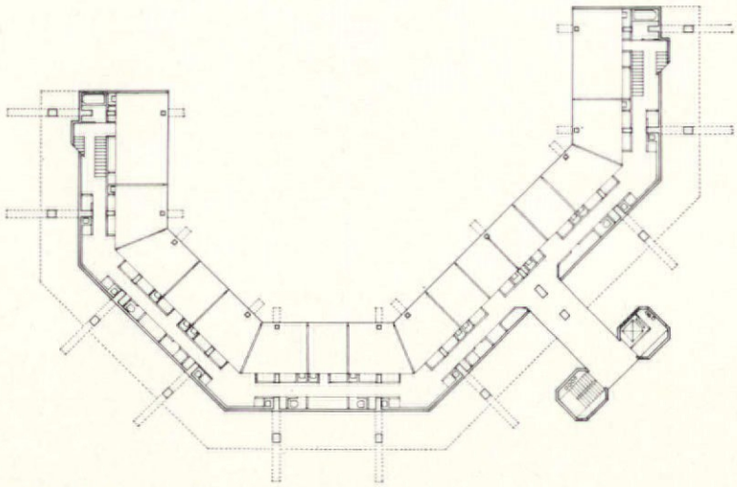
Section through breakfast room



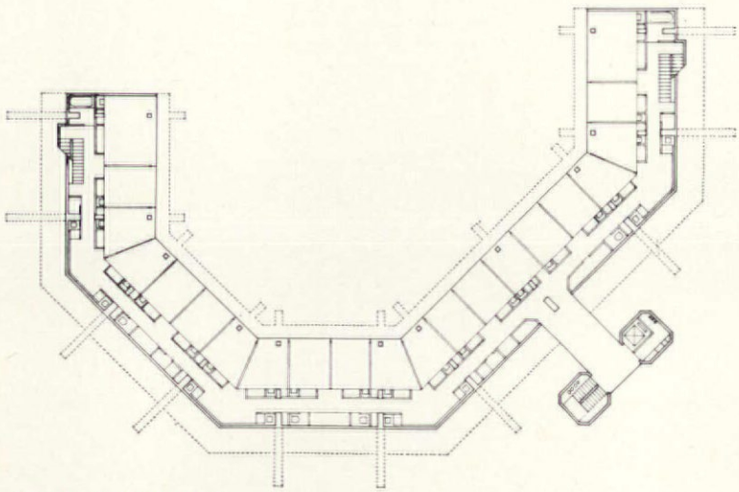
Notational plan



Ground floor



First floor (study bedrooms)



Second floor (study bedrooms)

located above the floor and close to the ceiling. These louvres are continuous across the width of the room and can be in the open position when the blinds are rolled down. The step-back of the window/wall façades at second, third and fourth floor levels provides a narrow ledge for external window cleaning. This ledge is not accessible from within the rooms.

Due to the step-back of each floor and the geometry of the building plan, there results a variation in room size and shape at different levels and this, in conjunction with the design of the two upper floors as studios, should produce a desirable variety of rooms. The research fellows' rooms (260 sq. ft) at first floor are considerably larger than the average undergraduate's room; one research fellow is positioned on the top floor in the largest studio unit (271 sq. ft). The bachelor fellow's apartment (527 sq. ft) is also situated on the upper floors; in addition to a principal room he has two rooms which can be used either as two bedrooms or as bedroom and study.

The main staircase is opposite the lift and both rise from a position adjacent to the porter's office. Stairs are also required for fire escape at the ends of each wing of the building, though it is intended that these stairs shall be an integral part of the general circulation. The stair at the end of the west wing terminates in the ante-room at ground level, adjacent to the breakfast room. In very bad weather it is possible to use the internal corridors and avoid going to the breakfast room via the cloister. At first, second, third and fourth floor all three stairs are connected to internal corridors which provide entry to all the study bedrooms. On the opposite side of this corridor, are the service rooms, i.e. shower, bathroom, toilets, stores, etc. There are four lavatories, two bathrooms, and two showers on every floor.

Gyp areas occur at the positions where the corridor cranks following the plan of the building and these areas are planned as lobbies or lay-bys off the corridor. The ends of the service rooms, flanking these gyp areas can provide small rooms for tea-making and washing up. These lobbies have continuous strip windows along the external wall, allowing sunlight to cross into the corridor; the windows will also provide a view, for students talking and drinking tea, of the south aspect and the main approach to the building. Stools could be provided for sitting at these windows and the sill could be broadened to make a bar or table surface. Normal circulation around the corridors will bring the undergraduates through the gyp lobbies, thereby promoting sociability with students who are in the gyps. There are four of these areas on each floor, occuring at approximately 45ft intervals where the corridor bends; sight lines are thus restricted by the crank of the plan and this should prevent long institutional vistas down the corridors.

It is intended to have under-floor electric heating in all rooms as the preferred way of heating this building. The considerable initial expense of boiler plant and flue would be

avoided, and it is better not to have radiators and pipes in the undergraduates' rooms.

There are no residential rooms at ground level. A cloister (12ft wide) runs around the court on the east, south and west sides, and provides access to the stairs descending at each end of the building. Entry from the cloister can also be made to the ancillary accommodation (porter's office, caretaker's flat etc.).

The main entrance on the south side of the building is adjacent to the porter's office and opens directly onto the cloister. Alongside the porter's office are the lift and main stair. These towers of vertical circulation are detached from the building and are positioned on the axis of the approach from St Clement's Street. The vertical form of the towers should indicate (and symbolize) the entrance to the new building.

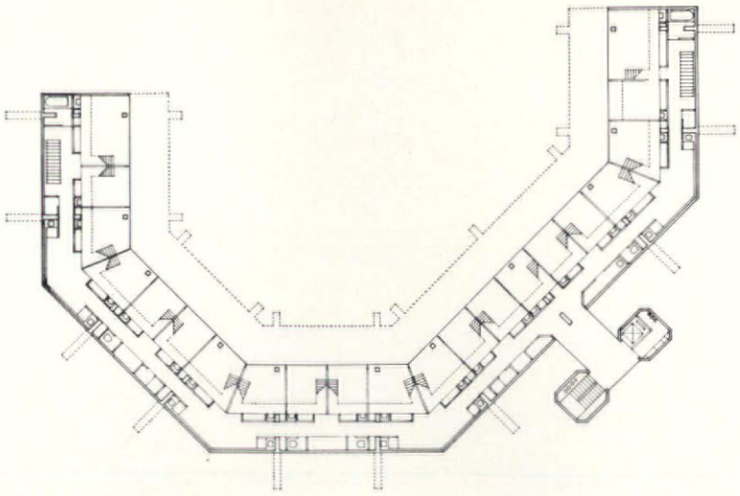
The mass of the building is raised above ground level and supported on reinforced concrete structural columns. In the covered area at the back of the cloister and under the building there is space for bicycle parking (75), and for positioning ancillary accommodation, including the caretaker's flat which adjoins the porter's office. At the end of the west wing the cloister terminates in the anteroom which, in turn, gives entry to the breakfast room. At the end of the east wing the cloister terminates in a ramp leading down to the public footpath along the river bank. This alternative entrance/exit is intended to have almost equal importance as the main entrance, particularly when the river walk is extended and there are other college buildings in the St Clement's area. Gates could be provided on this second entrance which, if locked at night, would necessitate students using the main entrance.

The breakfast room has high level windows on the NE and NW side allowing views out and upwards of the overhanging trees. Adjoining the breakfast room there is a servery counter and a small kitchen (under-counter refrigerator, wash-up sinks and cookers). The roof of the breakfast room is a paved terrace, about 2ft above the level of the court and approached by a wide flight of steps.

Along the south and west boundaries of the site there are positions for parking 15 cars. It would also be possible to park one or two cars adjacent to the caretaker's flat and porter's office. Access for cars will be direct from St Clement's Street and also, it is hoped, from York Place.

Cost

The quantity surveyors have cost checked the drawings at an earlier stage and they report that the overall cost of this scheme will be within £310,000 (inclusive of furniture and fees). They are now preparing a more detailed cost check which will take into account the possibility of using double glazing in certain areas. □



Fourth floor (studio bedrooms)

Schedule of room sizes and numbers

First Floor

16 rooms = 2632 sq. ft. Average: 165 sq. ft per room

Second Floor

21 rooms = 2662 sq. ft. Average: 127 sq. ft per room

Third Floor

21 rooms = 2934 sq. ft. Average: 140 sq. ft per room

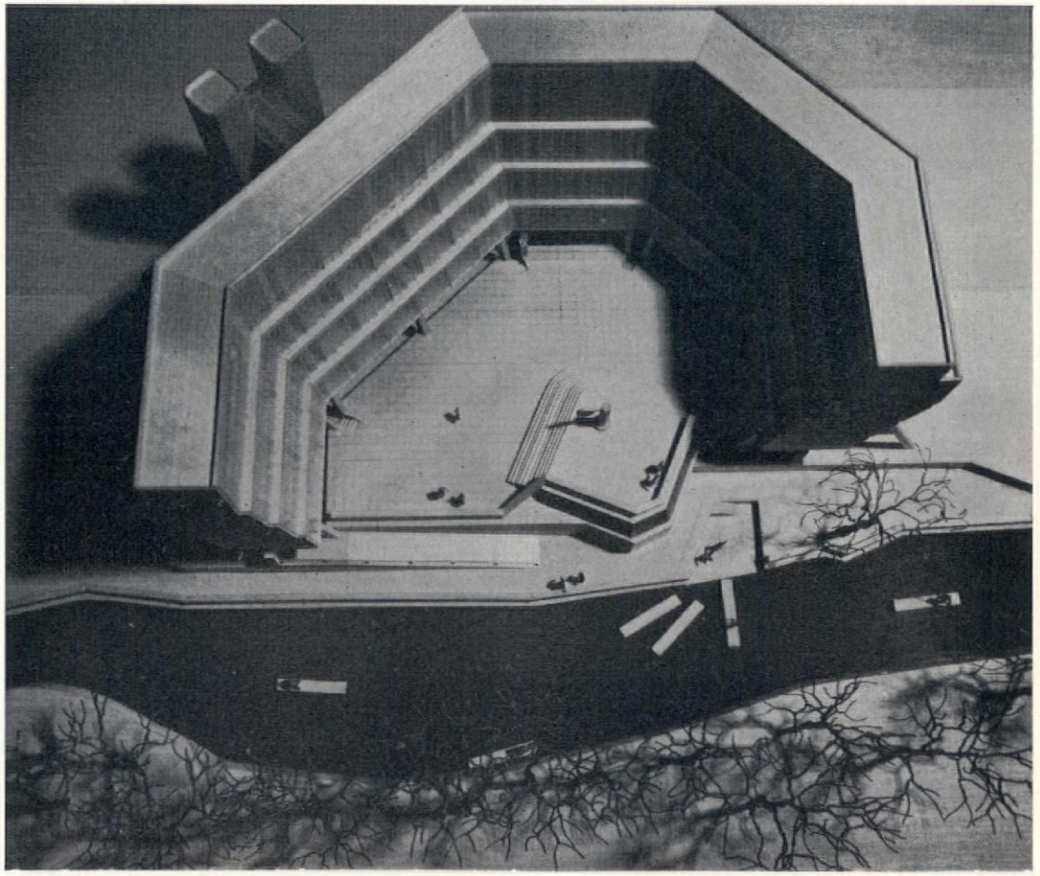
Note: Average room size on first, second and third floor = 142 sq. ft (including storage).

Fourth and Fifth Floors

20 rooms = 4530 sq. ft. Average: 227 sq. ft per room (including storage).

Summary

80 rooms equals: 74 undergraduates' rooms
3 rooms for research fellows
1 apartment for bachelor fellow (equivalent of 3 rooms)



Architects: A. & P. Smithson
Consulting engineers: Ove Arup & Ptners
Quantity surveyors: James Nisbet & Ptners

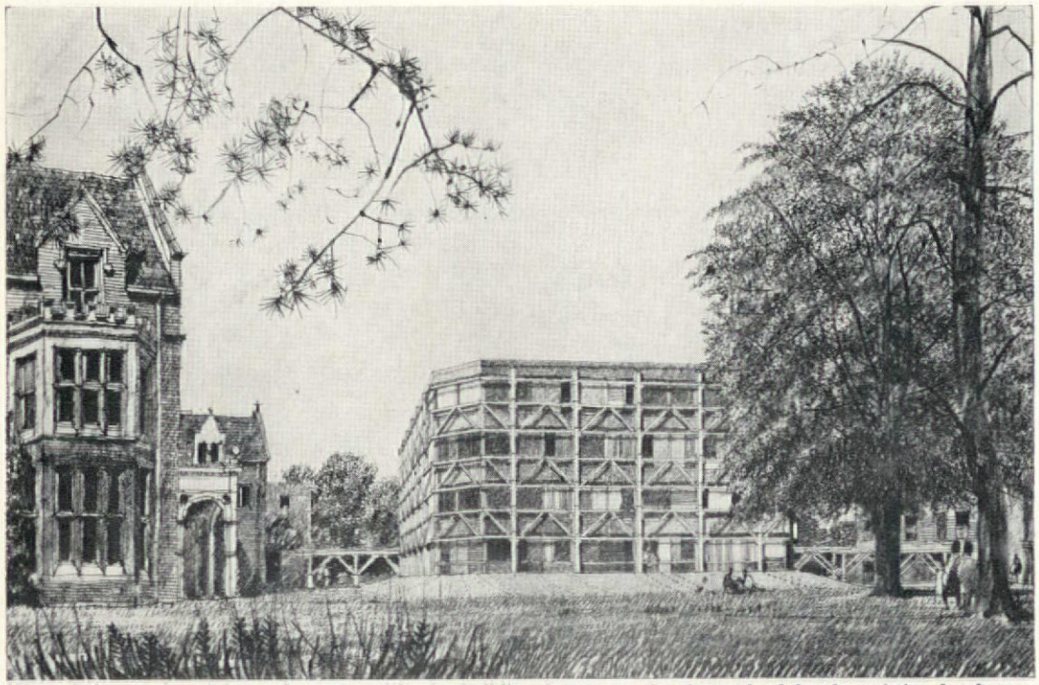
St Hilda's is a women's college which is to be found at the end of a cul-de-sac called Cowley Place, over Magdalen Bridge, Oxford. Its buildings have that 'bitty' character common to women's colleges—due, one assumes, to piecemeal endowments that have made them purchase or build bit by bit. Positive features are a long frontage to the River Cherwell—some 1200ft in length; views over Magdalen School playing fields to Magdalen Tower and the turrets of All Souls; and quiet.

At the present time a certain number of undergraduates live out of college—which they dislike—and the proposed new building is intended for them. It provides 51 undergraduate rooms, one tutor's flat and the appropriate servicing facilities.

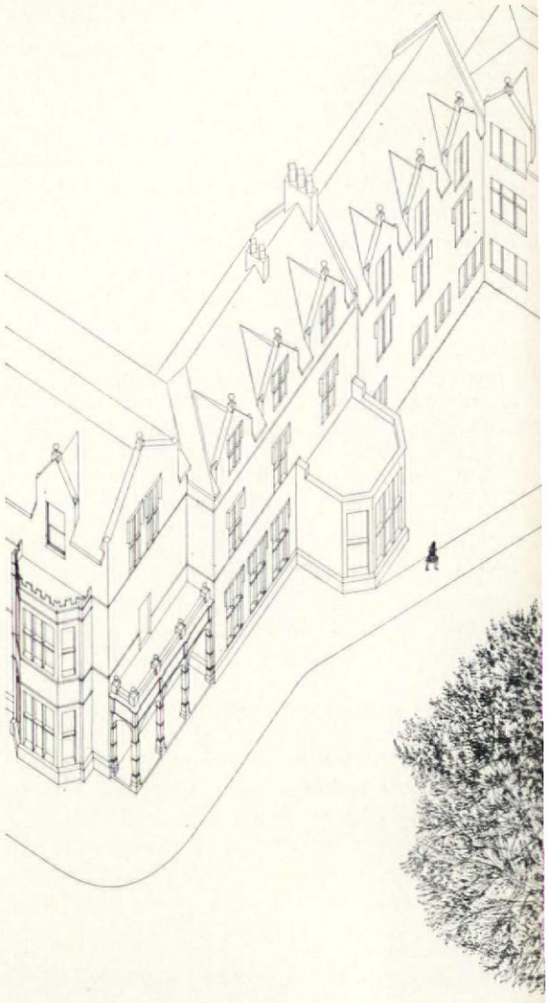
The new building is sited between existing buildings called Wolfson and South. The undergraduate rooms all face the garden, and the access which is inevitably fairly noisy is towards a new service-yard. Screened from the garden this is the first step in re-organizing the College's system of vehicular access so as to improve the most important asset, the garden frontage to the river.

At present there is a macadam road along the river front of South, where car-parking and access for certain servicing takes place. By making a proper service and parking area as part of the new building one begins to establish a system whereby all vehicular movement is kept to the back of the site and the river frontage could be freed eventually from the stresses, noise, and smell that vehicles bring.

The new building is a walk-up of four



View of the new hostel from the west, with the building known as South on the left, the existing beech tree on the right
Drawing by Gordon Cullen



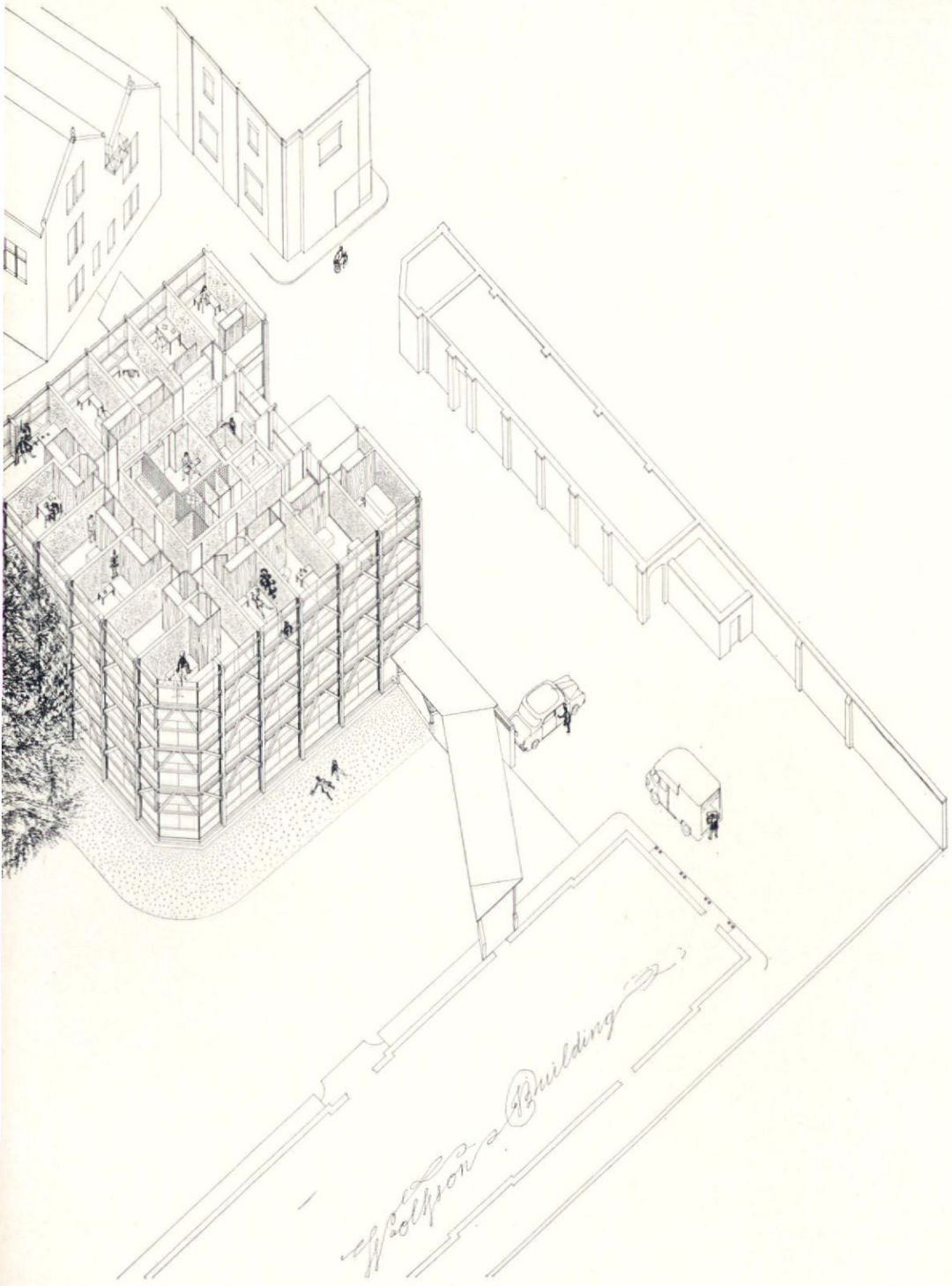
ST HILDA'S

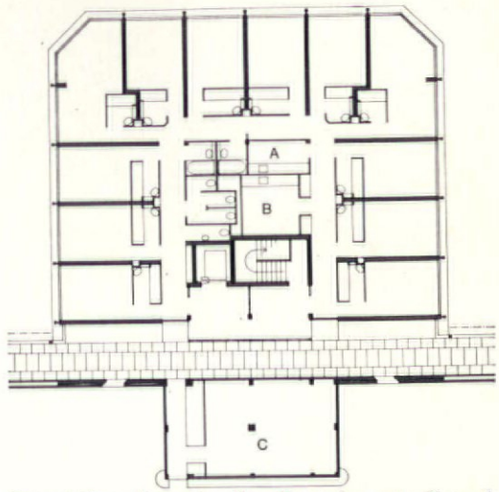
floors, with a lift for servicing and wheelchairs. It is entered from a covered link along the wall screening the noisy service yard. The lobbies and stairs have Pirelli rubber floors, and the stair and lift are in a solidly built box keeping the noise of people going to other floors from the floors they are passing. (The main snag of the traditional college arrangement is noisy staircases with doors directly off the landings.) The corridor floors are completely carpeted except in the service core. Between the corridor and the individual rooms there are the mini-dressing-rooms which shield the rooms from corridor chatter. Between the rooms are 9in solid brick walls and 6in *in situ* concrete floors. The windows have projecting mullions to prevent noise going from room to room via open windows.

To enable the students to rearrange the furniture to suit themselves, the rooms are organized so that the bed can be put against any wall. This criterion gives an irreducible room width—the bed length plus the distance needed to get into the room.

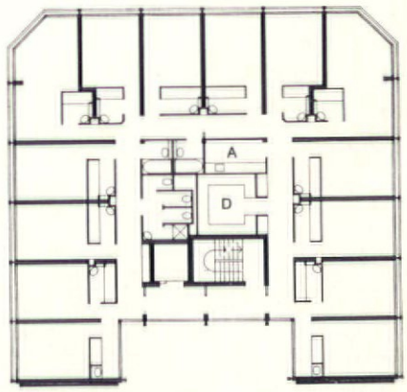
The architects were determined not to have the usual wash-basin-in-a-cupboard with the social embarrassment this often entails. In the mini-dressing-room one can happily leave the corridor door unlocked or change with a visitor in the room.

The architects considered that one of their main tasks at St Hilda's was to establish a form of building which would in some way be seen to be a girls' place—as older colleges are so easily seen as men's places. Starting from the fundamental English problem of needing a lot of light, we have provided big windows. But to prevent the girls being too 'exposed' (their psyche as well as their person is exposed with much glass) there is a separate external screen of timber members, which we hope will cut down glare, obviate any sense of insecurity, and prevent the casual eye from breaking too easily the 'skin' of the building. The timber screen is a kind of yashmak. The glare and over-exposure will be helped also by an existing tree—a beautiful, pale copper-beech. The timber screen is in untreated oak, (pale grey when dry, brown when wet), the mullions and spandrels are Cotswold stone colour, the brickwork on the back fawny-pink selected stocks—colours which reflect those of the recently restored Regency house in Cowley Place, now part of the College.





Ground floor plan—A galley, B service room, C trunk room and calorifiers



Typical floor plan—A galley, D linen room

THE NER GROUP

Discussed by Peter Cook

For some time a revivification of the great spirit, enterprise and sheer invention of Russian architecture was to be expected. Locally, the gamesmanship of successive ferreting operations by which, one after another, the masterpieces of Russian Constructivism were unearthed (whether from Tchernikov's 101 Architectural Fantasies, *obscure issues of* Architecture Vivante, *or via Vittorio de Feo's book), fell into the English trap of more interest in their historical significance than in the interpretive and inventive skill of the designs. At any rate, one began to have this hunch that when the Russians could think their way beyond the Stalinist cake-architecture we would all need to watch out.*

The NER Group work is the first *avant-garde* architecture that has been exposed to the Western scene. It owes its championship to Giancarlo De Carlo, who organized the publication of their town-planning ideas a year or so ago in Italy. He then invited one of the members of the group, Alexi Gutnov, to make an exhibit of their work at this year's Milan Triennale. The intriguing thing is the degree to which they fit in with the familiar scene.

The urban structures themselves are reassuring if we feel that a common thread should connect all experiment in a period of architectural history. They state themselves that 'Our work is imbued with the desire for a human order of things, for a genuine *world* architecture. This desire has led us to a certain formula for contemporary architecture.'

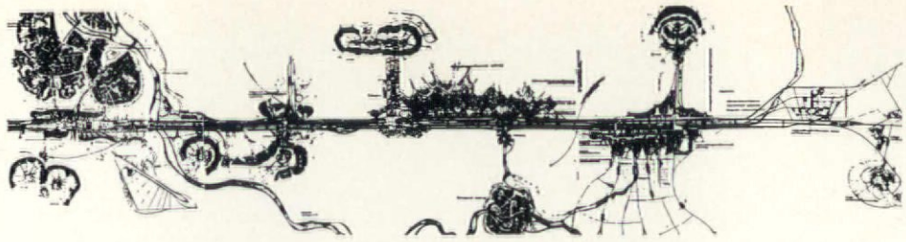
This familiarity can also have disconcerting implications: after all, the whole business of culture is bound up with geography, and the validity of a place in which to live must have something to do with the comprehension of its likely public. I have found some illustrations of urban projects that display such similar characteristics to those of the NER work, that one is forced to suggest that they point to a variety of pitfalls, or possible future directions in which their researches might go. The exposure that the Metabolists' work gained a few years ago can now be seen in a perspective that suggests (*a*) that it was psychologically a boost to other experimenters elsewhere, (*b*) that it was bound to irritate many critics who are suspicious of such linear dexterity and (*c*) that the same designers would probably return to the post-Corbusian concrete mould when actually asked to design a building.

Soleri's Mesa City has close similarity to the plan drawing, and I cannot resist a glance back to the 1964 section through Plug-in City, when confronted by the super perspective drawing. The list of parallels is not drawn up to say 'its all been done' . . . more to welcome the NER boys and girls to the fold.

We are surely interested to know much more about the context within which this work is tolerated by the Moscow Establishment. Gutnov tells me that he spends a couple of days a week in an institute of 'Architectural Research' where these experiments can be made, and the rest of the week in the Moscow City Planning Department. He hopes that some others in the group are going to visit England, and feels that they are really not too cut off. Western architectural magazines are available, and the group is obviously not bashful about the need to use non-architectural technologies as the cabins clearly show.

The system of parts appears to be heirarchical:

First grade: a radius of influence up to 30 kilometres. Local non-specific centres of rehabilitation, of communication, of public and secondary education, of facilities. Local non-specific centres of production, administration—research establishments, automated production.

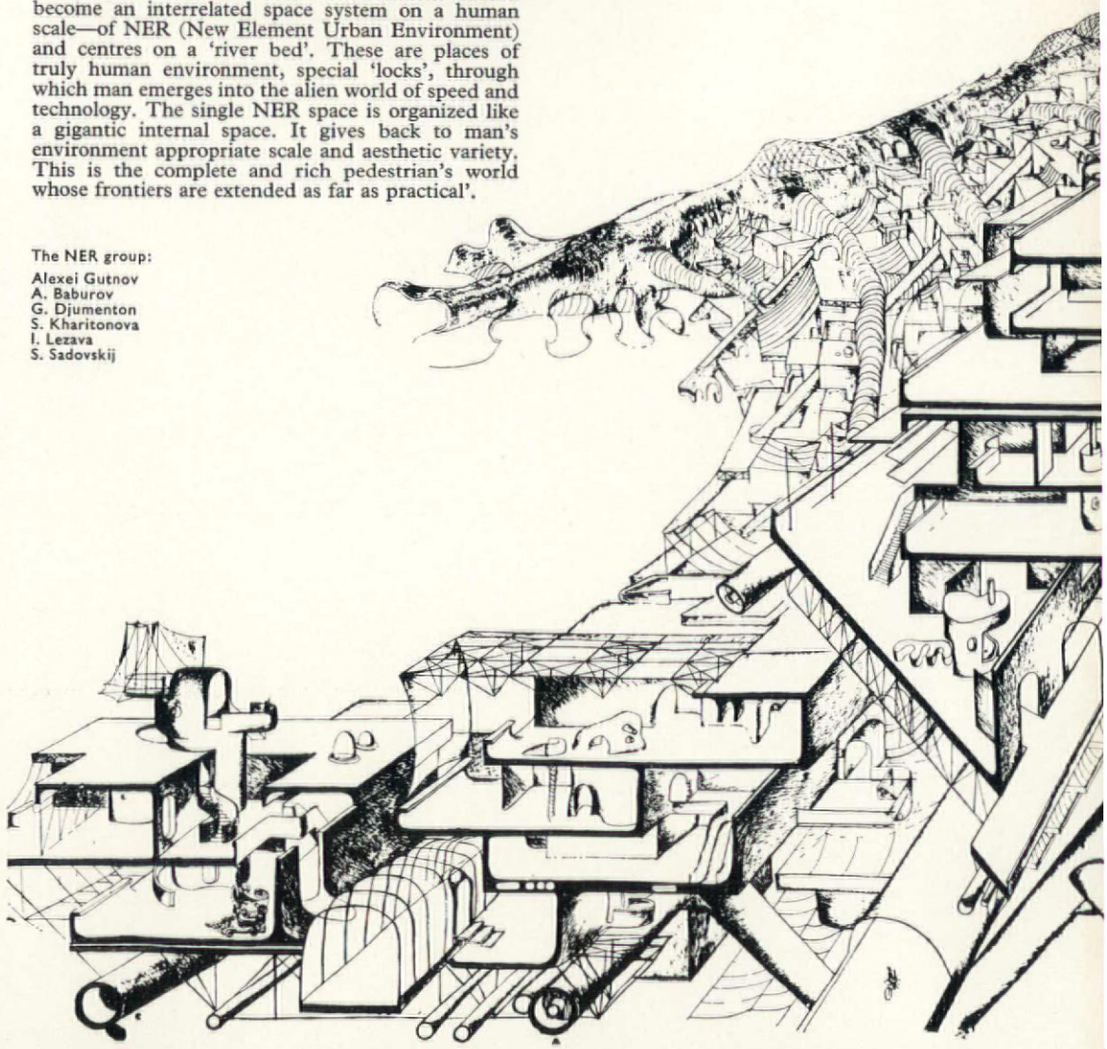


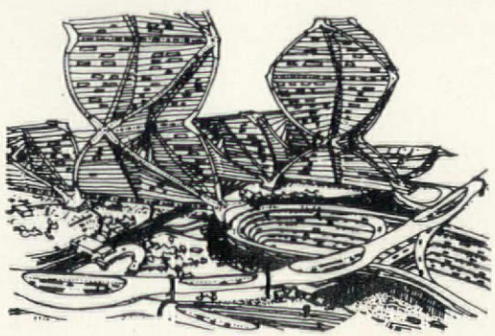
Second grade: a radius of influence up to 100 kilometres. Specialized centres of rehabilitation, of leisure, culture, entertainment, cultural monuments; specialized centres of production, of research, education, administration of branch industry.

Third Grade: Radius of influence up to 100 kilometres and over. Co-operative urban centres.

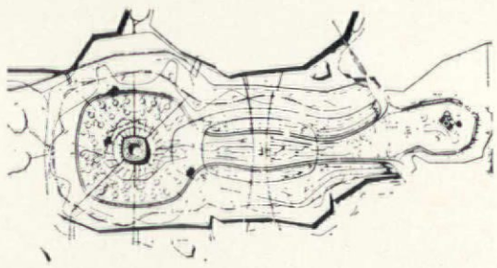
The really original part of the scheme seems to be the proposal that the 'urban environment should become an interrelated space system on a human scale—of NER (New Element Urban Environment) and centres on a 'river bed'. These are places of truly human environment, special 'locks', through which man emerges into the alien world of speed and technology. The single NER space is organized like a gigantic internal space. It gives back to man's environment appropriate scale and aesthetic variety. This is the complete and rich pedestrian's world whose frontiers are extended as far as practical'.

The NER group:
Alexei Gutnov
A. Baburov
G. Djumenton
S. Kharitonova
I. Lezava
S. Sadovskij





Noriaki Kurokawa: helicoidal city project

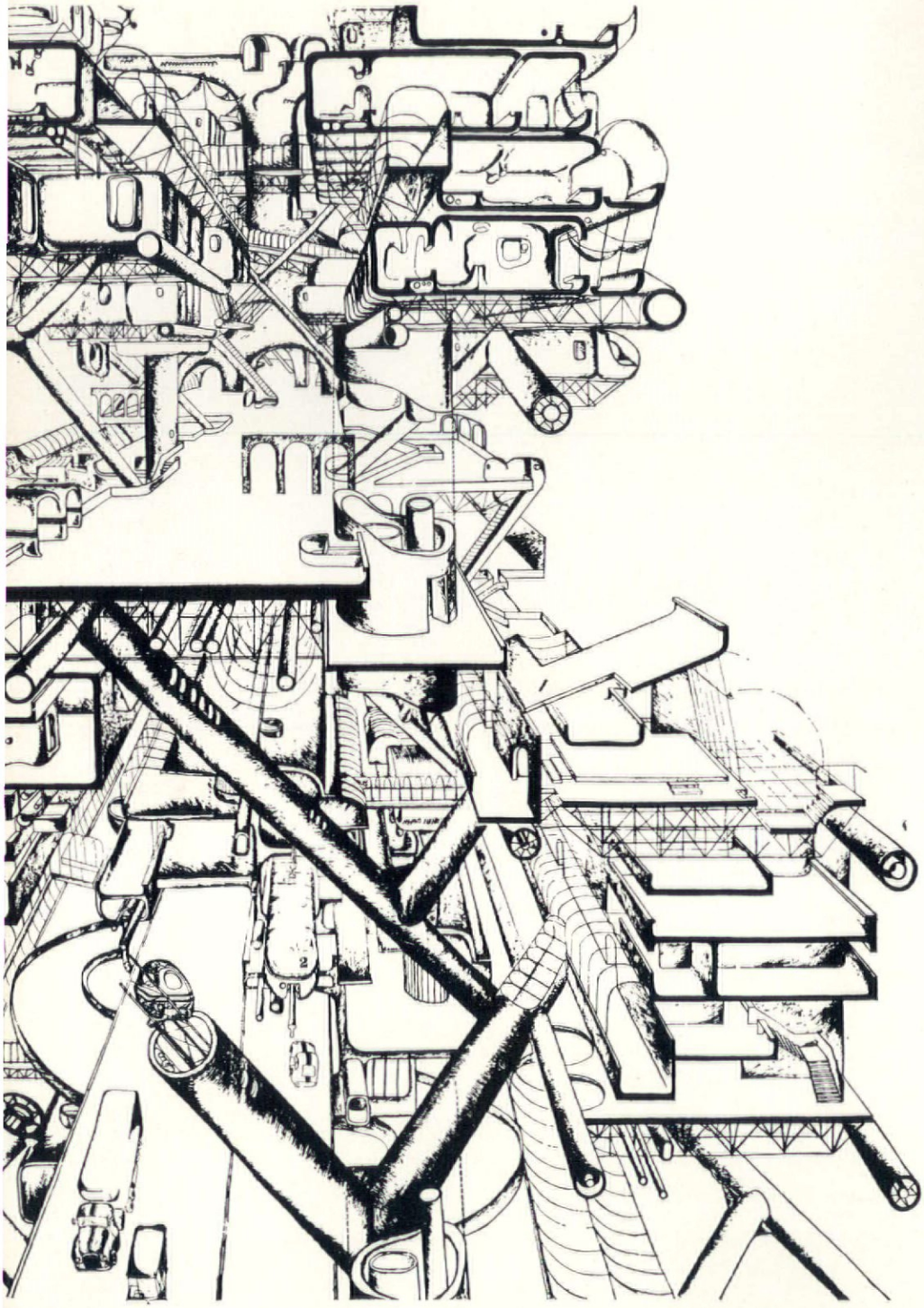


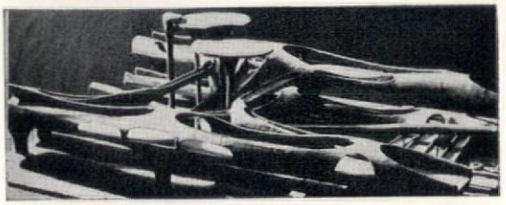
Paolo Soleri: plan of 'Mesa City'

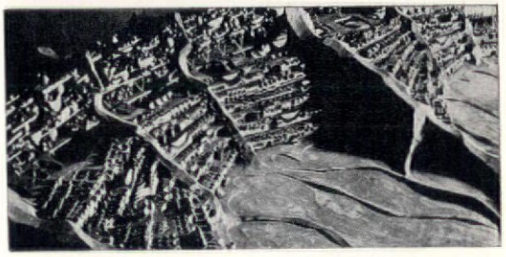
The idea of the city as a single building has, admittedly, been under discussion for some time in Western Europe, but this notion of 'locks' is intriguing. Perhaps it gives clue to the group's work. It is because the projects are agglommerate, yet made up of a series of known and likeable parti, that the authors themselves are able to make this 'switch on-switch off' actually part of the thing. Could one go through each lock, and enter a different world?

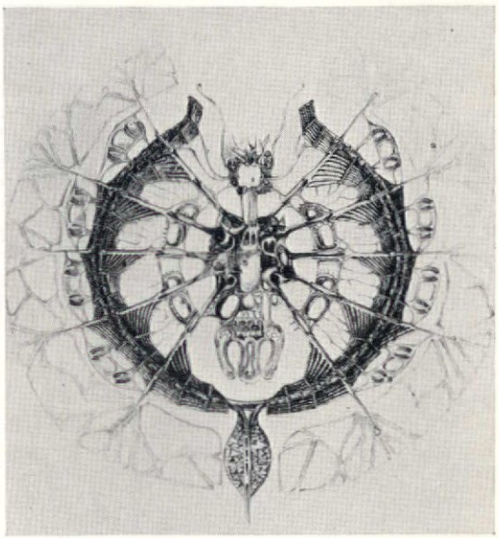
One likes the wit that at one moment makes the foothills of the structure suspiciously like a crocodile's head, and at the same time is able to postulate (to a non-consumer-orientated society) consumer durables such as caravans. One likes also the strong feeling of exuberance that it all has.

In the light of the average townplanning project seen in USSR magazines, it is great that the group is even tolerated. There is certainly a general move away from the florid but not from the basically monumental. The NER group has already gone much further. At this stage, universal exposure of this work can do nothing but good.

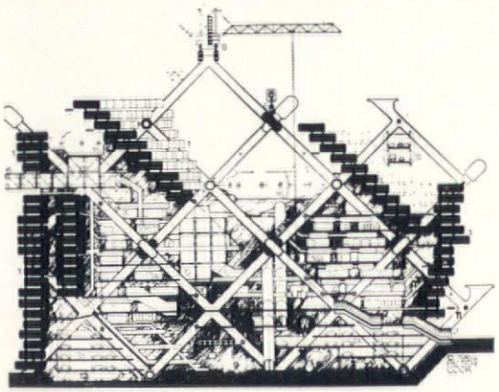




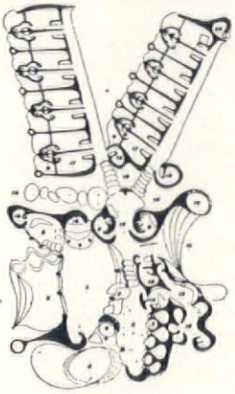




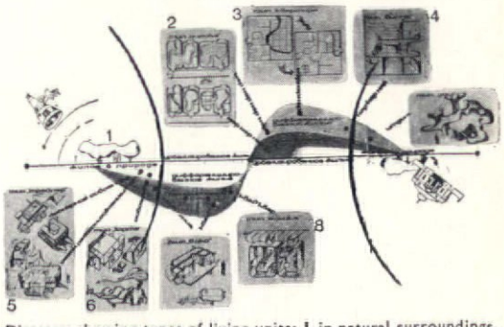
Models and plan of NER city



Peter Cook: 'Plug-in City' 1964



Amancio Guedes: hotel



Diagrams showing types of living units: 1 in natural surroundings, 2 Cell. 3 Flat. 4 Villa. 5 Trailer. 6 Camping. 7 Box. 8 Cell.

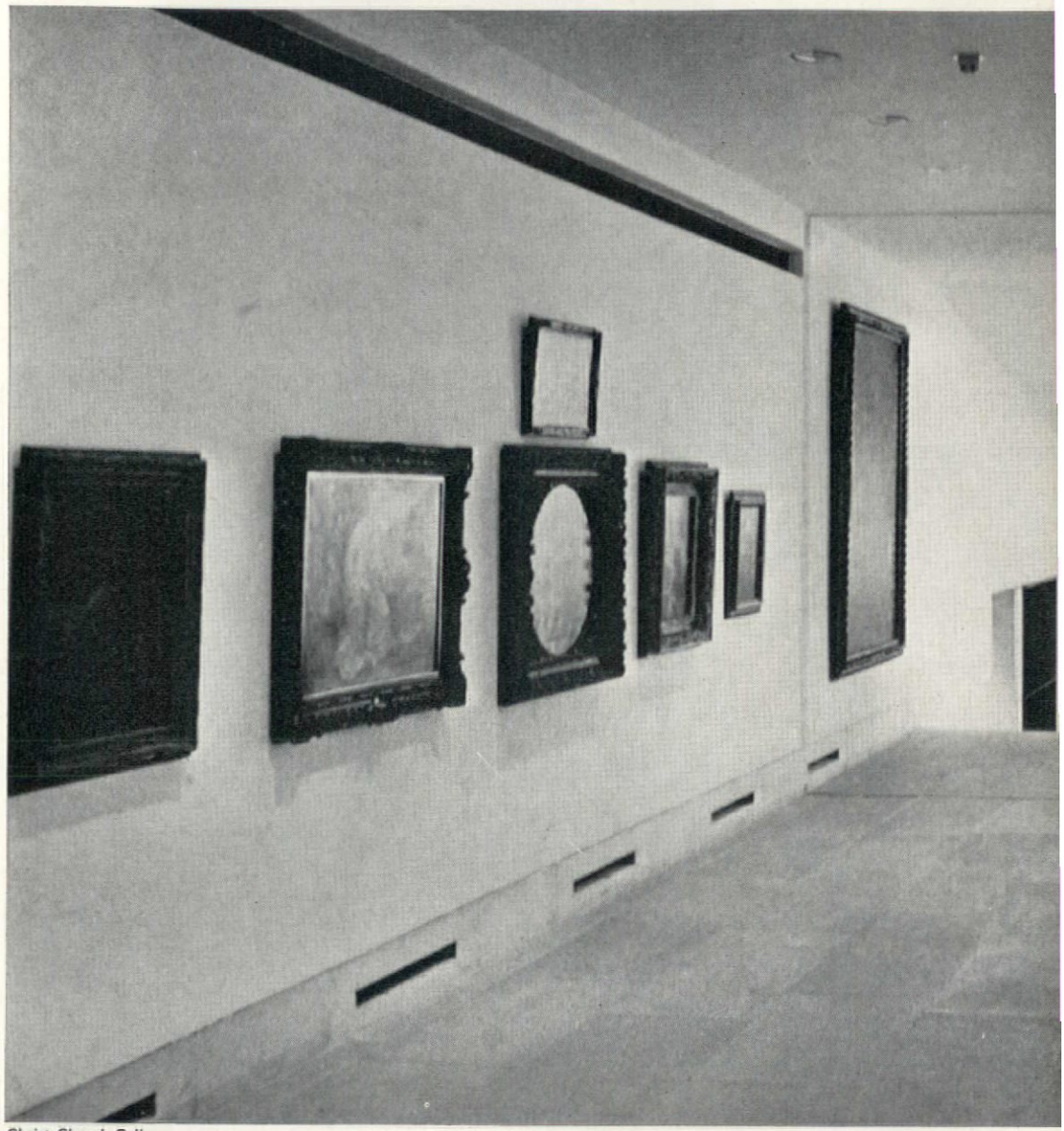
Discussed by Michael Levey
Photographed by John Donat

3 NEWART

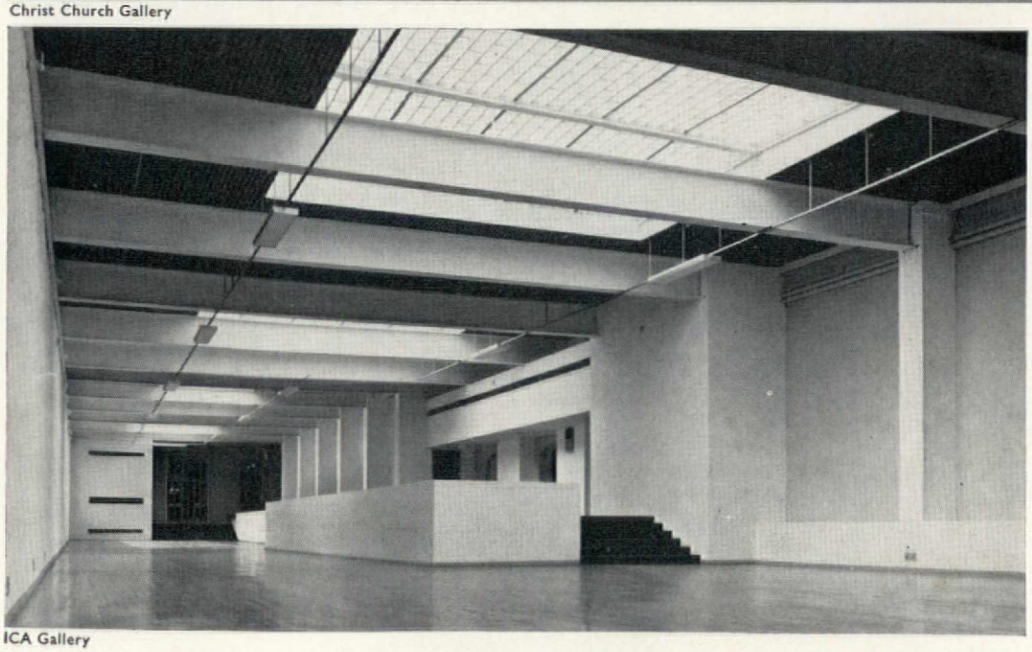
No less than one and a half cheers should greet the existence—if not the actual execution—of three new art galleries in England, all opened in fairly recent months and all seriously needed to solve urgent but very disparate problems. It is important to begin by welcoming the construction of these buildings, congratulating those who dared to spend money on them and who thus recognized that art (whatever that may prove to be) requires proper housing just as much as do people. The year is a triumphant one that sees a completely new and ingeniously-contrived gallery at Christ Church, Oxford, (*AD* Project Award, 4/65) to contain the permanent collection of paintings and drawings; an adaptation of existing structures in the Mall to provide exhibition space for fun and games at the ICA; and the long-heralded, very large Hayward Gallery on the South Bank which at last gives London a gallery designed entirely for temporary exhibitions of either sculpture or painting.

To the supposedly-philistine Victorians, these achievements might not have seemed very great. For us, however, whose national museums have had no opportunity to expand physically for many years, and whose biggest exhibitions have had to be accommodated not in graceful crystal palaces but by borrowing space in the museums or 'fitting-in' in rooms never meant for the display of works of art, at least in modern terms—for us these achievements represent perhaps the most significant advance in building to accommodate art since the war. More expert people than I will be able to speak of the technical advances in building technology, etc. which they represent. Yet it might be said that in their ideas about display, and in their uniform belief in clean, white walls (plus general air of austerity, purity, truth and other equally moral—rather than artistic—qualities) they are modern in a somewhat old-fashioned way.

The awful thing about the new Christ Church gallery seems that the pictures as pictures make less impact than before. It is perhaps because I was too busy admiring the way in which

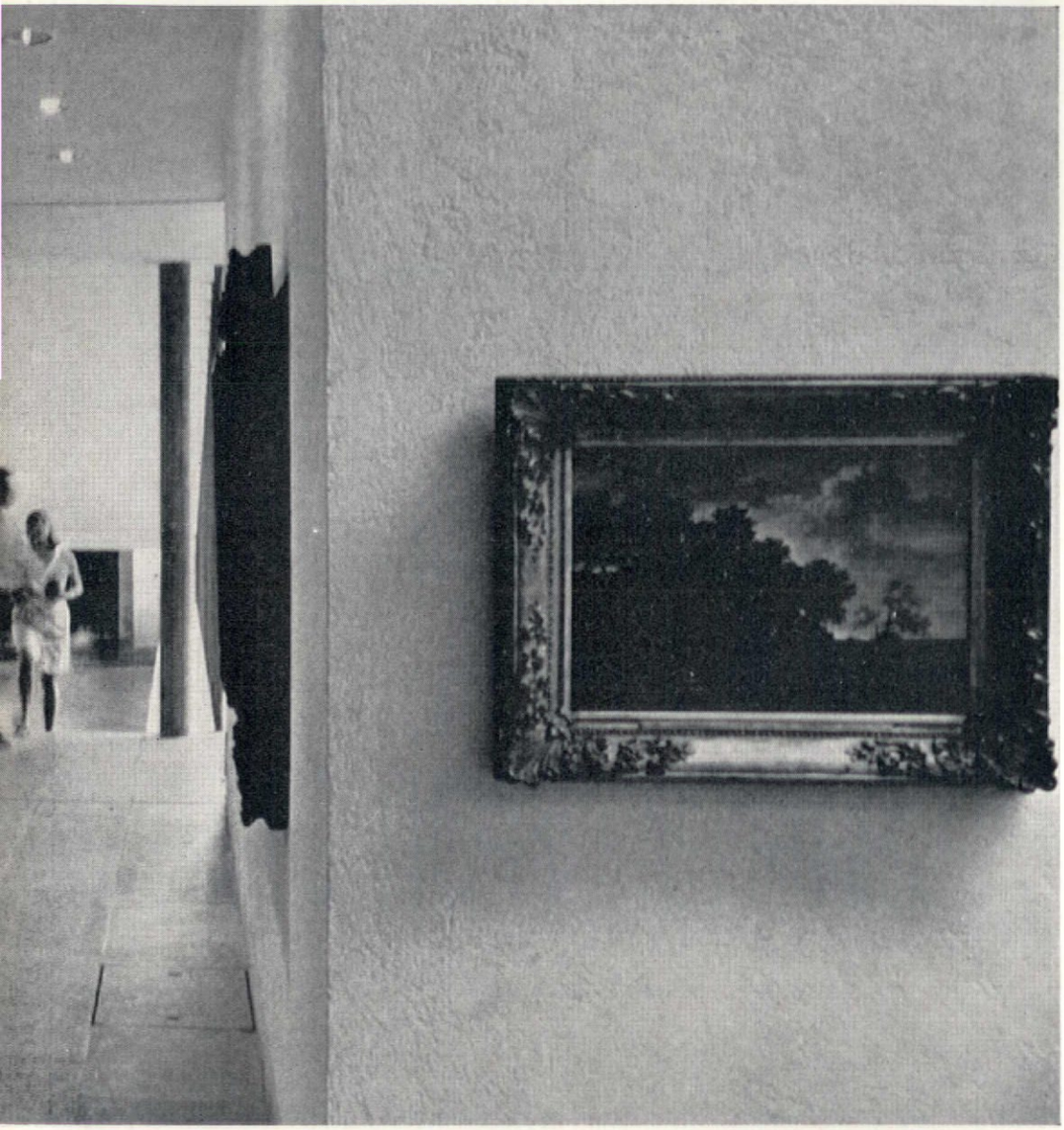


Christ Church Gallery



ICA Gallery

GALLERIES



problems of building a gallery below ground, without conveying acute claustrophobia, have been skilfully solved; or because I moved almost too easily between the two chief rooms; or simply because a private view is the wrong occasion to try to look at paintings as opposed to people. To my mind, there are undoubtedly too many paintings on exhibition and some of those high up on walls lit by top lighting look raddled or shiny—depending how the light catches them—but are certainly not seen at their best. The Christ Church collection is a very mixed bag; yet it is an unchanging one, and hence can be planned for in detail. Bare plaster walls giving general monastic austerity, with severe stone doorways and tiled floors, is the note throughout the new building. That may well seem the right atmosphere for Italian 'primitives' (an unfortunate word, perhaps too redolent of the early Church) but it is probably not the most sympathetic of environments for paintings by artists like Tintoretto and Van Dyck. These are hung in the largest room, the main one, which is dominated by a feature: four pillars supporting a sort of canopy fixed to the ceiling, consisting of wooden slats. This area is a shadowed, faintly swimming-pool-like space, about which opinions will vary. There are seats within it, but to occupy them is to have Damoclean sensations. Certainly, its effect is to soften the light in the centre of the room, leaving the walls luminous, but it achieves this very obtrusively. I found it impossible not to peer up at the slats, wondering if they formed a sort of ventilation or air-conditioning grille—leaving aside more neurotic sensations that they were the blades of some fiendish oriental device—and, in a word, uneasiness is caused by it and its uncertain function.

Monastic austerity has the advantage of letting you come close, physically and possibly emotionally, to the paintings on exhibition. At Christ Church they can indeed perhaps be seen better as specimens than as art, and this raises a problem of aesthetics. As soon as pictures of all

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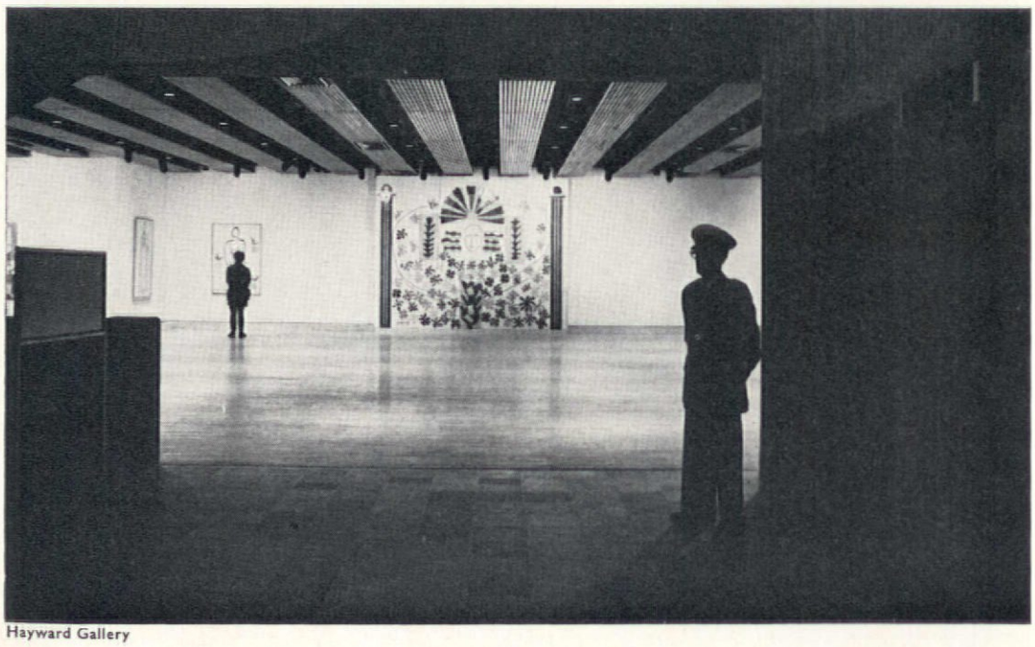

Hayward Gallery

kinds are collected together they take on a communal existence. They reflect—though only to those who are conscious of this aspect—the taste of their collector, yet this is seldom strong enough to bind together disparate elements. At Christ Church there are two main collections, that of General Guise, typically eighteenth century in its hotch-potch of good things and utter rubbish, and that of W. T. H. Fox-Strangways, orientated towards Tuscan and other Italian primitives (chiefly *quattrocento*), collected in Italy enterprisingly early in the nineteenth century. A rough division can thus be made, and has indeed been preserved between the two main rooms. Yet it still remains disputable whether the setting that suits one type of Italian picture need suit another: the medium and technique abruptly alter from a linear fifteenth century Florentine picture in tempera to the full, fluent oil paint handled by a Venetian like Tintoretto. What is more, the original ambients of two such pictures must have been very different. Is there any obligation aesthetically to try to suggest—in however slight and allusive a way—these distinctions? And should one positively plan the walls that will be displaying, presumably permanently, certain masterpieces, to accommodate those masterpieces with special effect? Or, if there is going to be considerable movement and change within a collection as exhibited, should this be anticipated by some flexibility in the architecture?

It might be said that the walls at Christ Church were good walls as far as they went; but did they go far enough? As the pictures looked to be fastened with impressive firmness to them, I should imagine that many changes of display will not be easy—or perhaps there is a resident plasterer, as well as a curator. Considered as rooms, the rooms are pleasant enough but perhaps rather too simple for the complex job of displaying pictures. They do not dictate to the visitor; it might be better if they did. And the question of display, faintly nagging with regard to the paintings, becomes serious when one goes up the stairs (ingenious freedom in a building where space upwards as well as around is so restricted) to the room where some drawings are exhibited. The Christ Church drawings are the real glory of the art collection, and it is frankly a disappointment that at any time only few of them can be shown publicly in this strange small room, with its necessary artificial light but with an impression also of other, emotional restrictions and cramping. It is less a room than a brief corridor with an S bend. Despite the masterpieces which were on show, I found it hard to linger in it. This may be too subjective and unfair, being merely an impression. I think it cannot be denied, however, that too little space has been given for the exhibition of the drawings. It is the more unfortunate since drawings remain—to the general public—underappreciated because of the usual difficulties of access and the scarcity of opportunities to see them on permant display.

Of course, much has been gained by and large through this new gallery: not only in better display, proper visibility and general conditions, but in the subsidiary benefit of a students' room and—perhaps best of all—in the pride displayed at last in a superb private collection now made agreeably accessible. Oxford drags itself so reluctantly into the twentieth century but it is slowly doing a few things to encourage Ruskin's wish to make undergraduates care somewhat for the fine arts. In its way, the new gallery at Christ Church (Ruskin's own college) may play its part.

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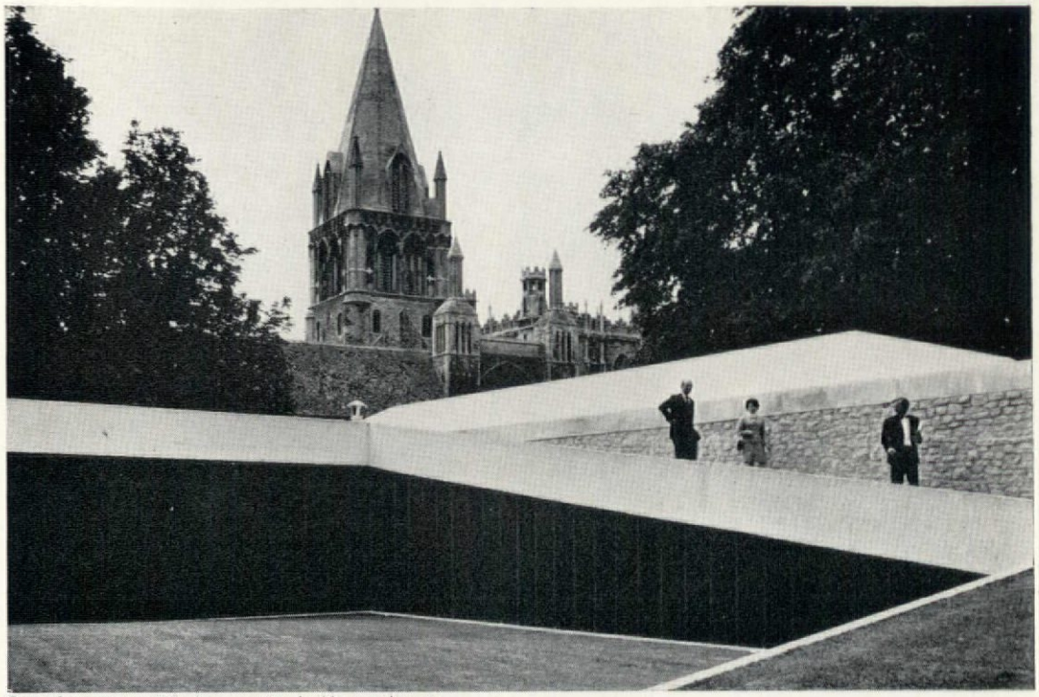
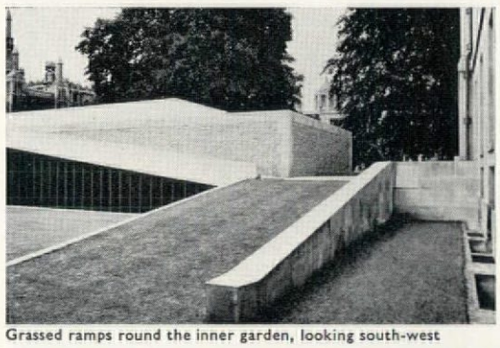
3 New Art Galleries/Christ Church, Oxford

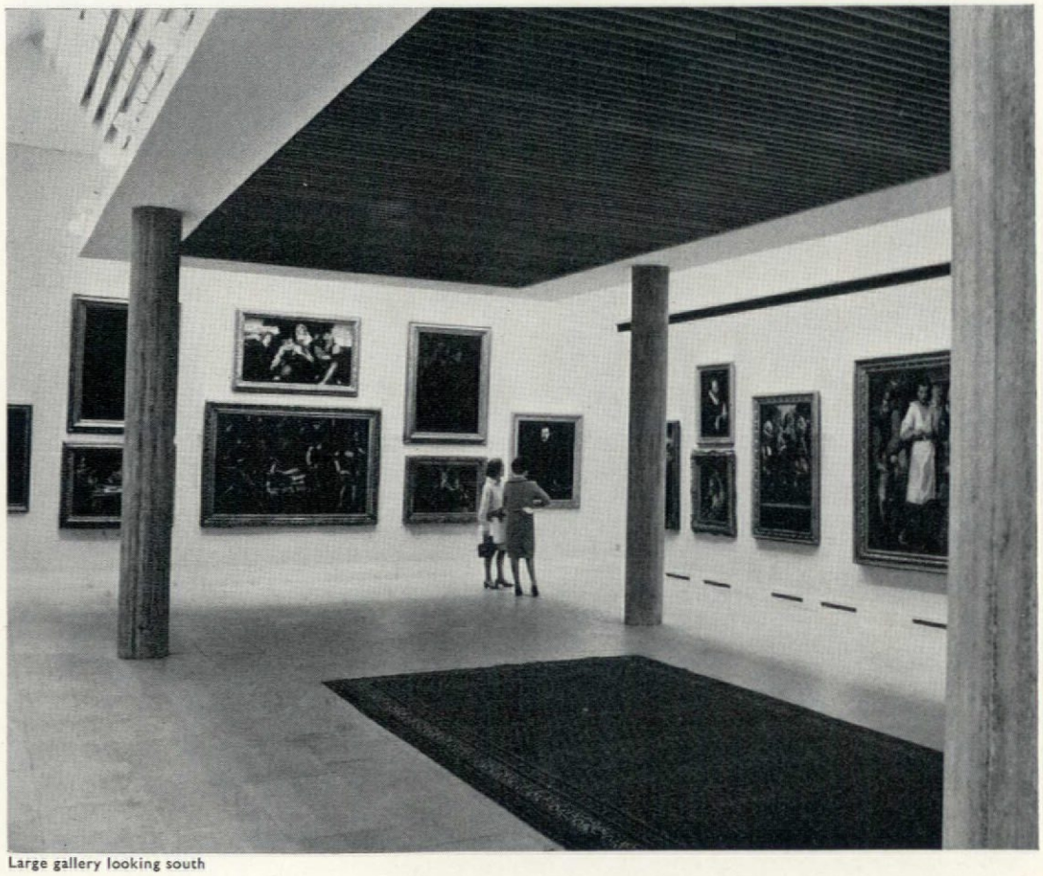


Grassed ramps round the inner garden, looking south-west



Grassed ramps round the inner garden, looking south-west

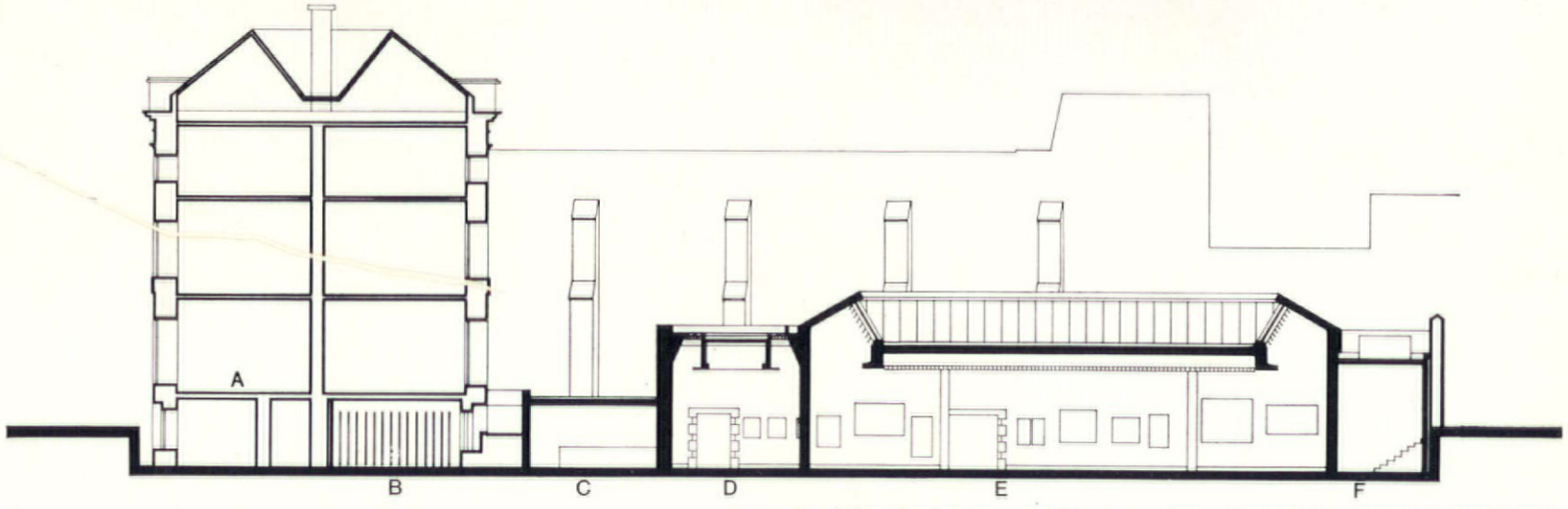
Inside the cloister under the west ramp



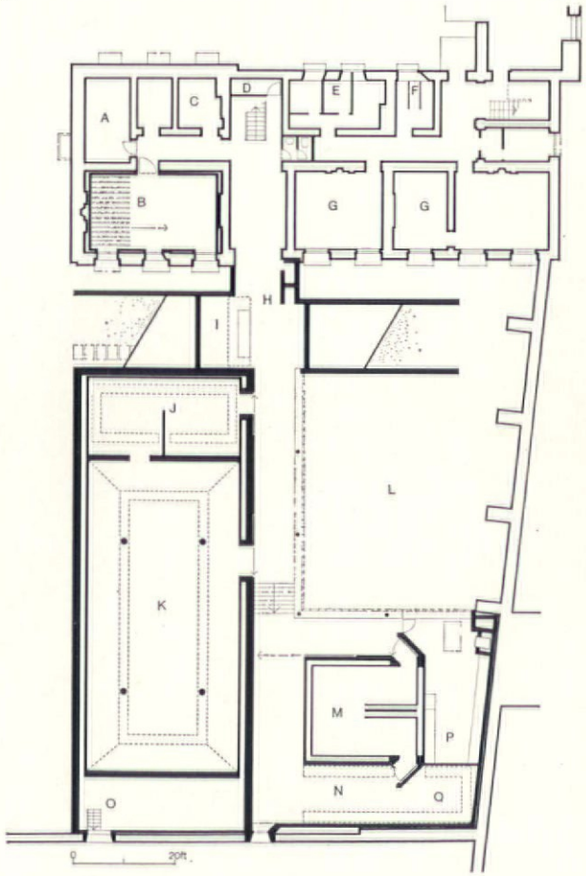
Large gallery looking south

Italian primitives gallery

Print room



N–S section: **A** Canterbury's student sets. **B** Picture store. **C** Custodian. **D** Gallery 1. **E** Gallery 2. **F** Plant room



Plan. **A** Mechanical plant for picture store. **B** Picture store. **C** Boiler. **D** Store. **E** Existing bathrooms. **F** Existing w.c.s. **G** Existing sets. **H** Entrance hall. **I** Custodian. **J** Italian primitives. **K** Large gallery. **L** Dean's garden. **M** Print room. **N** Smaller pictures. **O** A/C plant. **P** Study and picture store. **Q** Modern

Architects
Powell and Moya

Quantity Surveyors
G. D. Walford and Partners

Structural Engineering Consultants
Charles Weiss and Partners

Mechanical Engineering Consultants
David Kut and Partners

Electrical Engineering Consultants
Peter Jay and Partners

Clerk of Works
H. A. Tooze

General Contractor
Benfield and Loxley Ltd.

The building houses Christ Church's paintings and nearly 2000 drawings; the number of paintings was limited by the size of the site, and prints by that of the gallery. Easily accessible storage had therefore to be provided for those pictures which it is impossible to have on permanent exhibition. Only a small number of the drawings can be exhibited at a time, the remainder being stored.

The area of the site is about one fifth of an acre.

The gallery height was restricted to keep in scale with the surrounding garden walls and not overshadow Canterbury's ground floor rooms. Open spaces in and around the gallery remain as part of the Dean's garden, overlooked by the gallery but not accessible from it.

To avoid disturbing Canterbury, the entry to the gallery is through the semi-basement. The need for a low building fortunately suits the requirements of the gallery in which paintings which can benefit from natural lighting from the roof.

The external walls are of concrete faced with rough rubble stone to match that of the existing garden walls and with smooth Portland stone dressings and quoins. Generally, these walls have a wide cavity for the air conditioning services and an inner skin of 4in thick lightweight insulated concrete blocks, plastered internally.

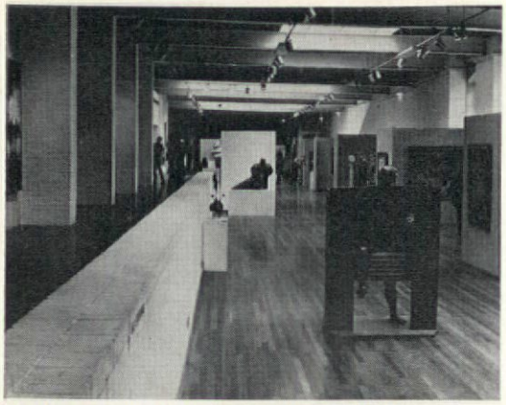
The sloping roofs on the perimeter of the gallery are of reinforced concrete, insulated and waterproofed and are covered with 3in thick Portland stone slabs giving the effect of thick stone walls with wide copings. The flat roofs are of reinforced concrete, insulated and waterproofed and incorporating pavement lights for the top-lighting of the smaller galleries. They are part paved and so designed that they can act as asphalte lined trays for about two feet thickness of earth for lawns and flower beds.

The fascia above the cloister window and the columns supporting it are of reinforced concrete with an exposed calcined flint aggregate finish, slightly textured by bush-hammering. The windows to the cloister have bronze frames, and those above the gallery anodized aluminium frames.

The internal walls have a painted textured plaster finish and the ceilings either plastered or fair-faced concrete with exposed aggregate finish. The floor finish throughout the gallery is blue-grey York stone flags.

The lighting requirements have influenced the forms of the rooms, especially that of their ceilings. Generally, the roof has been evolved to allow high level daylight and artificial light to strike the pictures at a steep angle so that reflections from the surface of the picture fall on to the floor in front of the spectator, not into his eyes. The light sources, both natural and artificial, are arranged so that the viewer should not be consciously aware of them.

The whole gallery is air-conditioned.



The ICA gallery during the Obsessive Image exhibition

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Nothing too solemn should perhaps be expected from the ICA stamping ground (once the stables, after all), freshly whitewashed in the Mall. Indeed, it should be part of the ICA's duty to avoid solemnity, and presumably the basic requirement was a reasonably large area of space in which 'things' can be exhibited or can just happen. What we get is a long, tunnel-like white room, lit by side lighting on the south aspect (from existing, unmodified windows), supplemented by spots and electric what-nots hanging from the ceiling. Since that would otherwise really be that—an undistinguished area—there is some relief in the raised wooden platform which runs down the length of the north wall. All the same, it may well prove a bore if it is a permanent feature on all occasions. Having foolishly missed the Obsessive Image exhibition which launched this gallery, I paid a heavy penalty (not to speak of stiff entrance fee) in visiting it during an exhibition of Posters of the Sixties. These were mounted in zig-zag formation down the room with very depressing effect: it was rather like a Tube station without any trains, and personally I prefer the Tube station method of display. It did not seem certain that the gallery was particularly adaptable or that much could be done to play around with the space. Its narrowness is one inescapable fact; its single entrance is another; and, unless there are ingenious devices and movable screens which can assume some architectural role, the room looks as if it would always remain *qua* room monotonous. Further plans may be intended to modify the present arrangements. An exciting exhibition could possibly make the room seem exciting—or just make one oblivious to it. The latter is a poor solution. Still, there the space is. Perhaps the ICA could organize a show which revolved around ideas of how to improve their own exhibition area.

If the ICA gallery is frankly interim amid the promised complex of Nash House, the Hayward Gallery represents in many ways solid, final, permanent-looking achievement. Indeed, outside it is rather like a windowless giant liner of concrete, moored at the South Bank: or perhaps several liners, agglomerated together. There is something about the look of it too that is not so much modern as modernistic. It is also big enough inside to make one wonder what the Arts Council will find to fill it with when the Matisse exhibition is over. However, everywhere it is planned to accommodate screens slotting into ceiling and—in three of the four galleries—the floor, and presumably walls of these can break up the vast film-studio-like cavernous halls. Without the bold lines and singing colour of large-scale Matisses to cheer them, these could easily look gloomy; there is something dank and

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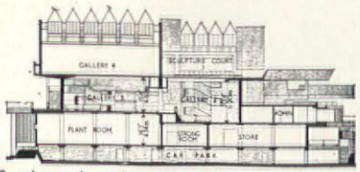
3 New Art Galleries/Hayward Art Gallery, London



South–north section through the Hayward Gallery

Architect to the GLC
Hubert Bennett

Deputy Architect
Jack Whittle

Senior Architect, Civic Design Division
Geoffrey Horsfall

Deputy Architect, Civic Design Division
E. R. Hayes

Group leaders for project
E. J. Blyth, N. Engleback

Job architect
J. W. Szymaniak

Quantity Surveyor, Dept. of Civic Design
M. F. Rice

Quantity Surveyors
Harry Trinick and Partners

Director of Mech. and Electrical Services
C. A. Belcher

Divisional Engineer, Electrical Services
P. C. Hoare

Divisional Engineer, Mechanical Services
R. J. Dickson

Structural consultants
Ove Arup and Partners

Lighting consultant
H. L. Gloag, Building Research Station, D.S.I.R.

Main contractor
Higgs and Hill, Ltd.

The Hayward Gallery completes the South Bank Arts Centre (*AD* 3/67, p. 120). It was designed concurrently with the Queen Elizabeth Hall and Purcell Room which were opened in 1967. The two buildings are related to the Royal Festival Hall (*AD* 6/51) by a system of pedestrian terraces which provide access from Waterloo station concourse, Waterloo and Hungerford bridges. The principal point of access is from these terraces.

External design. The box type structure of the galleries is clearly expressed, the upper galleries resting transversely over the lower, the part cantilevered sculpture courts form a dominant feature of the design. Whereas the walls of the gallery and lower areas are clad with precast concrete slabs having exposed Cornish granite aggregate, the sculpture courts and shafts from the circulation core rising above the general level of the building are of exposed concrete finish expressing the boarded shuttering. The doors and glazed screen to the foyer are of cast aluminium.

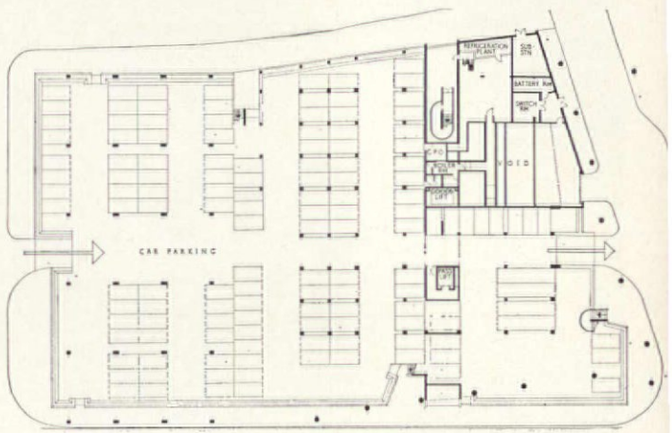
Structure. With the exception of the roofs to the top galleries which are supported on welded structural steel frames, the structure is of in-situ reinforced concrete. The central part of the structure is stiffened by two lift shafts and the main vertical services shaft which carry the appropriate vertical loading and transmit a proportion of lateral loading to the foundations.

The ground floor (level +10.00 O.D.) consists generally of 7in r.c. ground bearing slabs. The floor over the car park area (19.00 level) has been designed as two-way 6in slabs carried by 4ft 0in wide and 18in deep beam strips, spanning between walls and columns. At levels 32.00 and 37.00 O.D. the floor construction is similar. The floors at 43.50 and 47.00 levels are of ribbed construction. At 57.00 level the floor of the larger of the galleries consists of closely spaced Tee beams; and the open sculpture courts are partly cantilevered over the supporting walls.

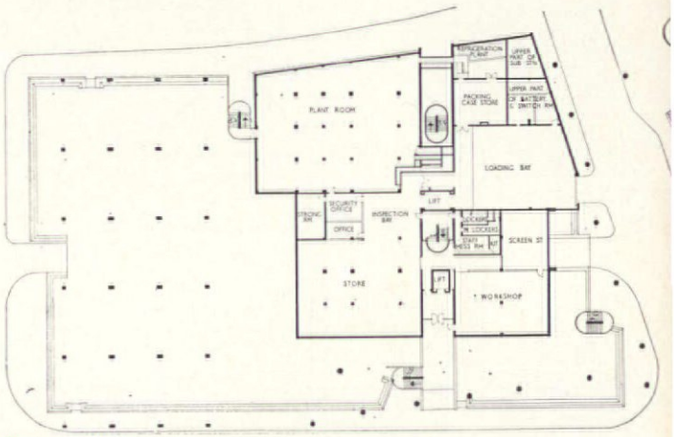
The walls which form the parts of box structures at various levels, act generally as horizontal spanning members, with often complex conditions of support. All the service ducts, vertical and horizontal, are incorporated into the structure and, whether internal or external, are in reinforced concrete, and are clearly expressed.

The foundations are by means of large diameter concrete piles.

Cost: total complex, £7 m. Gallery, £800,000.

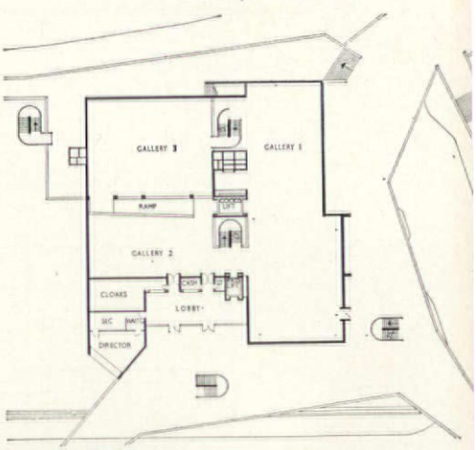


Hayward Gallery plan at level 13.00

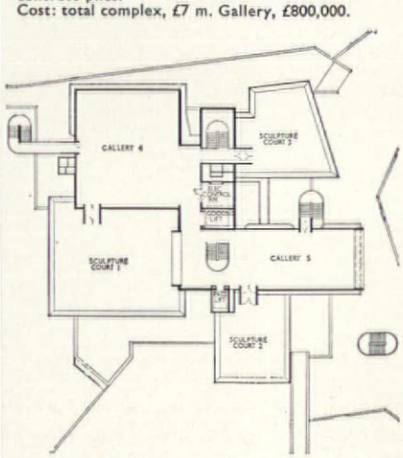


Plan at level 19.00

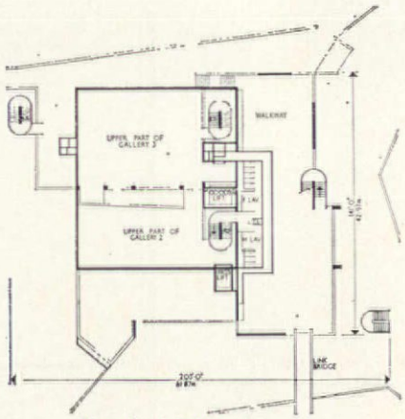
The Architects' Journal Information Library 10 July 1968—RIB (67): UDC 727.2



Plan at level 32.00



Plan at level 57.00



Plan at level 47.00

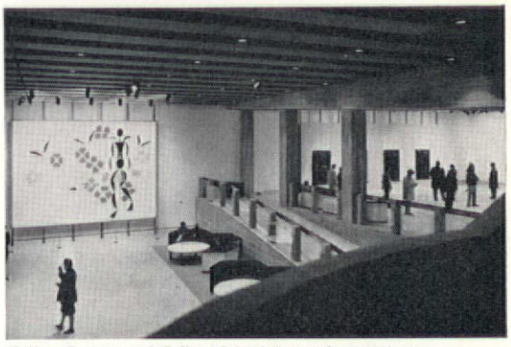
Pedestrian bridge (level 32.00) to Gallery from Queen Elizabeth Hall

Upper leve (32.00) access to main entrance

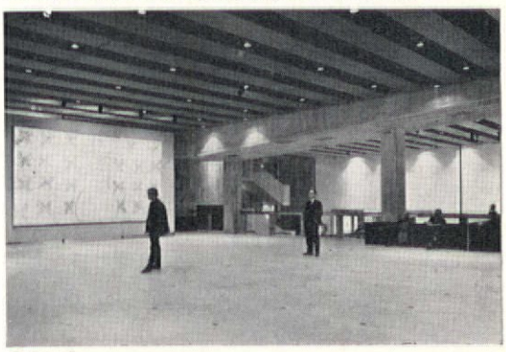
Main entrance lobby (level 32.00)

View from Gallery 2 (level 32.00) to ramp and Gallery 3

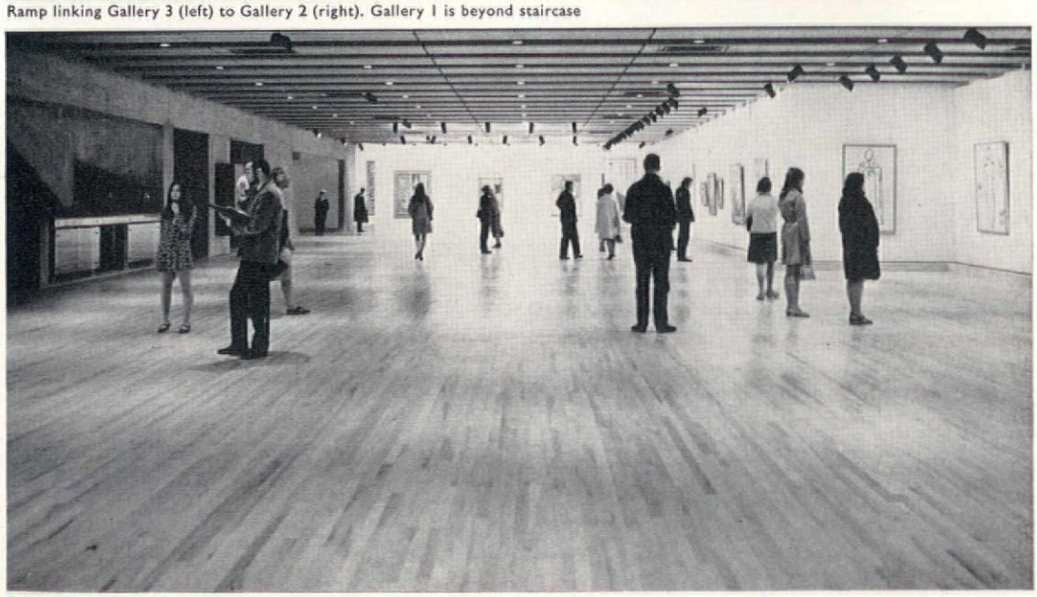
Ramp linking Gallery 3 (left) to Gallery 2 (right). Gallery 1 is beyond staircase



Gallery 2, ramp and Gallery 3 (right) seen from staircase

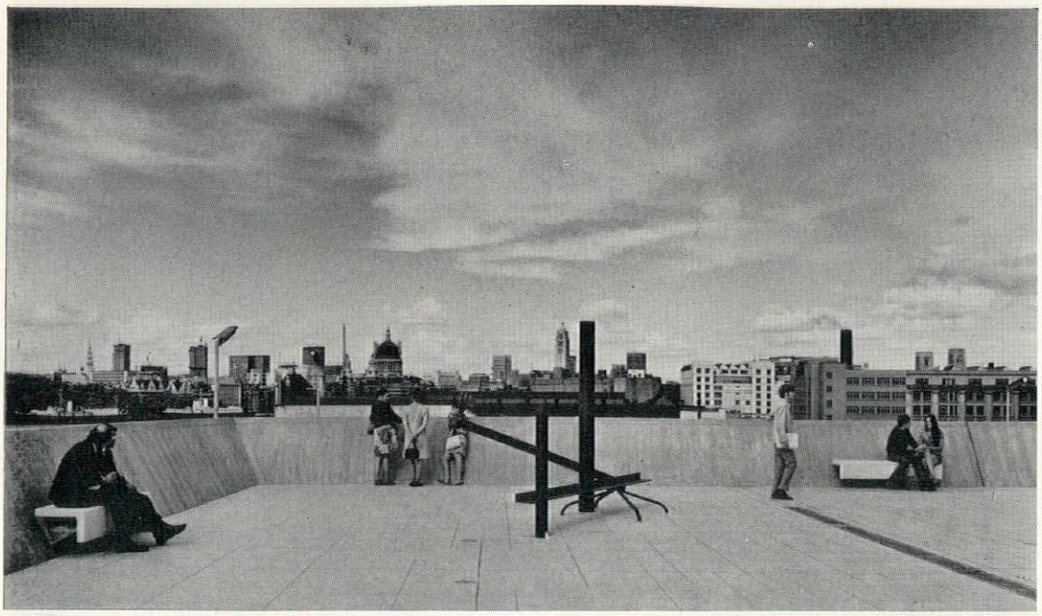


Gallery 3



Gallery 1

Gallery 5 upstairs



◁487 Hayward Art Gallery Sculpture Court No. 1

faintly soapy about the poured concrete effects of pillars, staircase and so on.

Both the large downstairs rooms appear likely to compete—in two different directions—for the visitor's attention on entering the gallery from the thin, seemingly inadequate, cinema-style foyer. The open room at the right may look the more easy and attractive; the other, ahead but approached by an inexplicable ramp and punctuated by massive concrete pillars, hints at some drama which never quite takes place. As well as the film studio suggestions—much encouraged by the batteries of lights that hang from the ceiling—there are faint associations of a set for *King Lear*, abandoned perhaps before ever being completed. Both these halls grow strangely indeterminate where they meet, with areas of nothingness, broken only by mysterious wooden cupboards and recesses which look as if they were meant for mops and pails—giant ones.

Upstairs, where artificial light is exchanged for natural daylight filtered through a rather busy honeycomb effect on the ceiling, the general effect is more exhilarating, even cheerful despite the stress on clinical cleanliness. To some people it may well seem too bright. Brightness and hardness are certainly enhanced by the light-coloured stone floors; wood or cork might have proved softer and more sympathetic, and, if stone was necessary, could it not have been rather darker? All the same, and allowing for complaints that these second floor galleries are not high enough (a complaint which I would not have felt very serious if only there were less ceiling 'sculpture' of honeycomb ducts, fans and light fittings), arrival on this floor is very pleasant. Two super views are available through big horizontal windows: one view at least is almost too absorbing, as you are drawn to watch trains sliding silently between blocks of buildings that seem—from your withdrawn, protected position—to have lost all third-dimensional reality. The views from the balcony sculpture courts are equally splendid.

The final, genuine air of exhilaration on this floor came, inevitably, from the subtle brilliance of Matisse's pictures: giving enough colour and atmosphere—and sheer visual impact—to take away the extremes of concrete severity and blank whiteness. Presumably other exhibitions will result not only in demonstrations of the planned versatility of the space but in some occasional variations of wall texture—or at least colour. The rooms could look very icy, even cruel, if hung with less exuberantly confident pictures. To my mind white is not the safe neutral colour it is supposed to be, but a very dominant, assertive colour, unsensuous, challenging in its purity and often creating a climate of over-intense, restless lucidity. A Van Gogh exhibition is being planned to occupy the Hayward Gallery; in painting his own room (with his own pictures on the walls), it was by a variety of tones that Van Gogh said he wished to express '*un repos absolu*'. May we hope for some imaginative developments out of such a hint, rather than the dated adherence to principles of uniform whiteness?

Problems of presentation, mostly no more than touched on in this article, remain considerable for anyone who has to devise the display of paintings—ancient or modern. It would not be surprising if the new galleries discussed here are not in every way totally successful solutions because, at least in England, it has only recently been realized that the problems are complex. Certain questions will remain battlegrounds of aesthetic debate, even when the best physical conditions have been achieved. My own personal verdict is that Christ Church is a most skilful blueprint for a small private gallery, planned within very rigorous limits (keeping discreetly below ground, preserving laws, etc.) but possibly not seizing all the opportunities to present sympathetically that particular collection. The Hayward Gallery has yet to prove many of its qualities; I find it ugly outside but, if not totally attractive inside either, at least flexible and adaptable. It offers space for experiments within it, as well as space for exhibitions as such. Yet will it prove temptingly accessible enough, once its novelty and the possibility of at last seeing a proper Matisse collection in England are over? A long, exposed walk in all weathers seems unavoidable in approaching it.

And anyone doing so should be warned of the price the Arts Council have presumably had to pay the GLC for use of the building (a quainter toll than any peppercorn rent): for no artistic body could willingly exhibit the particular portrait of the late Sir Isaac Hayward which now hangs in the foyer, a work oleaginously proclaiming its oilpaint, more pretentious and less effective than a photograph, worthy not of a mayor's but a funeral pralour. This object poses the acutest question: can the nation which hangs such a relic of hopelessly outmoded tradition in its most recently-built modern gallery, care at all for the arts? □

The Farrell/Grimshaw Partnership's bathroom tower

CONVERSION

Photo: Tim Street Porter

The hostel

The hostel is a conversion of six 100-year-old existing houses, Nos. 206–214 Sussex Gardens and No. 1 Westbourne Terrace. Before alteration the buildings were in poor structural order and very bad decorative condition. All are 'listed' as of historic and architectural value.

The hostel is a residential club for 190 places of which 175 are students of London University and Colleges of Further Education. The project is non-profit making and sponsored by the International Students Club Ltd., in association with the Missionary and Ecumenical Council of the Church of England. Grants were provided by the British Council and the Inner London Education Authority and the balance made up by a loan from the Greater London Council.

Carrying out a conversion of this type makes it imperative to think clearly about the function of the building. When 75 per cent of the building elements are 'given' and costs are to be kept to a minimum, what is being done to the buildings must be very clear even though it is achieved by a multitude of small piecemeal adjustments to the status quo.

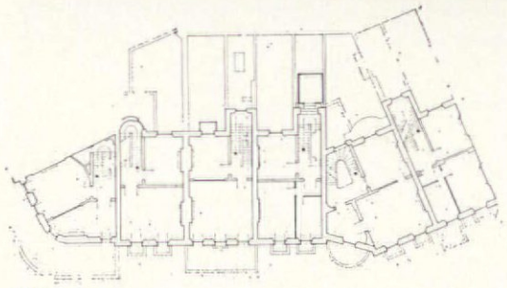
In the case of this hostel, an essential point of the clients' brief was the 'uniting' of the buildings horizontally and vertically. This may not be a concept to apply to all student living. However, in this case where many of the students were coming to England for the first time, often with few friends in this country, many not speaking very good English, a certain amount of basic organization can work well.

It was felt that the best way to treat these buildings was to accept the spaces that their Victorian character offered. The first priority, mainly for economic reasons, was to utilize as much space as possible for 'livable' space (i.e. flats and study bedrooms). Therefore the new bathrooms and laundries, etc., were placed 'outside' to gain living space 'inside'.

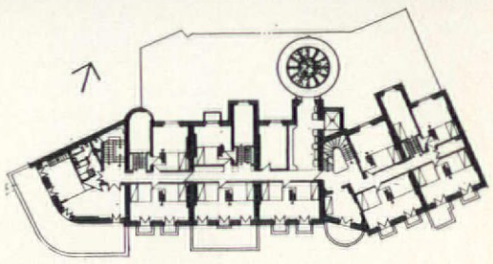
The average period of residence of any one student will be three years. Approximately 90 per cent of the students will come from abroad, so the hostel will provide their only place of residence in this country. For this reason a survey was carried out of the extent of communal needs of foreign students, as a result of which extensive accommodation has been provided, including a television room, several lounges, study/library, workshop/hobbies room, photo darkroom, small kitchen and dining room for parties, etc., main kitchen and dining room, games room, and wherever possible every odd kink produced in carrying out the conversion has been made into a sitting area.

Service tower

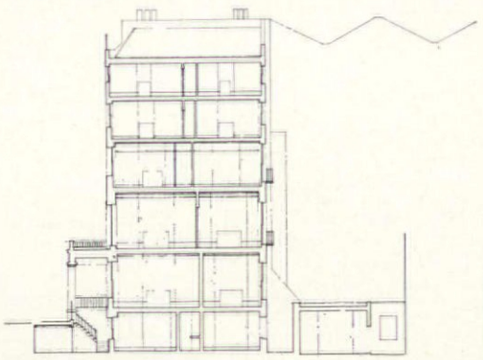
The idea of providing a structure outside the main buildings but centrally placed in relation to them, appealed to the clients on the grounds that this freed space in the buildings to accommodate more students, and that it obviated the need to insert pipework into the old structure (sometimes through walls 2ft 6in thick). A further technical reason was that none of the existing brickwork of the houses could offer sufficient compressive



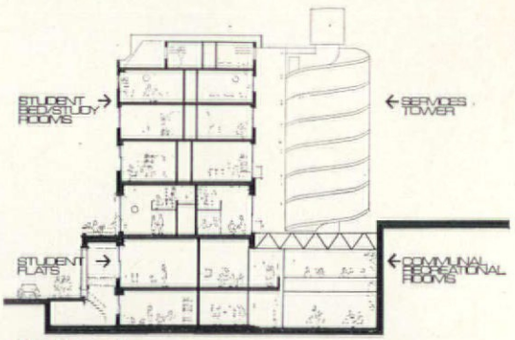
Plan before



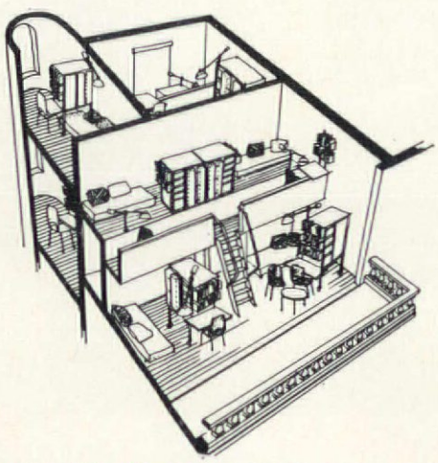
Plan after



Section before



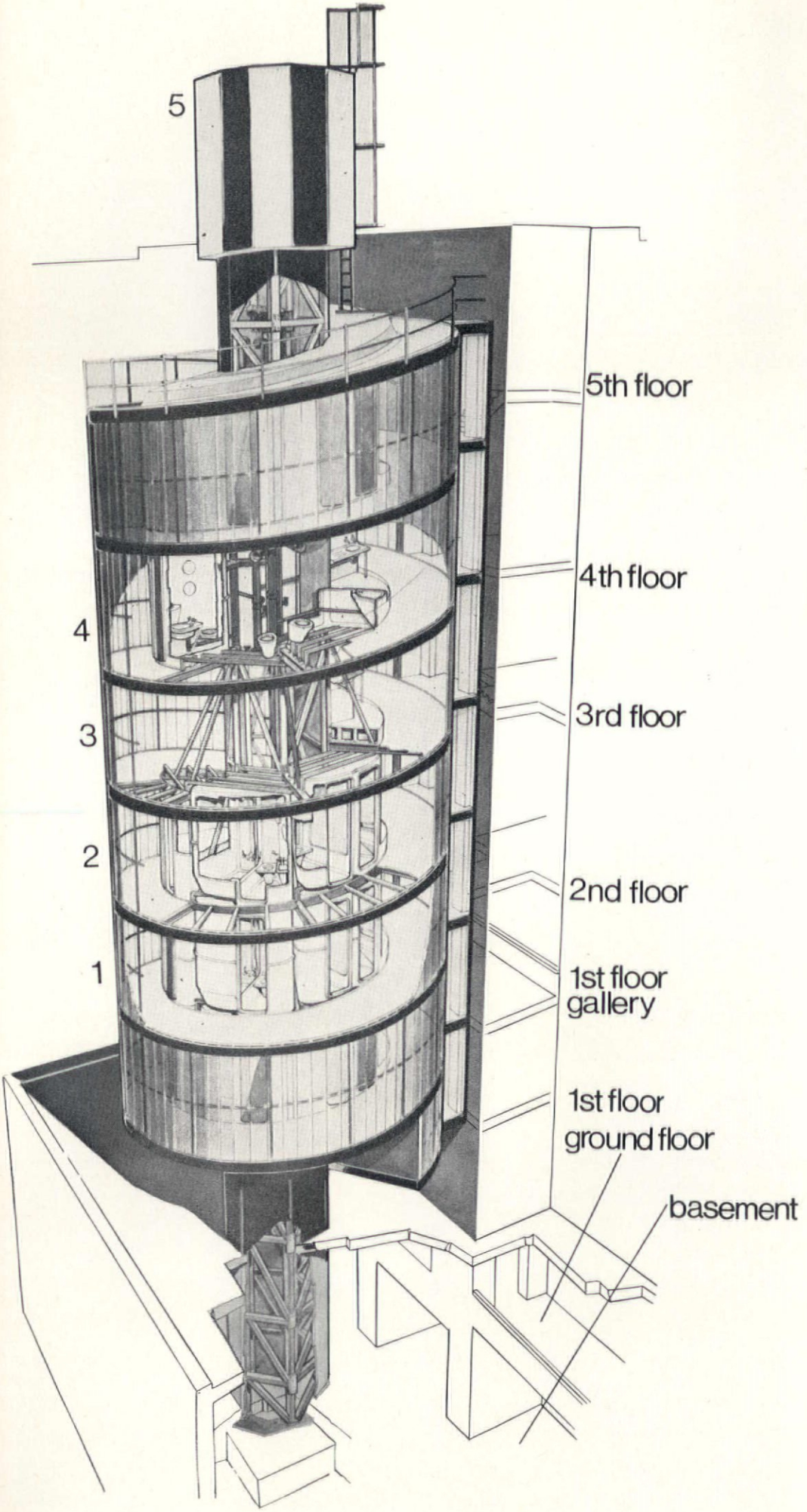
Section after

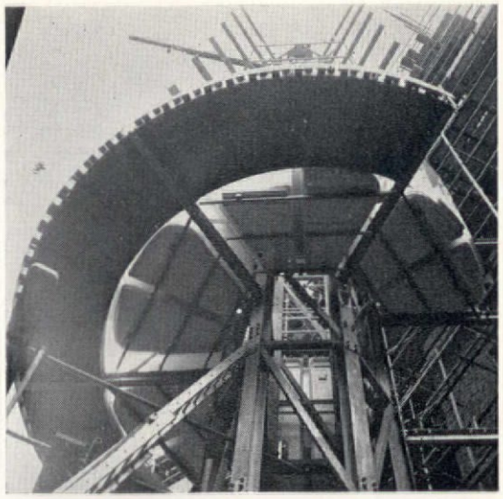


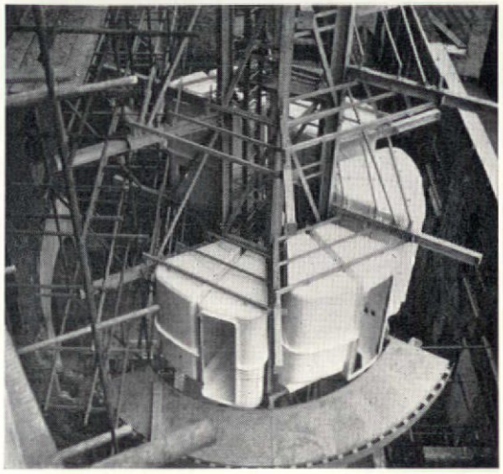
Axonometric of typical first floor
The large ceilinged front and rear rooms have 'galleries' with the corridor link passing below the front room gallery. The main staircase has been removed and new floors inserted at 8ft 0in vertical centres, gaining two additional floors in the height of the building.

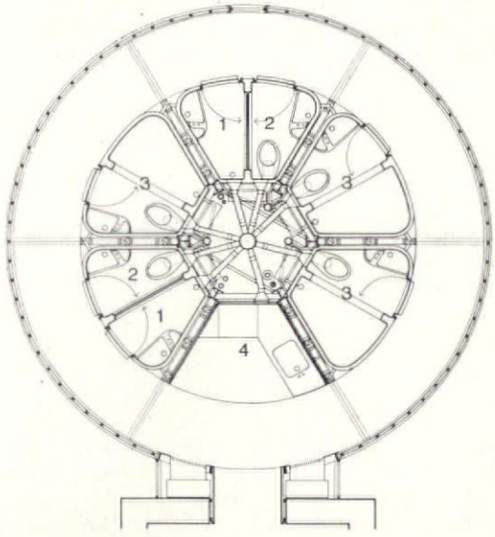
Group room

Dining room









Plan of bathroom tower

1 Shower and w.h.b. only
2 w.c. and w.h.b. only
3 Complete bathroom
4 Service bay

left: Cutaway view of bathroom tower

1 Bathrooms complete, but no glazing shown
2 Cutaway view of bathrooms
3 View of structure
4 View of plumbing and ventilation systems
5 3600 gallon polyproplene sheet water tank

Client: International Students Club (Church of England) Ltd.

Architects: Farrell/Grimshaw Partnership

Quantity surveyors: G. A. Hanscomb Partnership

Structural engineers: Ove Arup and Partners

Main contractor: A. Bell & Son Ltd.

Cost of building work: £250,000

Cost per student place (including site, fees, building contract, all furniture, etc.): £1850 approx

strength to support the 3600-gallon water tank needed for the hostel.

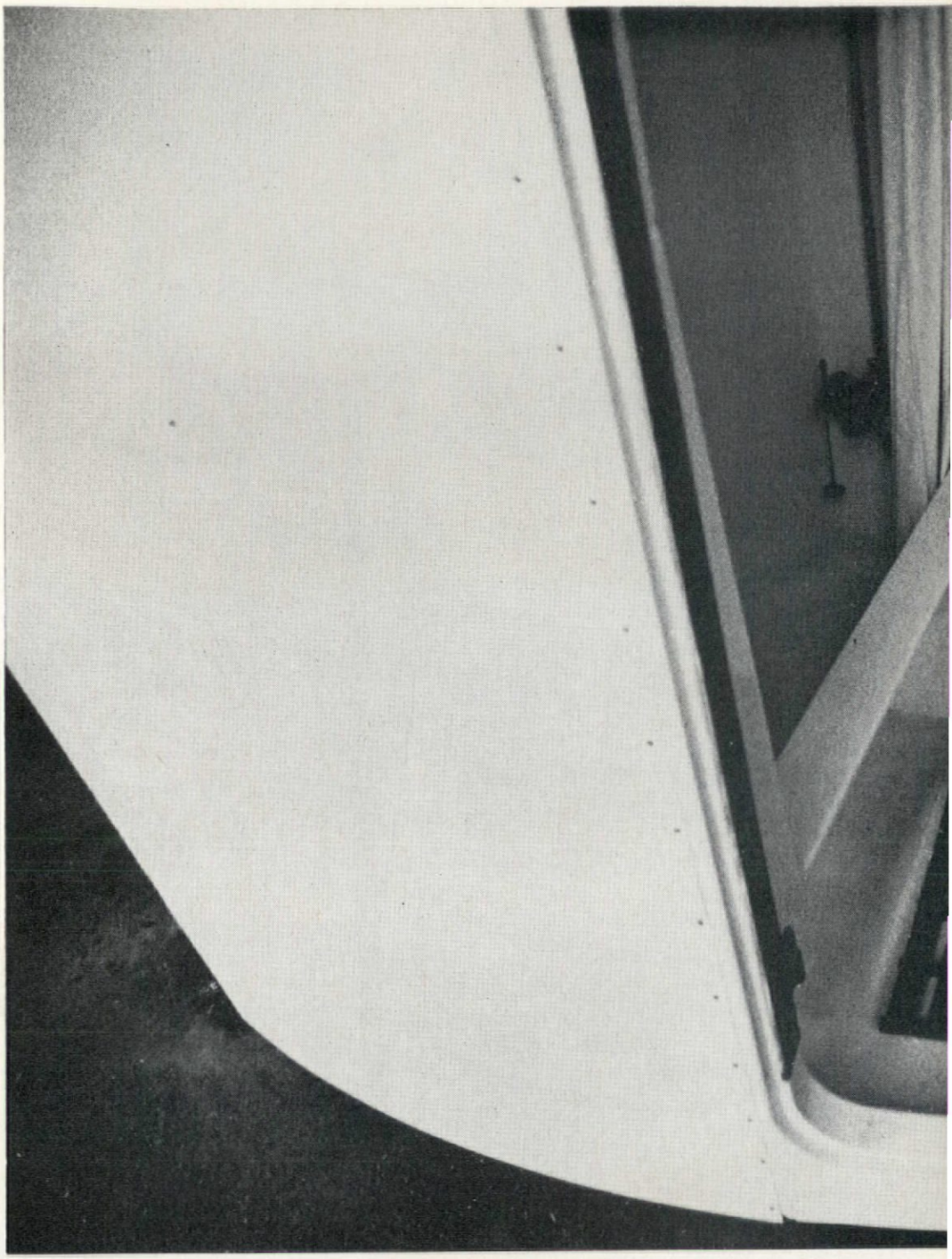
Centralizing the sanitary facilities meant that the plumbing was, in general, cheaper and easier to maintain, and it also appealed to the clients on the grounds that it would inevitably cause considerable social interaction, both between occupants of the same floor and from floor to floor throughout the student-occupied part of the hostel.

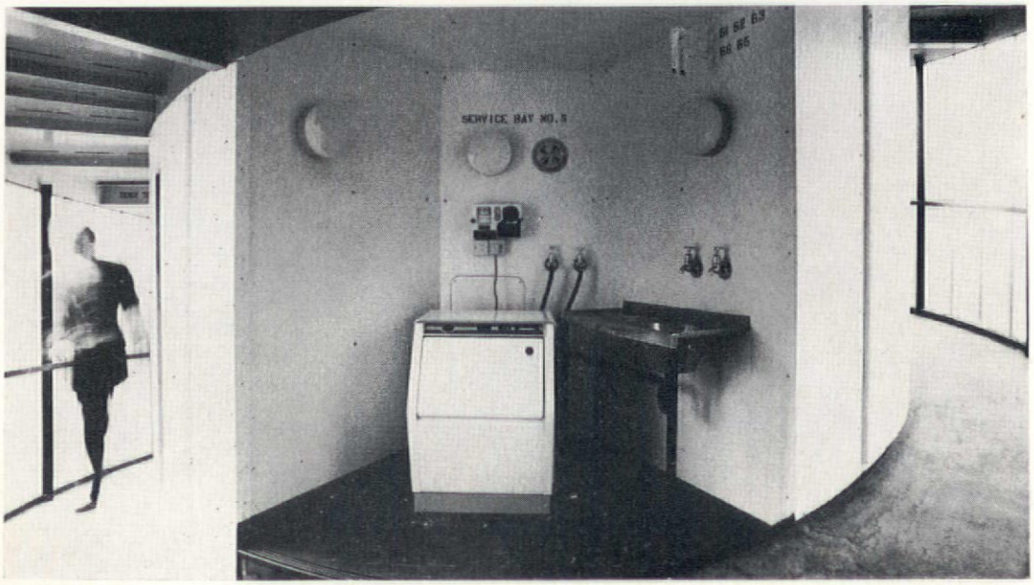
The aim, therefore, with the sanitary structure itself, was to provide an arrangement of bathrooms which was easily accessible from all the floors of the hostel, even though the floor to ceiling heights varied from 8ft 6in to 13ft 9in. The brief for the bathrooms themselves was to provide 'hygienic, washable, waterproof boxes, with efficient and easily maintainable services'. It was also required that a high proportion of the units should be showers rather than baths.

The structural limitations were considerable, in that no loads could be imposed on either the mews wall or the back wall of the hostel buildings, and the use of a crane was made quite impossible since the area where the tower was to stand was totally enclosed by buildings. A further structural consideration was the need to carry the significant point loading of the water tank down to the ground.

The structure used could be described as a sectionalized 'mast' arrangement, similar to a tower crane, with I-section beams hung from the mast by hangers made from angle sections. The sections of the core were made from six vertical 6in × 6in universal column sections which were cross-braced with square section tubes. These core sections were placed one on top of the other by means of a lifting beam which was cantilevered from the roof of the existing houses. When the horizontal beams were in place light tubular sections were bolted between them forming a means of support for the GRP pods. The pods were then winched into position using a revolving lifting beam which was fixed in position on top of the core. As each pod was bolted in place on its support beams, the ramp unit which was adjacent to it was winched into position and bolted to the respective end portions of the horizontal I-beam. The ramp units form a steadily rising helix with a gradient of about one in eight. This meant that the helix made a complete revolution every 7ft 3in vertically. This dimension was chosen because it enabled the spiral to correspond with three out of the five student floors so that level access to the tower at these three positions was made possible. At the third and fifth floors short flights of stairs had to be incorporated in the conversion in order to make a connection to the helical ramp.

The bathroom pods were manufactured from GRP and were further reinforced in their bases by chipboard and in their roofs by ply. The walls of the GRP units were stiffened by 'somic' reinforcement. Each pod was made from four quarter shells which were joined together in the factory so that the pod could be delivered as a complete unit. By using six moulds to produce these quarter mouldings and by assembling the quarter



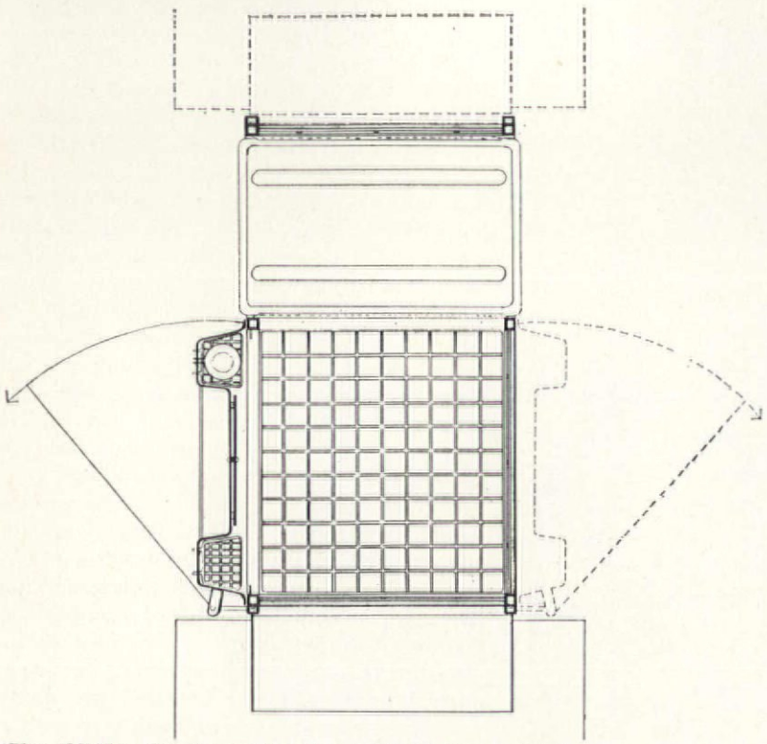


mouldings in different ways, two types of pod were produced. The basic type of bathroom unit used shells from four moulds to make a complete pod. The other basic pod consisted of a unit similar in shape and size to the bathroom unit, but divided along the centre line to produce two compartments. This unit was made from only two moulds as it was possible to 'hand' the shells about the centre line of the unit, i.e. the floor moulding on the l.h.s. could be used as the roof moulding of the r.h.s., and similarly, the floor of the r.h.s. could be used as the roof of the l.h.s. The washbasin is not an integral part of the bathroom unit but is planted on to the wall using the horizontal join between the mouldings as its anchorage. The complete pod weighs approximately 250lb and can easily be handled by three or four men. A special requirement of the clients was that the w.c. seats should be strong enough and of such a design that they could be easily stood upon by Asian students who, experience had shown, tended to use the w.c. in a squatting position. The clients had experienced great difficulties with cracked and broken w.c. seats of the ordinary type. A special seat, made from 1in blockboard, was designed which was completely enclosed with GRP. This has proved satisfactory to date. There are thirty pods in all, eighteen of the standard bathroom type and twelve of the type which are divided into two compartments (i.e. shower compartment and w.c. compartment). It is worth noting that for this limited production run using normal hand layout techniques, the mould cost for a unit amounts to about one sixth of its total cost. Materials cost is therefore the significant factor and modifications and variations can be made at relatively little extra cost.

The service tower has been in full operation for only a few weeks; however, experience has shown that the helical ramp has a comfortable gradient, and in fact is proving a popular means of vertical circulation within the building and is, therefore, satisfying the requirements of the client for social interaction. The floor drains to all the units which were omitted as a cost saving, are now being installed as the saving proved to be a false economy when measured against the increased difficulties of cleaning. It is now intended that the units will be cleaned with a hose with a soft brush attached to its end, similar to the arrangement used for cleaning cars. Experience has also shown that for a minimal enclosure of this type where considerable steam and therefore condensation are present, a ventilation system giving about twelve air changes per hour is advisable. This is considerably more than the consultant's design specification for this building and it is anticipated that the fan unit on the top of the tower will need to be replaced by one with a larger air handling capacity. A particular advantage of the structural form used for the tower is the very small amount of space taken up at ground level by the core, which is the only structural support to continue to the ground. The whole of the ground level is taken up with the students' dining area and it was particularly important to interrupt this space as little as possible. □

DESIGN

Bed-sit packages on wheels



1 Plan of trolley showing positions for wardrobe door and desk

1, 2

Farrell & Grimshaw, given only £72 2s 6*d* per student (£50 below the UGC figure) for furnishing the study bedrooms at Sussex Gardens (pages 486 to 491), solved both the space and cost limitations with a standard multi-purpose 'trolley' which, together with a bed on wheels, a chair, coffee-table and waste-paper basket, totalled £71 10s 9*d* (see below).

The trolley, 6ft 4in × 3ft × 2ft, mounted on locking castors, has a frame of welded square steel tube high enough for the bed to slide under. The wardrobe door is troughed fibreglass fitted on the inside with mirror, wire baskets, toothmug, etc., and on the outside with towel rails. A large wire basket is slung below this section. The space alongside has deep heavy-duty polythene drawers above a removable locking compartment. Book shelves can slot onto the framework at either end over pin-up boarding; similarly, a desk top can be hung from either end; while a pivoting light fits into the top of any of the four vertical frame members.

The bed consists of a hardboard flush door on bearers and castors, and a foam rubber mattress. Individual tastes are catered for, in that the trolley unit and all the loose items come in permutations of the three primary colours, red, yellow, blue; while there is a pattern and colour range of cover fabrics to choose from.

Assembly by unskilled labour is a matter of minutes. The furniture package will probably come onto the British market later this year.

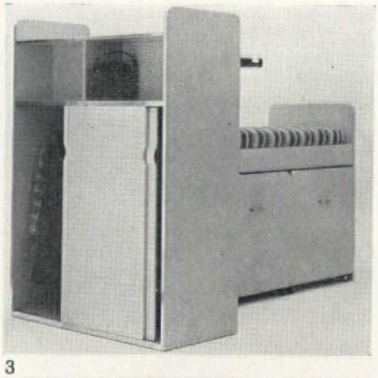
Cost analysis of complete furniture for single room

A Trolley unit	£	s.	d.
Metal frame and accessories, including hinge, hanging rail, fixing strap for pin-up board, large wire tray for shoes, pre-assembly of castors, fixing of 'Spur' channel, and security locker with door (D. Sebel & Co Ltd., makers of Mobo toys)	18	17	6
Castors. Two 3 in diameter braking castors two 3 in diameter non-braking castors. Both with rubber tyred wheels on cast iron centre (Revvo)	1	2	11
Pin-up Boards. Three 4ft × 2ft, including cutting and pre-assembly of fixing strap	3	14	3
Lipped blockboard desk-top, 2ft 6in × 2ft 0in. Ronseal finish and including pre-assembly of 'Spur' cantilever brackets	2	2	0
Shelves, Four softwood, 24in × 8in Ronseal finish and including pre-assembly of 'Spur' book shelf ends	2	13	6
'Spur' shelving system. Including four channels, two desk brackets and eight bookshelf ends	5	0	6
One adjustable light with 15ft 0in flex	3	0	0
One fibreglass door, including hanging rails, and fixing hooks for mirror and tray fixing, and bar magnet catches	5	0	0
Wire baskets, Four plastic coated at 7s each	1	8	0
Mirror with fixing bolts and foam strip backing		19	10
Polythene mug (Woolworth)			7
Mug holder		1	7
Tray/drawers. 5 heavy duty polythene	6	5	0
Sub-total	£50	5	8

C Bed unit	£	s.	d.
Base Component 6ft 6in × 2ft 9in. Assemblies, including wheel assembly	2	8	5
Wheels. Four 1⅞in diameter fixed direction, rubber with nylon centres		5	0
Mattress 6ft 6in × 2ft 9in, 5in foamed rubber with cotton cover	8	7	11
Bed cover. Heavy cotton rep. Choice from five colours	1	15	0
Cushion/pillows. Two 27in × 17in. Cotton covers, foam chip filling		11	8
Cushion covers. Two. One choice of five patterns. One choice of five plain colours	2	0	0
Sub-total	£15	8	0

B Loose items	£	s.	d.
Metal wastepaper bin. Stove-enamelled finish in choice of colours; 13in diameter, 14in high		6	0
Circular steel stacking coffee table, stove enamelled finish, in choice of colours 22in diameter, 24in high	2	6	1
Nesting polypropylene chair in choice of five colours	2	5	0
Sub-total	£ 4	17	1
	1	0	0
Plus: Assembly by students	1	0	0
Total for complete furniture package	£71	10	9

2

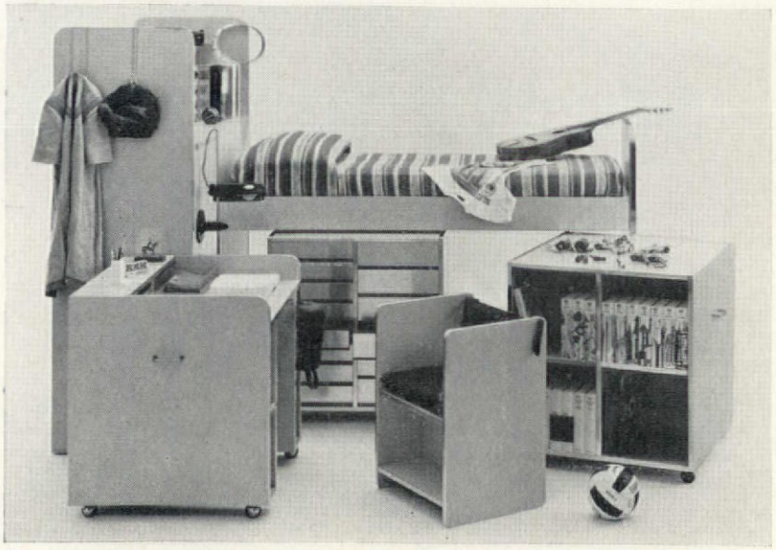


3

3, 4

Joe Colombo's package (2·50 × 1·30 metres) for La Linea of Como is already in production in Italy. Here we have the units sliding under instead of over the beds, the components being bed, wardrobe, night-table, writing-desk/dressing-table/book-case, small chair that doubles as 'ladder', and a lamp. The panels used for the units are of plastic laminated board edged with metallized plastic.

Photos: Aldo Ballo



4

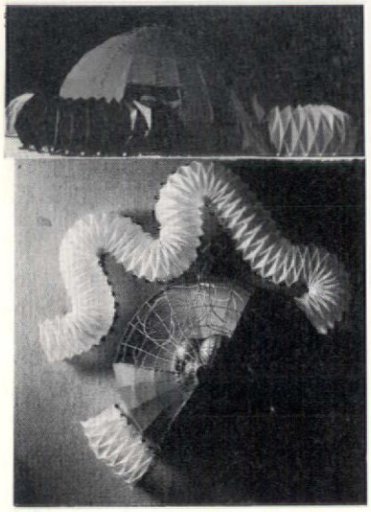
DESIGN

RCA diploma ideas

Exhibition tent

Tim Sarson had a complicated aim: to design an exhibition which would be simple to transport and erect, and flexible enough for any site conditions; and which would not only publicize the activities of the client (the type of UNESCO) but would also increase the public's subjective and objective awareness of the theme Intolerance.

The visitor enters a dome constructed in canvas and the Abstracta tubular building system, and is immediately confronted by a screen of balloons onto whose inflating and deflating surfaces are projected moving and still images. From here he passes into a quiet exhibition (photos and text) corridor made from sections of folded resin-impregnated paper, plugged into sleepers supporting the flooring **4, 5**.



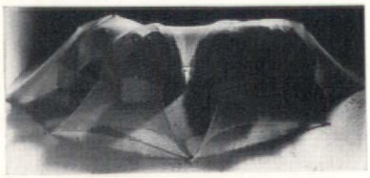
4, 5

Camp living

Richard Neal, inspired by the Club Mediterranée, designed a fold-a-way sleeping-and-dressing unit for two people, with a moulded GRP floor and a concertina-type nylon covering which can be kept open or closed **7, 8, 9**.

The floor, fixed to a steel ground plate, includes in its moulding a recessed entrance section for dirty shoes, a 7ft square mattress area, back rest, storage hole, dressing table with tray, mirror and seat, hanging space and suitcase storage. The roof frame of $\frac{1}{16}$in metal tubes carry, tied to them, the coloured nylon covers which can be removed easily for washing.

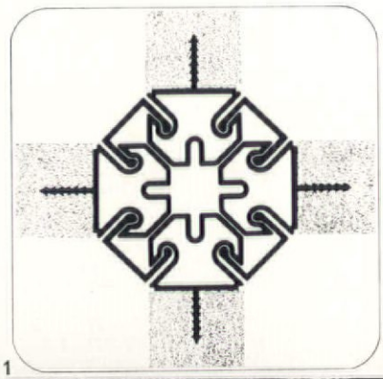
A sprung fibreglass fishpole spreads over the units to support, in tension, a nylon and PVC flysheet for weather protection. Small night lights are fixed to the ends of the pole.



7

The units can be unpegged and rearranged, or left folded and guyed on site when not in use.

A similar shower/w.c. unit is envisaged for use with groups of sleeping units.

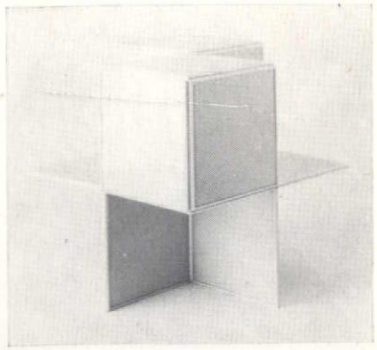


1

Cub-8

Angelo Mangiarotti's 'Cub-8' modular k.d. storage system, which was shown last month at Milan's Salone del Mobile, is now in production in Italy. Its components are quite simply white-painted chipboard panels which clip together with white PVC profiles **1, 2, 3**.

Design Centre, via Visconte di Modrone 28, Filiale Milano



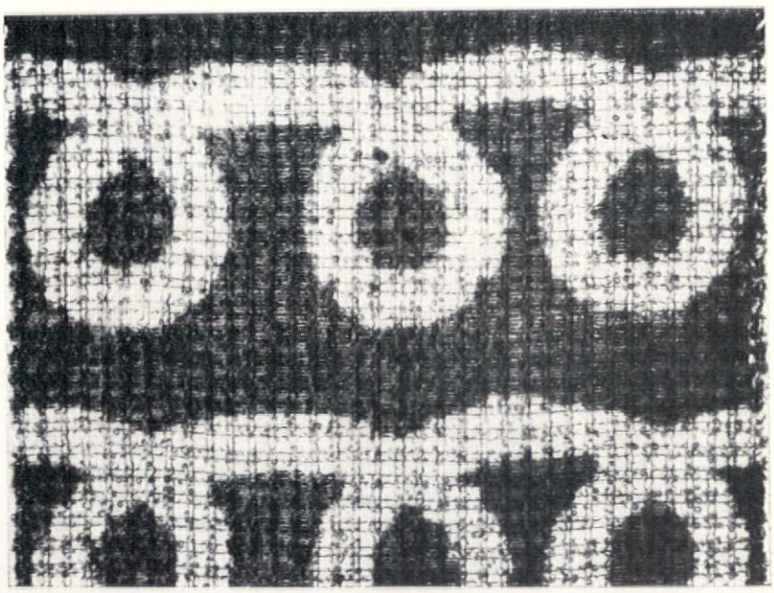
2, 3

Devoré

Victoria Mochett, using innumerable different materials for her very beautiful woven textiles, has been experimenting with a method of 'burning out' patterns. The pattern is printed onto the fabric with a chemical mixture which only becomes effective when heated. One of the two fibres in the cloth is resistant to the chemical-and-heat process; the other carbonizes, leaving only the web of the resistant fibres **6**.

The process which originated in India, has been recently developed by Courtaulds for lightweight fabrics. Royal College of Art students have been concerned with heavy cloths. Victoria Mochett feels that this technique lends itself to tactile interest and can combine different yarn values with surface relief, and solidity with almost complete transparency.

An exhibition of her work and that of fellow students pursuing similar lines, is to be staged by the RCA and Courtaulds at the RCA Galleries in Kensington Gore from November 19th to 29th.



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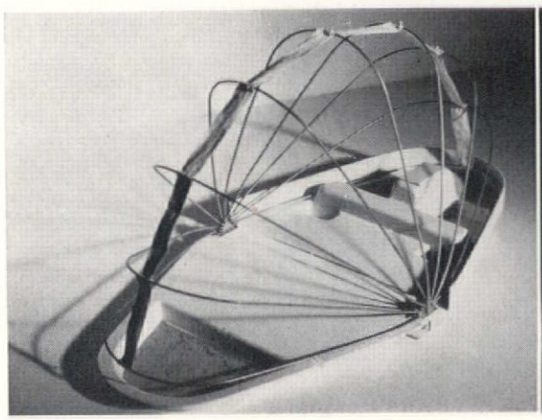

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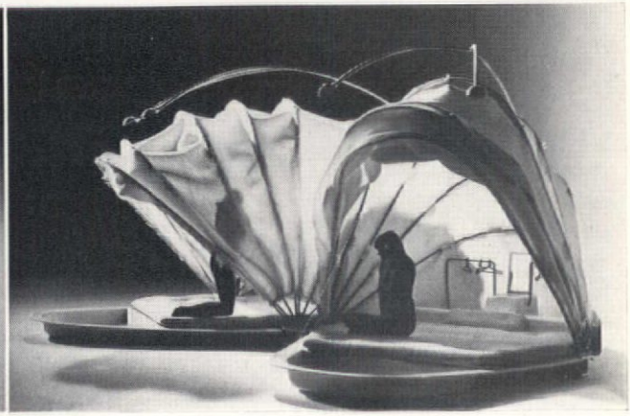

9

With 150 plain colours, patterns, woodgrains and marbles, Arborite's a match for almost anything.

A really versatile collection – and every one of Arborite's colours and patterns is immediately available. There are 52 plain colours (42 of them exact or close matched to BS colours). 45 woodgrains – so realistic you can't tell them from trees. 11 perfect reproductions of Italian marbles. And 42 attractive graphic designs. Every colour and pattern in the range is available in three finishes: high gloss, furniture finish (semi-matt) and texture finish.

However there's a lot more to Arborite than that. There are thicknesses and special grades to meet practically every kind of application. In addition to standard thicknesses of $\frac{1}{16}$" and $\frac{1}{32}$" – Arborite manufacture solid plastic laminate from $\frac{1}{8}$" to $1\frac{1}{4}$" thick. Also Post-forming grade for finely contoured working surfaces. Bending grade for forming larger radii. And Fire-retardant grade to comply with the surface spread of flame regulations.

Arborite standard sheet sizes are 10′ x 4′ and 8′ x 4′ with others, including 12′ x 5′ available.

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DESIGN

Acrylic

Bent acrylic sheet (variously known as Perspex, Plexiglas, etc.) used for furniture has popped up all over the place in the past year. Certainly very beautiful, it does not require elaborate tooling; the flat sheet simply has to be cut, the edges polished, and then, after heating in an oven, it has to be formed into shape.

Alan Turville used it for a Hille prototype settee **1**; K. Welters Ltd. tried it for dining table and chairs **4**; Peter Hoyte made an armchair and stool with it **2**; and David Colwell, the RCA student whose reception desk **6** for the new ICA is delighting so many visitors, shows how the same 'sucked-in' technique could be applied for a mass-produced chair shell that clips onto a tubular frame **7**. (William J. Cox Ltd. did the forming.)

Hille, 41 Albemarle Street, London, W.1.
Welters, 50 Goodge Street, London, W.1.
Hoyte, 86 Brighton Road, Surbiton, Surrey
Colwell, 5 Egerton Court, Harrington Road, London, S.W.7.
ICI, Plastics Division, Welwyn Garden City, Herts.

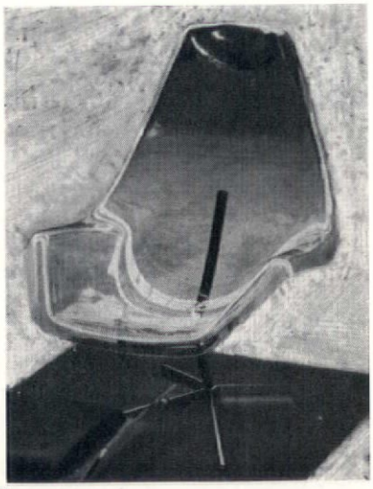
1

ICI, at the Decor International exhibition this year, provided an idea for using their own Perspex—a hanging chair **3**.

In the US, Neal Small Designs Inc. have a whole catalogue of suggestions (lamps and tables) which have long since been in production.

In Italy the material has been used by D. H. Guzzini of Recanati, Comfort of Milan, Sormani of Arosio, and the Design Centre of Florence—again only for chairs and small tables. And in Japan, Kyowa Glass Chemical Co. of Tokyo have made, to Isamu Kenmochi's design, a cylindrical chair-or-table with space for storage, and a lipped chair shell on a chromed steel frame **5**.

Domus 463, 6/68



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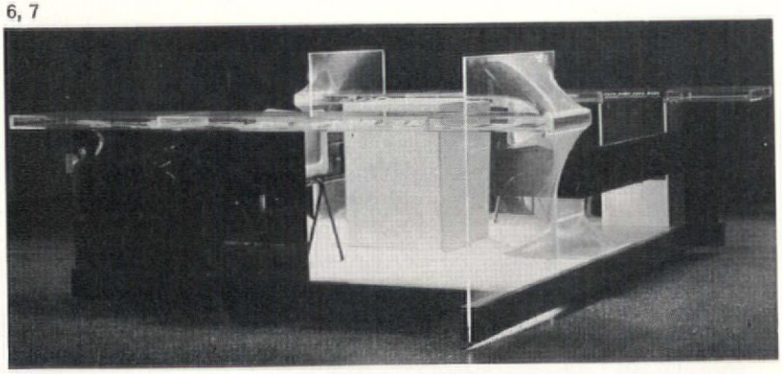
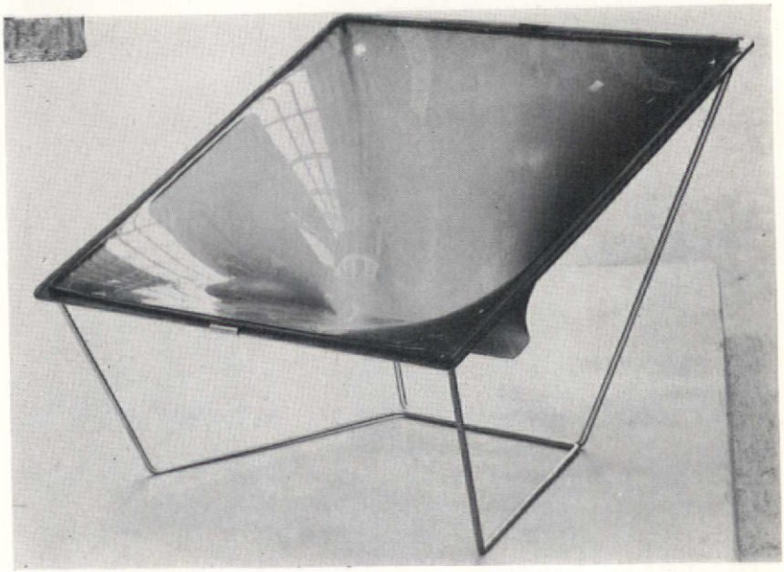
3

6, 7





4

5

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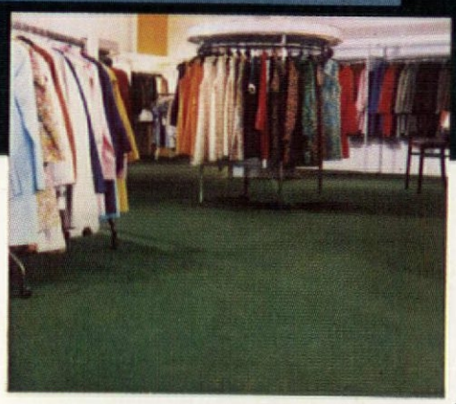
Available in 6 feet (183 cm) and 12 feet (366 cm) widths and in tiles 18" x 18" (45.7 cm x 45.7 cm) and with rubber waffle back.



some recent IRON DUKE installations...

- *Carreras Ltd. Training College, Little Munden, Nr. Ware, Herts.*
- *Hotel & Catering Industrial Training Board, Central Square, Wembley.*
- *St. Pauls School, Hammersmith Road, London W.14*
- *Batley College of Art, Batley, Yorkshire.*
- *Keynes College, University of Kent, Canterbury.*
- *Y.M.C.A., Romford, Essex.*

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ALEXANDER PIKE DEVELOPMENTS

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.

EQUIPMENT FOR DISABLED PERSONS

Amongst the devices currently being developed for handicapped persons are some items that may have a much wider range of application for other purposes.

M1 Switches for plumbing controls

The Magnetic Valve Company, 7 Kendall Place, London, W1

For those persons with arthritic hands or with insufficient strength to turn a tap, electrically controlled magnetic valves can be incorporated in kitchen and bathroom pipework so that the water supply can be controlled by switches.

M2 Minimum-pressure switches

Spirelle Electric Company

The Gira rocker switch is specially designed for operation by very slight pressure, and enables paralysed or limbless persons to control electrical apparatus by movements, for example, of the elbow or chin.

M3 Indoor invalid chair

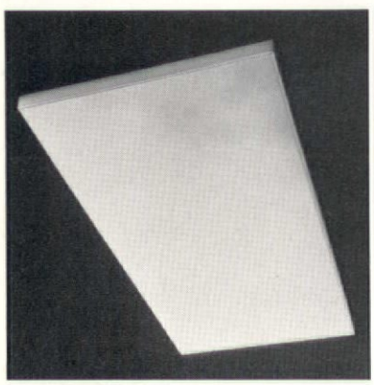
AC Cars Ltd., High Street, Thames Ditton, London

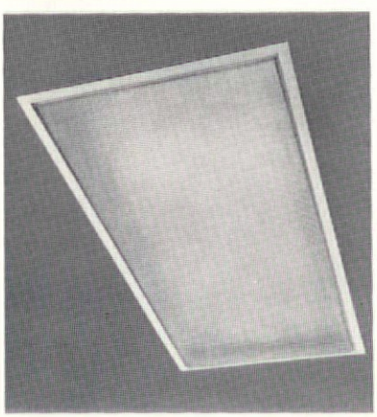
Designed for indoor use, the AC invalid chair is powered by a battery giving 3½ to 4 hours continuous use requiring charging every three to four nights. A version with power-assisted steering can be steered in any direction by the slightest finger-pressure on a miniature servo control. The chair can turn within a 40-inch space and can climb a one in 10 gradient.

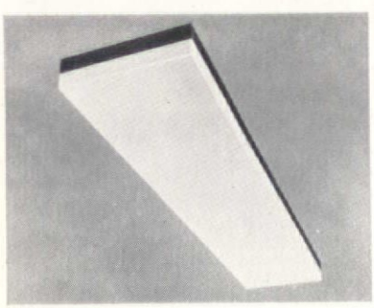
M4 Stair-climbing invalid chair

Wilhelm Meyer, Vlotho, West Germany

Suitable for use outdoors, this chair is powered by three 24V 300W motors, and is fitted with two rear caterpillar tracks which enable it to climb stairs. It is claimed to be very stable and easy to control.



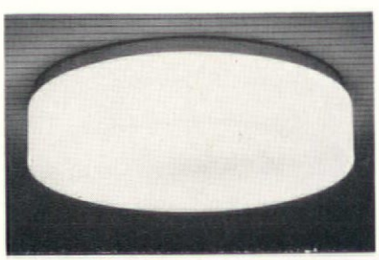


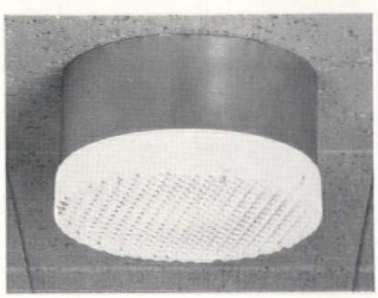


M5 Modular fluorescent lighting fittings

British Lighting Industries Ltd., Thorn House, Upper St Martin's Lane, London, WC2

The new Atlas format range comprises 88 different units in three basic groups: fully-recessed modules with metal trim; fully-recessed modules without metal trim; surface mounted units. The recessed fittings can be supplied either with plain diffusers or prismatic attachments, and the surface mounted units may be fitted with plain opal diffusers, diffusers with opal sides and a prismatic base, or all prismatic. The range of sizes is from 1ft × 4ft to 2ft × 8ft. The surface mounted fittings are formed of sheet metal, stove-enamelled semi-matt black outside and gloss white inside with a hard alkyd paint.

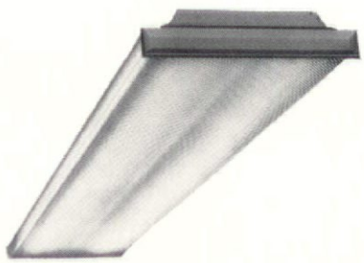




M6 Ceiling lighting fittings

Frederick Thomas & Co. Ltd., Everton Buildings, Stanhope Street, London, NW1

A new catalogue illustrates a group of fittings: Recessa recessed tungsten fittings in two sizes, each with a choice of four diffusers; Geometra, a complementary series of surface mounted fittings; Cercla, surface mounted fittings for circular fluorescent lamps, in two sizes, with acrylic diffusers; Lucida surface mounted opal glass fittings with a choice of six glasses, each with or without a metal skirt; Accenta, low brightness down lighting fittings, surface mounted or mounted with support rings to allow projection beneath the ceiling.



M7 Fluorescent lighting fitting

Lumitron Ltd., Hythe Road, Scrubs Lane London, NW10

Ambassador Prismatic fittings are a range of shallow diffuser units for 2, 4, 5 and 6ft fluorescent tubes. The optically designed prismatic diffuser is claimed to provide a high degree of light control combined with low surface brightness. The units are available as batten fittings only or complete with prismatic diffusers. Prices from £8 18s. with diffuser.

M8 Dimmer control for lighting circuits

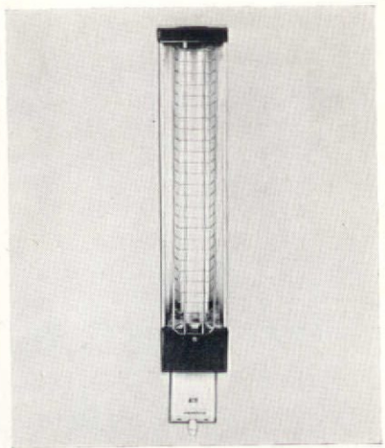
Superswitch Electric Appliances Ltd., 52–54 High Holborn, London, WC1

Suitable for use where large numbers of lights are required to be dimmed simultaneously, two lighting control boxes, with load capacities of 1·5 and 3 kW respectively, incorporate an on/off switch in addition to the rotating dimmer switch. Size 9in × 6in × 3in. Price, £17 10s.

M9 Burglar alarm

Photain Controls Ltd., Randalls Road, Leatherhead, Surrey

The Intrudalarm is a solid state burglar alarm which measures only 9in × 6in × 4in, and is powered by a 12-volt battery.



M10 Wall heater

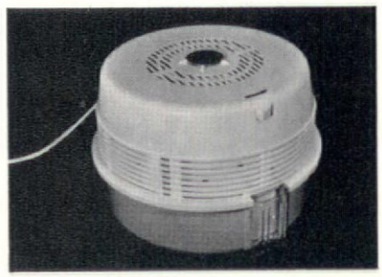
Engelhard Hanovia Lamps, Bath Road, Slough, Bucks

The Hanovia 108 Compact heater has an output of 1000 watts from an element encased in a tube of silica glass. It can be installed in either a vertical or a horizontal position, and by loosening a screw at the base of the unit, the reflector can be angled forwards or backwards, or to the left or right without dismantling. Size 19¼in long × 4in wide. Price £4 2s. 9d.

M11 House wiring system

Alpack (Electro Harness Systems) Ltd., Castle Works, Grattan Road, Bradford, 1

The Spider wiring system employs aluminium conductors, claimed to be approximately 40 per cent cheaper than the copper equivalent. The system is complementary to either traditional or industrialized building methods, and any combination of cabling skirting and accessories can be designed to produce an economic purpose made installation with a two-year unconditional guarantee.



M12 Air humidifier

Felvic (Air Humidifier Division), 34 Brighton Road, Coulsdon, Surrey

The latest Felvic humidifier incorporates a special spiral filter through which air is blown to remove smoke and dust particles. It will evaporate up to 10 pints per day, sufficient to humidify an office or lounge. Size, 18in high, 12in diameter. Recommended price, £16 10s.

M13 Electronic calculator

Block & Anderson Ltd., Banda House, Cambridge Grove, Hammersmith, London, W6

Provided with an international ten-key system keyboard for maximum operational convenience, the Canola 130S ▷

Room for improvement ?

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thermostatic shower

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Shower Information Bureau
WHADDON WORKS · CHELTENHAM

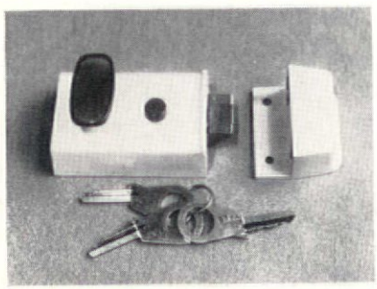
DEVELOPMENTS

498▷
electronic desk calculator has a 13-digit capacity for addition, subtraction and multiplication, and a 12-digit capacity for division. The calculator is a solid state model, with no moving parts to cause noise or wear out, giving instantaneous results in silence.

M14 Power storage system

Bruynzeel Storage Equipment, Stocklake, Aylesbury, Bucks.

The Monta power storage system provides double the storage capacity of a conventional static system in the same room area by eliminating the need for access gangways to each unit. The system is operated by a control button fitted to each storage unit. When access is required to a particular rack, a gangway is automatically opened by simply operating the appropriate control button. This actuates a pneumatic ram at the base of the unit to push other units along the metal tracks.



M15 Automatic deadlatch

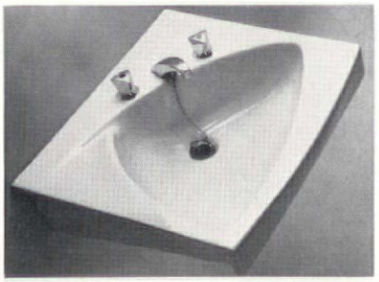
Yale Lock & Hardware Ltd., Willenhall, Staffs.

The Mercury 33 automatic deadlatch incorporates three security features. First, as the door is closed, a projection on the staple engages with a feeler lever on the bolt which automatically deadlocks the bolt against end pressure. Secondly, a reverse turn of the key from outside provides double-locking by locking the inner turn knob. The only way the lock can then be operated is by the correct key from the outside. Third, concealed fixing prevents the lock being removed from the door when it is closed. The case is enamelled in ivory, with a charcoal grey turn knob and satin chrome plate cylinder and rose. Recommended price, £1 17*s*.

M16 Pitch polymer dampcourse

Permanite Ltd., 455 Old Ford Road, London, E3

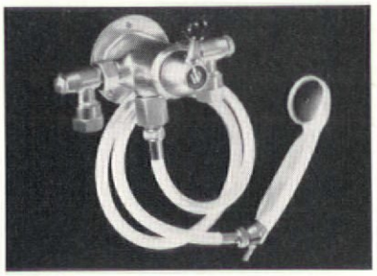
Claimed to be particularly suitable for use where the dampcourse may be subjected to exceptional compression loading or lateral stress, to have good adhesion to mortar and to retain flexibility down to minus 15°C, Permaflex dampcourse is available in rolls 48ft long in widths from 3in to 18in.



M17 Wash basin

Ideal-Standard Ltd., Ideal Works, Hull, Yorkshire

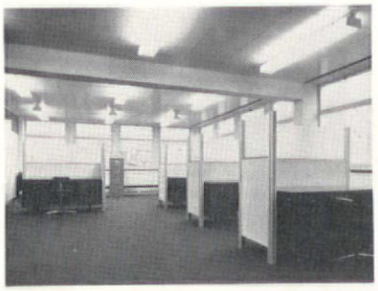
The Cleopatra vitreous china wash basin has been specifically designed for installation into a tiled or laminated plastic countertop surface, either singly or in ranges. Two variations provide for pillar taps and chain stay or for combination fittings. Size 24in × 20in. List prices, white, £8 15*s*., coloured £12 5*s*.



M18 Shower fitting

Charles Winn & Co. Ltd., Granville Street, Birmingham, 1

With a spray and hose fitting of white nylon, the Econospray shower unit has a simple single-control arm opening on the 'cold' setting, which must be moved through 'tepid' to the 'hot' setting, eliminating the possibility of scalding when returning the lever to the shut position.



M19 Office screening

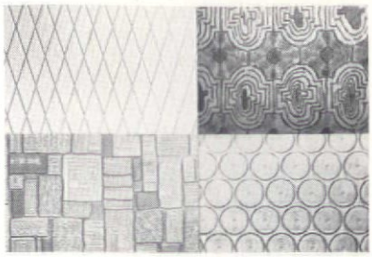
Unilock-Compactom Ltd., 176–184 Vauxhall Bridge Road, London, SW1

The Miniwall system of low screens, designed to meet the requirements of open planned offices, is now available in an improved version. Whilst still retaining rigidity, and giving full vision over large areas, it now has no floor or wall fixings, and can, therefore, easily be moved or altered to suit any layout requirements. A universal four-way aluminium post provides for panel clip-on fixings in four directions. Standard heights are 5ft and 5ft 6in, with a dado at 3ft 6in. Panel widths from 2ft to 6ft.

M20 Translucent polystyrene panels

Celotex Ltd., 27–31 St Mary's Road, London, W5

Celotex Venetian translucent panels are made from high density polystyrene in a



range of four patterns and six colours. Said to be splinterproof and impact resistant. Sizes, 16in and 24in × 6ft. Price, 6*s*. 0*d*. per square foot.

M21 Lightweight concrete partition slabs

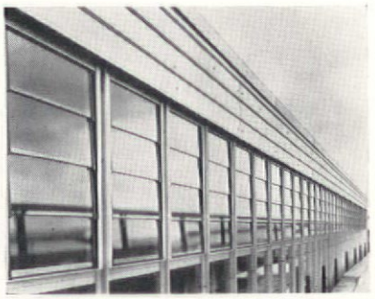
Thermalite Ytong Ltd., Hams Hall, Lea Marston, Sutton Coldfield, Warwickshire

Partition slabs manufactured from cement, sand and pulverized fuel ash, reinforced with a mild steel lattice coated with bitumen, have a smooth surface claimed to be suitable for direct finishing with paint or wallpaper. The slabs are available in thicknesses of 3in, 4in and 6in, and lengths in increments of 1in from 7ft 6in to 9ft 6in. The standard width is 1ft 6in. Fire resistance, 2 to 6 hours, according to thickness. Sound reduction varies from 36 to 41 dB, unplastered. Prices from 18*s*. 0*d*. per square yard.

M22 Window gasket

Datwyler AG, 6460 Altdorf (UR), Switzerland

A modified zipper-type window gasket designed for easy installation of panes features a retainer moulded into the profile to arrest the lip and open the groove. The seal lips do not need to be forced or held apart when inserting the pane, and the glass can be set easily in the opened groove. After the pane is placed in position the lip is quickly released from the retainer and the locking strip inserted.



M23 Louvre window

Beta Aluminium, Alexandra House, Alexandra Terrace, Guildford

The improved version of the Nylu louvre window has blades fitted into polypropylene holders, injection moulded with integral weatherfins, claimed to give an excellent weather seal and to prevent air leakage. The bearings are of acetal copolymer and require no lubrication.

M24 Ultra-violet screen

Peter H. Kappler, Wiler Weg 64, 4600 Olten, Switzerland

A clear plastic sheeting with the trade name of Antisun-UV-Tint can be applied to shop windows by means of a special adhesive, and is intended to protect the displayed items from fading or loss of freshness by filtering out the ultra-violet rays.

M25 Advisory service for special glasses

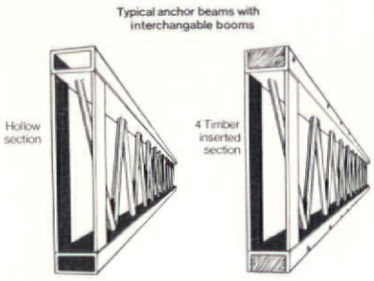
The Ministry of Technology, Abell House, John Islip Street, London, SW1

To assist industry, universities and Government departments in selecting and obtaining some of the more unusual types of glass required for special purposes, an advisory service has been set up to act as a central channel for enquiries. It will collect information on the products and facilities offered by manufacturers in this country and abroad, and will give advice on locating the best supplier.

M26 Fibre filled floor coating

H.B.M. Protective Coatings Ltd., 3 George Street, Wolverhampton, Staffs.

Linotol floor coating, used extensively on the Continent and claimed to have a service life of 25 years, is now being manufactured under license in this country. After the subfloor has been coated with a latex sealer, an underlayer consisting of a wood filler in a magnesium chloride binder is laid to a thickness of $\frac{1}{2}$in. The $\frac{1}{4}$in thick asbestos-filled overlay can be supplied in six basic colours. Claimed to be resilient, non-slip, hygienic and easy to maintain. Approximate price, £2 10*s*. per square yard.



M27 Long span lattice beams

Hope Anchor Beams, Heath Mill Road, Wombourne, Wolverhampton

A new range of beams up to 120ft clear span incorporates rectangular hollow sections, claimed to give a better economy of weight to span ratio. The beams can be provided with 4in wide timber inserts to top, bottom or both chords to allow easy fixing for all forms of ceiling or roof construction.

M28 Plastics siding

Hunter Structural Systems Ltd., Nathan Way, Woolwich Industrial Estate, London, SE18

V-Plank siding is extruded from rigid UPVC and is suitable for both horizontal and vertical application. It does not attempt to imitate timber and is claimed to be completely maintenance free and to have high resistance to impact. With an effective covering width of 6in it is manufactured in lengths of 14ft but is available in lengths of up to 30ft to special order. Standard colour, white, but grey and cedar can be produced to order.

M29 Steel reinforcement for plastics

National Standard Co. Ltd., Stourport Road, Kidderminster, Worcestershire

A new reinforcing material for plastics components, claimed to have advantages over boron or glass fibres, is now available. It consists of a mat of oriented steel fibres pre-impregnated with plastic and provided with a backing tissue. After the mat has been cut and formed to shape a catalyst is added to activate the resin. Wire sheet is compatible with polyester, epoxide, phenolic, furnae and polyolefin resins, and can be obtained with strengths up to 60,000 p.s.i. Prices from 4*s*. 4*d*. to 9*s*. 7$\frac{1}{2}$*d*. per square yard according to the number of wires per inch.

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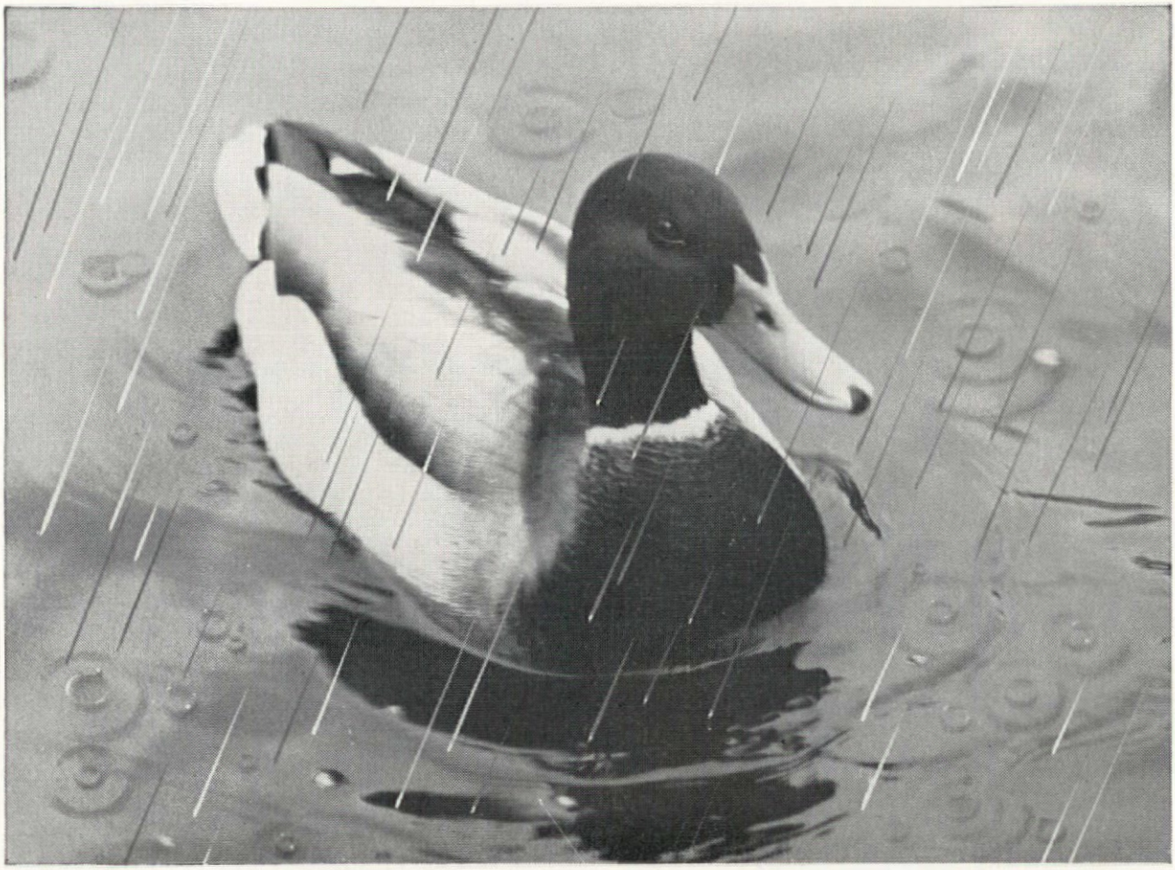
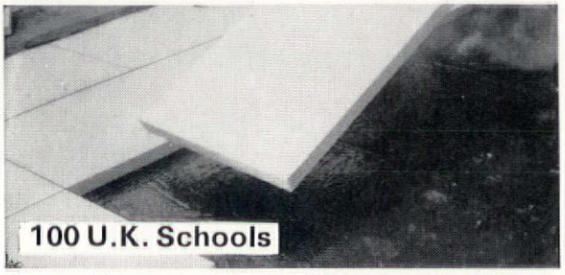


Prove Roofmate FR is really permanent roofing insulation–because it can't absorb water

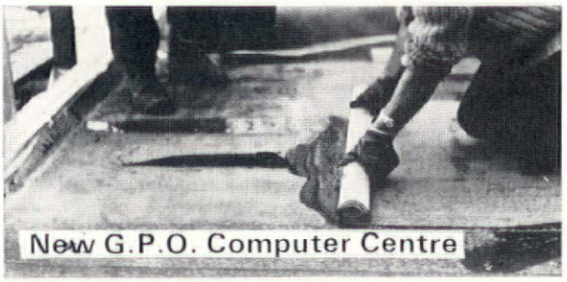
Roofmate spans the U.K.

Thousands of architects and builders throughout the U.K. are specifying and using Roofmate* FR roofing insulation. Not surprising. Roofmate gives a really permanently insulated roof. How? A special extrusion process produces a rigid foam board with uniform closed cells and tough outer skins. This means Roofmate is unaffected by water from above—or water vapour from below. So it will remain dry and effective even when installed without a vapour barrier. It's so tough ice won't crack it. Snow can't harm it. It remains dimensionally stable throughout its life. And it withstands the abuse of normal roofing traffic during installation. It's easy to install—so it cuts labour and overall roof installation costs. Drastically. So—if you haven't already—try the duck test. Just post the coupon.

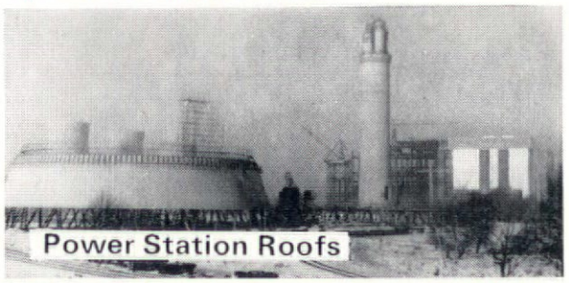


Low maintenance costs: 1,000,000 sq. ft. of Roofmate has already been installed on roofs of more than 100 schools built for local authorities. Routine maintenance is reduced to a minimum with Roofmate and building costs are also reduced because no vapour barrier is required.

Insulation of barrel vault roofs: of the 300,000 sq. ft. of Roofmate required for the Barbican redevelopment project in London a considerable quantity was used to insulate curved roof structures. The rigid boards are scored at regular intervals to fit the contour of the roof.



Constant environmental control: Roofmate was chosen for the insulation of a new G.P.O. Computer Centre at Derby to help ensure a damp-free atmosphere and precise temperature control for highly sophisticated electronic equipment.



Roof traffic damage eliminated: Over 1,000,000 sq. ft. of Roofmate has been used on major power station projects in England, Scotland and Wales. Roofmate was principally chosen in each case because it is unaffected by moisture ingression caused by the abuse of severe roof traffic during construction.

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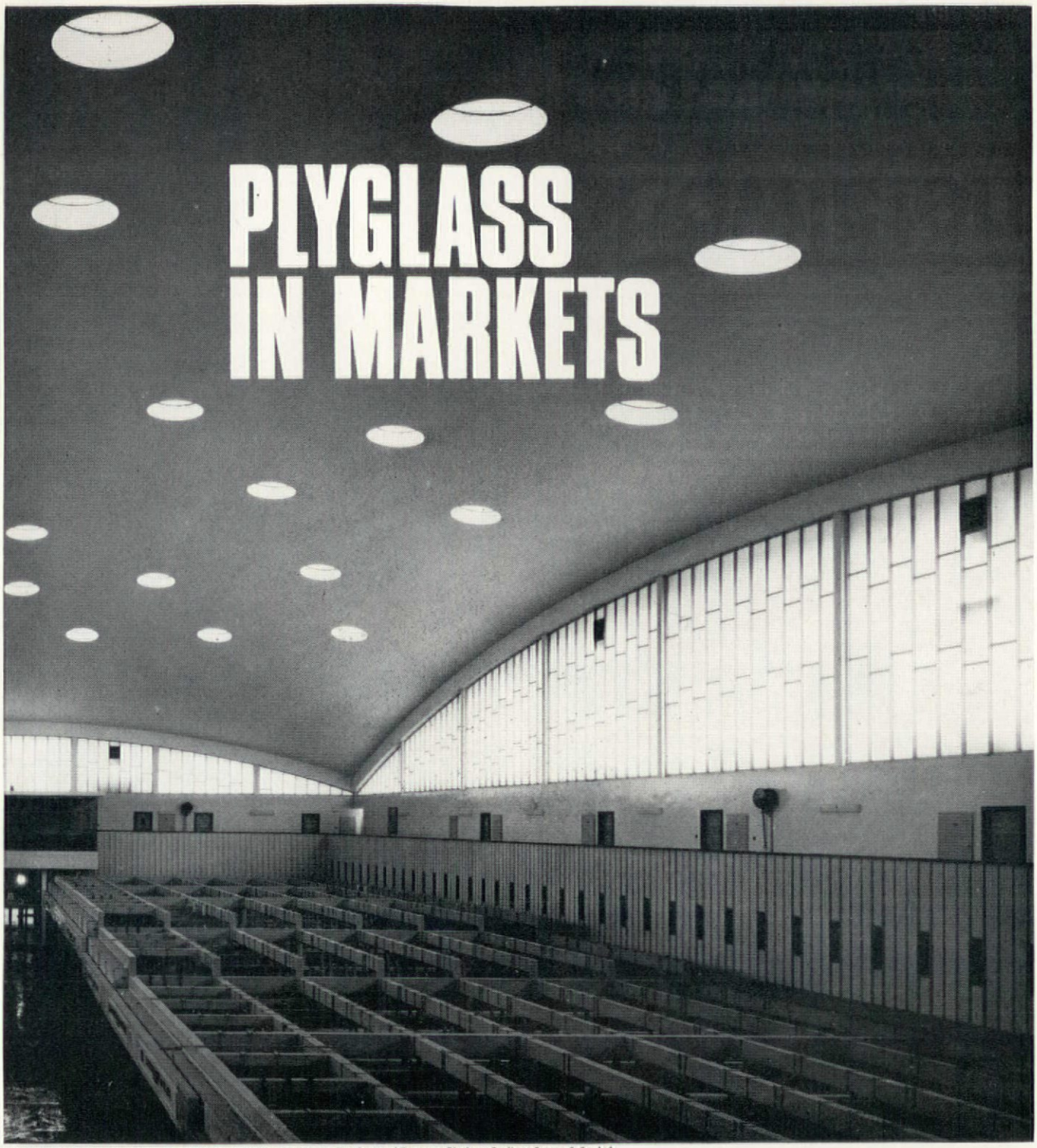

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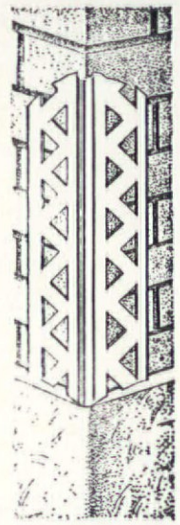

* **(in both senses of the word)**

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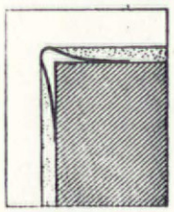

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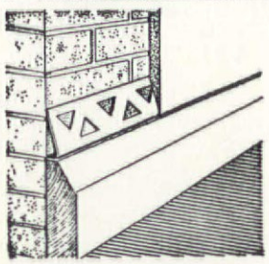

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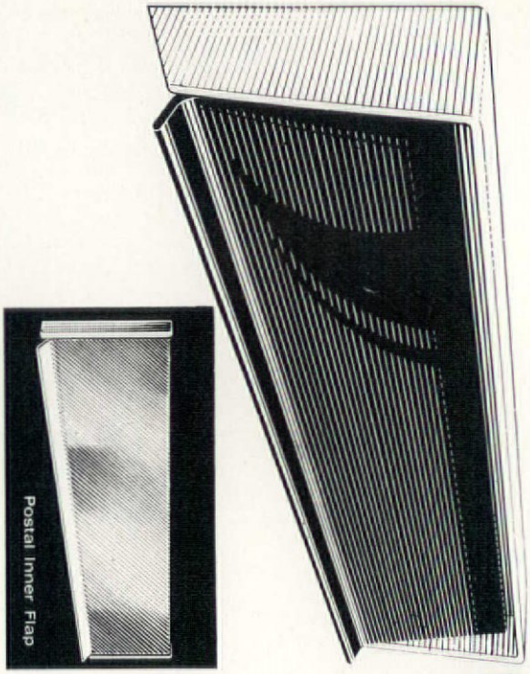

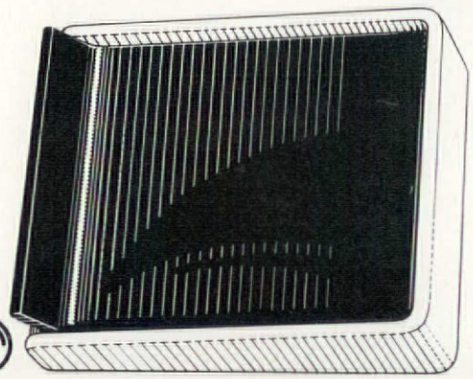

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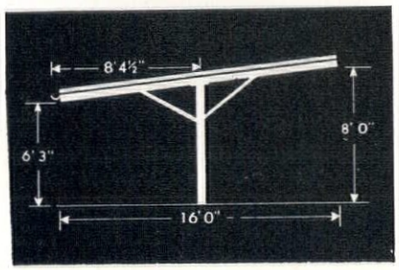

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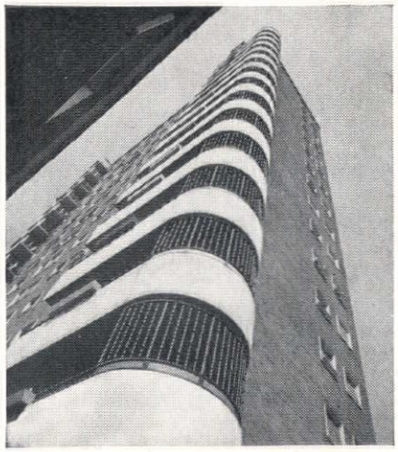

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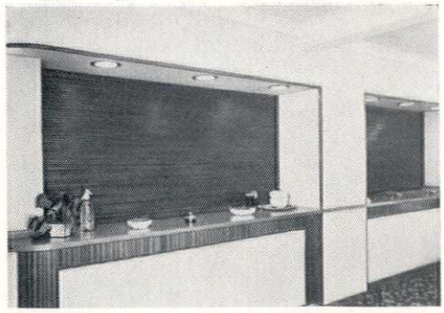

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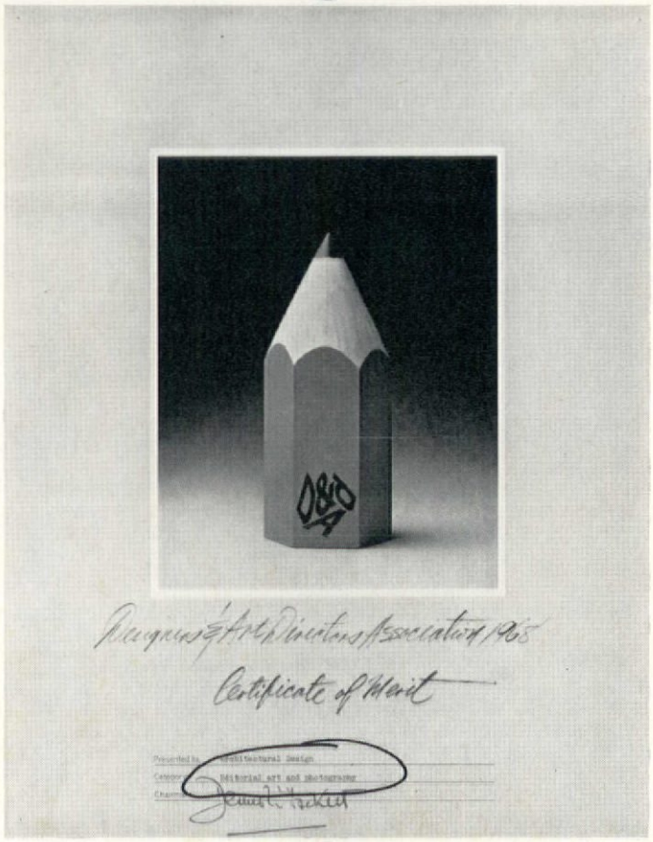

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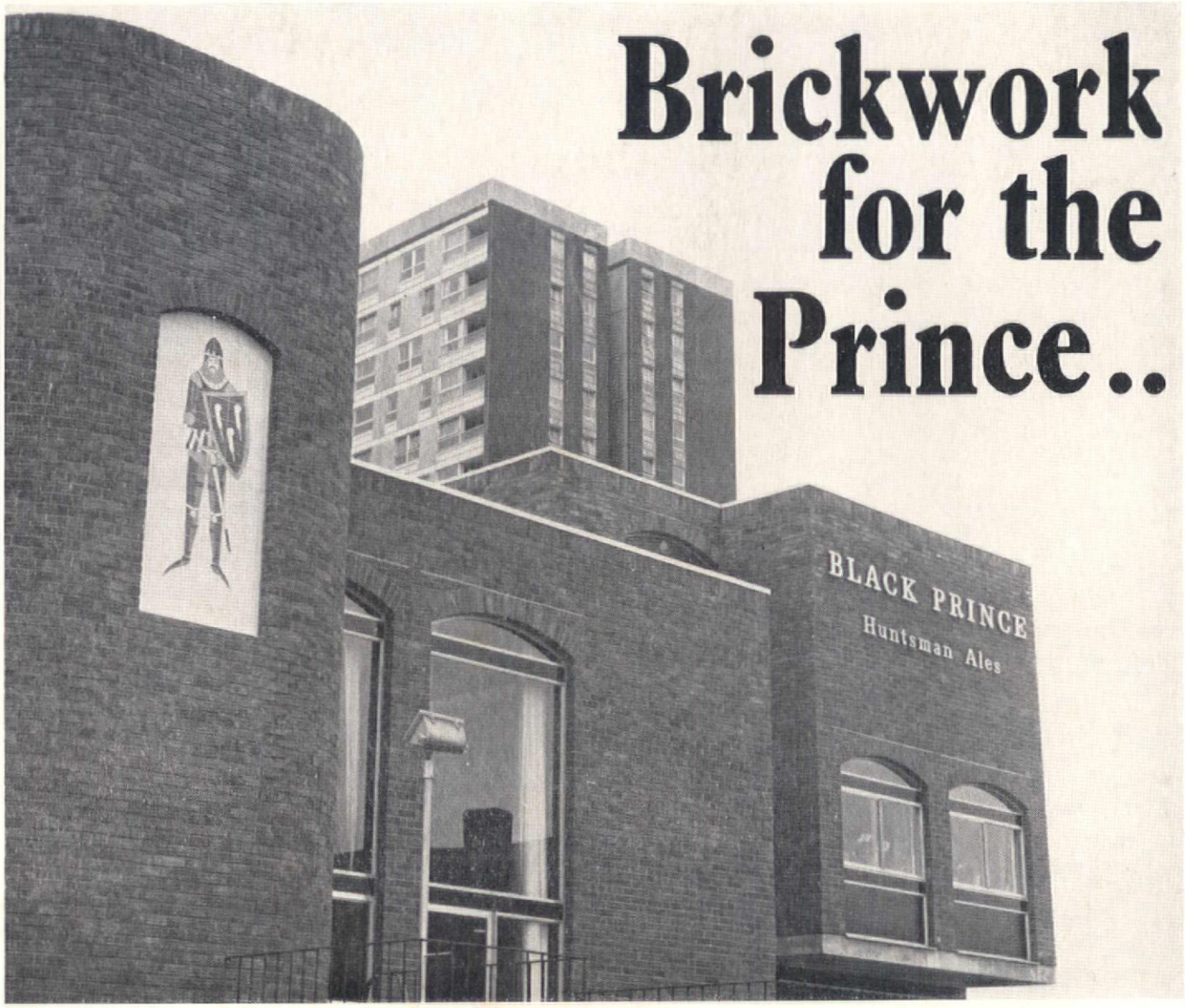

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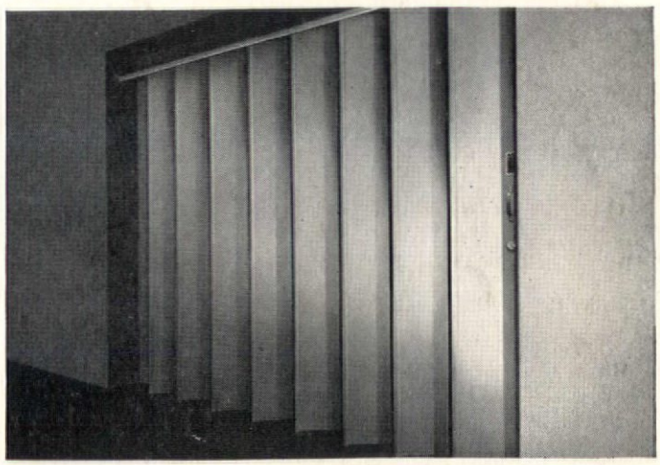

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