architectural design

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Letters

A.D. Project Awards, 1968

Sir, Judging by the report in *AD*, January 1968, the jurors of the fifth AD Project Award scheme appear to be dismayed by the diversity of the housing schemes submitted to them.

This may be taken as another instance of the notoriously conflicting ideals of architects and occupants in the field of multiple housing (the six winning schemes contained an average number of dwellings of 634) and we should perhaps ask ourselves more often who are the rightful jurors.

'Housing in this country does not appear to be following any one direction'; this undoubtedly makes it difficult to compare designs and pick winners, but it does not, as implied, create confusion, except in the minds of the unfortunate architect-jurors.

Diversity is unavoidable, and indeed, essential if the design of housing is to continue to be a creative and stimulating response to a wide range of compounds of situations, demands and personalities. Any 'clear unifying tendency' is unlikely in an increasingly pluralistic society, and would be a sign of reactionary tendencies on the part of architects.

The late 'Juke Box Jury' served a purpose, and was popular, because of the close relationship and interaction between the sayings of the opinion-givers and the sales of the goods, which anyway were all based upon identical criteria. In housing, this relationship and this interaction do not exist, and the statements of anyone trying to pick winners come from a false situation and should thus be regarded with suspicion.

Joe Holyoak, Birmingham

Sir, I feel that I ought to bring your notice to what appear to be serious design defects in the Cranford House, Harefield scheme and I am rather surprised that no comment has been made about them by the adjudicators. The faults appear to be so basic that I am surprised that you should consider this scheme for an award. The points are as follows:

The main pedestrian entrance is through the kitchen. This would seem to be extremely unattractive and undesirable and is made worse by the absence of a draught lobby.

It would seem that all formal dining would have to take place in the kitchen which has been designed in such a way that it is barely more than a working kitchen, as opposed to an eating area.

The owners gain access to the living room on the ground floor by means of a staircase but appear to pass an open-planned utility room directly off the hall. I presume that this must have been a mistake.

I presume that I must have interpreted the plans incorrectly but at first glance the scheme appears to be almost unworkable.

Michael Sassoon, Cheadle

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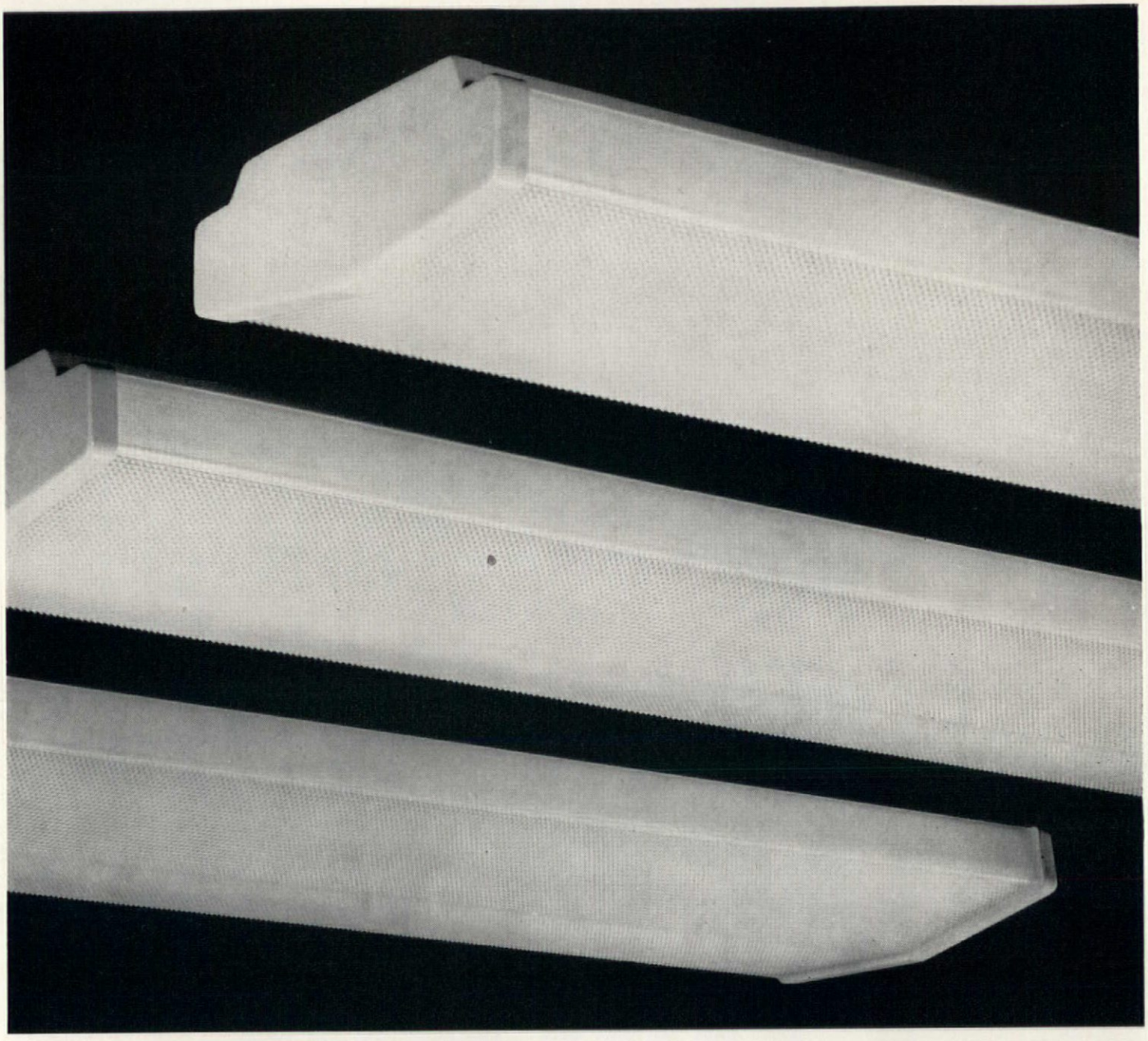

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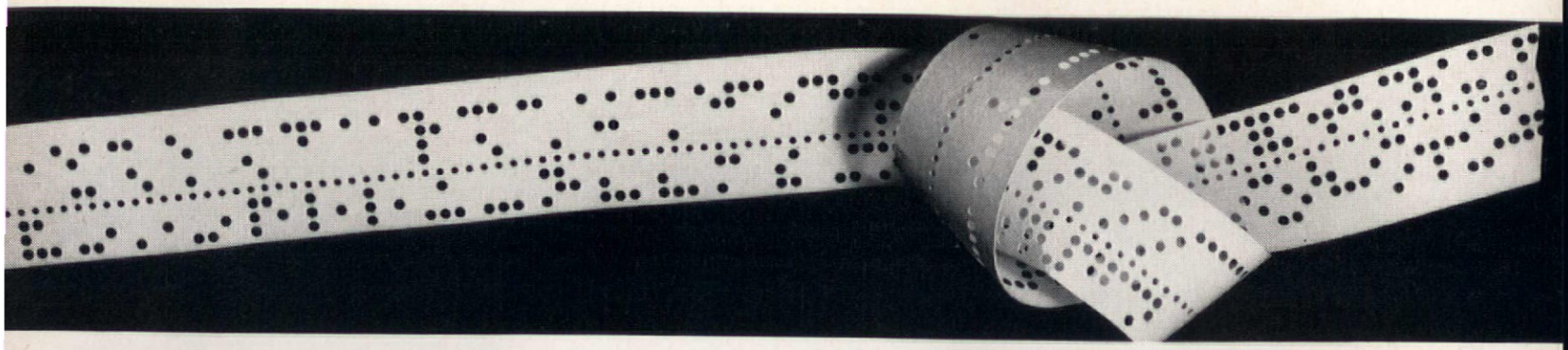

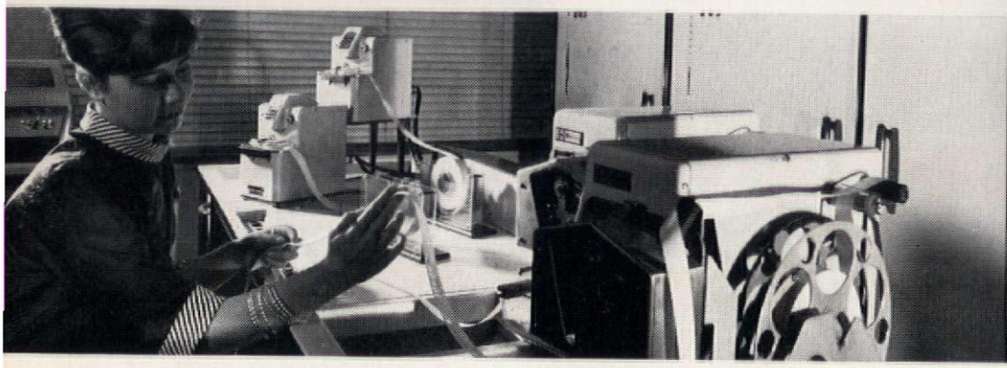

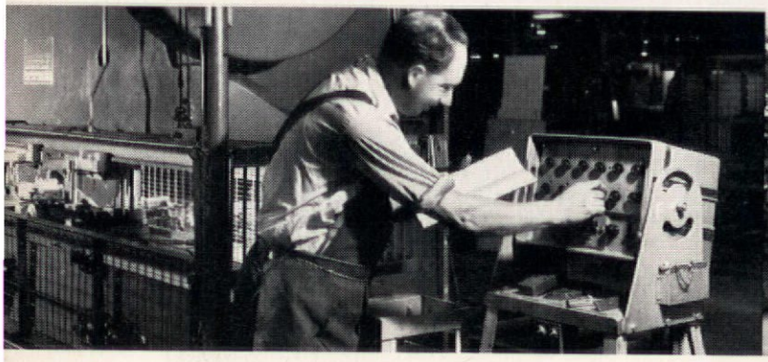

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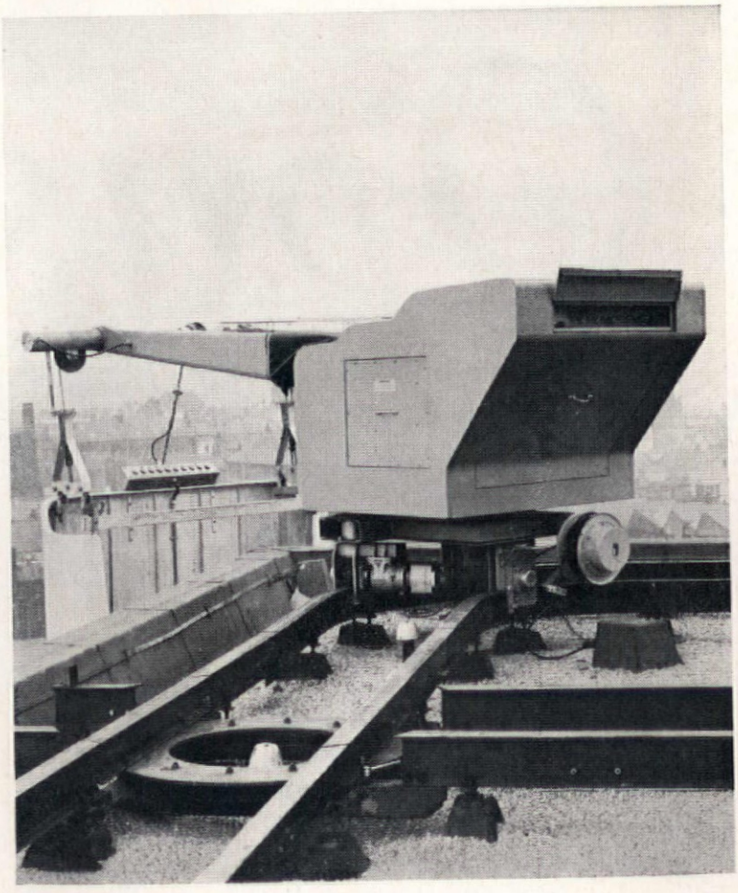

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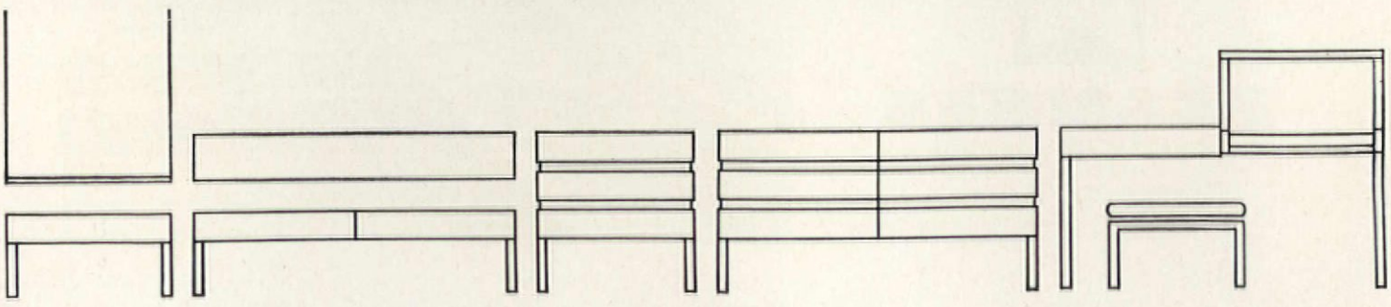
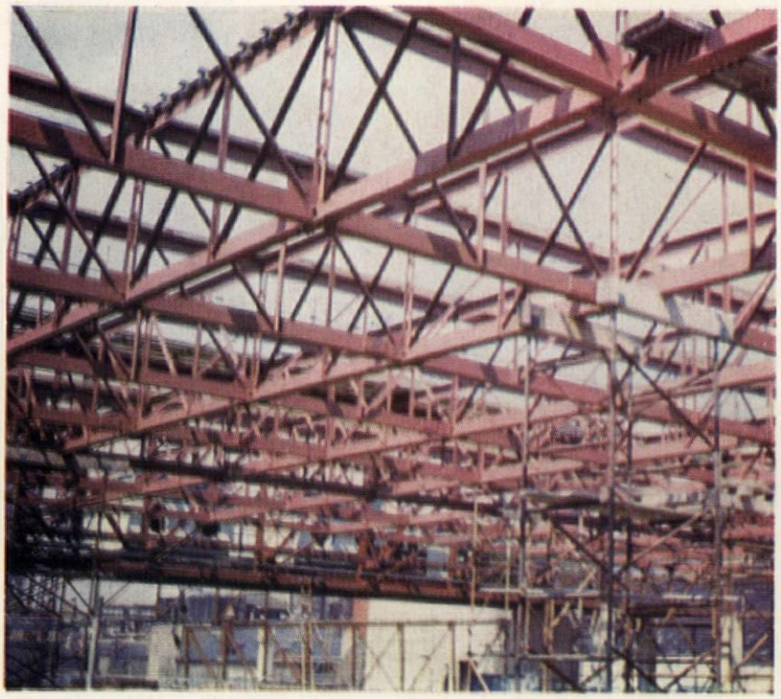



Design in Steel for sport and recreation
Steel is helping to speed the task of giving Britain new recreational buildings, sports stadia, equipment and facilities that a modern society needs—for active leisure pursuits, entertainment, and social recreation.
British Steel Corporation



Strong, lightweight steel structures can give clear enclosed spaces for indoor activities. Top Rank Brighton Entertainment Centre: steel lattice girders 7 ft deep form a double-layer two-way grid to give economical clear spans. *Designed for the Rank Organisation by Russell Diplock Associates. Consulting Engineers: Phillips Consultants Ltd. Steelwork by Smith Jewell Ltd., Chichester.* COVER: Steel at Wembley. The vast stadium's cantilevered roof extends forward 80 ft. unsupported, giving excellent crowd cover. *Steelwork by Dawnays Ltd. Consultants, Sir William Halcrow & Partners.*

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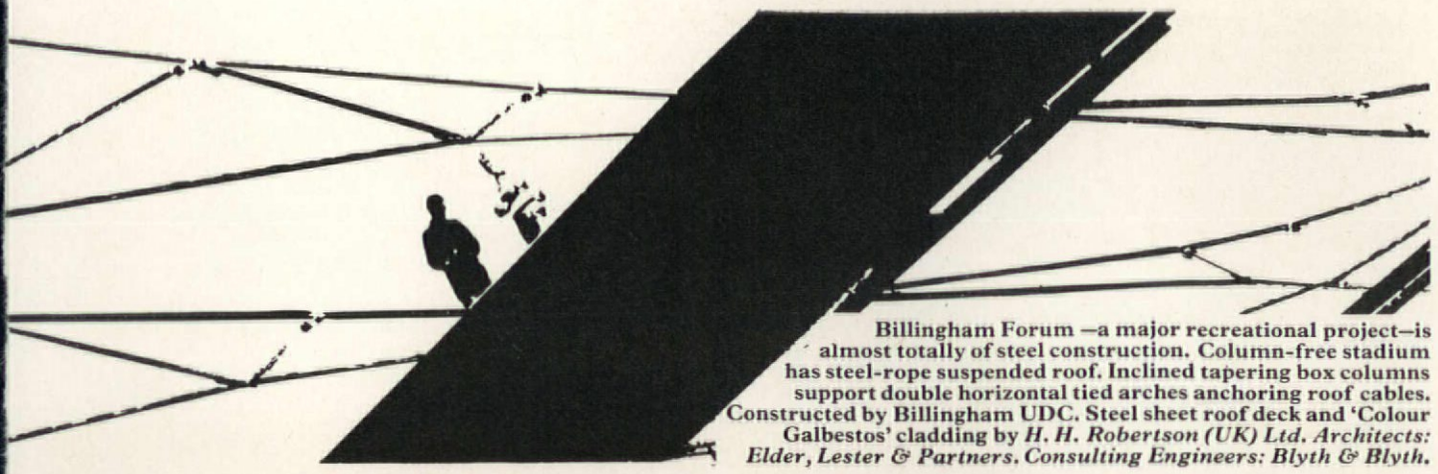
Stainless steel equipment in indoor swimming pools withstands corrosive conditions due to humidity, condensation and chemicals. Maintenance-saving handrails, ladders, diving stages, turnstiles remain hygienic, easily cleaned.
Coventry City Swimming Pool.
Tubular Ladders by Contemporary Industries (Engineering) Ltd.

First-class facilities for sport at the National Recreation Centre, Crystal Palace.
Sports Hall: Partially prestressed steel lattice truss roof has herring bone bracing.
Stadium Canopy: Welded steel frames and purlins are suspended by steel tubes from tripod supports.
Designed by Hubert Bennett, architect to the GLC. Consulting Structural Engineers: Ove Arup & Partners Consulting Engineers. Steelwork: Hoveringham Eng. Ltd.

Steel–a winner at Ascot. Design of the elegant, steel-framed Queen Elizabeth II Grandstand takes advantage of advanced cantilever construction. New Royal Enclosure extension steelwork was completed in only 12 weeks.
Structural steel by Boulton & Paul (Steel Construction) Ltd.
Main Contractor: George Wimpey & Co. Ltd.

Indoor training centre for Wolverhampton Wanderers FC–teams can train in all weathers. Strong, lightweight, welded tubular steel roof structure is fabricated from Rectangular Hollow Sections in BS 968 high yield steel, giving 75 ft clear span over a 150 ft long training hall.
Architects: Johnson & Giles. Steelwork by Herbertson & Co. Ltd.

More fun at 'The Centre'. Crawley is one of the New Towns with 'Entertainment Centres' in which economical wide span roofs of steel lattice girder construction provide the required large clear areas for ten-pin bowling.
Architects: Russell Diplock Associates. Consulting Engineers: Bridges, Snow & Partners.
***Cover photo (top)*—Bowlers in action.**



Billingham Forum —a major recreational project—is almost totally of steel construction. Column-free stadium has steel-rope suspended roof. Inclined tapering box columns support double horizontal tied arches anchoring roof cables. Constructed by Billingham UDC. Steel sheet roof deck and 'Colour Galbestos' cladding by *H. H. Robertson (UK) Ltd. Architects: Elder, Lester & Partners. Consulting Engineers: Blyth & Blyth.*

projects are quick to design, erect and carry through to completion. Site work can proceed with minimum interference from Britain's treacherously changeable weather.

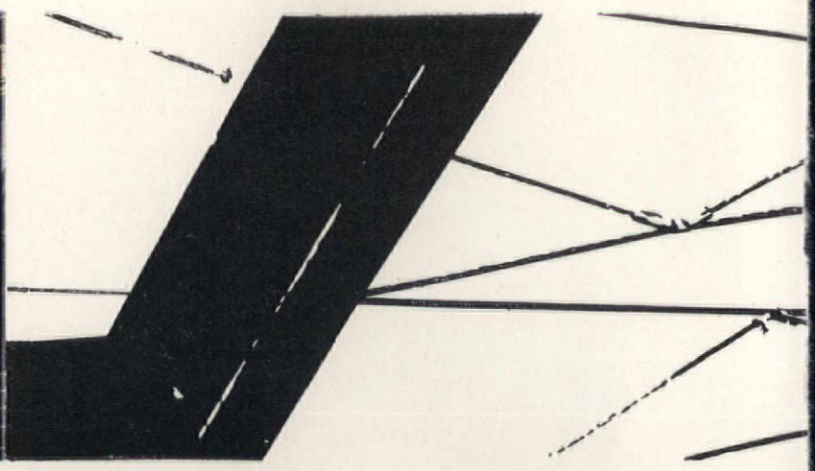
Steel wins—on so many scores. **New types of steel, recent advances in fabrication, welding and structural techniques and an ever-growing range of newly-developed steel products yet further increase the benefits of designing new projects in steel, to achieve the better sporting and leisure facilities that modern Britain needs.**

Structural steel for Leeds International Pool—with 3 pools, for tuition, competitive and recreational swimming, diving, water polo. 'Autofab' beams forming the 8 cruciform columns support steel lattice roof. ***Architects: J. G. L. Poulson in association with Leeds City Architect, E. Weston Stanley. Consulting Engineers: J. G. L. Poulson Associates.***

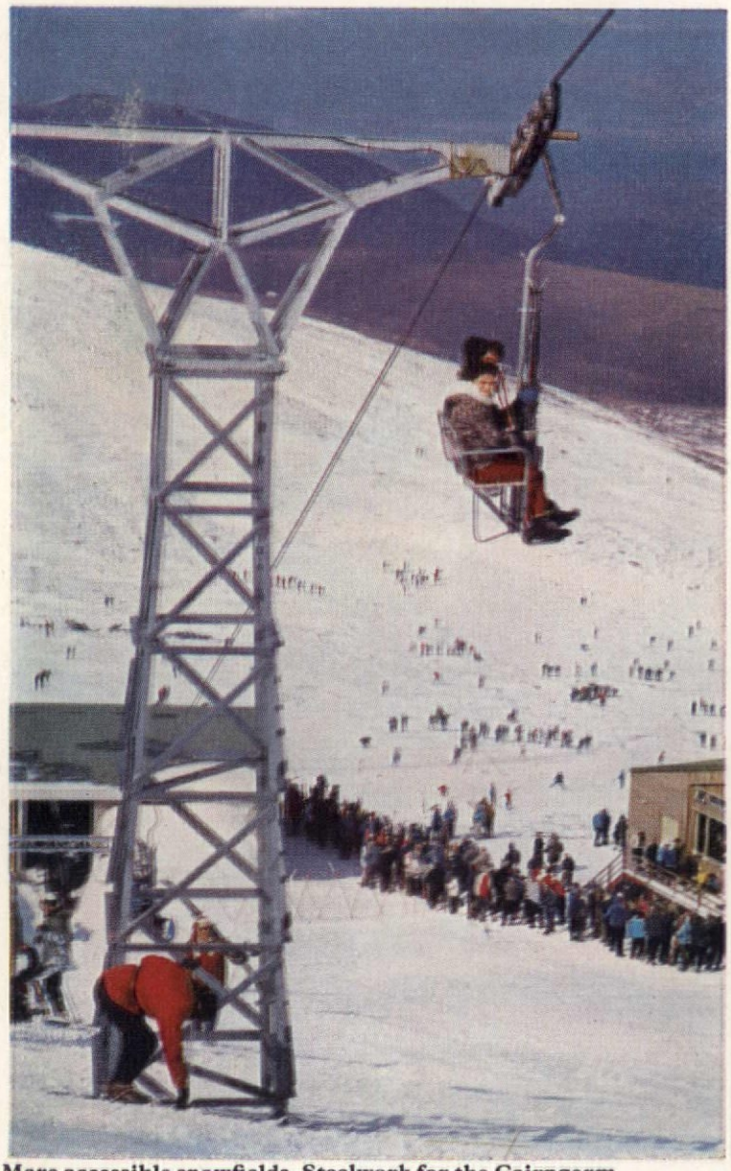
(Left) Economical steel-framed gymnasium with light tubular steel roof grid. 'Space Deck' structural system at Ladysmith Secondary Modern School for Boys, Exeter, allows wide clear spans which will accept loading at almost any point for suspended 'gym' equipment. ***Designed by the Department of the City Architect, Exeter. Space frame structure by Space Decks Ltd.***

Harlow's 'Sportcentre' (above, and cover). Outstanding example of a purpose-designed community sports hall. Economical steel-frame structure employs weight-saving 'castellated' beams for wide, clear spans. ***Architects: Frederick Gibberd & Partners. Steelwork: Redpath Dorman Long Ltd.***

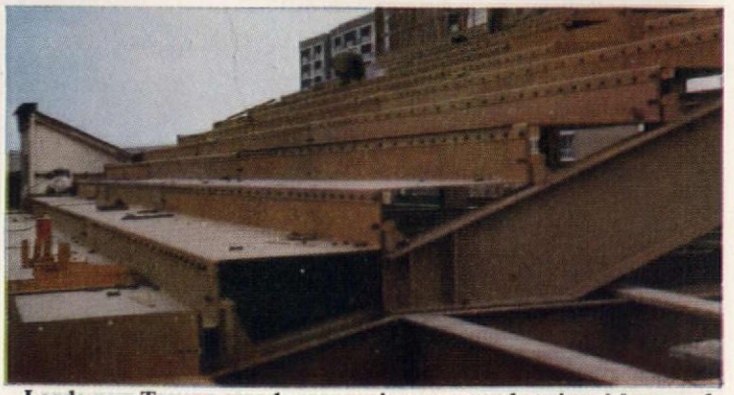
Multi-sport centres reduce costs with shared amenities. Steel-framed Sports Hall at Easthampstead RDC's Bracknell Sports Centre caters for many sport and leisure activities. Galvanized pvc-coated steel sheet vertical cladding by ***William Briggs & Sons Ltd. Architects: John Rice & Partners.***



For providing new sports stadia and recreational buildings of all kinds throughout Britain, steel frame construction is regularly preferred. Steel design continues to be selected again and again on grounds of faster construction, greater convenience and speed at the design stage, superior flexibility and adaptability to changing needs, as well as for lower costs to make maximum use of available funds. This is yet another field of building design in which steel offers the important advantages of fast, dry construction. Steel is a precise and accurately calculable design material;



More accessible snowfields. Steelwork for the Cairngorm 'Chairlift', Aviemore, incorporates tubular and angle lattice construction—corrosion-protected by hot-dip galvanizing. ***Consulting Engineers: Blyth & Blyth. Steelwork by R. W. Hay Ltd, Edinburgh. Cables by British Ropes Ltd.***



Lords new Tavern stand—economies were made using $\frac{5}{16}$" pressed steel plate for channel section main beams and terraced decking. ***Steelwork by John Booth & Sons (Bolton) Ltd. Architects: Louis de Soissons, Peacock, Hodges, Robertson & Fraser. Consulting Engineers: R. T. James & Partners.***

Adventure-play. Youth enjoys its earliest 'fling' on steel play equipment. Tubular steel playground structures give strength and security, eliminate sharp edges for safer play. *'Playways' equipment by Lew-Ways Ltd.*

Higher lighting standards in strong, lightweight, cost-saving tubular steel. Flood-lighting towers are neat in appearance, offer less wind-resistance, cost less to paint and maintain. Hot-dip galvanizing resists corrosion. *Designed by Ove Arup & Partners. Steelwork by Stewarts & Lloyds Ltd.*

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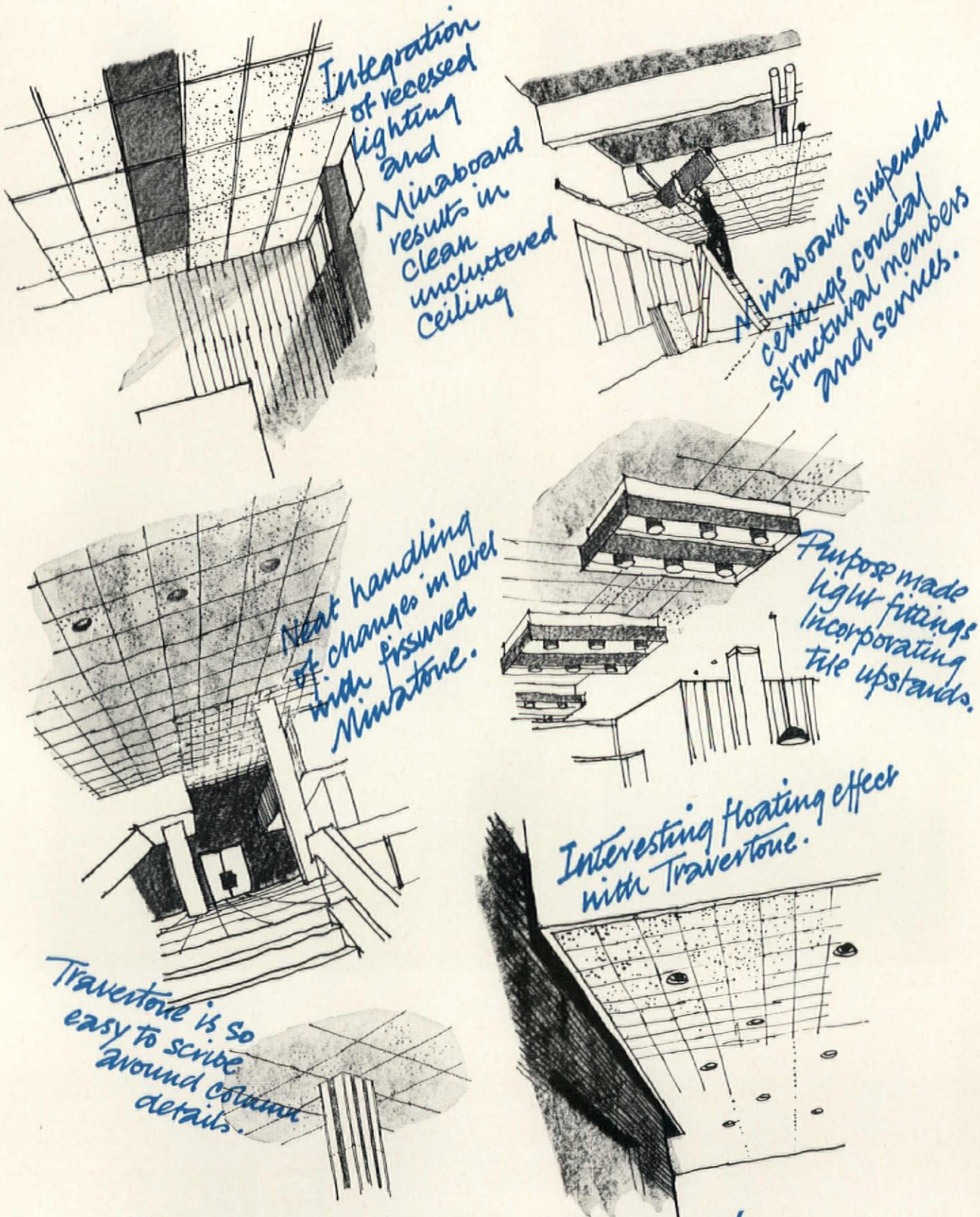

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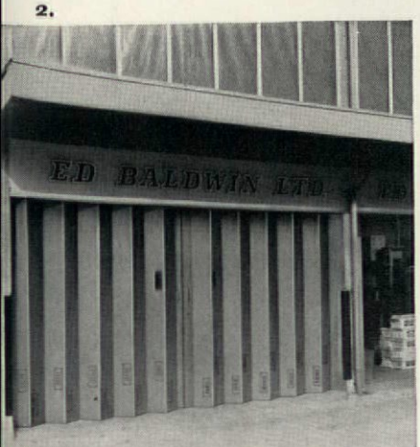

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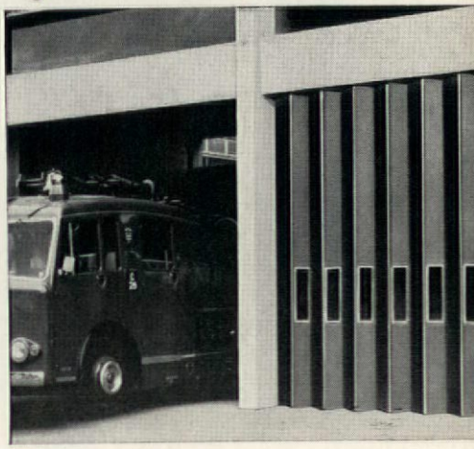

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Architects: Architect to the Greater London Council, Hubert Bennett, F.R.I.B.A.

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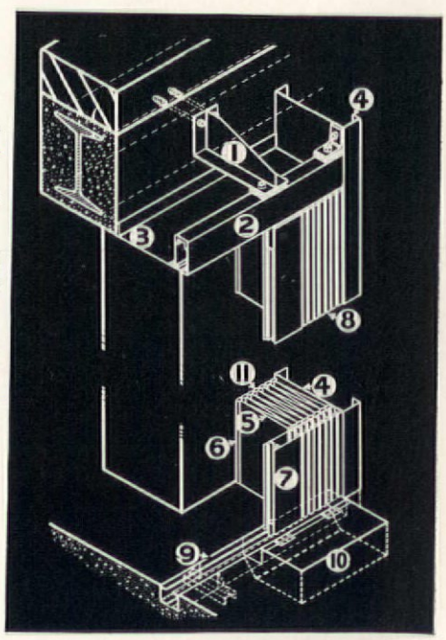

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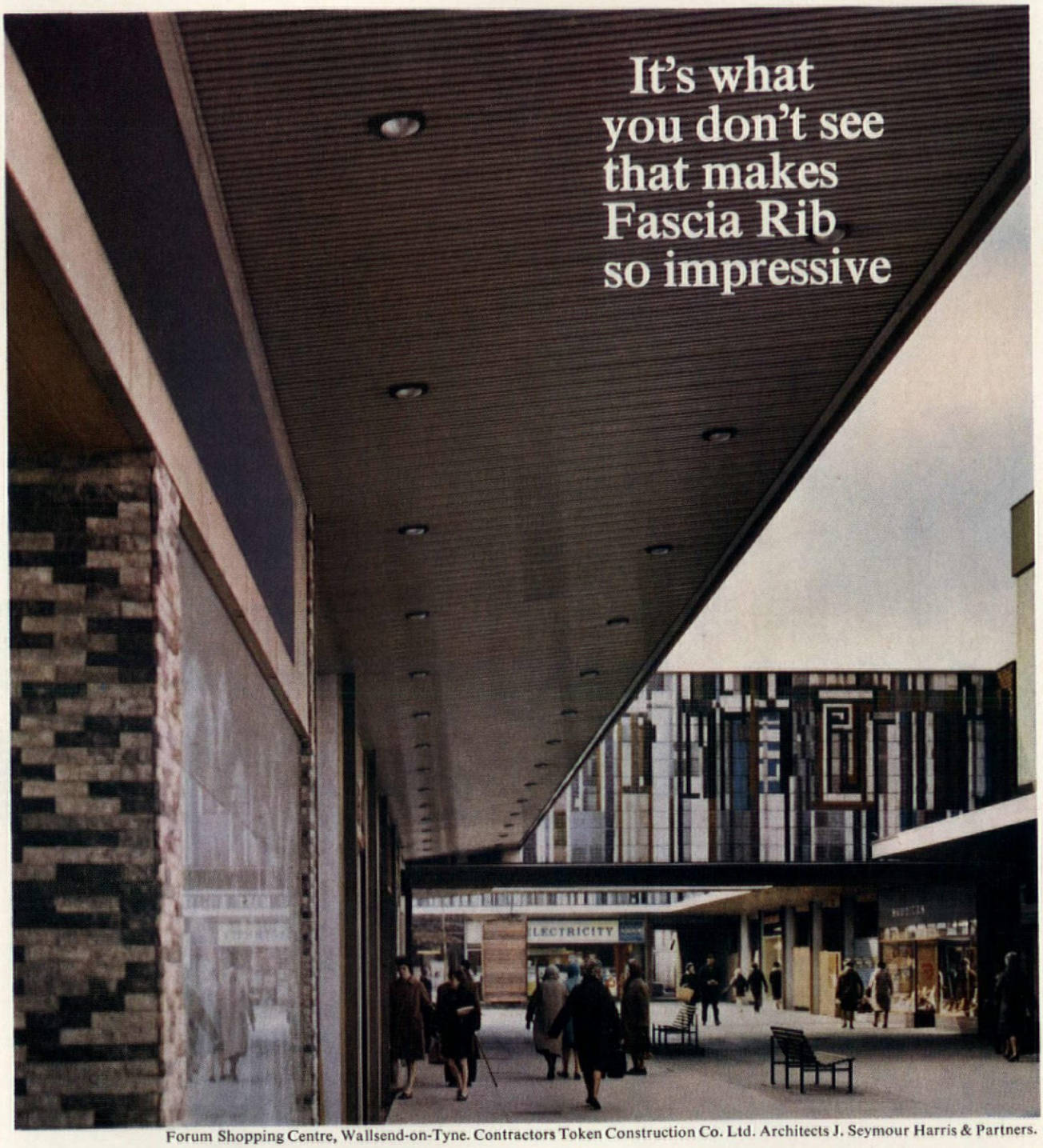

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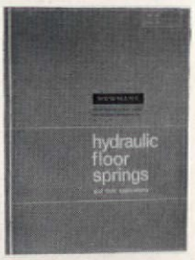

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AD Competition 3/68

What, where, when and by whom?

Answer

name of building or construction .....

address .....

date of construction.....

designer (if any) .....

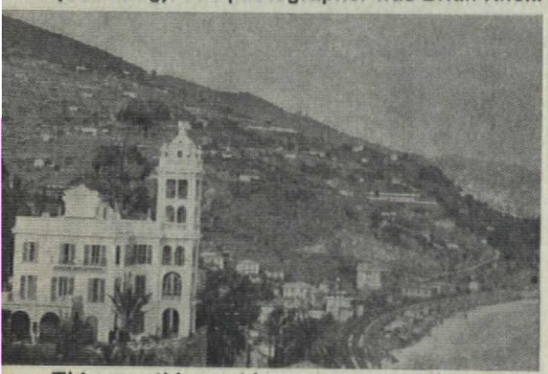
Name of competitor .....

Address .....

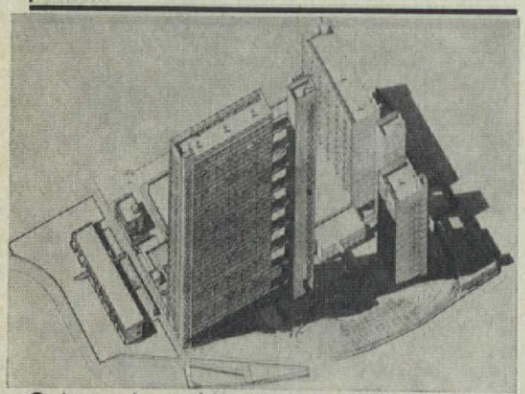
Cosmorama

WHat Ere Hon?

Winner of last month's competition was Roland Hagmüller of Vienna who was the only person to identify the building. The architect was Hans Scharoun, who designed the hostel in 1928 for the Work and Home Exhibition (WUWA), Breslau. It stands on the edge of a park, at the junction of the ulica M. Kopernika and the ulica E. Dembowskiego in the suburb of Szczytniki (Scheitnig). The photographer was Brian Knox.



This month's problem picture recalls a more effulgent period of architecture. The sender of the first correct entry, identifying the architect and giving the date and address of the building, opened in our office on the 20th of this month will win £5. This entry form is printed on page *AD*28. Envelopes should be marked *Competition*.



Guinea pig architect

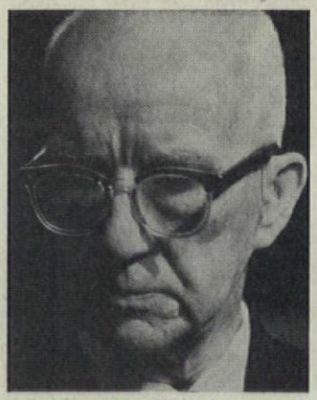
The GLC's most surprising tenant is living for a few weeks at the top of the East End's tallest block of flats.

The tenant—Ernö Goldfinger, the architect who designed the block—has moved into one of the 26-storey flats at Rowlett Street, Poplar, as a sociological experiment. 'The aim of my stay in the tower block,' he says, 'is to get the "feel" of living in a flat I have designed for the GLC. I want to experience, at first-hand, the size of the rooms, the amenities provided, the time it takes to obtain a lift, the amount of wind whistling around the tower, and any problems which might arise from my designs, so that I can correct them in the future.'

He pays approximately £11 10s a week rent, exclusive of rates but including central heating. (This is the cost without any subsidy from the ratepayer or taxpayer. The subsidized rent for the flat will be £4 15s 6d, including heating, but exclusive of rates.)

Mr Goldfinger and his wife have four rooms plus kitchen and bathroom, and a bird's eye view of the River Thames and River Lea.

Men of the Month

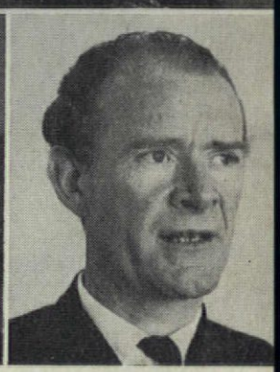


Fuller. *Photo: Hans Wild*

Richard Buckminster Fuller, who will receive the 1968 Royal Gold Medal for the promotion of architecture on June 18th at the RIBA.

Readers of *AD* need no introduction to Professor Fuller's work or his philosophy of structures which have been featured again and again through the years in our pages, as follows:

1967, pages 56, 60, 335, 349. 1966, pages 15, 106, 110, 269, 533. 1965, pages 264, 371, 475, 483. 1964, page 60. 1963, page 557. 1962, page 171. 1961, page 290. 1960, page 101. 1957, page 146. 1955, page 126.



Scott
Tallon, Walker. *Photos: John Donat*

Michael Scott, FRIAI, Hon. RHA, Hon. FRSUA, born 1905, acted with the Abbey Players, was articled to a firm of architects in Dublin. From early work on hospitals, the Irish pavilion at the New York World's Fair in 1936, and the post-war Dublin Bus Terminus, has built up the leading architectural practice in Ireland.

Robin Walker, MSc, RIAI, ARIBA, born 1924, studied at University College, Dublin, worked for Atbat (le Corbusier) 1947–48, worked for Michael Scott 1948–49 and 1952–56. Studied City and Regional Planning at IIT in Chicago (and worked for SOM) 1956–58, then rejoined Michael Scott, becoming a partner in 1958.

Ronald Tallon, B.Arch, ARIAI, ARIBA, born 1927, studied at University College, Dublin, has worked for Michael Scott since 1956, becoming a partner in 1958.

With his partners, who are now primarily responsible for design initiative in the office, Michael Scott has established international standards in a country typified by reactionary opinion and an overwhelming nostalgia for the past. In time, their work could have a significant influence on Dublin as a city, that Dubliners (though they may not appreciate it) need not be ashamed of. Along with his achievements as an architect, Scott is also a great Dublin character, a raconteur and *bon viveur* who leads an enviably congenial life of art, architecture and oysters. He is also a forceful cultural crusader on the Irish scene: a founder member of the Dublin Joyce Society, of Signa (with Louis le Brocquy, the painter), a member of the Irish Exhibition of Living Art, and of the Irish Arts Council. His office is a rallying point for young architectural talent in Ireland and he persuaded both Ove Arup and Jorgen Varming to set up offices in Dublin.

For those cynics who repeatedly accuse architects of designing Modern and living Georgian—all three of these men live in houses of their own design. *JD*

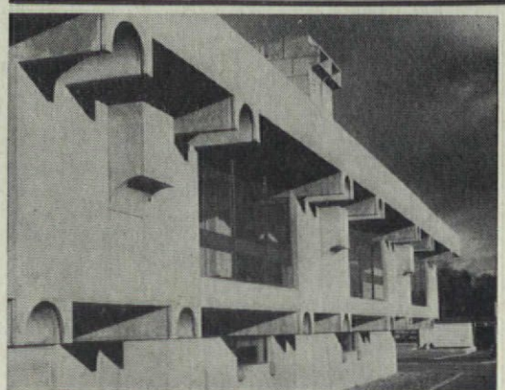
There will be a broadcast about Michael Scott on Radio 3 on April 1st in the evening.

Deaths

Pierre Jeanneret, Le Corbusier's cousin/collaborator who was Chief Architect and Town Planning Adviser to the State of Punjab. Died 11.12.67 in Geneva.

Gordon Ricketts, Secretary to the RIBA since 1959. Died 5.1.68 in Folkestone.

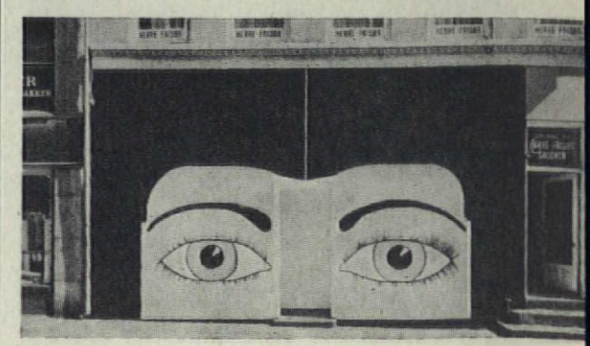
Jean Fayeton, architect. Died in February, in Paris.



Winner of the first AD Grand Project Award in 1964, the Nuffield Transplantation Surgery Unit designed by Peter Womersley for Edinburgh's Western General Hospital, was officially opened by Sir Peter Medawar on January 31st. Full details of the building will be published in AD next month.
Photo Edwin Johnston

The eyes have it

Shopfront in Strøget, Copenhagen's equivalent to Carnaby Street, London, where the shopper appears to be held up to scrutiny rather than the goods, which are totally hidden.
Arkitektur 6, 1967



Exhibitions

Till March 23rd	London	Cunard *Queen Elizabeth II* interiors	Design Centre, Haymarket, London, W.1
Till March 24th	London	*De Stijl*	Camden Arts Centre, Arkwright Road, London, N.W.3
March 1st to 29th	Paris, France	Inflatable structures	Musée d'Art Moderne de la Ville de Paris
April 23rd to 26th	London	Transportation engineering	Central Hall, Westminster
April to May	London	Danish design	Victoria and Albert Museum, London, S.E.7
May 15th to July 14th	Milan, Italy	14th Triennale of Milan	Palazzo dell'Arte al Parco
September 1968	London	Bauhaus graphics	Central School of Art, Southampton Row, London, W.C.1
August 30th to October 27th	London	The surveyors craft since 2800 B.C.	British Museum
October 7th to 10th	Mexico City	Spaces for sport and culture	
1970			
March 15th to September 13th	Osaka, Japan	EXPO 70	

Conferences

April 3rd to 5th	London	Alcan University Conference No. 3: Human factors in urban planning	Inf. Alcan, 8 Hill Street, London, W.1
April 23rd to 26th	London	Transport Engineering Conference	Inf. Institute of Civil Engineers, Great George Street, London, S.W.1
April 22nd to 27th	Barcelona, Spain	3rd UIA Colloquium on industrialization of building	Inf. UIA (Spanish section), Colegio de Arquitectos de Cataluna, Barcelona 2, 5 Plaza Nueva
April 28th to May 5th	Agadir, Morocco	3rd UIA Colloquium on housing	Inf. Mourad Ben Embarek, Rue Assad Ibn Al Forat, immeuble Bnde, Rabat
April 19th to May 25th	Ljubljana, Jugoslavia	3rd Biennale of industrial design	Inf. Moderna Galerija, 14 Tomsiceva, Ljubljana
May 16th to 21st	Montreal, Canada	11th Biennial Congress of International Federation of Landscape Architects	Inf. Canadian Assoc. of Landscape Architects and Town Planners, Oakville, Canada
May 19th to 26th	Detroit, USA	UIA 5th Seminar on industrial architecture	Inf. L. A. Rossetti, Marquette Building, Detroit, Michigan 48226
May 27th to 29th	London	International congress on lightweight concrete	Inf. Concrete Society, Terminal House, Grosvenor Gardens, London, S.W.1
May 30th to June 6th	Prague	6th Congress of the International Prestressed Concrete Society	Inf. Concrete Society, Terminal House, Grosvenor Gdns., S.W.1.
June	Cambridge, Mass., USA	International Conference of International Design Methods Group	Inf. Coll. of Environmental Design, Dept. of Arch. re Berkeley Univ. of California, Calif. 94720
June 16th to 23rd	Aspen, Colorado, USA	International Design Conference	Inf. IDCA, Box 664, Aspen
June 21st to September 22nd	Brno, Czechoslovakia	2nd Biennial of Applied Graphic Art	Inf. Organizing Committee, Husova 14, Brno
June 26th to 29th	Cambridge, England	RIBA Conference (Building for education. Looking forward)	Inf. RIBA
July 6th to 13th	Greece	Ekistics tour of Greek settlements and attendance of closing session of Delos 6 Symposium	Inf. P. Psomopoulos, Athens Centre of Ekistics, P.O. Box 471, Athens
July 15th to 26th	Athens, Greece	Ekistics seminar	
August 18th to 24th	Eindhoven, Holland	3rd ICOGRADA Congress	Inf. Sjoerd Bijlsma, "Bijland", Kreiël 16, Winterle gem. Vessem, Holland
September 4th to 13th	Manchester	Town and Country Planning Summer School	Inf. Sec. 26 Portland Place, London, W.1.
September 9th to 14th	New York, USA	7th Congress International Bridge and Structural Engineering Assoc.	Inf. E. K. Timbly, c/o Howard Needless, Tammen & Bengendorf, 99 Church Street, New York
October 7th to 11th	Ottawa, Canada	4th International Congress for Building Research and Documentation (CIB)	Inf. Miss Milroy, Information Division, Building Research Station, Garston, Watford, Herts.
October 7th to 10th	Zacateno, Mexico	Meeting of architects under 30	Inf. Arg. Ruth Rivera, Organizing Committee for Olympic Games, Avide la Fuentes 170, Jardines del Pedregal, Mexico 20DF.
November 13th to 15th	London	International reinforced plastics conference	British Plastics Federation, 47–48 Piccadilly, W.1.
November 15th to 17th	London	Art, technology and society	Inf. DIA, 13 Suffolk St., London, S.W.1
1969			
February	London	Reinforced plastics in building	Inf. Plastics Institute, 11 Hobart Place, London S.W.1
October 9th to 15th	Buenos Aires, Argentina	10th UIA Congress	Inf. UIA Secretary, RIBA, London

Competitions and awards

Furniture design (dining suite) 1st prize, £750; 2nd prize, £250	Entries by June 29th 1968	Org. Donald Macpherson Group, Jenkins Lane, Barking, Essex
Concrete structures of outstanding merit, completed in 1967. Plaque and certificates to winners	Submissions by April 8th	Inf. Concrete Society, Terminal House, Grosvenor Gardens London, S.W1

Study tours

May 4th to 11th	Finland (£90) (AA Members only)	Inf. Architectural Association, 34 Bedford Square, London, W.C.1
May 12th to 19th	Copenhagen	Inf. Joint Activities Committee, Midland Design & Building Centre, Mansfield Road, Nottingham
July 15th to 19th	Finland (£168)	Inf. Concrete Society, Terminal House, Grosvenor Gardens, London, S.W.1

Air art

'Establish a society
in which the individual
has to pay for the air he breathes
(air meters; imprisonment
and rarified air, in
case of non-payment
Simple asphyxiation if
necessary (cut off the air)'

Marcel Duchamp (1915)

The new interest in the creative possibilities of air in art, architecture and industry marks another step in the flight from fixity that characterizes our present phase of cultural and technological development. Although the various applications of air to architecture and the multiple modes of inflatable furniture are very visible and well documented, the uses of air as a sculptural medium are not.

Leonardo da Vinci, probably the earliest artist to have understood the inherent aesthetic character of air, created a pneumatic environment by using inflated pig's bladders in a small room.

In our century, Marcel Duchamp was the first to signal the actual use of this medium. After discussing inflatable furniture and flying structures with Picasso around 1914, he produced a glass globe containing 50 cc of pure *Paris Air* (1919). Four years later, the Russian Suprematist, Kasimir Malevich, finished the plan for his *Planet* (illustrated in February *Architectural Design*), the first satellite city. In 1935 Moholy Nagy discussed inflatable furniture and advocated the use of compressed air for free-flying sculpture (see *Vision in Motion*, Chicago, 1947, p. 46).

More recently a number of kineticists have made extensive use of air. Yves Klein (1928–62), one of the pivotal figures in post-war European art, constructed the first 'aerostatic sculpture' or 'immaterials', one thousand and one balloons floating over Place St Germain des Près during his Paris exhibition in 1957. His friend, Piero Manzoni, made *Floating Bodies* and several architectural inflatables. The Group T (Milan) did a *Large Pneumatic Sculpture* in 1959. In 1961 the Zero Group's *Demonstration* utilized hundreds of white helium-filled balloons which were released into the Düsseldorf sky.

The exhibition 'Air Art' which opens at the Arts Council of Phildelphia on March 13th and then will be seen in April at the Contemporary Art Center, Cincinnati, Ohio, will document the use of air in art, architecture and industry and present one work of air sculpture by each of a dozen artists: Hans Haacke, Akira Kanayama, Les Levine (whose work is shown here), Preston McClanahan, David Medalla, Robert Morris, Marcello Salvadori, Tony Smith, Keith Sonnier, Graham Stevens, John van Saun and Andy Warhol.

Willoughby Sharp

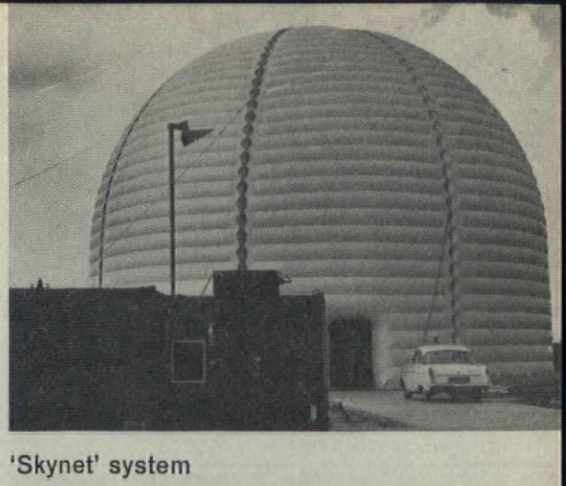
Blow-up II

Quasar Khanh, husband of the dress designer, Emmanuel Khanh, an ex-engineer already more famous as the designer of those transparent chairs and stools* that have bulged enormous in the boutiques of Europe during the past few months (5000 chairs and sofas were sold in France alone before January 1968), has launched his latest fantasia on a swimming bath in Paris. The inflatable room—in which he is shown here—is to be moved to St Tropez for the summer and there he and his family will try it out.

More intriguing—and no doubt more dangerous—is his proposal for a town car, a 6 ft cube of glass for six people sitting on transparent inflated plastic seats, driven by a rear-mounted BMC mini-engine with an automatic gear-box. The car is being manufactured in England and should be available in limited numbers within a few months. Prototypes are already being used by French advertisers.

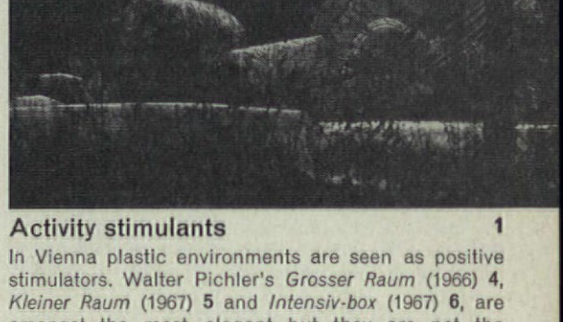
Photograph and information, Tim Street-Porter.

*Made under license in UK by Ultralite, 49 Conduit St., W.1.



'Skynet' system

The Marconi Co. has been awarded a £1,000,000 contract to supply and install a fixed satellite communications terminal in southern England and to modify two existing transportable Marconi stations overseas. These overseas stations, the one at present in the Middle East, the other in the Far East, are to be housed in double-walled inflatable radomes. These stations can be entirely dismantled, moved by air and re-erected and made operational within 72 hours.



Activity stimulants 1

In Vienna plastic environments are seen as positive stimulators. Walter Pichler's *Grosser Raum* (1966) **4**, *Kleiner Raum* (1967) **5** and *Intensiv-box* (1967) **6**, are amongst the most elegant but they are not the only examples of the genre. Laurids Ortner, An-An Hareiter and Klaus Pinter and their friends have produced a 'Mind-Expander' **2** and a 'Balloon for Two' **3** which are intended to heighten not only mental but also physical activities. Perched precariously in the balloon, contact between Stoff Superhuber (a bass-player from Jack's Angels) and Maria Ebner is reported to have been so intensified that they decided to become engaged.

'Our balloon', the designers write, 'will help you to discover a hitherto unknown feeling of peace, security and relaxation and love. It will heighten your sensitivity. Take a trip into inner space with someone you love. You will be able to think better and to make love better because you are relaxed. You can set up the balloon where you like, in the street, in the garden, in your own home—next to the little table with the flowers on it or near the TV. Our balloon is unobtrusive.' The same designer's 'Connecting Skin' **1** is intended to serve much the same purposes, though as it is designed for intimate summer parties, its effectiveness has not yet been properly tested.

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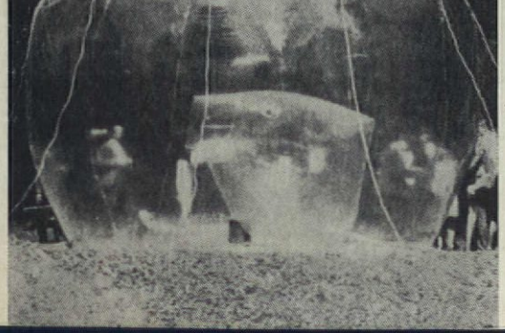

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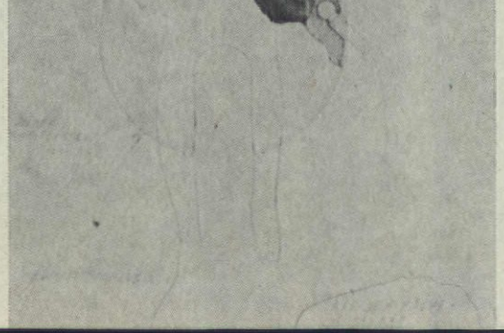

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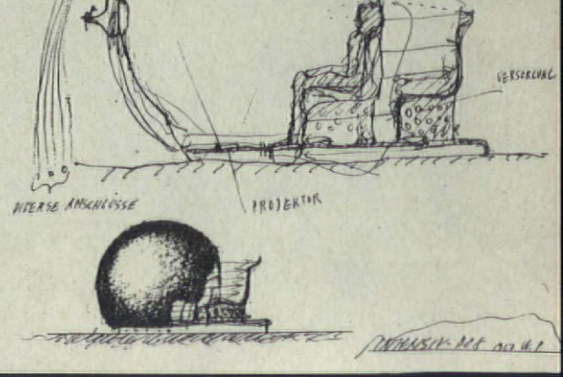
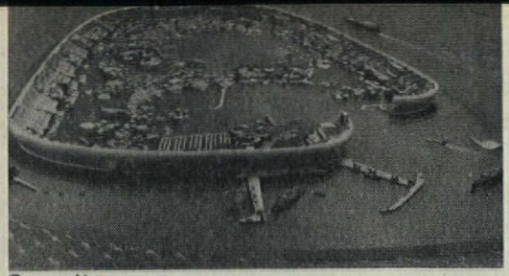
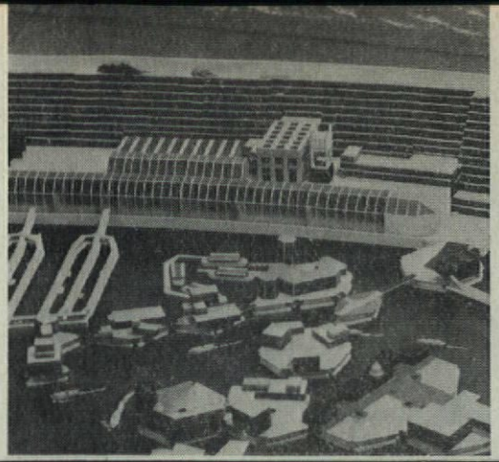
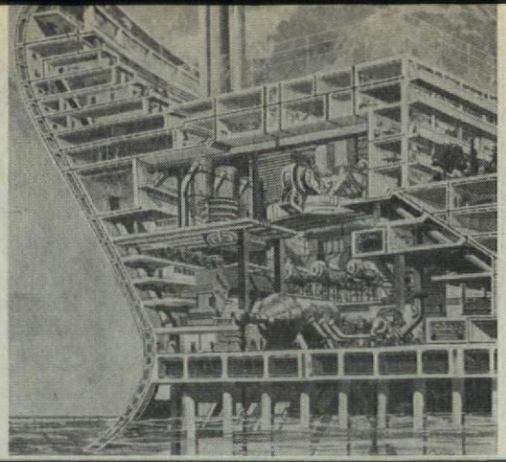
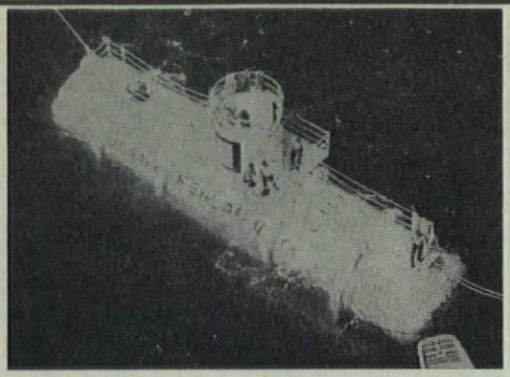




Sea-city
A design by the Pilkington Glass Age Development Committee for a self-supporting city 15 miles off the Norfolk coast, housing about 30,000 people; based on piles and floating concrete pontoons, protected by a breakwater and a specially designed wall, it could provide a city with a climate cleaner, warmer and more equable than that on shore.







1

Design limits

The niceties of self-conscious formal design are often ignored and frequently rejected once the architect or industrial designer hands over his creation. Users have a way of transforming buildings and objects. They do not for long look pristine and they are rarely used in the way intended. The humanizing process is more apparent than ever in experimental work and is further intensified when the environment created is confined and self-contained.

The account of life in SEALAB II, the US Navy Department's submersible (see AD, 2, 1967, *p. 80), which is printed here is particularly illuminating in this respect—there were no precedents. The article was written by Hugh M. Bowen and is extracted from an article that first appeared in* Industrial Design, 9, 1967.

Sealab II was a pressure hull in the shape of a cylinder 64ft long and 12ft in diameter. It was placed on the ocean floor at 200ft. Ten men lived in this hull and dived from it out into the open sea. Each team of ten men stayed for 15 days.

The living and working space inside the hull was not designed in a formal sense. The space was divided into two major spaces of about equal size. One end of the space was the bunk area with bunks in tiers of two lined around the walls. The other end was the working area in which all the various activities took place including cooking, medical, communications, biological, watch-keeping, equipment maintenance, log-writing, discussions, etc. In the working area there were some shelves, cabinets, and work surfaces along the walls.

Given this situation, what happened? Over the first five days a shake-down period occurred which might be called 'adaptive chaos'. The personnel were adapting this particular closed environment to their needs and were adapting themselves to its exigencies. Several things were established almost instantaneously. At the end of the work area was the front door, an opening into the sea, with the water being held back by the gas pressure inside the hull. It was a rather cramped space. Included around the side of the hole was a small bath. It was put there with the idea, presumably, that divers on returning from the cold sea would like to soak in a hot bath. However, the first returning diver decided to take a shower, which was also provided, and found it entirely convenient to heap his diving equipment and suit in the bath. From then on, the utility of the bath for this purpose was obvious to all and it was never used for anything else.

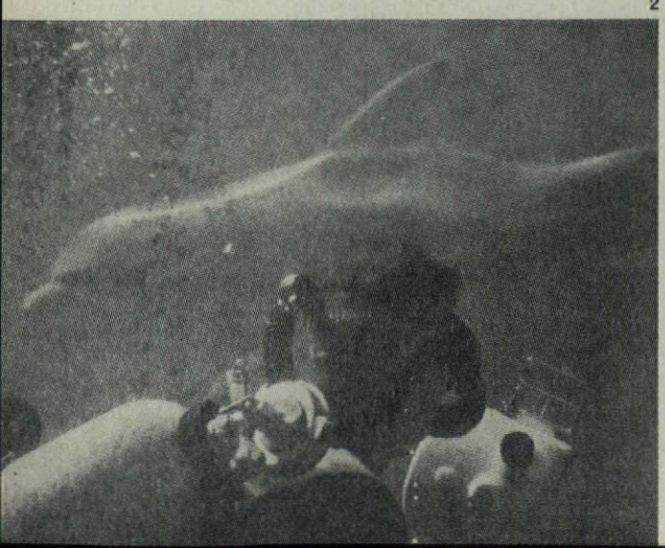
Another event occurred very quickly. A table had been provided stretching along the length of the corridor between the bunks. This table in fact took up most of the space between the bunks. It was supposed to be used by the diving team for meals when all the team would sit down together and enjoy the psychological as well as the physiological pleasures of eating as a group. One meal was eaten this way—which at least pleased the photographer. But it was hopelessly inconvenient. The space was too crowded. Furthermore the various duties and activities taking place had to be artificially interrupted in order to get everyone eating at the same time. By mutual consent, meals were thereafter eaten *alfresco* style. Men ate when and where it was convenient to eat. On debriefing, everyone thought that the table was in the way, made access to the bunks difficult.

In fact, there occurred a long list of adaptations to the environment and all kinds of extemporized ways of doing things grew up and became established as normative behavior. However, these adaptations could only go so far; the various physical properties of the habitat exerted severe constraints on what possibly could be done to make the space livable and allow for effective working patterns. One such constraint was the absence of adequate and accessible storage space. It was impossible to put up new shelves and access to many of the storage areas was difficult. Constructive adaptation could go no further and there was some confusion and friction as persons co-operated and competed for the space available.

The Sealab II situation presented a more-or-less vacant space in which 10 men were to live. How they would arrange themselves depended on certain principles of territoriality. At first a man laid claim to or was allotted a bunk. This became instantaneously his preserve, his sacred bit of space—his, wholly his. There was virtually no trespassing between bunks. Articles on the bunk, even temporarily, took on the identity of the diver and were generally assumed to be 'his', either temporarily or permanently. The bunk became in fact, a kind of extension of the owner's ego. I think it probably true that the more confined and public the quarters, the more the tendency for it to be recognized that each individual has his private preserve. But territoriality did not stop here. As the days went by, it was increasingly notable that each individual had preferred ways of occupying the total space. In some cases there would be quite defined spots where a given individual would stand to have a cup of coffee and where no one else would stand, or very seldom, even in the absence of the owner.

Work areas for each individual tended to be defined at least as far as the cramped conditions would allow. Other individuals would dispose of themselves quite differently. They would be mobile and continually join with others as if their notion of the rightness of things was to be next to somebody else. But predominantly the pattern of location followed a recognizable identity between a person and some certain positions within the habitat. Hence, broadly speaking, we observed a social group adapting the physical space in which it found itself to meet both personal and group needs of the disposition of the men in the space. It turns out to be a nice balance between the assertion of the individual and his need for some degree of privacy and the concomitant respect by the group of his individuality and, on the other hand, the requirements of the group to intermix and join together in common purpose and to perform their various tasks. In fact, this establishment of territoriality was difficult in the cramped space available and it was significant that the very few instances of animosity seemed, to be due to perceived invasions of another's prerogatives with respect to where he was in the habitat.

1 Sealab II
2 Sealab's most unusual communications system was Tuffy, a porpoise trained to take part in the 45-day experiment. Tuffy delivered mail 205ft below the surface and carried a lifeline to a diver who needed assistance.
3 Members of the crew were under constant surveillance by closed-circuit television. Because high-pressure helium atmosphere interfered with their functioning, cameras were mounted outside the ports.
4 After the first meal, there were few times when all crew members ate together.



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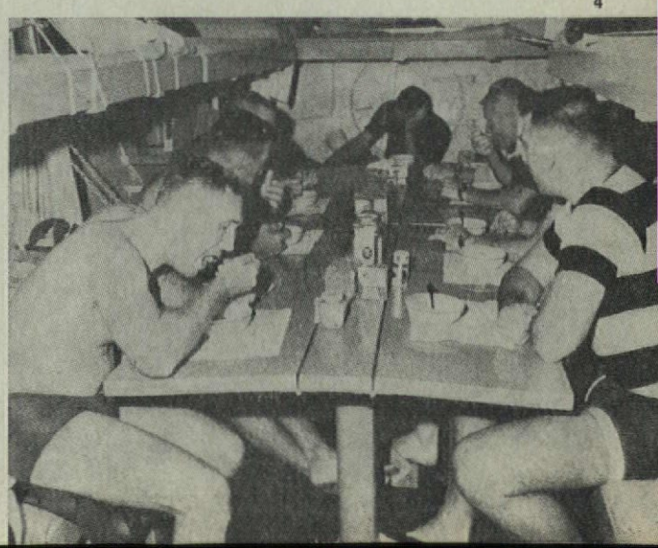

4

GEMs

1

GEMs (ground effect machines, known also as hovercraft) are becoming ubiquitous. The Minister of Housing and Local Government (despite all protests from the Nature Conservancy, the National Parks Commission and the National Trust) has granted permission for a new hoverport at Pegwell Bay, near Ramsgate, intended for the first regular cross-Channel services using the new SRN4 hovercraft. Dover, whose cross-Channel trade is likely to dwindle, should of course, have harboured the noisy brutes. But the Ministry are intent to develop lots of new public amenities; they are not much concerned by noise, nor do they seem to have studied the implications of the use of hovercraft by private individuals. Lady Brassey's Hover-Air company at present exports 80 per cent of its production of do-it-yourself Hovercraft kits (at £544) and the two-seater Hover-Hawk (at £1450) **1**. But no doubt more enthusiasts at home will be buying these machines. Geoffrey Harding, the general manager of Wallasey's transport department has already made the fantastic 'Wotsit' **2** which can travel at speeds up to 40 m.p.h. and drive transversely up slopes in the order of 1 in 20, but this is unlikely to prove objectionable. It is intended for rescue operations. More disturbing are the Ford Tractor Operation's forecasts for the future. Farming is to be revolutionized. The soil may never be touched by traditional metal ploughs and cultivators. Instead it could be fractured to perfect tilth by ultrasonic waves, beamed from agri-hovercraft **3**. Of course, the noise and the rays will probably not be that disturbing, for only the old-fashioned romantics will be desporting themselves in the country. Even the farmer shown here will be an anachronism, the work is far more likely to be under the control of a scientist, far away in a computerized control tower.

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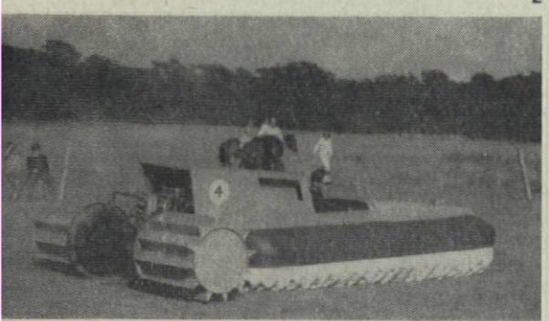

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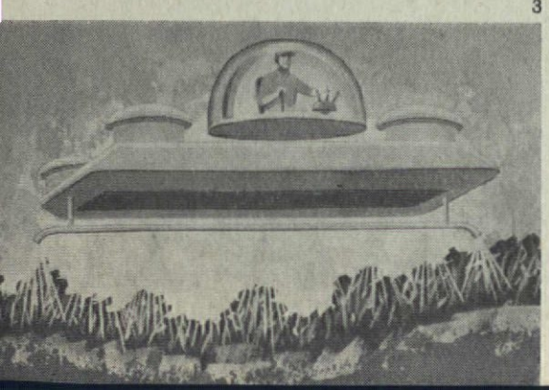
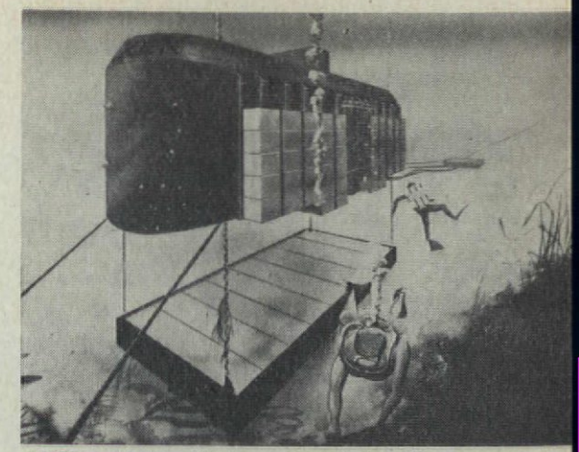


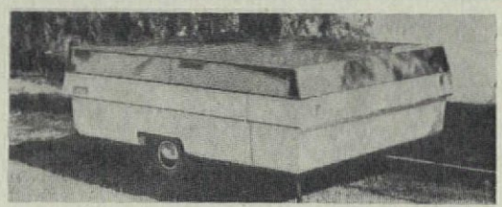
Kracken

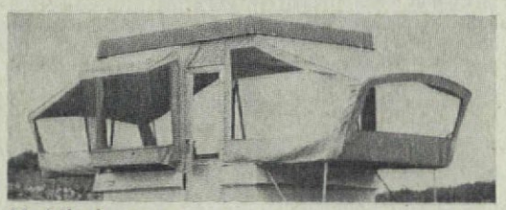
Not only North Sea gas, but vast mineral and food resources lie on the continental shelf areas of the ocean floor. Before these riches can be reaped, however, far more research into the psychological and physiological effects of living underwater is required. Underwater communication needs to be further studied, sediment transport, algae distribution and fish behaviour understood. The French and Americans have made notable experiments, a vast array of submersibles have been developed (see *AD*, February 1967, pp. 78–84), but they have on the whole one major drawback—they are designed for deep sea work. Although a worker can take a small volume of his natural environment to any required depth, when he reaches the bottom he must rely on mechanical arms. To be completely effective he must be able to work freely with his own hands. Like many of Commander Cousteau's habitats, the new *Kraken* project devised by Brian Ray, David Baume and Roger Wiley of Imperial College, and further studied by the Guided Weapons Division of the British Aircraft Corporation, is designed to house four men in a high pressure environment at about 100 feet below the surface of the sea—the limit for air mixture diving and, conveniently, the depth at which a great deal of scientific and commercial investigation needs to be done. The first series of experiments, it is hoped, will take place this summer off the island of Kerrera in Oban Bay, Scotland. The *Kraken* house, 32 ft long, 8 ft 6 in high internally, will be divided into two sections, a 'wet' area kept at 55°F and 100 per cent humidity, containing the entrance to the sea, the heavy workshop, cooking, washing and toilet facilities, and the 'dry' area, kept



at 70°F and below 65 per cent humidity, with an area for light and clean work and two small bedrooms that will provide a modicum of privacy. The house will have enough power—about 18 kWH—and enough air stored in cylinders to allow operation independent of the surface for three days. But it will normally operate on an umbilical from the surface carrying air, water, power, closed circuit television and telephone links. The decompression chamber will probably be attached to the house, divers proceeding to the surface as rapidly as possible after decompression, exposure to high pressures for a brief period not being likely to cause serious difficulties.

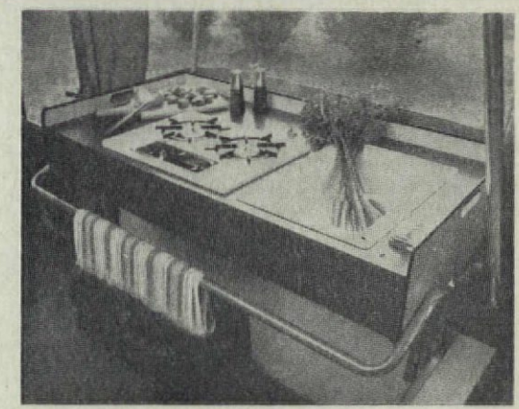
New Scientist, October 19th, 1967
The Illustrated London News, January 13th, 1968





Mobile homes

Mobile homes are still, for the most part, cumbersome and uncomfortable affairs, but some, such as the camping trailers shown here, by Richardson/Smith



Inc. for the Coleman Company of America, do at least retain a lightness and inconsequential air appropriate to the spirit of travel and exploration.

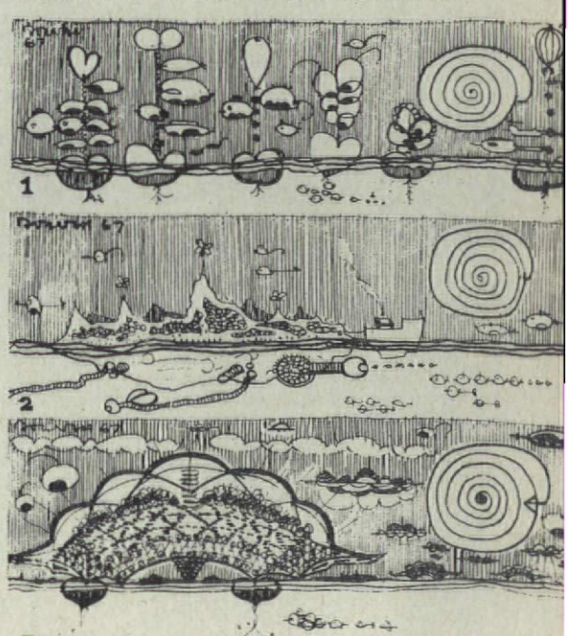
Industrial Design, December 1967

The ice-lands cometh

Rudolf Doernach, remembered perhaps for that wellnigh incomprehensible article, 'Biotecture', published in *Architectural Design* in August 1965, has issued another tract designed for the salvation of all architects, urban planners, traffic idiots, etc.—and others. The statement would seem to be of import. However, the language is once again of an almost indecipherable privacy and only a tentative interpretation of the high prophecies is possible.

The world, as we know, has ice ages. Such ages, it is feasible, are not only of a physical but also of a social nature. Before too long, Mr Doernach envisages, we shall all be yearning to set up home on ice. In order to prepare for this change we may anticipate it by using low-cost atomic energy to freeze large volumes of sea water and thus create the ice-lands, floating islands on which independent, freedom-loving and police-free colonies may be set up. Life will be an orgy of physical fitness; ski-ing above the water-line, fish-farming below. Two-thirds of the earth's surface could thus be made habitable. But it is not the overburdened populations alone that will be relieved; our intellect-ridden consciousness will find a new release in this baptism by water. We shall become creatures of leisure. Technology will be our saviour. For the pursuit of technology is in effect the pursuit of freedom from effort. And that, Mr Doernach considers, is all we need.

Three aspects of the colony of the seas: 1 dirigible and helicopter moorings; 2 icefoam islands; 3 mobilepolis on floating ice.



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Book notes

Design of cities

Edmund N. Bacon. Thames and Hudson, 1967. 84s.

Edmund Bacon's Design of Cities is a joy to read for the architect and urban designer alike. A series of studies, beautifully presented, show the total urban design structure of various cities. With lithographs of the period, evolutionary plans and graphic overlays, some of the most important city plans and urban spaces are analysed and developed. The historical studies cover Greece, Rome, medieval and renaissance Europe, baroque and neo-baroque examples. From each of these periods, the urban spaces are shown as a part of Bacon's theory of single movement systems within the total city fabric, such as the excellent analysis of Sixtus V's Rome. These studies are brought up to date with a few rarely discussed examples; Savannah, Georgia's cellular growth and Peking's newly rehabilitated central design structure.

Following the historical studies, Bacon makes an awkward jump to the present day and his own valuable theories of urban design based on simultaneous movement systems. He presents a great many of Philadelphia's new developments and schemes, all admirably attempting to provide an overall design structure. It is here that the text is too thin, the layout drawings lacking titles, and too many ideas are left unexplained. Perhaps modesty prevented Bacon from showing in great detail the many concepts of the Philadelphia Urban Structure School—the greenway systems, the multi-level traffic architecture, and the visual dreams of Philadelphia's design giant, Louis Kahn. As more European cities follow the pattern of the American city, the detailed design of Bacon's movement systems becomes more and more relevant to the European designer.

Eleanor Smith Morris

The new museum: architecture and display

Michael Brawne. Architectural Press. 5*gns.*

With a number of major recent exhibitions to his credit, what Mr Brawne has to say about the purpose, layout, construction and servicing of museums deserves close attention, for he deals with an array of galleries for the display of works which no longer command an immediate market, and whose relevance to us is therefore a matter of perpetual interrogation. Since the sheer physical conservation of such works is an important part of museum activity, I could wish that Mr Brawne had put a much expanded section on this aspect near the beginning of his book. Unlike works of music, paintings and sculptures made of organic materials often deteriorate, as he notes, under just those conditions (such as lighting) required to display them.

Mr Brawne distinguishes two main views about the museum as background to its exhibits: that it be an exhibit in its own right; and that it be aesthetically neutral. He shows a bias towards the latter. I am afraid this soft option is based on an epistemological error, such as led certain writers to suppose that an entirely factual history would be value-free, and such as still leads the occasional van Meegeren to try to pass off his own works as someone else's. This bias may be responsible for the unequal impression made by the examples, in which excellent provincial museums by minor masters jostle for page space with thoroughly third-rate buildings by major masters, such as Mies' Cullinan Hall, or with meretricious pieces of American 'camp' by Philip Johnson, unworthy of serious opposition. Ahrends, Burton and Koralek's intensely positive display of Henry Moore sculptures was a work of architecture in its own individual right, and much kinder to the exhibits than would have been any studiedly non-interventionist background; and even a hostile one would have been more to the point than an illusory neutrality. The Guggenheim is perhaps a case in point, where some of the works repay Wright's very evident and notorious hostility to almost all modern art with interest. Either method establishes empathetic relations with the works, which could not be said of the recent Gabo or Picasso exhibitions.

The Wallace collection is the surviving prototype of all earlier museums, sometimes amassed with great personal discrimination, more often the spoils of a grand tour or war booty, unlikely ever to be repeated again on that scale owing to the evaporation of the sources. Of course, machinery does exist at the Museum of Modern Art in New York, and at the Tate Gallery, whereby recent works of art, after a period in Modernist Limbo, can accrue to the Metropolitan or the National Gallery as Genuine Antiques, leaving room for works whose immediacy is still controversial.

In any museum still actively collecting, no more than a fraction of the works in store can ever be simultaneously displayed. So if we wished to reactivate them, it might be possible to permute them according to other canons of display than the somewhat cavalier grouping according to school and century, i.e. style, which presently prevails. The Parthenon may, according to us, have more in common with a Bugatti racing car, than with the European baroque, its remote temporal descendant; then why not exhibit chunks of polished mesotechnic machinery from the Science Museum alongside the Elgin marbles, for instance? And supposing this suggestion to be too provocatively Dada for the present generation of museum directors, why not be thoroughly art-historical? Insofar as their physical condition permits, display works variously, not just according to school, but according to technique, to subject-matter, to patronage, to purpose, for all these factors attended their birth, and may even have fertilized their inspiration; and above all, since conservation is the *raison d'être* of Museology, put the conservation department itself on exhibition, behind bullet-proof glass!

Thomas Stevens

Modern agriculture and rural planning

John Weller. Architectural Press. 63s.

This is a study of the ways in which the land of Britain has been used, is used at present, and could be used if different demands are rationalized in some national plan. If the assumptions, facts, and figures given are reasonably accurate and balanced between the separate demands for land, this book will be a reference book for all those who are concerned in their work with the ways in which land is occupied.

The book is written in three parts; population pressures, land resources, and methods of agricultural production. The first part traces the history of agricultural development and relates this to the urbanization of the industrial revolution, the increase of population, and the constantly changing policies determining the levels of agricultural production. The second part takes stock of land resources, describes urban pressure for land, and indicates how and why agricultural land patterns which are familiar to us are changing rapidly as a result of a revolution in agricultural method. This revolution in farming and marketing techniques is described in the third part of the book.

The soil, terrain and climate of the United Kingdom varies, but as a whole it is comparatively productive; therefore there is a choice of ways in which land may be used. No policies or plans for the sensible use of land have been developed since the Kingdom was dependent for its livelihood on agriculture. John Weller shows in his book that there is a pressing economic need for a regional and national planning strategy which takes into account the tactical implications of factory farming, the need for more urban land, and the need for an increased quantity of home produced food.

John Voelcker

Design for death

Barbara Jones. Andre Deutsch Ltd. 63s.

Barbara Jones has worked hard and gleefully collecting material for her *Magnum Opus*, and it is an impressive coverage. There is next to nothing in the grizzly subject that her pertinacity and lack of squeamishness has failed to disinter. From recipes for embalming and preserving corpses to every kind of funeral embellishment and undertakery, both contemporary and traditional; chiefly garnered in Britain and America, but supplemented from as far afield as Peru, Mexico, Egypt and Indonesia. Her industry includes 27 pages of photographs and 200 of her own drawings. Some of these are factual and informative, but others are sketchy and trivial, as though knocked off in a great hurry.

The book jacket is eye-catching—as bookjackets are intended to be—and shocking as befits her gruesome theme. A blood-curdling skull on the front of the jacket, and Barbara's own face to fit the skull on the back.

The cloth binding is a funereal purple, the end papers jet black, and the heavy type of the title page and chapter headings is reminiscent of memorial cards. Chapter headings and covers, those particular exercises in book design, have been lovingly contrived, too, but the book is dull and depressing. Soured by an unhappy cynicism and a sad want of compassion for man's inadequacy and for his pitiable fears.

Peggy Angus

La guadua

Dicken Castro. Talleres Gráficos del Banco de la República, Bogotá, Colombia.

This is an appreciation of the building-use of bamboo in villages of the Quindío region of Colombia. It consists of 108 photographs, with short sections of general text.

Bamboo's simple geometry and light yet dense and tensile structure make it the world's greatest house-component, growing generously in countries which most need the transient buildings that it provides. Castro shows that bamboo buildings, which last about forty years, correspond to the development-cycle of a family, and these structures perch and cluster like birdcages in the precarious life of Colombia's countryside, no more and no less memorable than the brief households they shelter.

Though many of Castro's photographs are superb, this is a tantalizing book—no maps, no measured and drawn records of these bamboo houses, and no indication of the interior household life which bamboo so well equips. Nor do we find out who builds these houses (occupants? carpenters?), how much they cost or what this cost means in a householder's economy. Can the great virtues of such precarious construction be continued into a more firmly-structured society? More, please, Dicken Castro!

Pat Crooke

Town design

Frederick Gibberd. Architectural Press. 84s.

The revised re-issue of a classic of the fifties; it sums up the conventional wisdom on the subject; townscape, industry, redevelopment, everything the local authority committee needs re-assurance about. The illustrations are of old classics, Pisa, Venice, and dozens of new city projects which look and are utterly sterile. Within its context, it's beyond criticism: every problem posed has a neat and logical answer, and somehow the reality of towns has evaporated.

Theo Crosby

Publications received

Between Dystopia and Utopia
Doxiadis. Faber and Faber. 25s.

Group practice in design
Michael Middleton 303 *pp. The Architectural Press.* 84s.

Tensile structures, vol. 1
Ed. Frei Otto. The MIT Press. 210s.

Glass in modern architecture
Arthur Korn. The Barrie Group of Publishers. 55s.

Planning and architecture: essays presented to Arthur Korn
Ed. Dennis Sharp. The Barrie Group of Publishers. 63s.

Antonio Gaudi
George R. Collins. George Braziller, $1.95.

Antonio Gaudi: a reappraisal
E. Casanelles. 124 *pp. text, plates. Studio Vista Ltd.,* 70s.

Building construction, vol. 4
J. K. McKay. Longman Green. 35s.

The Sydney opera house affair
Michael Baume. 174 *pp. Thos. Nelson & Sons.* 30s.

The new city: architecture and urban renewal
Elizabeth Kassler. 46 *pp. Museum of Modern Art.* $1.95.

Impressions of Japanese architecture
Ralph Adams Cram. Constable. 19s.

Early American rooms 1650–1858
Ed. Russell Hawes Kettell. Constable 33s. 6*d.*

Baroque and Rococo in Latin America
Pal Kelemen. Constable. 28s. 6*d. each.*

Cost of road accidents in Britain
R. F. F. Dawson. 63 *pp. Road Research Laboratory. Free.*

Glossary of terms in electrical work
M. S. James & E. G. Clark. The Estates Gazette Ltd. 10s. 6*d.*

Evaluation of discomfort glare
IES technical report no. 10. *The Illuminating Engineering Soc.* 12s. 6*d.*

The RRL reflecting kerb
J. R. Lake & J. W. Tyler. 11 *pp. Road Research Laboratory. Free.*

Hexagonal motorway networks
J. C. Tanner. 34 *pp. Road Research Laboratory. Free.*

Sixth form centre
Department of Education and Science. HMSO. 6s.

Cours de geometrie constructive
D. G. Emmerich. Centre de Diffusion de la Grande Masse.

Houses from steel
Steel Sheet Information and Development Association. Free.

Urbanisme a Copenhagen, Stockholm, Helsinki, vol. 9
Villes Nouvelles en Scandinavie, vol. 9
Urbanisme en region de Londres et amenagement du territoire, vol. 8
Villes nouvelles en Grande Bretagne, vol. 8
l'Institut d'Amenagement et d'Urbanisme de la Region Parisienne.

40 *francs each/subscription* 140 *francs.*

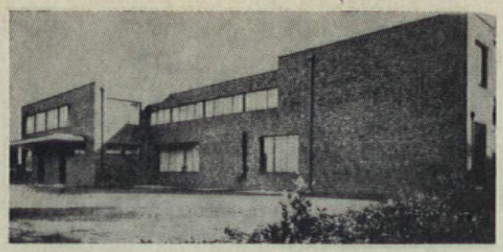
Technical information 1968/9
Cape Building Products Ltd.

Space in the home: metric edition
MoHLG. HMSO. 5s.

Constructivism: origin and evolution
George Richey. Studio Vista 90s.

Street furniture from Design Index 1968/9
CoID. 15s.

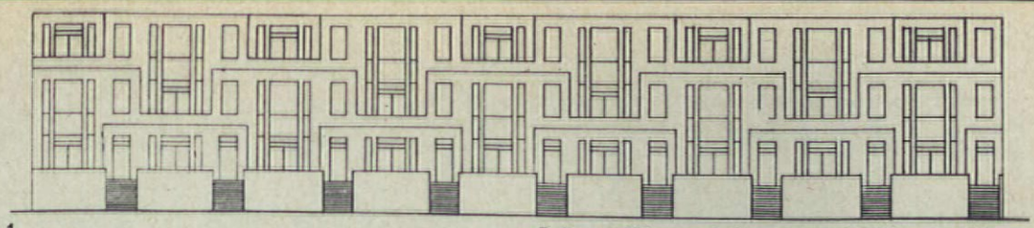
Looking at cathedrals
Nicholas Taylor. BBC Publications. 8s. 6*d.*



Lange house

Mies van der Rohe's Lange house of 1928, which was little damaged during the war, was handed over to the town of Krefeld immediately after by Dr Lange. The city turned it into a museum which, with a dynamic director, established a position for Krefeld in the world of art. There was, during this time, no question of Dr Lange paying rates. He hoped that a foundation would be able to further the work that he had initiated. This however would have left the town to pay for the upkeep of the building and would have meant a loss of revenue from rent and rates. This was unacceptable; so Lange generously offered to donate to them half the estate and the building. The town was unwilling to accept even this, as it would have put them in a position of having to pay for the upkeep of the museum. Finally, after two years of equivocation, Dr Lange made it known that he would sell the house for demolition and split up the estate into 6000 sq.m. lots. At this point *Bauwelt*, fearing the loss of an historical monument, exhorted their readers to write to Krefeld in protest.

In the January 22nd issue of *Bauwelt* it transpires that Dr Lange is not to sell the house for demolition. According to one town 'culture' official (*Beigordneter und Kulturdezernent Honnen*) the demolition of the house was not seriously considered and, even before the outcry raised by *Bauwelt*, a decision had been reached not only to retain the house but to pay for its upkeep.



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de Stijl commemoration

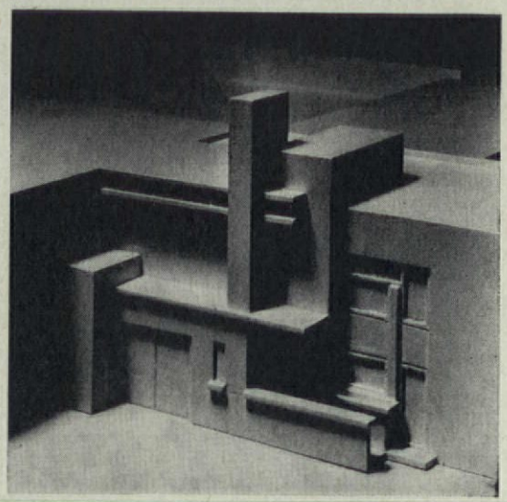
The de Stijl movement has been painstakingly delineated and assessed by Prof. H. L. C. Jaffé in *de Stijl*, 1917–31—*the Dutch contribution to modern art*, published in 1957. Anyone interested in the heroic period of modern architecture has long been familiar with this history and the handful of images that illustrate it. Many enthusiasts have visited the house that Rietveld designed in Utrecht in 1923, a few have even managed to come away bearing chairs. But on the whole there is, in England, little first-hand knowledge of de Stijl. The magnificent de Stijl exhibition from which Jaffé's book emerged was shown in Amsterdam in 1951, in Venice the following year and then in New York; but only now that the products and artefacts of the movement have become historical curios are they to be seen in England.

Between February 24th and March 24th an exhibition organized by Bernard Gay with the help of Peter Smithson and Jeannette Jackson is being held at the Camden Arts Centre, Arkwright Road, London, N.W.3, that includes paintings by Mondrian, Theo van Doesburg, Vilmos Huszar and Bart van der Leck, furniture by Gerrit Rietveld and Van Ravesteyn and drawings and models of the work of J. J. P. Oud, Cornelis van Eesteren, Robert van't Hoft and Jan Wils. Prof. Jaffé himself came to London to partake in this de Stijl saturnalia and lecture on it.

Only fifty years after the founding of the movement it appears still fresh but oddly remote.

1, Houses on an esplanade by J. J. P. Oud (1917); 2, (detail) of a model of a factory at Purmerend by J. J. P. Oud (1919); 3, Set of bedroom furniture by Sybold van Ravesteyn (1925), who was not a member of de Stijl, but greatly influenced by it; 4, model of the Johnson house by J. J. P. Oud (1931).

2



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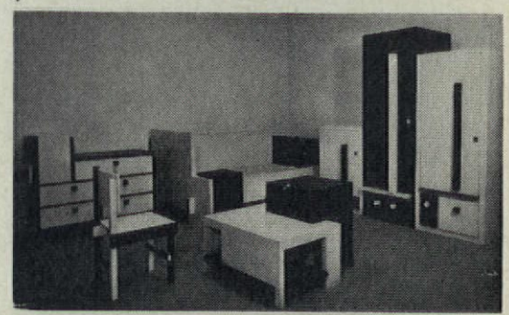

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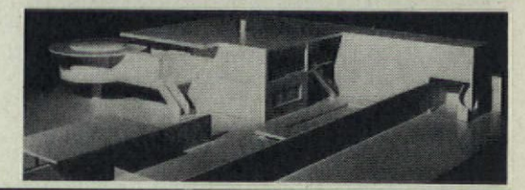

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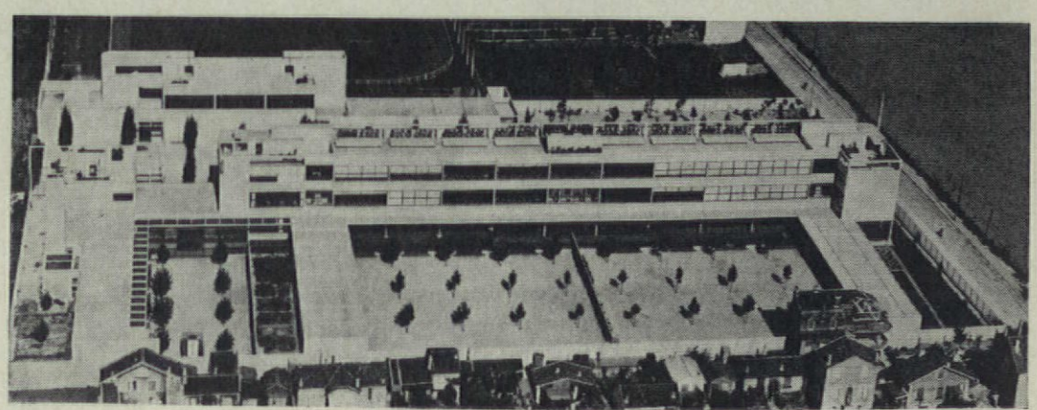
André Lurçat

On January 27th, 1965, André Lurçat formally handed to the Conservatoire National des Arts et Métiers in Paris a vast collection of original drawings, photographs, documents and press-cuttings relating to his works. These have by no means been properly researched. But a selection of 500 items was exhibited at the Conservatoire from December 1st, 1967 to March 1st, 1968, to provide the first comprehensive display of Lurçat's work. Inevitably criticism is provoked. Lurçat has never been adequately assessed; he is appraised as the author of a few distinctive houses and studios in Paris, the designer of the Hotel Nord-Sud at Calvi (1929) and, most memorably, of the Karl-Marx school at Villejuif (1930–33) **1**. This remarkable building, which demonstrates more clearly than any other of the early modern movement, just how much was owing to the Beaux-Arts tradition, appears to mark the end of his active career as master. Yet he continued active for many years. He built countless housing estates at Maubeuge, at Nancy and on the outskirts of Paris. One of the last, that at Osny (1967), is shown here **2**. Despite his conversion to Communism, he designed the church of Saint-Pierre et Saint-Paul (1955) at Maubeuge and built an array of pretentious civic buildings such as the *hotel de ville* (1964–67) at Blanc-Mesnil **3**. They are all works of the sort that are by-passed; only the most astute observer would connect them with one of the *grands maîtres* of France. What, one is bound to enquire, happened to the early André Lurçat? What became of the author of *Formes, composition et lois d'harmonie* (1953, 1954)? The sensitive manipulator of forms, the theorist and even the environmentalist all appear to have been effaced. The problem is not one that either the exhibition or the useful booklet published on that occasion* was intended to solve; but it is certainly one that requires resolution if the modern movement is to be understood and permitted to influence deeply the architecture of today.

***André Lurçat, Conservatoire National des Arts et Métiers, Paris 1967.**



3

Ray Affleck and architecture

Ray Affleck, partner in the Montreal firm Affleck, Desbarats, Dimakopoulos, Lebensold and Sise, and designer of Place Bonaventure (see *AD* 1, 1968, and 7, 1967), will give the RIBA's 1968 Annual Discourse on March 12th, his subject being 'Montreal 1967 and future urban environments'. We publish below some answers he gave to a questionnaire sent out recently by the magazine *Canadian Architect* to leading Canadian architects on the subject of the rôle of the architect. (The questions are in italics.)

In its evolution modern architecture responded to a philosophy or idealogy. It has been said that architecture today responds to no such basis. Is this so? Is it a strength or weakness? Does it raise questions of style in architecture?

From today's vantage point, the 'evolutionary years of modern architecture' appear to be a rather typical nineteenth century manifestation—and its slogan 'form follows function', a typical simplicist catchword, equally representative of that era.

I agree that the significant architecture of today responds to no such basis.... In their general adjustment to a non-idealogical stance, architects are, of course, only responding in their own way to what is happening to our culture in all its aspects. The old clear cut 'truths' no longer apply—we have to be able to live with ambiguity and a plurality of attitude and action. Nietzsche generalized the whole situation by simply stating, 'God is dead'.

The question of philosophy is a more engaging one than that of idealogy. Karl Jaspers is reported to have answered as follows, when asked about his philosophy: 'I don't have *a philosophy*, I philosophize'. His meaning, it seems to me, is clear: that it is the action of 'philosophizing' that is important rather than the myth of a single viable philosophical system.

'Philosophizing' is, of course, expressed as a present participle—and denotes a process; whereas the noun and article 'a philosophy' tends to express a fixed point of view that does not change and grow.

The notion of philosophizing is, I think, important to architecture today. It would seem to denote a concern in depth for process (in a psycho-social sense) and for the complex interrelationship and often contradictions of form and content, rather than the superficial preoccupation with 'form as pictorial object' that still characterizes much of the work of our profession.

Clearly in this light it becomes possible to sense the rôle of the architect as someone engaged (with others) in an open-ended process of discovery and decision making, related to a complex, quickly-changing society, rather than as a manipulator of objects related to a rigid idealogy or philosophy.

When grasped in this manner, I think the current situation is a strength for our profession—though it is a situation which makes demand on architects they are often ill prepared to respond to.

What is your view on the present and evolving relationships between architect, client and contractor? How would your views of these matters relate to the procedures, fees and responsibilities as reflected, for example, in the various existing professional documents such as the client-architect agreements, contract forms and the formulated codes of ethics?

My views of the relationship of architect, client, contractor can best be summarized by saying that the three rôles should be professionalized (in effect and, eventually, in form). The ethics of professionalism are the basic platform for the functioning of the total information, total programme, simultaneous process that must occur if any meaningful dent is to be made in our world-wide problems of urban and regional development. This notion of professionalization is not the least bit idealistic nor impracticable. It is actually what is happening in most significant cases of 'research and development'. In our rapidly emerging post-industrial world, the category of 'professional' is emerging as the lowest meaningful rung in the value hierarchy that regulates individual or group action. As production becomes automated and scarcity disappears (at least potentially), the motivation of *service* becomes the lowest common denominator to human action and interaction.

The problem with respect to fees, responsibilities, procedures, is simply to bring them into line with this situation.

The realignment of client-architect-contractor rôles is of great significance in the implementation of physical change. It is, however, merely one example of the creation of new interfaces in the area of environmental research and action. One that particularly interests me right now is the creation of a milieu for the effective interaction of the traditional professions concerned with physical change (planners, engineers, architects, etc.) with the so-called social scientists—psychologists, sociologists, economists, anthropologists, etc. In my view the achievement of such a milieu demands the abandonment of many preconceived notions within the professional and academic communities; but also the transfer across disciplinary lines of several valuable procedures. From the professional side the commitment to task and the use of the professional-client relationship as a feed-back mechanism would appear to be of some value in the new interface. Obviously one of the more meaningful contributions from the academic side would be the very notion that the architect or engineer might well see himself to a large extent as a social scientist.

Is the architect, either by reason of his understanding or by reason of the nature of his work, in any realistic position to affect the form and quality of cities and the nature of urban life? Or is he ineffective and suspect of inoperative pretentions regarding the basic twentieth century phenomenon?

To the extent that architects are caught up in outworn idealogy and in appropriate procedures they are barred from a meaningful contribution to 'the nature of urban life and the form and quality of cities'.

The wording used in the question ('inoperative pretensions') seems most appropriate to describe the position the architect frequently occupies by reason of his understanding or rôle. An individual usually adopts a 'pretentious' posture when his actual knowledge and sensitivity are out of phase with the official claims of his position—an unhappy situation that the architect often finds himself in today.

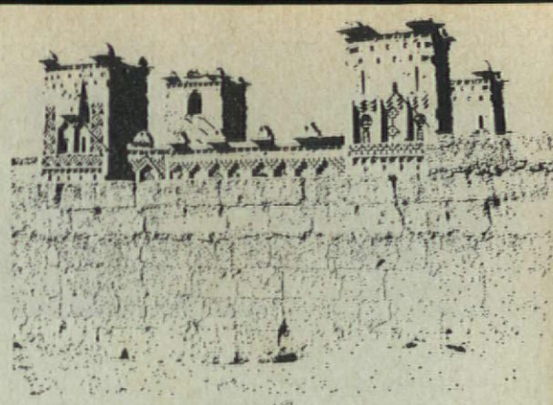
I think that notions of 'master builder', 'mother of the arts', expanded services, etc., are all inappropriate responses to this situation. The answers are more likely to be found in a more humble participation in complex forms of organized research and implementation, where the architect plays an important rôle, but not necessarily a leading one. Certainly it remains a very real responsibility for the architect to advance and defend the qualitative elements of physical environment—particularly in relation to the constant and rigorous intrusion of quantitative factors. Any notion, however, that the architect alone is motivated by, or uniquely capable of understanding, the qualitative aspects of 'urban life' is clearly pretentious nonsense.

We are only beginning to grope our way towards an understanding of environment as involving the psychic and sensual as well as the social, economic and physical aspects of life. As society begins to articulate more sophisticated modes of dealing with these complex problems, the architect's rôle will become clearer. There is no doubt that he can and will remain a valuable member of society, but certainly not in the garb that our profession assumed at the time of the Renaissance and has worn with varying degrees of success ever since.

One obvious task confronting our profession at the present time is to assume an active rôle in the establishment of milieus where the needed inter-disciplinary and inter-professional process can occur; as well as an effort to make a genuine contribution to the sophistication of the process of discovery and implementation, and the arts and techniques of communication that are central to it.

Postscript

A discussion last January in Birmingham's Building Centre between Peter Trench representing the building industry, Owen Luder for the professions, and Maurice Healy, managing editor of *Which?*, speaking for the client, on their relationships in any building enterprise, revealed a singularly negative approach to the problem, everyone seemingly more concerned with the disruptive aspects than with any suggestions for closer liaison.



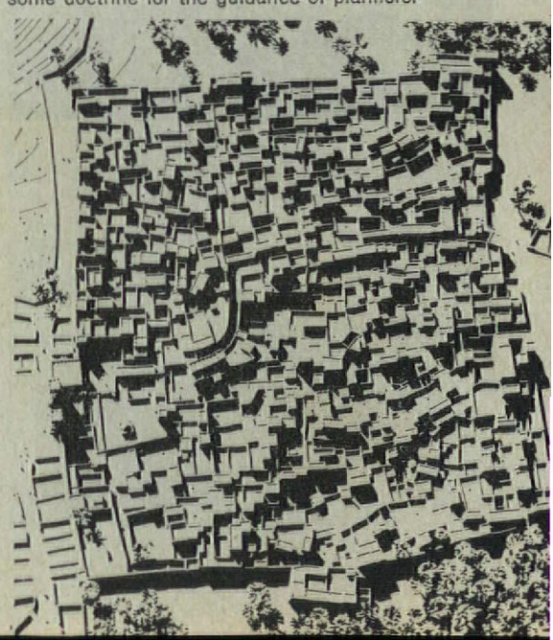
Home life in Morocco

Since independence Morocco has attained to an easy sense of maturity. There is a grasp of salient problems, an understanding of both limitations and possibilities. The Government, for instance, has indulged in no facile propaganda about bringing riches to the country through rapid industrialization, instead it has sought a more appropriate source of well-being in agriculture. The people are not to be driven into the towns to become low-paid industrial drudges. The irrigated crop area, the King has decreed, is to be increased from the present 150,000 hectares to a million hectares.

Even in architectural circles such understanding maintains. The new towns laid out by the French after 1912 are not looked upon as models of urban development. Even the sub-Corbusian culture that has flourished outside Rabat and Casablanca during the past fifteen years and has recently been so disastrously applied to the rebuilding of Agadir and the expansion of Mohammedia, is not considered to be quite the thing. Artful and contrived buildings in the French modern manner are illustrated and extolled in that excellent magazine **a+u** (*revue d'architecture et d'urbanisme*), but the editors are evidently far more concerned that the traditional ways of Moroccan planning should not be rudely rejected or overlooked.

Most of the fifth number of **a+u** is given over to an analysis of the small fortified castles and towers of the Tafilalt, an area on the edge of the Sahara where building has been static and traditional for hundreds of years and has even now not been disturbed. Change will, of course, come, and it is no part of the editors' and contributors' intention to discourage it; what they hope to ensure is that the harmony between the patterns of life and the built forms of these towns should find an appropriate parallel in any new building. Indigenous architecture is only too quickly rejected when Progress becomes identified with new and Western architectural forms. It is a problem with which other independent and expanding African countries have had to contend—usually unsuccessfully. In Nigeria modern concrete slums are piously built at twenty times the cost of traditional mud huts —neither the amenity nor the coherence of the old settlements surviving.

Outside Casablanca and Rabat some new housing has been of equally limited success. It is encouraging, nonetheless, that before greater expansion takes place in Morocco someone should be trying to formulate some doctrine for the guidance of planners.



Michael Scott
and Partners

All uncredited photos are by John Donat

Introduction by Alan Colquhoun

Michael Scott's international standing as an architect rests on the consistently high quality of work produced by his office. But his reputation, as is the case with so many architects, was made by a single work—the Dublin Bus Station (shown above in a 1966 photo). The shortcomings of this building are obvious—its Festival of Britain frilliness; the elaboration of vulgar and effeminate detail in the structural elements; the awkwardness with which the main masses intersect—but it remains an impressive work, and was remarkable for its time.

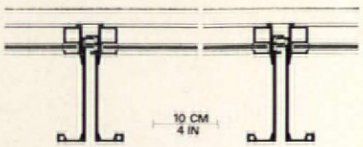
It is difficult to point to any other architect of the time who had seen Le Corbusier as more than one of the many exponents of the international style. The work of Lubetkin and Tecton was more sophisticated, but more formalist, and never went as far as Scott in the use of such elements (derived apparently from the Pavillon Suisse, Maison Clarté and the Armée de Salut) as the glass façade, the widely spaced piloti and the pavilionized top storey. The intention of the total organization and its technical brilliance outshine the tawdriness of the details, and the curtain wall is still one of the most convincing examples of its kind.

But in the work of Scott's office, this building represents a full stop. Although not finished till the fifties, it belongs to the canon of the thirties. As in the case of many of those architects who were converted to modern architecture after their training, there might seem to have been a danger that the euphoria produced by the new ideas from the Continent was not matched by an ability to translate these ideas into technique. To a large extent, this was a problem which faced architects throughout Europe. The early phase of modern architecture was based largely on art movements—Expressionism, de Stijl and Constructivism. The second phase cannot be said to have started until Mies van der Rohe and Le Corbusier each discovered a way to translate their formal visions into terms of available constructional techniques—Mies in steel, aluminium and brick at IIT, Le Corbusier in concrete in the Unité. Until that moment Mies' statement '. . . architecture depends on facts but its real field of activity is in the realm of significance' could not become a reality.

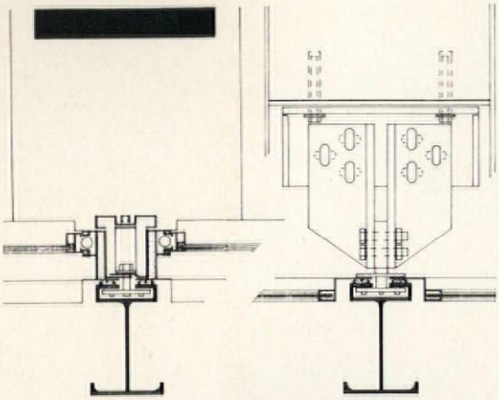
It is towards Mies that Michael Scott's office turned in its search for an aesthetic and a technical method which act together instead of in opposite directions.

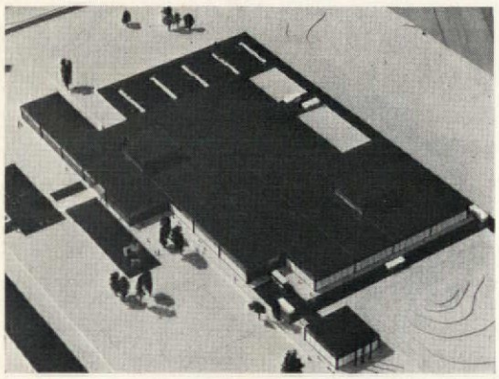
The test of work which seeks inspiration from models created by another architect is that instead of merely emulating certain effects in isolation, it shows an understanding of the principles of his method. If it does this, it is likely to arrive at 'objective' architecture more surely than if it attempts to derive its forms from the empirical facts. Mies' method of design is also a method of teaching, because of its schematic and reductive qualities. By being content with very rough approximations to functional types he has been able to evolve a series of formulae. Within this severely limited world, it is possible to develop all the details consistently and logically from the first principles. This quality in Mies seems to have reached a final point of development at a very precise point in time, between the 1939 and the 1940 versions of the IIT Campus design, when he eliminated from his style special functional shapes (e.g. lecture theatres) and sliding and butting masses which he had inherited from Schinkelesque neo-classicism and de Stijl and which had characterized all his previous work. Henceforth virtually all his work was to be based on the idea of simple multi-purpose volumes, their juxtaposition and the perfecting of the visual/constructional problems which they posed.

Since 1960 a number of buildings have come out of Scott's office which are based on the work of Mies' Chicago period. In this phase the younger partners, of the firm, Robin Walker and Ronald Tallon have played an important role, and the technique and formal disciplines apparent in the buildings are derived from direct experience at IIT and the office of SOM. Among the buildings that show this influence most clearly are the Bôrd Fâilte office block (p. 119), the National Bank extension (p. 115) and the Dublin Television complex (p. 108). The Bôrd Fâilte block is technically the most simple and was built on a very low budget. Though in photographs it seems a rather dull building, its carefully studied proportions, its direct use of materials and structure, give it in reality an air of calm orderliness which is quite striking. The form is defined by the three fundamental constructional elements; concrete frame, brick spandrel walls, and glazing. These elements constitute a simple but adequate language. The 'meaning' of the frame is intended to be its structural logic. Any modelling of this frame (for example, a thickening of the roof beam to give the reading 'roof') would contradict this meaning. In order for the frame to read positively, any emphasis of functional differences between



Detail of the curtain walling of the television administrative offices (*above*) and the National Bank, Dublin, (*below*) demonstrating that the actual structural frame of these buildings are separated from the apparent frame on the window plane in a manner formulated by Mies van der Rohe at the classroom buildings of Illinois Institute of Technology





Model of the proposed cigarette factory for Carroll's at Dundalk, which suggests that Scott's office is moving towards a more flexible design approach, in which a basic unit can be repeated by addition on any of its free sides—a planning system that is Japanese rather than Miesian

floors and roof have had to be suppressed. The entrance is the only functional element that modifies the expression of structure and infill.

The sources of this building are those on the IIT campus and at the Promontory Apartments where a concrete or steel structural frame is expressed on the same plane as the infill panels. But it is clear from the classroom buildings at IIT that Mies was already separating the actual frame from what appears as the frame on the wall plane. The need to protect the steel frame against fire was doubtless a factor in this separation, but this does not explain the fact that the visible frame is at closer centres than the structure itself. It is already being used as a stiffener for the wall skin, and, in its deliberate ambiguity, foreshadows the I-beam mullions first used in 860 Lake Shore Drive.

This system is employed in the National Bank **1** and the studio and administrative blocks of the Television Centre **2**. These three blocks are 'core' buildings of greater architectural and technical refinement than the Bôrd Fâilte. In the latter two, modular systems for the interconnection of external skin, ceilings and partitions have been developed with great precision. The floor slab is cantilevered from the concrete frame, and the window wall is fixed to the edge of the slab. The gap between the column line and the edge of this slab is sunk, and forms a space for heater batteries, which in the Television Centre is closed by an inner skin of glazing. The plane of the columns thus delineates the usable space of the building, and an intermediate zone is created between this and the external surface.

In the television buildings the external glazing is fixed, and spans the full 5ft 0in of the mullion module. In the Bank, limitations in the size of tinted glass available at the time of construction forced the architects to introduce a secondary glazing bar, but although this produces an unintentionally vertical proportion, it does not destroy the mullion expression.

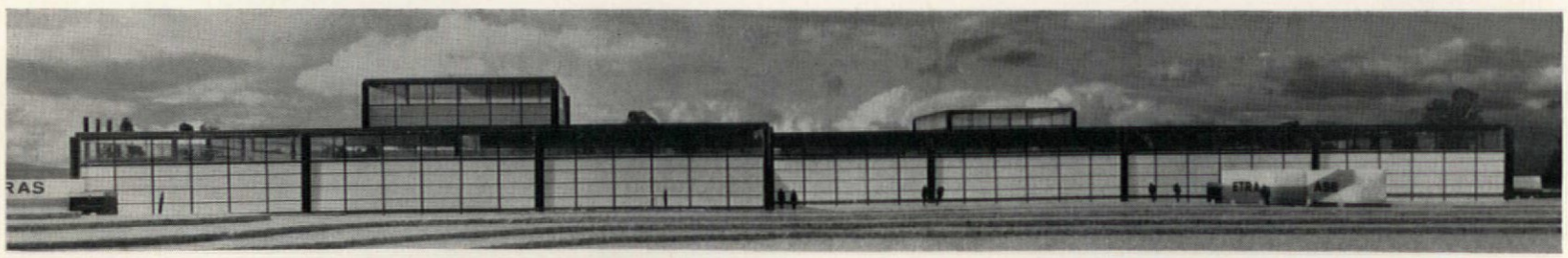
The high standard of design is not always maintained throughout. In the Bank, the interior finishes and built-in furniture in a light coloured bronze seem alien to the general aesthetic, and in the studio building the entrance hall with its special finishes and somewhat rhetorical circular staircase seem isolated from the main part of the building. In both these cases, the clients demand for an 'expensive' look may have been responsible. The Television administration building suffers from none of these faults and seems nearly perfect within its own terms of reference. Both on a visual and a physical level, it provides an environment which is calm, satisfying and unobtrusive in the true Miesian sense.

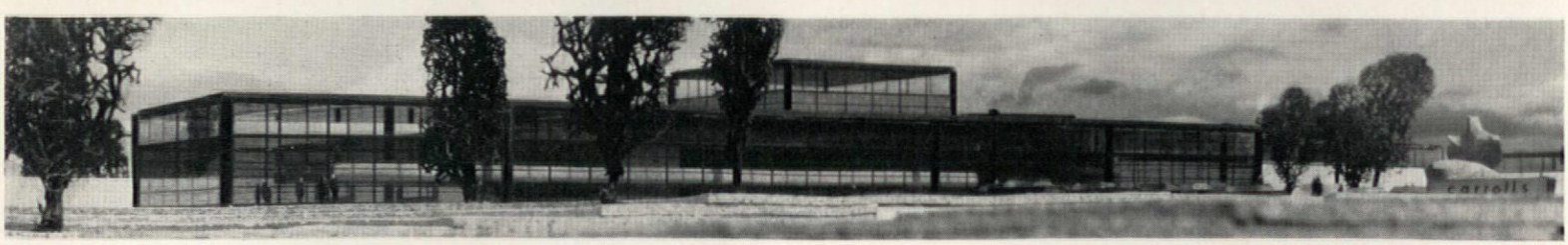
Of all the projects the television complex is the most interesting because it combines a number of buildings on a single campus-like site. In spite of the high degree of unity achieved on the site, there are certain differences in treatment that suggest an unsureness in the handling of a complex of buildings when the functional variables differ. At IIT Mies was able to maintain absolute control of phasing by breaking up his programme into small units. This has evidently been impossible here, with the result that some of the buildings have to be extended to form linear masses. The long brick wall extending from the canteen seems to show an indecision as to whether the site is to be considered as a number of pavilions within continuous space, or a series of spaces screened from each other.

This site plan raises fundamental problems in the application of the Miesian system. Since IIT it has depended on the interrelation of simple isolated blocks. But few modern developments of this scale can avoid the problems of contiguous expansion which changes the form of the buildings and also the nature of the spaces between them.

In the project for the Carroll cigarette factory **3, 4** at Dundalk, Scott's office seems to be moving towards a more flexible design approach in which a basic unit can be repeated by addition on any of its free sides, providing a plan which can be articulated according to functional and site irregularities—a planning system which is identified by the office itself with traditional Japanese practice. Whether this will ultimately lead to a reappraisal of their formula for office structures is a question which must remain open.

The main qualities of Michael Scott and Partners' work are its technical precision and a scrupulous attention to the constructional details of a building and their coordination. With these qualities go a preference for a rather classicizing aesthetic which avoids dynamic and functionally expressive forms. Their acceptance of the Miesian canon has enabled them to achieve a degree of technical and visual refinement which is very rare among architects in Europe, but in the last analysis it must by admitted that Mies teaches a style—a style containing universal qualities and profound lessons, but one that often seems inadequate to meet many of the spiritual and operational challenges of our time.



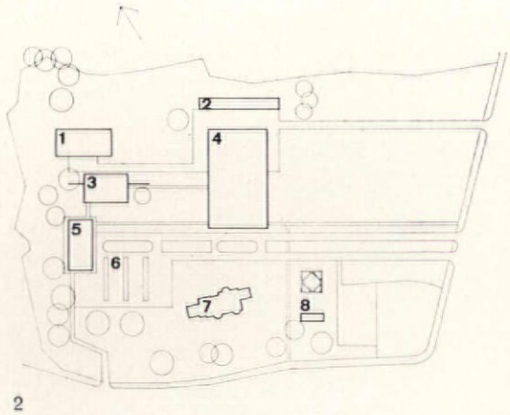


1

TV Centre, Montrose, Dublin

Client: Radio Telefis Eireann
Partner in charge: Ronald Tallon
Assistant architect: Patrick Reeves
Structural engineers: Ove Arup and Partners
Quantity surveyor: John Gannon
Services consultant: Robert E. Jacob

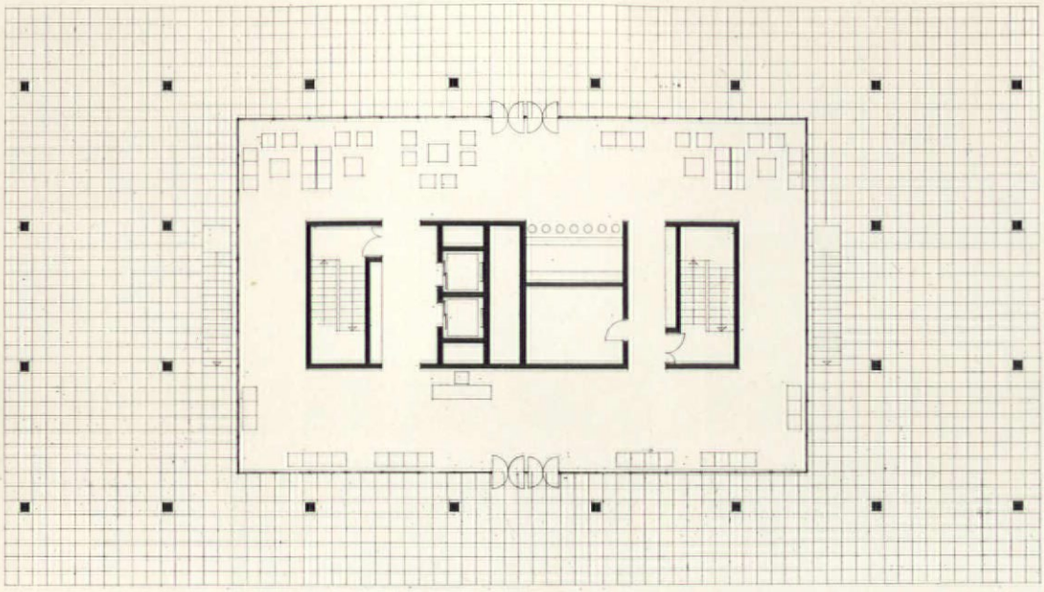
In February 1963 AD *published details of the new TV studios at Montrose. Since then various extensions have been completed, notably an office block, a restaurant building, and a stage workshop, each capable of future extension and all grouped at one side of the site so as not to interrupt the extension of the original studio block.*



2

1
The new office block, east façade (see overleaf)
2
Site plan of the whole Centre
1 scene dock
2 boiler house
3 canteen
4 studio block
5 office block
6 car park
7 Montrose house
8 link house
3
The office block seen from the restaurant building

3



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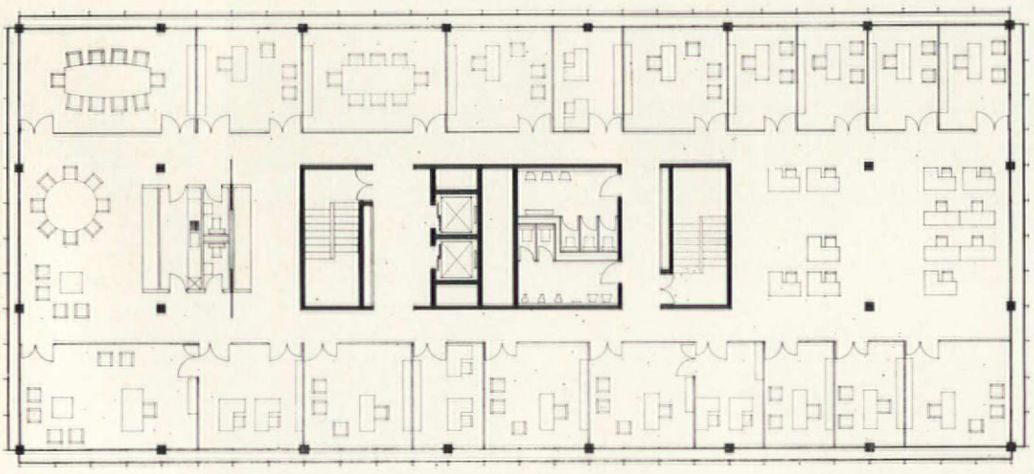

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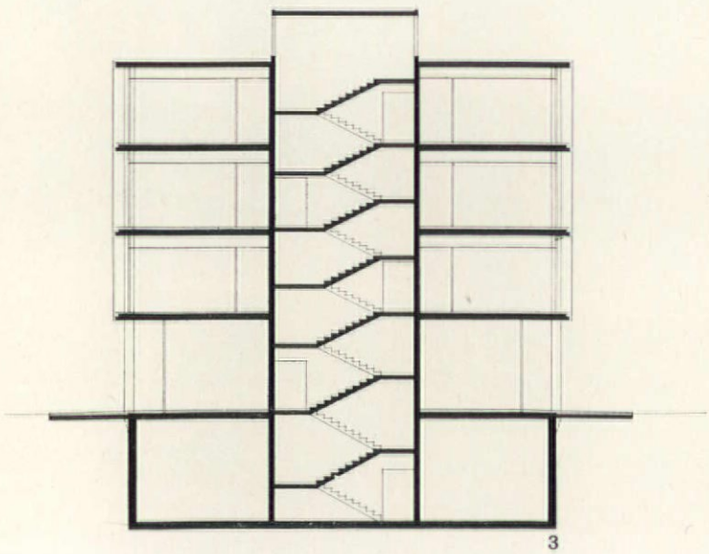
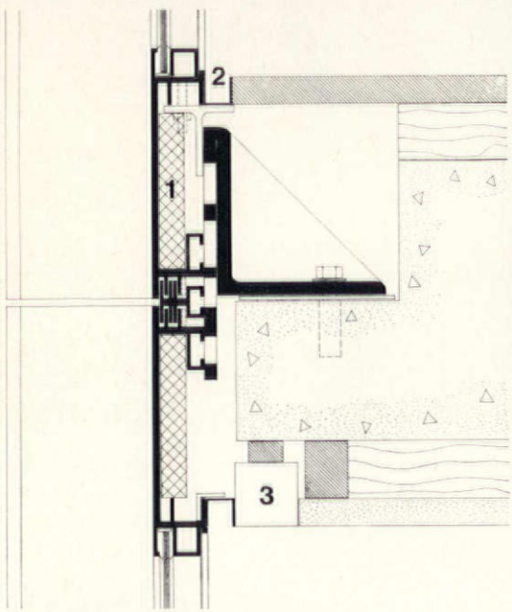


3

1–8
The new office block (see previous page) which accommodates the main administration departments. Construction is of reinforced concrete flat slab with exposed aggregate precast concrete columns on a 20ft structural grid. The exterior is sheeted in purpose-made, anodized aluminium curtain walling, similar to the studio block

1
Ground floor plan
2
Third floor plan
3
Section
4
Sectional detail through intermediate floors
5
Sectional detail through first floor
1 condensation channel
2 cork
3 venetian-blind box
6
The spacious ground-floor foyer
7
Top floor executive corridor
Finishes inside the building include bush-hammered granite slab facing to core walls, dark natural wool carpets on floors, and a suspended ceiling similar to the original studio block. The building is air-conditioned throughout. Partitions are kept to a minimum on the first and second floors, with open planning for the office areas, while on the top floor, which accommodates most of the executive staff, the partitions are of a specially designed sound-proof partition system, finished completely in black beam timber. The 5ft module of the studio block system has been adhered to, to give the possibility of interchanging partitions (see overleaf, **4**), etc., between the two buildings
8
Open office on the second floor



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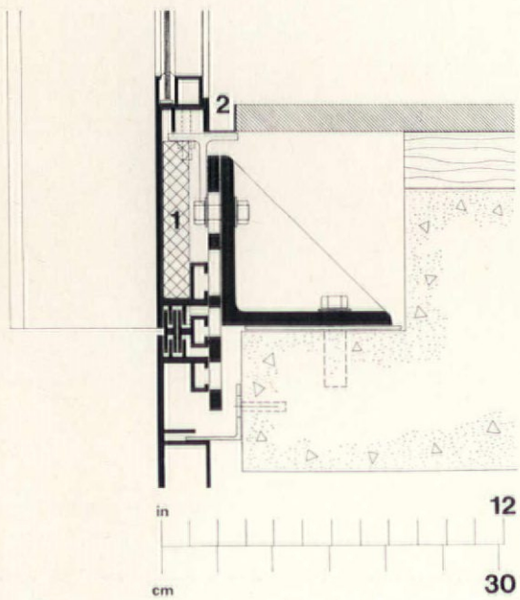

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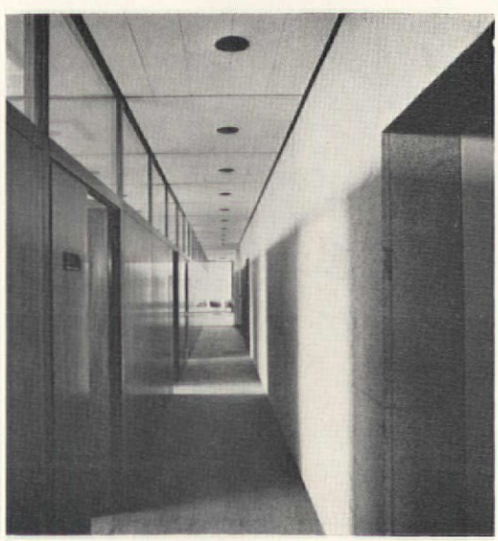

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8

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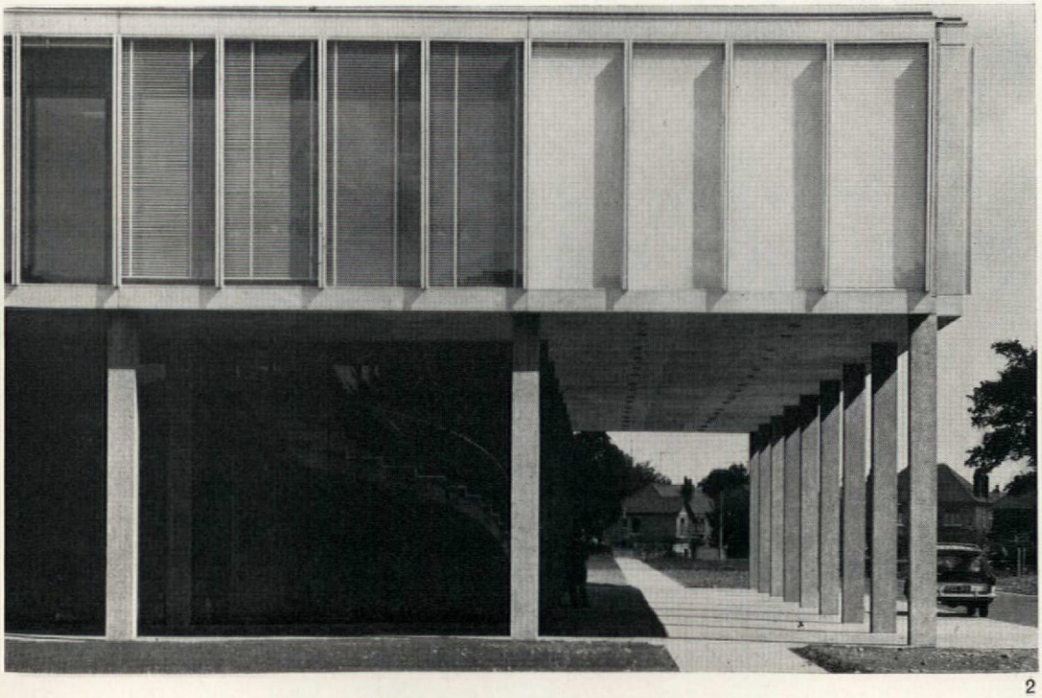

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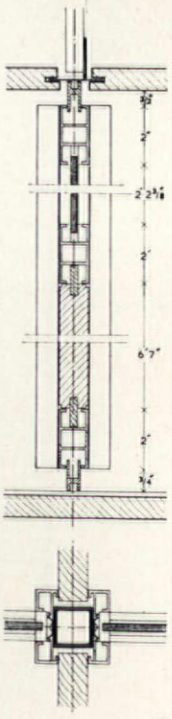
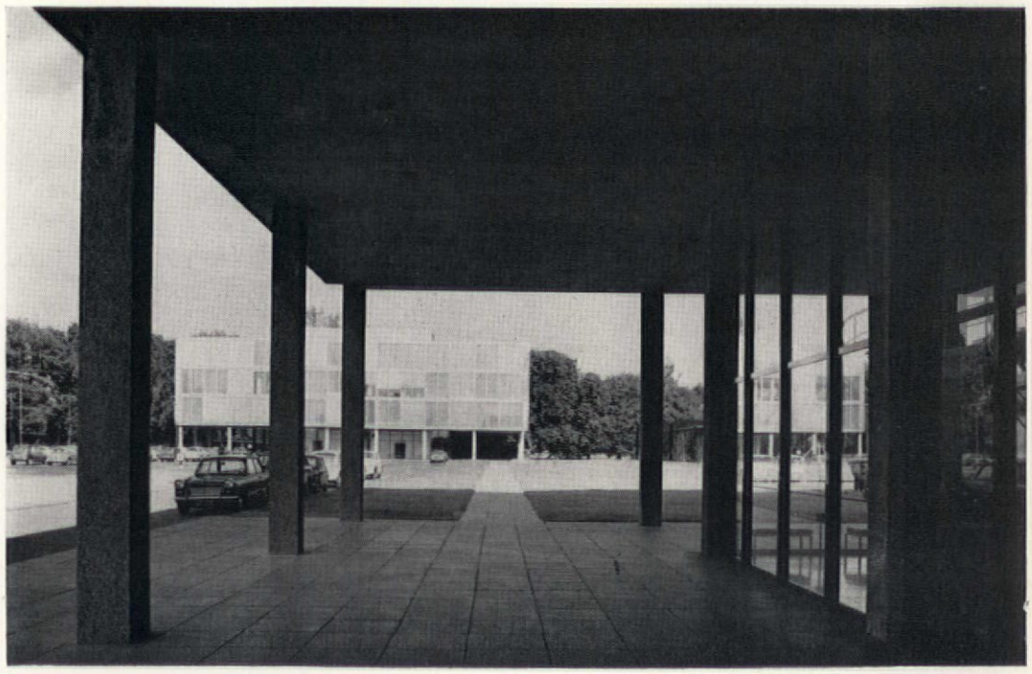


4

5

1
View from north-west, with new office block on right and restaurant block on left, with original TV studio block in background
2 & 3
The TV Studio building (see *AD* 2/63), a close view and a detail of the specially designed demountable aluminium cladding of the first floor. The latter and the internal partition system carried round the perimeter together form a double glazed wall
1 concrete roof slab
2 venetian blind
3 false ceiling
4 aluminium condensation channel
5 false floor
6 concrete floor slab
4
Section and plan of adjustable partitions used in TV studio building
5
The new office building seen from below the eaves of the restaurant block
6
The new office building seen from the colonnade on the entrance (south) side of the TV studio block



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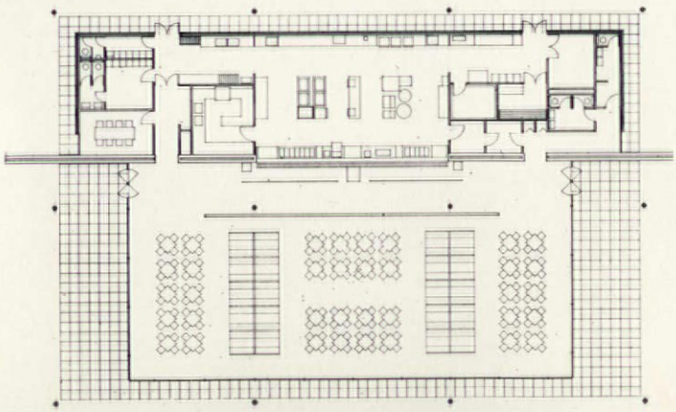

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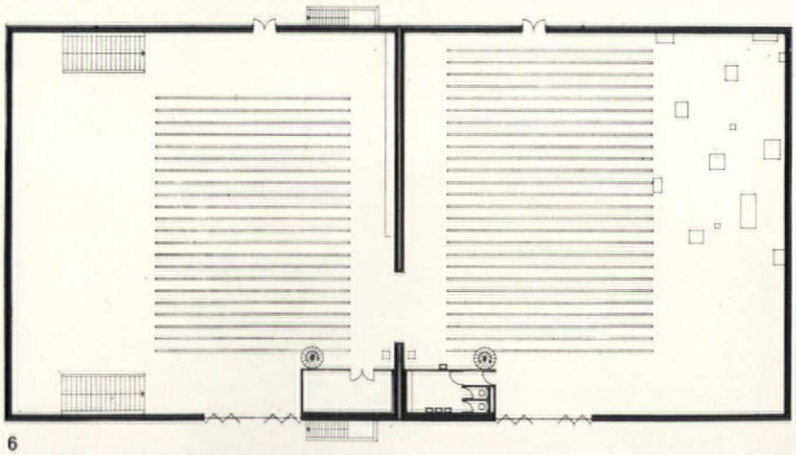

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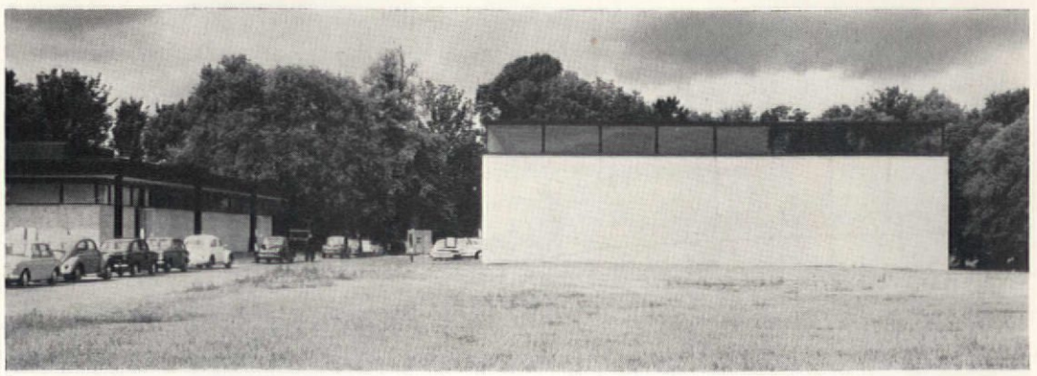


7

1–4
The new restaurant building
1
South-east corner of the new restaurant block catering for 250 people

Construction is in steel on a 40ft structural grid with built-up columns of cross section and a steel deck roof. The curtain wall is made from bright steel flats with fixed glazing and is set back about 5ft from the outside line of columns. Heating is by a hot-air plenum system
2
Plan
3
Inside the restaurant

Fixed seating breaks up the space into small intimate areas
4
View of the restaurant from the office block. A long brick wall, ceiling height, passes through the building and out to east and west, dividing the dining-room from the kitchen area. The TV studio block is visible in the distance

5–7
The new building for manufacture and storage of scenery, the available accommodation in the original studios having become too small

The building is designed to expand in separate bays, 80ft × 80ft to a total of six. The two that are already completed are seen here from the south. The bay unit is built of 10in r.c. walls up to 19ft high, with a 2-way spanning tubular steel truss carrying 10ft glazed sections on the perimeter. The outside of the building is faced with concrete brick

National Bank head office, Dublin

Client: The National Bank of Ireland Ltd
Partner in charge: Robin Walker
Quantity surveyors: Desmond MacGreevy & Associates
Structural consultants: Ove Arup and Partners (Dublin)
Mechanical consultants: R. E. Jacob
Consultant architects: Fuller & Jermyn

1
The original double height banking-hall off College Green seen from the higher level of the new 'link' building. The central tellers' counter has been replaced by perimeter counters to allow for increased circulation.

Finishes generally were chosen for durability and quality of appearance—bronze for counters, fittings and window walls, end grain wood blocks for floors, teak panelling. However, work in the old building was restricted largely to a replanning and tidying up operation

2 & 3
Ground floor plan at Suffolk Street level and section through from Suffolk Street (left) to College Green. Upper two floors contain offices, the top floor the kitchen and eating facilities

1 enquiries
2 bills
3 cash
4 deeds
5 statements
6 stock exchange
7 manager
8 interview
9 waiting
10 banking hall
11 telephone exchange
12 mezzanine
13 foreign exchange (upper part)
14 typists
15 strong room
16 w.c.'s

4
New entrance screen in old banking hall

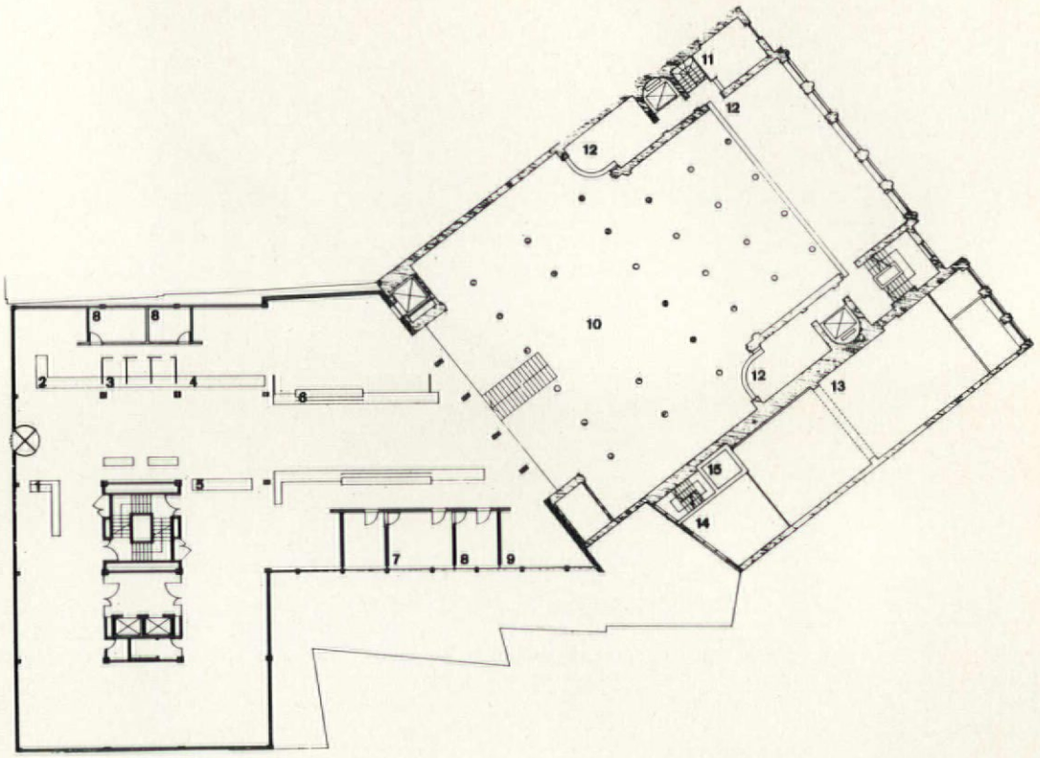
5 & 6
The Suffolk Street elevation of the new wing which connects through a new 'link' to the old banking hall.

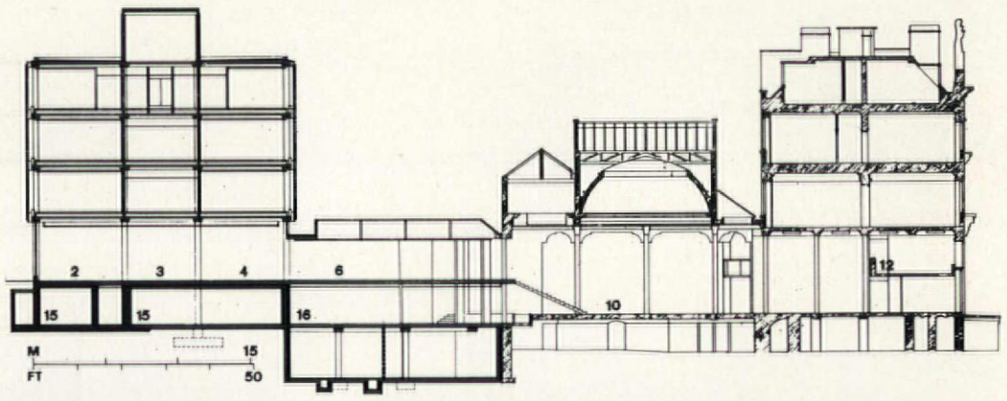
The new building is a r.c. column-and-beam structure. The only load-bearing walls are those of strong-room, lift shafts and staircases. The office floors are subdivided by demountable standard partitions 5ft and 3ft 4in wide, the floors and ceilings also based on this grid. The 5ft dimension is marked by the mullions of the curtain wall, which not only support the double hung sash windows but also serve as attachments for the partitions. The curtain wall mullions and spandrels are of a natural grey aluminium, and the glass is brown anti-sun to reduce glare

7
An office interior

Finishes include natural aluminium and satin chromium plate, Burma teak panelling, and linoleum.

The mechanical services are controlled from plant rooms in the sub-basement under the 'link' and in a penthouse on the new office block—conditioned hot air and hot water. All services are contained in the sub-floor space and the false ceiling for each office floor and each 5ft module of the office floor frontages is equally serviced





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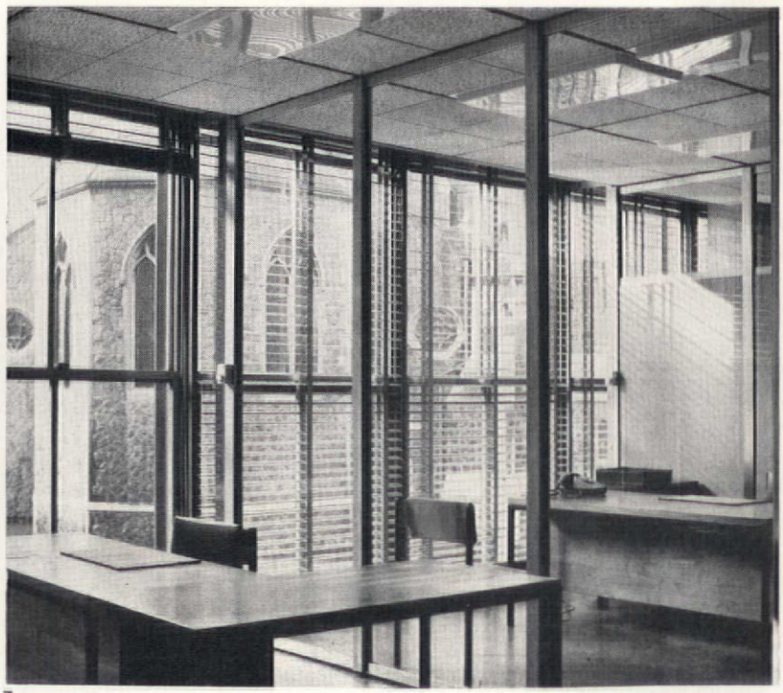
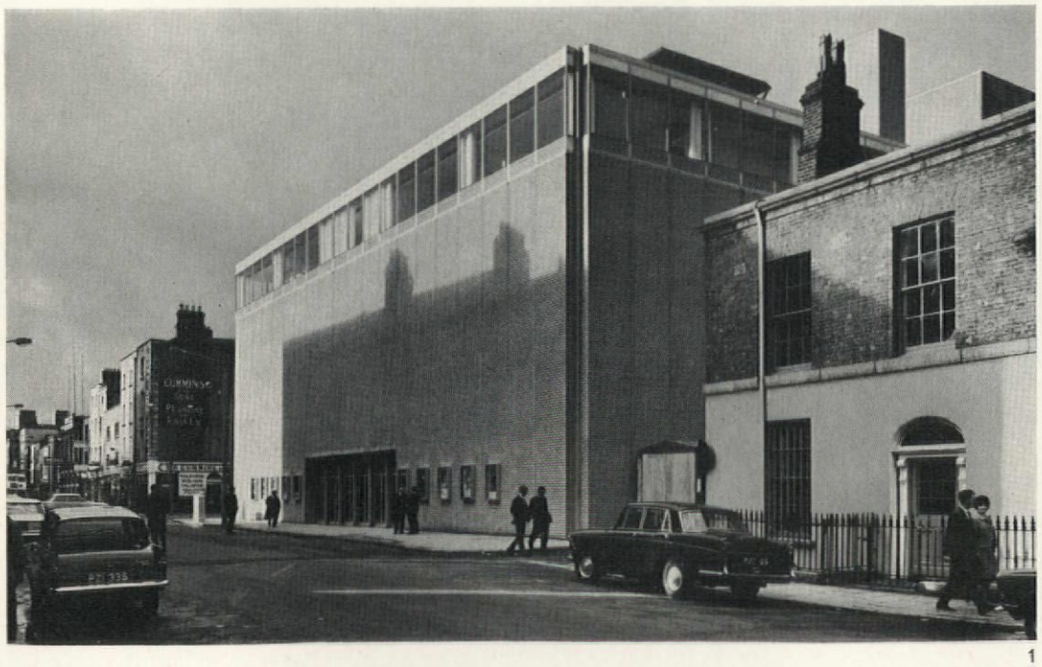


7

The Abbey and Peacock Theatres, Dublin

Client: National Theatre Society Ltd
Partner in charge: Ronald Tallon
Assistant architect: Hans Schaufelberger
Consultant architect: Pierre Sonrel (Paris)
Quantity surveyor: John Gannon
Structural engineers: Ove Arup and Partners
Mechanical and electrical engineers: Varming Mulcahy Reilly Assoc.
Acoustical consultant: Henry R. Humphreys
General contractors: A. J. Jennings & Co. Ltd



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1 & 2
Two theatres on one site, the Abbey for 628 people and the basement Peacock for a maximum of 157 people. Here we see the Abbey Theatre's entrance elevation on Marlborough Street

The building structure, exceeding 100ft from basement to top of stage tower, is in normal reinforced concrete; the roofs over the stage areas and the auditorium are partly in precast concrete with prestressed composite main beams

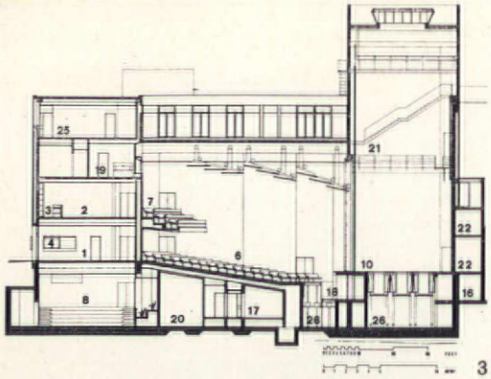
3, 4, 5 & 6
Plans of first floor, ground floor, upper basement and lower basement

7
Long section

8
The Abbey auditorium
There are 531 seats on the raked ground floor and 97 on the three-row balcony the shallowness of which allows the forestage to be extended 14ft (by lifts). The proscenium opening can be varied—in width, by sliding panels from each side, in height, by three movable ceiling reflector units carrying spotlights. Three large stage lifts plus many traps make for great adaptability on stage

9–14
The Peacock auditorium
Flexibility of stage area and auditorium are achieved mainly by all-electrically-operated split-level/turn-over stage units, movable wall panels to either side of the stage, movable ceiling panels in the stage tower, and movable auditorium seats—the latter making it important that the hall be designed as an isotropic acoustic space. There is no proscenium wall

The two long walls are finished in afrormosia, over hessian-covered mineral wool slabs. The short walls are plaster painted black—also the suspended ceiling



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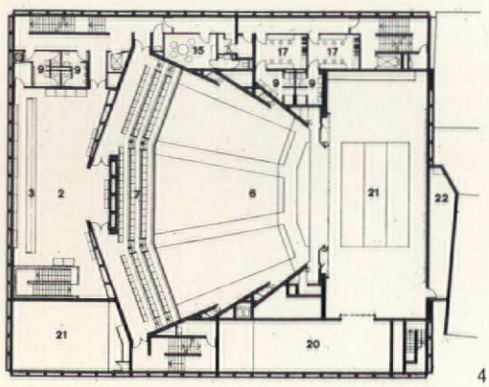

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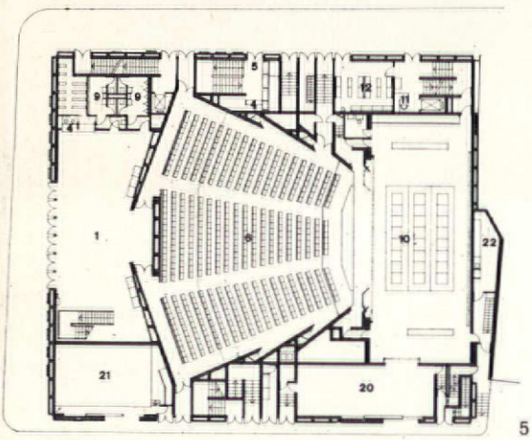

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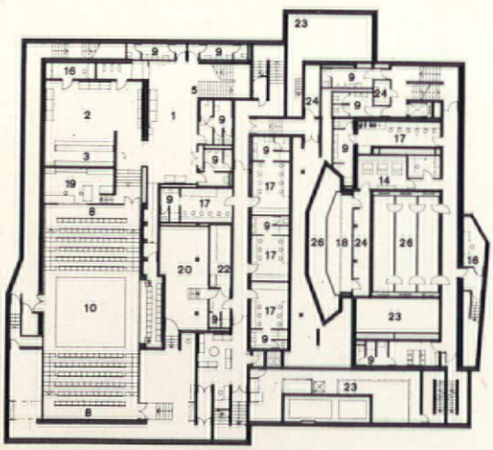

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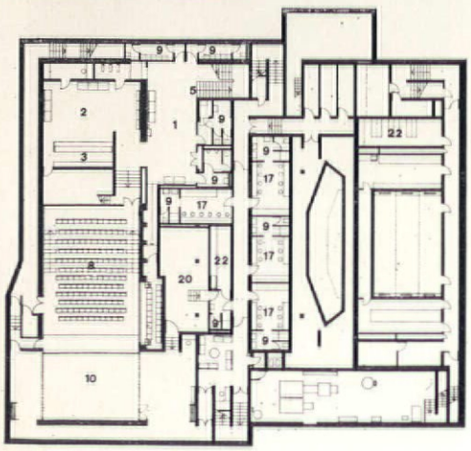


7

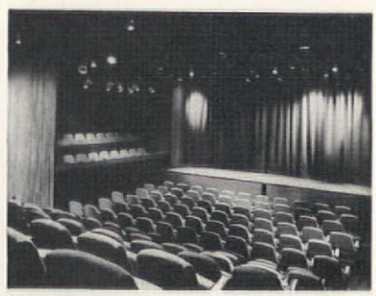
8

Key to section and plans

1 foyer
2 lounge
3 bar
4 booking
5 Peacock Theatre entrance
6 Abbey auditorium
7 balcony
8 Peacock auditorium
9 w.c.s
10 stage
11 porter
12 green room
13 stage hand
14 band room
15 president
16 manager
17 dressing
18 orchestra pit
19 control
20 scene dock
21 upper stage
22 props.
23 plant
24 store
25 rehearsals
26 stage lift

9

10



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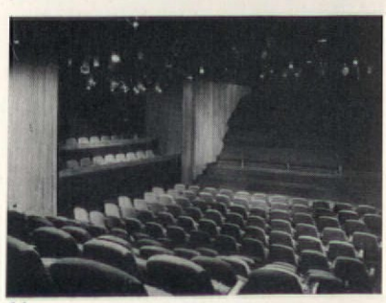

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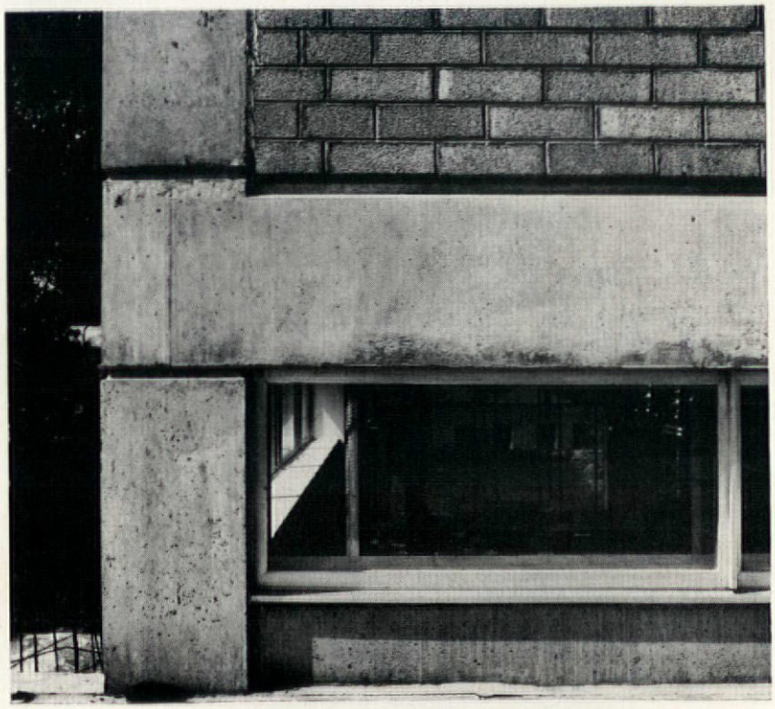
1

Bŏrd Fāilte (Tourist Board), Dublin

Clients: Bŏrd Fāilte
Partner in charge: Robin Walker
Structural engineers: Ove Arup and Partners
Mechanical and electrical engineers: R. E. Jacob
Quantity surveyors: F. D. Shortall and Co.
General contractors: D. McIlvenna and Sons Ltd

1 & 2
Principal views of the Bŏrd Fāilte, which is sited in the centre of Dublin, on Baggot Street bridge, close to one of the canals. The office accommodation, on six floors, is planned around a central core containing a staircase, lifts, toilets and service ducts. The structure is of *in situ* reinforced concrete with columns set on a 15ft 6in square grid. The floors and roof are of rib construction. A lower annexe, planned around two sides of a garden court, houses the distribution department. The roof of this, which is at pavement level, is paved and planted as a terrace
3
Corner detail at pavement level. In keeping with the uncomplicated, low-cost construction, the internal and external finishes are simple. The concrete of the structure is exposed externally fairface off lined shuttering. The infill panels are of concrete brickwork, windows are of aluminium. Internally the walls are plastered and ceilings are of acoustic plaster

2



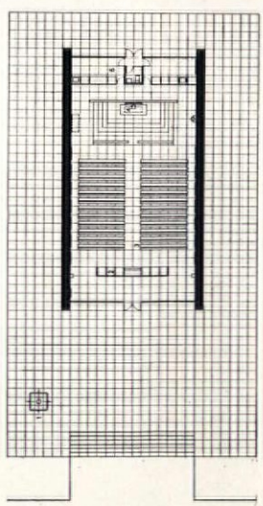
3

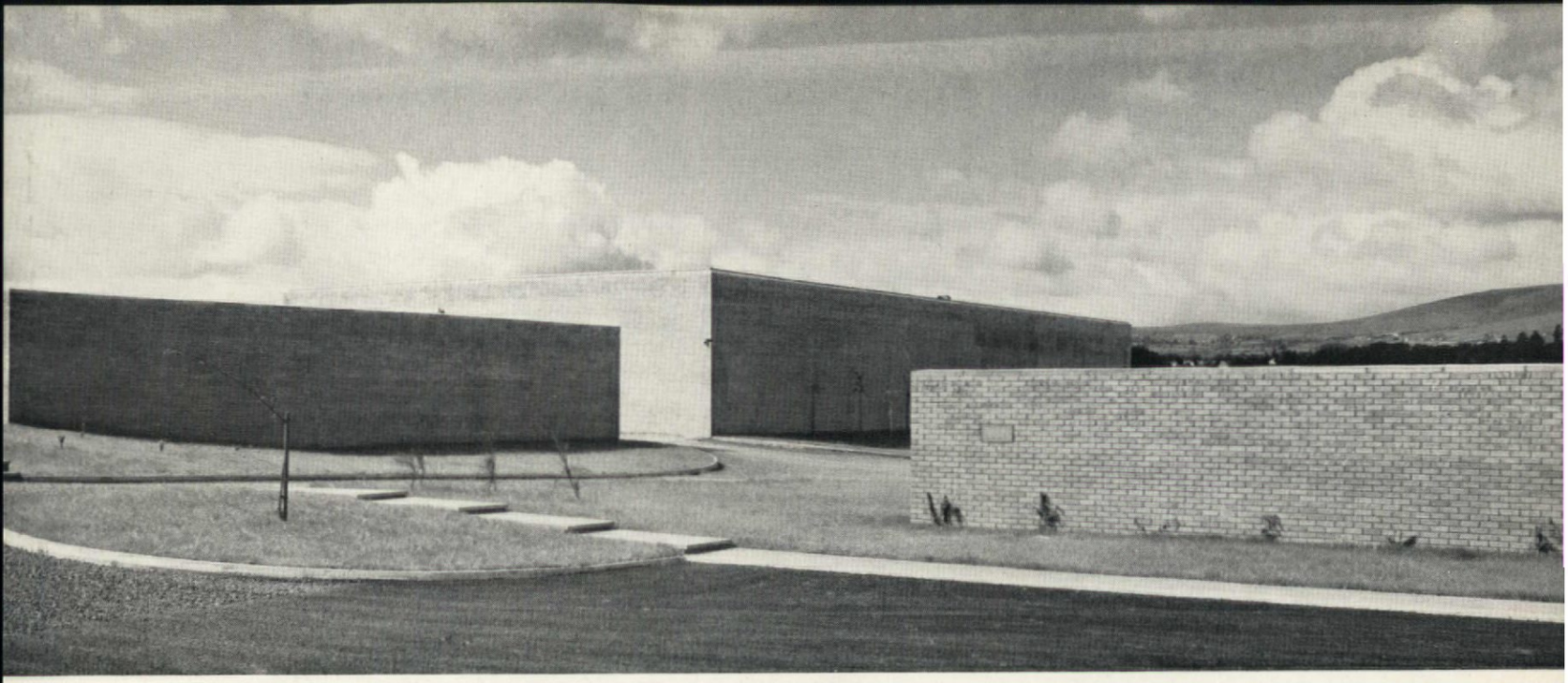
1 3
2
4

Knockanure Church, Co. Kerry

Partner in charge: Ronald Tallon
Quantity surveyor: John Gannon
Structural consultant: Ove Arup and Partners
Mechanical consultant: Varming Mulcahy Reilly Assoc.
General contractor: C. G. Cooney Ltd

1 & 4
The church by night and day. By tradition it consists of a single chamber with massive side walls projecting to front and back. These are of concrete brick supporting the concrete T beams of the roof, while the cross façades are glazed. The body of the church is screened from the sacristy by a white reredos wall, and from the entrance by the confessionals backed by a wood carving by Oisin Kelly
2
The interior undecorated save for some tapestries by Leslie MacWeeney
3
Plan





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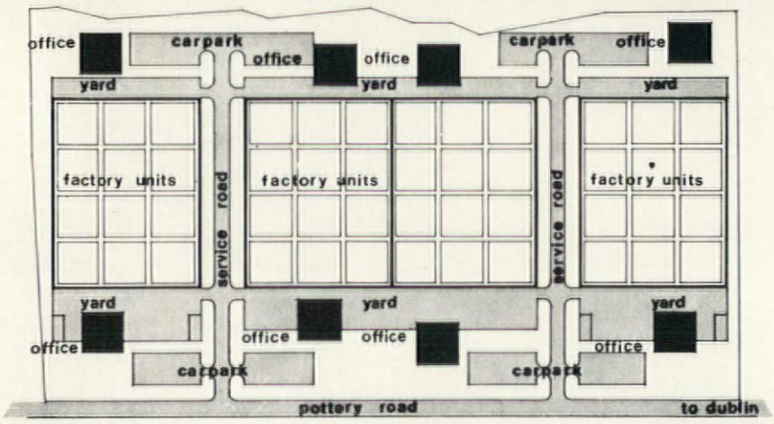

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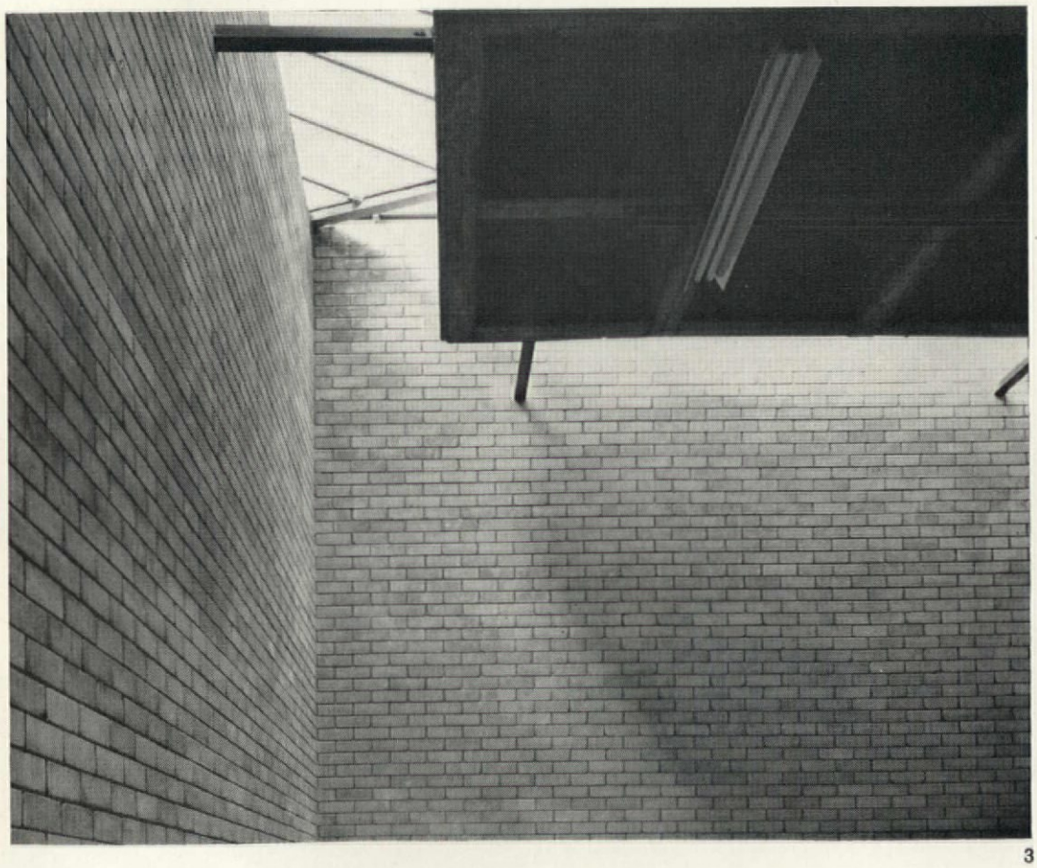
Dun Laoghaire industrial estate

Clients: Dun Laoghaire Industrial Estates Limited
Partner in charge: Ronald Tallon
Structural consultants: Ove Arup and Partners
Mechanical consultants: R. E. Jacob



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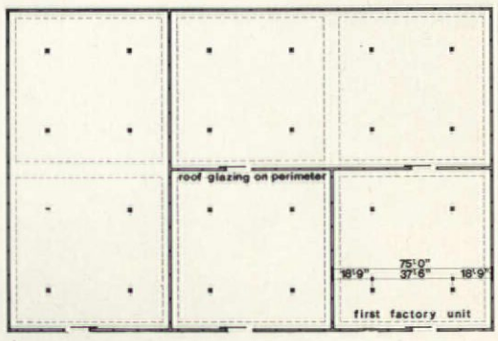

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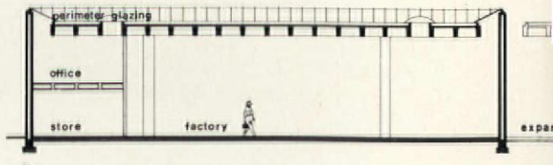

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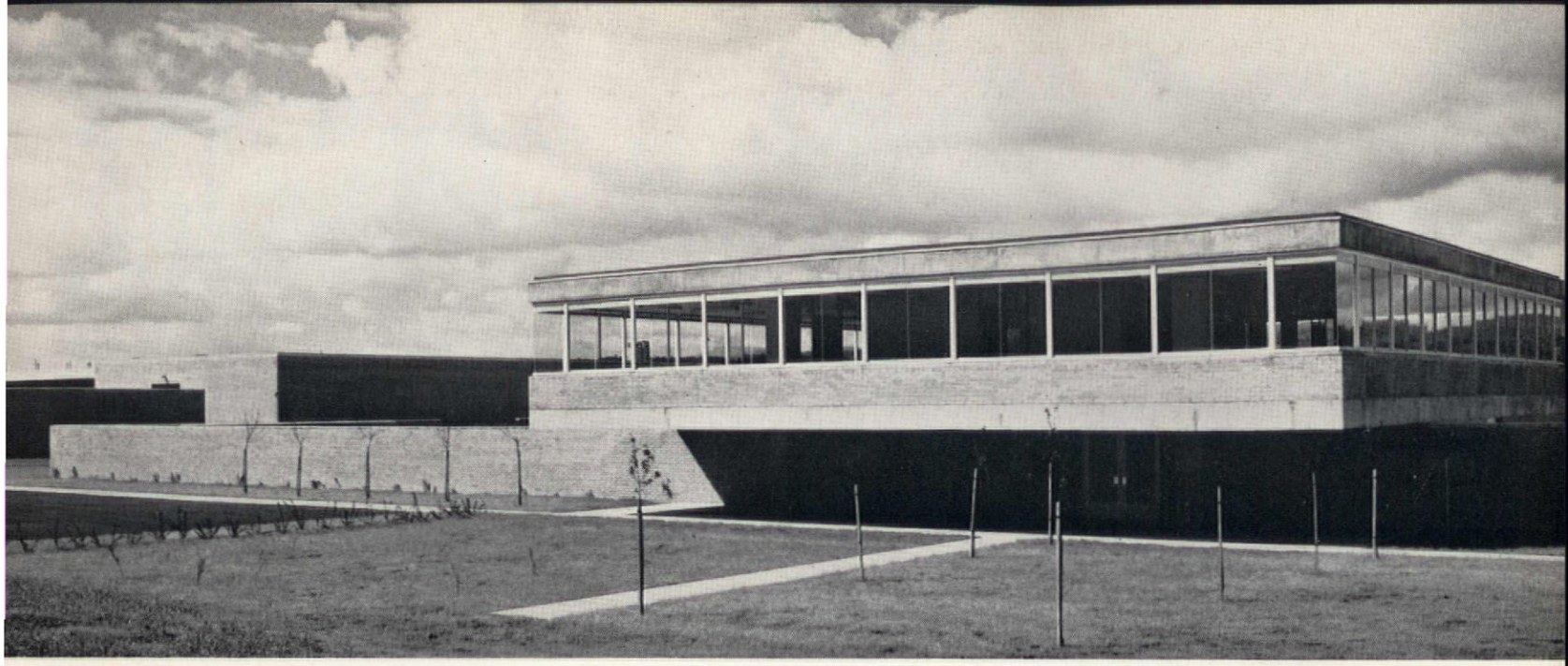
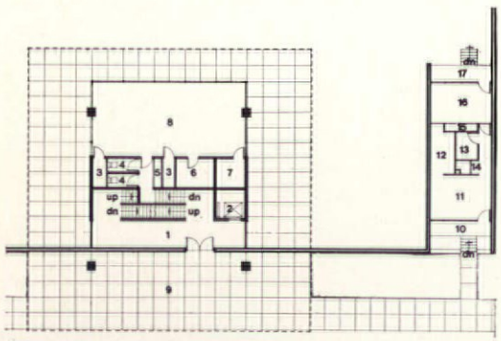


6

1
Standard factory units
Non-structural perimeter cavity walls are formed of two leaves of pressed concrete brickwork with internal wind bracing. The roof of each unit is reinforced concrete coffered, insulated and asphalted, supported on r.c. columns. Floors are of industrially treated r.c. Boiler-house accommodation and underground ducting are supplied for individual heating installations
2
Site plan
The 16-acre (6·5–a) estate—in Pottery Road, Kill O' the Trange, two miles from Dun Laoghaire harbour—is divided into 48 factory units and 8 office blocks for separate or grouped letting
3
Natural light to the factories is provided by perimeter roof light; fluorescent fittings are installed to give a standard of 25 lumens per sq ft
Photo: Peter Stroethoff
4
Part plan of factory units
Each unit is 75ft square subdivisible on a 3ft 9in grid, and a factory may consist of any number of such units, added horizontally as required without interfering with production
Section through a factory
5
When horizontal extension takes place, the final link between an existing and a new roof is effected by means of sloping roof glazing, without affecting the weathertightness of the unit already in use. The former external wall, being non-structural, can then be demolished if desired
6
An office block with a factory beyond.
The office buildings are designed to expand vertically up to three floors. The r.c. structure is similar to that of the factories. Gas-fired central heating is installed; fluorescent lighting and floor ducting for power and telephones are provided
7 & 8
Ground and first floor plan of an office block
9
Entrance to an office block



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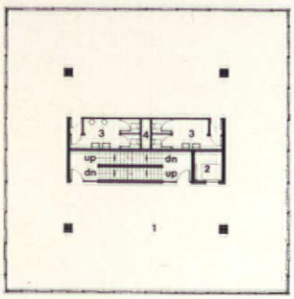

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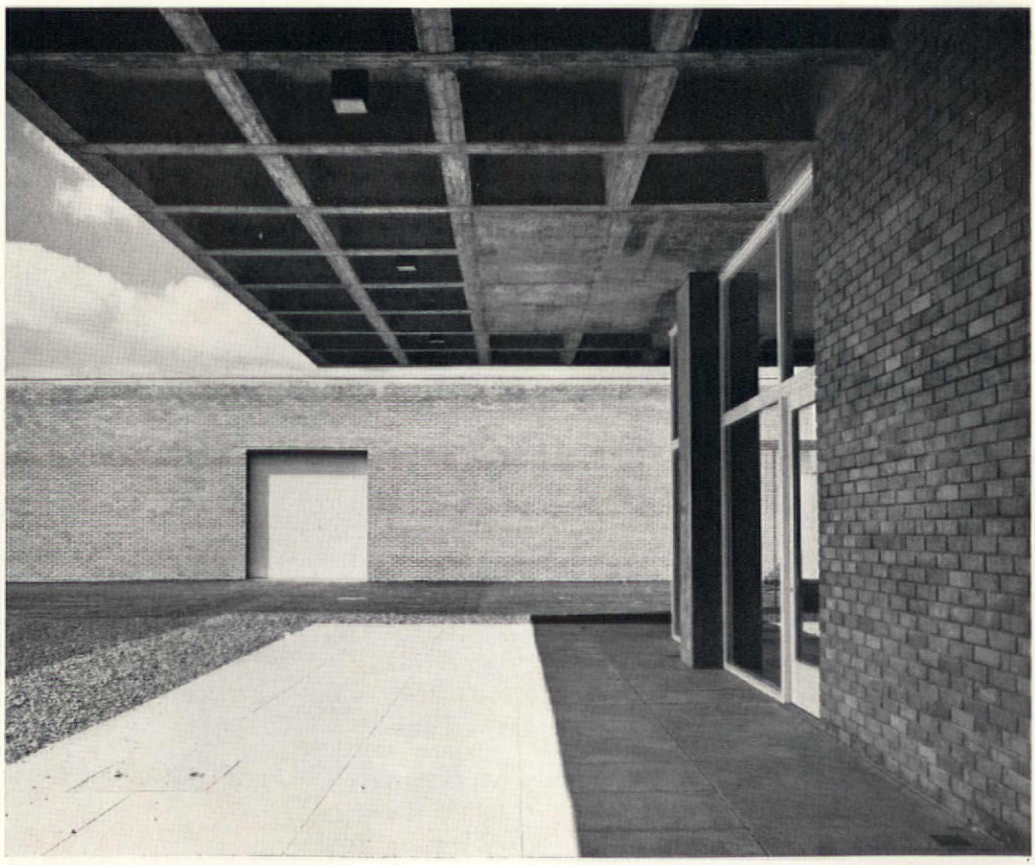

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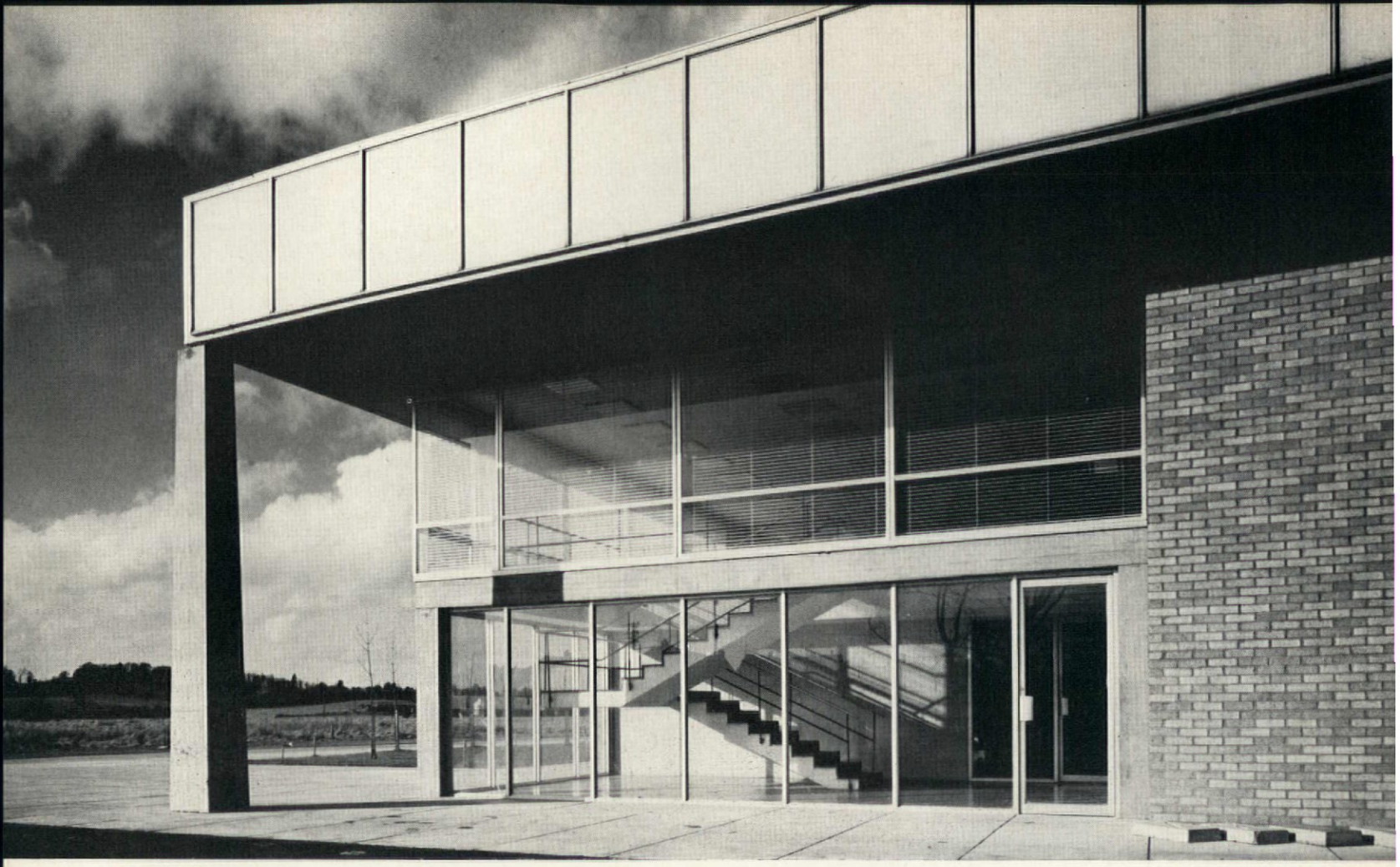

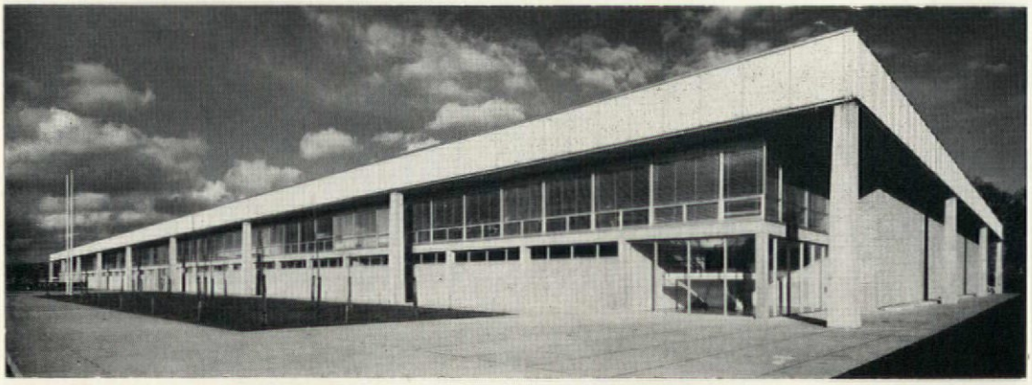

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Ecco factory, Dundalk

Client: G.E.C. (Ireland) Ltd. and subsequently Ecco Ltd.
Partner in charge: Ronald Tallon
Quantity surveyor: Thomas C. Whelan
Structural consultants: Ove Arup and Partners
Mechanical consultants: Varming Mulcahy Reilly Assoc.
Contractor: John Paul and Co. Ltd.

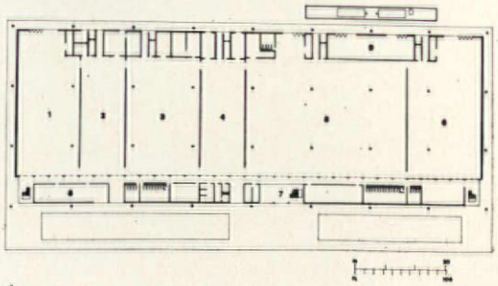
Photos: Peter Stroethoff

1 & 2
Originally built for GEC (Ireland) Ltd,* the factory was later taken over by Ecco. This year it was awarded the RIAI Triennial medal. In area 512ft × 192ft, it is designed on a 64ft square structural bay. It has a raft foundation on bay centre lines, and, concrete columns reinforced with cruciform-section steel cores. The fascia is of aluminium curtain walling with glazed asbestos infill panels. Cladding is cavity brick wall outer skin and aluminium windows. Internal walls are concrete block. There is a r.c. mezzanine floor on either side of the building

3
The flat roof is of Castella beams across the width of the building with secondary trusses at 8ft centres, the clear height being 18ft 6in

4
Ground floor plan

1 rough parts store
2 polishing shop
3 plating shop
4 brought-in parts shop
5 assembly area
6 finished goods store

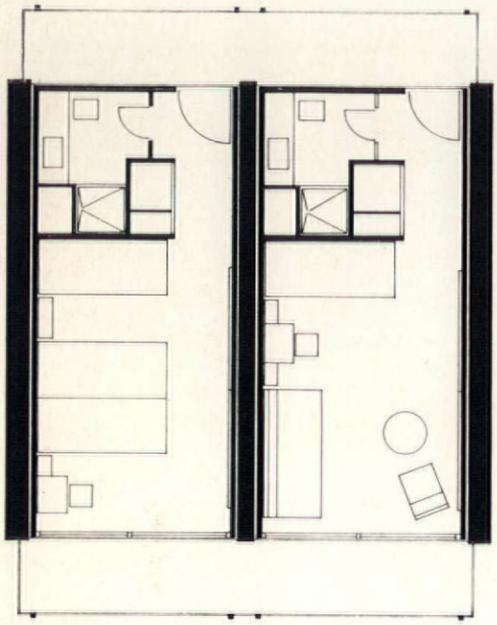


4

*Re-named Electrical Industries of Ireland Ltd.

Prefabricated hotel bedroom unit

Client: McInerney Ltd
Partner in charge: Robin Walker
Consulting engineers: Ove Arup & Partners
Hotel consultant: Liam J. Ryan



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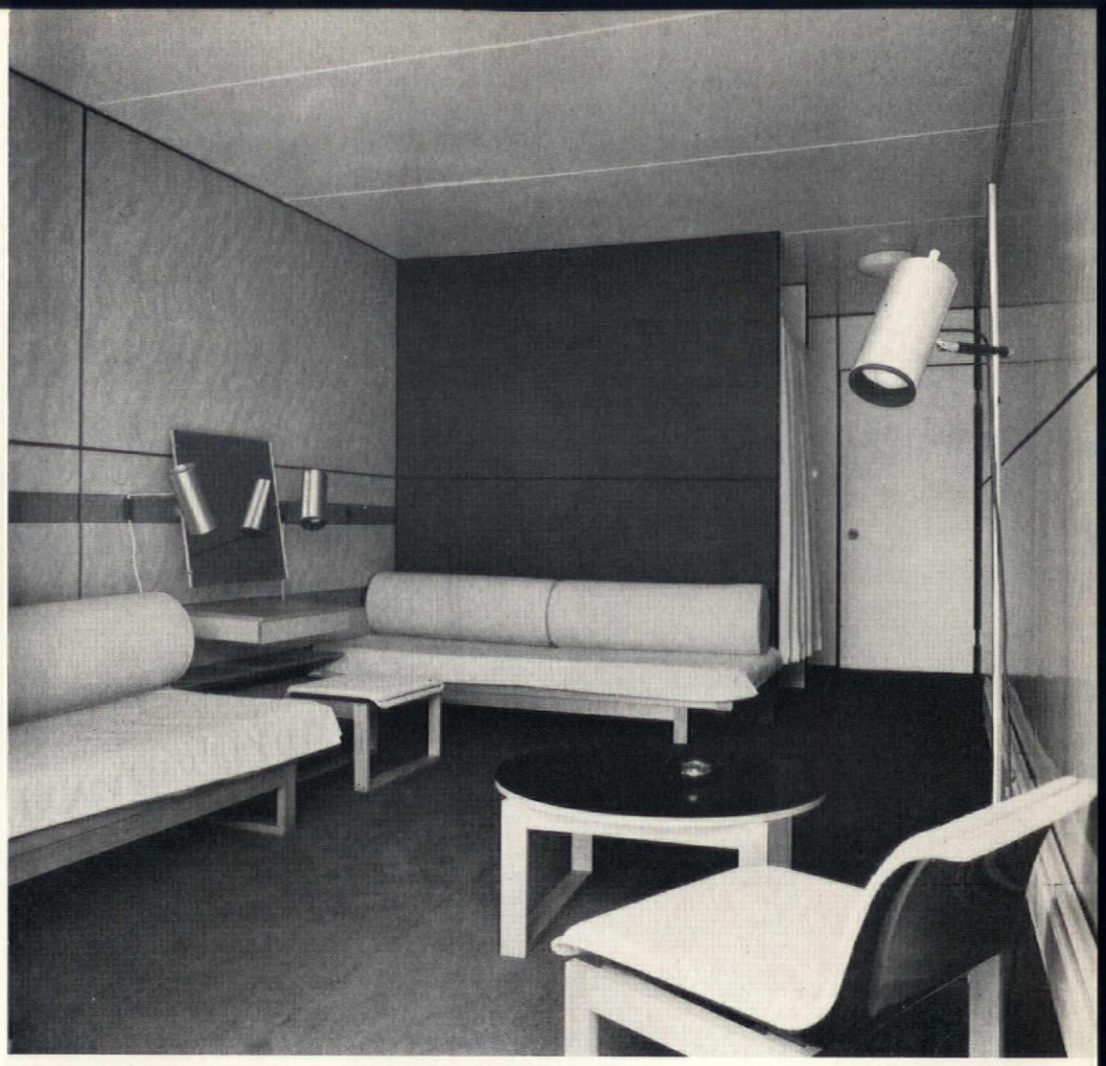

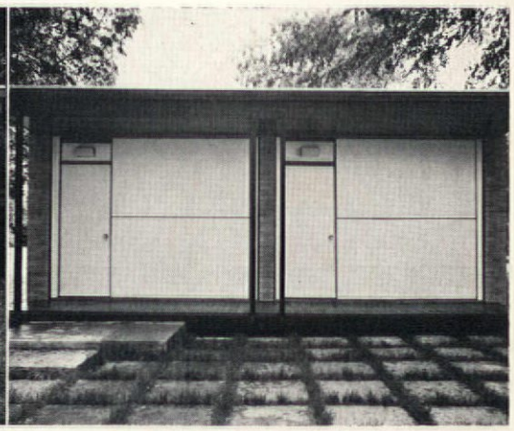

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5 6

1
Plan of two prefabricated hotel bedroom units for use in construction of new hotel bedroom blocks. A unit is about 22ft 6in × 11ft 3in × 9ft high, and contains a bathroom with shower, basin and w.c., and an entrance lobby with fitted wardrobe. Covered access gallery and balcony elements are supplied for attachment on site

The units can be used individually, or ranged along one or both sides of a corridor in single or multi-storey blocks

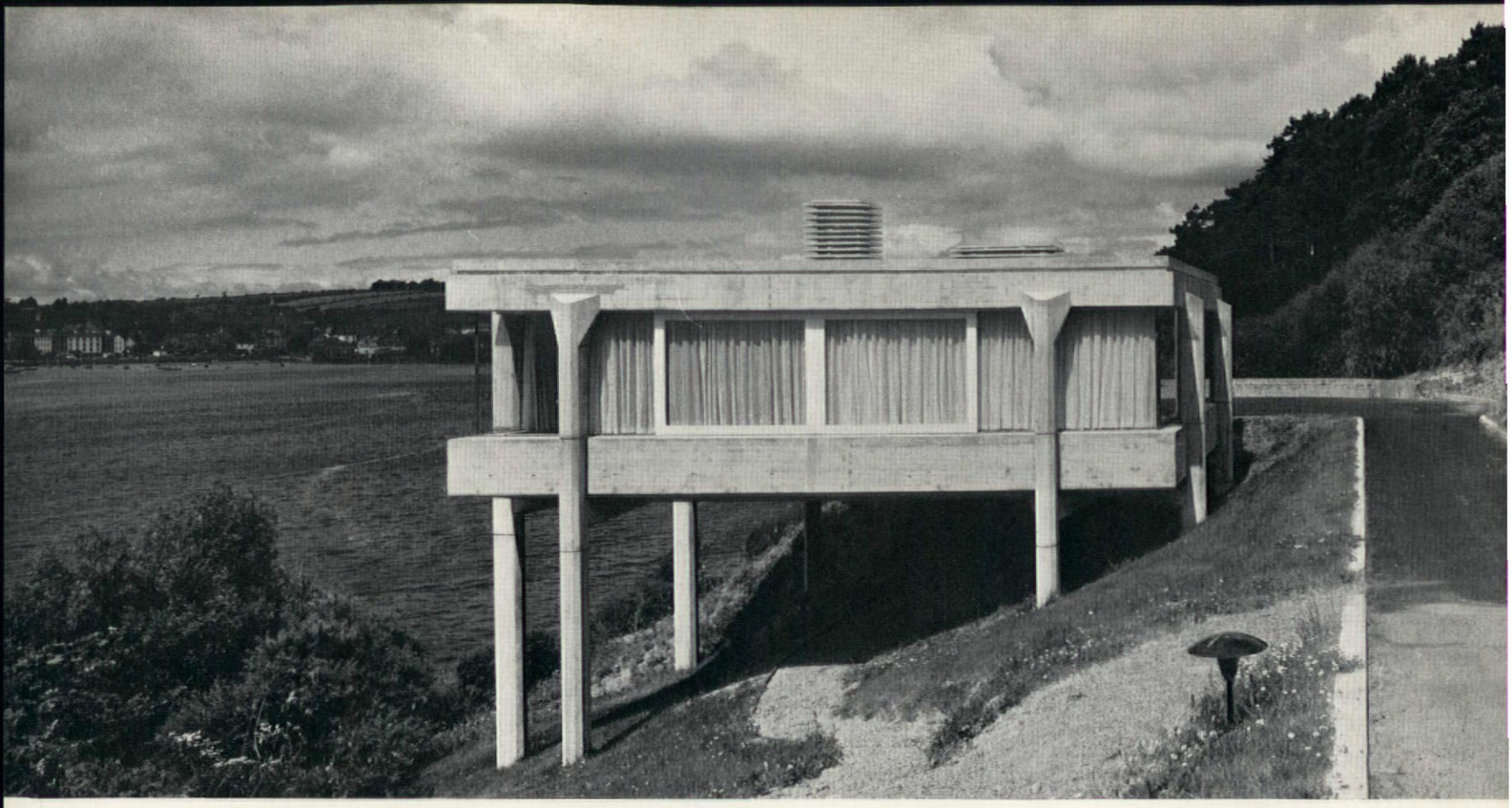
2
The bedroom
Various layouts are possible, up to three beds, incorporating adaptable built-in equipment—dressing table, mirror, bedtables and lamps. Finishes are according to choice

3
Front and back elevations
The unit consists of a prefabricated interior shell installed in a traditionally constructed system of load-bearing, concrete block, cross walls. The shell is of stressed skin plywood on timber frame. The window wall is of anodized aluminium framed glazing. The roof is finished with bituminous felt. Where units are stacked, a 2in layer of sand is laid between them. RC brackets project from the cross walls to support the timber framed and boarded balcony, gallery and roof deck elements

For erection, once the foundations and walls are built the fully finished units arrive on trailers, are raised by crane and lowered into position, supported on steel angle brackets bolted to the face of the wall

Heating is by lowline electric convectors; water is heated by electric pressure-type water heater; ventilation is by electric extract fan

5 & 6
The bathroom
The shower bath, vanity-table/wash basin and coved skirtings, coved wall junctions and cornices are all of fibreglass, while panelling is plastic and the floor is covered with linoleum



1
View of the house from the south

The road leads to the entrance, across a bridge, on the north side where there are also steps down to the lower level 'dug-out' guest house. The steep slopes and rock formation were the determinants of the stilts; and local building and the predominant grey colour led to the choice of reinforced concrete for the construction. Even the roof, very visible from the road above, is surfaced with a concrete screed. The aggregate used was local red sandstone.

The need to achieve a high strength and dense concrete for the structure was dictated by the desire for an exposed concrete finish, for setting the columns in front of the edge beams, and for the location of construction joints on the columns

Photo: Henk Snoek

2 & 3
Plan and section

The house is basically one room subdivided by a kitchen-cloakroom-bathroom block and a fireplace-storage unit

4
Inside the north-west corner

Given breathtaking views over the estuary to north, west and south, the four corner mullions are reduced to the slenderest proportions to emphasize the transparency and indeterminacy of the living areas

Week-end house, Kinsale, Co. Cork

Partner in charge: Robin Walker
Quantity surveyor: John J. Gannon
Structural consultants: Ove Arup & Partners
Heating consultant: G. B. Johnson
Builder: P. J. Hegarty & Sons Ltd

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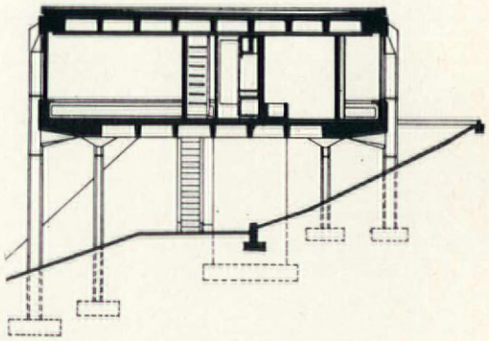

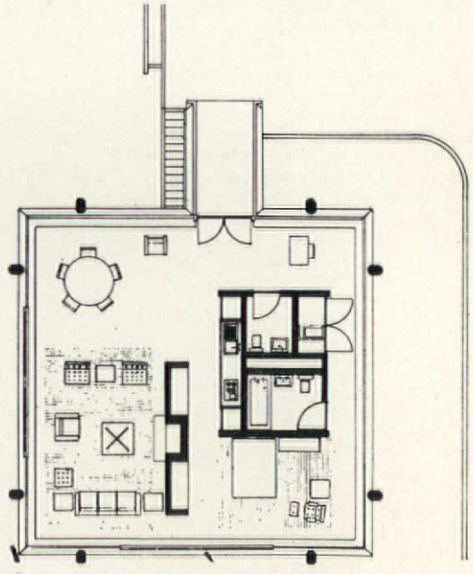

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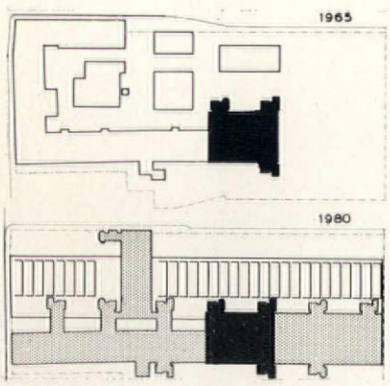


2

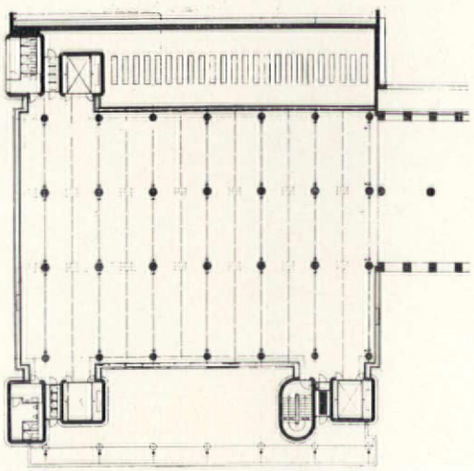
Leitz factory, Stuttgart-Feuerbach

Heinrichs and Muller

The building illustrated here as an example of indeterminate architecture, is the first stage in the extension and reconstruction, block by block, of an existing filing-cabinets factory.

Photos: Deyhle

1
View from the south-east
2
Block plans showing the present state of development (above) and projected development for 1980 (below)
3
Ground floor plan
4
Section with the connection to the older buildings on the right



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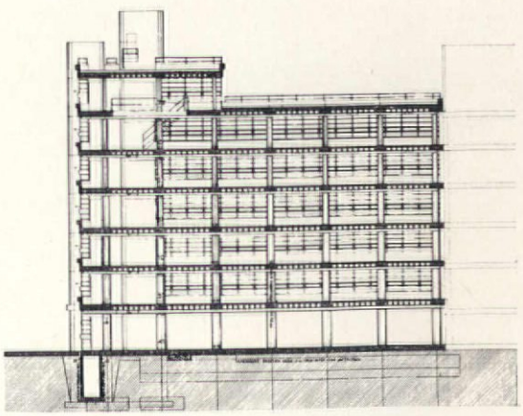

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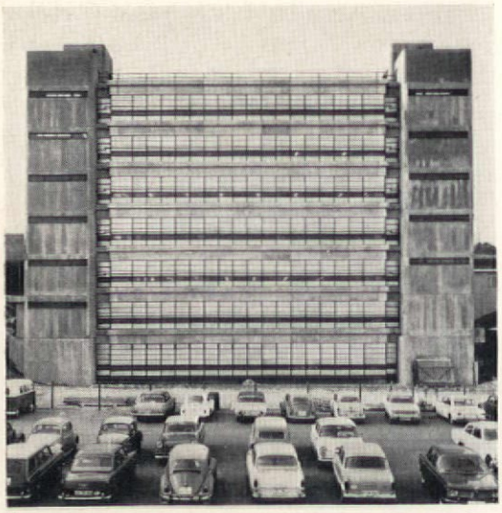

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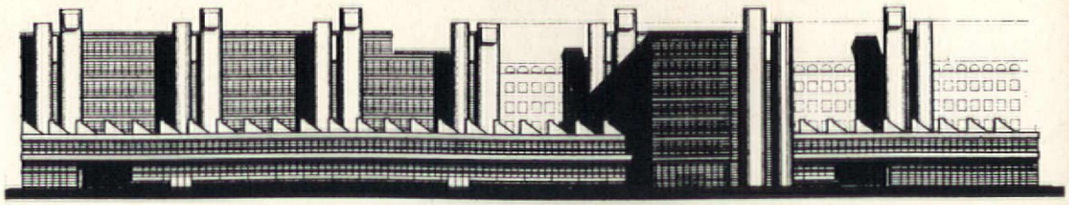

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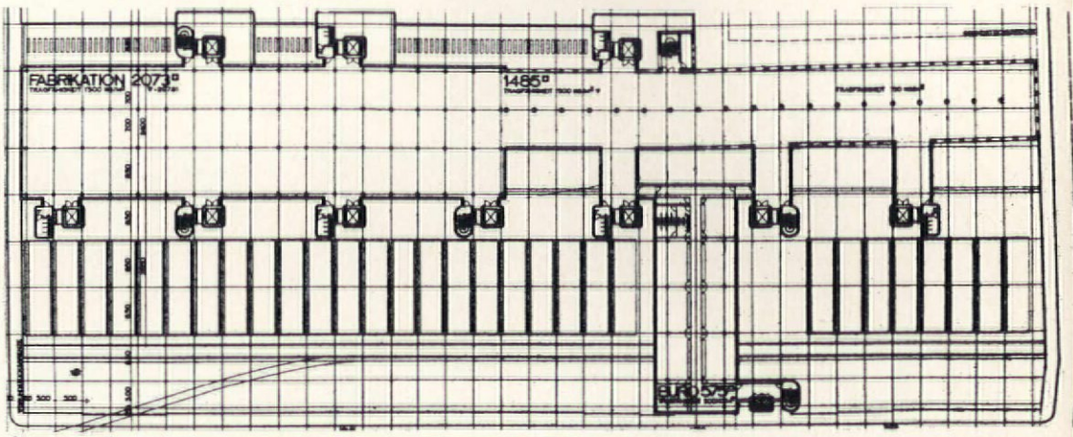

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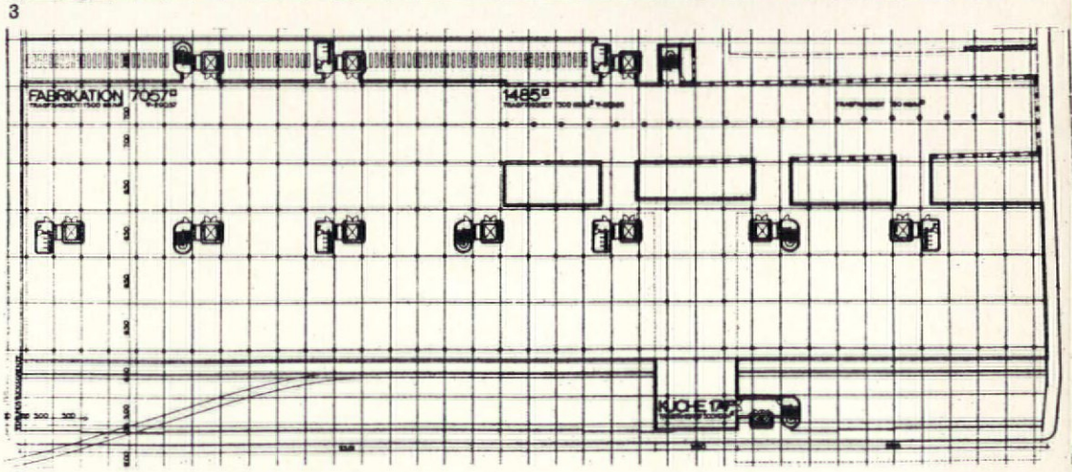

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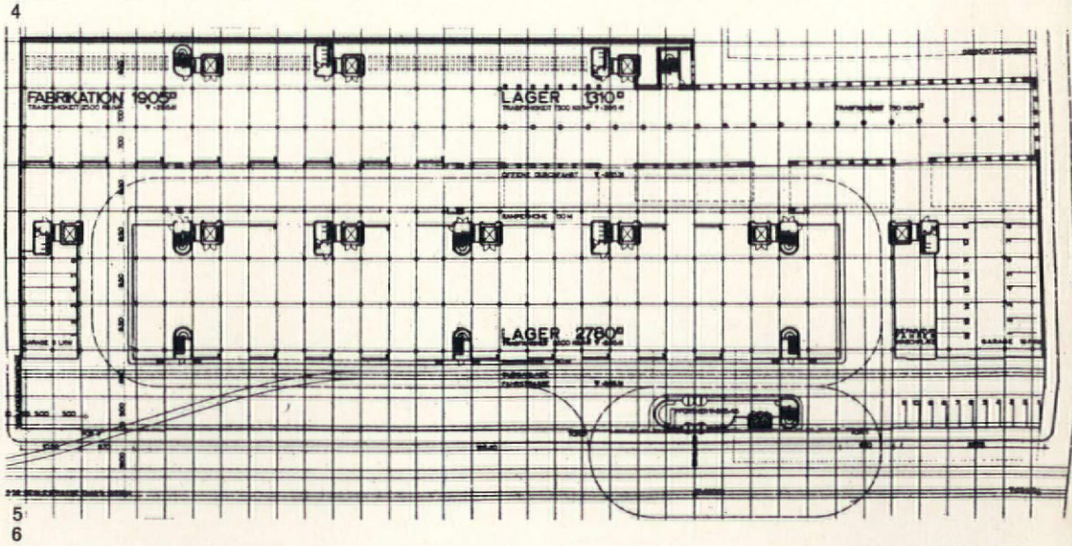

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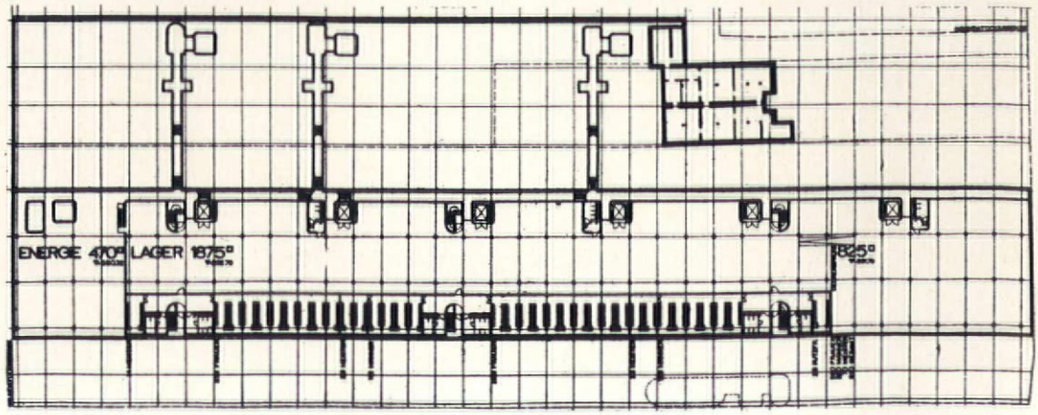


Opposite
View from the north-west
1
View from the north-east
2
Elevation of projected complete scheme
3, 4, 5 & 6
Final plans at third, first, ground and basement levels

Designed in 1962, construction of the first phase of building began in 1966. The main factory (where metal parts are made and assembled), offices, cloakrooms and canteen are spread on all six main floors; materials storage is in the basement.

Horizontal circulation (porters and trucks) is provided for by a vast corridor along the length of the north side in the basement. Vertical circulation is by lift/stair/services towers on the front and back walls.

Column spacing is 5×7 metres or 5×8·5 metres. Construction is in reinforced concrete, with precast concrete cladding.

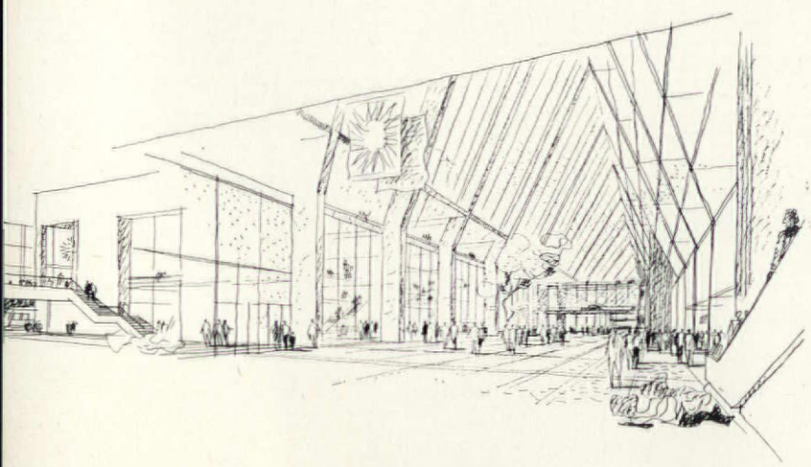
Heating is by pumped water and panel radiators.

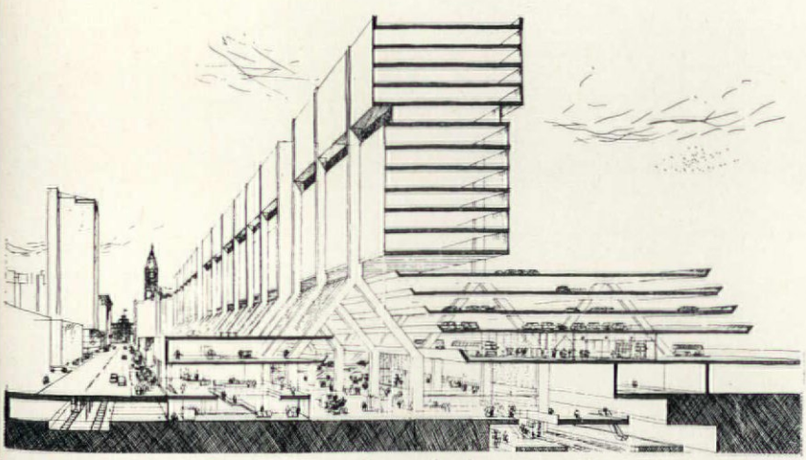
Center City plan 1963, with City Hall in the centre, Penn Center left of it, and the proposed multi-level Market Street East to the right

Market Street East, Philadelphia

Eleanor Smith Morris

Slowly, over the past 20 years, Philadelphia's designers have developed the multi-level centre, from being a single centre at Penn Center, to a central area movement structure system described in *AD8*,62 and now being built at Market Street East.





Market Street East esplanade as designed by Giurgola in 1964

Philadelphia, USA, is making as brave an attempt as any city to find new urban design forms and new city structures. One of Philadelphia's most important developments has been the multi-level centre, based on transport movement needs.

The Market Street East multi-level centre, based on the transport movement systems, is a new urban form of importance. The problem of movement—arrival and dispersal—from the centre of a city is one of the most involved problems confronting planners today. Movement cannot be isolated, or zoned into neat categories; rather the urbanist is confronted with many different kinds of movement occurring simultaneously.

All types of transport systems—the underground, the surface transit systems of bus and tram, the pedestrian, the commuter railway system and the vehicles on both the expressway and arterial streets—all these systems must enter the centre of the city at the same spot and the same time. Vertical segregation, as well as horizontal segregation of all movement systems is imperative, and when civic activities are coordinated in the same building envelope, one avoids creating monuments of movement and instead builds citadels of civic activity.

Simultaneous movement systems

Philadelphia's dynamic and energetic City Planning Director, Edmund Bacon, has slowly evolved this new expression of urban space*, described as simultaneous movement systems.

The concept of the simultaneous movement system rests on establishing a strong central design structure in bold general terms without attempting to cover the entire city area in detail. Once the bold design concept is laid out, then the modifications and extensions can take place over a long period of time and still fit into the general framework. The movement system itself is the path along which the city-dweller moves as he goes about his daily life. The concept of the design of the simultaneous movement system is to design a track which is the actual path of movement of the most number of people, and then to design the space around this flow, so that a continuous series of design experiences are created as one moves through space.

Many of these desired paths occur all over the city at once. It is the simultaneous demands of movement system

Three pedestrian levels in early Market Street project

* Described in his recent historical survey of city planning *Design of cities* (Thames & Hudson, 84s.)

demanding coordination with the normal everyday facts of city life of working, shopping, eating and playing which have forced the creation of multi-level centres, based on movement systems.

The Center City plan and the traffic plan

Center City Philadelphia has complex movement problems because it is the capital of a metropolitan region expected to reach 6 million people by 1980. The plan for Center City Philadelphia, which incorporated Market Street East, is part of the development plan for the whole city of Philadelphia, and is also part of a detailed transportation plan. Organizing the problems of movements is at the heart of the Center City Plan[1], which is based on the principles of:

an efficient and concentrated business and civic core;

a modern balanced transportation system (auto, bus and rail) penetrating close to the heart, with easy and pleasant transfer from vehicle to foot; and the exclusion of traffic not destined for the core;

major parking facilities;

vertical segregation of pedestrian movements from the car;

parks and open space to provide an appropriate and dignified setting for public buildings and historic shrines, squares for public buildings, quiet spaces for relaxation and places for enjoying the bustle and excitement of the crowd.

The traffic plan for Center City interlocks three different types of transport movement; vehicles via an expressway system linked to parking terminals; commuters and passengers via the underground, the railway system and the bus system, and pedestrians via separated below level or upper deck walkways.

The Expressway Loop around Center City provides a bypass for all traffic not intended for Center City. The underground, known as the subway rapid transit, is being improved by lengthening strategic sections and by rebuilding elevated portions underground.

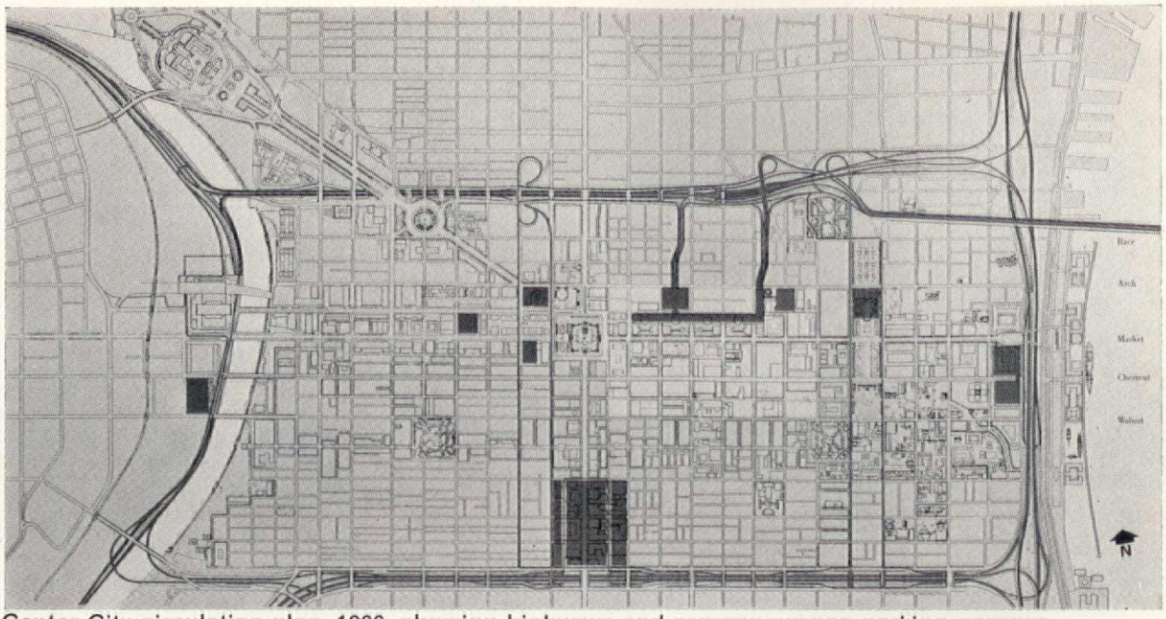
New parking garages are being built and will add a total of 17,000 parking spaces connected to the major passenger stations and to the Expressway Loop by special access ramps.

But the most important aspect of the traffic plan which most affects the Market Street East complex is the underground connections of the two suburban commuter railway lines. It is a major achievement that the two powerful private railway companies, the Pennsylvania and the Reading Railroads, aided by Federal funds, are building a connecting link between their existing suburban commuter railway systems bringing passengers below ground to two stations within the multi-level centres of Penn Center and Market Street East. The resulting system of combined underground and commuter passenger stations, with adjoining garages linked to the expressway access ramps, provides the movement backbone for Market Street East. The entire complex of Market Street East rests above these vital connections.

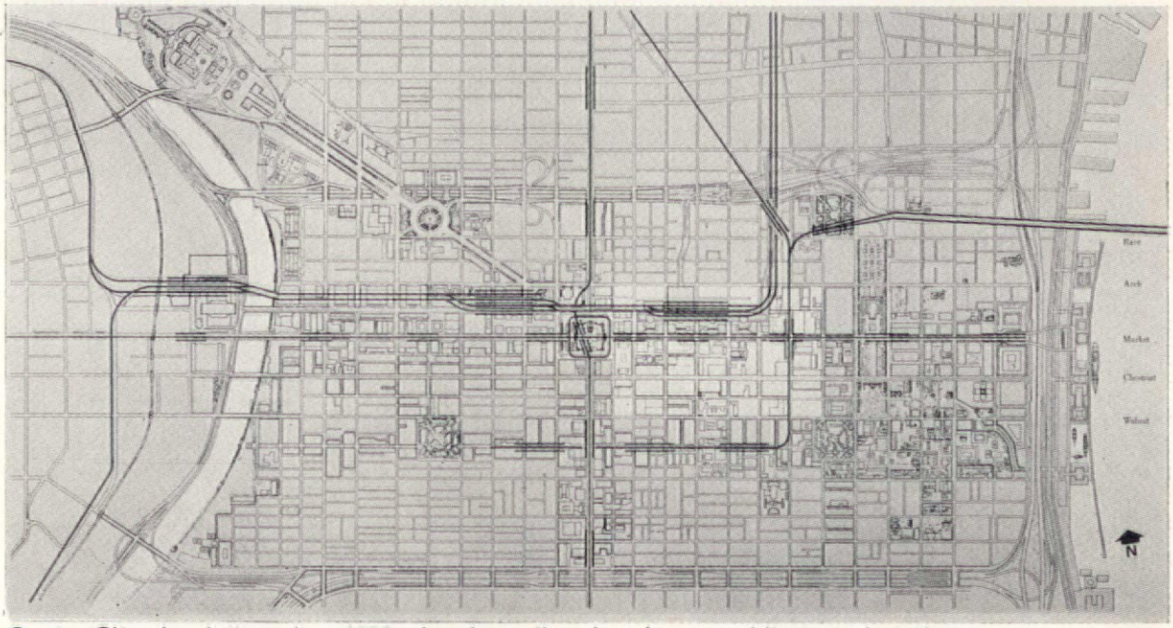
Coordination of simultaneous movement structures

Penn's original gridiron plan for Philadelphia exists today almost as he laid it out in 1688. In the middle is the main square, and in the centre of each of the four quadrants of the gridiron rectangle Penn created a green square. Of these squares, the gingerbread Victorian City Hall now sits in the middle square. Two main axes run north–south, Broad Street, and east–west, Market Street. The skyscraper office core concentrates on Broad Street south of City Hall. The department store core concentrates along East Market Street. ▷131

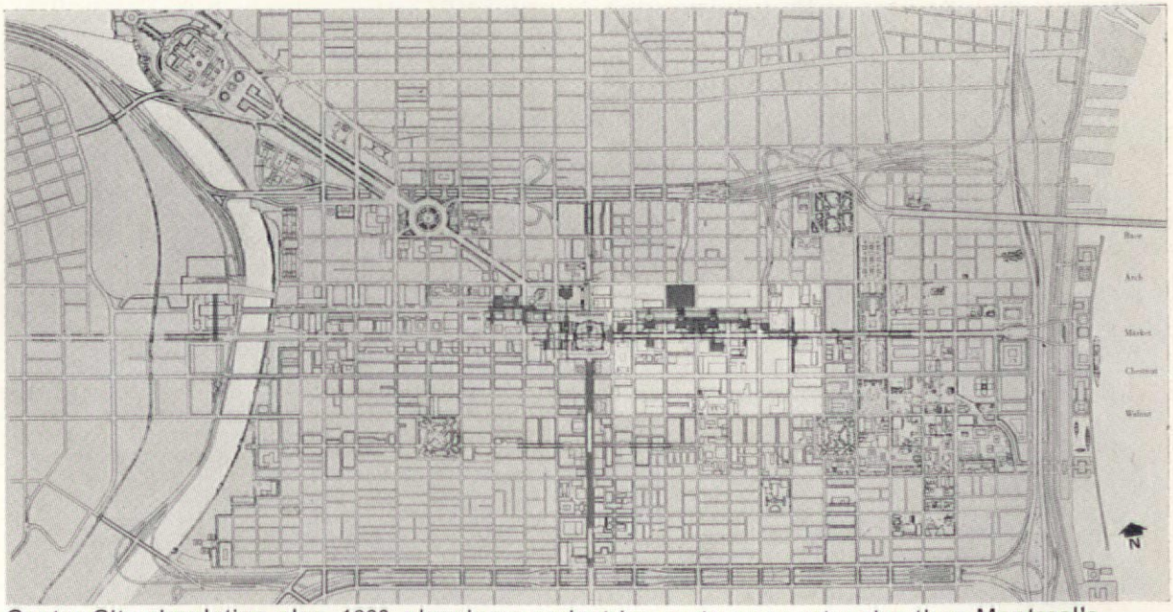
[1] *Center City, Philadelphia.* Philadelphia City Planning Commission, 1960.



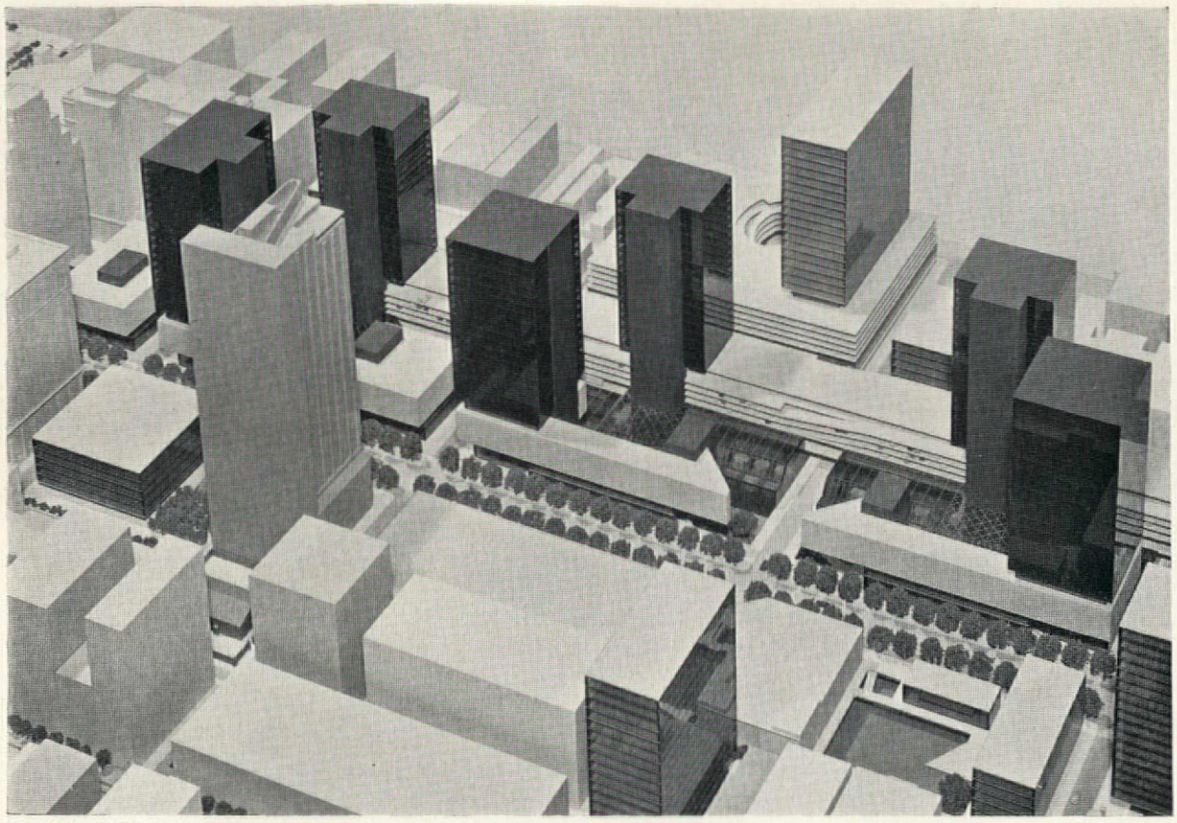
Center City circulation plan, 1966, showing highways and express-access parking garages



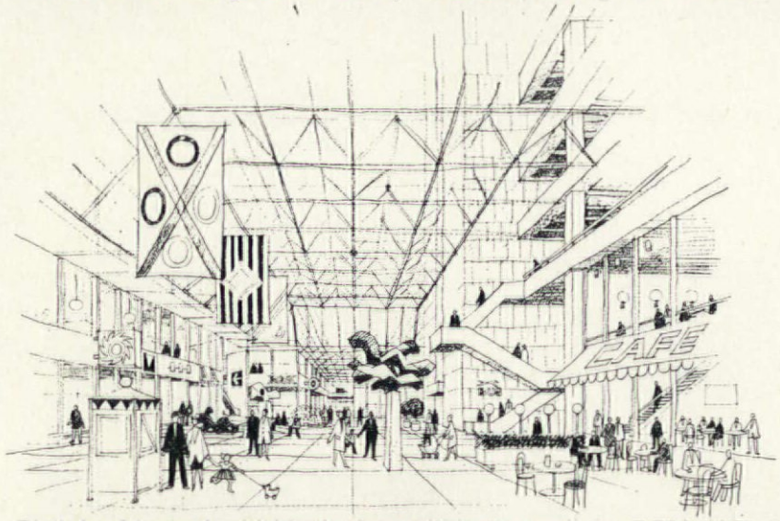
Center City circulation plan, 1966, showing rail and underground lines and stations



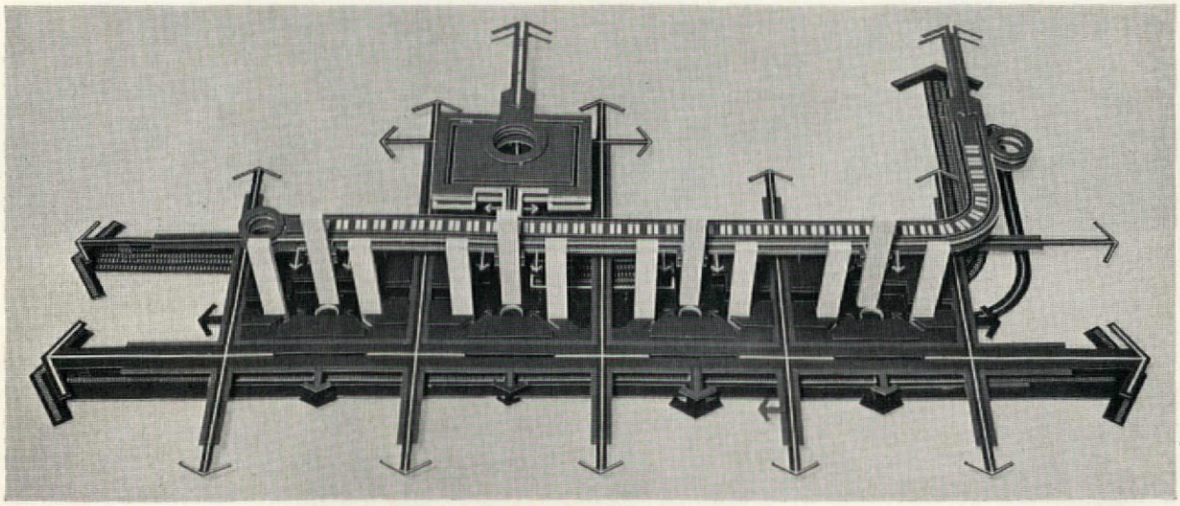
Center City circulation plan, 1966, showing a pedestrian route more extensive than Montreal's



Model of Market Street East as designed in 1966 by Skidmore, Owings and Merrill



Sketch of typical mid-block plaza within the mall, by SOM, 1966



Model of Market Street East transport movement systems by Skidmore, Owings and Merrill, 1966

◁130

Penn Center was the first of the new multi-level centres to be built, west of City Hall. Penn Center is a complex of individual office blocks rising above three levels of underground floors containing the commuter railway stations, the underground stations, a major pedestrian concourse and open spaces, and parking areas. On ground level there is a pedestrian mall, and a bus terminal, but no interlocking of buildings or movement systems. The connecting physical links are mainly below ground. Still Penn Center was a very useful beginning to the creation of continuous multi-level building as part of a system of continuous building over a large area of the city.

Penn Center has been extended underground by several levels of pedestrian concourses and parking areas to the City Hall, and the Municipal Services Center. Again on ground level there are pedestrian spaces but the street system remains and the buildings rise individually above.

Market Street East. Early principles

Market Street East is a continuation of Penn Center and the Municipal Services Center, but is the most complete concept of the continuous multi-level centre yet to appear in an American city. More than Penn Center, Market Street East is one of the pioneer developments in urban design.

From the commercial point of view, Market Street East is an attempt to stop the decline in central area shopping, to beat the suburban shopping centres and to bring suburban shopping centre comforts and ease to an urban shopping centre.

When Market Street East was first considered, the Philadelphia City Planning Commission laid down certain objectives:[2]

distribution of all pedestrians arriving at Market Street East on a series of separate levels from Penn Center to Independence Mall;

rebuilding and rehabilitating the Market Street underground stations;

connecting the suburban railway commuter lines of the Pennsylvania and Reading railways;

providing a new bus terminal;

providing a parking garage for 4000 cars with direct access to the Vine Street Expressway;

integration of four major department stores and all shopping activities.

The principle evolved of creating a single continuous architectural form to integrate the transport systems, the vast shopping possibilities of four major department stores and the possibility of future office development. Covering over 70 acres, the single continuous building is to integrate all activities under a single roof.

The backbone of Market Street East is the inter-connecting link of the two commuter railways and the new railway stations which occur on the lower level pedestrian concourse. This lower level pedestrian concourse continues the length of the complex and is punctuated by many open spaces. The design of this lower level concourse is crucial to the success of the complex and has been a major factor in all the schemes which have led to the present scheme being built to the designs of Skidmore, Owings and Merrill.

[2] *Center City, Philadelphia,* Philadelphia City Planning Commission, 1963.

Evolution of the design

The actual design of Market Street East has evolved over a period of years, as needs changed and ideas crystallized. Early schemes were produced by Edmund Bacon, Willo Von Moltke (now head of Urban Design at Harvard), Morton Hoppenfield (now Chief Planner of Columbia New Town), Donald Jackson (now Chief Designer for Washington, D.C.), Romaldo Giurgola (now Chairman of Architecture at Columbia University), Daman Childs and John Gallery of the Philadelphia City Planning Commissions, and Vincent G. Kling in private practice.

These early schemes were based on the concept of three levels of pedestrian concourse; the lower level pedestrian concourse below ground, the normal ground level, and then an upper level pedestrian promenade twenty feet up, on the level of the bus terminal. At the upper level pedestrian shopping promenade bridges were to connect with the four department stores. (*p. 129*)

The principle behind these early schemes was that each pedestrian level should be integrated with a specific transportation system, such that each level was an arrival platform. The upper level led to the bus terminal, the ground level led to the street system, and the lower level led to the underground railway.

The 1964 Study of Market East[3] done by the planning commission. John Gallery and the consultant, Giurgola, had a grandeur and a sense of civic beauty, which the earlier diagrammatic schemes did not possess. The Giurgola scheme showed an entirely new structural form with functions more clearly defined and thus the centre became easier to implement. A single great glasshouse esplanade extended the length of the centre, separating the public and private sectors. This great glass explanade was considered a public pedestrian street to be serviced by city police, fireman, etc., as any normal street. (*p. 129*)

The esplanade rose from the lower level pedestrian concourse. Access in the previous schemes had been on three levels leaving to many confusing choices for the shopper, but in the Giurgola design there was a clean and definite decision that the lower level esplanade was the principal level.

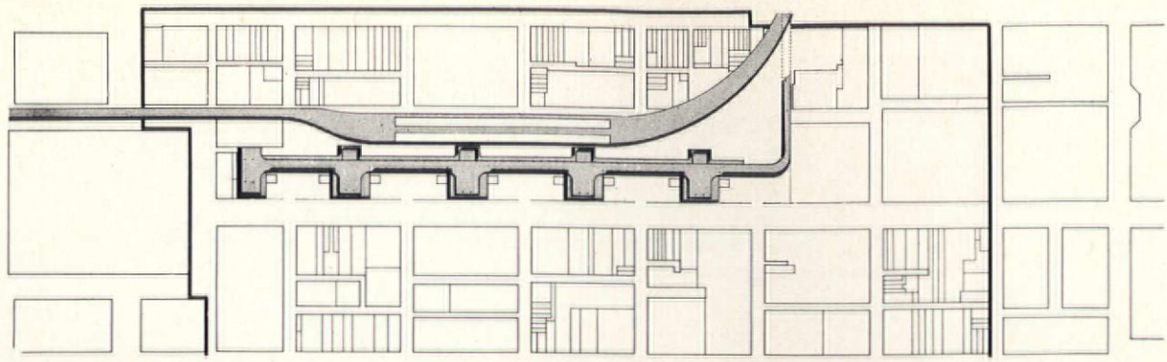
The functions of shopping, offices and transport systems were also clearly set out. On the street side the shops could be built as independent units. The scheme also eliminated upper level shopping—but kept an upper level concourse for the bus passengers. On the non-street side of the esplanade rose the upper level bus deck, four levels of parking for 2000 cars and then office space above. For this scheme the release of air rights for office space could be controlled.

The dominant feature of the Giurgola scheme was the glass esplanade, like an Italian galleria, containing all the main entrances to the shops, station and public spaces. The esplanade provided a marvellous civic core, a unique place to enjoy the bustle and excitement of the crowd.

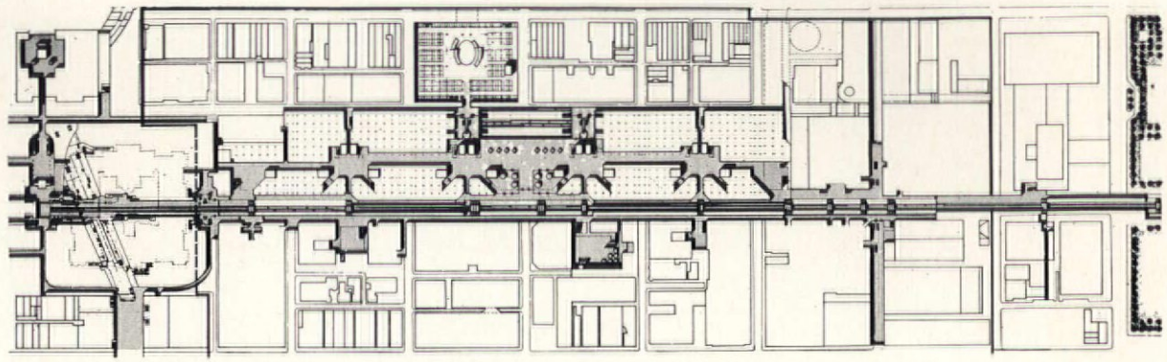
1966 scheme by Skidmore, Owings and Merrill

The present Market East scheme by Skidmore, Owings and Merrill is, hopefully, to be built. The Philadelphia City Planning Commission changed the brief somewhat, but the main principles continue.

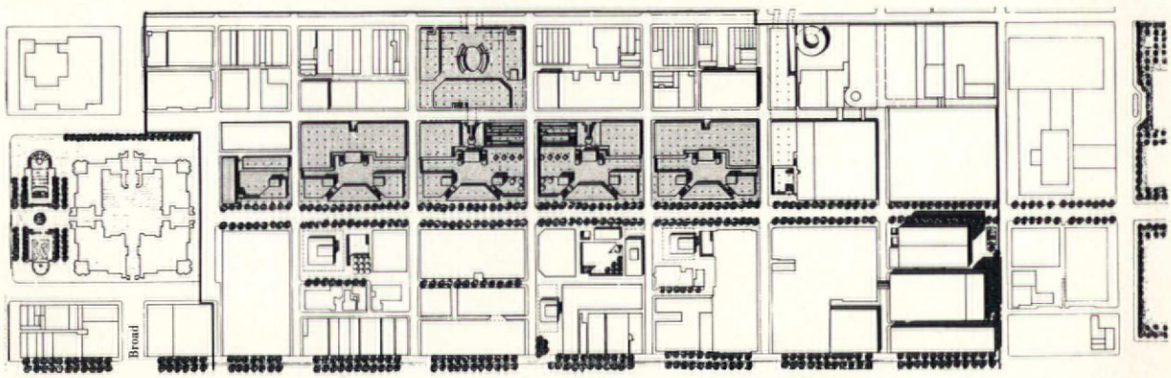
▷133



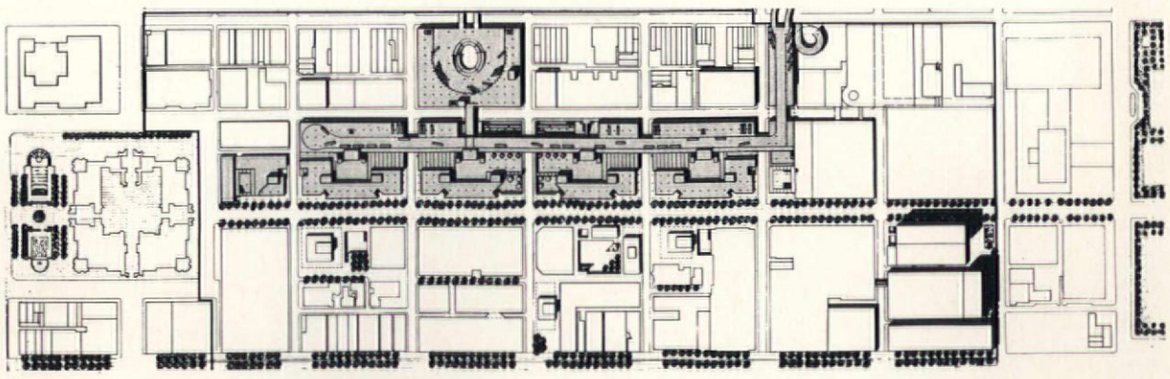
Rail and service level, with a pair of tunnels approximately 40ft below the street



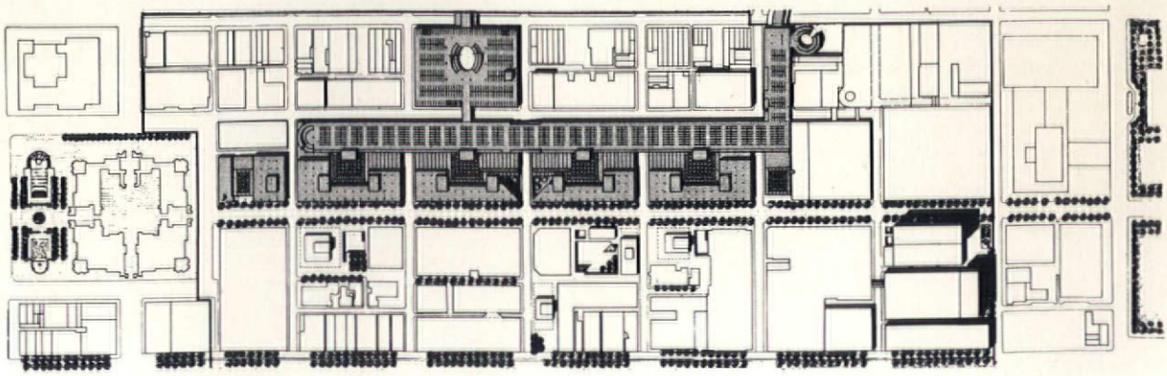
Concourse level, with the air-conditioned, skylit pedestrian mall shown shaded



Street level, with open entry plazas at the block corners on Market Street

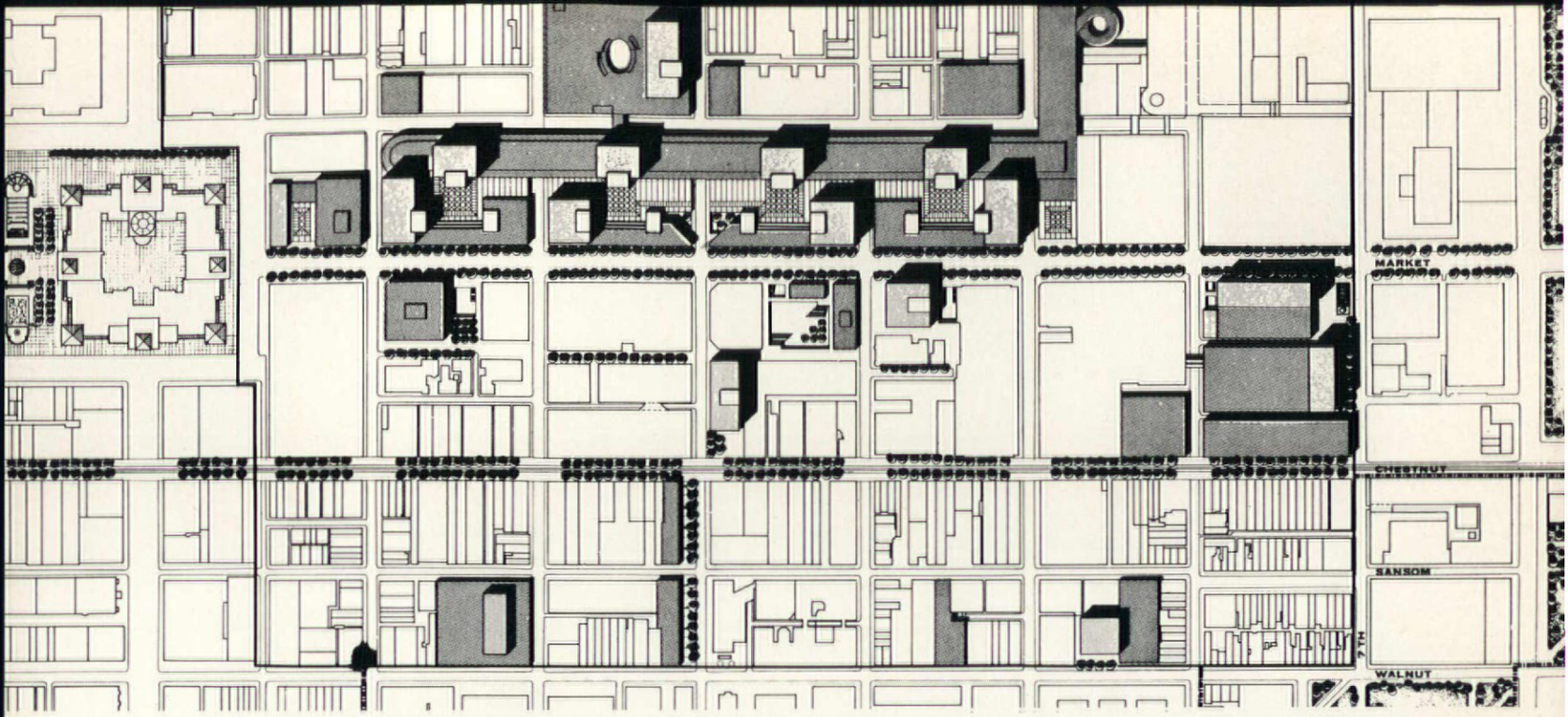


Bus level, *above*, showing two stations; *below*, typical parking level containing 400 cars



[3] *Market East Study*, 1964. Philadelphia City Planning Commission

[4] Skidmore, Owings and Merrill. *Market Street East—Report on the General Neighbourhood Renewal Plan*, June, 1966.



Ultimate development plan for Market Street East area, as proposed in 1966 by Skidmore, Owings and Merrill

◁132
The major change from the earlier schemes is the complete removal of the upper level of the pedestrian promenade. The upper level was extremely difficult for functional shopping reasons. Merchandizing in the stores was based on selling on the ground floor or in the basement but not so much on the upper floor. The upper level was also difficult for design reasons, as coordinating three levels of concourse was too indefinite. By concentrating on the lower level, it gave clarity to the centre and also linked up more easily with the existing Penn Center, and its lower level concourse.

The beautiful glass-house esplanade of the 1964 study was changed to a functional glass covered mall, still an ambitious structural form. The concept of natural light penetrating through to the lower level is very important to the scheme, and in certain places no building is allowed at all, just to ensure that natural light will exist.

The mall is not only a transportation concourse but also a shopping mall linking the department stores and shops. The mall widens and increases in height at the major points of circulation which occur at plazas in the middle of each block. The railway station is in the centre of the entire complex and the mall is widest at that point. At each mid-block plaza, escalators and lifts carry pedestrians up and down, and occur opposite the underground platforms. The mid-block plazas have special physical characteristics, and are intended to act as nodal points for that section of the complex. The mid-block plazas are entered on the diagonal axis, measure 120 by 150 feet and are higher in height (61 feet from concourse floor to glazed roof) than the rest of the mall. In between the mid-block plazas the mall decreases in width, to widths from 30 to 50 feet wide and in height fall to 42 feet and move closer to Market Street.

There was considerable fear of a continuous mall 2000 feet long from the market analysts who considered the mall too long a shopping stretch, so that the more flexible arrangement of several shorter sections oscillating through the complex is more closely based on circulation and shopping needs.

The street level is organized in the design by open plazas at the entry points of the corner blocks of the complex. The office buildings hang over these plazas, which are in danger of being on the mean side, but do give the pedestrian a glimpse of the pedestrian mall beyond.

The commuter bus terminal level has been brought down to the first floor, and now will be a platform running the entire length of the continuous building permitting bus stops at various points. The cross country bus terminal is in a separate building one block north, but still connected by pedestrian bridges.

Parking occurs on five floors with expressway links. Lifts connect all the levels with the lower level mall at each mid-block plaza.

Rising above this continuous building are eight tall office buildings, which are carefully placed to relate to the lift and service cores of the mid-block plaza and yet still admit natural light to the mid-block plazas and the malls.

Area development

Unlike the Penn Center concourse which is privately owned, the Market Street East covered mall will be designated as a city street with the consequent police and fire protection. The glass roof of the mall, the staircases, etc., will be built by the Philadelphia Redevelopment Authority. The parking terminal will be built by the Philadelphia City Parking Authority, while the offices and the shops will be built by private developers. There could be different private developers for each block. Over all the development, the Redevelopment Authority and the City Planning Commission have final design control. For all the public places the Redevelopment Authority will appoint one coordinating architect.

Market Street East area development will require approximately £70 million of public money, shared by the City, the State, and the Federal Government. Market East will also require £40 million of private money over the next fifteen years. The 50-block area is divided into seven renewal projects to be staged over a period of 15 to 20 years. It is hoped that demolition for Phase I of Market East will start in 1969 and construction in 1970.

The areas surrounding the continuous Market Street centre are to be rehabilitated, so that the general environment o the centre is safer and more attractive. Certain buildings are to be cleared, others to be altered, other new buildings to be built and some new open spaces to be provided.

The four major department stores are the major nodes of the area. Two of the department stores are rebuilding, while the other two are carrying out alterations as part of the general area plan.

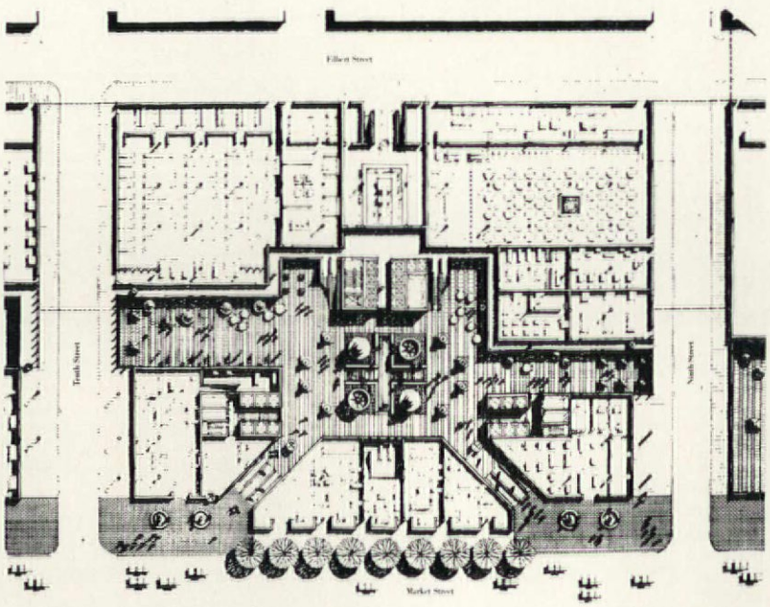
Market Street East

As the Market Street East Center moves closer to the development, it becomes more and more a major urban design achievement. At last the scale of the twentieth-century city is being respected in one continuous interlocking space—volume-time concept in a new continuous building literally enveloping all transport movement systems.

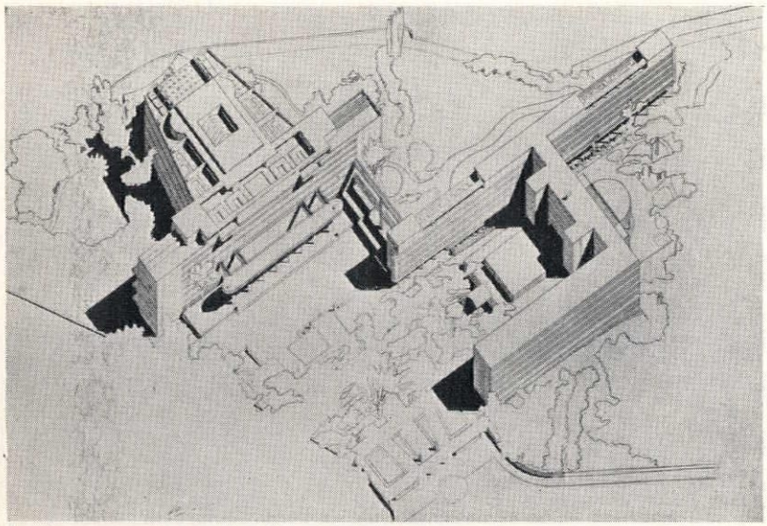
Market Street East is not just space–volume but a structure with a built-in time dimension. It is designed to be phased over twenty years; it is designed to link up with earlier centres. The pedestrian concourse runs continuously through the Penn Center, and to the Municipal Services center. It is designed to link up with furture continuous buildings which could be added on to the movement system.

There is also a clearer sense of orientation in Market East than ever existed in Penn Center or in Montreal's shopping malls (*AD*7/67 and *AD*1/68). In the glass roofed mall with the mid-block plazas, you will know where you are and where you want to go. The difficulty will come in retaining the concept of natural light in the mall itself, and providing sufficient open space throughout the complex. Place Bonaventure in Montreal suffers from lack of natural light and insufficient artificial light. This must not happen to Market Street East where the open spaces need to occur at the lower level and private developers need to respect the demands of natural light.

As Market Street East comes closer to success, it provides a dramatic example of a highly complex urban structure providing a new civic core to an old city.



Plan of a typical mid-block plaza within the mall, SOM, 1966

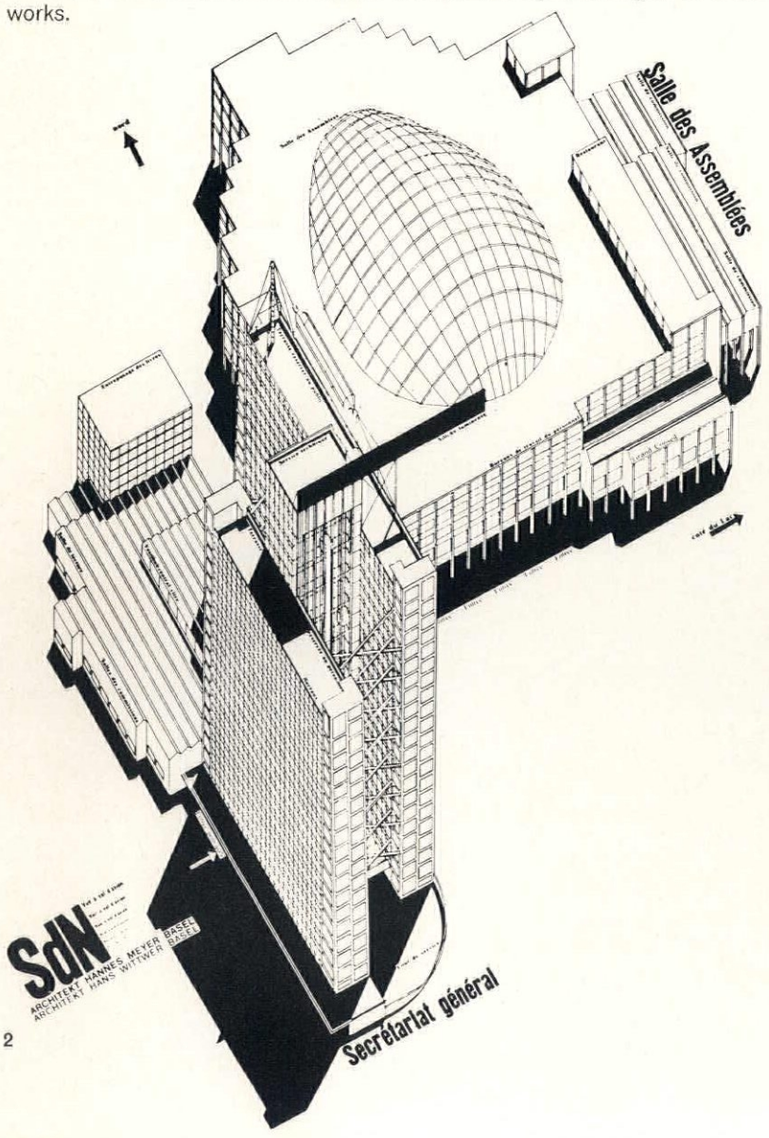


1

The humanist v. the utilitarian ideal

Kenneth Frampton

Just over forty years ago the nations of the world decided to hold a competition for the building of the League of Nations. The judging of this competition was something of a major scandal. Modern architecture was effectively, if invidiously, excluded. This decision, it may be argued, seriously retarded the development of modern architecture. However, it was the signal for a bitter debate that vitally stirred the theorists of the modern movement. Two of the most significant entries—those of Le Corbusier and Hannes Meyer[1]—so crystallized the opposed approaches of the visionary idealists and the strict utilitarians that one may assess the subsequent development of modern architecture by an analysis of these works.



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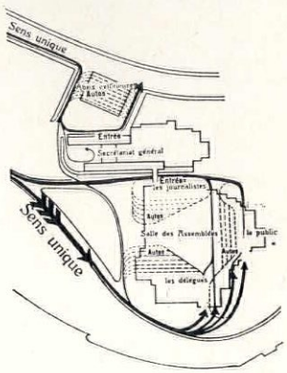
This refers, of course, to the year 1927 and to Le Corbusier's initial success and subsequent disqualification, on a trivial technicality, as the author of the premiated design for the Palais des Nations, Geneva. It is possible to see this event and its aftermath as symptomatic of a profounder schism between humanism and utilitarianism. Paradoxically, Le Corbusier's entry was regarded by reactionaries as being unduly utilitarian, although in fact, it tended towards the visionary ideal. An idealistic rhetoric was prevalent in most of the entries submitted to the competition. Neo-classicism was the ideal style of authority. This style, however debased, manifested itself increasingly after 1927 as a reaction on the part of *all* nationalistic governments.

Thus the post-1918, utilitarian oriented architecture of the Soviet Union suffered a sudden eclipse in the early thirties. The 1931 Palais des Soviets competition, consciously conceived as an international Communist counterpart to the League of Nations, was to result in a triumph for so-called 'left classicism'. Le Corbusier was to suffer in this the agonies of rejection all over again.

In spite of differences in architectonic development between the projects submitted by Le Corbusier **1** and Meyer **2** both reveal a functionalist commitment to the accommodation of the programme. They are both concerned with the direct expression of these requirements in the derivation of their forms and in the arrangement of the complex as a whole. The two projects have in very general terms a similar *parti*, arising directly out of the competition brief, and comprising in each case a distorted H-plan Secretariat block, linked by *passerelles* to a large, free-standing Auditorium building. Apart from their very general *parti*, the projects may be found to differ in the following respects. Firstly, in their siting and in the attitude taken by their authors to landscape and nature in general; secondly, differences as to the principles adopted in the manipulation and ordering of space; thirdly, differences as to the selection and application of structural modules and their relation to space; fourthly, differences as to the selection and application of circulation systems and service devices; fifthly, differences as to the selection and application of materials and finally, fundamental differences as to iconography and prototype.

Both projects are partially lifted off the site on a system of *piloti*, accommodating cars under their elevated sections in much the same manner as pile dwellings accommodate boats. The car set-down points in Le Corbusier's plans are marked *Quai de la Grande Salle* and *Quai du Secretariat*, thereby emphasizing the nautical metaphor by direct reference to the *quais* that border the shores of Lac Leman. In spite of Le Corbusier's highly developed car consciousness, it is Meyer who makes, in excess of the competition requirements, an altogether larger and more realistic provision for future car access. In Le Corbusier's project one senses the car to be an unavoidable, almost embarrassing necessity, compromising pedestrian movement across the site by its presence. In Meyer, on the other hand, pedestrian movement on the site is totally discouraged, the car becomes essential to the building's workability. Both projects pay surprisingly little attention to the need to separate pedestrian and vehicular movement. Meyer idealizes the car and inundates the site with vehicles, **3** cars flowing around the lowered belly of his auditorium and its related entry points like whirlpools of water around a large obstructive rock. In this respect, Meyer's project is far in advance of its time, providing six times the amount of parking space required under the brief. This extended system of mechanical access is deliberately utilized by Meyer to classify the various types of people arriving at the building. Personnel, journalists, public and delegates alike are separated out through the vehicular medium into their respective parking lots before entering the building as pedestrians. Thus they may enter the Secretariat from the uncovered Secretariat park or the auditorium building from three classified parking lots, located under the *piloti*, adjacent to their appropriate entry foyers situated on three separate sides of the auditorium. Meyer not only uses the car for distribution but also for classification while Le Corbusier simply diverts his vehicular traffic to two main entry points—one to the Secretariat and the other to the *Grande Salle*. The mechanics of classification occur inside the building, through the static agency of an ingenious system of interlocking staircases, which lead from classified entrances providing restricted access to the various levels within the auditorium. Meyer uses the dynamic agency of the machine.



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Both Meyer and Le Corbusier oriented their Secretariat blocks east–west, but thereafter their separate attitudes to the context and to the *genius locus* of the site could not have been more different. Meyer with doctrinaire vehemence declared that the siting of his building depended solely on traffic flow and on natural and artificial lighting diagrams.

He categorically proscribes any artificial landscape link between his building and its park-like environment. 'As a deliberately contrived work of man,' he writes, 'it stands in legitimate contrast to nature.' This sentiment can be found echoed in the writings of Le Corbusier, but whereas Meyer ignored the nature of the site and stressed the divorce of his deterministic structure from its existential locale, Le Corbusier was concerned deeply—as always—to relate the artifact to the site. The axonometrics of the two schemes are testament enough. Meyer shows no vestige of the site whatsoever. In Le Corbusier's drawings, a Virgilian landscape impinges upon the representation of a man-made structure.

It is typical of the early design work of Meyer that he failed to respond to the special characteristics of the site which were outlined at some length in the competition conditions. These conditions included a special appendix of ten photographs which showed not only the magnificent grandeur of the sites' macro environment but also the idyllic pastoralism of its micro scale. Meyer's Peterschule project for Basel, of the previous year, had displayed a similar unconcern for the peculiarities of its urban location. Meyer appears always to have been preoccupied with the internal organization of the programme itself. This may explain why his Palais des Nations entry did not make any provision for the eventual extension of the institution northwards as far as the then existing Bureau International du Travail. This omission appears to have been made out of indifference to the competition brief.

Illustrations 1, 4, 8, 9 are from Le Corbusier's *Une maison—un palais*, kindly loaned by B. Weinreb Ltd.

[1] The projects are referred to as the Meyer and Le Corbusier entries, although all evidence suggests that Hans Wittwer, as Meyer's collaborator, played an equal part as designer, and that Le Corbusier could not have brought such precision to his design had not his genius been matched by Pierre Jeanneret's technical ability.

For Le Corbusier the site was of the utmost importance. He not only adhered to the competition brief in this respect but also interpreted the nuances of its implied intentions. He provided as Meyer did not, an alternative occasional and processional route into the complex from the south, in addition to the main entrance from the route Lausanne. The horizontality of his complex was a deliberate attempt to layer the building into the site so as to parallel the macro scale of both the lake and the Alps. This entailed much greater internal horizontal circulation in the Secretariat than in the Meyer project, where a 21- to 24-storey Secretariat yielded circulation economies at the price of producing a strong formal vertical contrast to the natural environment. It was apparently out of deference to the nature of the site and out of the need to provide for extension that Le Corbusier relegated to second choice his *parti* in its most ideal form. The small drawing appended to the right hand of the main site plan, **4** illustrated in *Une Maison—Un Palais* demonstrates clearly the ideal arrangement of the elements.

In this version, captioned 'proposition de variante avec emploi des mêmes éléments de composition', the symmetrical system of traffic access, distorted in the actual entry, is here implicit in its prime, workable form. Its implementation would have depended upon Le Corbusier's proposal to extend the Quai Wilson as a straight line into the route Lausanne. The operational benefit would have been a more coherent system of pedestrian and vehicular access at all levels. In the 'proposition de variante' the library foyer adjacent to the covered garage would have been established on the axis of the extended Quai Wilson. In this manner the somewhat unconvincing location of Secretariat entrances in the project submitted would have been automatically obviated.

Similarly, horizontal high level circulation between the Secretariat and the Assembly building would have been greatly improved through the duplication of the *passerelle* links and the symmetrical disposition. Clearly Le Corbusier rearranged the elements of his ideal solution in order to provide for a 'mirror' extension to his Secretariat wing in the form of a large future secretarial expansion to the north, on the axis of the Bureau du Travail. This distortion of the ideal type through the manipulation of its elements in response to the empirical demands of site and programme, was detrimental to the elegance and efficiency of the basic idea shown in the 'proposition de variante'. However, it was to result in a product of great aesthetic richness, relatively independent of notions of an ideal.

Le Corbusier described the disposition of his buildings on the site as a 'conception paysagiste', a phrase suggestive of Romantic-Classicism. The devices involved in the development of this conception, however, are complex and sufficiently removed from traditional notions of relating a building to its site. As Colin Rowe and Robert Slutsky have pointed out,[2] Le Corbusier's Palais des Nations entry comprises a series of parallel longitudinal spaces running perpendicular to the main east–west access of approach. Hypothetically, a visitor approaching the assembly building along this axis, through the *cour d'honneur* passes through a series of shallow striated spaces, defined by planes which, either planted or built—that is either green or granite—deflect visual attention to the lateral views of the lake and the surrounding foliage. The centre of vision however, would naturally remain focused on the assembly hall and the space before the advancing spectator would alternately compress frontally and expand laterally and diagonally, creating a perceptual ambiguity as to the position of the frontalized planes suspended in space.

The siting of the Le Corbusier and Meyer projects leads naturally to a consideration of their different attitudes to the ordering of space and structure. As before, essential differences are to be found in Meyer's description: 'Our League symbolizes nothing. Its size is automatically determined by the dimensions and conditions of the programme. As an organic building it expresses unfeignedly that it is intended to be a building for work and co-operation.'[3] The key words in this passage are 'organic' and 'automatically determined'. The aim is automatic determination of an empirical programme and the expression of this random empiricism. If we compare the arrangement of the eleven Salles des Commissions in the two projects—five small and private, six large, with public access—we shall find that both designers have reacted consistently with those differences in attitude already noted in their handling of the site.

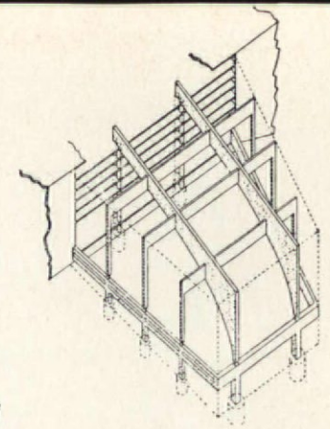
Meyer is consistent in his aim to achieve an automatically determined assembly of spatial elements. The asymmetric plan forms of Meyer's two structures are, at least in part, due to the agglomeration of commission rooms adjacent to the two main foyers of the Secretariat and the Auditorium. These rooms have opaque walls and are top lit by east–west sawtooth roof lights. The stepped plan profile to the perimeters of these two structures arises largely out of the automatic superimposition of the scheduled room areas on a regular planning grid. The resultant plastic effect appears random and inconsequent. One pauses to question whether such high levels of natural top lighting were necessary or even desirable.

It would seem that Meyer sought to express his egalitarianism through the repetition of a standard structural module, part of an infinite field of coordinates. On this field his structural arrangement would arise in much the same manner as the 'image' came into being on a Mondriaan canvas. The Platonic element for Meyer was the structural grid; for Le Corbusier, it was the resultant volume and mass. To this end Le Corbusier assigned to the smaller commission rooms the same minimum depth, so that they might be conveniently assembled, as side-lit rectangular spaces arranged *en serie*, parallel to the eastern façade of the Secretariat. In a similar manner his larger commission rooms were stacked into the wings of the assembly building. Paradoxically, this gave a far clearer expression to the commission rooms than Meyer's top lighting.

Le Corbusier's basic notion of spatial order was hierarchial. The cross-section of his assembly building comprised a complex architectural promenade, which is best described in his own words. **5** 'I attach major architectural importance to this little schematic section,' he wrote. 'It shows from A to C, the various architectural sensations experienced by the visitor; the rhythm of successive architectural volumes, of the *quai*, and of the canopy which protects it, of the entry drum, of the vestibule, of the Pas-Perdus, of the Pavillon du President and finally of the Grande Salle.' [4] This promenade was envisaged by Le Corbusier as the orchestration of successive psychological states, to be induced either by aspect or by the quality of light.

In his project Meyer resists as far as possible the creation of processional space. The idea of an architectural promenade seems anathema. The classification of people by parking pattern at ground level allows him thereafter to rely primarily on a vertical mode of access. The interjection of various banks of elevators at strategic points in the plan affords him direct vertical access to the irregular foyers located between the wings of the Secretariat or around the periphery of his egg-shaped auditorium. Meyer endeavours as far as possible to accommodate the inherent spatial hierarchy without increasing the structural scale. Most of his spaces, irrespective of their size, are ordered by the 9 by 4·5 metre structural grid. Only the top-lit meeting rooms are an exception. Even the large roof of Meyer's egg-shaped auditorium is carried on hyperbolic concrete ribs at 4·5-m. intervals **6**, while the eliptical plan of the same space is related closely to the incremental square set backs of a 4·5-m. grid. Eccentric by shape and location and structured by the standard grid, the principle vestibule to this auditorium at mezzanine level precludes its interpretation as a *res publica* in the traditional sense.

Le Corbusier's *5 points d'une architecture*[5] afforded him a freedom of movement denied to Meyer whose design was an architecture of building method, rather than an architecture of volume, mass and space. Meyer, as a doctrinaire constructivist, was dedicated to building method as the very basis of creation. For Le Corbusier, the means, as construction photographs of Garches testify, were



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rather less important than the ends. Le Corbusier varied the structural grid of his *palais* according to the different volumetric demands of the programme, thus the Secretariat and library were based on a 7·5 by 3·5 metre bay, and the assembly hall undercroft on a 7·5 metre square bay increasing to 15 metres or larger where the scale of adjoining public spaces demanded an increased span. The free façade and free plan permitted further modulations to these basic variations. The ultimate contrast between the two schemes is to be found in the roof structure of the respective auditoria, Meyer proposing a two-way ribbed, semi-hyperbolic structure based on his standard grid **6**, Le Corbusier, two 70-metre half-arch lattice spans, **7** carrying three cross girders simply supported at their ends. The homogeneous is, once again, in contrast to the hierarchial.

Meyer's project depends on mechanical circulation—that is, on cars, escalators and elevators. In his Secretariat there are six elevators and two paternosters, rising 27 floors to the level of the radio station and observation deck. This is in addition to two service hoists and two sets of escalators that rise through the first 20 floors of the Secretariat itself and the two book lifts serving the 11-storey book stack. In his assembly building there are a further 16 elevators rising to a height of 6 floors—10 for the public, 4 for the journalists and 2 for the delegates. From this analysis one can see that only the delegates were expected to use a staircase. For once Meyer made some concession to hierarchy, introducing a *scala regia* between the delegates' ground floor foyer and the foyer of the auditorium. Curiously enough, Meyer displayed little understanding of the economics of elevators. In his assembly building we find 10 elevators assigned primarily to connect the public foyers at ground level with the public tribune of the hall situated four floors above. Meyer rationalizes this provision by assigning the upper floors of his assembly to a concourse for 3000.

Le Corbusier's use of mechanical circulation is extremely economical by comparison. Five passenger elevators and two service hoists serve the 8 floors of his Secretariat, while 4 passenger lifts and 2 service hoists (monte-charges),

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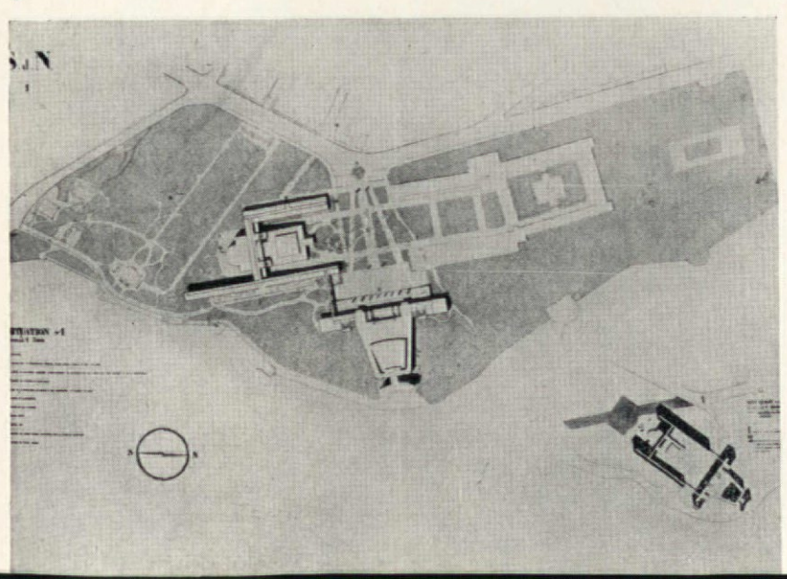

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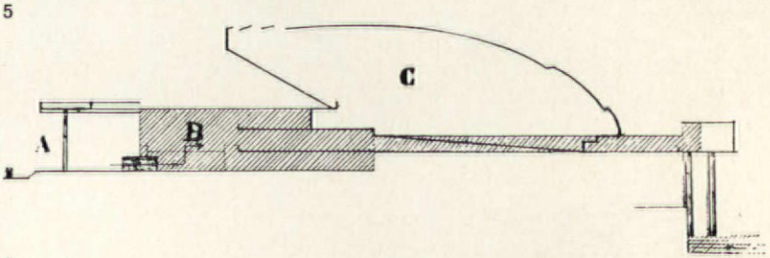

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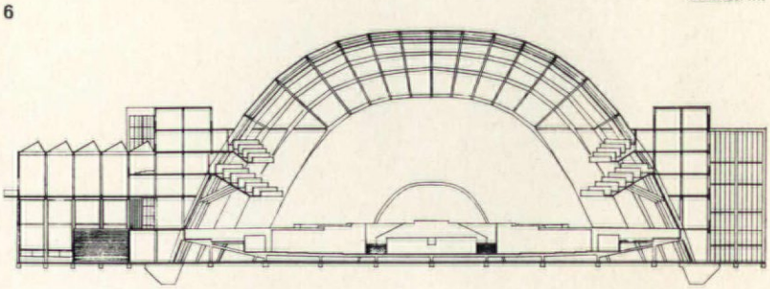
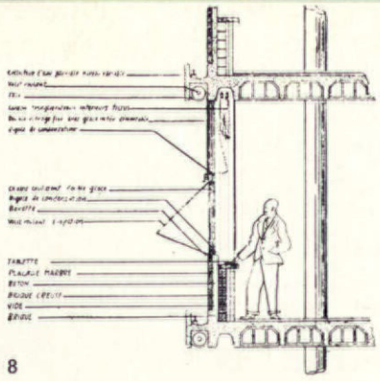


carry all the traffic for the 8 floors of his Assembly building. He relies on staircase access for all other distribution.

It is surprising that Meyer, the utilitarian, should make such an inept provision for servicing his structure. No provision, for instance, is made for cleaning the extensive glazed area of his *palais*, while Le Corbusier, supplemented his invention of the continuous window with an equally integrated mechanical device for cleaning its glazed surface **9**. Similarly, Meyer makes no provision for air conditioning or even for the adequate ventilation of his assembly hall, while Le Corbusier, with great zest and in considerable detail, provided for the complete environmental control of his major volume. Both architects pay adequate consideration to the acoustic performance of their respective auditoria, although Meyer's eliptical plan is hardly the profile on which one can traditionally rely for acoustic perfection.

The complex relations that may exist between the relative utility of an artifact and its inconography are, even today, insufficiently acknowledged. A utilitarian iconography may be as detrimental to the relative utility of an object as may be the vestiges of ideal or religious iconography. A utilitarian iconography does not assure optimum utility. Conversely, an ideal iconography does not preclude an effective operational solution. The iconography of Meyer's Palais des Nations clearly derives from the early utilitarian socialist architecture evolved in Russia immediately after the Revolution. The glazed elevator shafts of the Secretariat block are evidence enough, quite apart from the radio aerial and sky sign which echo the imagery of the Pravda project designed by the Vesnin brothers in 1923.

In 1928 Le Corbusier found constructivism to be an optimistic but vague word. 'It is vague,' he wrote, 'because it contains too much. It neither limits an aesthetic, nor a category of human production.'[6] For his part, he was prepared to confine his elaborate spatial aesthetic within the limits of an architectural typology substantiated by the past. 'I have one master,' he wrote, 'it is the past,' and elsewhere opposite an axonometric of *Les Terrasses* at Garches—which he regarded as a prototype for his Palais des Nations—'we are strengthened by the past because the past has proven to us that under conditions of clarity and lasting equilibrium, the house becomes typified and that when the type is pure, it possess an architectural potential . . . it is able to elevate itself to the dignity of a palace.' Conversely, he referred to his Palais des Nations as 'the administration house of the nations.' 'It is an organism,' he continued, 'a mechanism of precise ends. It is a machine for living in.' Elsewhere, under an elevation of his palace he shows a schematic elevation of Garches to the same scale, accompanied by the caption, 'The disposition of the windows is the same as those of the Villa Garches **8, 9.**'



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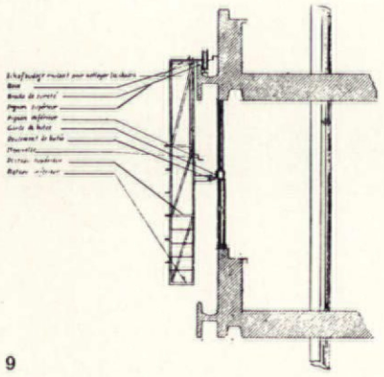

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This transposition of the house into the palace and vice-versa is one of those basic cultural insights that illuminate the whole of Le Corbusier's work. The elaborate metaphorical edifice which is the content of his work is incomprehensible if we do not understand that it is built on this fundamental hierarchy. The primal universal myth of 'sacred' and 'profane' space, since expounded upon at length by Mircea Eliade[7], is the essential corollary of this concept. Enclosure itself is sufficient to render a space sacred, as Le Corbusier's sketch of a nomadic temple illustrates, but the approach route and the act of entry are critical. Hence the peristyle and the related architectural promenade of Le Corbusier's 'high palace', create a context in which the rite of passage from profane to sacred space may be enacted. This act of entry initiates a progression which culminates both literally and metaphorically in the ideal centre of the world—the chamber of international assembly.

The prototype of Meyer's 'building' for the League of Nations (he scrupulously avoids referring to it as a 'palace' in his text) is, ironically enough, the Crystal Palace; the industrialized reiteration of a structural invention with no content other than itself.

The prototype for Le Corbusier's *palais* is a Renaissance palace—the form is an expression of a hierarchy of values eventually distinguishing the valued from the less valued, etc. It is significant in this context that Meyer faces his building in 'eternit', on essentially modern material, implying a non-hierarchical structure, while Le Corbusier faces his palace in polished granite, the traditional material of monumental architecture.

The house/temple/palace syndrome is seen by Le Corbusier as the ultimate archetype of the human world. On this ancient ideal, inherited via Utopian Socialism from a Classical past, Le Corbusier superimposes a rich metaphorical culture; a mythology compounded from the ancient past and the major technological innovations of the nineteenth and twentieth centuries. To this end he pairs —after Consideront—in a sequence of sketches, **10** a classical palace with an ocean liner; parallels subsequently being drawn between the liner, his Palais des Nations Secretariat and skyscraper.

This drive to fuse the dichotomy between idealism and utilitarianism was soon to bring Le Corbusier into conflict with the young utilitarian socialist designers of the twentieth century. The Cité Mondiale or Mundaneum that Le Corbusier designed for Geneva in 1929, as a centre of world thought, prompted a reaction from his young Czech admirer, the architect/writer, Kanel Tiege. The Cité was intended as a supplement to the Palais des Nations and was therefore located close to the site of the *palais*. It was not the content but the forms of the Cité to which Tiege objected; in particular the helicoidal ziggurat of the Musée Mondiale **12**. Tiege who had championed Le Corbusier in 1927, savagely attacked him two years later for the formalism of the Cité Mondiale. Such was the vehemence of Tiege's attack that Le Corbusier decided to take up his own defence —and in an essay entitled 'Defense de l'architecture,' written for the Czech paper *Starba*, he replied to Tiege's challenge. In his attack Tiege had quoted from Hannes Meyer's essay, 'Bauen' of 1928, 'All things in the world are a product of the formula function × economics, so none of these things are works of art; all art is composition and hence unsuited to a particular end. All life is function and therefore not artistic, the idea of the composition of a dock is enough to make a cat laugh. But how is a town plan designed or a plan of a house? Composition or Function? Art or Life?'[8] Le Corbusier placed this citation at the head of his essay and made it clear that his riposte was directed as much against Meyer as Tiege[9]. He was to mount a similar defence in his book, *Precisions*, written in the same year as Tiege's attack. He wrote then, 'The plans of the Cité Mondiale have drawn violent attack from the extreme architectural left of the Germanic countries. I have been accused of academicism.' He then protested, 'The buildings projected are strictly utilitarian, in particular this helicoidal Musée Mondiale so violently incriminated.' And yet later he gives a denial verging on an admission. . .. 'The plans of the Cité Mondiale bring to buildings which are true machines, a certain magnificence wherein one wishes to discover, at any cost, some archeological inspiration. But from my point of view this harmonious quality arises from another thing, from a simple response to a problem well stated.'[10] Yet he could not deny that his much proclaimed use of regulating lines and ordering geometry imparted to his Cité Mondiale a monumental architectural quality, usually reserved in the past for sacred cities or high towns. Peking and Angkor Vat are obvious models which, although he refused to acknowledge them on this occasion, are clearly present as images elsewhere in his published work.

The Mundaneum was the ultimate polarization of Le Corbusier's utopian idealism. It was to be formally varied, yet essentially repeated, in the many city centre projects that he designed throughout life. It was the sacred enclosure *par excellence*. Thus it is hardly surprising to find that his subsequent proposals for the *Ville Radieuse* found little response in the Soviet Union. Clearly Marxian urbanism could not be served by such an hierarchic model.

The 1931 Palais des Soviets competition terminated all ideological conflict, through the official imposition of a synthetic architectural style. All conflict was denied through a moratorium on architectural thought. Under the circumstances it was ironic that Le Corbusier's Palais des Soviets should be such a *tour de force* in constructivist style. Yet in its formal organization it remained symmetrical, baroque and, as preliminary sketches indicate, **11** elementarist in composition. Its eventual rejection, in spite of the lucidity of its solution was an act of propaganda.

To deny the existence of a conflict by totalitarian edict is one matter, to maintain thought alive under such restrictions is another. Today the problem of idealism versus utilitarianism re-emerges not only in the West, but also in the East, under conditions which are even less propitious for its resolution than they were forty years ago. Then the millenium was a distant possibility; today, at least technically, it is within our grasp.

The utilitarianism of Hannes Meyer leads to the idealization of the appearance of utility. The idealism of Le Corbusier leads to the idealization of the appearance of man. His Palais des Soviets was refused for its functionalism—yet it was he who provided the ideal space of public assembly—his open air tribune or agora for 50,000 people. As Hannah Arendt says 'What makes mass society so difficult to bear is not the number of people involved, at least not primarily, but the fact that the world between them has lost its power to gather them together, to relate and to separate them.'[11] Le Corbusier's Palais des Soviets was the reiteration of such a world. A realm designed both to unify and to differentiate men. Such realms by definition imply hierarchy—they demand a system of values and the creation and maintenance of a mythology.

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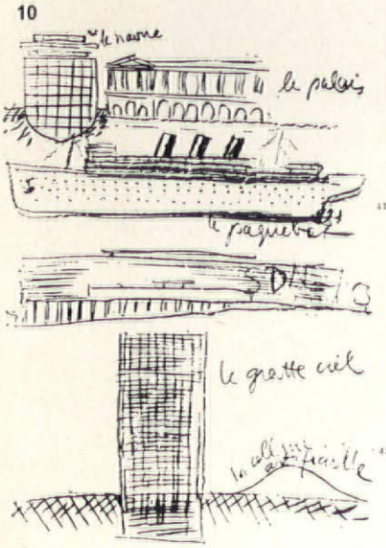

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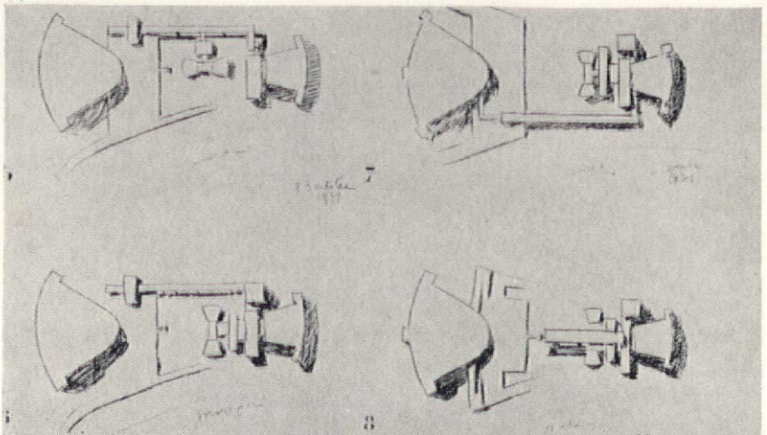

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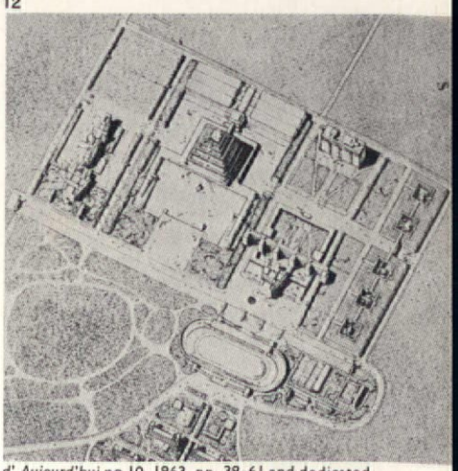

[2] 'Transparency: Literal and Phenomenal', *Perspecta* no. 8, 1963, pp. 45–54.
[3] Schnaidt *Hannes Meyer:* London 1965, p. 25.
[4] L. C. and P. J. *Oeuvre complète 1910–29* 5th edition, 1965, p. 165.
[5] L. C. and P. J. *Oeuvre complète*, op. cit., pp. 128–9.
[6] Le Corbusier *Une maison, un palais*, Paris 1929.
[7] *The sacred and the profane*, New York, 1961.
[8] Quoted by Claude Schnaidt, op. cit. p. 95.
[9] The article was reprinted in *L'Architecture d' Aujourd'hui* no 10, 1963, pp. 38–61 and dedicated by Le Corbusier *'à Alexandre Vesuine, fondateur du Constructivisme'.*
[10] L. C. and P. J. *Oeuvre complète* op. cit.
[11] *The human condition*, Chicago, 1958.

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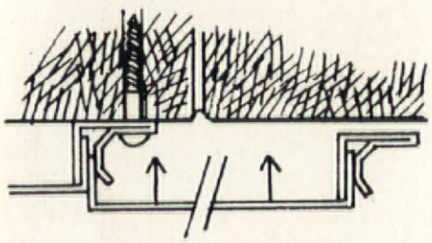

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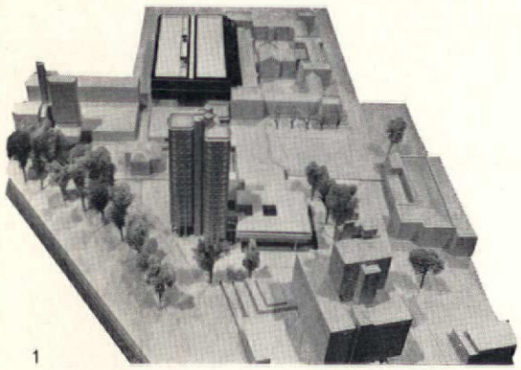

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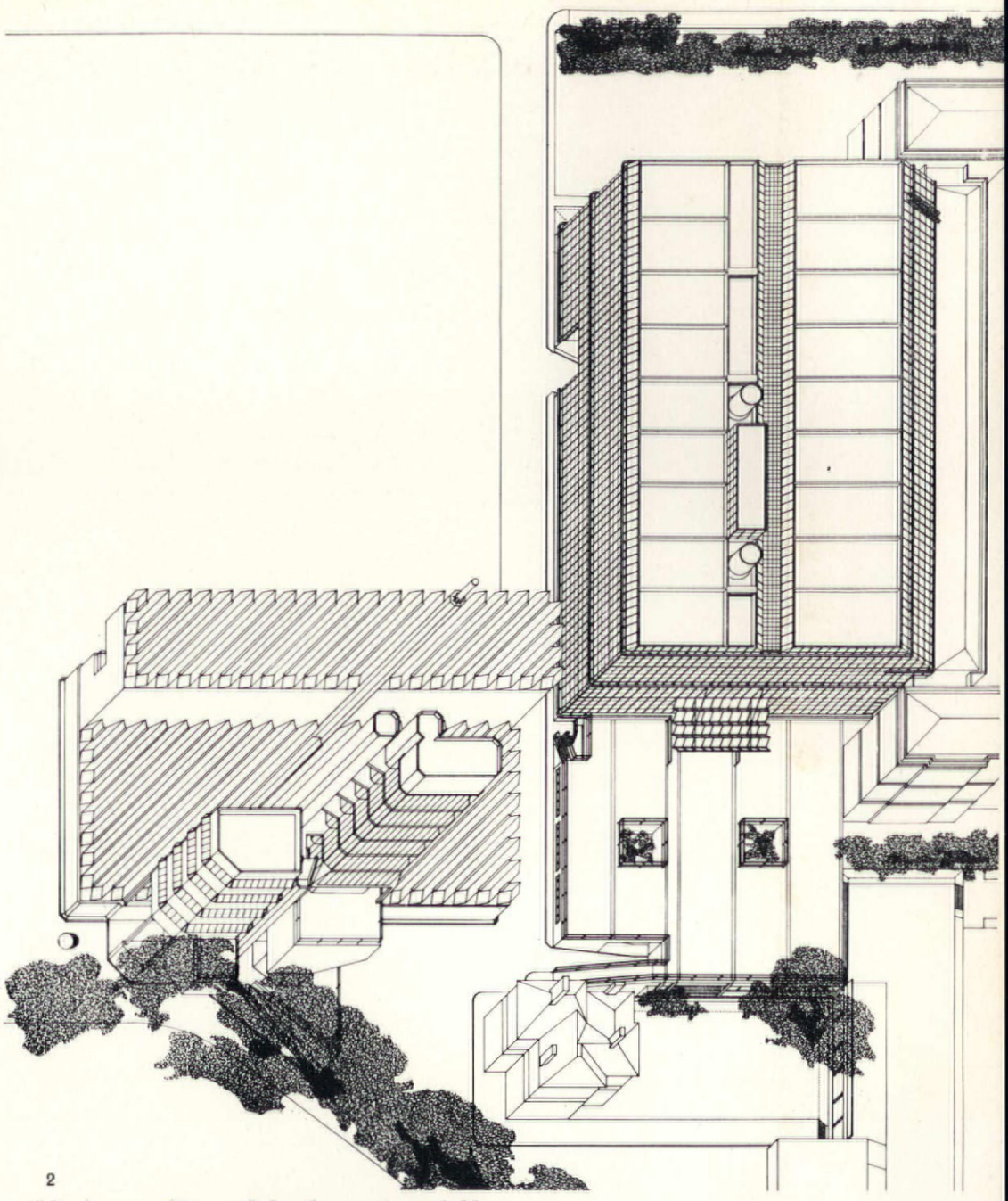
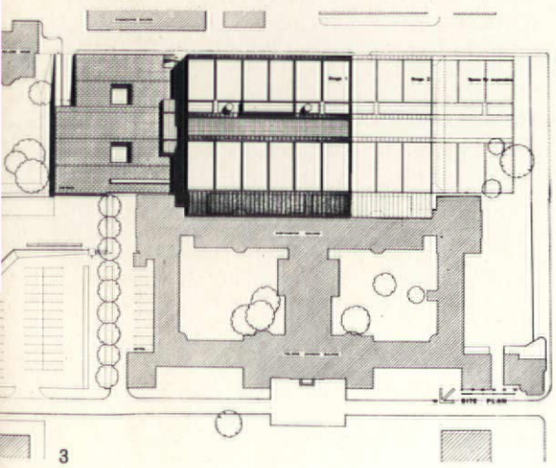


2

1
Development model of part of the Leicester university precinct seen from the north-east, with Stirling and Gowan's Engineering Laboratories to the left, the proposed new library at the rear, Arup Associates' new building in the centre and Denys Lasdun's Students' Union in the right foreground
2
Axonometric drawing showing the relationship of the proposed library and Stirling and Gowan's Engineering Laboratories
3
Site plan, showing the proposed library and the staging of the extensions



3

University of Leicester Library

Castle, Park, Dean, Hook

Assistant: Christopher Blencowe
Structural engineer: Anthony Hunt
Mechanical and electrical engineers: E. A. Pearce and Partners
Quantity surveyors: Monk and Dunstone

The design of the building has stemmed largely from the internal environmental conditions required in the brief. The hollow structural elements acting as air distribution ducts, together with an economic plan, have considerably reduced the volume of the building, thus making it possible to provide a highly zoned air-conditioning system within the restricted cost limit.

The building is designed to house the centralized university library services with open access to the stacks for all readers. It is planned to be built in two stages with the possibility of further extensions at an unspecified date. The first stage will accommodate 600,000 books and 1300 readers and the second stage of the new building will accommodate 400,000 books and 300 readers. Initially the library will be arranged on a subject divisional basis with the possibility that other systems can be accommodated in the future.

The scheme has been provisionally approved by the university and is to be submitted to the University Grants Committee. It is hoped that the building contract will start in 1970.

The site is situated at the rear of the existing university main administrative building and library. The existing buildings on two sides of the rear courtyard will be demolished for the first phase of the library and on the third side for the second phase. The main entrance to the building will be on the long axis from the north-east. The approach will be over the new courtyard which will be bounded on the south-east by the Engineering Building and on the north-east by the projected Arts and Social Science Buildings. The

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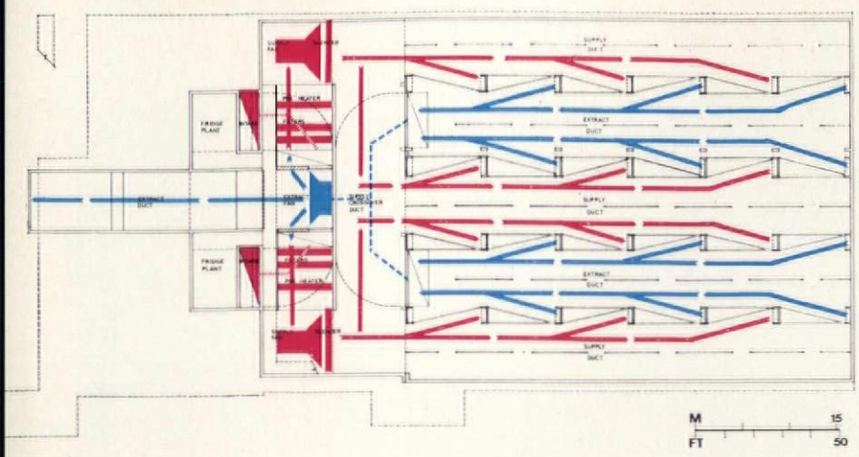

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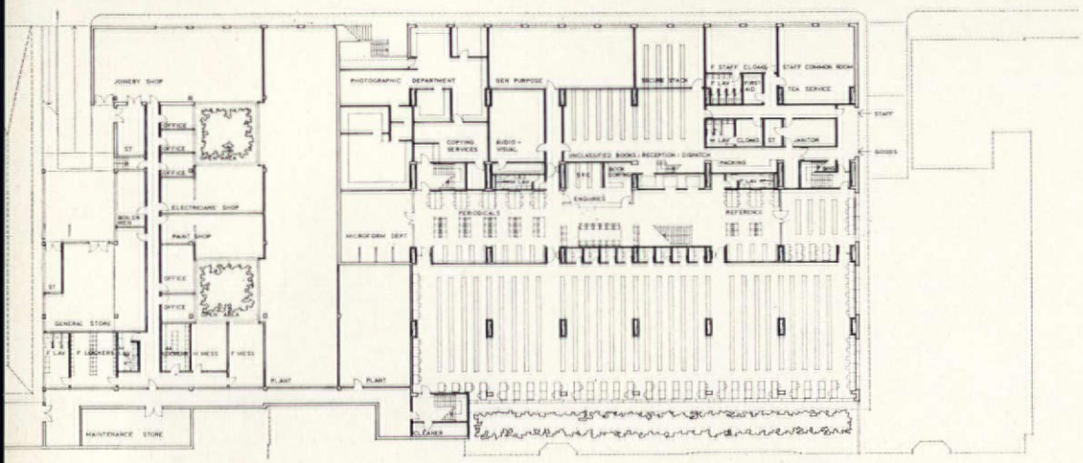

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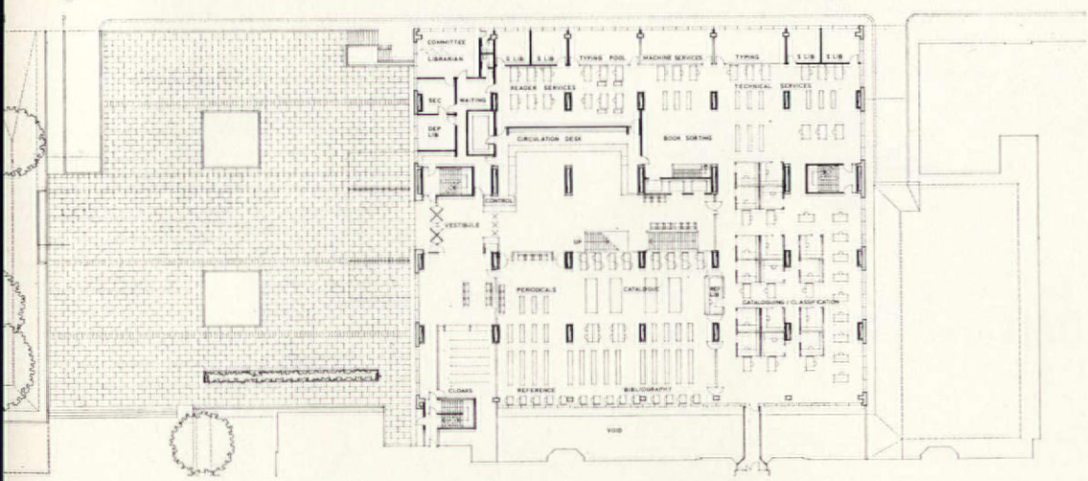

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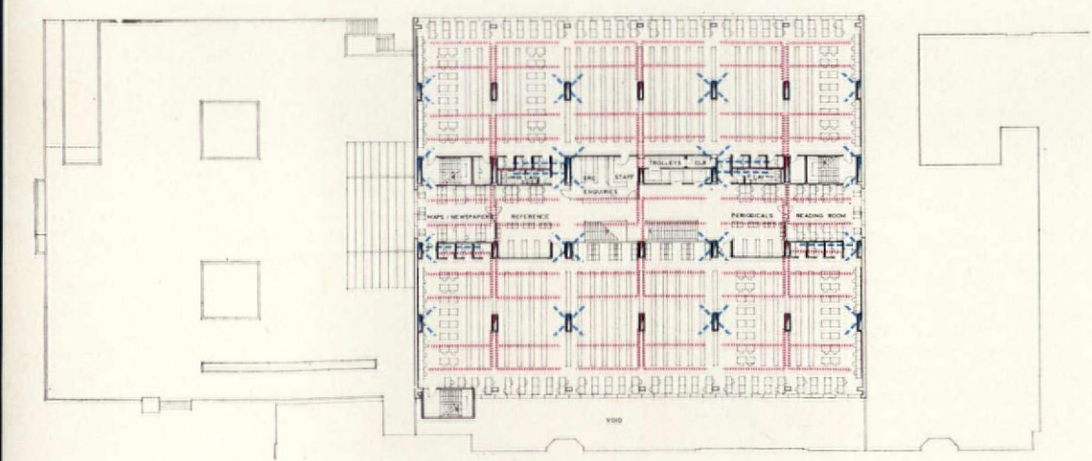

4

service entrance is situated at lower ground floor level at the south-west end of the building.

It is proposed to provide a glass roof over the area between the Worthington Building, containing the existing library, and the new building to form a conservatory; bridges at ground and first floor levels will connect the two buildings.

A linear plan form was chosen, primarily to facilitate the parallel growth of the various departments: the stacks, core, technical services and staff areas may all extend proportionately, maintaining their same relationship with each other.

The university maintenance department and the workshops were also required to be accommodated on the site. This noisy area together with the plant rooms is situated below the forecourt at the north end of the site and is isolated from the library in order to eliminate the penetration of structure borne sound.

Apart from the ends of the circulation area which are glazed, the north-east and south-west walls are constructed of heavyweight concrete blocks faced with an insulation layer and solar heat rejecting glass. The south-east side is similar except that a slit window 2ft 6in high above desk top extends the length of the building at each level. The south-west side is fully glazed at each level affording views into the conservatory. Windows are double glazed with an 8in gap containing venetian blinds.

The heavy construction for frame and walls is necessitated by the high loadings encountered in libraries; it also provides a high thermal capacity which is required to help the efficiency of the air conditioning services. All the glazing is grey brown in colour and is fixed in black neoprene gaskets with no exposed external metal. Cleaning the façades is by means of traversing gantries in two tiers. A similar gantry is provided to obtain access to the conservatory roof. It is proposed to maintain water on the roof during summer months to aid cooling of the building by evaporation

First, second and third floors

The bookstack is arranged in two areas on either side of the central core each approximately 160ft in length and 50ft in width. These large unimpeded areas allow the maximum opportunity for both flexibility and simplicity in the internal organization of the floor. Lighting and ventilation is so designed that any area may be used for books or readers.

Reading places are provided in the bookstack areas in such positions as will bring readers into as close contact as possible with the book collections. Most of the reading places are designed as double tables with screened divisions up to a height of 4ft 6in. A few armchairs are also provided as reading places.

Bookstacks are to be initially at 4ft 3in centres, but they can be fixed at any centres from 3ft 6in upwards. However, if the stacks are to be placed at right angles to the direction shown they may be placed only at the 4ft 3in centres.

The general circulation of readers will be confined to the central core of the floors. Current periodicals, reference collection, student reference collection, individual reading rooms and the enquiry desk are provided in this area.

Lifts, escape stairs, staff area, book sorting area and lavatories are confined to one strip the complete length of the building on one side of the central core and there is a similar strip on the other side containing carrels, books and reading places designed to be easily interchangeable depending on use required.

Ground floor

The catalogue together with the general reference and bibliography sections are immediately to the right of the control and the circulation desk is situated to the left. The circulation desk is the central point for all reader services including general enquiries, the issue and return of books, inter-library loans and registration of readers.

The technical services department covers the major part of the rest of this floor and is planned as an open area, divided only by the subject librarians' rooms which are formed with 6ft 0in high screens. It is so placed that it has easy access to the catalogue and bibliography and to the unpacking room and goods

entrance on the lower ground floor. Processes in this department include cataloguing and classification of both books and periodicals, processing, acquisitioning of all incoming material, and binding preparation and reception.

Lower ground floor

The general arrangements for bookstack and reader accommodation are as for the upper stack floors.

Other accommodation on this floor includes a central photographic and photocopying unit for both the library and the university, the microform department, the audio visual department and staff common-room. The secure stack room accommodates restricted material on closed access pending the provision of the rare books room in stage 2.

At this level is also situated a covered pedestrian link from the Arts and Social Science Buildings connecting direct to the library vestibule.

Mechanical services

Air conditioning is provided throughout the building to maintain optimum environmental conditions, and the maximum internal planning flexibility for both books and readers.

Air entering the building is coarse and fine filtered, chilled and re-heated so that the internal areas are maintained at 68°/70°F and 50/60% relative humidity when the external conditions vary from 30°F/100% relative humidity to 80°F/65% relative humidity.

Two refrigeration machines and the fan plants are housed in the basement with cooling towers on the

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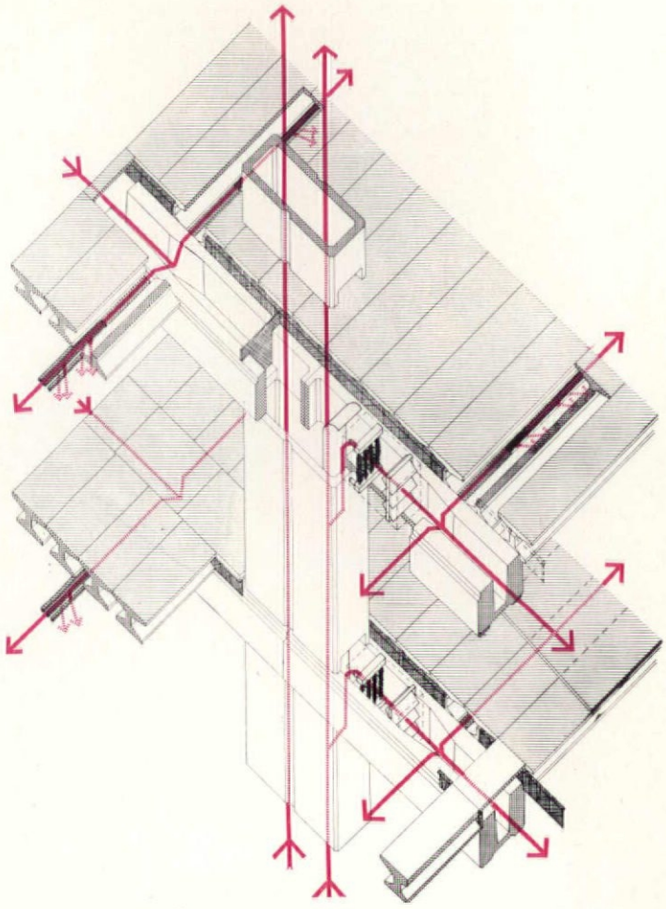

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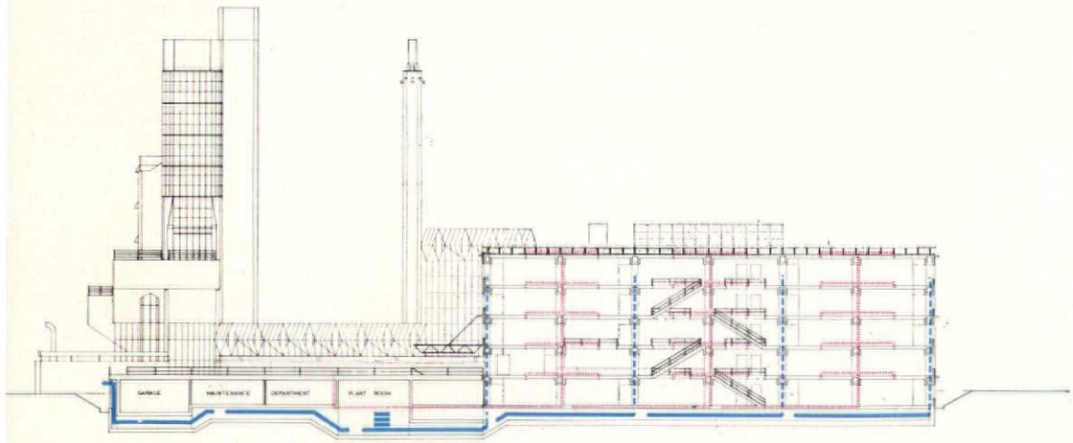

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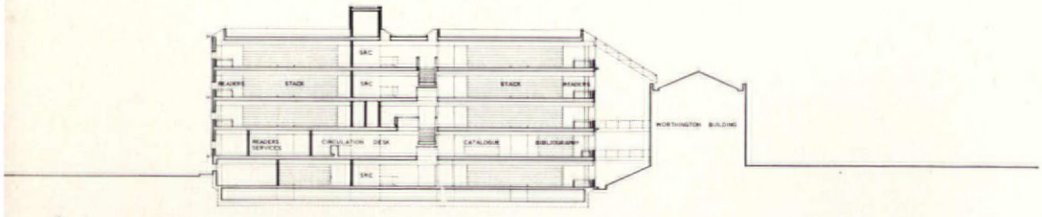

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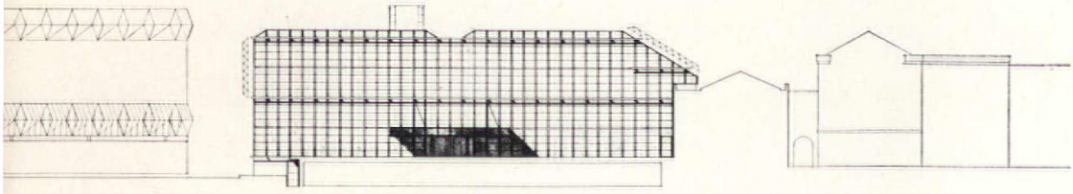

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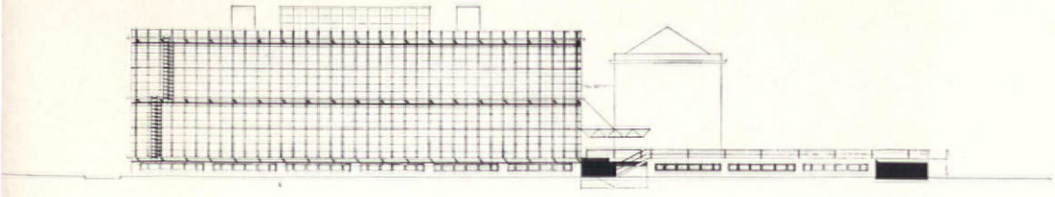

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The air-flow supply is shown in the plans and diagrams in red, the extract in blue

1
Sub-basement plan
2
Basement plan
3
Ground floor plan
4
Second and third floor plan
5
Longitudinal section
6
Cross-section
7
North-east elevation
8
South-east elevation
9
Diagram showing the close relationship between the structural and mechanical services design. The columns and beams serve also as ducts. The air-supply flow is indicated in red

◁139

roof. Loads on the equipment are reduced by the high thermal capacity of the building and the systems of reducing solar gain. The conditioned air is distributed at low velocity in structural ducts and finally discharged via linear diffusers in the depth of the floor beams. A similar system of structural ducts deals with the extract air. To achieve zonal control each two-bay area is provided with automatic thermostatic equipment controlling the local air heater batteries.

The installation is fitted with sound attenuators and the design noise criteria for the installation is 35 N.C.

The heater batteries are served with medium temperature hot water from the campus site mains.

The building is fully serviced with hot, cold, fire prevention and toilet ventilation installations.

Structure

The substructure is an *in situ* reinforced concrete raft forming the base to the service duct floor and plant room. The lower ground floor slab and beams also in insitu concrete together with the columns up to this level. This construction ensures a rigid box from which the precast concrete superstructure starts.

The floor, beam and column units for the superstructure, which are all designed for precast repetitive manufacture, give the correct enclosed volumes for the heating and ventilating ducts and provide a linear grid for the lighting. All units are structurally at their optimum capacity and form the final finish to the interior of the building.

Floor units are I section with the top flanges butting together, and narrower lower flanges, giving a 6in wide continuous slot between all units for air distribution and lighting. Beams are U section, carrying the floor units and forming the primary horizontal air distribution routes. Columns are generally hollow box sections carrying the beams and forming the vertical air distribution routes.

All structural units are precast concrete and will be cast in steel moulds to give the required high degree of accuracy and finish. The whole structure is designed for a superimposed load of 150lb per sq ft and the basic grid is 25ft 6in × 25ft 6in.

The structural system is the subject of a provisional patent.

Electrical services

High tension supply (initially at 6·6 kV—ultimately at 11 kV) will be derived from the existing main intake station and will provide low tension supply through a transformer substation on the lower ground floor.

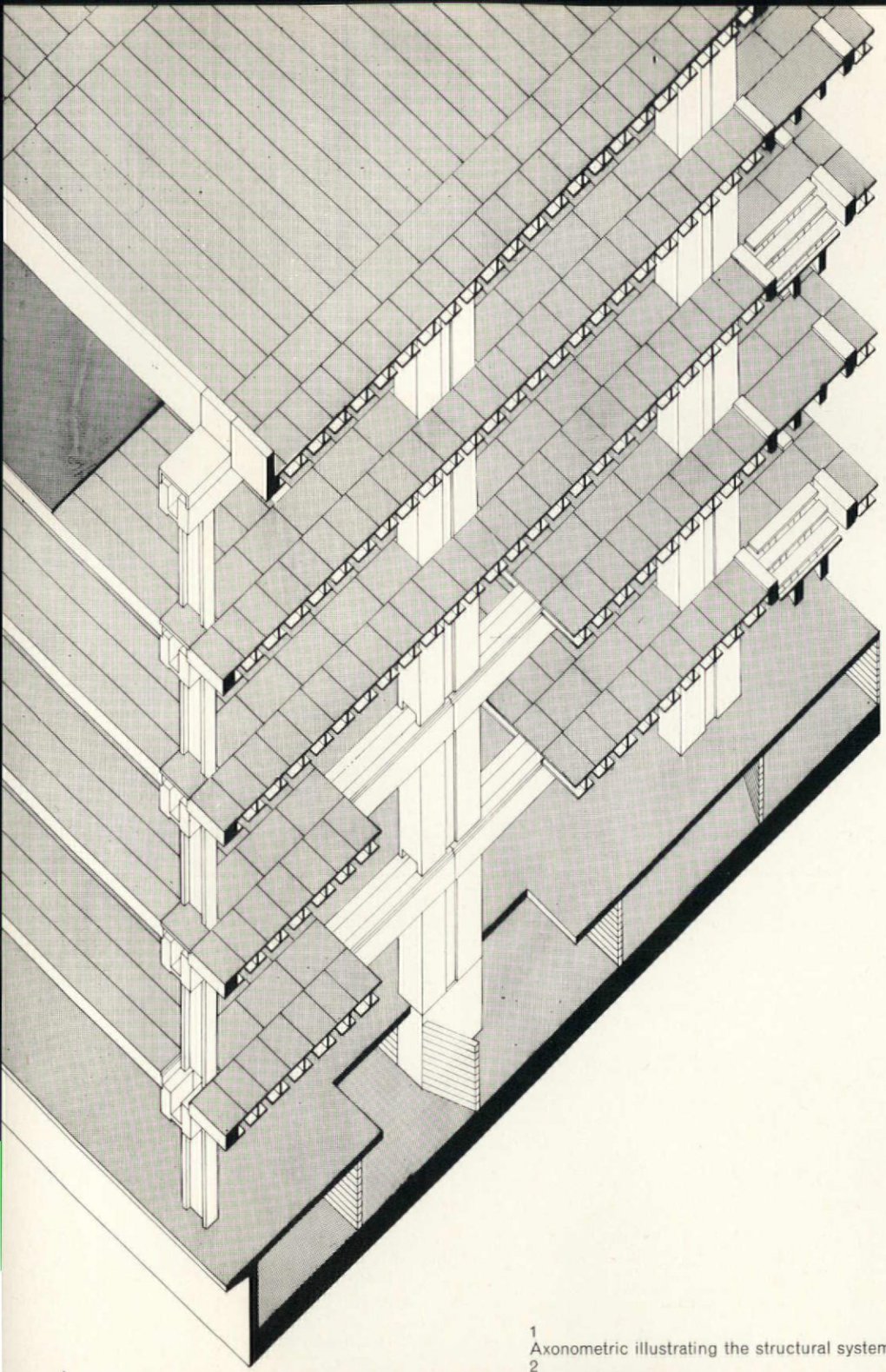
The basic lighting design will take the form of almost continuous lines of fluorescent fittings incorporated in the hollow beam structure. These lines will run at right angles to book stacks to allow flexibility of layout. Lighting control will be by master and floor sub-master switches.

All other conventional ancillary electrical and communications services will be included.

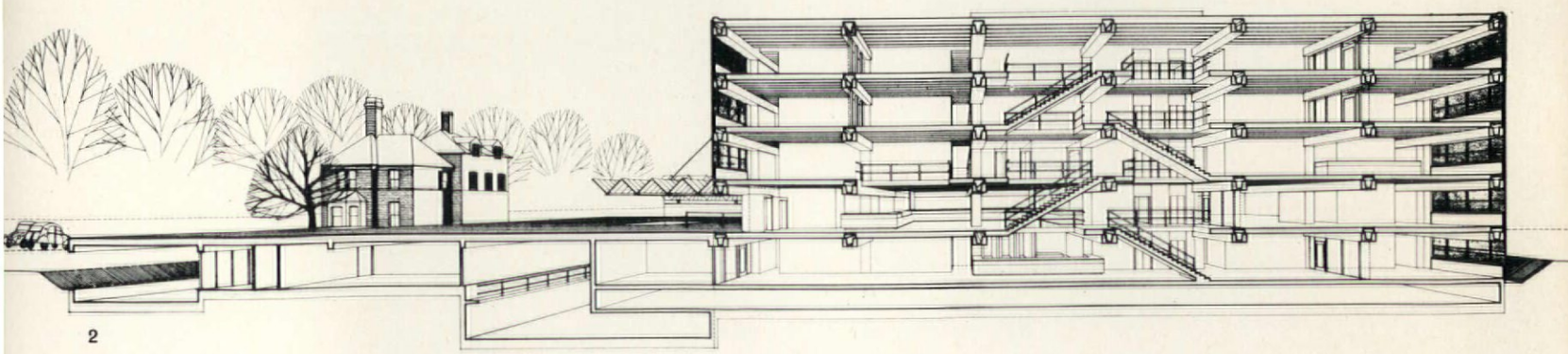
Lift services

The building will be served by three lifts, two of which will be for passenger use and one for goods/staff use, so sized as to allow transportation of a single book stack unit. The lifts: 10 persons/1500lb, 150ft per min., will serve from lower ground floor to third floor. One of the two passenger lifts will be arranged for fireman's service.

1



1
Axonometric illustrating the structural system
2
Sectional-perspective



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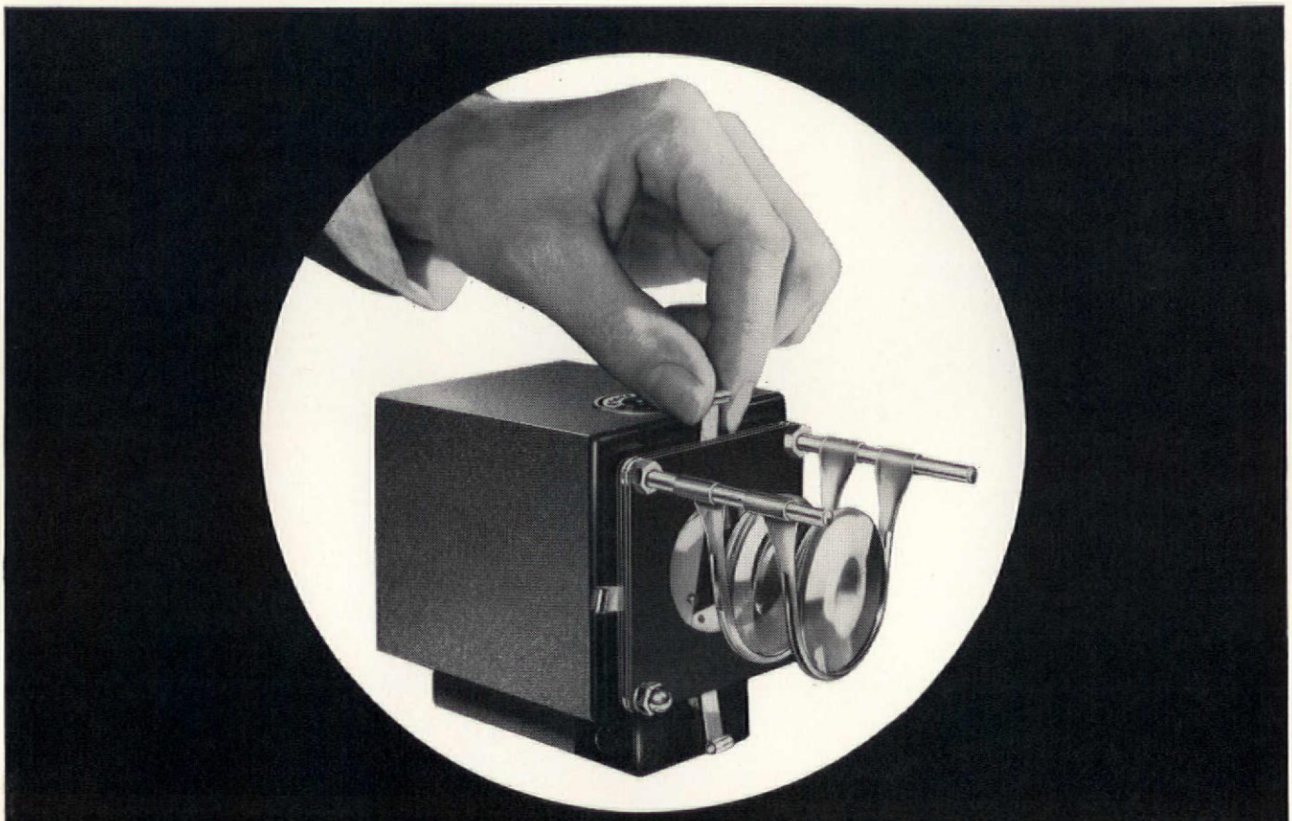
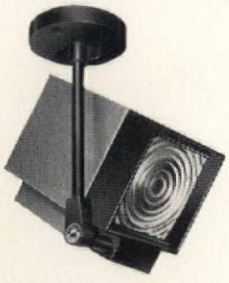


Minispot does everything a stage spot can do-

but with its 100w lamp it can be used anywhere

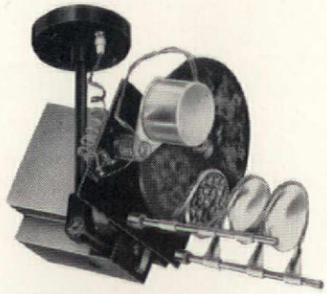
Minispots can be focused, directed, beam-shaped and dimmed to suit any lighting effect you require. For the very first time, Strand bring stage lighting techniques to the aid of the designer . . . the opportunity for creating original lighting decor in restaurants, hotels, clubs, stores and exhibitions–in fact anywhere that a 100w lamp can be used.

These new exciting Minispots, possessing all the versatility of theatre lighting, can be used functionally or decoratively, and there's even a projector version offering unlimited scope for using movement and colour (psychedelic effects) in any lighting scheme. Minispots and their control equipment are described fully in our catalogue, available on request.

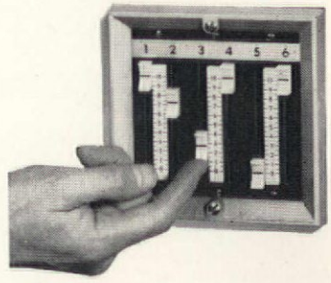


Mini-Softspot *Fresnel type step lens gives a soft-edge spotlight or, by adjusting a single knob, a 45° floodlight.*

Minispot (Top) *Any hard-edge beam shape can be achieved by simply altering the angles of the four shutters. The beam will then cover the area to be lit.*



Mini-Kaleidospot *This unique unit projects still or moving patterns and introduces the range of optical effects, clouds, snow, colour mixing, commonly used in the theatre,*



Minispot control *This simple unit allows infinite regulation of intensity with every Minispot in a lighting scheme. With this dimmer you can effect gradual changes such as dawns and sunsets.*

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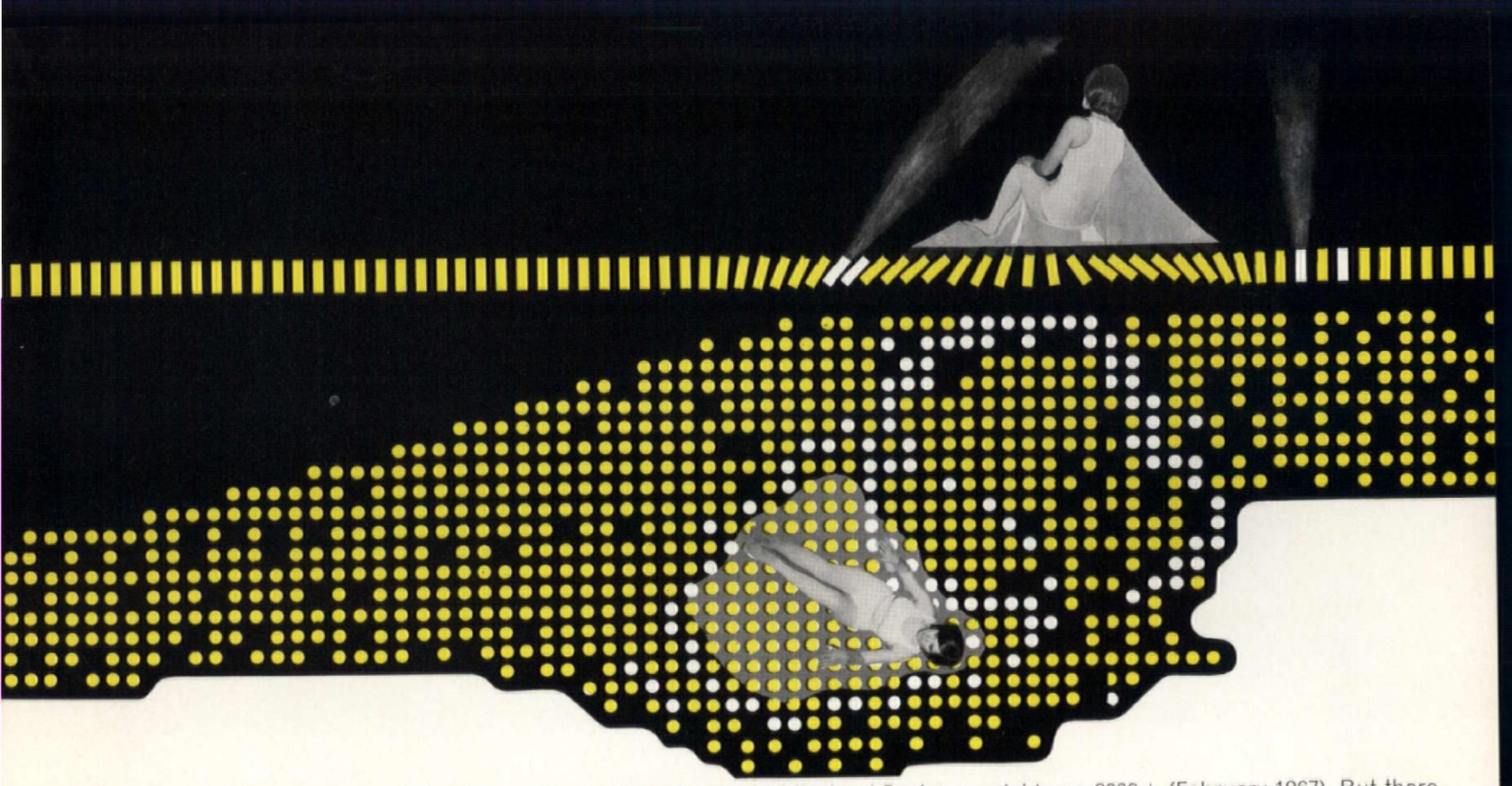
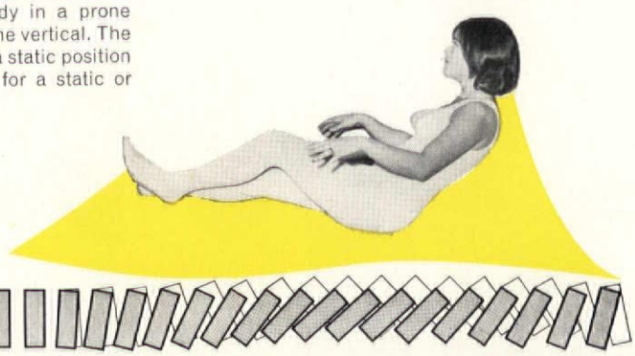
632 desk £98·4·0, with ESC chair £43·15·0. Retail prices including tax

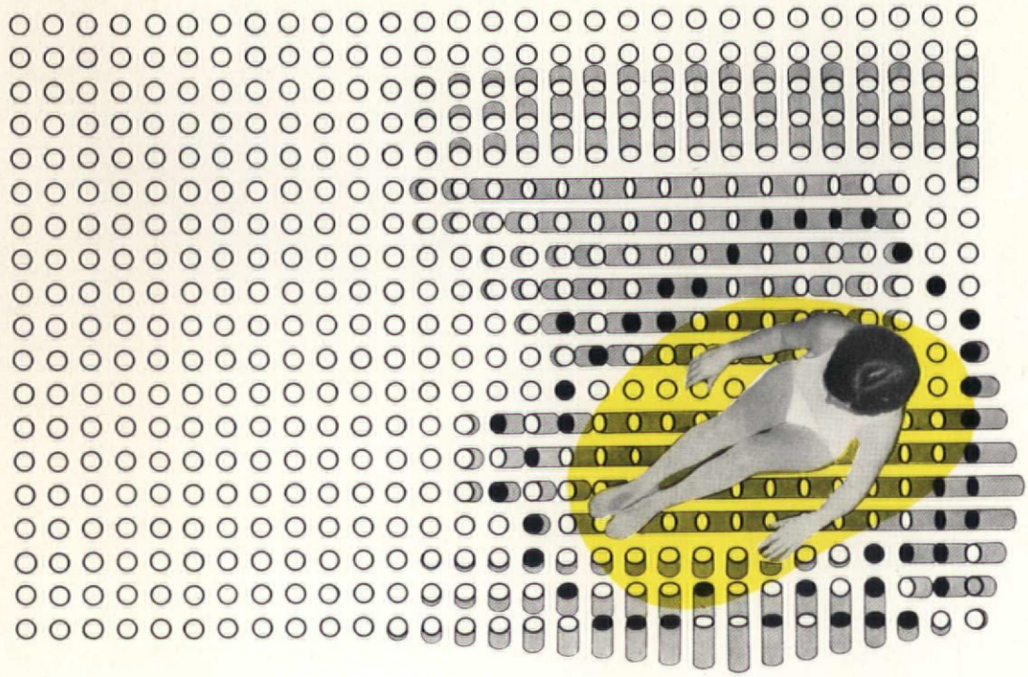


The end of the architectural road was fairly well established in the *Architectural Design* special issue 2000+ (February 1967). But there are some interim possibilities, pitched between the period style split-level house and the electrode-charged isolated brain. Two of these, suggested by Michael Webb, are shown here.

1 Magic carpet and Brünnhilde's magic ring of fire

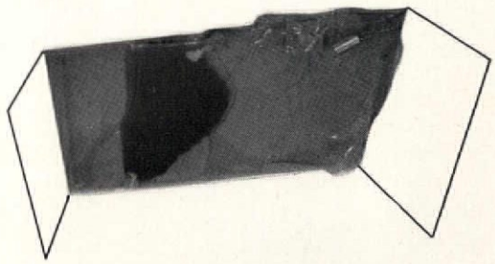
The hovercraft principle in reverse. Tubes blow air at varying pressures to maintain the body in a prone position or to raise it through sitting to the vertical. The tubes can pivot to maintain the body in a static position or to rock it; they can also eject gases for a static or moving enclosure

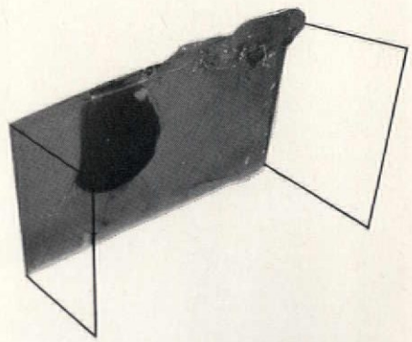


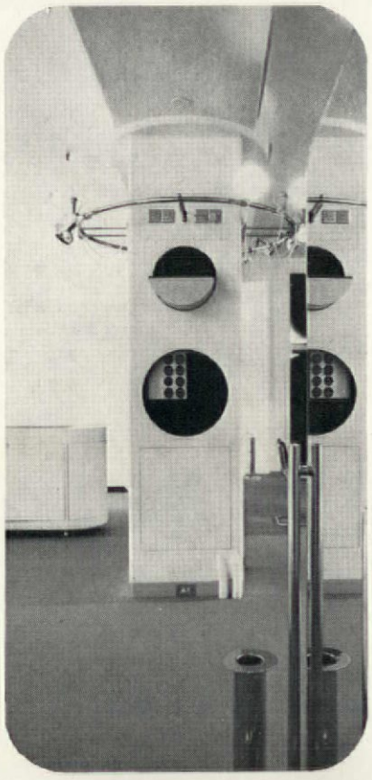


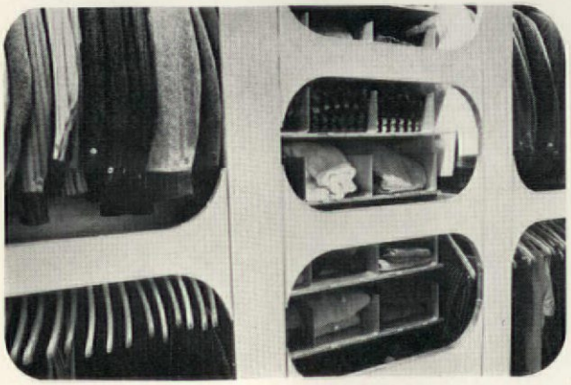
2 Fluid and air wall

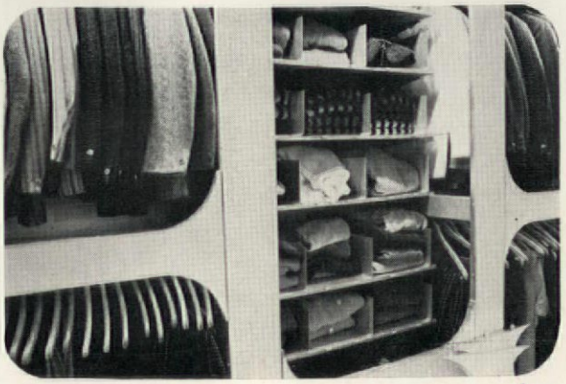
A cavity wall which changes its visual, thermal and insulative properties by means of fluids, gases and silver crystals. Below are three views of the wall showing the cavity empty, with a curtain simulation fluid spreading and with the fluid fully spread.











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2 | 3 | 4
5 | 6 | 7

Design

30's Trend

Few visitors to Simpson's, Piccadilly, realize that not only is it one of the early examples of modern architecture in Britain—it made Joseph Emberton's name in the thirties—but that the interior was designed by Moholy Nagy. The central staircase and its great pendant light hanging the whole height of the building, are almost all that still bear witness to the fact.

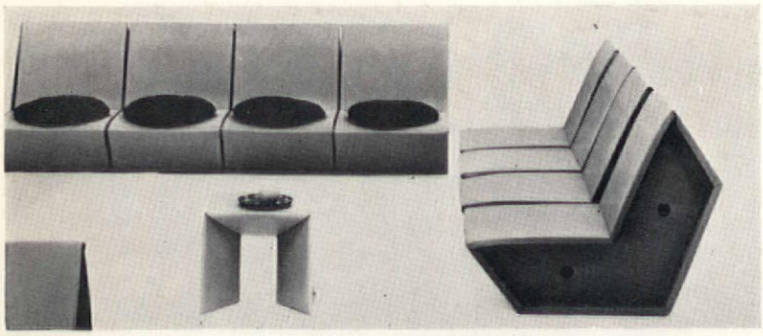
Zeev Aram & Associates bore this in mind when they undertook to design the Trend department **1** on the first floor: hence the prevalent rounded corners and the tubular steel fittings. Breuer's tubular tables and chairs, themselves dating from the period, look completely at home.

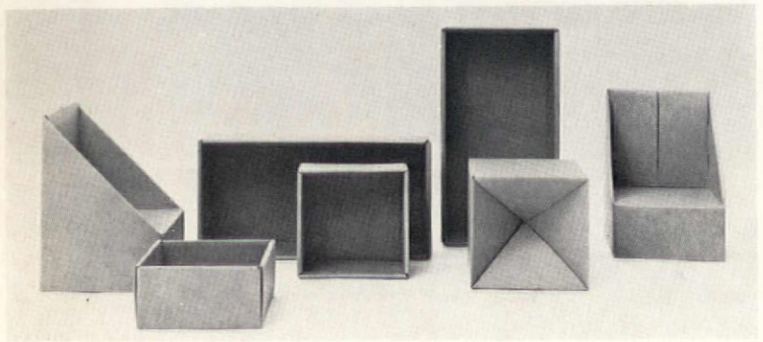
Flexibility is the key to the design. Display/storage walls screen each side of the room, both infinitely adaptable in use—they convert in a trice from hanging space to sliding shelves, and the pattern of their fronts can be varied by slotting in or out the curved-ended fascia elements, **6**, **7**.

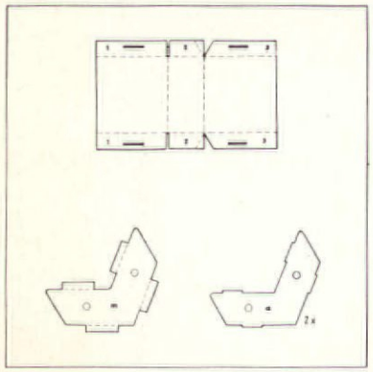
The free-standing counters **1** are mounted on castors so can be trolleyed to new positions at will, they have plug-in lighting for the goods displayed, which can be viewed through glass panels top and 'front', the back is reserved for salesmen's storage.

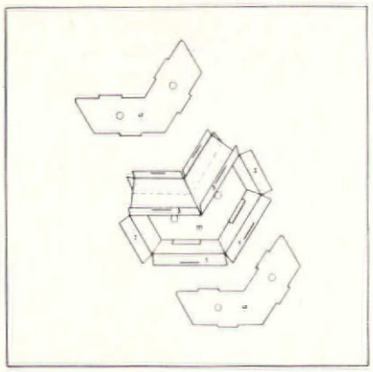
There are semi-circular tubular steel display frames for the clothing dummies, free-standing mirrors **2** with tubular steel frames, and fixed mirrors **3** on one side of the two columns. On the obverse of the columns are housed the switches, and a feature is made of the pneumatic cash-handling tube-system **4**; and the circular tube carrying spotlights at the top of the columns echoes the curve of the trunking system above it (another Moholy Nagy relic).

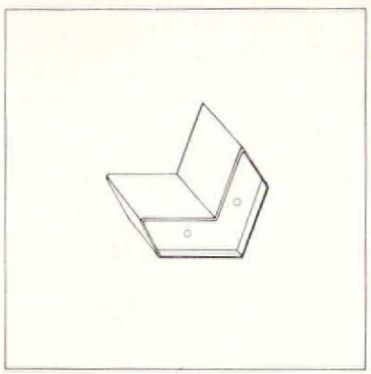
All walls and fittings are painted white and the long window overlooking Piccadilly is masked by vertical louvre blinds **1**.

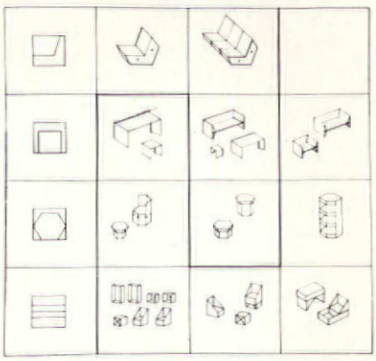












Papp

Over the past two years we have seen plenty of examples of folded paper chairs and stools. But now comes along a 39-year-old German industrial designer called Peter Raacke who claims that his paper-furniture company Papp was first in the field with a complete paper furniture programme. Very probably.

His products (above), of corrugated cardboard with a heavy Kraftliner skin, are delivered flat and merely have to be folded along the pre-creased lines and slotted and they're ready for use. He says they're cheap, but we have no price list so cannot judge. They can be sprayed any colour or pattern, or left untreated.

The joy of it, as he sees it, is that the furniture can be made on rotary punches, completely automatically, flat and ready for shipment.

6451 Wolfgang-hanau, Postfach 50.

Ministry bulk purchasing

It is not generally realized that the Ministry of Public Buildings and Works has a Supplies Division which is probably the largest purchaser of furniture and furnishings in Britain, their contracts placed annually totalling about £42 million; and, furthermore, that these bulk purchasing facilities are available to universities, hospitals, and other public bodies, which would lead to considerable savings in public funds. The Ministry has permanent display centres in London, Glasgow, Birmingham, Manchester, York and Exeter, and another soon to be opened in Cardiff, where they display furniture, fabrics and floor coverings.

Tucked away in their 'back room' in London, the design team are in charge of all manner of furnishing contracts, for embassies, Government offices, museums, research establishments, hostels, canteens, Service Departments, Home Office, Post Office, etc. Sometimes outside designers are commissioned (for such items as crockery and cutlery), but on the whole most things are designed within the Division.

Recently they exhibited and invited criticism of prototypes of a new range of study bedroom furniture (left). Every unit shown was itemized and priced in the catalogue for all to see, but it says 'the prices are not for publication'. Suffice that they seem reasonable: £91 including tax would buy a complete outfit for one room: a divan bed with foam mattress and boxed storage under, the armchair shown plus another moulded plastic chair, the dressing table and chest of drawers, a 610mm wide wardrobe unit (all dimensions are given in metric) with matching top cupboard, a coloured plastic boxed stool/table, and a set of four bookshelves also coloured plastic. The dressing table can overlap the chest of drawers to adapt to available space, and it has a sloping board along the back for propping up books for reference.

Included in the catalogue are all manner of other units of furniture supplied by the Ministry—for laboratories, halls, conference rooms and auditoria, senior staff room, etc.—so it is worth getting from the MoPWB Supplies Division O1, Southbridge House, Southwark Bridge Road, London SE1. As they point out, 'the Ministry has to maintain most of the equipment it buys; sound construction and good quality are therefore of great importance. It follows that the design team must work in close consultation with production staff who ensure that each design is produced in the most economical manner consistent with good quality production'.

Inch metric pocket rule

If you write and ask, D. Anderson & Son will give you a fascinating 6in rule with optical scales for instant conversion of inch and metric units. Along one edge it has an inch scale which changes into a centimetre scale simply by tilting it or by moving one's head. (clever, those Japanese!).

On the face of the rule there are fractions of an inch and their decimal equivalents. Again, by tilting, the metric equivalent appears in their place.

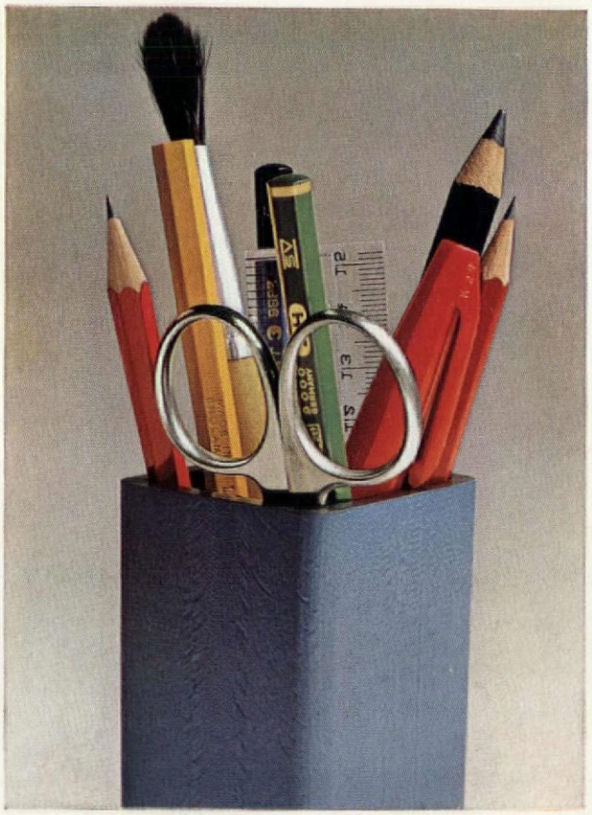
A very useful gadget, but what a pity it does not include feet as well as inches!

Stretford, Manchester.

You know what you can do with structural hollow sections?

Ask Stewarts and Lloyds. A piece of SHS makes a marvellous pencil box. But if you talked to Stewarts and Lloyds about these new shapes in steel, you might well need less pencils in future. Take the problem of industrial buildings. SHS can save you up to 25% on cost and 50% on weight here. Reason? Their high strength/weight ratio means you use less, especially in lattice beams. You need less intermediate supports. Prefabrication, easy welding and quick erection on site save labour costs, too.

Perhaps industrial building isn't your pet subject? Then how about space structures, balustrading, crash barriers, staircases, road bridges, fencing, agricultural or mechanical handling equipment? SHS is being used in greater than ever quantities in these fields. Why not put one of those pencils to work and write to Stewarts and Lloyds for details? Better still, put down that pencil and pick up the phone.



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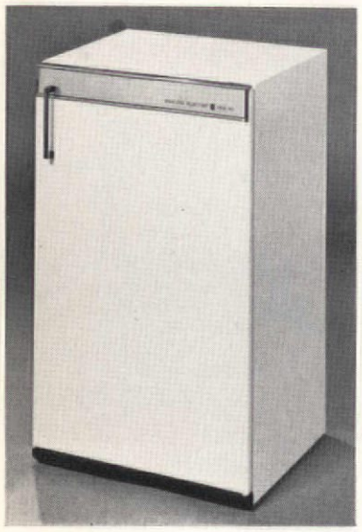
DEVELOPMENTS



1

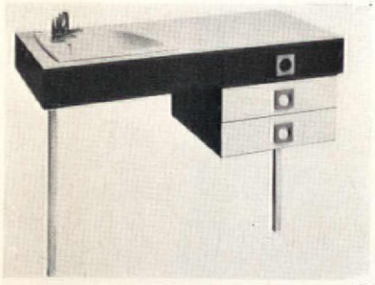
E1 Transistor controlled shower

A new form of shower aims at increasing the blood circulation by exposing the body to alternating cycles of hot and cold water, and is said to have an effect on the circulatory system similar to the roll in the snow after a sauna bath, or the traditional pounding with birch twigs in the steam bath. Water in the shower is directed at the body simultaneously from four different directions and an uninterrupted flow of hot and cold water, alternating in frequency, is regulated by transistorized impulses. The hot water cycle is set at 2 seconds whilst the cold water cycle can be varied from 0·2 second to 10 seconds. Stepless transitions from hot to cold are permitted by impulse-controlled magnetic vents. A thermostatic mixer controls the water temperature and an automatic cut-out operates if the temperature exceeds 45°C or the cold water supply fails. The shower was invented by Torbjörn Löfgren and is made by Wikholm's Tool Factory, Ockelbo, Sweden.

E2 Vanity unit 2

John Steventon & Sons Ltd., Royal Venton Works, Middlewich, Cheshire

Developed to meet the need for equipping bedrooms with washing facilities other than the ordinary washbasin and pedestal, the Vanitor is one of the first products of the firm's newly formed Furniture Division. It combines a Royal Venton Mitre Vanity basin in vitreous china with a dressing table top in plastic laminate with woodgrain finish. The units are available with one, three or five drawers and have been designed to give a good working surface with an area of 3 square feet, providing space for toilet articles and a free-standing mirror. The basin is available in white or in five pastel shades and can be fitted either left or right hand. Overall dimensions 48in wide by 21in deep by 30in high, basin size 19½in by 17in.

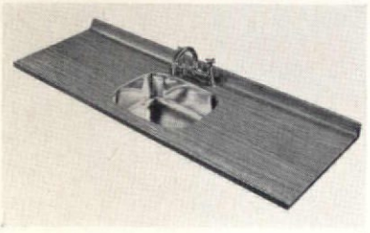


2

E3 Wash basin

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

The 2000 wash basin is based on the findings of the Cornell University study conducted by Alexander Kira, and is claimed to be ergonomically correct. The generous size 25½in by 24in is to ensure that all washing activities are provided for, and that even drips from the elbows when washing hair are contained within the basin's contours. Manufactured in vitreous china and suspended on totally concealed cantilevered brackets.



3

E4 Plastic taps

I.M.I. Developments Ltd., P.O. Box 216, Kynoch Works, Witton, Birmingham, 6

Made from Kematal copolymer and claimed to be the first all-plastic taps accepted for both hot and cold water by the British Waterworks Association Ltd. Immune to sticking washers, furring and plating defects. A normal life span of at least 20 years is expected.

E5 Stainless steel sinks

Metal Containers Ltd., General Products Division, Van Leer House, West Byfleet, Surrey

The Maid range of stainless steel sinks includes sizes from 18in wide by 36in, 42in and 54in long, and 21in wide by 42in and 63in long. All bowls are available pierced 1½in for standard waste fittings or 3½in for strainer waste or electric waste disposal units. Tap holes for pillar or mixer taps. Prices from £9 13s to £16 12s 6d.

E6 Plastic sink unit 3

Bakelite Xylonite Ltd., 12–18 Grosvenor Gardens, London, SW1

The Warerite Topdek sink unit consists of a decorative laminated working surface with a stainless steel bowl permanently bonded to the underside of the veneer. The joint is made with a thermosetting resin and is claimed to provide an hygienic and watertight edge which is impervious to detergents and household solvents. Each unit has a post-formed backsplash and the front and side edges are slightly angled to an upward slope. Sizes: all units are 21⅝in deep. Lengths, 42in, 63in, 84in. Prices, 42in, £16 , 63in, £19.

E7 Catering waste disposers

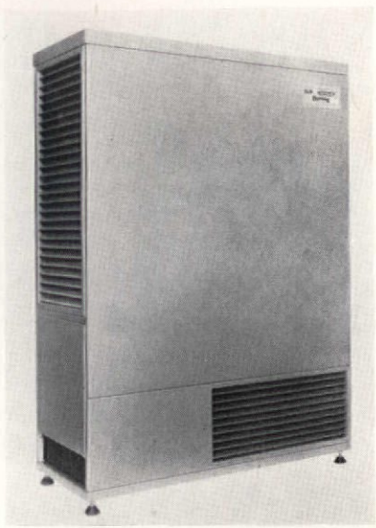
Wynbourne-Satoba Equipment Ltd., 327 Commercial Road, London, E1

The range of In-Sink-Erator catering waste disposers has been extended to include models to deal with kitchens requiring a capacity of up to 3000lb of food waste per hour. The range includes models from 1 to 5 h.p. with capacities from 300 to 3000lb per hour. Stainless steel sink cones are available for each model, together with special flushing attachments. Prices from £120 to £510.

E8 New refrigerators 1

English Electric Co. Ltd., English Electric House, Strand, London, WC2

The four new models in English Electric's 1968 range, Slimline 30, 40, 50 and 65 have capacities of 3·2, 4·1, 5·1 and 6·7 cubic feet respectively. Each model incorporates pushbutton defrost with automatic reset and has two star rated frozen food compartments permitting the storage of frozen foods for up to four weeks in temperatures below—12°C (10°F). The Slimline 30 is available with an alternative simulated teak table top and front surface intended to blend unobtrusively with furniture in dining or living rooms. Prices: 30, £39 9s 11d (woodgrain £45 18s 1d). 40, £46 19s 5d, 50, £55 10s 2d, 65, £66 3s 8d.



4

E9 Gas-fired warm air heaters 4

Bering Ltd., Doman Road, Camberley, Surrey

The Bering Hi-Speed range of gas fired warm air heating equipment comprises 18 variants of three basic models of 48,000, 60,000 and 72,000 Btu/hr capacities. The heaters may be fitted at high level discharging warm air through a bottom grille, or at low level with the heated air discharged through a front grille. Provided with a room thermostat and time clock, the units employ a centrifugal blower for impelling the recirculation air. Suitable for offices, schools, churches, restaurants etc. Size, 35½in long, 47½in high, 14½in deep. Prices from £123.

E10 Low silhouette air diffuser 5

Fairitt Engineering (Sales) Ltd., 24 Worple Road, Wimbledon, London, SW19

The Airmaster Circular Low Silhouette diffuser is of the pan-type and is fully adjustable, with air quantity independently controlled from the face of the diffuser without any effect on the pattern of air discharge. It incorporates the Airmaster patented induction cone principle, providing draught-free air distribution from full stratification of cooling air through to direct downward discharge, if required, for heating. By incorporating the iris damper as an integral part of the neck the above ceiling height is reduced from the 9⅜in for the usual diffuser to $2\frac{7}{16}$in for the LS unit.

5

E11 Sill heating

Copperad Ltd., Colnbrook, Bucks.

Classic Sill-Line provides a continuous aluminium alloy grille formed from extruded section and a flush sound-deadened front panel. Telescopic assembly ensures exact wall-to-wall coverage. Depths, 2⅞in and 5¼in, heights, 12in to 28in, in 4in increments, with an additional height of 6½in for 5¼in depth only. Panel lengths 18 to 60in with 2in increments.

▷145

To obtain additional information about any of the items described above and on p.145 circle their code numbers (E1, E2 ... etc.) on the Readers' Service Card inserted in this magazine.

The curve of most reflectors approximates to $y=nx^2$ Rotaflex Concord reflectors are exactly $y=nx^2$

Reflectors should curve. All light makers know that. They probably know, too, that to avoid stray light and scatter the curve should be a perfect parabola. $y = nx^2$. But they don't all take the trouble to make their reflectors perfect. We do.
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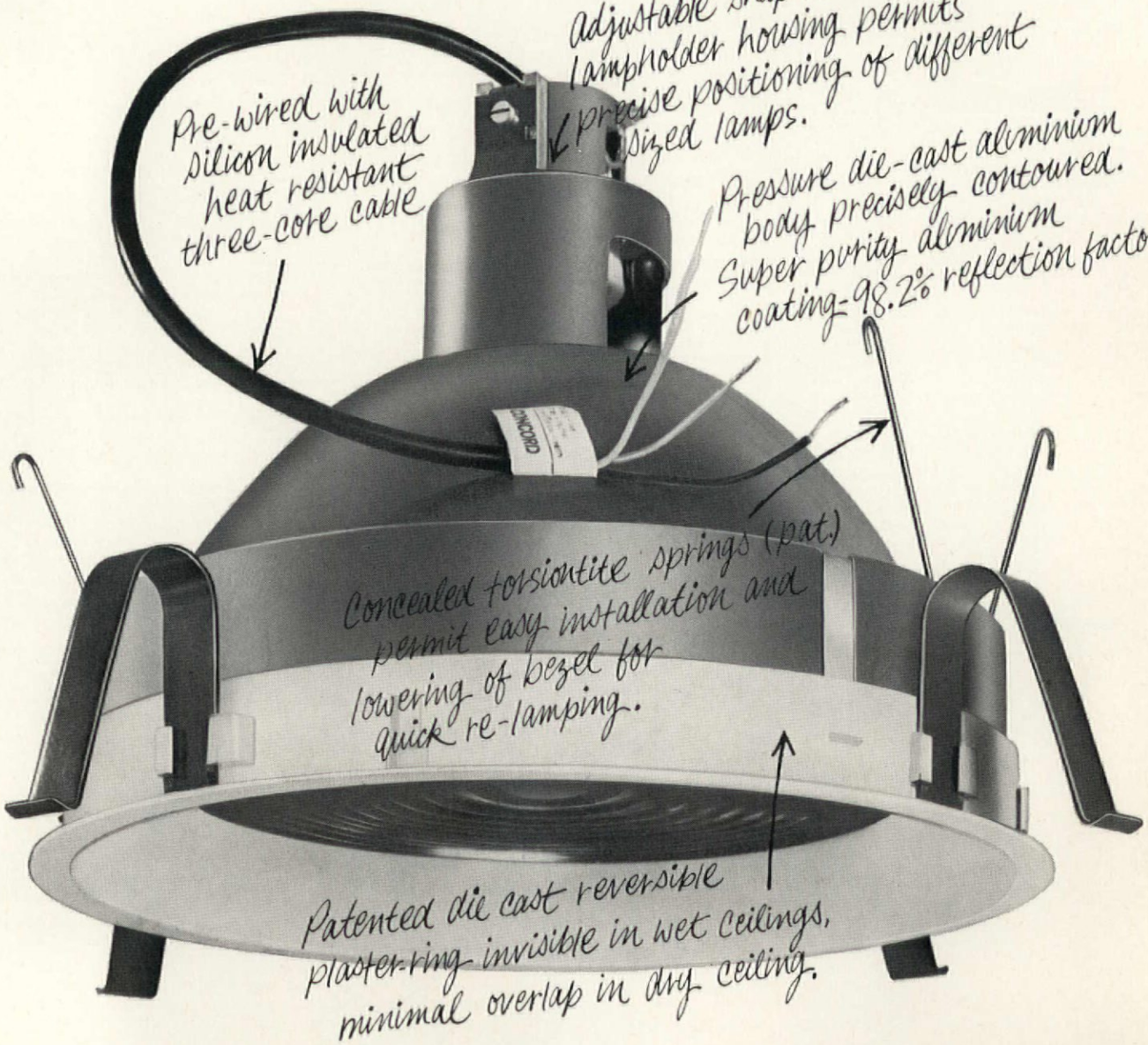
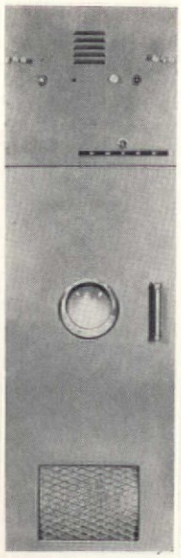


Rotaflex Concord
leading lights

Send for the Downlighter book to Dept. 7, Rotaflex (Great Britain) Ltd., Rotaflex House, City Road, London EC1. Tel. 01-253 8371

Regd.



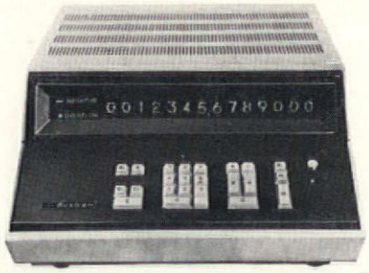
6

E12 Oil-fired warm air heater 6
Stevens and Uhart Ltd., 176 London Road, High Wycombe, Bucks.
The Potez 1542 is capable of heating premises ranging in size from a medium-sized workshop to the largest of factories. The casing of the generator is of double-skinned metal construction, fully lined with glass wool, and equipped with 6 warm air outlets and one flue outlet. The burner is of stainless steel with intakes on two sides, and has a maximum burner output of 71,500 Btu/hr at a fuel intake of $\frac{1}{2}$ gallon. The maximum effective output is 60,000 Btu/hr and the minimum fuel consumption rate is $\frac{1}{2}$ pint per hour. A centrifugal type blower with blades revolving at 1000 r.p.m. is employed, and all air passing through it is filtered.

E13 Portable space heater
W. C. Youngman Ltd., 96 Hackford Road, London, SW9
Designed for light industrial and building applications, the Instant Junior Model B50 is a portable oil-fired space heater with an output of 50,000 Btu/hr. The atomizer is suitable for use with parafin and is operated by a small rotary compressor. An after-burner cone ensures complete combustion of all fuel gases. Fuel tank capacity is $3\frac{3}{4}$ gallons and fuel consumption is approximately 2 pints per hour. Weight 46lb.

E14 Fume cabinet
Turner & Brown Ltd., Turbro Works, Gibraltar Street, Bolton, Lancs.
The latest Turbro fume cabinet employs specially treated moulded asbestos cement for the main structure and lining. It claims to provide a cabinet shell which is completely fireproof and may be operated at temperatures in excess of those applicable to normal fume cabinets. The moulding technique eliminates all sharp corners and simplifies decontamination.

E15 Plastic roof lights 11
Transplastix Ltd., 28 St. Mary's Place, Newcastle-upon-Tyne.
The Floatlite range of acrylic and wire reinforced PVC and glass fibre roof lights offers a wide variety of shapes, sizes and types. Available in square, rectangular and circular domes in sizes from 18in × 18in up to 108in × 60in rectangles and 60in diameter circular domes. The domes are held in place by epoxide coated spring steel storm clips claimed to eliminate the risk of fractured domes due to overtightening of screws or bolts. A seal of continuous $\frac{1}{2}$in thick compressible bituminous flexible foam strip is interposed between dome and curb to ensure storm-proofing.



7

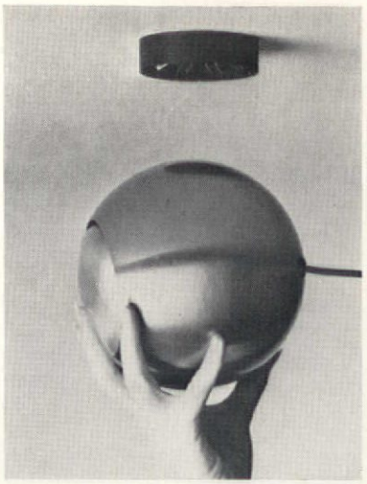
E16 Fully reversible aluminium window
Alumin Building Components Ltd., Winterstoke Road, Weston-super-Mare
Designed for insertion into wood surround frames, the Civic aluminium window is fully reversible through 180° and has been designed as a low-cost positively safe window, primarily for high-rise buildings. The window is restricted to a 5° movement by two safety levers, one in each pivot. Only by releasing both levers can the window be reversed and postively locked for easy cleaning. Tests indicate a high performance against air infiltration and water penetration. Cost: from 12s 0*d* per square foot, unglazed.

E17 Interior wall cladding
Burgess Products Co. Ltd., P.O. Box 11, Hinckley, Leicestershire
Manufactured from mild steel with a laminated facing of textured PVC, Burgess Interior Wall Cladding is available in panels 12in wide and in lengths variable by 6in increments from 7ft 6in to 10ft. The panels are clipped into a specially formed wall rail fixed direct to walls or battens at 12in centres. Prices from 3s 6*d* per ft².

E18 Three-dimensional panelling system 12
A. Borwell & Co. Ltd., 29a Walker Terrace, Bradford 4
Panel-Plus is a three-dimensional wall and ceiling panelling system employing Arborite decorative laminate. Standard $\frac{1}{32}$in Arborite is bonded to $\frac{1}{2}$in blockboard on which are mounted dished rectangular panels formed in $\frac{1}{32}$in Arborite of the same colour and pattern as the base panel. The dished panels are held in place by nylon clips or magnetic catches and are readily removable. Cost, approximately 25s 0*d* per ft².

E19 Integrated light fittings 9
Lumitron Ltd., Hythe Road, Scrubs Lane, London, NW10
Cape/Lumitron modular fluorescent fittings have been specially designed to integrate with both exposed and concealed grid suspension systems, using various ceiling panels and lighting diffusers. Diffusers are available in three types, prismatic louvre, prismatic pyramid and flat opal acrylic, and can be supplied in flat sheets for exposed grid ceilings, or as re-entrant stepped diffusers for either exposed or concealed grid ceilings.

E20 Display lighting fitting 8
Falks Ltd., 91 Farringdon Road, London, EC1
The Magnadjust is an adjustable spherical display fitting for floor, wall or ceiling mounting. The adjustment is achieved by eight separate magnets forming the support assembly which are hidden from view inside the perimeter of the $3\frac{1}{2}$in glass reinforced nylon unit, and retained by a circular spun aluminium ring. The lamp housing, of spun mild steel with a brushed and lacquered finish, has an 'eyeball' aperture. The support assembly magnets are contoured to the radius of this housing, allowing the fitting to be adjusted in any direction. Suitable for 75W or 100W internally silvered spotlight lamp. Price £3 18s.



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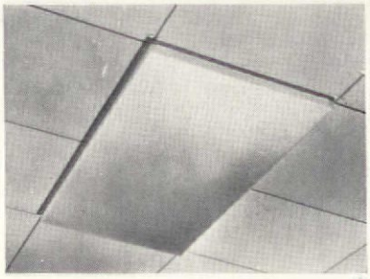

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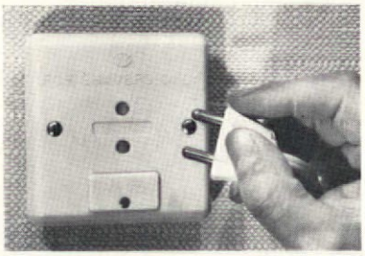

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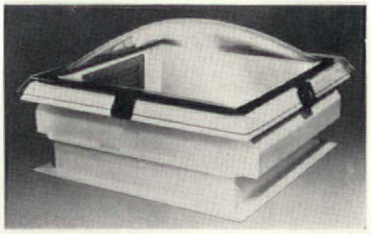

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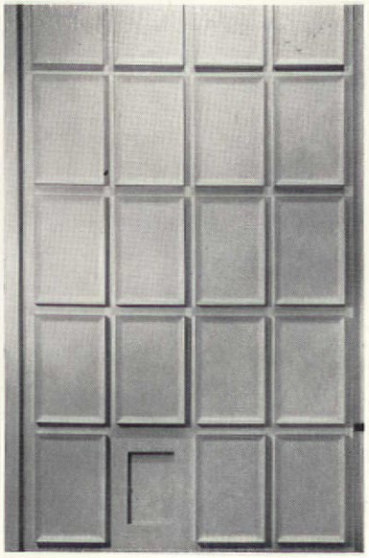

12

E21 New asbestos product
The Universal Asbestos Manufacturing Co., Watford, Herts.
Ace is an autoclaved silica-asbestos extrusion with good surface qualities claimed to be completely non-combustible. It has high strength, is manufactured to close tolerances, and is hard, dense and weather-resistant. The natural colour is grey but it is available in other integral colourings. It is available in a variety of different forms including flat sheets, wall panels, tile boards, decking, sills, copings, etc.

E22 Shaver socket 10
MK Electric Ltd., Shrubbery Road, Edmonton, London, N9
The MK Shaver Socket provides an alternative to the expensive type which has to meet the stringent safety standards applying to the use of electrical equipment in bathrooms. The socket is inexpensive enough to be used freely in hotels, colleges, clubs, or in any place where an electric razor may be used, except bathrooms. It has two safety devices, a 1 amp cartridge fuse and a thermal cut-out limiting the current to 0·2 amp. Available for flush or surface mounting, size $3\frac{3}{8}$in square with $2\frac{3}{8}$in fixing centres. Price 18s 0*d*.

E23 Electronic desk calculator 7
Broughton & Co (Bristol) Ltd., 6 Priory Road, Clifton, Bristol 8
The Busicom Beaver 141 has a 14 digit display capacity and a fully flexible memory register. It provides automatic decimal setting and clearance of previous results, and has a back space key for individual digit correction. Price £348.

E24 Videophone
Recordatron Ltd., 34 Wood Lane, London, W12
The Recordatron communication system employs a transistorized TV camera, a TV monitor and a sound reproduction unit with all the necessary switching devices. It enables callers working in different offices or different buildings to see and speak to each other, and to display documents, drawings or samples simultaneously to a number of positions.

E25 Remote dictation system
Aga Dictating Machine Co. Ltd., 26 Voltaire Road, London, SW4
The Hybrid system can be operated on PAX or PABX or on telephones on a separately wired circuit for dictation, and can combine with either. The use of this system enables a separately wired telephone to be used for remote-control dictation, leaving the PAX or PABX circuits free for calls.

E26 Automated information retrieval
Remington Rand Ltd., 65 Holborn Viaduct, London, EC1
By employing closed circuit TV and Lektriever and Kardveyer automated retrieval units, pictures of any one of tens of thousands of files or index cards can be instantly conveyed to offices up to 3000 feet from the records.

E27 Self-correcting typewriter ribbon
Industrial Markers Ltd., 30 Baker Street, London, W1
By using a new type of ribbon, typing errors can be instantly eradicated by switching the ribbon colour selector to the 'red' position, back spacing, and then retyping the incorrect characters. This leaves a clear space for typing the correct characters.

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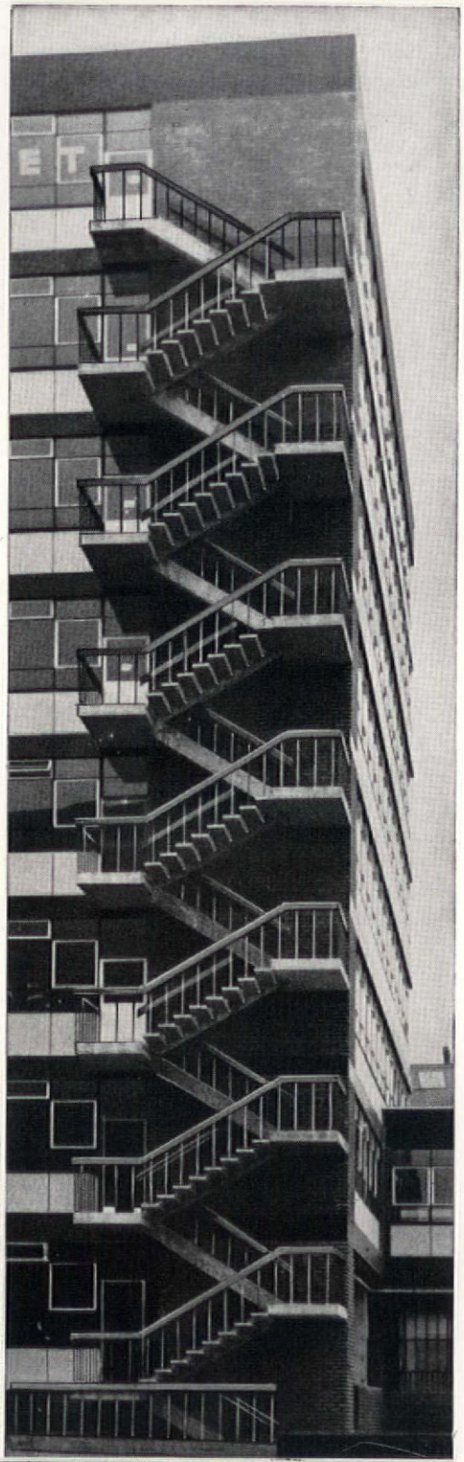

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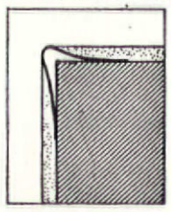

*** (in both senses of the word)**

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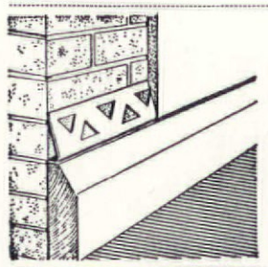

A specialised form of angle bead–Blakey Stop-End-Casing has been designed to strengthen plastering at openings and abutments. It is essential for expansion joints and skirtings, architraves, rooflight openings, and junctions and access panels and tiling. BLAKEY STOP-END-CASING BEAD OFTEN ENABLES WET TRADES TO COMPLETE WORK BEFORE THE FINISHED JOINERY IS FIXED

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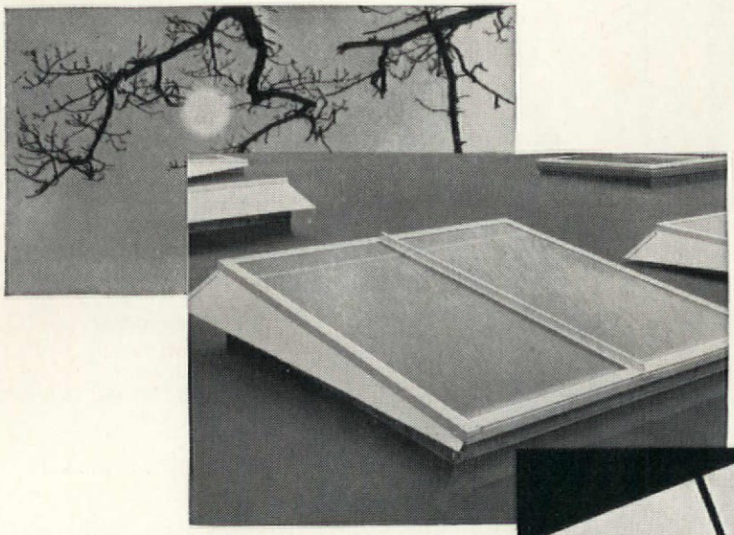

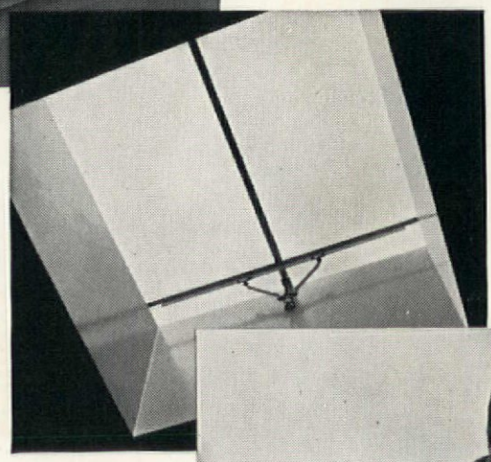

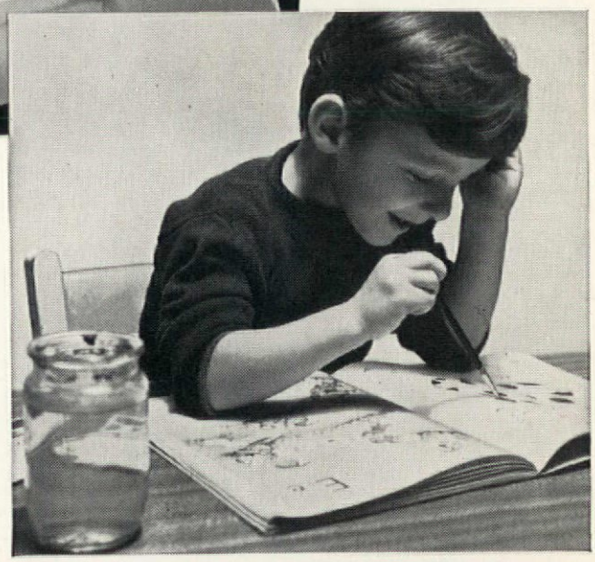

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Further details in Crittall leaflet No. 356.

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CR734

New fully adjustable Stand with Spring Counterbalance plus Board: £35.

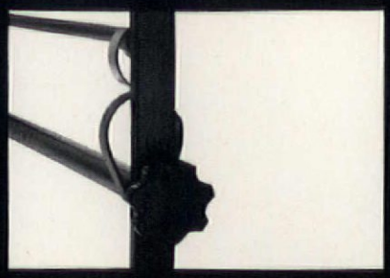
Rigid Construction

The new JS2IA Magpie fully adjustable Drawing Stand—now with Spring Counterbalance—gives you instant board adjustment to any desired angle with complete ease and accuracy, to suit any parallel motion available.

The introduction of the Spring Counterbalance provides a logical progression from hand-controlled equipment.

Simple Adjustment

It is typical of Magpie's policy to provide the most efficient furniture at minimum cost. The Stand, plus Double Elephant honeycomb core board, comes to you for only £35—a unique combination of economy and high design standards unmatched in today's drawing office equipment. The Stand can also be supplied without the board for £27.



Tensile Spring

The Stand is part of the Magpie 'S' range which includes reference tables, plan chests and office desks—designed to work as an integrated group, or as single units. All Magpie Furniture has been selected by the CoID for the Design Centre.

For full details of all our furniture, and a price list, write for a copy of the Magpie catalogue.

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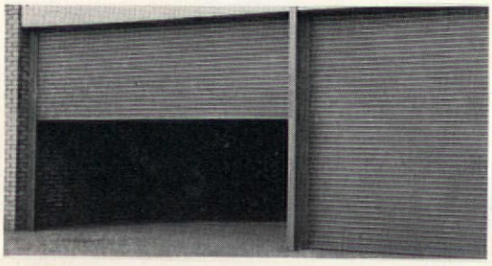

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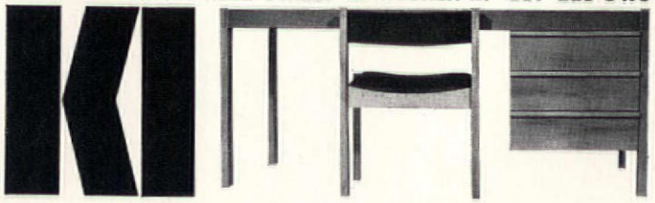

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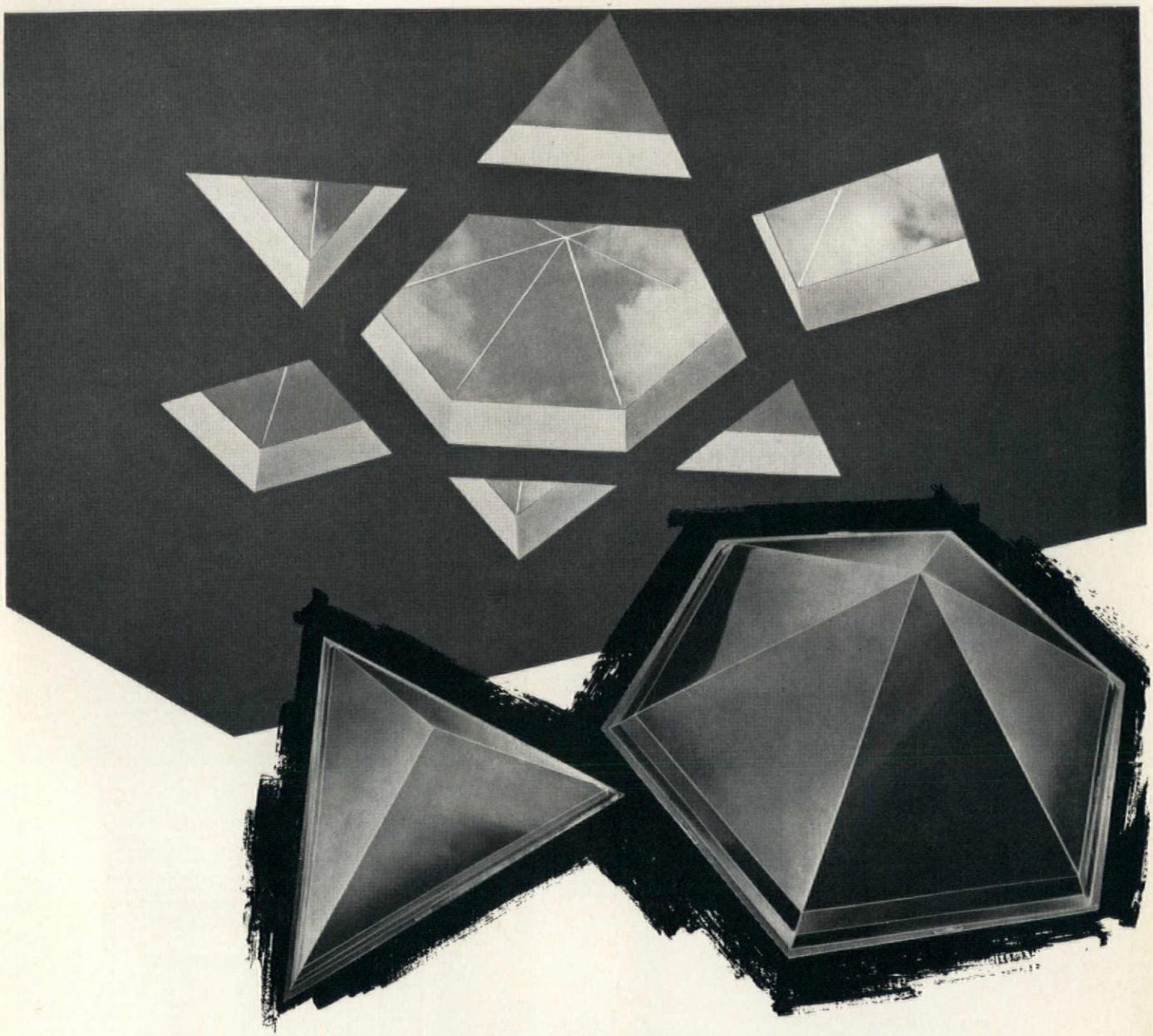

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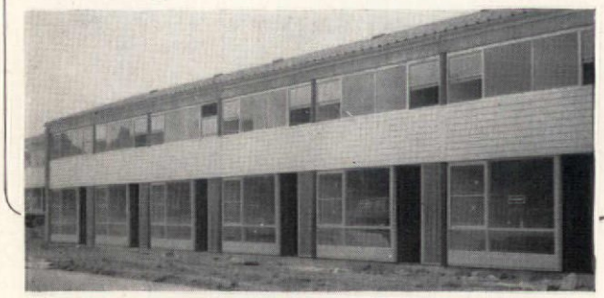

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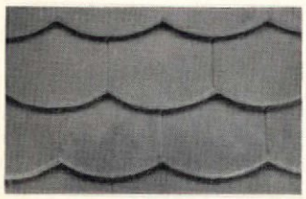

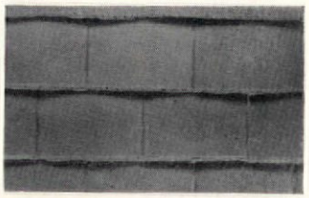

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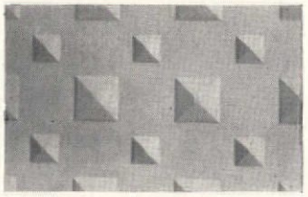

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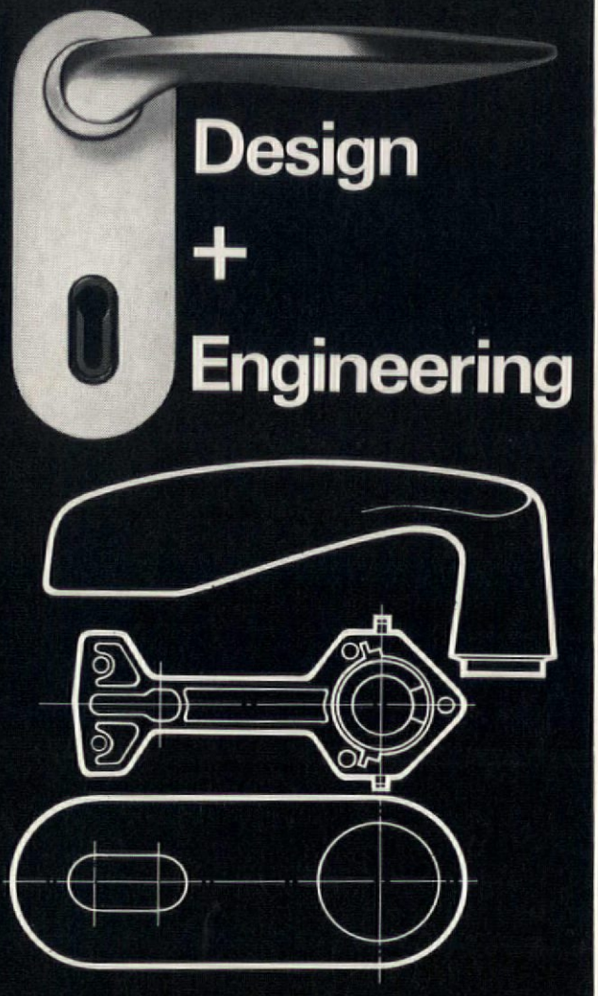

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