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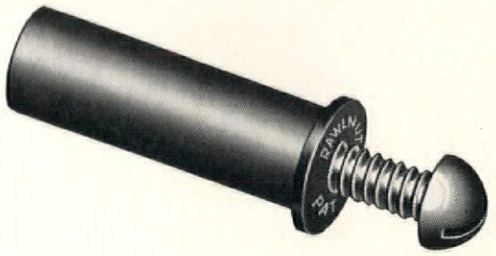
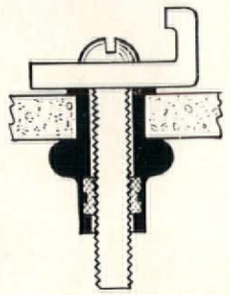
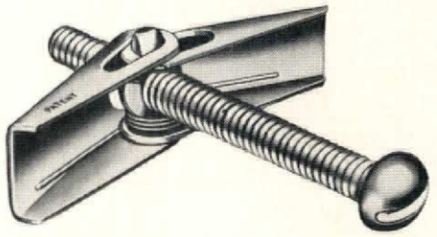
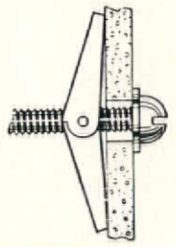




SPRING TOGGLES

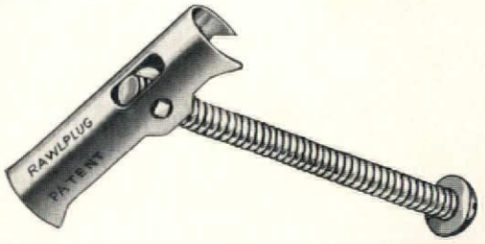
Drill a hole, insert the device, and its wings spring apart behind the material, so spreading the load. Ideal for lath and plaster ceilings, or for wall boards or panels mounted with a cavity behind them.

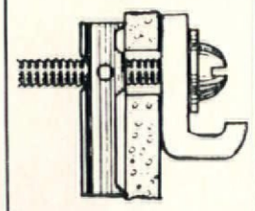




GRAVITY TOGGLES

A device in which the toggle falls vertically into position inside the cavity. It is then pulled back against the inside face by being tightened from the front. For hollow walls, doors, etc.





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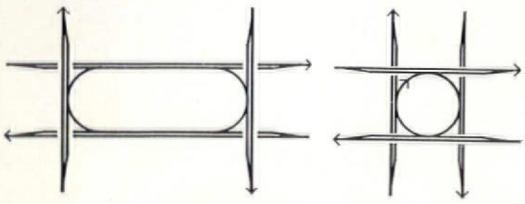
B363

Letters

Sir, I read with the greatest interest, *The pattern of streets*, by Christopher Alexander, in your November issue. It is certainly a step to a solution of a texture of cities. But why does he fall in the same mistake as other traffic-designers? He always uses an ancient road with two directions even while separating the two directions. Therefore, he needs two complicated and expensive loops at each crossing. It is better than four loops in a standard cloverleaf, but one loop for four directions is enough when you consider each direction separately.

The classification between principal and secondary highways is something like a 'tree' structure! Why not consider principal ducts becoming secondary for a certain length for functional reasons, and others doing the reverse?

I enclose a note and drawings prepared on the subject some time back. *Lucien Kroll*, Brussels



Circulation routiere

La route ou la rue sont des anciens sentiers et chemins; bien sûr on n'en est plus là en observant les feuilles de trèfles de nos autoroutes, et tout l'équipement mis à la disposition de nos véhicules. Pourtant, aujourd'hui encore, même les spécialistes pensent à l'autoroute en terme de sentier et de chemin et non en termes d'hydraulique.

Quelle est la fonction d'un 'conduit' de véhicule? A part les considérations physiques connues, le conduit doit assurer un débit rapide et une grande sécurité (réponse digne d'un plombier). Il faut éviter les pertes de charge, les coups de bélier, les fuites. Les véhicules sont des molécules pensants d'un fluide. Il ne faut évidemment pas mettre dans un seul tuyau les deux sens contraires. Le chemin de fer, lorsqu'il a installé ses voies (d'abord voie unique) a vite compris que malgré une programmation complète, le système était trop dangereux. La réponse du tracé du trafic consiste à prévoir les autoroutes à voies indépendantes, qui ne se rencontrent jamais. Pour les villes, la réponse consiste à imposer les sens uniques, sans espérer éviter les carrefours.

Pourtant, la conduite à droite (ou à gauche) et la priorité de droite sont au fond, des systèmes de très petites vitesses, de piétons ou de charrettes. A 100 km/h ou même à 60 km/h, ce système est effrayant et absurde. Bien entendu, il constitue une amélioration par rapport à l'anarchie et augmente le débit d'un réseau existant de priorités établies, quoiqu'il semble que la conduite à droite demande plutôt la priorité à gauche.

La structure mentale 'chemin' est restée contraignante, alors que la fonction mutait. C'est ainsi que les autoroutes ne sont qu'un chemin dont on a séparé les bandes de roulement et dont on a supprimé les carrefours à niveau au moyen de coteux raccords en feuilles de trèfles. Pourtant il n'y a aucune raison pour garder ce système et de bonnes raisons pour faire l'inverse.

Voici une tentative de solution, encore assez théorique, qui consiste à croiser deux doubles conduits à véhicules. On s'aperçoit tout simplement qu'en plaçant les conduits à l'inverse de la manière habituelle, c'est à dire comme si c'était un chemin de conduite à gauche dont nous avions séparé les bandes, nous pouvons grouper les quatres voies autour d'un seul échangeur circulaire qui communique avec les détournements secondaires d'accélération et de décélaration. De cette façon, toutes les entrées et les sorties se pratiquent vers la droite, ce qui. lors d'une conduite à droite, représente la bande de véhicules plus lents.

L'extrémité de cette autoroute (si elle a une extrémité) doit posséder un échangeur distribuant les voitures dans plusieurs directions. On peut d'ailleurs espérer que toutes ces voies soient à sens unique lorsque la vitesse des véhicules dépasse celle du cheval. Ainsi aux extrémités, le problème de remettre les voies dans le sens habituel s'en trouve résolu.

Ce schéma de croisement doit pouvoir être appliqué à la texture du trafic d'une ville: des voies de desserte, à double sens cette fois-ci, et à très faible vitesse (30 km/h) peuvent relier les voies principales à sens unique en les attaquant toujours par la bande de droite, et sans traverse possible. *Lucien Kroll*

How do you feel about hanging?

Our man is fervently in favour. Just as long as it's done in the bathroom. Just as long as it's done by us.

As he sees it, the advantages are evident and apply equally to toilet, handbasin and bidet.

For a start, there is more scope in design. Then, wall-hung pieces obtrude less on surrounding decor. Cleaning problems are vastly reduced. And, most important, floor space is obviously increased.

Quite a few Shanks pieces offer no visible means of support and therefore embody all the foregoing features.

Our man is happy to talk (and quote) on them all. But perhaps his favourite example is our Belgrave suite. In this suite only the bath touches the floor. Everything else gets hung. And, to his vast amusement, as a final touch, the cistern is sealed up in the wall.

Call in the man from Shanks

Progress

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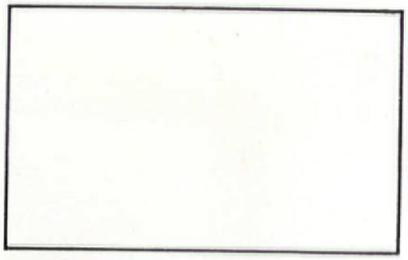

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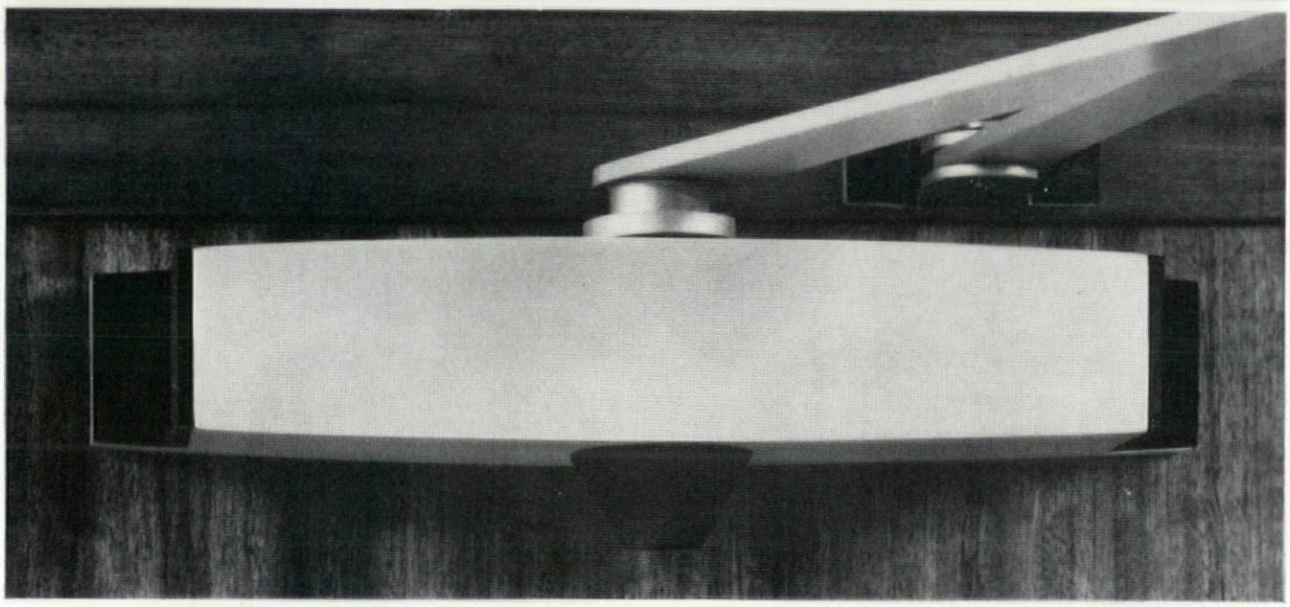

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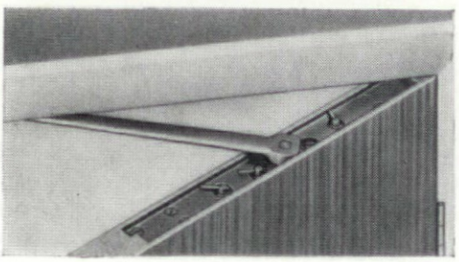

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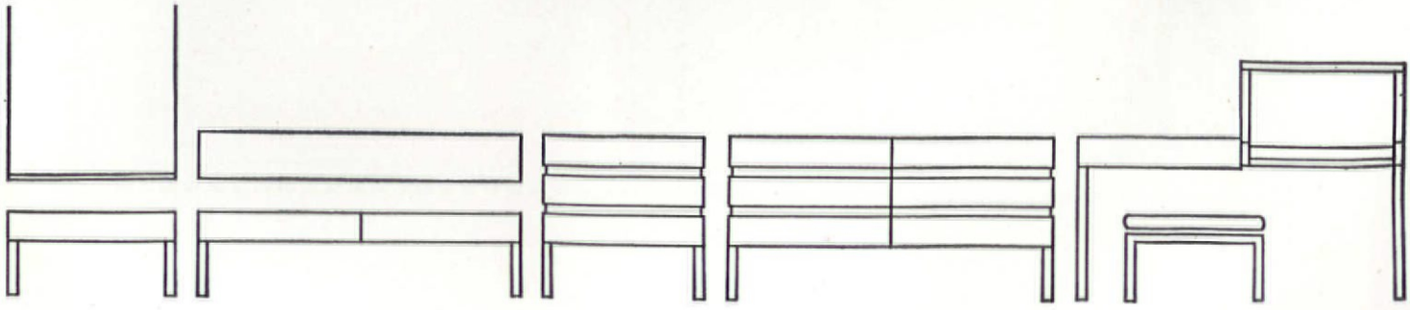

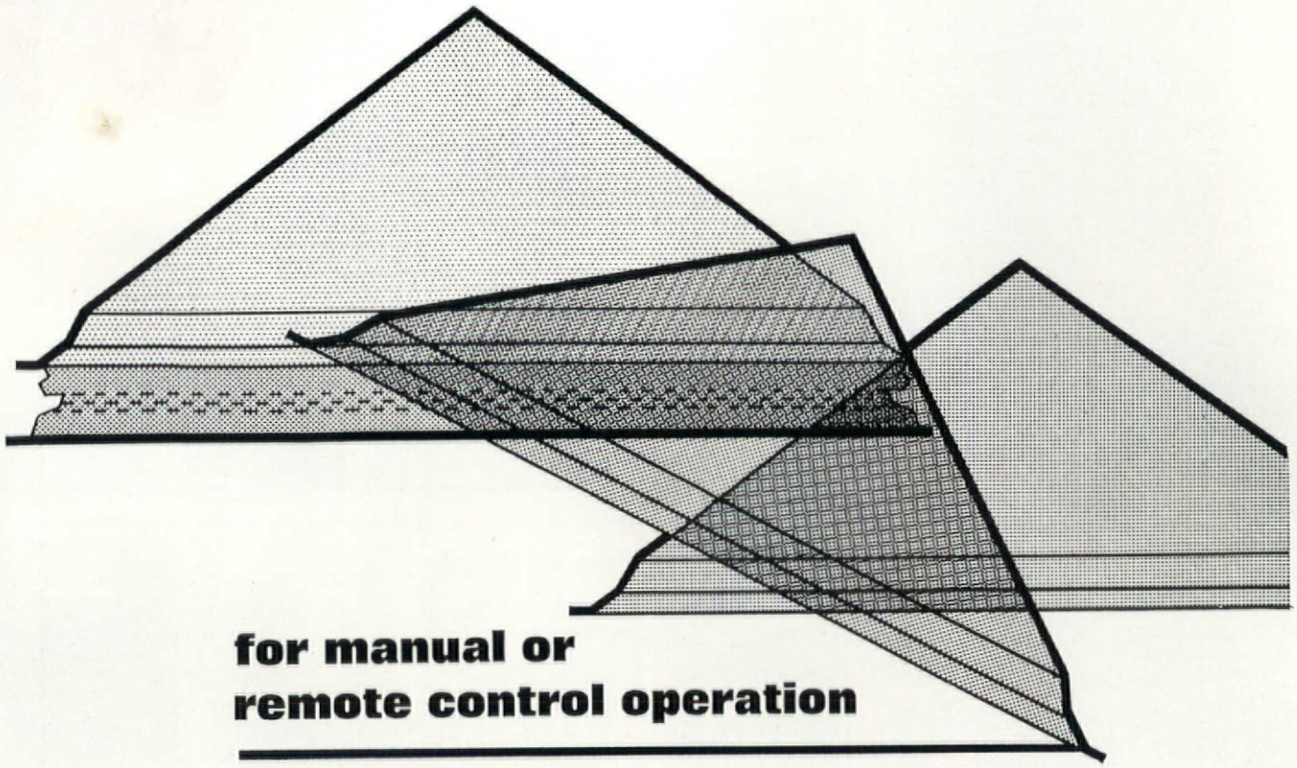

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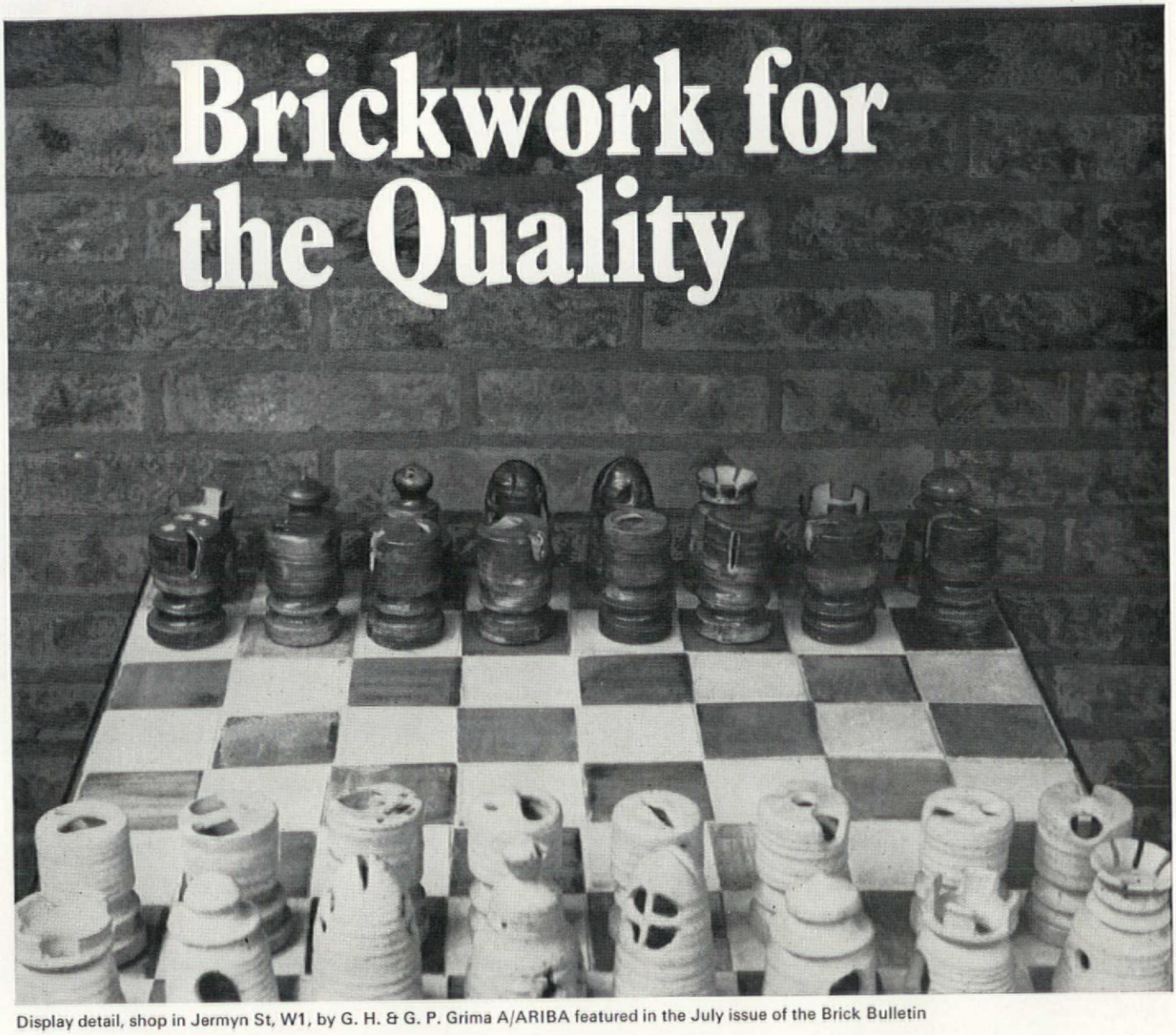

Display detail, shop in Jermyn St, W1, by G. H. & G. P. Grima A/ARIBA featured in the July issue of the Brick Bulletin

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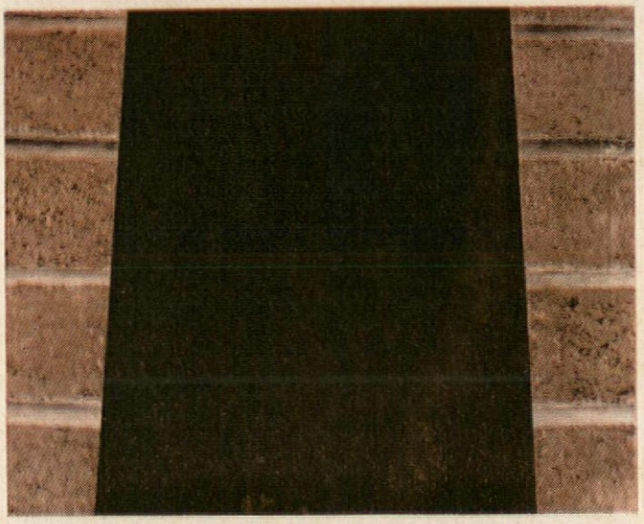

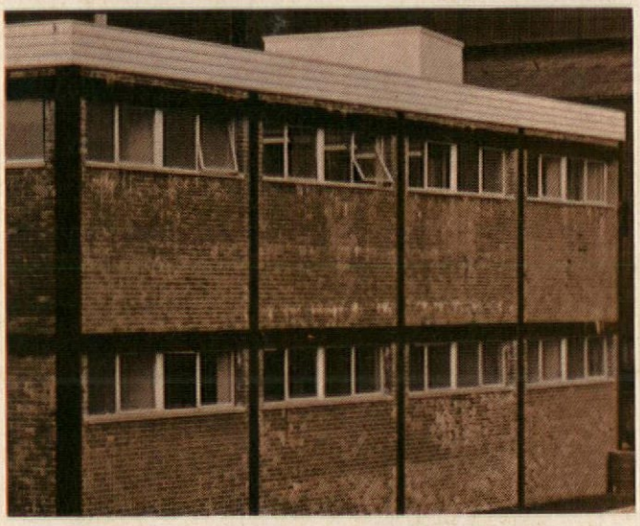

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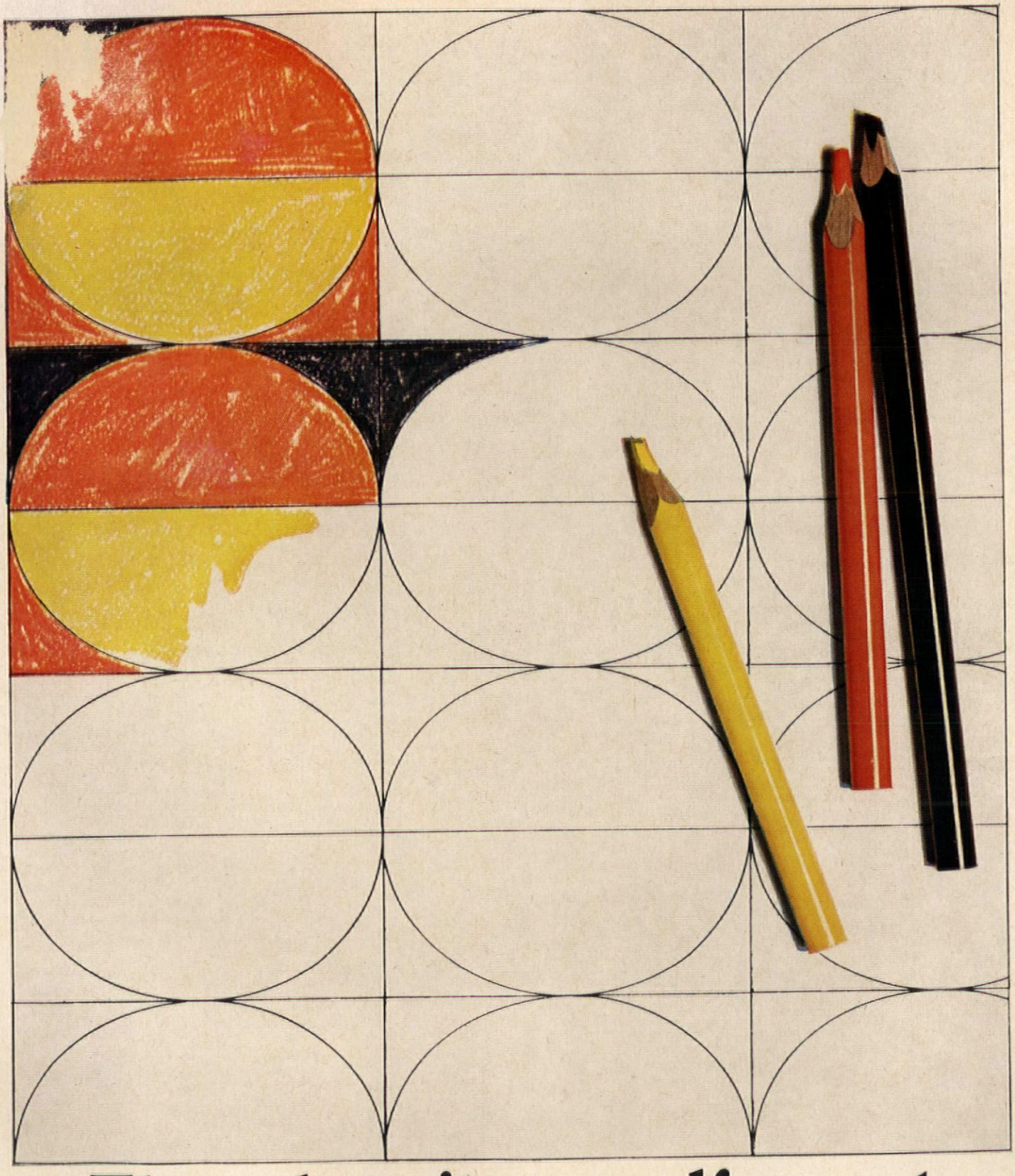

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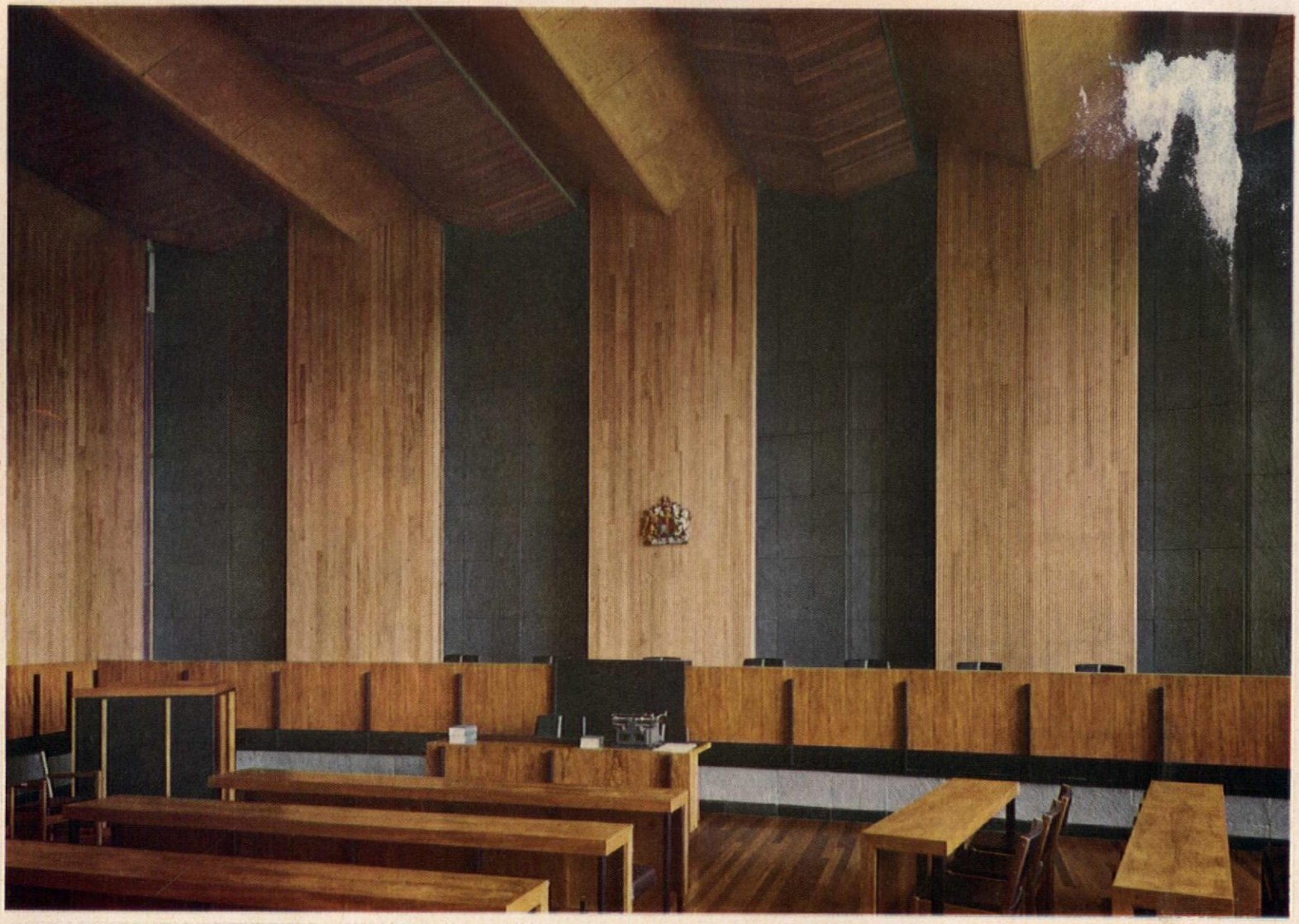

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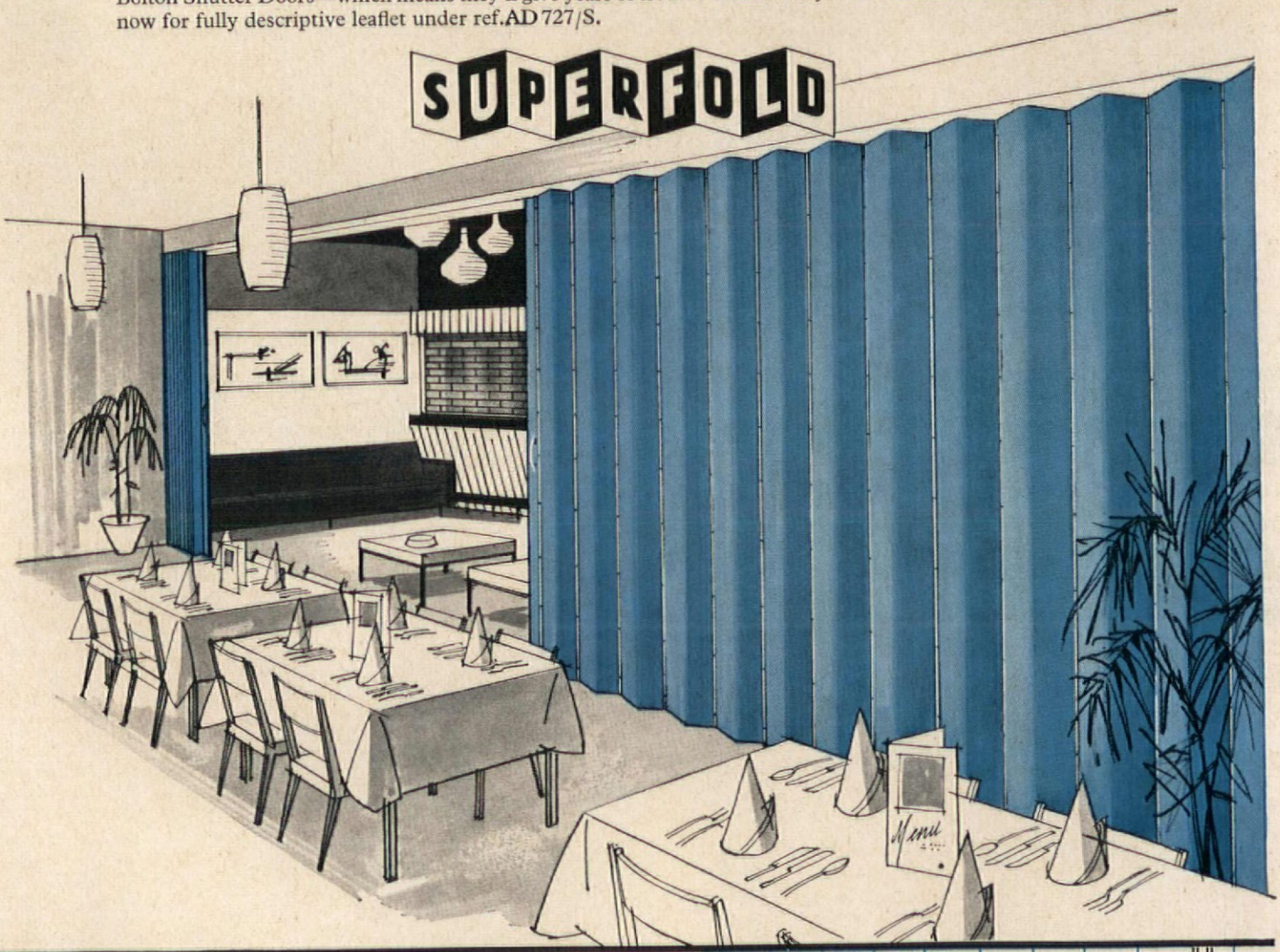

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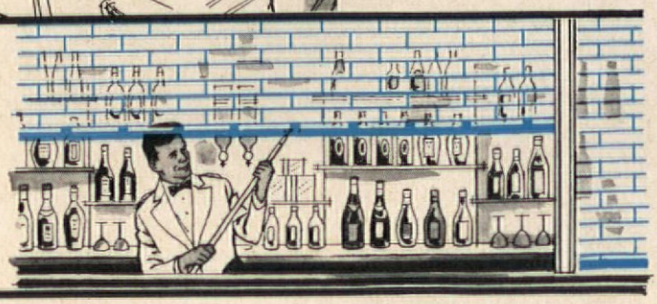

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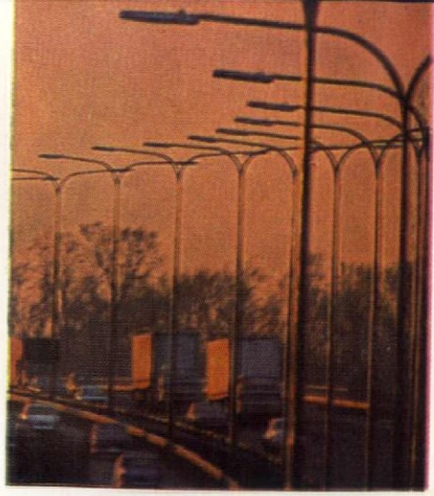

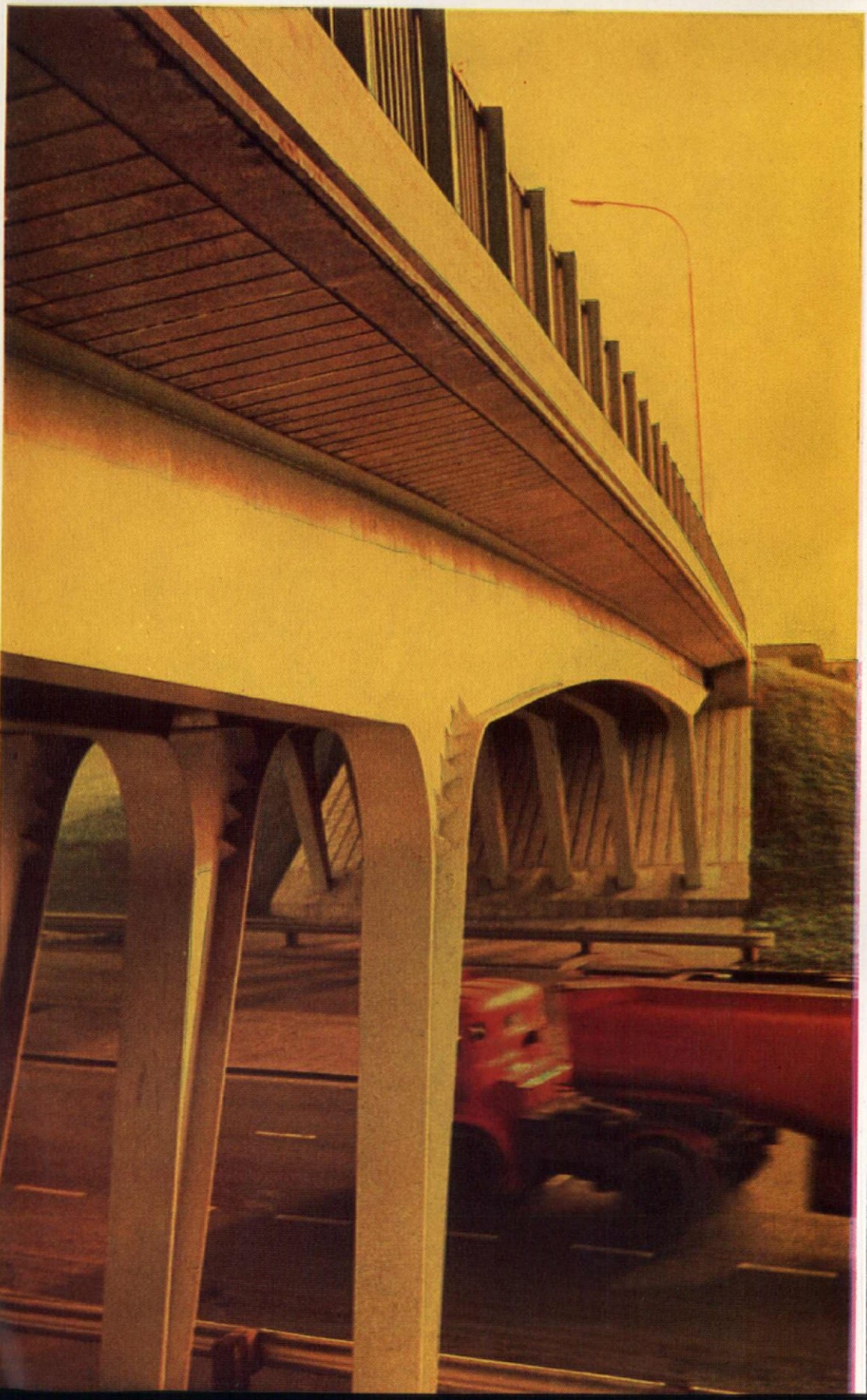

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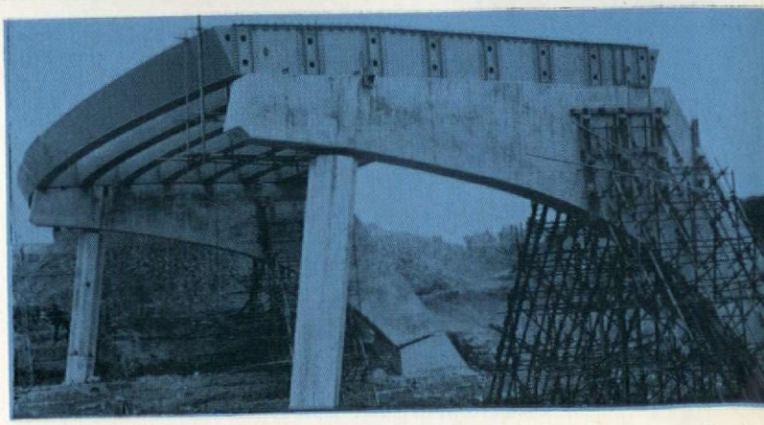
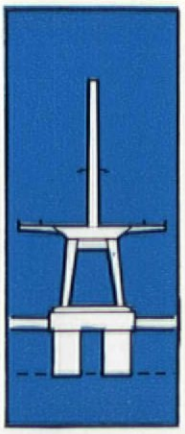
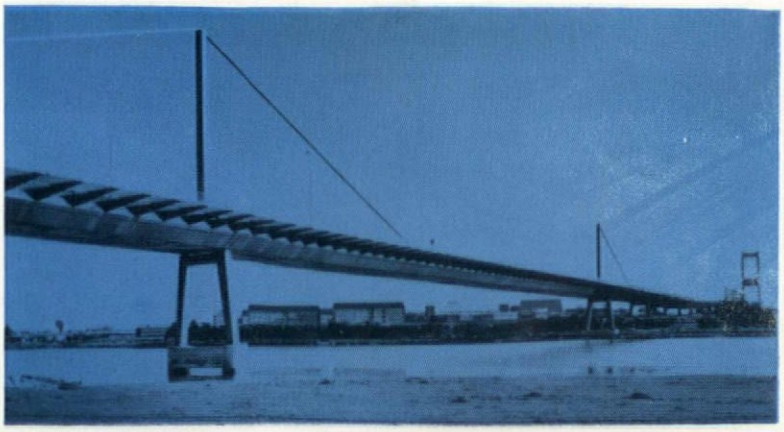
Main cover illustration:
Hall Lane Bridge, Upminster.

Lofthouse Motorway Interchange involves a complex of eight bridges, and forms the important intersection between M1 and the future Lancs-Yorks M62 motorway. One of its four interesting roundabout bridges is shown at right. These all have a composite deck containing eight curved steel box beams of trapezoidal section. Beams are friction-grip bolted at ends to steel cross-beams mounted on sliding bearings with longitudinal forged steel link connections between decks, stressed by Macalloy bars to the novel banana-shaped 3-hinge propped piers. These can take up two-dimensional movements due to the sharp 400-ft radius of bridge decks. Agent for MoT: County Council of West Riding of Yorkshire. Engineer: S Maynard Lovell. Main Contractors: A Monk & Co Ltd. Steelwork: Robert Watson and Co (Constructional Engineers) Ltd. Steel protective treatment by Metalife Ltd.



Design advances in steel cable-stayed road bridges. The development of steel bridge deck structures which have central stiffening girders of box-section construction, and are able to absorb torsional moments induced by eccentric traffic loading, now make it possible to usefully reduce weight and cost with towers and cables located centrally. Centre spans of the new Erskine Bridge and the Wye Bridge (right) are examples of this sophisticated system. Both employ twin welded steel box towers with galvanized bridge wire stays anchored within their decks. Wye Bridge—Consulting Engineers: Mott, Hay & Anderson, and Freeman Fox & Partners. Main Contractor: Cleveland Bridge & Eng. Co Ltd. Cables: British Ropes Limited.

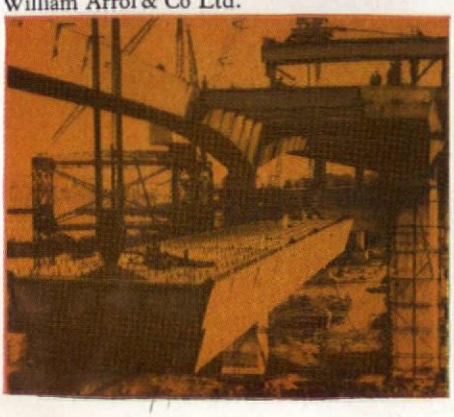




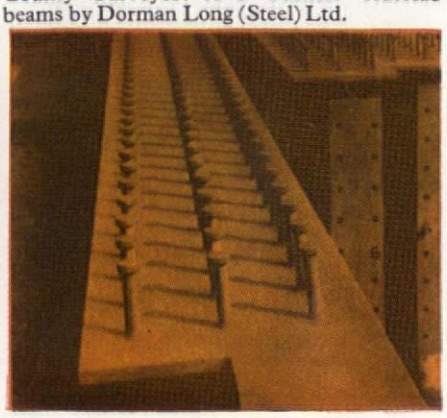
Design in Steel
solving traffic problems

Steel-framed flyover—superstructure completed in 8 days! Ease and speed of erection make the versatile 'Fliway' standard unit construction system particularly attractive to highway engineers; MoT-approved design provides quick and economical solutions to traffic bottlenecks, can be dismantled and re-erected elsewhere. This two-lane 720-ft installation on the A13—erected with minimum disturbance to local residents—has eased traffic congestion at the Movers Lane crossing, Barking. Design, fabrication and erection: Braithwaite & Co Structural Limited.

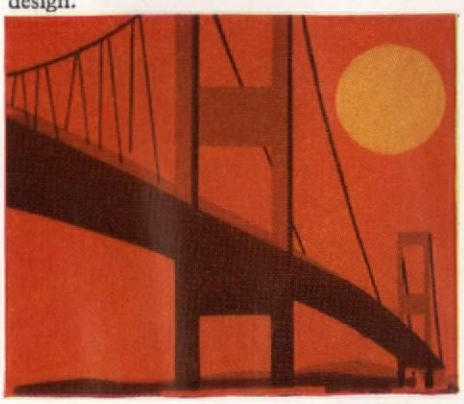
White Cart Viaduct on the M8 Renfrew by-pass. 2,700-ft superstructure has twin welded steel plate box girders 6ft 6in deep. 5,400 tons of steel were erected in under 9½ months. Steel Universal Bearing Piles in 12" x 12" H-sections were used throughout the foundations. Consulting Engineers: Crouch & Hogg acting for the Scottish Development Dept. Steelwork by Sir William Arrol & Co Ltd.



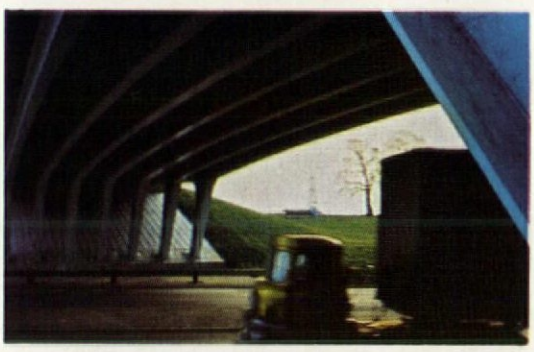
Steel beams that cut bridge building costs: Universal steel beams for short spans save on erection time and costs. Larger 'Autofab' beams like these allow higher safe loads with similar speed and economies—used here with unequal flange thickness and centre camber of 1¼in for Yanley Lane Viaduct, Somerset. County Surveyor: A S Turner. 'Autofab' beams by Dorman Long (Steel) Ltd.



Steel—to link Asia and Europe. A new British-designed suspension bridge will span the Bosphorus Straits, replacing the centuries-old ferry service with a fast road route. Design by Consulting Engineers Freeman Fox & Partners will feature continuously-welded steel plate box-section deck and inclined hanger system as used in the advanced Severn Bridge design.



Steel cuts the cost of parking more cars. Many steel-framed multi-level car parks do not need to have steel members fire-proofed now! This makes steel frame construction the most economical method of building the urgently-needed extra parking accommodation our growing volume of traffic demands. The new exposed steel frame system shown—developed by Sanders & Forster Ltd—can be rapidly erected, requires simple foundations, and when slab floor units are used is easily demounted for re-siting.



A graceful rigid-frame steel structure—Hall Lane Bridge, Upminster, gives a clear span of 128 ft over both dual carriageways on the A127 main London-Southend trunk road. Its seven cross-braced plate-girder frames were fabricated in five sections with full-strength welded joints made on site. Steelwork, shown here, weighs only 140 tons. Designed by R Bradley, County Surveyor of Essex. Steelwork: United Steel Structural Co Ltd. *Also illustrated on the first page.*

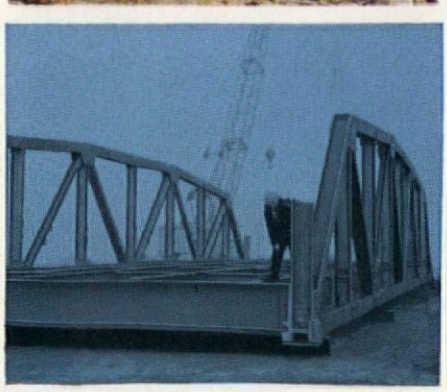
Raith Bridge—a 450-ft long 3-span dual carriageway composite deck structure—crosses the River Clyde on the M74. Its 4 all-welded steel box-girders of continuous trapezoidal section omit full top plates; deck slab acts compositely with steel through stud shear connectors on flange plates and cross-girders. Jacking has been employed to precompress the deck. Consulting Engineers: Babtie, Shaw & Morton, Glasgow, in association with Scottish Development Dept. Steelwork: Sir William Arrol & Co Ltd.

'Preflex' beams form the four main spans over the High Street on the new flyover at Croydon, Surrey. Comparative lightness of this type of construction meant quick, easy placing of beams with minimum interference to the district's dense pedestrian and road traffic. Borough Engineer: H Marcus Collins. Structural Consulting Engineers: Walter C Andrews & Partners. Main Contractors: Higgs and Hill (Civil Engineering) Ltd. 'Preflex' beams by Boulton & Paul (Steel Construction) Ltd.

Steel motorway structures—Milnrow and Ellenroad Bridges form part of a local complex on the M62 near Rochdale. Cambered main girders are supported by tapered steel box section columns. Steel was blast-cleaned and etch-primed before fabrication, followed by 2 coats of metallic lead primer and a final micaceous iron oxide coating. Design: Lancs CC, acting for the MoT. Main Contractor, Leonard Fairclough Ltd. Steelwork: Colville Constructional and Eng. Co Ltd.

British Steel and bridges for export

British engineering firms are continually winning valuable export earnings by shipping steel bridge components to overseas countries. *Below:* A 'Callender-Hamilton' unit construction bridge in Pakistan supplied by British Insulated Callender's Construction Co Ltd. This system of standardized steel sections meets many demands for rapid bridging. Components can be dispatched from stock for quick bolted site assembly. *Lower illustration:* Trial assembly of one of the eight prefabricated steel bridges for Turkey's Cizre-Hakkari Road. (United Steel Structural Co Ltd.)



Britain's urgent need for more efficient roads calls for speed in the erection of new bridges, viaducts, elevated roadways, traffic interchanges, temporary and permanent flyovers. The projects illustrated here show how modern design in steel is rapidly and economically contributing to the creation of an improved national road network—and to the solution of traffic congestion and parking problems.

New steel structures for the road ahead

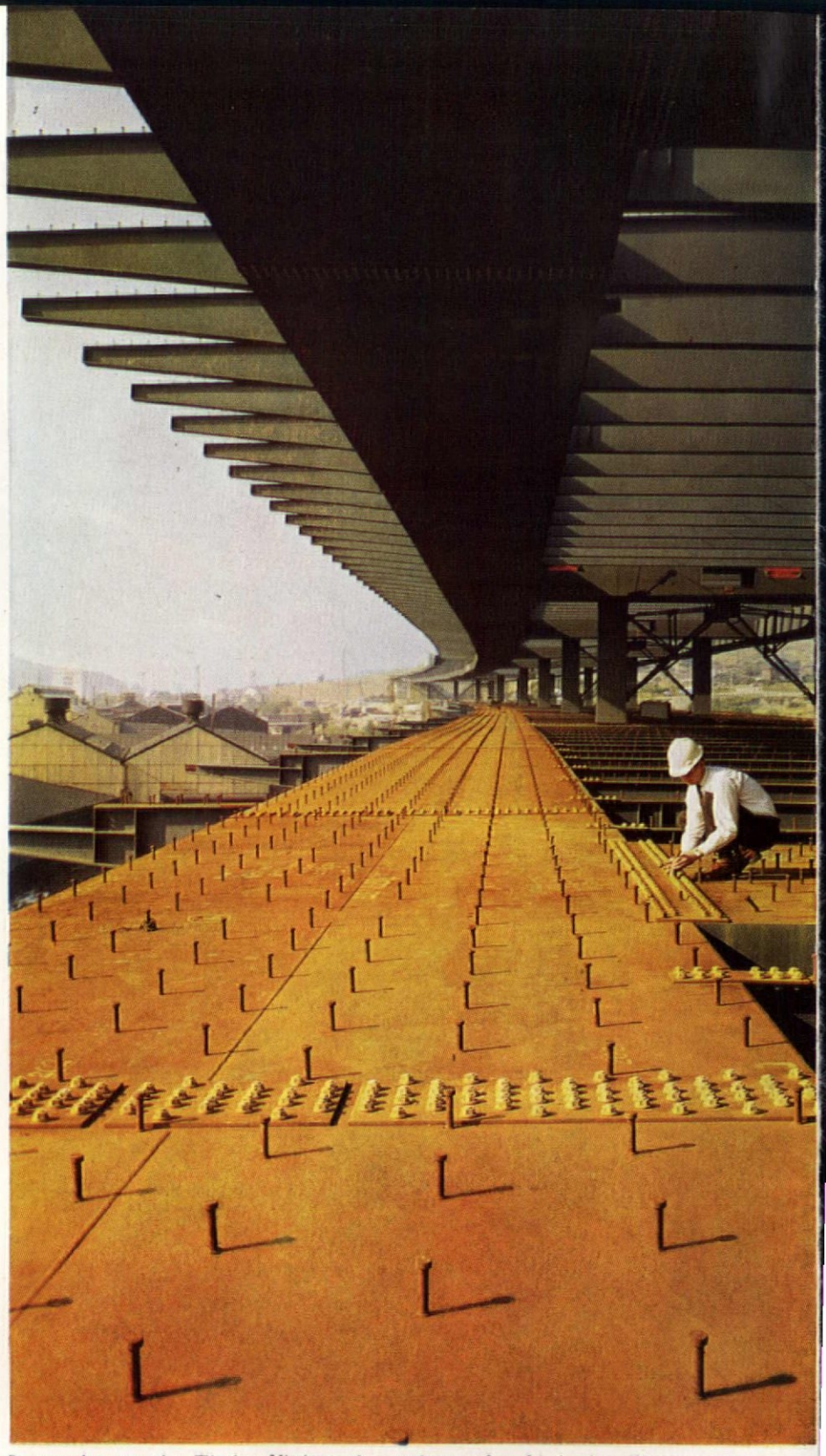
A modern road system that will meet Britain's future traffic needs calls for planning to make fullest possible use of all our available resources. Our present economic situation, and the fast-growing total of registered road vehicles—already topping 14 million in the U.K. —make speed and economy all-important. Rapid steel construction is thus one of our most important assets.

Steel is already showing how the challenge can be met in swiftly designed and erected bridges, highway structures, flyovers, and off-street multi-storey car parks based on economical steel frameworks. Steel bridgeworks permit delivery of pre-engineered structural components for more rapid erection, with reduced costly labour and sitework, and quick, dry assembly without weather delays. Speedily erected demountable flyovers in steel can now eliminate dangerous road junctions and provide permanent or temporary solutions to urban traffic bottlenecks. For all these techniques, costs are low in the ratio of pounds spent to increased traffic flow achieved, transport and industrial haulage costs reduced, accidents avoided, lives saved.

Strong support for the road programme

British steel producers are giving support to the bridgebuilder and highway engineer. Steels with improved strength-to-weight ratios have been a key feature in the successful design of major British bridges and highway structures, particularly when, as at present, maximum value for pounds spent is such a vital requirement. A new comprehensive British Standard Specification encompassing and extending the current range of weldable structural steels will shortly be published.

Attractive colour finish to suit a bridge setting is a valuable feature of steel construction. Advances in anti-corrosion techniques also mean that exposed steelwork in projects like the Severn and Forth bridges, and Tinsley viaduct, will require no major maintenance attention for some 20 years.

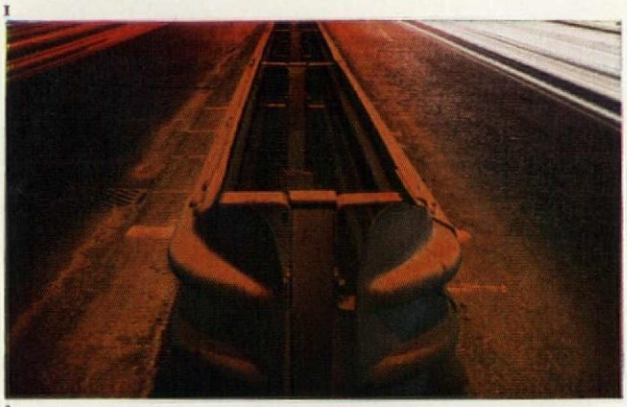


Spectacular two-tier Tinsley Viaduct. A major contribution to Britain's highway programme, this unique steel-girder structure spans a congested area in the Don Valley at Sheffield, and will carry M1 above and a local trunk road on its lower deck. Savings have been substantial due to final choice of a steelwork structure with large-scale use of prefabrication. Continuous box girders in high yield steel to BS.968 are carried on cantilevered cross beams which are supported on welded box columns. Consulting Engineers: Freeman Fox & Partners, acting for the Ministry of Transport. Main Contractors: Cleveland Bridge & Engineering Co Ltd.

Design engineers can call on steel reinforcements of many kinds—special bars and welded fabrics—and on improved types of pre-stressing and post-tensioning bars, wires and cables. These, and special grades of bridgewire for suspension and staying cables, provide sinews of strength in bridges, reinforced concrete roads, composite bridge decks, and other highway structures. Illustrated: Slip-Form Paver, reinforced concrete road-laying machine.

Steel - safeguarding and speeding traffic

1



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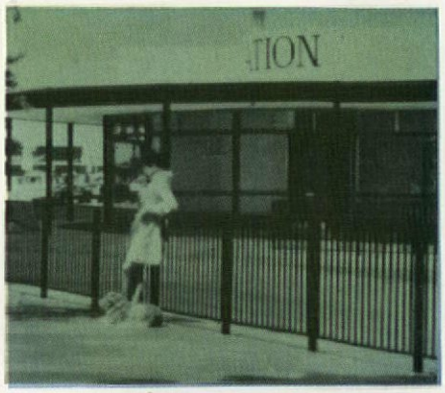
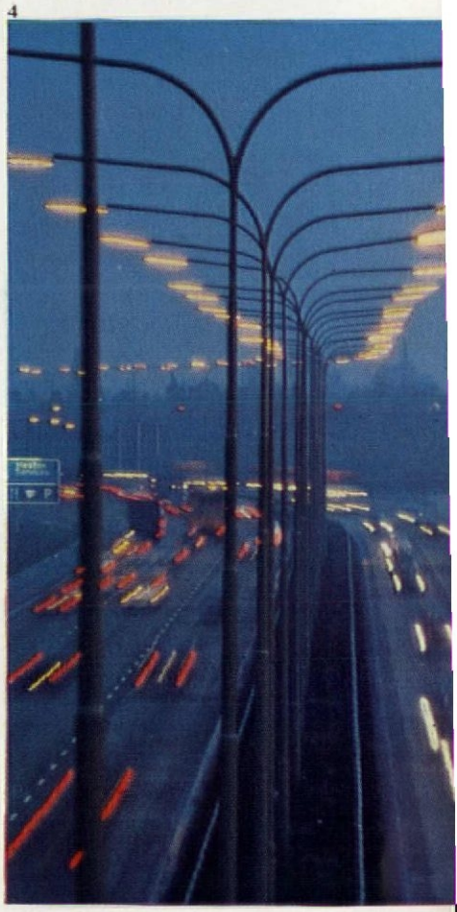


3

These are just a few examples of how readily available steel highway equipment can increase road safety, save lives and money.

Steel crash barriers protect moving traffic. (*1*) Road-edge and median safety barriers fabricated from galvanized steel sheet are designed to absorb crash impact, decelerate and deflect vehicles safely along their length. **Safety for the pedestrian—at low cost.** Strong, lightweight tubular steel footbridges and pavement railings (*2 & 3*) aid better road use; pedestrians walk safely; drivers proceed with greater confidence; traffic flow is increased at busy centres. Steel footbridges can be erected in a day—at 1/5 cost of a subway—making a 100 per cent safe High St. or school crossing; available with pram ramps. Tough thermoplastic dip-coating of balustrading can give long-term corrosion-resistance and colour decoration.

4



High standards of design cut costs—and accidents. Strong slender steel lighting columns (*4*) reduce visual obstruction and are available with extra-long cantilever arms. Efficient hot-dip galvanizing cuts maintenance costs. The tall double-bracket units shown above are on the M4 Chiswick-Langley motorway. Installations of this type can cut night accidents by 30 per cent.

Illustrated: (1) Crash Barrier by Dorman Long (Steel) Ltd. **(2)** Bus station balustrading manufactured by Norman & Sons (Marketing) Ltd. and nylon-coated by Plastic Coatings Ltd. **(3)** Footbridge made and erected by Finch Engineering Ltd. **(4)** Lighting columns by Stewarts & Lloyds Ltd.

Information

Please indicate your interest by ticking appropriate square, and underlining special subject.

- Data on steel highway structures: bridges (including footbridges), flyovers, composite construction in bridges, etc. ☐
- Steel-framed car parks. ☐
- Tubular Steel products or design advice: balustrading, lighting columns, etc. ☐
- Steel Sheet: safety barrier designs, ducting, road signs, with colourfast corrosion-resisting finishes. ☐
- Stainless Steel: Uses in road equipment and street furniture. ☐

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Design in Steel

Have you seen our fifth* report on calculated brickwork?

We have now completed a further study in the area of calculated loadbearing brickwork. There is much in it that has great significance in tall building projects. Redland, as always, are well to the fore in the development and manufacturing of bricks for high rise building. This latest addition to our list of technical publications is of great significance to architects and the building industry in their continuing search for improved design at satisfactory cost. The number of this publication is LB8. Please write for it.

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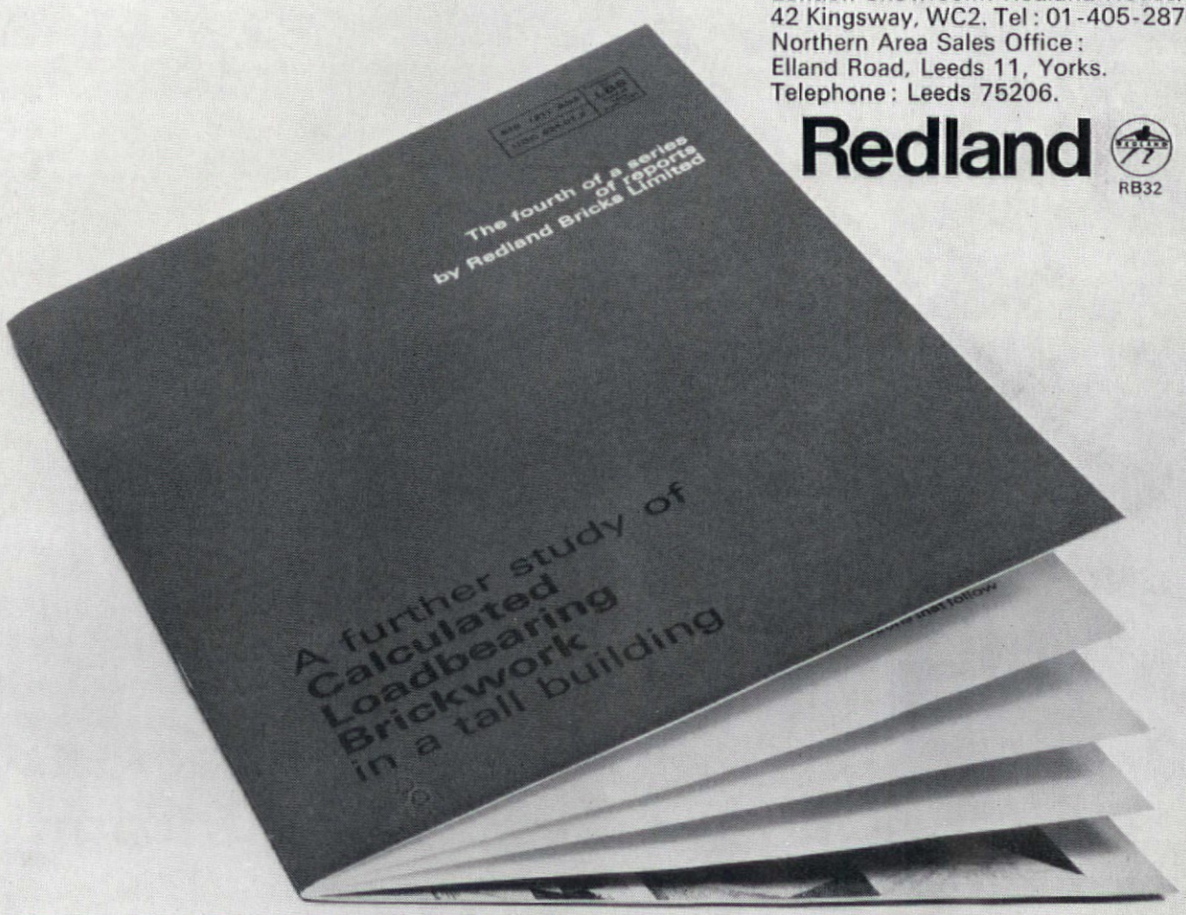
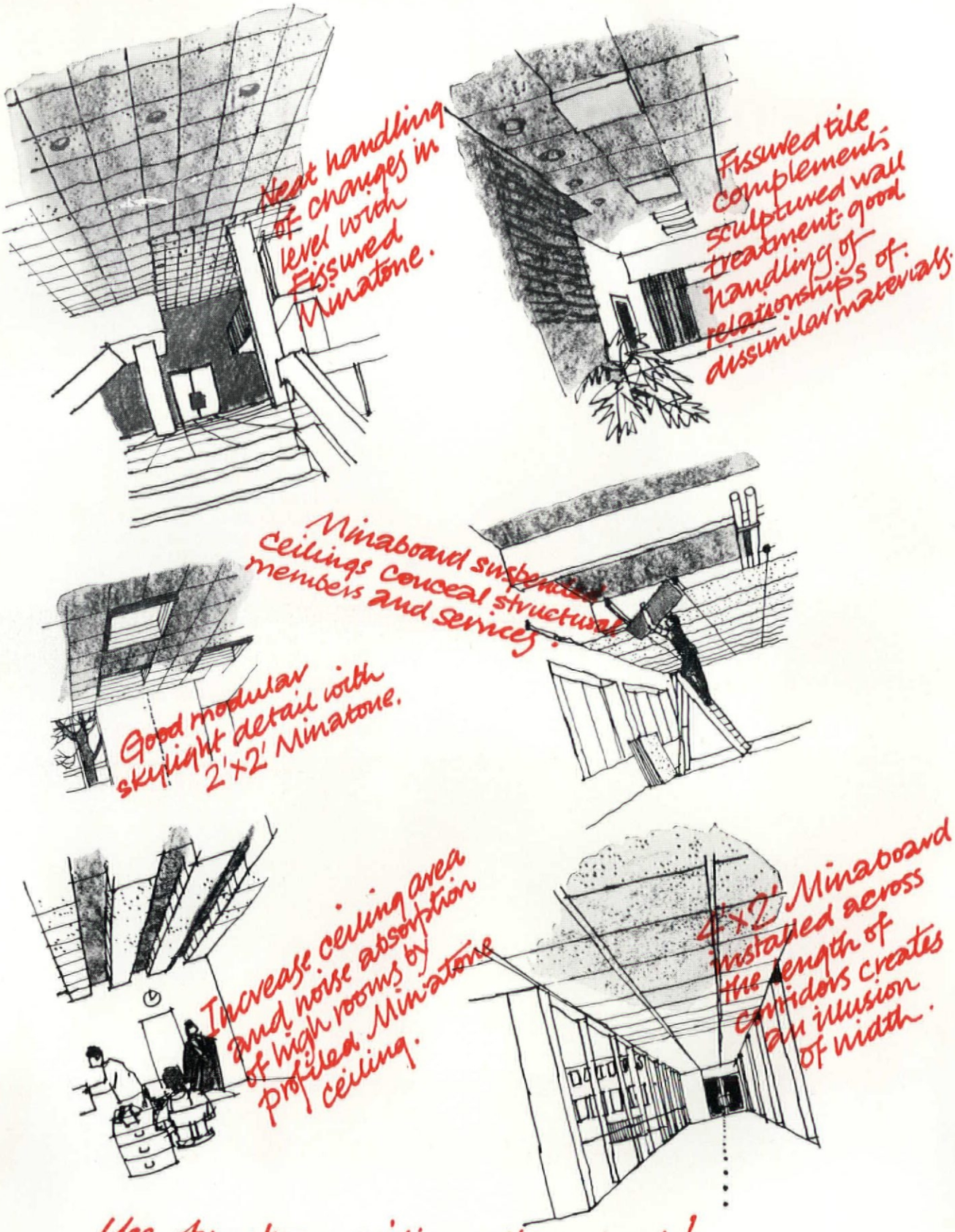


*Five includes the illustrated report on Baylis Road.



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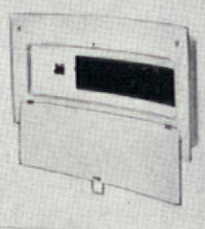
we have two stories to tell

Once upon a time there was an old fashioned house owner who didn't know or care much about overloading the electrical circuit of his home. After a fuse had "blown" he couldn't find any fuse wire so he fumbled around in the dark until he found a piece of thick wire, located the offending fuse carrier (at the sixth attempt) and mindlessly inserted the wire in the carrier... That night his house was burnt down. Sad but too often true.

Knowledgeable architects advise their clients to fit Quicklag-P Consumer Units – the modern way to protect domestic electrical circuits. Safe with thermal-magnetic tripping, compact with Miniature Circuit-Breakers and a built-in mains switch, foolproof with resetting at a flick of a switch and easy visual fault location. You may not be a fairy godmother but you can write for details of QUICKLAG CONSUMER UNITS and ensure that your clients *live happily ever after.*



This is the story of an electrical contractor who always needed 20 square feet of wall space to accommodate his electrical distribution equipment. Switches here, fuseboards there, ugly cables everywhere. The architect tore his hair to see such a mess is his lovely building. So he wrote to Chilton and got the electrician full details of the Protector range of Distribution Units which showed how versatile, compact and modern looking they are. It also showed him the four sizes of boards available to provide 12, 18, 24 or 36 single pole outlets for 2, 3 or 4 wire systems. The electrical contractor thought the architect was a wizard and the architect had a nice, neat, unobtrusive electrical installation. So everybody was happy.

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ANNOUNCEMENTS

The Owen Luder Partnership of 102 St. George's Square, London SW1, telephone number 834 6811 (10 lines), announce that Norman Willson, Dip. Arch., ARIBA, an Associate of the Practice since 1962, has become a Partner with effect from 1st June 1968. At the same time, Dennis F. Drawbridge, ARIBA, will retire from the Partnership by mutual concent to commence practice on his own account, but will continue to be associated with the Owen Luder Partnership.

The Owen Luder Partnership and Young and Hall announce that they have formed a Group Practice as from 1st June 1968. Arrangements are in hand for both offices to operate from 102 St. George's Square, London SW1, telephone number 834 6811, but in the meantime, Young and Hall will continue to practise from their present address, Crown Buildings, 9 Southampton Row, London. WC1, telephone number HOLborn 3518 and HOLborn 8371.

The Owen Luder Partnership and Gaby Schreiber Associates announce that they have formed a composite design service, under the title of Convel Design International, with offices in London, Brussels, Harrogate and Newcastle-upon-Tyne. The two offices will co-operate on design work in this country, but particularly on overseas commissions. The London address of the Owen Luder Partnership is 102 St. George's Square, London, SW1, telephone number 834 6811, and Gaby Schreiber Associates, 15 Radnor Walk, King's Road, London, SW3, telephone number 352 9841.

Bubble City at All Hallows-by-the-Tower of London
(8th–20th July)
Fun structures, Games, Events, Clowns, Music or what have you.
If interested in participation please contact
Robert Atkins, Project Organizer,
1 Hayward's Place,
London, EC1.
Tel: 01-534 0310
01-253 9293

AD Competition 7/68

What, where, when, whom?

Answer

name of building or construction .....

address .....

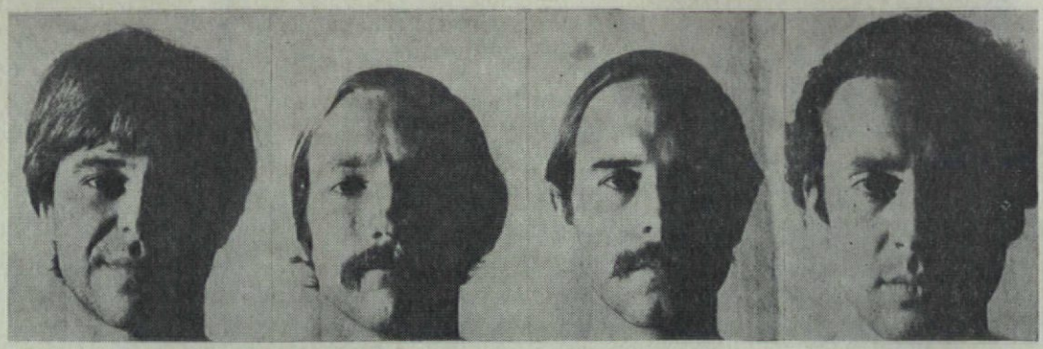
date of construction .....

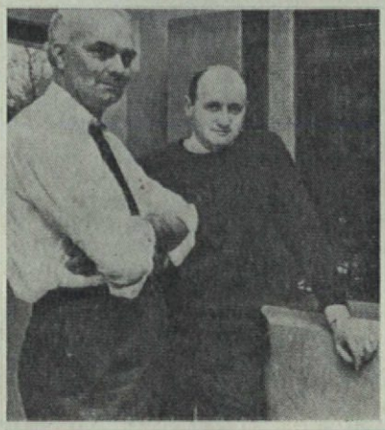
designer (if any) .....

Name of competitor .....

Address .....

cosmorama





People

(Above) Ricardo Bofill, Peter Hodgkinson, Xavier Baguel and Mando Janowsky, designers of the fantastic Xanadu shown on page 327.

(Left) John Dinkeloo, 49, and Kevin Roche, 45, architects of the Ford Foundation headquarters, New York, featured in this issue, on page 305.
Photo, *Time* 8-1-68

(Right) Neave Brown, architect of the five houses in N.19, illustrated on page 330.

What Where When Whom

The sender of the first correct answer to this month's problem picture opened in our office on the 20th of this month, will receive £5.
The entry form is on page *AD* 28.
Envelopes should be marked *Competition*.

There were no correct answers to the June competition, perhaps because the picture was so bad, but it was littered with clues.
The building shown was Eugène Viollet-le-Duc's own house, 68 rue Condorcet, Paris, built in 1862.
Winner of the May competition was Hermann Czech.

Reynolds Award

The 1968 R. S. Reynolds Memorial Award for distinguished architecture using aluminium has been given for the Netherlands Pavilion at Expo '67 by Walter Eijkelenboom at Abraham Middlehoek.

Corrections

AD 6/68, page 294, H3. The suppliers of the inflatable warehouse are Barracudaverken (Great Britain) Ltd., 70 Woodcock Hill, Kenton, Harrow, Middx.

AD 4/68, page 193. Dryad Metal Works Ltd. ask us to point out the knob and handle shown only form a small part of a whole range.

Sigfried Giedion (1888–1968)

An appreciation by José Luis Sert

I made Giedion's acquaintance in the late twenties. I saw him frequently in the Congrès Internationaux d'Architecture Moderne (CIAM) and at preparatory meetings, then later in New York during the war years; and finally at Harvard.

Giedion was a discoverer of a recent but unknown past; and he often used to comment on the lack of interest and appreciation or effort to document the recent inventions and discoveries that have shaped our industrial civilization. He was shocked to learn that the US Government authorized the sale of the National Patent Office collection of scale models and documents, some of the most significant inventions and creative ideas in furnishings and equipment that have shaped environment in the USA.

Sigfried Giedion has written some of the most important architectural books of this century. His best known work, *Space, Time and Architecture*, has given students a better understanding of the world we live in. Some American documents and information in the book had never before been published. He discovered them because he was concerned with the origins of the things around us. He was a man who lived in the present, although he investigated the past. He understood the relationships between the visual arts; he extended architecture to building technology and to city planning and urban design, when such broad views were only shared by very few. All developments in the arts were for him one continuous process related to architecture, urban design and the visual arts, formulated in his series of remarkable books on *The Eternal Present*.

In the last weeks of his creative life he finished *Architecture and the Phenomenon of Transition*.

He had wanted to write a brief history of CIAM. He had been the Secretary of this group from its inception in 1928 at the Chateau de la Sarraz. For 26 years he gave the Congresses his enthusiastic, unpaid help, and his family in Zurich had sacrificed a room in their house in the Doldertal to store the collection of documents that Giedion never had the time to select or destroy. The Zurich Polytechnic Institute will be the depository of those papers after the history of CIAM is published as a homage to Sigfried Giedion.

Next month:

The Architecture of Democracy (a sequel to *AD*, August 1963), describing that upsurge of architecture, from the squatter settlements of Peru to the reconditioning of negro tenements in Boston, undertaken by engaged groups who have eschewed bureaucratic controls and taken building into their own hands.

Miscarriage

Photo: John Donat

The 14th Triennale of Milan was intended to be a gallimaufry of talent. Charles Eames *et al.* were invited to participate. In the event only Charles Eames and the UCLA contingent didn't contribute; the rest might well have spared themselves the effort, for their exhibits were debarred from public viewing on the day of the opening, May 30th. Hardly had the ceremonial eulogies been completed than the lights went out and G. Muzio's unlovely Palazzo dell'Arte, in the Parco, was occupied by the students of Milan.

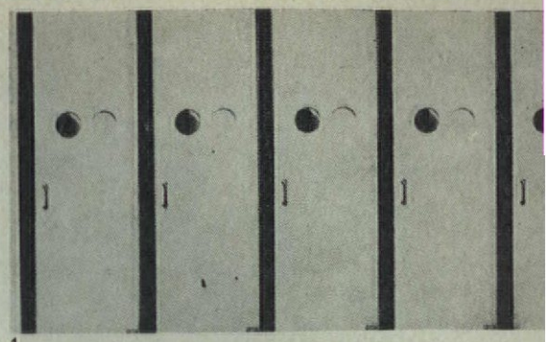
Fired by German and French student protests Italian youth had effectively closed down most universities and institutions during the month of May; the occupation of the Triennale was simply another protest aimed against the archaic disciplines of art and architectural training and the organization of the arts in Italy. Having made their protest the students might well have abandoned the Triennale—an occasion for them of no great significance—but occupation having been effected, a host of older sculptors and painters seized the opportunity to adopt the ready-made revolution. 'No more power from the top', an aging lady painter cried. For ten days they held the building, organizing meetings, preparing press handouts. Opinions as to the nature of the complainants differ. Aldo van Eyck, one of the contributors, has called them a host of failed bourgeois artists; all the French contributors, led by Francois Matthey, have upheld them, one of them (Chang from Hong Kong) has declared the Triennale to be no more than a brothel, a house of goods for the delectation of the leisured and indolent, *not* for the Greater Number—the avowed theme of this year's exhibition.

Certainly, there was nothing dull or academic about the exhibitors or their works. Giancarlo di Carlo, the organizer, predictably invited a phalanx from Team 10—Peter and Alison Smithson, Shadrack Woods and Aldo van Eyck—but there were other designers too, of an altogether different tenor, ranging from the Americans George Nelson and Georgy Kepes, Romaldo Giurgola, Saul Bass and Hugh Hardy, to Isozaki, the Archigram group, the fantastic, futuristic NER group from Russia, led by Gutnoff **3**, and the French revolutionaries under Francois Matthey **9**. Altogether it would have been the youngest Triennale ever.

Of its success, one cannot judge fairly. Many of the exhibits were unfinished on opening day. Of the 14 national exhibits—as opposed to individually invited participants—only two stood out; that of Mexico, designed by Eduardo Terrazas, with the graphics **4** (on which it so largely relied) by Peter Murdoch, and the Austrian pavilion by Hans Hollein, in two parts, the one a two-colour injection moulding machine belching out rose coloured spectacles, the other a series of corridors in parallel, each giving a taste of what you get in the greatest number in Austria—snow storms, crowds, garbage, frustration, etc. **1,2**

Saul Bass was in introverted mood, presenting a roomful of green filing cabinets with objects hidden within **8** (his more expansive film was not shown). Arata Isozaki was determinedly morbid, with his images of Hiroshima (one again his own more optimistic panaceas were not projected onto the grusesome background). Georgy Kepes celebrated the lights of the city, Archigram not only the lights but all the clutter and glitter of city living **5–7** (*AD* 4/68, p. 152) and so, in their way, did the Smithson's **10**, who attempted to show how each individual in the manner he dresses, in the objects he carries, may make of living in the city, an act of celebration (*AD* 5/68, p 151).

Ironically the organizer, Giancarlo di Carlo's exhibit, devoted to the youth of today, took the form of a pastiche barricade, painstakingly contrived first by laying cobbles and setts and then ripping them up with pick-axes. Inside was the art barricade, outside were the student pickets.



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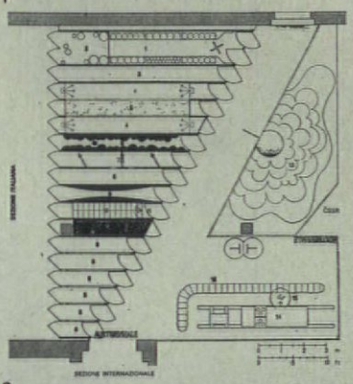

Key
1 supermarket
2 waste
3 files
4 snowstorm
5 cooled corridor
6 crowd
7 frustration
8 passage
9 population increase
10 dead end
11 mitcrokosmos
12 isolation
13 products
14 2 colour injection moulding machine
15 glasses
16 seats

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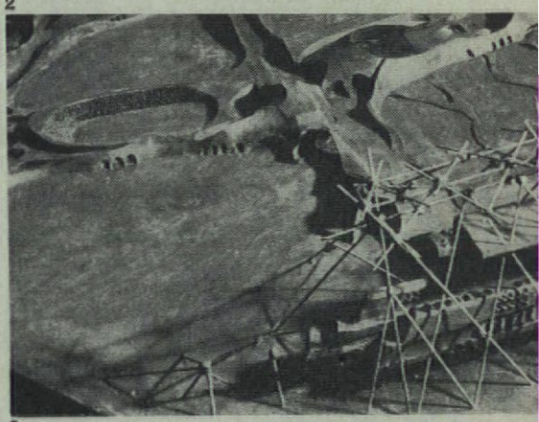

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Books

Letters of an architect

Eric Mendelsohn. Edited by Oskar Beyer. Abelard-Schuman. 45s.

'. . . A profession—that is the tragedy. I feel, as always, inclined to treat architecture as an art with all the passion that I feel for beautiful women of her rank. But I find that the longer I live with her the more choosy she shows herself in accepting my old, youthful love.'

These nostalgic excerpts written mainly to his wife of legendary beauty, interspersed with extracts from lectures covering the period from 1910 as a student till his death at 66 in a foreign land, his migratory years at an end, synthesize the life of this volatile, sensitive, introverted imagination—arrogance of a diffident man in youth. It is a pity we only get a one-way traffic in this communication. To his contemporaries they evoke the tragedies of a persecuted minority; to the current generation, they convey clues to the understanding of his work—as one of the founder members of the Modern Movement—and of the new forms evolved by a handful of architects who became international figures.

His visionary sketches reproduced here—the first steps towards a new form of expression—are the most valuable contribution of this cultural epoch. Regrettably the photographs are not as good as one would have hoped—the Chelsea house is omitted. An autobiographical memorial edited by the late Oskar Beyer it is free from taint of egotism. In a sense Mendelsohn wrote his own obituary in that 'Nobody can do more than express what is in him—this alone is the foundation for success'. *John Killick*

Design and Art Direction 68

Constable & Co. 42s.

Was he the right man for the job?

This is the sixth annual of British print, advertising, editorial and television design. A catalogue to go with the move to new headquarters at 12 Carlton House Terrace.

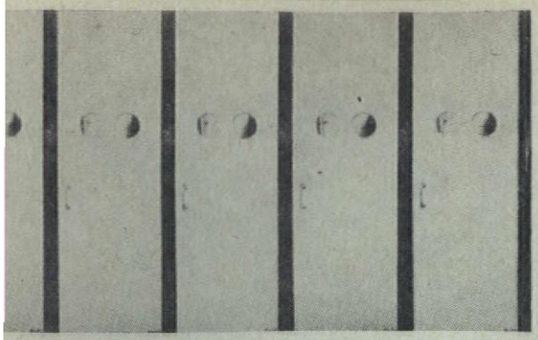
The cover is designed by Bob Gill and looks like a very badly designed Omo pack. Two points come out of this: firstly if that kind of approach was needed why not get someone who designs soap powder packs to design the cover, and secondly and more important is the fact that this type of design seems to contradict all that *Design and art direction* says it stands for—that is, the promotion of *good* design work.

The inside of the catalogue is not much better. The advertising design looks like secondhand American Art Directors Annual of New York 1965. Most of the copy is too clever for its own good, the choice of models in most cases is terrible. In fact most of the ads shown seem to depend on a formulae of the latest 'in' typeface pushed around a mediocre photograph. There are exceptions, and these for me are the campaigns for Uniroyal tyres, Dhobi rainwear and El Al airlines.

In the magazine area *Nova* appears again using the same 'poor man's' *Esquire* magazine headlines. Nearly all the spreads shown are fashion features—and you can't really go wrong with those. The *Sunday Times* Colour Supplement comes off best because it is based on good journalistic and visual projection.

There is the usual collection of letterheadings, direct mail, packaging with nothing worth mentioning. Television commercials—forget it.

The only other memorable displays for me were two photographs by Helmut Newton. One for *Vogue* of Twiggy, and one for *Queen* magazine If you don't believe me take a look for yourself. . . . *Dave Chaston*



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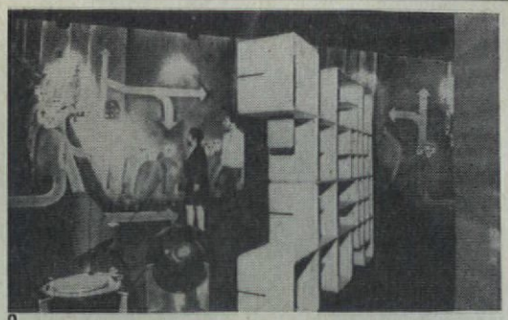

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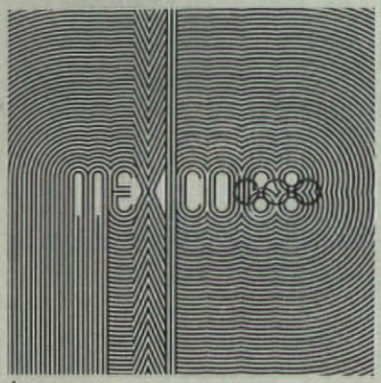

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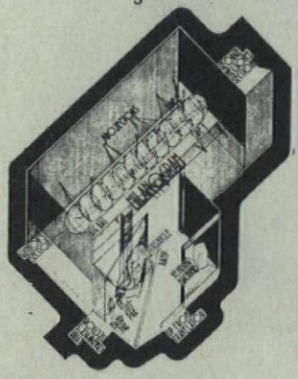

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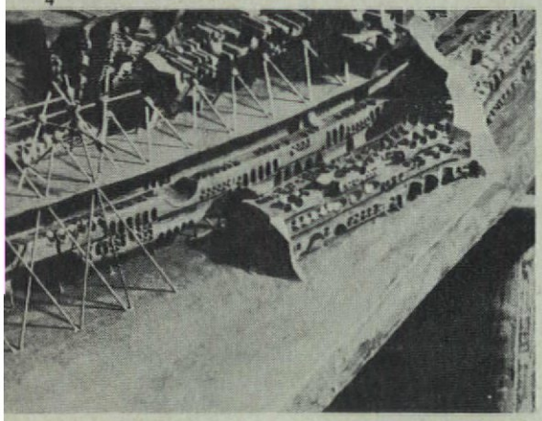
The inflatable above is the first mock-up of Mike Webb's cushide and living envelope, minus, of course, all the gadgetry necessary to make it work (see *AD* 11/66 p.576 and 6/68 p.272). Gadgetry and technology at the Triennale were confined mainly to a special exhibit, where the highlight was a 35hp pedal-powered aeroplane (wingspan 22m, weight 47kg) designed by the Japanese engineer Isao Hosoe. The first flight was made in February 1966, when the plane rose 3 metres from the ground.

10 Photo: John Donat



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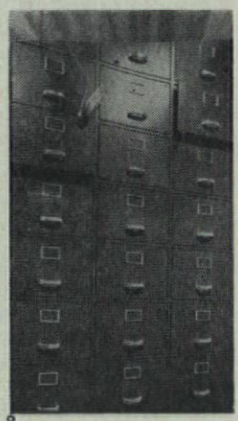

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Sources of modern architecture and design

Nikolaus Pevsner, Thames and Hudson, 216 *pp.,* 198 *ill.,* 35*s. cloth,* 21*s. paper.*

Professor Pevsner's essay on the sources of modern architecture and design has been rescued from that lumbering compendium *The Sources of Modern Art.* Numerous illustrations have been added; but it is doubtful that the operation has been worth the while. The new book must, inevitably, be compared to the author's classic *Pioneers of modern design.* The new study is in comparison slight and unbalanced. William Morris remains as always, in Professor Pevsner's iconology, the fountainhead; his socialism provides the moral basis for the modern movement. Yet in the present study no less than a third of the pages are given over to Art Nouveau—a movement which Professor Pevsner patently dislikes—giving an unwarranted emphasis to certain artistic and aesthetic aspects of the modern movement. Vital aims are forgotten, or overlooked—the rise of interest in mass housing is not discussed, nor is the development of structure, plumbing and lighting or even of mass production considered. The Thonet chair, for instance, which was used by well over 50,000,000 people, is not mentioned—even from a purely stylistic point of view Michael Thonet's Liechtenstein Palace chair was at least 60 years in advance of similar designs by Eugène Gaillard who is upheld for his chaste paraphrases of classic French furniture. The modern movement was not, and should not be considered as a stylistic escapade; if Morris's socialism and his 'art for the people' mattered, then the way in which they mattered should be demonstrated. *RM*

Publications received

Collins pocket guide to English parish churches
The South and The North. Ed. John Betjeman. 447 *pp. and* 384 *pp. Collins, London.* 30*s. ea.*

The language of architecture
Niels Luning Prak. 213 *pp. Mouton & Co., The Hague.* 32.50 *guilders.*

Architecturology. An interim report.
I. M. Goodovitch. 120 *pp. George Allen & Unwin Ltd., London.* 45*s.*

Richard J. Neutra.
238 *pp. Instituto Eduardo Torroja, Madrid.* $27.

American art since 1900—a critical history
Barbara Rose. 318 *pp. Thames & Hudson Ltd., London.* 35*s. (cloth),* 21*s. (paper).*

Isamu Noguchi—a sculptor's world
Foreword by R. Buckminster Fuller. 260 *pp. Thames & Hudson Ltd., London.* £5 5*s.*

Furniture designed by Børge Mogensen
Selected and described by Arne Karlsen. 135 *pp. Danish Architectural Press, Copenhagen.* 72.00 *kroner.*

Looking forward to the seventies
A blueprint for education. Ed. Peter Bander. 333 *pp. Colin Smythe Ltd., Bucks.* 20*s.*

Public Health Act 1961. The building regulations 1965. Metric equivalents of dimensions
Ministry of Housing and Local Government, Welsh Office. 44 *pp. H.M.S.O., London.* 7*s.* 6*d.*

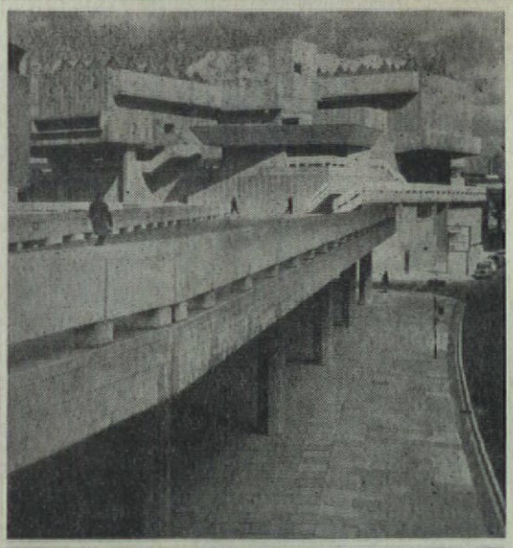
Building construction
Vol. 3. W. B. McKay. 166 *pp. Longmans, London.* 25*s.*

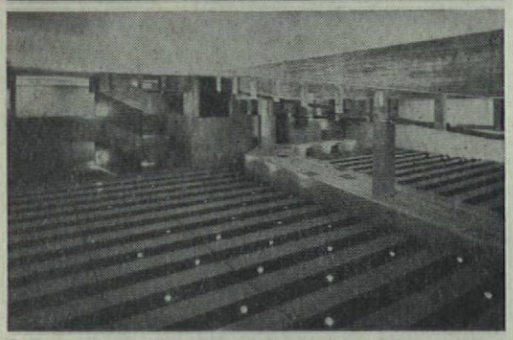
Chartered surveyors
The growth of a profession. F. M. L. Thompson. 40 *pp. Routledge & Kegan Paul, London.* £2 10*s.* 0*d.*

Thonet underplayed

The Victoria and Albert Museum was inspired in June to hold an exhibition of the bentwood furniture of Michael Thonet (1796–1871) at the Bethnal Green Museum. It was inspired by and leaned heavily upon the research undertaken for the great showing of the Thonet's work held 3 years ago in Vienna (*AD,* 1/66). Neither the range nor the novelties of that exhibition, however, were reflected in the London showing. Sadly, no one important enough in the V & A hierarchy thought the Thonets' worth a full-scale investment.

Architects are, perhaps, biased in favour, they have for long been obsessed with Thonet furniture—Adolf Loos was using it in the Café Museum in Vienna in 1899, Josef Hoffmann at Purkersdorf Sanatorium five years later, Otto Wagner at the Postsparkassenamt in Vienna, and so to Le Corbusier in the Ozenfant house in Paris in 1922 and the Esprit Nouveau pavilion of 1925. Yet it was not these masters of the modern movement alone who recognized its mass-produced artistry, that heavy-handed restorer—and prophet—Viollet-le-Duc had introduced it with easy assurance into his own house at Lausanne long before he died in 1879.





More art in another bunker

The Hayward Gallery (24,600 sq ft of galleries and sculpture courts on three main levels) making up that cluster of faceted concrete structures—the Queen Elizabeth Hall, the Purcell Room and the National Film Theatre (*AD* 3/67) all hard against Waterloo Bridge, is complete and is being inaugurated this month with a great display of the works of Henri Matisse. The GLC South Bank Arts Centre is thus finished and the site of the National Theatre determined (on the other side of Waterloo Bridge), but the development of the King's Reach site beyond is not yet fixed—St Martin's School of Art is to be transferred there and an hotel, it is hoped, will be built.

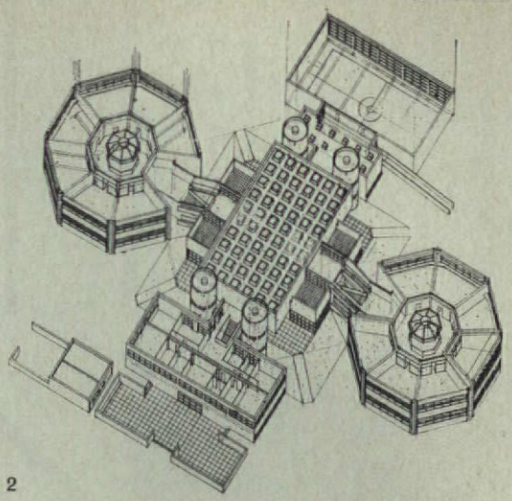
Like the earlier finished structures the Hayward Gallery has a tough, urban quality that is carried consistently and insistently throughout the architecture, both externally and internally. Rudely contrived *in situ* concrete columns and beams, stairs and ducts, delineate the interior, providing a certain character but no quietude. It will not be easy to contemplate an array of art works in these interiors.

The force and vigour of the external architecture has been carried through from the outside to the inside, but there has been no parallel attempt to introduce the changing conditions of outdoor lighting into the interior. The light internally is rigidly controlled and artificial. There will be no fluctuations and variations. Painting and sculpture will be viewed under static conditions that are termed 'ideal', but which bear little relation to those under which they were created—unless it is to be assumed that artist's studios are universally underlit. Nor is there any allowance for those chance effects of changing natural light that can so wonderfully illuminate—if only for a moment—a work of art. The two top floor galleries, it must be admitted, do allow for some top-lighting, but this is so restricted and controlled by baffles and screens, and adulterated by serried batteries of electronically controlled fluorescent lights, as to be a mere travesty of natural lighting conditions. Elaborate is perhaps the gentlest way to describe these contrivances; redundant might be a more accurate description of some of the features. The lighting then—from a partisan viewpoint—is not effective, nor are the acoustics. Hard flooring surfaces are provided in most of the galleries which cause noise and echo; carpets surely are called for. *RM*

1 Building LBJ, Robert Grossman, 1967

Architecture locked in, the city locked out

Read (if you know where to find a copy) that slim, sophisticated Viennese magazine *Bau** edited by Hans Hollein, Oswald Oberhuber and Gustav Peichl, and you will enter a world of architectural fun, fantasy and wit. Nothing is rigid, nothing is fixed in their vision of what constitutes architecture or arouses architectural interest—their recent issue *Alles ist Architektur*† is an audacious array of images **1**, ranging from an equivocal lip-stick tip, through Claes Oldenburg and Christo compositions, to cut-out patterns for our inflated and tented structures of the future. Association is free and uninhibited. It is all nonsense perhaps, but as Charles II said of a preacher 'His nonsense suits their nonsense'. But turn thereafter to the back of this same *Bau* and you will see another aspect of these Viennese minds at work—Gustav Peichl's design for a school **2**. The architectural implications are here as stunted and limited as anything by the most plodding nineteenth-century Neo-classicist. The design is engaging enough as a diagram (and beautifully drawn), but suggests an architecture of static, self-contained and suffocating symmetry, entirely unrelated to any surrounding environment. Symmetrical composition is, of course, a means of obtaining a degree of organization, and it does have a long and respectable history. That this history ceased to be respectable when an axial geometry was imposed as an absolute dogma during the dying years of Neo-classicism, has often enough been stressed. The architects who succeeded J. N. L. Durand learned (in France at least) to temper this obsession with axial symmetry—'une infirmité intellectuelle', Viollet le Duc called it, and counselled instead a return to the original Greek concept of harmonious balance in composition. But it was, of course, to Vienna that Neo-classicism went to die and it is there that it has, despite all odds, survived. Adolf Loos was Vienna born and bred. Hans Hollein and Walter Pichler have often enough exhibited a complacent liking for the dullest symmetry—even in their most surrealistic



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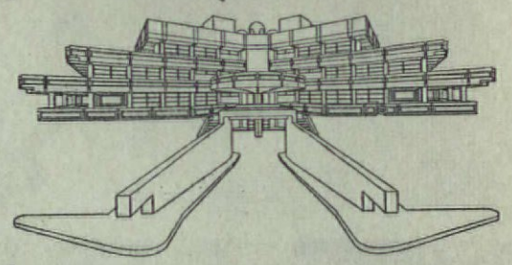

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compositions. But Gustav Peichl, it seems, leans even more heavily on symmetry as a means of ordering his compositions. Both his design for a musical college **2** and that for the Meidling clinic in Vienna **3** (*AD* 11/67 p. 490), now complete **4, 5, 6**, offer stiff, symmetrical arrangements of geometrical elements as a surrogate for architecture. The concern for detail planning in both designs is most painstaking and the execution of the clinic most punctilious. It is, indeed, impeccable. But it is as a formal composition that it has inspired the architect's greatest devotion—a composition of the most limited, self-contained sort. The published drawings of both the clinic and the school show these buildings in utter isolation—geometrical diagrams unrelated to any site. Aerial views of the completed clinic show just how oddly and irrelevantly it is related to its surroundings. A perfect, formal object is set down on a grass verge, to be admired for itself alone. It is not the symmetry that is most disturbing here, but the way in which it is used to contrive such self-centred architecture. Even in the boring post-revolutionary period of Neo-classicism, when Napoleon was putting up those monumental platitudes in Paris—the Madeleine and the National Assembly, the Arc de Triomphe and the Arc du Carrousel—axial symmetry as a method of composition retained a significant meaning. It was not simply a lazy way of ordering an individual building, it was a means of extending the influence of that building so that it partook of the order and coherence of a whole environment. Paris might have a chaotic street pattern, but it has a magnificent sense of order, subtended, on the whole, by the axes of its key monuments. They are an integral part of the whole city system. If the Viennese luminaries are intent to use axial symmetry rather than some freer, uninhibited method of organization they might at least endow it with some context in a total environment.

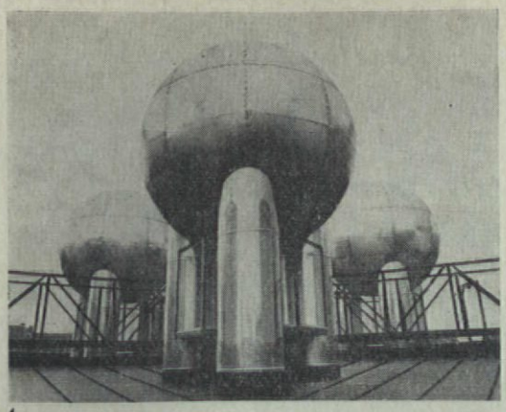
**Salvatorgasse 10/6/4, Vienna 1010*
†*Bau* 1/2 1968*

In France

André Malraux, Minister of Fine Arts, reacting to the recent protests of architects and architectural students, refused to dissolve the Order of Architects, but agreed to make reforms all round, especially the archaic system of education.

In Britain

It is good to know that in our own small corner architectural students have not gone unheard in official quarters. For the past five years there has been a BASA member on the RIBA's Board of Education; and the new Charter now includes proposals for two Student representatives on the Council.



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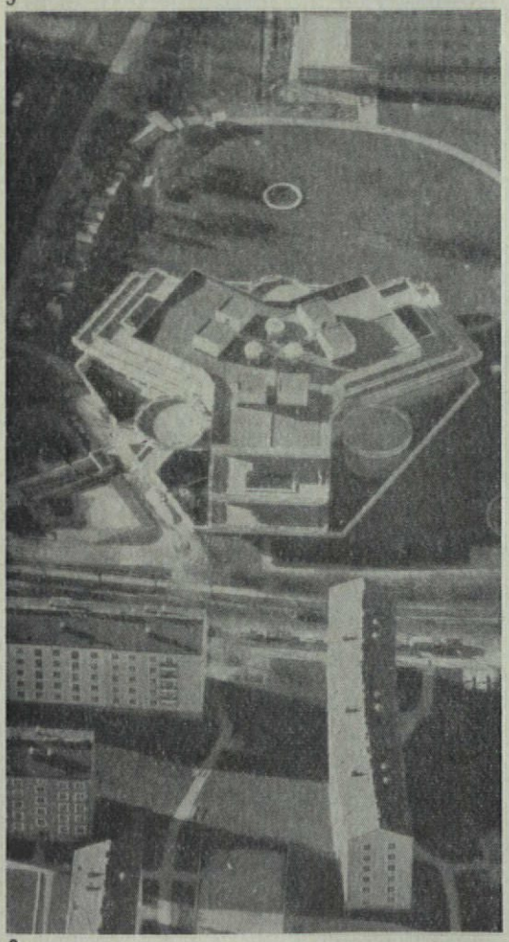

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Research in New York

The Museum of Modern Art together with Cornell University, have founded Institute of Architecture and Urban Studies, at 5 East 47th Street, New York.

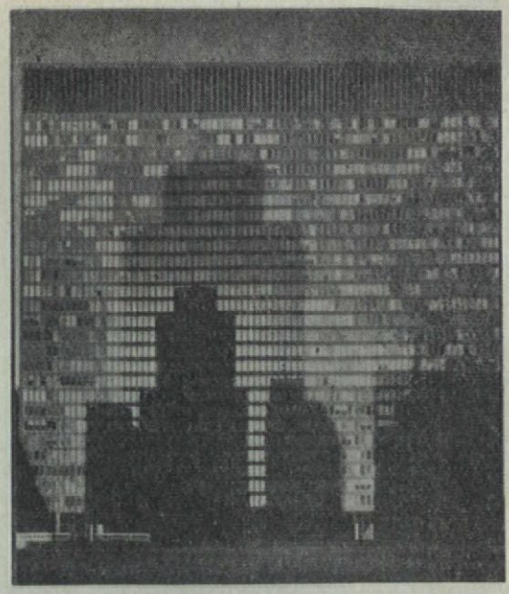
Directed by Peter Eisenmann, helped by Colin Rowe, Robert Gutman and Arthur Drexler, the Institute offers a three-part action programme of urban studies: design education; applied research and pure research.

The deification of Mies?

Perhaps the Chicago Art Institute, in collaboration with the Graham Foundation for the Advancement of the Arts, has unwittingly done the local master, Ludwig Mies van der Rohe, a great disservice in its current retrospective showing. The end has justified the means, and the ascendancy has been documented as a series of depressingly familiar 'official portraits' of milestones from a carefully abstracted and resurrected past. The cold, static and imperially arranged presentation makes no recourse to the man, the context in which he worked, nor the major themes he has pursued, and the elegantly produced catalogue which faithfully records the material on view is all but indistinguishable in form and content from half a dozen universally available publications.

One can only hope that having produced the 'official version', Chicago will permit itself one day soon to be sentimental about Mies and offer up its greatest treasure in Miesiana in the form of a well-thumbed family album—skeletons included—which will reveal what it was about the man that turned a city on.

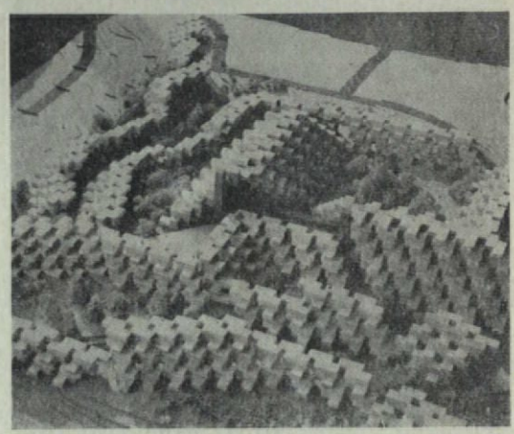
Alvin Boyarsky

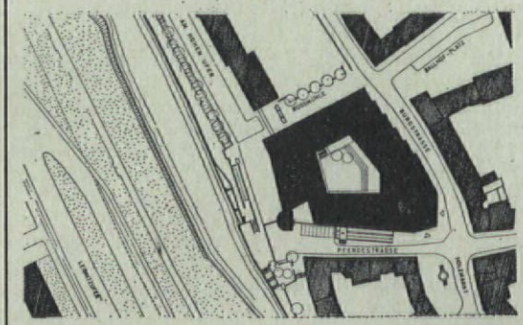


Lowish cost housing

The District of Columbia Redevelopment Land Agency has awarded grants to Paul Rudolph, Moshe Safdie and a partnership of Harry Weese and Brown, Wright and Mano for experimental housing projects on a 20-acre portion of the Fort Lincoln site of the former National Training School, Washington. The intention is that new methods of construction be demonstrated. Paul Rudolph is to use prefabricate units, similar to caravans. Safdie will attempt a variant of Habitat (*AD* 3/67). Working with E. K. Rice, he has managed to reduce the wall thickness of the Montreal prototype from 5in to 2in, by using a chemical post-tensioning system employing expansive concrete. It is hoped that a four-bedroom unit will cost $16,000. The Weese team is to use precast concrete panels.

***Forum 4/68, Industrial Design* 15/3 1968**

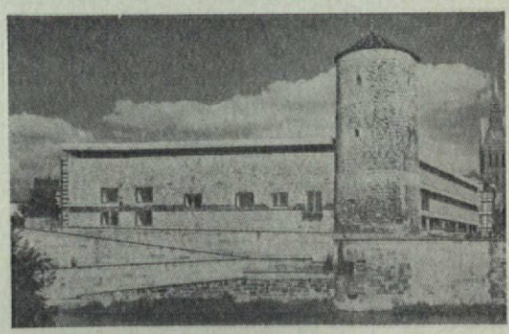


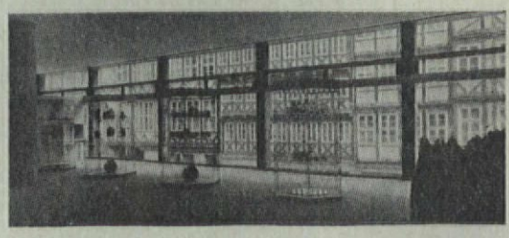


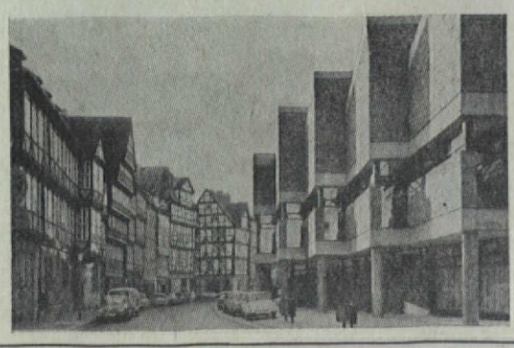
Tact

Tact in architecture is a nineteenth-century notion; it is not often practised today. The problem of designing a new building in an old, historical quarter is most readily resolved by the traditionalist—though not usually with any great degree of success. Those architects who most actively uphold the tenets of modern architecture are not equipped to tackle the problems. They have little real feeling for history. If the building required is large, the problem of assimilation is immeasurably increased. Special praise is due, therefore, to Professor Dieter Oesterten who has designed the new Historical Museum for Hannover, not only within the bounds of an old castle but within a maze of streets of fifteenth- and sixteenth-century half-timbered houses. There is no compromise in the handling of the architectural elements; the castle wall on the banks of the Hohe Ufer is deftly incorporated, the liveliness of the surrounding houses is unassumingly reflected in the handling of the forms and they are even integrated subtly into the interior spaces of the musuem, where they are used as a backdrop to the exhibits. The history of the town and the detailed objects within the museum are made one.

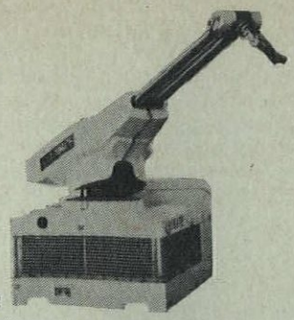
***Deutsche Bauzeitschrift* 8/1967**







1 18th century. Victoria and Albert Museum, London



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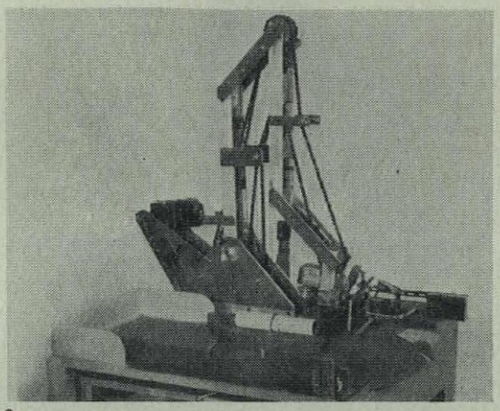

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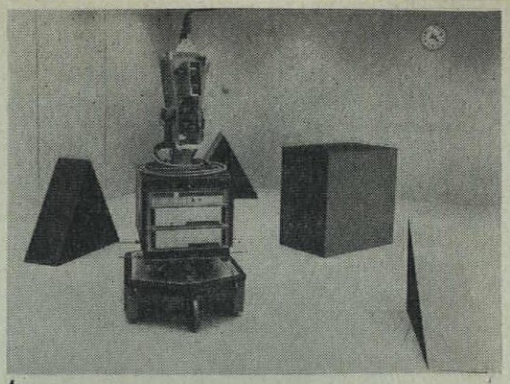

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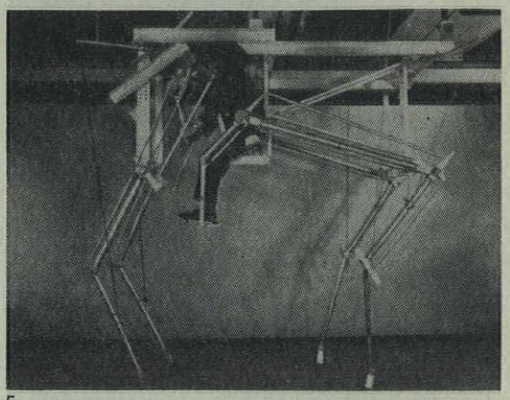

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Older attempts to produce automata, such as Tīpū Sultan's tiger **1**, *worked on a closed clockwork basis; the machines of the present day, such as the Unimate* **2** *and the Versatran robots shown in London last month, are much more advanced. Some even possess sense organs. In London, Professor Thring's team at Queen Mary College, working virtually with their pocket money, have produced a table clearing robot* **3**. *At Stanford Research Institute, California Nils J. Nillson, Charles Rosen and others (working with a $750,000 grant from the US Air Force and Department of Defense) have designed a computerized robot* **4** *that can move through a roomful of obstacles with a certain 'awareness' of its environment. Marvin L. Minsky and Seymour Papert at Massachusetts Institute of Technology (also generously funded) have designed a mechanical hand, co-ordinated by a computer with an 'eye' in the form of a stationary TV camera. At Stanford University John McCarthy has undertaken a similar experiment.*

A US General Electric team under Ralph Mosher is working on a family of CAMs (cybernetic anthropomorphous machines the most advanced of which is a horse designed for the US Army to be ridden over rough terrain at 30 mph) that are possessed of a kinethetic sense, that is, a sensistivity to changes of force and position that enables a child to open a door but a robot to wrench it off its hinges if it is in the wrong position.

The machine which is conditioned by its relation to the external world and the things happening in it is clearly with us. Norbert Wiener's thesis was that the operation of the living individual and the operation of such machines is precisely parallel. Both have sensory receptors as one stage in their cycle of operation, that is, a special apparatus (ranging in robots from a photo-electric cell to a television camera) for collecting and transmitting information, making it available for further stages of performance. It is this study of messages and, in particular, the effective messages of control, which constitutes the science of Cybernetics that he founded and attempted to direct, so that there should be always a more and more human *use of human beings.*

Man's relationship to such machines has, of course, been a source of much worry—the film Space Odyssey *is one example, Harvey Matushow's International Society for the Abolition of Data Processing Machines is another. The article below is an attempt to show how McLuhan and Wiener considered the problem.*

Wiener, McLuhan and the rise of automata*

André Belleau

translated by Ralph Manheim

One day William James pointed out to friends that his country house had no less than fourteen doors and that they all opened on the outside. This gave him keen satisfaction. Those, I tend to think, were happy times when words and things did not crush men with their fatality. Today, in a world marked by the rise of automation, we soon become aware of our limitations. Goaded by changes of all kinds, aroused and troubled by those of our contemporaries whose profession it is to talk of such things, who hold out visions, now of apocalyptic twilights, now of the dawn of a new Golden Age, we try confusedly to orient ourselves in the hope of foreseeing the future; we attempt, as laymen, to make those messages that strike us as most generous and most compelling 'adjust themselves' to a unity, to employ Murilo Mendes' fine expression. Of course we don't get anywhere. That is our common fate.

One of the reasons for our confusion depends on the fact that the very ambitious and prolix sciences devoted to the study of man are forever referring us from question to question or rather from threshold to threshold, so that we never arrive at a vantage point whence it might be possible to gain a comprehensive view of our world so as to see what is going on and, above all, what trends are shaping. The profusion of knowledge in our period obliges me either to disperse myself and become a witness of scattered fragments, or to choose a single path. I may decide for example that I must take language as a starting point, that this will provide me with a valid frame of reference within which to interpret the present-day world. My preoccupation is not strictly speaking philosophical. I have a concrete, 'practical' desire to know where the world is headed. But I soon discover that like a tennis ball I am played from racket to racket; from phonetics to vocabulary, from vocabulary to syntax, from syntax to discourse, that is, speech, that is, man, that is, *a* man, hence a consciousness. In the end I arrive at a philosophy or, actually, at myself; I am back with myself again and my problem which was a problem of knowledge becomes a problem of decision. But decision on what basis? On the other hand, if I take the contrary direction on the scale of structures, I descend ultimately to what Norbert Wiener called 'dust'. Jaspers enlightens us on the matter. 'We begin,' he says, 'by hearing answers. But no answer will be the last; each leads us to new questions up to the moment when the last question remains, unanswered to be sure, yet not a hollow question....'[1] My remarks will not be concerned with this last question.

Still, the impossibility in which I find myself of arriving at a sound view of our technological society amid the superabundance of facts, fashions, descriptions and theories is in itself rich in instruction. It provides me *ab absurdo* with certain criteria. My relation to the world through the mediation of knowledge will not necessarily be threatened by dispersion and profusion. Since I am obliged to choose, I shall direct myself instinctively toward the works and approaches which from the very outset avow the subjectivity of their author instead of denying it. I shall prefer the interiority that communicates itself to the exteriority that hides. I shall concern myself as much with the direction taken as with the utility or interest of the actual operations. And in this way perhaps I shall find men who on the basis of a knowledge infinitely exceeding my own will seem to me to have in a sense discovered reality. I shall take the authenticity and sincerity of the voice as an indication.

We all remember Sartre's remark: 'Man is nothing other than what he makes of himself.' Within the overall field of cybernetics I have recently been led to take an interest in the thought of two men who have expressed alarm over what man has made of man: the American mathematician Norbert Wiener and the Canadian essayist Marshall McLuhan. What they have to say concerns the present-day world most concretely and immediately. Their works flow from an admitted subjectivity: a symbiosis of science and mysticism, in Wiener an anguished science, in McLuhan an assiduous frequentation of literature and a profound love of poetry. They are not Cartesian. On the plane of epistemology they would have failed an elementary course in philosophy. Though Wiener's major work, *Cybernetics*, was published in France (in English, in 1948) he never authorized a French translation of it. He was afraid of not being understood.[2] It is legitimate to consider them together from the standpoint of cybernetics, for apart from the fact that Wiener was the inventor of the word if not the thing itself, his thinking like McLuhan's deals essentially with the problems of communication, which are also the basic preoccupation of cybernetics. Both of them were keenly aware from the very start of the consequences of the new conception of space introduced by Einstein at the beginning of the century.

Unfortunately, there is a tendency to restrict the scope of cybernetics to a question of computers. This is rather a crude mistake, because the computer is merely one of the most significant cybernetic mechanisms, and cybernetics aspires to cover the entire field of information control, which applies as much to the physical sciences as it does to the biological sciences and the humanities. At present the very term 'cybernetics' is frowned upon in certain scientific circles, partly because of the unwarranted generalizations for which it has been evoked and partly as a reaction against the philosophical bias of Wiener's thinking. At present its use is more limited in North America than in Western Europe and the Soviet Union where the term is still employed, as Wiener intended, for the whole vast field of problems connected with automatic control in mechanical and living systems. But other terms have arisen: bionics, neurodynamics, theory of general systems, theory of self-organizing systems, artificial intelligence, theory of automation,[3] all relating more or less to this field common to nervous systems, machines and mathematics, in which mathematics exploits the analogies between the functioning

This article appeared first in French in *Liberté* 9–10/67, Montreal.

of the nervous system and certain aspects of machines.[4] In this field, to simplify a little, the physiologist tells the engineer how to construct his machines and the engineer reveals the secrets of life to the physiologist.[5] It should be added that cybernetics as a method is dated, that it bears the fatal imprint of an epoch—our own—the epoch in which one goes to the engineer, in particular the electronics engineer, for analogies throwing light on biological mechanisms.[6] This attitude is not new, as W. Sluckin[7] remarks, in connection with Descartes who conceived of animals and of the human body as hydraulic machines. Has not man always sought to explain the mysteries of life on the basis of the technological models most current in his time?

I have been obliged to make these prefatory remarks in order to clear up certain misunderstandings relating to the particular aspects of Wiener's thinking that concern us here. Nevertheless, cybernetics remains identified inevitably with his name as inventor of the term and initiator of the discipline. Cybernetics has been defined in any number of ways: for some it is a science, for others, Ashby,[8] Greniewski[9] and Couffignal,[10] it tends to become formalized and axiomatic. For Wiener, however, it is much less a science than a field in which facts, events, hypotheses and tools suggest a form of thinking, an attitude, and indicate the direction of an investigation whose concrete result, the coming of automation, must ineluctably change the world. This conception is reflected by the title of his most important work: *Cybernetics or control and communication in the animal and the machine*.[11] Elsewhere he put it much more explicitly: 'Side by side with the theory of electronic technique for the transmission of messages, there is a wider field which includes not only the study of language but also the study of messages as means of control over machines and society, the development of computers and other such automatic machines, certain considerations on the psychology of the nervous system, and a new experimental theory of scientific method.[12]

Behind this refusal to recognize barriers between disciplines, this rejection of specialization (if only on the basis of poetic analogy, for Wiener claimed that the mathematician is an artist[13] and that 'great discoveries spring up full-blown like Athena'[14]) there lie first of all a personal temperament and vision. According to those who knew him (he died in 1964) he was a prince of the tall story, of fantasy and humour. He moved about the garden of knowledge with sovereign freedom striking bridges between the 'islands of knowledge',[15] jumping over hedges and stepping on flowerbeds as he passed. His most important contribution to science, which is not cybernetics but his brilliant mathematical work, reveals a mind haunted by what he called 'the highly irregular regions':[16] the contingent, the more or less probable, and time. And he was assuredly one of the great artisans of the mathematization of the social sciences that is a characteristic of our time.

But this portrait is not complete. One might speak of a second Wiener, less known but more important for the present discussion. He devoted the last years of his life to research on electronic prostheses. Are we deluding ourselves, or is there not a striking continuity in this man's destiny? As a child he was strangely fascinated by deformities and mutilations[17] and felt the desire to construct automata that would be as much alive as possible.[18] Later he developed a veritable cult of Heine. His interest in the myth of the Golem,[19] that clay statue into which a rabbi of Prague in the Middle Ages had breathed life by means of magical incantations, takes on a special significance when we consider the importance, noted by Pierre de Latil,[20] of android automata in German romanticism. A fascinating thesis might be written about the prophetic significance of the automata in literature, in Hoffman—it goes without saying—but also in the works of Kleist, Jean-Paul Richter, Brentano, Poe, Villiers de l'Isle-Adam and several others.

As we follow Wiener's non-mathematical work chronologically, we become increasingly aware of his philosophical preoccupation, of a secret anguish that is masked neither by his humour nor by the exigences of his radical rationalism. (Toward the end, he explicitly invoked Kierkegaard.[21]) Already in *Cybernetics and society*, he succumbs to a pessimism of chaos—'the time may come when the earth is again a lifeless burnt-out or frozen-out planet' and 'we are shipwrecked passengers on a doomed planet.'[22] The duty of all those of us who swim against the steadily mounting torrent of uniform disorder foreseen by the second law of thermodynamics,[23] is to create 'enclaves' of order and freedom, to delay the catastrophe by true communication, the organizing and stabilizing communication that triumphs over chance. 'Discourse struggles against the forces of disorder', he says magnificently. In the same work he regrets the loss of the tragic sense of life in societies of abundance. 'The education of the average American child of the upper middle class, he says, 'is such as to guard him solicitously against the awareness of death and doom.'[24]

It is with this tragic consciousness that Wiener's thinking begins to take on its full meaning. Without it we would not know what position to take toward automation. (It is also fundamental in McLuhan, although less clearly expressed. I recommend a careful reading of the chapter entitled 'The Gadget Lover' in *Understanding media*.) In this connection Wiener finds a tone very close to Hölderlin. 'If a man with this tragic consciousness of fate approaches, not fire, but another manifestation of original power, like the splitting of the atom, he will do so in fear and trembling. He will not leap in this place where angels fear to tread, unless he is prepared to accept the punishment of the fallen angels. Neither will he calmly transfer to the machine made in his own image the responsibility for his choice of good and evil. . . .'[25] He spoke in these terms when Claude Shannon, father of the theory of information, was suggesting the use of computers for evaluating military situations and determining strategy, and when Von Neumann's well-known theory of games was attracting the attention of the Pentagon experts.

Make no mistake, Wiener did not regard himself as a spectator or outsider. More than anyone else, he was responsible for developing the scientific ideas that made possible the computer, the first universal and functional automaton in history. In *God and Golem*, his last book, he explored what Santillana very aptly called the terrifying game between the Creator and his creature:

> 'In the hour of anguish and of vague clarity
> He let his eyes dwell on his Golem.
> Who will tell us what God felt
> As he contemplated Rabbi Löw, His creature in Prague?'[26]

He was the Creator, and now, so he was told, his creature was able to beat his programmer at certain games and demonstrated that it was capable of apprenticeship; theoretically, it was even capable of reproducing. Today we know that some of these claims were exaggerated and that a computer cannot yet play a passable game of chess.[27] But that is secondary; what matters is the development of Wiener's thinking. First he congratulated himself at seeing his predictions realized; as an orthodox materialist using the language of behaviourism he declared that the machine, like man, is endowed with intelligence, originality and invention. But there was in him a strange duality. The more he raised the machine to the level of man, the more he upheld the primacy of the human values which he felt to be threatened. Wiener was not naïve: the problem did not reduce itself to the good or bad use of the machine, in itself a neutral object. What preoccupied him was the *existential* relationship between man and the machine. (Here McLuhan comes very close to Wiener; for him the relationship between man and machine or technology involves realities *as such*, which are much more profound than our pious thinkers suppose.)[28]

It is significant that Wiener came to express his anxiety through the intermediary of mythical thinking,[29] invoking in turn the story of the revolt of the angels, the expulsion from paradise, the legends of the Golem and of the Sorcerer's Apprentice, and certain Arabic or Hindu tales. (McLuhan too makes liberal use of mythology. See, for example, his interpretation of the myth of Narcissus.[30]) Even if on this level his thinking is not always clear, Wiener establishes a very marked analogy between the efficacy of magic and that of the machine. They follow human desires to the letter. They are *literal* efficacies. But this aimless obedience can have terrible consequences if man does not succeed in deciding on a project, in taking cognizance of what he himself wants for himself as man. Here Wiener goes back to the dialectic of the master and the slave. Shall we end up by resembling these machines conceived in our image? Will the machines that we make end by making us? Fundamentally what he feared was not machines but man. Man frightened him. In *God and Golem*[31] he speaks of 'gadget worshippers' (cf. McLuhan's 'gadget lover'), the new sorcerers, as he himself put it, who blinded by their cowardice and will to power are prepared to relegate their human responsibilities to automata.

To him the worst of all sins was simony. Though he claimed that sociology and anthropology, as sciences of communication, were within the competence of cybernetics,[32] he persistently refused, despite the pleas of Margaret Mead, to guide cybernetics in that direction,[33] invoking all manner of methodological pretexts. The real reason for his attitude was that it seemed to him that economists, market analysts, the specialists in applied sociology and psychology, were trafficking 'sacred mysteries' for the benefit of the constituted authorities and the Pentagon. And on this subject, Santillana tells us, he could be as terrible as Luther.

Wiener postulated a profound logic of information and control, hence of action, common to the machine and the individual living in society. Cybernetics unifies phenomena which had hitherto been disparate, and by leading to the creation of machines that extend the powers of man, establishes a new environment which substitutes reason and order for incoherence and entropy. But at the end of his career, when the scientist, the philosopher (he had studied under Husserl) and the poet in him had joined forces, Wiener tried to show that extreme vigilance was in order. Robert Merton justifies this vigilance in a striking aphorism 'Short-run rationality often produces long-run irrationality.'[34]

Marshall McLuhan also asked himself what man would make of man. Whereas in Wiener machines and technologies are prostheses of our brains or muscles, for McLuhan they are 'extensions of our senses'. Like Wiener he tries by approximations, analogies and myths to circumscribe the implications of techniques for man. The ideas of these two men, beyond any doubt, will be made use of. The reductive thinkers who retain only those of the ideas involved in cybernetics that seem to favour the substitution of the servitudes of efficiency for the mystery of freedom, have led Henri Lefebvre to apply the term 'cybernanthropos' to alienated man *par excellence*. And one day perhaps we shall hear these same voices invoking McLuhan to justify, and to proclaim with an air of relief, the end of subjectivity, the uselessness of the creative man's personal adventure, the return to the Middle Ages or a new totalitarianism. It is also delightful to hear these illiterates periodically proclaiming the death of literature. But in reality, despite McLuhan's mythical nostalgias (the pursuit of dream Italy's is very much in the Anglo-Saxon tradition) his thinking is concerned not with the *desirable* but with the *probable*. It does not reject our past *en bloc* any more than it accepts our future without reservations. McLuhan adjures us to be on our guard: if we alienate our freedom in favour of the obscure servitudes of the technologies, not only shall we be unable to preserve what is worth preserving of the past, but we shall also become the playthings of the future. Unawareness leads to disaster. By dissassembling the mechanisms of technological determinisms, McLuhan attempts to make us aware of them in order that we may be able to neutralize and control them. (According to Santillana, Wiener said that the more masked the machine is, the greater its power.) As everyone knows, McLuhan did this work of dissassembly in *The Gutenberg galaxy* (for the techniques of communication by writing and print) and in *Understanding media* (for the techniques of electronic communication).

Thus we may justifiably speak of determinism in connection with McLuhan's structuralism only if we make it clear that this is not a determinism that transcends man—technologies are not *a priori* forms—but one which, on the contrary, presents itself as the paradoxical fruit of man's genius. By rising to full consciousness, man can restore the shattered equilibrium between his perceptions and escape from the hypnotic anesthesia that cuts him off from a vision of the totality. Poets, still according to McLuhan, are men who have not been marked by the fatality of the powers of technology. Sartre, from whom McLuhan drew inspiration tells the reason for this in *What is literature?:*

he observes that the language of prose, which he defines as an 'extension of our senses', necessarily implies a certain loss of oneself to the instrument, whereas the poet regards language as an end and consequently situates himself outside it.

Of course it remains to inquire whether McLuhan is right within the carefully circumscribed limits of his determinism. I leave to others more competent than myself this important question which would require detailed consideration. Nevertheless, I should like to make two observations.

It is difficult in reading McLuhan to surmount a feeling of irritation. There are few pages in which one is not struck by shifts in meaning and unwarranted interpretations. His theory of perception seems to have no precise psycho-physiological base. In the remarks he devotes to Teilhard de Chardin, Pascal, Bergson, and existential philosophy misunderstanding vies with misinformation.

On reflection, however, one realizes that his thinking is more valuable for its direction than for its actual operations. Based largely on the poets, whom McLuhan reads and comments with a freshness and inventiveness that most critics might envy, his thinking defeats by its very source and movement the determinism it sets out to proclaim. It expresses hope and summons to responsibility.

The cybernetic structures[35] conceived by Wiener and McLuhan's configurative theses are sustained, or perhaps one should say undermined, by a movement of individual conscience and responsibility which summons the citizen of the twentieth century to be vigilant. It would be of the utmost interest to compare them with what is known in France as Structuralism, which, it would seem, denies the freedom and causality of the conscious subject in history in favour of *a priori* systems that operate through him.[36] It seems likely that McLuhan would not hesitate to subscribe to certain statements made by Michel Foucault in *Les Mots et Les Choses*.[37] But once again our primary concern here is with the ultimate direction of his thinking.

In *Cinéma et réalité*, the fine film which Clément Perron and George Dufaux devoted to neo-realism (and on which I had the pleasure of collaborating) Moravia distinguishes between neo-realism and what he calls the 'cinema of the white telephone'.

Now that the last war is far behind us, we are witnessing, in spite of the atomic threat, the resurgence of what I should like to call 'philosophies of the white telephone'. Cybernetics has made its contribution to them in spite of Wiener, and so has McLuhan in spite of McLuhan.

[1] Karl Jaspers, *Initiation à la méthode philosophique*, Payot, p. 7.
[2] The source of this information is Paul Idatte, 'l'Action cybernétique et le temps,' in *Nuova Critica*, No. 17, Rome.
[3] Michael A. Arbib, *Brains, Machines, and Mathematics*, McGraw-Hill, New York, 1964, p. 141.
[4] Arbib, *op. cit.* p. VII.
[5] See Eelena V. Saparina, *Cybernetics Within Us*, Peace Publishers, Moscow, 1966 p. 6.
[6] See J. Bronowski, 'Has the Concept of Cybernetics Lived up to Its Early Promise?' *Scientific American*, June 1964.
[7] W. Sluckin, *Minds and Machines*, Penguin Books, 1954, p. 100.
[8] W. Ross Ashby, *An Introduction to Cybernetics*, London, 1956.
[9] Henryk Greniewski, *Cybernetics without mathematics*, Pergamon Press, Oxford 1960.
[10] Louis Couffignal, *La Cybernétique*, Collection Que Sais-Je?, Presses Universitaires de France, Paris 1963.
[11] M.I.T. Press, 1948.
[12] Norbert Wiener, *The human use of human beings*, 2nd edition, Houghton Mifflin, 1954, introduction.
[13] Norbert Wiener, *Ex-Prodigy*, M.I.T. Press, p. 212 and *I am a Mathematician*, Victor Gollancz, London, 1956, pp. 60-63.
[14] Quoted by Giorgio de Santillana, professor at the Massachussetts Institute of Technology in an interview broadcast by Radio Canada.
[15] The expression is that of Giorgio de Santillana, the great historian of the sciences.
[16] *I am a Mathematician*, *op. cit.*, p. 23.
[17] *Ex-Prodigy*, *op. cit.* p. 40 and p. 65.
[18] *Ex-Prodigy*, p. 65.
[19] Norbert Wiener, *God and Golem Inc.*, M.I.T. Press, 1964.
[20] Pierre de Latil, *l'Homme et les Machines*, Hachette, Paris, 1965, p.36.
[21] *I am a Mathematician*, p. 324 and p. 328.
[22] *op. cit.*, Eyre and Spottiswoode, London, 1950, pp. 25, 26.
[23] *I am a Mathematician*, p. 324.
[24] *Cybernetics and Society*, p. 26.
[25] *Cybernetics and Society*, p. 211.
[26] Jorge Luis Borges, 'Le Golem' in *L'Auteur et autres textes*, Gallimard, p. 171.
[27] For an excellent discussion of the question see Hubert Dreyfus, *Alchemy and Artificial Intelligence*, Report of the Rand Corporation, December1965.
[28] Marshall McLuhan, *Understanding Media*, Routledge and Kegan Paul, London, 1964, p. 11.
[29] See *God and Golem Inc. op. cit.*
[30] *Understanding Media*, *op. cit.*, pp. 41-47.
[31] *God and Golem*, p. 58 ff.
[32] *I am a Mathematician*, p. 327.
[33] *Cybernetics*, *op. cit.* pp. 24 and 25.
[34] Quoted by Diana Crane, 'Computer Simulation' in *Automation, Implications for the Future*, Vintage Books, p. 351.
[35] In the strictly and fully scientific sense of the word.
[36] See *Esprit*, May 1967, special issue on structuralism.
[37] Gallimard, Paris, 1966.

Statement from Kevin Roche

In designing the headquarters for the Ford Foundation we wished to solve several problems which we felt were not being solved by the current crop of office buildings in New York—problems relating to the manner in which the occupants of a building are treated and problems relating to the contributions which any one building can make to the city as a whole.

The conventional office building tends to isolate the individual and store him away in a cubicle with no means of communication other than electronics, with no sense of the working community to which he belongs, with no environment other than his own cubicle and with no view other than that of the anonymous cubicles 100 feet away across the street.

We felt that a building for the Foundation had a very special responsibility to provide a proper environment for its staff. A space that would allow them to enjoy the view but at the same time allow them to be aware of the existence of other members of the Foundation, people who share their common aims and purposes—the family of effort to which they belong.

As to our second concern—that the building should contribute something to the city—it would have been easy for us to have designed another tower building, but we chose, rather, to keep the building as low as possible—12 storeys in height—and to conscientiously observe the lines and planes created by the other buildings which form the surrounding streets.

To these ends then, we designed a building C-shaped in plan which partially wraps around and shelters a large enclosed space, the remainder of the enclosure being spanned by a 10-storey high, sheer glass wall. This enclosure becomes a park with trees and shrubs and flowering plants—a place to look at and walk around, a place to enjoy some greenery even in the depths of winter. Since its lower level is at 42nd Street it will also be enjoyed by the passer-by. In addition, the park is so placed that it continues and extends the existing public parks in the area.

The offices are held back behind this enclosed park, away from the heavy traffic noise, and look out on a view that includes not only part of the building itself but parks, the street below, and farther down to the East River.

It is our hope that this will be a pleasant and human place to work in and that rather than ignoring the existing environment the building works with it and contributes something to its enhancement.

Recent projects

No less than 21 projects and recently completed buildings by Kevin Roche, John Dinkeloo and Associates are illustrated in the *Architectural Record* 5 1968, some—notably a high school in New Haven, the Aetna Insurance Co. at Hartford, the National Aquarium in Potomac Park and the Sports and Convention Hall at New Haven, have already been glimpsed in AD 4/68 p. 149–150. Two more of their larger projects, a research laboratory in New York **2, 3** and a National Centre for Higher Education in Washington **4, 5**, together with a progress shot **1** of their Knights of Columbus headquarters are shown here, as examples of their style. For good measure we add their diminutive Orangery, a 25ft cube **6, 7**.

* *Forum* 5/68.

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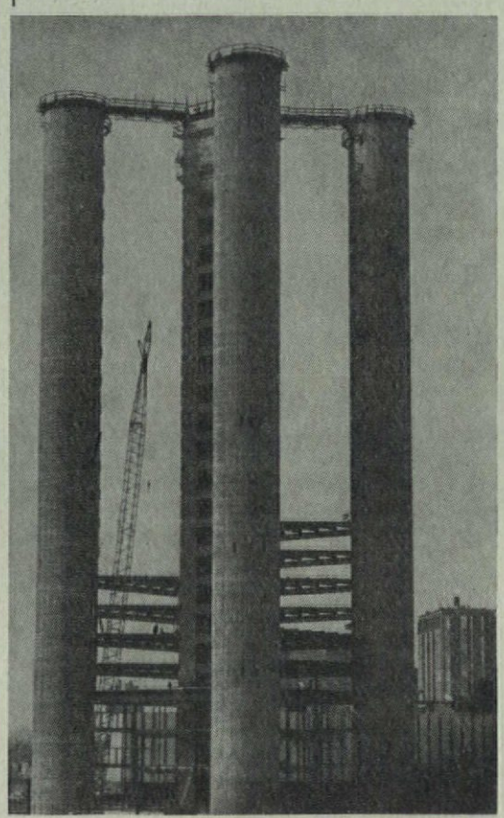

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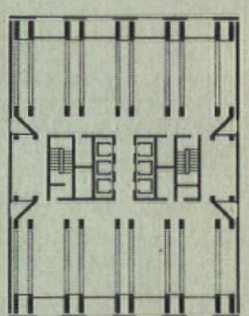

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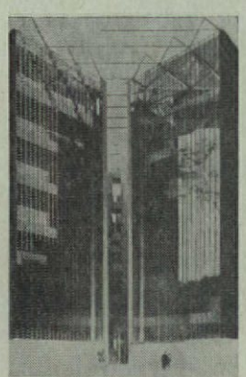

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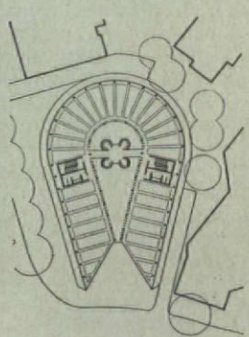

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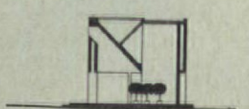

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All photographs of the Ford Foundation headquarters by Esto ▶

A house of Ivy League values

an appraisal by Kenneth Frampton

Kevin Roche, John Dinkeloo Associates
Consultants:
Structural: Severud Associates
Mechanical: Cosentini Associates
Garden Planting: Dan Kiley
Acoustic: Michael J. Kodaras

The new Ford Foundation headquarters in New York is, without question, the finest urban work yet produced by the successors to the firm of the late Eero Saarinen, the architects Kevin Roche and John Dinkeloo. Few modern institutional buildings can equal it for its authority and sober sense of decorum. It is equally distinguished by virtue of its restrained elegance and the daring of its basic conception and the precision of its elaboration and realization.

The building is an uncanny response to Sigfried Giedion's 1944 appeal to the *Zeitgeist* for a 'new monumentality'—a custom-made monument down to the very last door spring. No expense has been spared. So much so, that one can only be sceptical of the published contract figure of 16½ million dollars (excluding furnishing and the site); rumour having it that the real figure is almost twice the amount.

That the Ford Foundation have built themselves a prestigious building of highest possible quality no one can doubt, even if some might take exception to such institutional self-indulgence. Kevin Roche, even more than his predecessor Eero Saarinen, is a proven heir to the 'high' architectural tradition in America; running, in New York at any rate, as far back as the Racquets Club by McKim, Mead and White, of which Peter Smithson has commented that no Renaissance palace was ever so well detailed. The tradition includes the high calibre skyscrapers of the 'twenties and 'thirties by Harrison, Hood, Fouilhoux, Van Ellen & Co., the SOM mid-town buildings of the 'fifties, and the Mies van der Rohe/Philip Johnson Seagram Building completed in 1958. Within this tradition the achievement of the Ford Foundation building is assured, although it may well be the penultimate palace of the American 'Renaissance'.

One can hardly begin to question its achievement without questioning the programme and, by implication, the self image and operating personna of the Ford Foundation itself. But such questioning must depend upon an acceptance of John Summerson's dictum that twentieth-century architecture is primarily to be distinguished from that of the past by the emphasis it inherently places upon the programme.

The Ford Foundation is evidently an institution so prestigious that when embodied in built form, it requires no name. It simply exists as an unemphatic brown granite outcrop, between Second and Third Avenue; an imposing megalith of stone, steel and glass, occupying the full depth of a sloping site between 42nd and 43rd Street. The site is effectively occupied by the built volume. This volume rises for 12 floors above 42nd St. ▷

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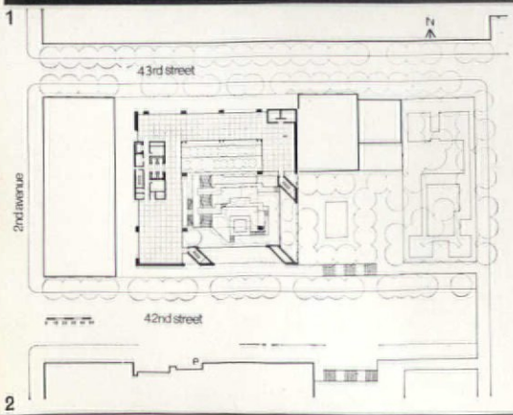

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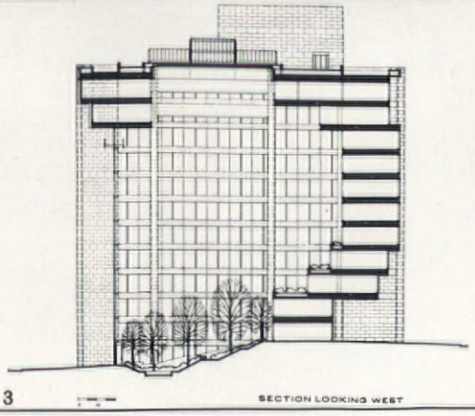
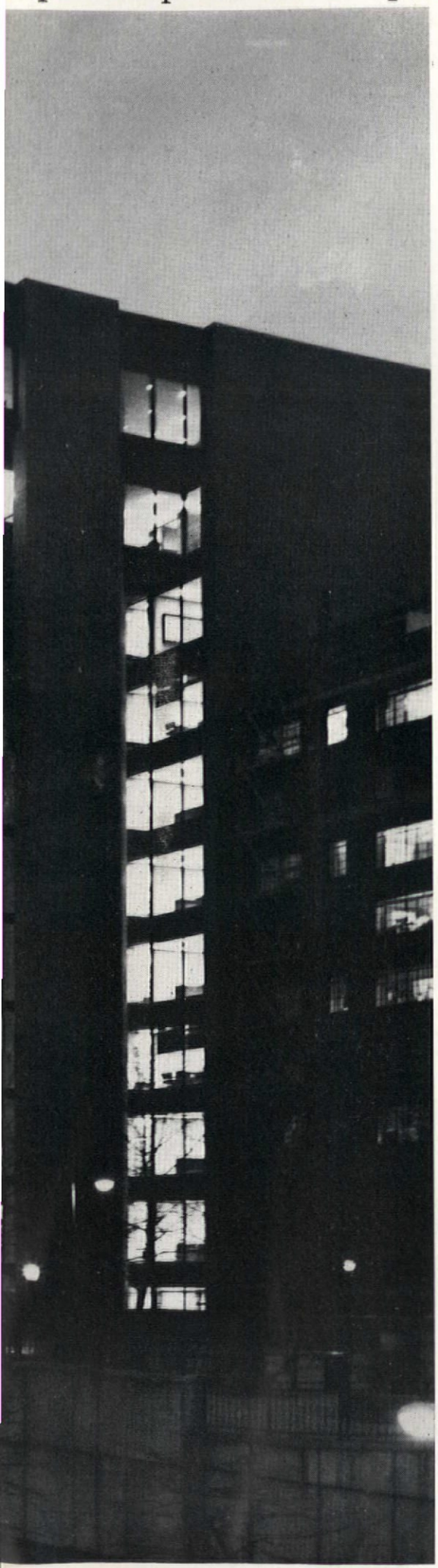


A house of Ivy League values and good intentions, dedicated to the dispensatio

f private profit for the public good, hermetically sealed in an unreal world. . .



and for 11 floors above 43rd Street; accommodating, in its first nine floors, a stack of double banked offices on two of the adjacent sides of its square plan, and, for the remaining two floors, offices on four sides. The bulk of this office space thus wraps itself (on the north and west faces) around the remainder of the site, amounting to one third of an acre in area, enclosing a vast glazed conservatory of some 6 million cubic feet. The sloping floor of this conservatory is ramped, paved and planted with shrubs and trees, which in some instances, notably the eucalyptus and cryptomeria, will eventually grow to 100 feet. This then, is the patio house solution on a colossal scale, eccentrically extended in height. (For such a *parti* there is some precedent, particularly in America.)

On entering this 'patio-conservatory' from 42nd Street, one feels that one has been privileged to enter into the 'private' realm of a large and benevolent family institution. Here one may take a very constricted turn around the 'garden', gape briefly at the greenery, at the vast space above, watch the diligent 'family workers' behind their hermetic glass, and then leave—for other than going up for a 'grant' or a 'guided tour', there is nothing else to do and no point of arrival or rest.

It is at this juncture that the irresolution of the building's programme is to be felt most keenly. To walk in, to look briefly around and to walk out—one cannot but question whether this unavoidable procedure symbolizes adequately the rapport that the Ford Foundation conceives of itself as possessing in respect of the general public. There is even less of a public *agora* here than in the average Park Avenue bank or in the street level foyer of a Wall Street corporation building. Are we to conclude from this that in our Western society, the house of private profit is more naturally rendered 'public' than the house of private, non-profit, public benevolence?

To the dilemma of twentieth-century architecture as a whole and, in this instance, to that posed by the Ford Foundation building in particular, the architectural theory of Norberg-Schulz provides a critical point of departure. In his discussion of the role of the programme or the *building task*, Schulz argues that it may be analysed broadly as two interdependent aspects, expressed as dualities; firstly, the *physical milieu* and the *functional frame* and, secondly, the *social milieu* and *cultural symbolization*.

It is in the second aspect that the Ford Foundation building is to be seen as problematic. For Schulz 'the building task is the point of departure of the architectural solution. While a classification in terms of formal and technical factors would isolate architecture, a classification in terms of tasks unites the architectural totalities to the form of life in

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What promised to be a public space, is in essence an *anti-agora*, invaded by th

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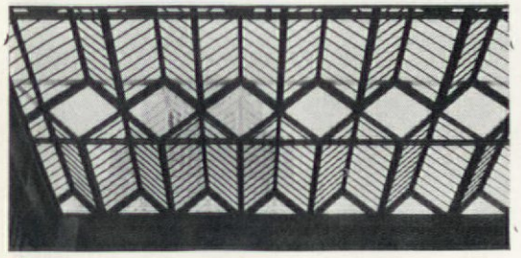

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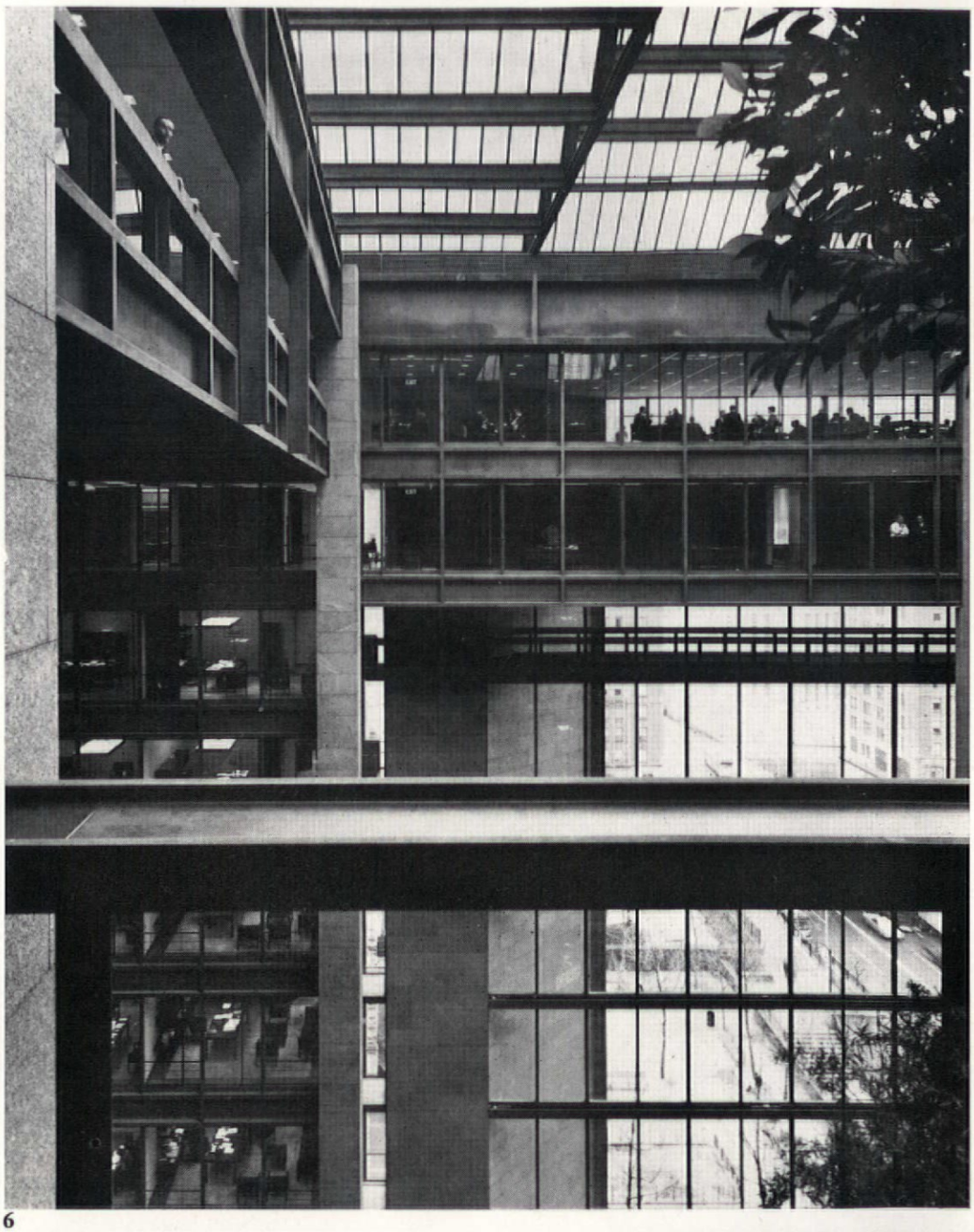
1 View to the east, down 43rd Street, with the UN building in the distance
2 Garden court, showing the processional approach to the entrance hall
3 View from the entrance hall-way, looking towards the curtain wall
4 Detail of the skylights over the garden court
5 Offices overlooking the garden court
6 View across the court

'egetative processes of nature . . . there remains nothing for man to do but leave.



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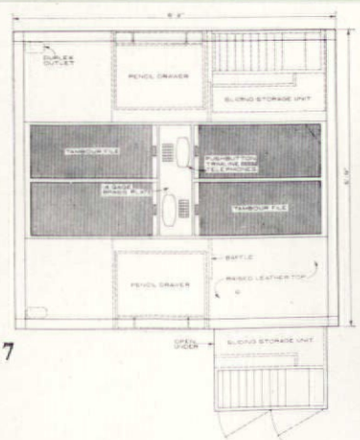
7 & 8 Plan and elevation of mahogany and leather double secretarial and reception desks
9 Double secretarial desk
10 Detail of recessed telephones set on the secretarial desks within bronze facings



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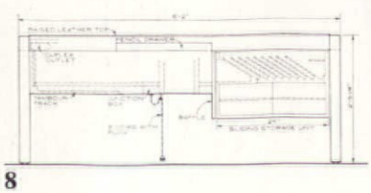

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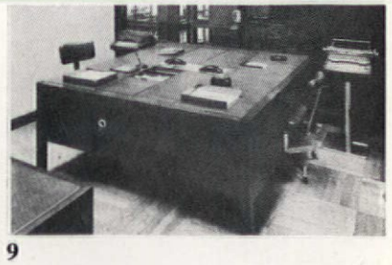

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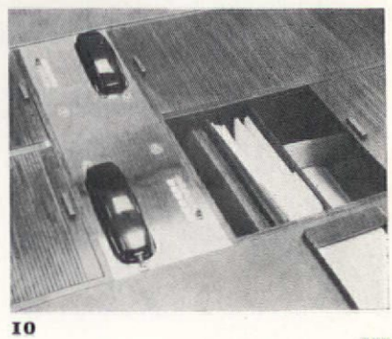

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The *object type* cannot be welcomed... the presence of a cheap mass-produced wire was

general. An architecture determined by the need for a "symbol milieu" could be denominated as *monumental*.' Schulz elsewhere states that 'an architecture where the formal dimension is unduly stressed is "formalistic", a term which implies that the forms are unsatisfactorily coordinated with the building task'. In this situation, turning upon the possible invention of new building tasks, there are two possibilities: either the forms are inappropriate to the inherent reduced building task, or the building task has been inadequately developed through the agency of the building programme.

In the case of the Ford Foundation building, a critique may be sustained on the two fronts at once; for, formally, from the two street façades, the building promises a hierarchy that may only be interpreted as first 'public' and then 'private'. To a degree, this promise seems to be momentarily fulfilled on entry—but almost at once it becomes apparent that what promised to be a public space is in essence an *anti-agora*, invaded by the vegetative processes of nature, and that there remains nothing for man to do but to leave. As realized then, the building is formalistic, for the forms are far from adequately coordinated with the building task.

From formal evidence alone, one may only construe the building as being monumental, yet its present task or programme is far from being so. The second *post facto* alternative is that the Foundation and its architects should jointly have amplified the building task, so as to embody a valid public element, through which to establish symbolically and actually a correct 'contractual' relation between the Foundation and the public it serves.

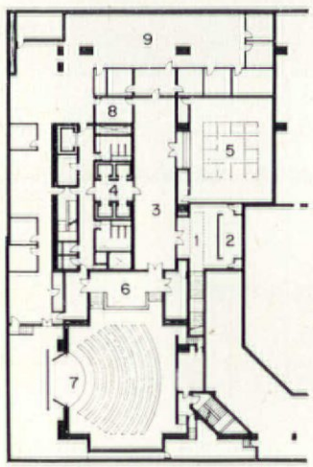
As it is, the one element which could have effectively fulfilled this public contractual role, the 175-seat auditorium in the basement, has been rendered exclusively private. The building is thus totally devoid of a public realm that is in any way appropriate to the scale of its volume, its institutional content and its prominent location. The bulk of the Ford Foundation's direct grant is to educational institutions, for the purposes of education. Surely then the introduction into the programme of an adequate auditorium for public use would not only have been within the capacities of the site and the budget but would also have symbolized, through actual use, the Foundation's main public function.

This paradox of an exclusively private monument (of public import) is further emphasized by the conscious egalitarian symbolism of the building's internal detailing and finish. One standard of high quality furnishing is maintained throughout the office space. Be it secretary, programme director or president, the same range of high quality equipment, designed by Kevin Roche and Warren Platner, is placed at their disposal. The clear implication is of a working team, which in spite of different roles is symbolically equal. The 'house style' is consistent throughout and the floor to ceiling glazing to both the office space and the 'conservatory' mutually permits that every act on every floor (with the exception of the chairman's), is observed and witnessed by all, testifying to an exclusive, private, closely interrelated vigilant *élite*, functioning collectively in the service of the public.

It is ultimately in the small-scale detailing of the furnishing of its fabric, that the Ford Foundation building acquires its full cultural significance. For here we are presented with an

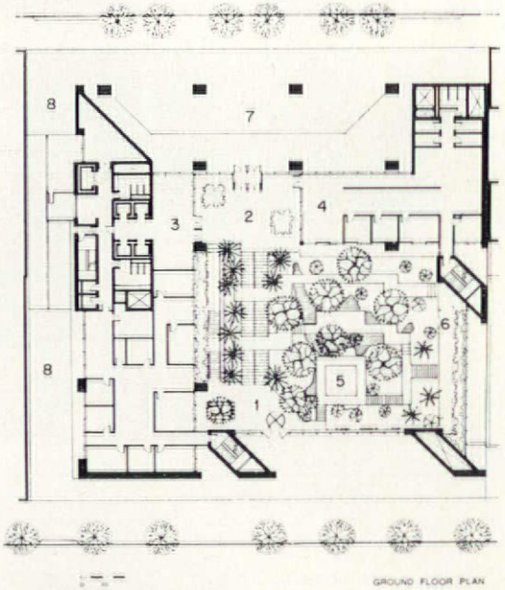
Basement level plan

1 public entrance
2 cloakroom
3 reception
4 lift lobby
5 board room
6 balcony
7 auditorium
8 servery
9 data processing

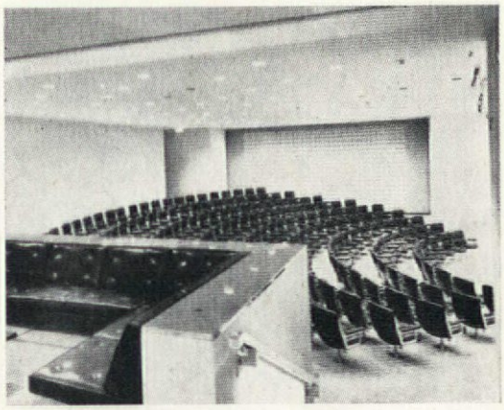


Ground floor plan

1 42nd St. entrance
2 43rd St. entrance
3 reception
4 employment
5 pond
6 sitting area
7 set down
8 service areas

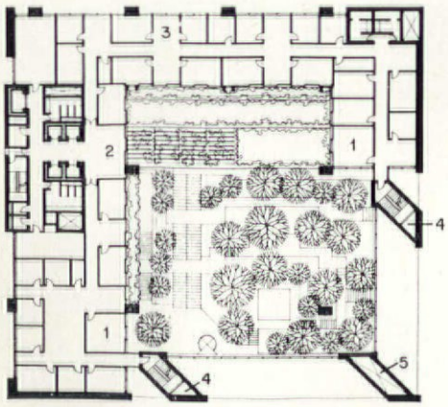


Basement auditorium



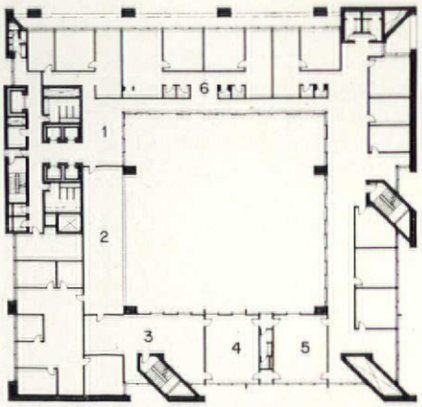
Typical floor plan

1 directors' offices
2 reception
3 secretarial offices
4 stair tower
5 services tower



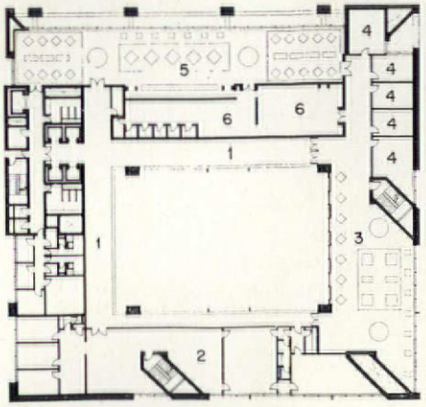
Tenth floor plan

1 reception
2 balcony
3 president's reception
4 president's office
5 conference room
6 vice-president



Eleventh floor plan

1 balcony
2 chairman's suite
3 executives' dining
4 private dining rooms
5 staff dining
6 kitchen



per basket would, unavoidably have to be regarded as an object of subversion.

identifiable taste which is to be directly associated with a particular life style and a particular accepted system of values. That this value system may be regarded as the direct opposite to that evoked by the Carpenter Art Centre at Harvard, is not without significance to the ultimate values aspired to by these very different buildings. Apart from its pale mauvish-brown granite 'shell', selected so as to harmonize with the brick facing of Tudor City, the Ford Foundation building is a study in Cor-Ten 'weathering' steel both inside and out. This sombre, opaque, non-reflective frame is complemented by an equally sober range of elements, ranging from the granite itself, to black ceramic tiles in the public galleries, to parquet floors in the offices, to dark brown, pale grey and beige fabrics and carpets, to the occasional muted sparkle of mauvish-red Florentine marble, plate glass and polished bronze. The wooden furniture throughout is of dark Honduras mahogany, the upholstery is in restrained earth-coloured fabric, the walls of the offices and staff rooms are decorated with modest prints selected by the director of the Yale Art Gallery. The public gallery balustrading is finished in brown cowhide, as are the lift cars and certain wall panels. An atmosphere of indestructible decorum reigns throughout, with a persistence and a level of craftsmanship only to be matched, in its all pervasive sense of confidence and stability, by the high institutional styles of the nineteenth century. In this, paradoxically, resides its underlying sense of *insecurity*. As at the macro scale, so at the micro scale; for at all scales this building admits to no intrusion by a single part of any *general* current system of value. Its egalitarianism is totally introverted. Unlike the rigorous generosity and stoicism of the Carpenter Arts Centre, it cannot welcome the public presence and worlds beyond its own realm. The *Third World* would have no place here, for the building is at once private, custom-made, exclusive and hermetic. The *objet trouvé* and the *objet type* of the civilization at large cannot be welcomed into its *consensus* system of order. The presence of a cheap mass-produced wire wastepaper basket would, unavoidably, have to be regarded as an object of subversion.

One cannot but conclude that consciously or unconsciously, the Ford Foundation and its architects knew what they were doing. The public, like the more ordinary objects of our industrial civilization, must be ministered to, but kept constantly at a distance. It is a wholly regrettable and highly dangerous symbolic stance for a great benevolent institution to adopt. For what remains is a superbly organized Shangri-La housed with impeccable technique. A house of Ivy League values and good intentions, dedicated to the dispensation of private profit for the public good, hermetically sealed in an unreal world, which is not only open to unfortunate external misinterpretations, but which may well also distort, through its all pervasive yet delusive sense of security, its own internal perception of the reality in which it must operate. □

Facts and figures

Building area at street level:
Office area: 16,500 sq. ft.
Garden area: 8500 sq. ft.
Paved plaza and drive: 6426 sq. ft.
Building plan module: 6 ft. 0 in. × 6 ft. 0 in.
Gross building floor area: 287,400 sq. ft.
Net rentable: 239,300 sq. ft.
Per cent net rentable: 83.3%

Building height:
Main roof: 160ft above 42nd Street
Penthouse: 194ft above 42nd Street
14 Storeys: 12 above grade, 2 below
Typical floor to floor height: 13ft 0in
Typical ceiling height: 9ft 8in

Building volume:
Office areas: 3,940,000ft³
Garden: 2,210,000ft³
Total: 6,150,000ft³

Enclosure wall:
Steel: 783 tons
Exposed HSLA structural steel (skylight trusses and garden wall), enclosure wall mullions, spandrel panels, soffit panels and window washing tracks.
(HSLA): High strength low alloy
ASTM A242 and ASTM A374
USSteel 'Cor-Ten'
Glass (walls) 64,051 sq. ft.
1185 glazed units of $\frac{3}{8}$in and $\frac{7}{16}$in thick polished plate glass.
Glass (skylight) 9000 sq. ft.
$\frac{1}{4}$in thick wire glass.
Stone facing: Mahogany granite, South Dakota Quarry
Granite joints: $\frac{1}{16}$in mortarless polysulfide sealant joints

Wall insulation: 66,000 sq. ft. 1in thick rigid Urethane Board behind granite facing

Brick paving:
Acme-Bennet round edge repressed pavers, dark flashed colour $\frac{1}{4}$in ± Urethane base sealant joints

Wood flooring: 90,000 sq. ft. $\frac{25}{32}$in. thick plain sawn white oak parquet set in cold trowel mastic on concrete topping

Acoustic ceilings: 140,000 sq. ft. 17$\frac{3}{4}$in × 17$\frac{3}{4}$in fissured mineral acoustic tile set within 6ft × 6ft modular aluminium ceiling grid system. 100% accessible concealed cap spline support system provided. Modular aluminium ceiling grid channels accommodate air supply and return diffusers and receive movable partition head section

Movable partitions: 11,000 lin. ft. 1 Mills metal partition
Movable metal partition with adhesive applied, PVA coated linen fabric covering
Partition panel module F 3ft 0in
3200 partition panel units
2100 wall liner panel units

Slate:
Vermont structural slate Fair Haven, Vermont quarry
Vermont unfading green and purple slate with high honed finish used at toilet room floors, divider partitions, wall panels and counters, stair tower landings and stair treads

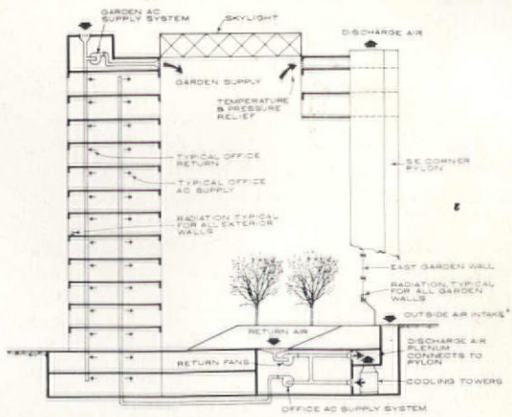
Special ceramic tile: 16,000 sq. ft. Heath ceramics, Sausalito, California
12in × 12in × $\frac{1}{4}$in matte glazed ceramic tile at 11th floor dining, office, and garden promenade area

Miscellaneous:
Food service: 11th floor
Dining for 360: buffet and service dining
Complete kitchen with separate bakery
Service pantries at level B and at chairman's suite
Conference room: level B
Auditorium/Conference room of 175 person seating capacity with enclosed observation and control booth

Parking:
Attendant parking garage is provided at level A for 32 cars

Structure:
Foundations: reinforced concrete on rock
Columns, penthouse and core walls, shear walls: reinforced concrete
Floor system below grade: reinforced concrete slab and beam
Floor system above grade: 3$\frac{1}{4}$in concrete topping on cellular metal deck welded to structural steel beams. All steel fireproofed with sprayed on asbestos
Concrete: 16,100 cu. yds.
3500 p.s.i. concrete footings, walls, buttresses, beams and slabs
5000 p.s.i. concrete columns
Light colour cement and special light colour aggregate used at exposed concrete with sandblasted finish
Cement: Howes Cave, Penn Dixie Type IL
Aggregate: Bennett, Long Island
Reinforcing steel: 1287 tons
ASTM A-432 and ASTM A-431 steel
Structural steel: 1837 tons
ASTM A-36 62T steel

Mechanical:
HVAC: Refrigeration: 1100 tons
Two 550 ton electrical motor driven refrigeration machines
Heating: warm air with supplementary fin tube hot water base radiation at exterior glass walls and at horizontal beams of garden enclosure wall
Fuel: Utility company steam.
Ventilation: air handled at the rate of 251,000 c.f.m. by five air handling units and 31 fans
The air conditioning for the building consists of a high pressure double duct system supplied from a central machine room in the basement on 43rd Street side. From this central source of air, high pressure duct work (hot and cold) is manifolded through an underground trench to 3 main air shaft risers which feed vertically up the height of the building. At each floor high pressure branch duct work is run in the hung ceiling. These high pressure branches, (rigid or flexible ducts) connect to a double duct mixing box which acts as a thermostatic mixing device and sound trap and provides the proper temperature of mixed air supply for each individual room of the building through half of each module in a ceiling diffuser.
The return air system for the building consists of individual returns from each of the rooms into the hung ceiling by way of half of each module line diffuser and through the ceiling plenum



to central return air shafts located in the vicinity of the cores. The air is carried to the penthouse where a transfer air fan discharges the air to the garden area and uses the garden as a return air plenum. The return air is picked up by return air fans at lower garden level and is recirculated through the system or discharged through the main exhaust in the pylon at the south-east corner of the garden.
The entire building is on a single air conditioning system with the exception of the main conference room on the 42nd Street side, which is provided with an independent system so that it can be run at off peak hours. There are also some miscellaneous supply and exhaust ventilation systems for basement areas and storage areas.
Snow melting system:
22,000 lin. feet of piping covers drives, sidewalks and plaza areas
Heating medium: 42·7% solution Dow Therm permanent antifreeze

Electrical:
Energy at full load: 4000 KVA Vertical distribution through core electric closets, horizontal distribution through cellular steel deck and above suspended ceilings
Electrical (high tension) convenience outlets in movable partition base and through floor fittings into electrical cells in cellular steel floor deck
Telephone (low tension) outlets in movable partition base and through floor fittings into cells of cellular steel floor deck.
Emergency power:
400 Horsepower 250 kW 'Onan Eastern' diesel emergency electric generating set
Lighting:
Total of 5000 various lighting fixtures
General office areas: 85 f.c.
2200 individual 3ft × 3ft flush louvered 225 watt fluorescent fixtures
Private offices: 120 f.c. over desk
235 pendant, louvered, 550 and 690 watt fluorescent fixtures with supplementary incandescent fixtures providing accent lighting
Board room: dimmers 0 to 120 f.c.
18ft × 18ft fluorescent luminous louvered ceiling over conference area. Incandescent downlights and wall washer fixtures at room perimeter. All lighting on dimmer control (4 dimmers)
Reception and main conference room area:
All incandescent down lighting and wall wash accent lighting.
All lighting on dimmer controls (5 dimmers)
Garden lighting
76 1200 watt adjustable spotlights from 10th floor soffits at perimeter of garden
43 100 watt well lights at base of major plantings
Signal systems:
Exit supervisory alarm system: 6 emergency exit doors are monitored by this system. Alarm signals activated by unauthorized use of these doors are annunciated at guard's station in receptionist's desk and at engineer's control panel in mechanical room
Entrance call system: signals from 43rd Street entrance, garage entrances and loading dock platform are sounded and illuminated at guard's station in receptionist's desk and at engineer's control panel in mechanical room
Intercommunication system: New York Telephone Company instruments will handle all internal communication except for separate systems in connection with passenger elevators

Plumbing:
Fire standpipe system
Risers located at each of three stair towers
Fire hose cabinets provided at each floor landing of each stair
Sprinkler system
All areas below grade provided with wet pipe sprinkler system except main conference room and board room areas, which are provided with smoke and fire detection devices connected directly with New York Fire department through A.D.T.
Exterior glass walls adjacent to 800 Second Avenue building are provided with dry pipe sprinkler system
5000 gallon house storage tank for standpipe and sprinkler systems is located in upper section of penthouse

Vertical transportation:
Four passenger elevators (Armor Elevator)
Speed: 500ft per minute. Capacity: 2500lbs each
14 floors served.
One service elevator (Armour Elevator)
Speed: 200ft per minute. Capacity: 6500lbs
14 floors served
One vertical mail conveyor (Lamson)
Automatic loading and unloading
Stations at each floor below roof
Speed: 12 trays per minute

Window washing:
Western Gear 'Skyclimber' system employs the following:
1. Roof mounted powered work platform and cages capable of transfer to pre-selected points under building overhangs
2. Independent drops by powered work platform and cages suspended from tracks and brackets on interior and exterior soffits and galleries. Legal footing positions with safety belt anchors are accessible through Garden sliding windows where the powered platform or cages will not be employed

PUT ON YOUR DANCING SHOES

*Modern architecture has been a grim and puritanical affair. Minimal housing at a minimal cost has been the parsimonious aim. Sights have never been set very high. There have, of course, been occasional forays into the realm of the fabulously expensive—Mies van der Rohe's onyx screens are one such example—but they have been markedly restrained in effect. There has been no attempt to excite people and generate any degree of liveliness. There has been no sense of fun in the 'high' tradition of modern architecture. In the 'lower' reaches though, modern architects have managed to produce a jubilant, enjoyable architecture that was—for a brief period—actually popular. Juke-box Bauhaus was a triumph of design over dogma. Its manipulators wanted people to expand when they saw it, and so, during the late twenties and early thirties there was a real, widespread response to some modern architecture at least. It became a part of people's lives—especially their leisure lives. Dozens of Odeon cinemas in London bear witness to this decade of popularity. There are still the Lyric[1] and Whitehall[2] theatres, the Rainbow Room[3] at Derry and Toms and a handful of glittering interiors at the Savoy and Claridges Hotels[4], but rumbustious modern is rapidly disappearing in London. The biggest juke-box of all time, the Ford Motor showroom[5] in Regent Street, was replaced ten years ago by an effete modern interior; the great Lyons Corner Houses[6] **6, 7, 8, 9** have been stripped or covered over within the past few years, the ground floor of the Cumberland Hotel[7] **4, 5** was recently gutted to be replaced by some artistic interiors,[8] alternately folksy, alternately modern; the Chez Cup[9] in the basement of the Regent Palace Hotel is boarded up; that dazzling, incandescent glory, the entrance to the Strand Palace Hotel[10], **1, 2, 3** is to go. A new entrance to the hotel is required in a side street; yet there seems no reason why this last full scale relic of the work of Oliver Bernard and a witness to a past era of Messrs Lyons' enlightenment should not remain as a subsidiary entrance. Anyone feeling this way about it can still put on their top hat, tie up their white tie, brush down their tails, put on their dancing shoes—and protest.*

[1] Michael Rosenauer architect, 1932
[2] E. A. Stone architect, Marc-Henri et Lavardet interiors, 1929–30
[3] Bernard George 1933–38
[4] Howard Robertson architect
[5] Charles Heathcote and Sons, 1930
[6] F. J. Wills architect, Oliver P. Bernard interiors, 1928 onwards
[7] F. J. Wills architect, Oliver P. Bernard interiors, 1932–33
[8] Dennis Lennon and Partners
[9] F. J. Wills architect, Oliver P. Bernard interiors, 1934–35
[10] F. J. Wills architect, Oliver P. Bernard interiors, 1929–36

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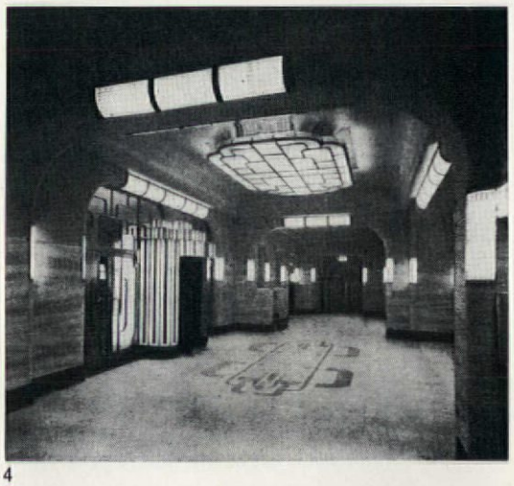

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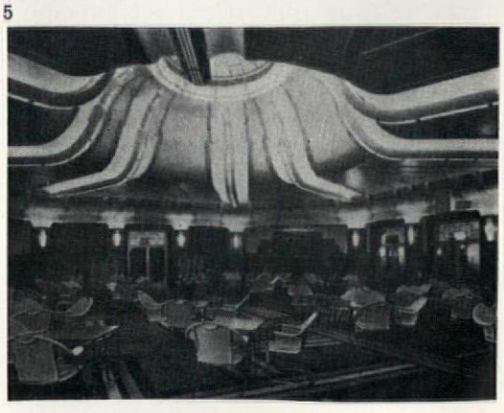


Oliver Percy Bernard (1881–1939)

He came of a prosperous theatrical family, and received the beginnings of a middle-class education; but both his parents died when he was 13, and he went to Manchester, where he worked as a property boy in a theatre. Whilst working there he taught himself to draw. He tried to escape from this drudgery by sailing as a ship's boy on a windjammer to the Gulf of Bothnia, but returned gratefully to painting scenery in London. From 1901 to 1905 he worked in the theatrical studio of Walter Hann, and then emigrated to America. He was lured back to London in 1913. On the outbreak of war in 1914, he was rejected for military service because of his deafness, and returned to America. He left the United States in 1915, aboard the *Lusitania*, and was fortunate in being on deck when she was torpedoed.

He was accepted finally for war service as a member of the small team of artists and theatrical designers sent to France to carry out camouflage for the British army.

After the War he went into interior designing and architecture. He was appointed design consultant to J. Lyons, and one of his first jobs for them was the interior of the Strand Palace extension, completed in 1936. The entrance itself, now the only relic of Bernard's work, opened into a brightly lit arcade, giving access to the interior, 1–3.

The Strand Palace was followed by the re-vamping of the Strand and Coventry Street Corner Houses, and the designing throughout of the Oxford Street Corner House, 1928. 7, 8.

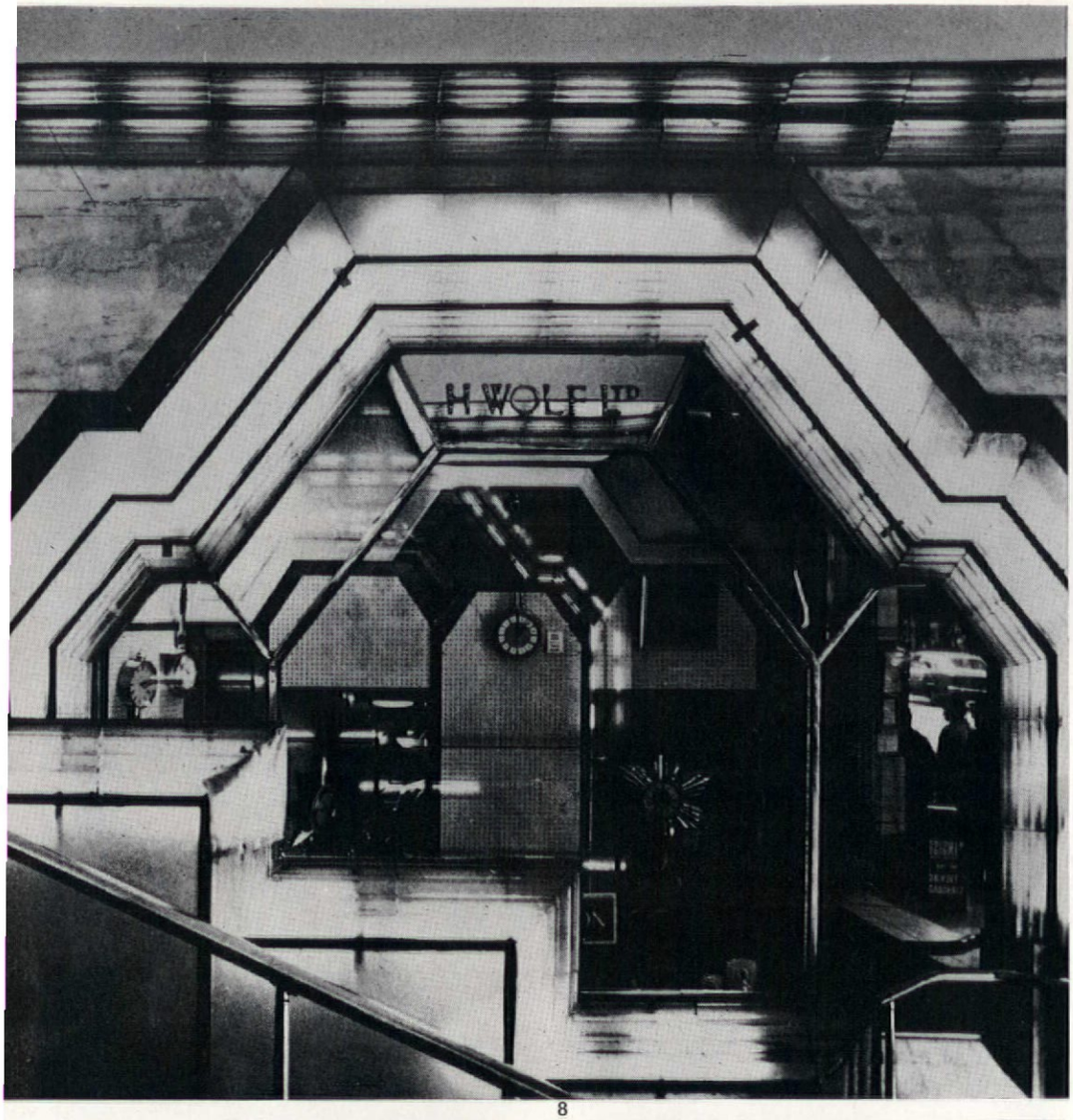
Structurally the building was interesting since it employed the 'mushroom' system of construction, hitherto used mainly in factories. Bernard used the lighting and ventilation devices to refine and conceal the mushroom heads.

The most widely-acclaimed of the buildings which he and the Lyon's architect, F. J. Wills (1885–1939), created for the firm was the Cumberland Hotel 4, 5 and its associated Corner House 6 at Marble Arch. The Cumberland, opened in 1933, itself made technical and sociological history by providing a bathroom to every bedroom—never before attempted for a hotel in its class, and only made possible by the revolutionary use of a single-pipe system and internal plumbing ducts. In the public rooms he again took the lighting and heating systems as the formative elements of his design, 'instead of treating them either as visible accessories or disgraceful adjuncts'. This approach was most vividly demonstrated in the Quebec Cafe in the Corner House, where a diamond-shaped decoration for the wall was created by an upper triangle of light and a lower triangle of ventilation grill, 9. The building was described by Maxwell Fry in the *Architectural Review* (1934, pp. 13–17).

Bernard did work for the Paris Exhibition, and for the Ministry of Agriculture and the Naval Gallery at the Wembley Exhibition, and smaller commissions for cinemas, shops, and houses. He designed and built factories for Supermarine Aviation at Southampton, and for the Iron Company at Dublin, and offices for Rockware Glass (1937), 10.

Bernard was not an easy colleague, having both a memorable temper and a fine flow of language, but endearing through his ready wit and profound humour. Owen Williams wrote of him that he was a non-conformist, and an individualist who carried his individualism into every corner of his life.

Hermione Hobhouse



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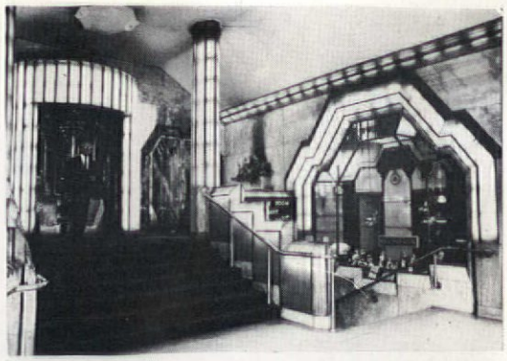

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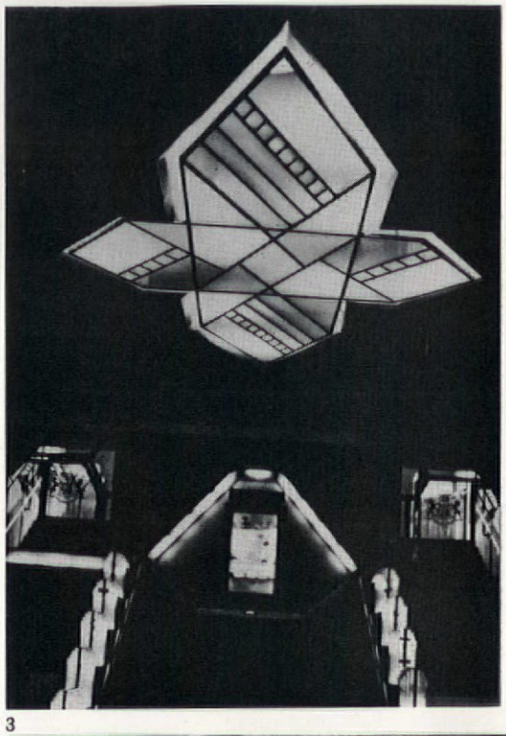

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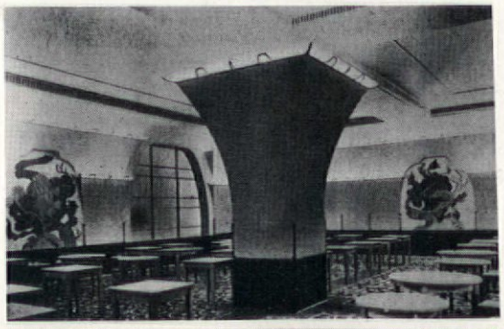

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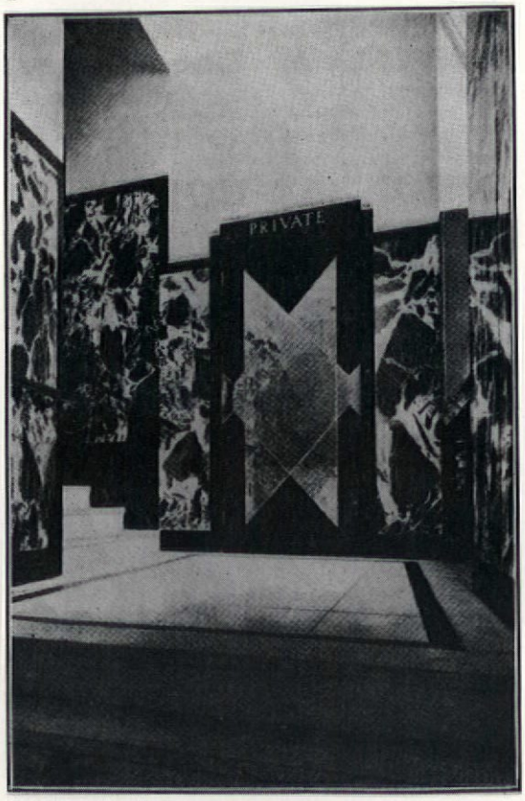
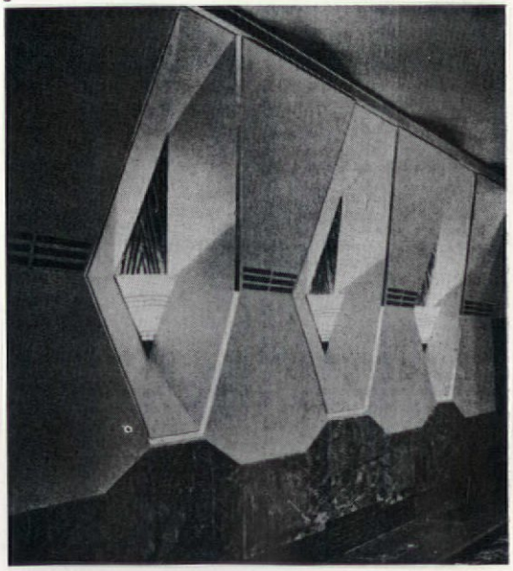


1, 2, 3 Entrance to the Strand Palace Hotel; *Photos Tim Street-Porter*
4, 5 Entrance hall and Centre Court at the Cumberland Hotel
Architect and Building News Dec 29, 1933 p. 356, 359
6 Quebec Café, Quebec Street
Architect and Building News Oct 27, 1933 p.101

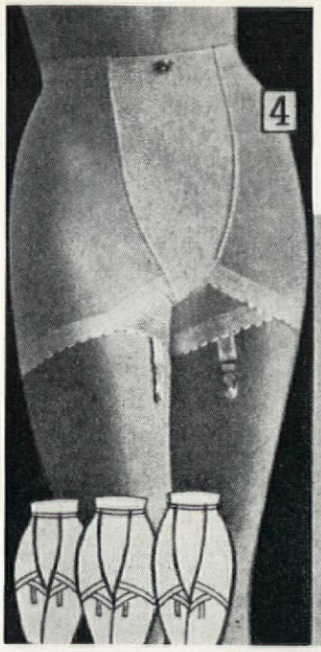


9,10

7, 8 Oxford Street Corner House, details of doorways
Architect and Building News May 4, 1928 p. 645, 646
9 Details of the light fittings and ventilation grilles, Quebec Café
Architect and Building News Oct 27, 1933 p. 100
10 Rockware Glass Ltd, Greenford, Middlesex

Why 3 cup styles in our Wonder-Fil Bra ?

an offering by David Greene



. . . with non-stretch front panel
and comfort-styled legs
. . . in smoothing power net

You can get as far as 247 miles from Onan parts and service . . . *but it isn't easy!*

POWER TEAM COMBINATIONS

PICKUP MODELS 90SS	1000B	1100BT	1200BT	1300BT	STAKE 1500B	ALL-WHEEL DRIVE 1100BT	1200BT	1300BT
ENGINES								
Standard 155 hp V-8	141 hp Six	141 hp Six	141 hp Six	141 hp Six	141 hp Six	141 hp Six	141 hp Six	141 hp Six
Optional	153.5 hp Six	153.5 hp Six	153.5 hp Six	153.5 hp Six	153.5 hp Six	153.5 hp Six	153.5 hp Six	153.5 hp Six
	155 hp V-8	155 hp V-8	155 hp V-8	155 hp V-8	155 hp V-8	155 hp V-8	155 hp V-8	155 hp V-8
	193 hp V-8	193 hp V-8	193 hp V-8	193 hp V-8	193 hp V-8	193 hp V-8	193 hp V-8	193 hp V-8
	197 hp V-8*	197 hp V-8*	197 hp V-8*	197 hp V-8*	197 hp V-8*	197 hp V-8*	197 hp V-8*	197 hp V-8*
		180 hp V-8 (LPG)*	180 hp V-8 (LPG)*	180 hp V-8 (LPG)*				
TRANSMISSIONS								
Standard 3-speed	3-speed	3-speed	3-speed	Heavy-duty 3-speed	Heavy-duty 4-speed	3-speed	3-speed	Heavy-duty 3-speed
Optional	Heavy-duty 3-speed	Heavy-duty 3-speed	Heavy-duty 3-speed	Heavy-duty 4-speed		Heavy-duty 3-speed	Heavy-duty 3-speed	Heavy-duty 4-speed
	Heavy-duty 4-speed	Heavy-duty 4-speed	Heavy-duty 4-speed	5-speed, overdrive**		Heavy-duty 4-speed	Heavy-duty 4-speed	
			5-speed, overdrive**	5-speed, direct**				
			5-speed, direct**					
	3-speed automatic	3-speed automatic	3-speed automatic	3-speed automatic		3-speed automatic	3-speed automatic	3-speed automatic

† Models 1100B, 1200B, 1300B available with six-man, four-door cab.
*197 hp V-8 and 180 hp LPG V-8 not available with 3-speed automatic transmission.
**Available with 180 and 197 hp V-8.

*The solid gold sound of K.S.C.**

Capsulized freak out
Metal to rubber of asphalt ribbons plugged into Vietnam and the price of aerosolled ketchup thru W.D.B.J. Star City via the chromium telescoping finger. 700 miles of the great highway turn on, 13 hours of keeen-sell survival service and all the gear to keep the wheels flying, the gut full, and the mind blown on soul and acid, and tune-in, eat, and flash, rush, One South and zapp it forward, gas-up; and hum and sink into supa-fit vinyl pads and watch it all. All the cardboard cities and the X-ray of us all on the giant billboards. And buy me, lay me hot dog-burgers. Blink, zip me into bed and flash past a thousand Kleenex sleeperies and King-size pleas trying to break up the big high and consume hy-flyte, Pep-up, an alligator breakfast a nude-serviced eat.
How do you get it all to stop ?
And Warren on wings in the flying drunk-eat-zapp box.
It's all about three things which are basic to the now turn-on.
Three observables that make us all unique:
In the '20's it was all happening on the assembly line. They all got high on industry, liners and Socialism. That's all dead, the action's moved on into the delicately tuned transister teeny-bopper ears, to the highway, K.S.C., the paper packed fizz champagne of the age Coca-Cola, and the magic minds of white-shirted identity-carded men with checkout clip-boards plugged into plasticised cybercircuits.
Don't look here for organic life patterns, God, or Chateaubriand as a way of life. But look here for what Supa-king slimline services the ego of tomorrow. Or why the survival of the soul depends on the Beverley Hillbillies, and the Golden Krispi-Kreme, and who is pouring it on whom or what.
What's so great about walking on water anyway ?
The Evidence:

1. Now life is as it is available and consumable as advertised now.
2. Now dreams as they are serviced as they are availably fed and advertised and purchased now.
3. Our life games possibilities increasing due to increasing technology, as they are made more easy to obtain.

All three as advertised in the Media, and seen at L.A., K.S.C., Cocoa Beach, any corner drug super-market, I.B.M. space boutique, or pocket radio: instantly available for money (legit), or looting (presently non-legit), or money you may have at some time—at low, low, low discount prices—or given away with every ten purchases and between 10.00 a.m. and 1 p.m. daily on 13 channels.
The Hypothesis:
That the tying together—all the zapp and megraine—mental disorders—zippup consumer scene—dream-land now are three common phenomena.

1. Its all service.
2. Its all the same.
3. Its all artificial.

The organic birth-death-life-earth-heaven-God is no longer valid.
Amplification:

1. Its all service. Or we offer giant discount. You merely: take it away, eat it, drive it, watch it,
   Scene: religion, parkland, hamburgers, the pill, rentaplane, artmobile, beach, ice, cleanery, tissue. Plug in to any or all. Switch on and be serviced. Finished, full, switch off—doesn't matter because:
2. Its all the same. The joint between God-nodes and you, eat-nodes and you is the same. Theoretically, one node could service the lot. There's no need to move. Cool it baby! Be comfortable. Godburgers, sexburgers, hamburgers. The node just plugged into a giant needery. You sit there and need—we do the rest! Green stamps given! Doesn't really matter any more about heirarchy or value systems. Make your own. No need is more important than any other. Wipe your nose, Bach, smell a flower. Plug in and turn on. Because:
3. Its all artificial anyway. Opt out of the King-size plastic now if you want. Plug into the nude hippy-suburban painless happy-life. The pill and the plastic liver have ended the concern that we are all part of some wonderful inevitable natural process.

*Kennedy Space Center

We offer ten pre-selected sets

We offer ten pre-selected sets—or you can choose from 43 individual fixtures and custom design your own set to suit your tastes. Part 4—or in spite of the fact there is no sign of the Evinrude Aquanaut and skim-twin all-weather carpeted multipurpose boat this picture tells you now it is—which also happens to be part 2 of a consideration of the completely friendly and satisfying environment and how to recognize it.
The passing cluster of equipment.
The transient space.
The backyard that happens as 3 magic tail-gates lower and the twin barrel V8's stop feeding horses thru' Synchro-smooth drive trains.
Slip off the hi-way.
Cut out automatic pilot control and cruisomatic Select down.
Super diamond lustre finish feeding back bent images of sky and trees.
Sports tach fliskers dead and supa wide ovals sink into the meadow.
Just unload the gear and live. Move on maybe. Its all different tomorrow anyway the backyard has become a party or kitchen and 3 days gunning down the Pan-American hi-way and your stepping out of that feature foamcushioned bucket and setting up your luxurious and convenient equipment in the jungle and there still isn't a crease in your shirt.
See the picture, its all there, at least until its all in your pocket, or embedded in your nervous system or we don't need to go because we can recreate it all in Bradford or on the Central Line.

Designer City or the Environment as a Collection of Coin-Ops to keep us all Grooving

The City as a service is, of course, here now—the three machines illustrated being the latest dispensers, an inevitable extension to the coffee, food, contraceptive and stamp machines that have been around for some time. Just more hardware, but a good deal softer than the banks, shops, etc., that they could replace; and if the city becomes an oasis it must certainly contain dispensers developed from these—crude though they are. The nice thing about them really is that they are part of the increasing fund of equipment, extras, stick-ons, personalizing kits, etc., ready to be grafted on to the paraphernalia of the built environment in order to make it perform. A drive around any English suburb can only beg the question: is the bungalow attached to the Kencast garage-shed-greenhouse or is the Kencast gear attached to the bungalow. If dispensers and stick-ons develop they will not only modify and redefine the meaning of what they are attached to (cf. Cedric Price's Gas Station University) but will eliminate the need for a 'building' at all.

A basic limitation on the dispensers seen now is that their need/satisfaction capability is of a low level. A cigarette machine can never deliver a plane ticket and the shaver 2 cannot at the moment simulate the feeling of being in a barber's shop or a luxury bathroom.

If we are not all to lie in battery racks, fed to keep the nervous system throbbing, plugged into a transistorized giant supermarket of all the galaxies of knowledge and the memories of Genghis Khan or Peter Pan and the information about why it is or isn't, answering demands and placing under the skin visions and worlds on demand, then we must be mobile.

If we are to be mobile the range of services offered your local pump jockey must be enlarged. The American motel complex is the closest thing yet to a universal dispenser of service to the nomad but offers only a limited choice to the consumer. One could easily see them as having two functions (1) satisfying physical needs; (2) satisfying psychological needs. It is the second one that at the moment is crudely handled; there is no way of simulating directly your own bedroom in Wembley at a holiday inn in Des Moines, Iowa. With this in mind read Chris Dawson *right* because it might be that only when we can produce a truly responsive environment backed up by service dispensers can the problems of reconciling personal choice with group needs be eliminated.

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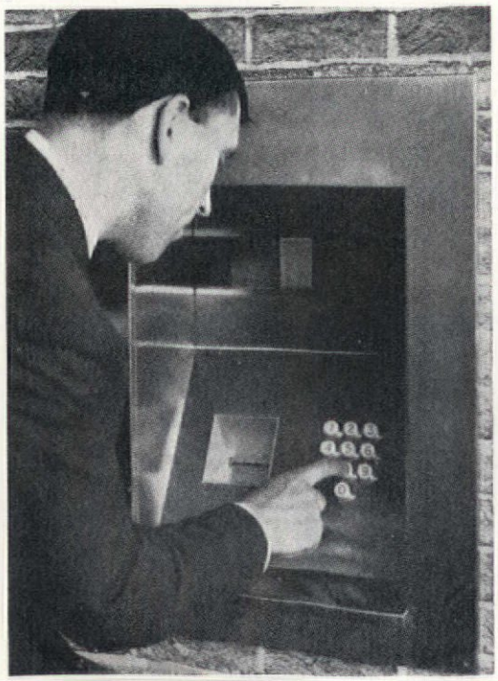


2

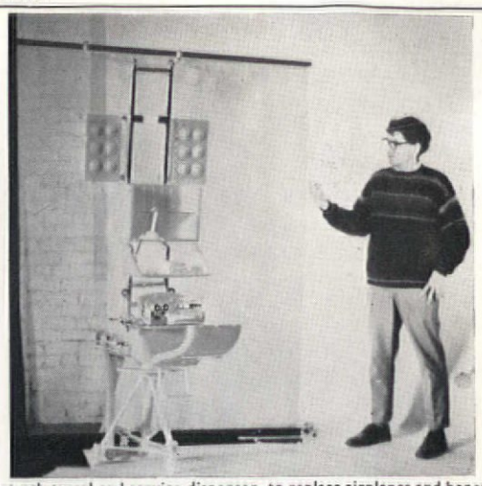
3

1 Westminster Bank's sidewalk instant cash dispenser

2 Sidewalk clean up operation: place in coin, cabinet opens, shaver comes on, after shave lotion cup fills, warm air blows. Time 4 min.

3 Instant foreign cash. Insert a five-pound note out comes dollars, lira, francs, whatever you select.

footnote 1



Jet-pak travel and service dispenser, to replace airplanes and hence airports in the future: designed by Charlie Jones.

Thoughts on a completely satisfying friendly environment

Until now, the personal, local environment has meant anything from a simple weather exclusion device (cave through tent, through semi-d) to pretentious, style conscious, prestige symbols, contributing little to the mental or physical comfort of the individual. As a result, one finds the modern 'cave' filled with the optional extras which make life bearable—telly, telephone, tape recorder, hi-fi, central heating, etc.—and some which do not—our ideas on furnishing are medieval. What then should the personal environment be? It should—ideally—be a sensor and an activator; a reactive imput–output responding to personal desire signals—whether those devices be for shelter, communication, sustenance, knowledge or entertainment. The environment should be an extension of the skin *and* the mind. The techniques will soon exist to enable us to live in our own imaginations—what price reality then?

The environment will become the network of vibrations, establishing and defining the symbiosis between the individual and the reactive 'mechanism' *and* the interaction between individuals through that 'mechanism'. People are dynamic, organic, non-passive—the environment must take account of this!

Chris Dawson

footnote 2

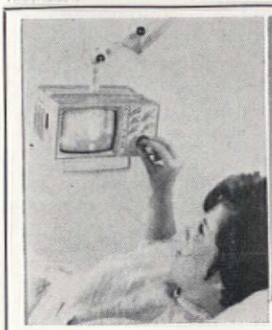
Ice King Snow Mobility Skeleton

The Ice King. A 60 m.p.h. independently sprung one-man vehicle skeleton, probably the nearest thing on the market to the cushicle. (AD 11/66, p 576) Survival time on this skeleton could obviously be increased with a range of further equipment, envelope and/or suit, communications system, food, etc.

Over the hills and far away '67 skeeter style

Ice King is surely a breakthrough from the Skeeter (which looks like a boat, you ride like a horse, has caterpiller traction and the power unit is in the same place as a car). Or is it? As a hybrid it's a knockout.

footnote 3



The idea of a TV set as a piece of furniture is slowly changing and this Sony on a flexible arm comes closest to being equipment and not a family altar.

The Ramostar Radio Remote Control sends signals to your car (house, office, cushicle?) and lets you start it up in your driveway or parking lot from up to 500 feet away. In addition, it can switch on air conditioning and heater controls.

THE THEATRE OF R

In February this year, M. André Malraux himself opened the grandiose *Maison de la Culture* on the southern edge of Grenoble. It is the most ambitious yet to be built in France —all previous ones having been either installed in existing buildings or related to other institutions. But the brief is extraordinary.

In September 1966, the mayor of Grenoble, acting on the recommendation of no less than 128 local organizations, ranging from mothers' unions to vociferous pressure groups, commissioned André Wogenscky to design the building, half of which was paid for by the town, half by the State under the administration of the Ministère des Affaires Culturelles and in particular that section concerned with theatres. This was headed by M. Biazini who provided a ready-made departmental brief.

The Grenoble authorities were primarily concerned to provide a permanent house for a local theatre company of considerable repute, the *Comédie des Alpes*, so that the agreed programme was dominated by theatrical interests. As planned, there was to be a large, adaptable theatre (1500 seats) for concerts, plays and films; a smaller theatre (600 seats) for the *Comédie des Alpes* and a conference hall (300 seats) which could also be used for film shows. Also envisaged were other cultural amenities, a small exhibition hall (300 sq m), reception rooms, a library, a record room (with four cubicles), a television room, snack bar, crèche and directors' quarters. But these were subordinate not only to the theatres, but to the ancillary accommodation required by them—foyers, administrative offices, dressing-rooms, rehearsal rooms, scene, prop and costume stores, vast workshops and plant rooms. The theatrical bias was further emphasized by Wogenscky—the large theatre (1153 seats) has the second largest stage in Europe (the Paris Opéra is the largest), the smaller theatre (525 seats) for the *Comédie des Alpes* is probably the most complex and sophisticated in Europe, while the conference hall (323 seats) was turned into a theatre by the addition of a stage. Wogenscky likes a theatre. But his interest was clearly focused on that designed for the *Comédie des Alpes*.

For many years he has experimented with the concept of the 'théâtre torique'. Here his mature ideas are developed. He intended that the audience should be neither in front of the spectacle nor around it, as in a circus, but within it. The audience is to be enveloped by the drama. The auditorium is thus a revolving platform (22m Ø) surrounded by a revolving stage (3·6m wide) with a vast fixed stage beyond. The audience can thus be discreetly moved; scenes can be effortlessly changed and lighting controlled from a centrally suspended cabin. Similar experimental theatres exist in the open in Czechoslovakia and Finland, but this is the first to be built indoors.

Culture in Grenoble, as François Loyer has so ably argued in *Architecture, mouvement continuité* 4,* is identified with the theatre.

Theatrical culture is largely a consumer item. Only in the small conference hall—to which Wogenscky added a stage—will amateur theatricals be possible. Only there will local people be able to take an active part in developing a theatrical culture. If a *Maison de la Culture* is to encourage only a passive, spectator culture, it can hardly be considered as worthy of its name, nor can it be taken as a model for other such buildings—especially when the cost is said to be 26,950,000 francs.

*Bulletin de la Société des Architectes Diplômés par le Gouvernement, Paris

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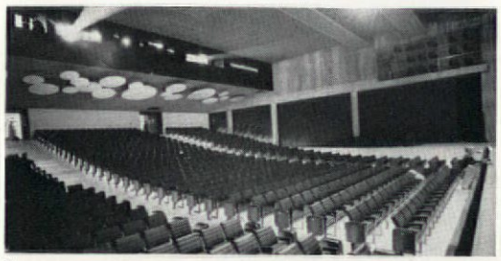

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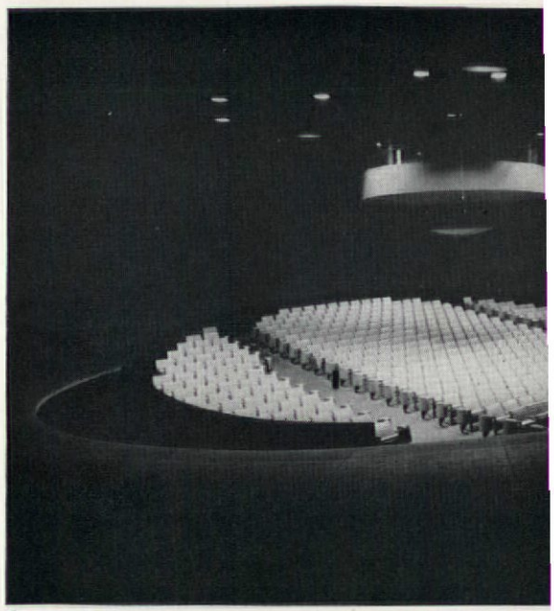

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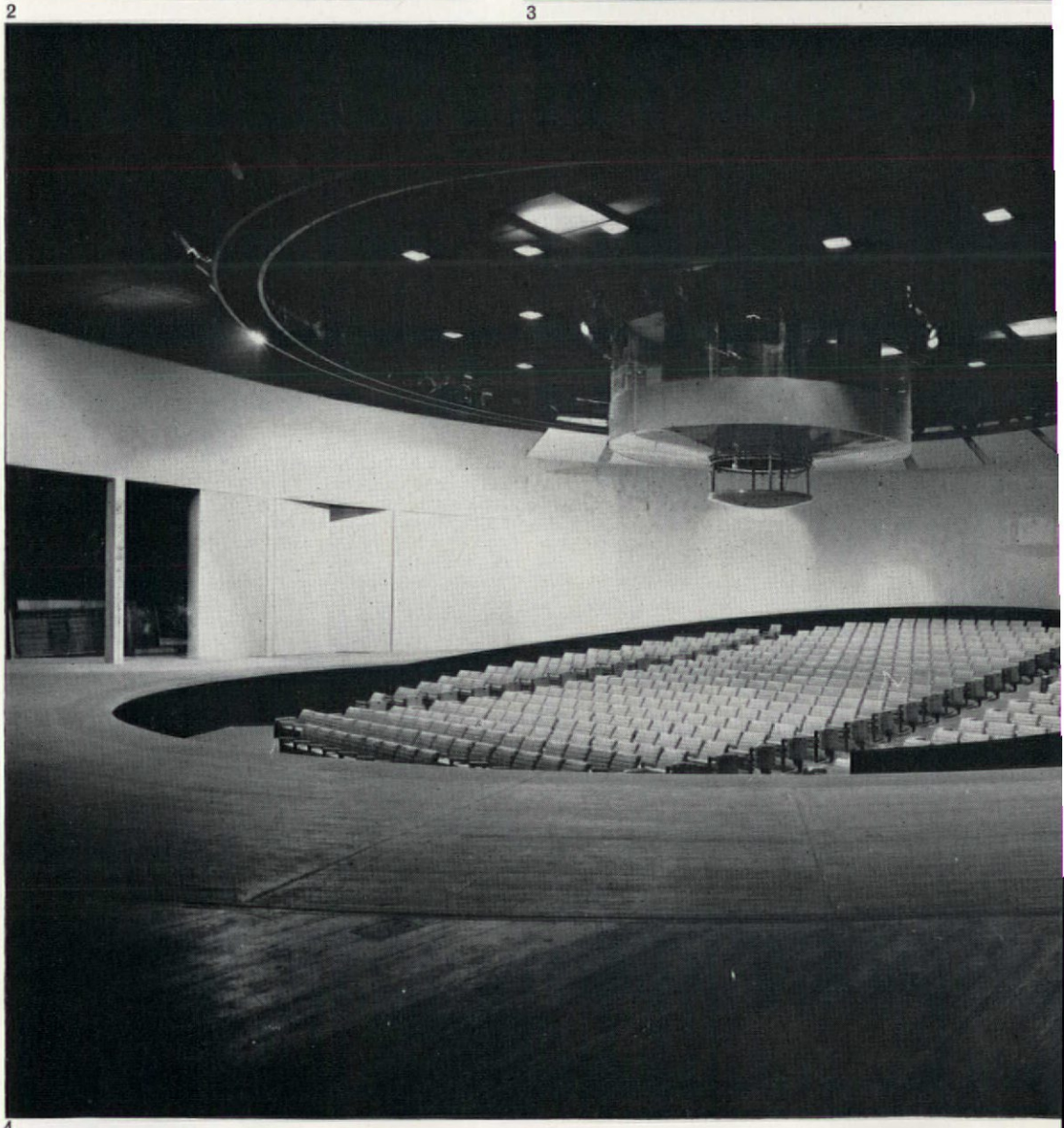

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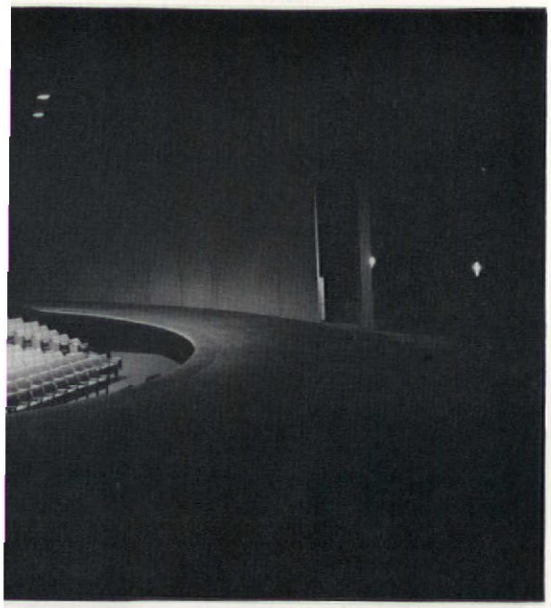

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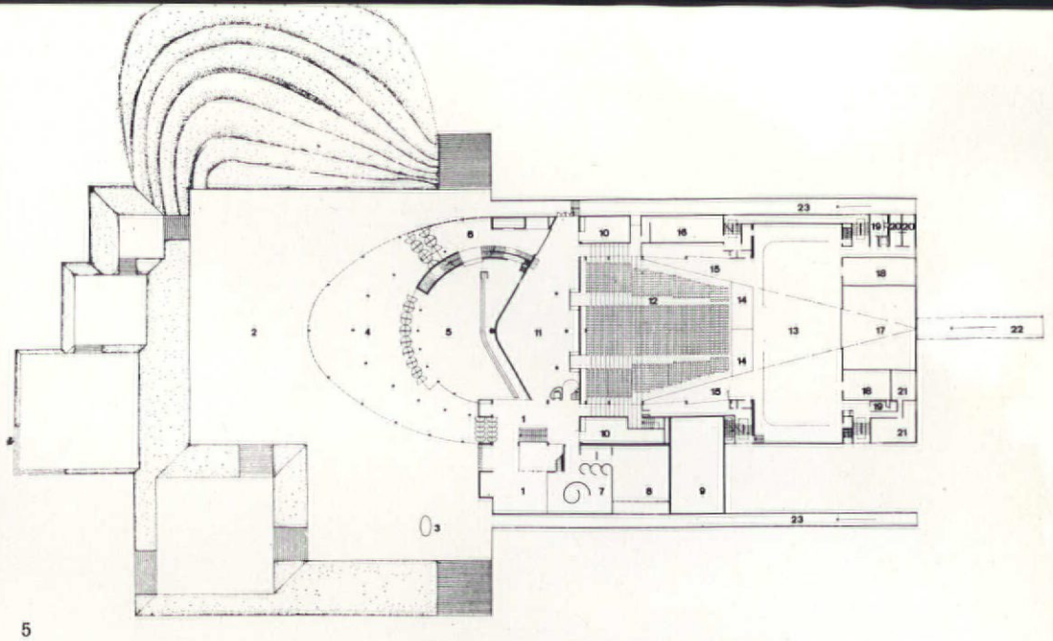

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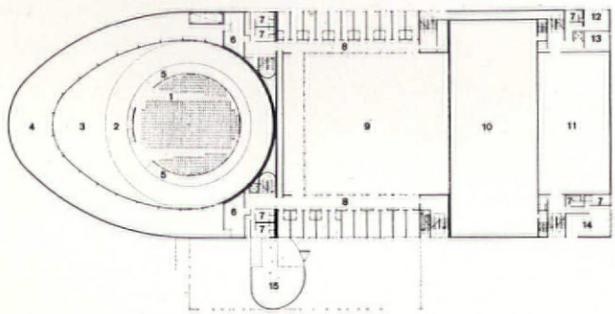

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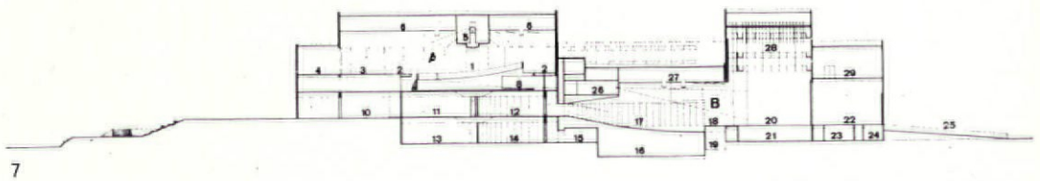

7

1 General view of the Grenoble Maison de la Culture, *set on an awkward triangular site on the edge of the new Place des Etats, at the crossing of the rue Marcel Peretto and the railway from Grenoble to Chambery. A museum is to be built nearby to make this a 'cultural' focus for the new housing estates planned south of the town*

2 Interior of the largest theatre

3, 4 The sophisticated experimental rotating theatre designed for the Comédie des Alpes (538 *seats). The lighting and sound control box is suspended centrally over the audience. Powered by three 500 h.p. motors the 200-ton auditorium can revolve at varying speeds, up to a maximum of 2·5 m/sec. The audience is able to leave the auditorium at all times, even when it is moving by one of two staircases leading down to a circular gallery below stage level*

5 ground level plan
1 entrance foyer
2 promenade
3 sculpture
4 covered terrace
5 snack bar
6 rotating theatre foyer
7 record playing room
8 library
9 scene store
10 cloakroom
11 main foyer
12 large theatre (1309 seats)
13 stage
14 moving platforms
15 wings
16 green room
17 scene store
18 material store
19 cleaner's room
20 star's dressing rooms
21 dressing rooms
22 lorry ramp
23 pedestrian ramps

6 upper level, rotating theatre
1 revolving auditorium
2 revolving stage
3 fixed stage
4 back stage
5 access ramps
6 green room
7 cloakrooms
8 star's dressing rooms
9 roof of large theatre
10 stage left
11 rehearsal room
12 office
13 director
14 store
15 children's garden

7 longitudinal section
A rotating theatre (523 seats)
1 revolving auditorium
2 revolving stage
3 fixed stage
4 back stage
5 control cabin
6 catwalk
7 under croft
8 public access
9 promenade
10 open terrace
11 snack bar
12 foyer
13 kitchen
14 exhibition hall
15 meeting hall
16 workshop
B large theatre (1309 seats)
17 large theatre
18 moving platforms
19 orchestra pit
20 stage
21 undercroft
22 scene store
23 prop store
24 doorkeeper
25 truck ramp
26 projection room
27 catwalks
28 stage loft
29 rehearsal rooms

Architect: André Wogenscky

Assistants: J. Lavot
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Technical consultants: C. Demangeat
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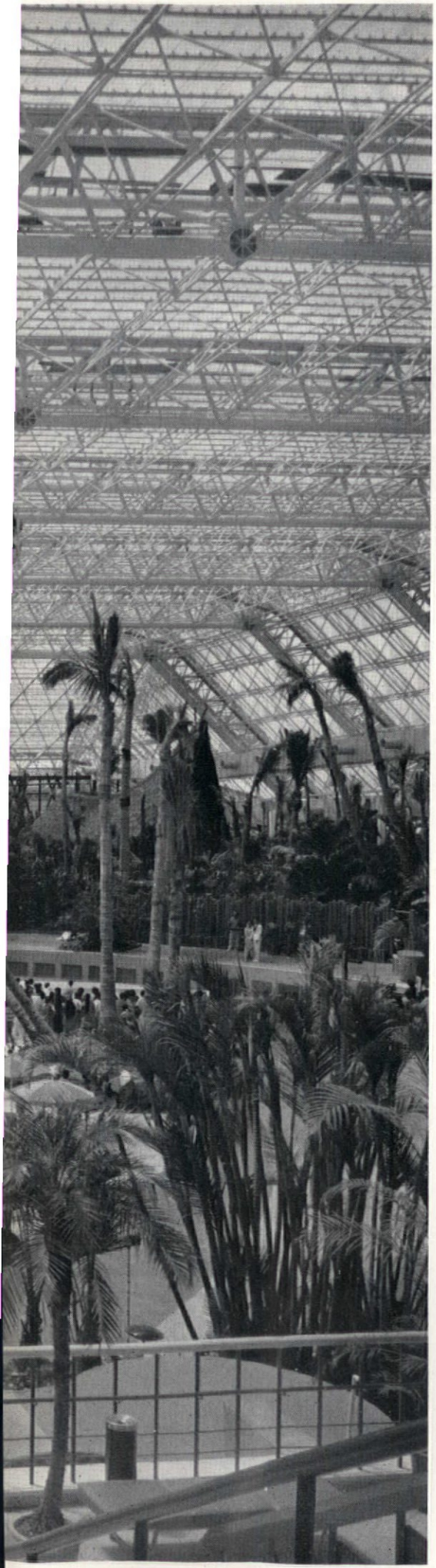
Mechanical equipment by Sores, 119 Rue Manin, Paris 19e

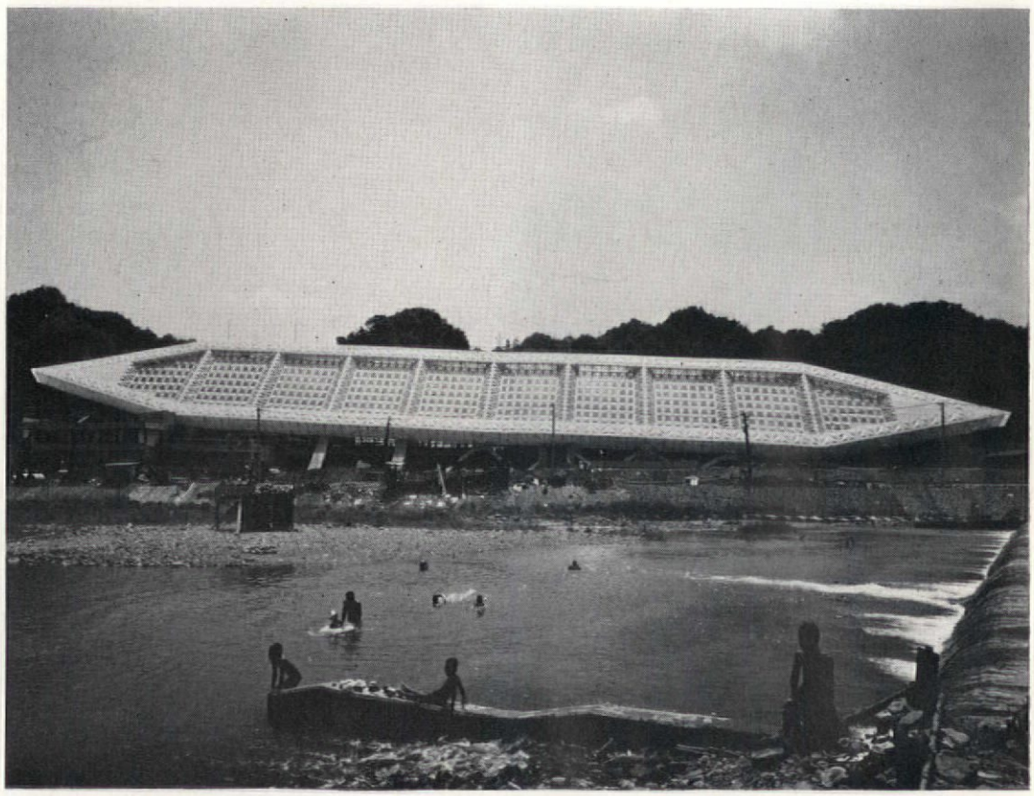


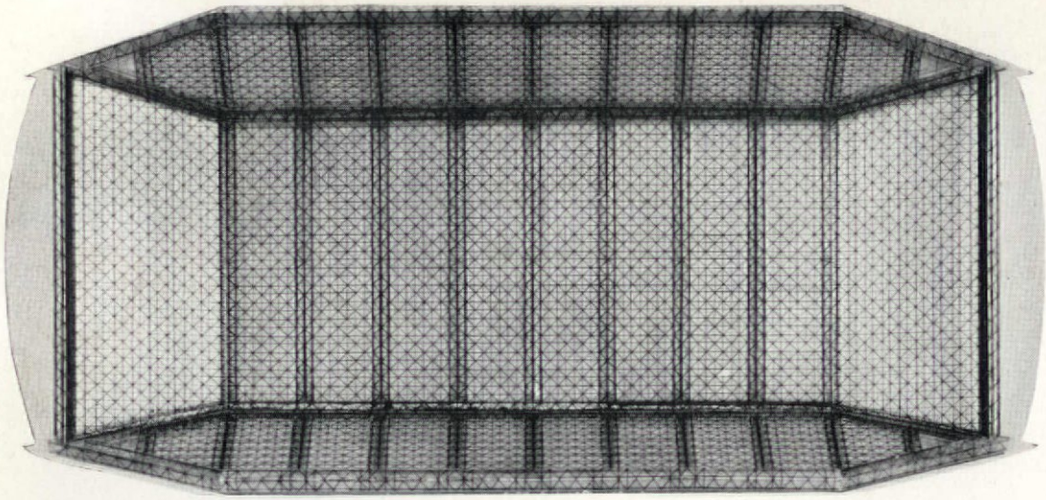
SUMMERLAND

A serviced space-frame for changing fantasy and fun

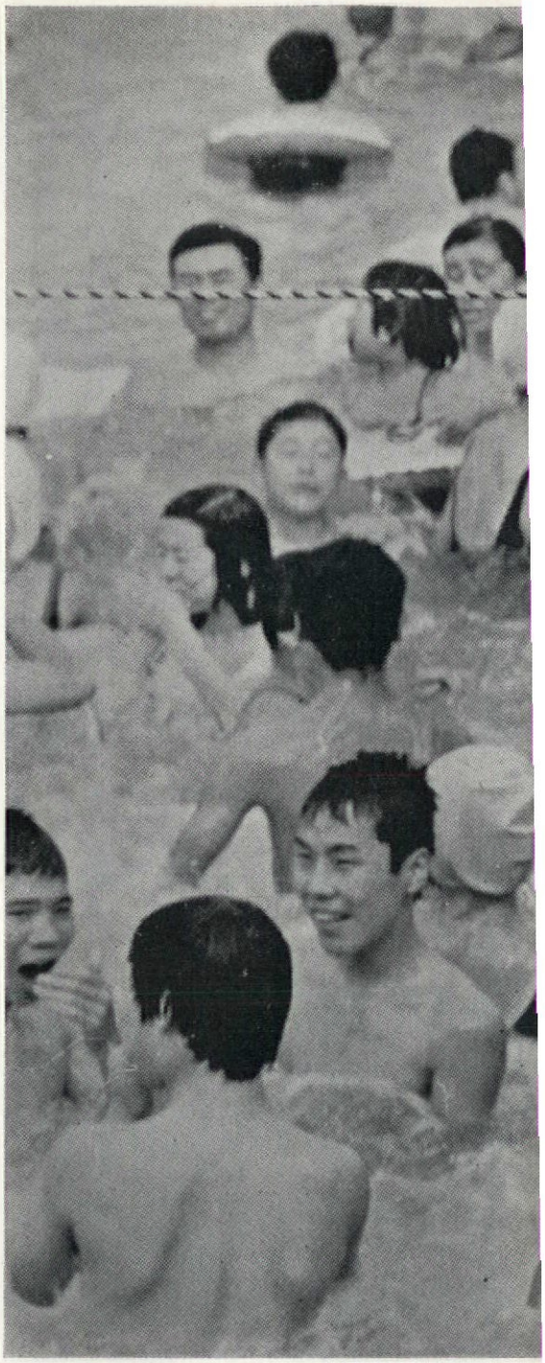
Ishimoto Architectural and Engineering Co.
Chief architect and engineer: Kinji Fukuda
Architect: Minoru Murakami
Structural engineer: Toshio Sato
Mechanical engineer: Kanemaru Murayama

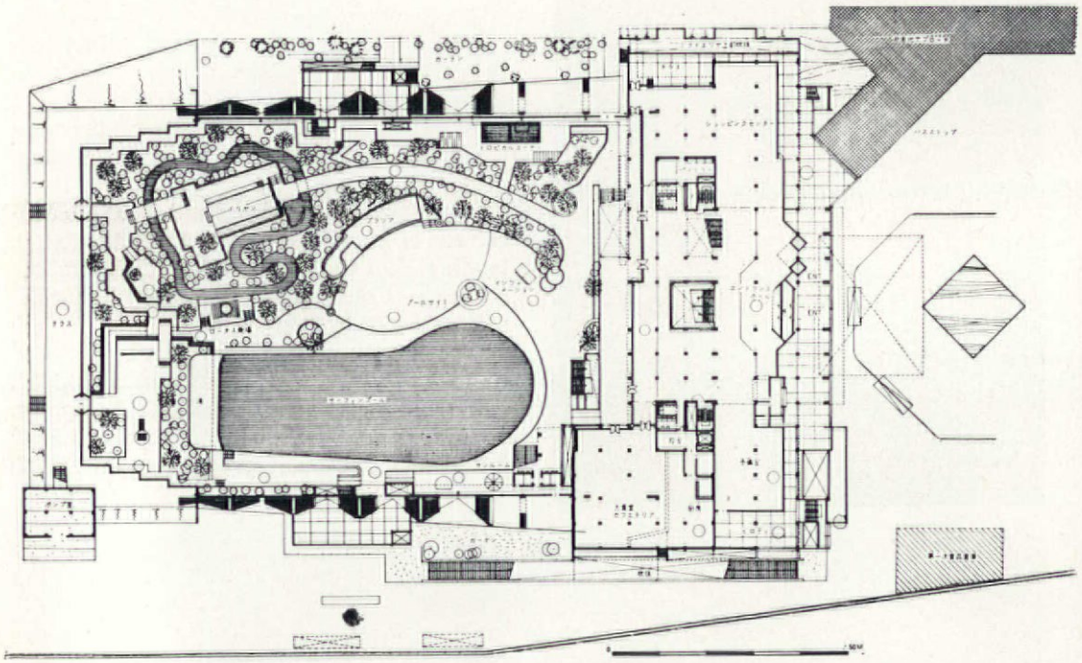
Recreation centres designed to encourage 'active' rather than 'passive' leisure (i.e. spectator sports) are being built throughout Japan. Not many of them, however, are in the Tokyo area and it is in Tokyo that crowding is most stifling and restricting. Even that most common Japanese form of recreation, bathing in hot springs, is not much catered for there. The promoters of Summerland therefore conceived of a vast climatized space with a bathing pool that could be used throughout the year. Construction was started in September 1966, building was complete by July 1967. Already queues straggle daily around the car park; the average attendance is 8000, maximum capacity is thought to be 13,000. Environmental conditions in Tokyo are clearly intolerable if so many people are prepared to travel for over an hour along the expressway ▷





Model of the tubular steel roof





SUMMERLAND

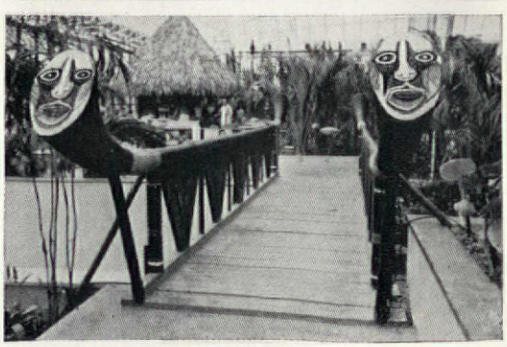
◁

from Tokyo to Summerland. An added irony is that they prefer to crowd together in the plasticized environment rather than lie in the open and swim in the adjoining Aki river, which is one of the few in the region that is still unpolluted.

To stress the 'dynamic' nature of Summerland leisure the designers have abjured regular rectangular forms; the mammoth tubular space frame (162m × 81m) is tilted dynamically to accommodate a 'static' concrete administrative building with spectator terraces. Everything though is under the one great plastic roof. Most of the elements are designed for movement; the free form swimming pool has a wave machine that works at regular intervals and a series of water sprays that work at irregular intervals; the winding canal has bobbing 'lotus' boats, the tropical palms sway in artificial breezes and the constructed décors are intentionally temporary in appearance, to be changed at the whim of fashion.

The mechanical services are complex and sophisticated. The air-conditioning ducts threaded through the lattice of steel ensure an air change of 7680m³ per minute and a general temperature of 28°C. Relative humidity is 60 per cent. Sprays are incorporated for watering the plants and for washing the roof automatically. The floor temperature is 33°C.

Eventually the amenities of Summerland will be extended, car parking capacity will increase to 10,000, there will be a motel and petrol station, a golf course, a baseball pitch and a sports ground.



AAH!

Constructed 1949
Chief architect: Eric Ross
Consulting engineer: Brian Colquhoun
Steel design: Dorman Long
Steel erection: Redpath Brown

Quite the most extraordinary space-building-time-usage experience in the South West, and probably in England, is a twenty-year-old veteran—now *quite* wrong as a working concept, but still very much in service and as handsome as ever—the old BRABAZON HALL at BAC, subsequently renamed BRITANNIA HALL, and now just AAH (Aircraft Assembly Hall).

Anyone looking for the '*future*' kick must see it—nostalgia and all. Consider—*three* open Festival Halls all together in a late forties 'composition', all in steel open framing—enormous space, enormous structure and down on the floor the frightfully expensive pale green *bird* (002) in orange and black hydraulic jigs. It looks rather small, but when production starts, twelve or thirteen will fit into the floor space; the effect will be stunning.

This is an assembly hall; it is wrong and old-fashioned because it is in echelon in three sections and non-linear (hence all those towing arrows on the work's plan). New proposals are for a much lower and direct linear plant, but it seems it will not be worth building it, as the old hall *just* gets by. (They have even considered unbolting the present steelwork and re-erecting a more workable plant.)

The point here is that it nearly doesn't get by, because it has been composed architecturally. It only works because the inside that matters is still firm and dry and well-equipped with service trenches and frequent floor outlets.

It was monumentally 'designed' for one 177ft long aircraft—the *Brabazon*. It was not designed as a principle—as a casing to the aircraft assembly process. Today, it might cost £16–20 million to build it.

The construction is heavy, full of Book Five detailing and Festival of Britain pomposity—but the space inside is prophetic. It is the huge all-happening structure of the future.

For megastructuralists, like myself, it all seems so right. It is perhaps the oldest modern architectural joy to walk among structure and look out into the spaces that it wraps up. This is *being* part of the building rather than merely looking at it.

The steelwork is all aluminium-painted and sparkling. The orange jigs, the aluminium scaffolding, copper engines and white air flexibles and even the warm-air fan casings are direct and shapely. Add to all this the very real pleasure of seeing near-perfect construction and quite fantastic wiring assemblies and general systems engineering.

It's so cool! It's so cool!

Compare our hot, secretive, suspicious little suburbs, entrenched in social fears and taboos—with the careful dangerous piece of potential disaster that has to achieve and register a miraculous performance, all being quietly put together, piece by umpteenth piece. It is very sobering. For the Concorde itself is the product of a social system that is probably wrong. But if we ever manage to devote real attention to living, then here are the skills with which a very wonderful new world could be built.

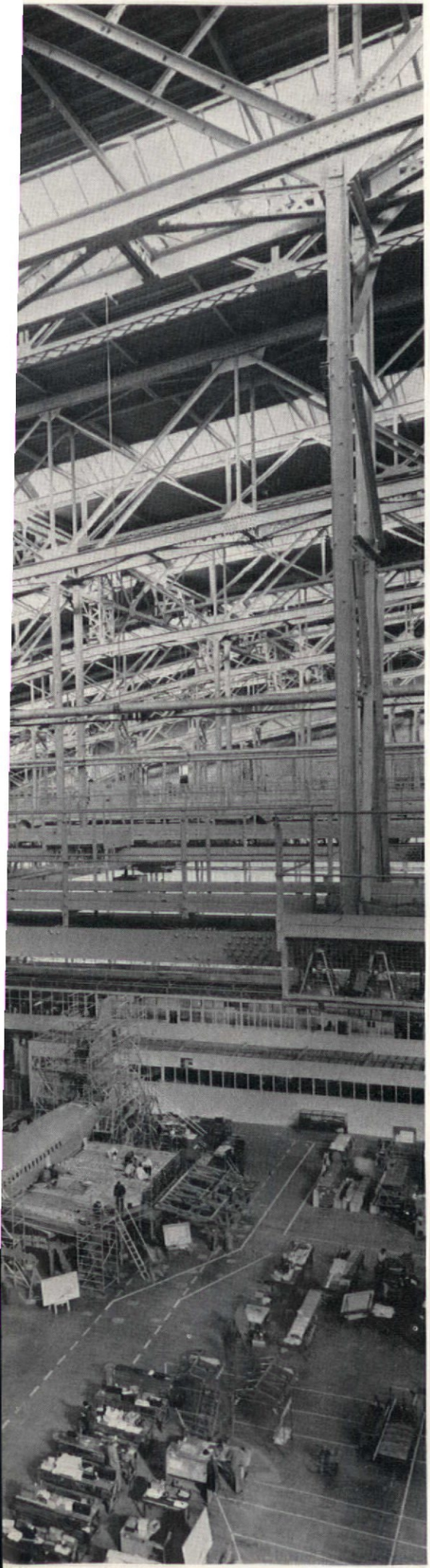
Mike Jerome

Facts and figures:
9962 tons of steel
O/A width: 1052ft
Depth of centre bay: 420ft
Depth of side bays: 270ft
Clear span (two-pin framed-portals): 331ft
Eaves height: 83ft
Pitch height: 117ft
Floor area: 325,000 sq. ft. (= 7½ acres)
Capacity: 33,000,000 cu. ft.
Door: 1045ft × 66ft (still going strong and trouble free)
Window: 1045ft × 50ft (north and single-glazed)
Walkway in roof structure: 1¾ miles
4 cranes, 4 ton, 84ft span
2 grabs: 12 tons
88 warm air blowers
44 'Tallboys' at 60ft
16°F temperature gradient
Day heat cost: 0·01 pence/1000 cu. ft./deg.

Roof:
1949 3/felt doubled
1957 redone
1968 redone ¾in polyurethane foam
¼in asbestos.
0·8mm 'Reponal' factory bonded 8ft × 4ft panels.

Floor:
Grano finish
12in R.C. slab
6in mass slab on hardcore
Construction cost: £4¾ million
£12,000 p.a. maintenance fund (almost all on paint, the roof being under guarantee)
7 year repainting cycle
£80,000 internal painting—4 tons paint—15-month job

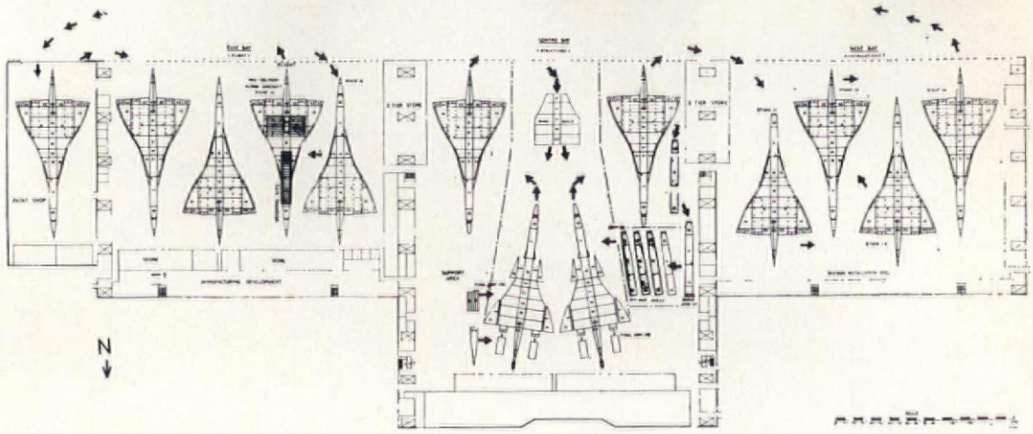
Assembly hall roof trusses, all aluminium painted



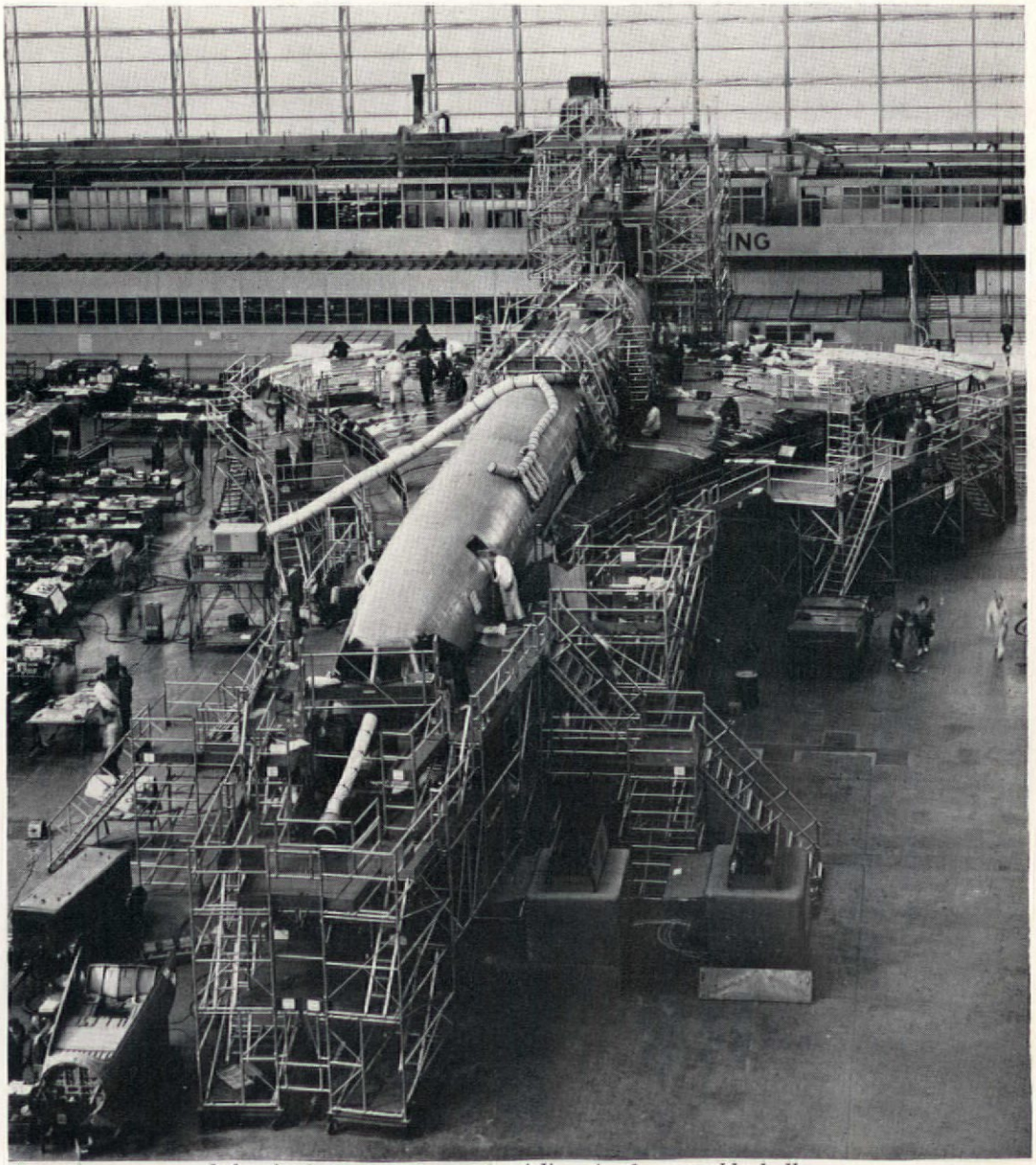
kling

Single glazed windows on the north façade

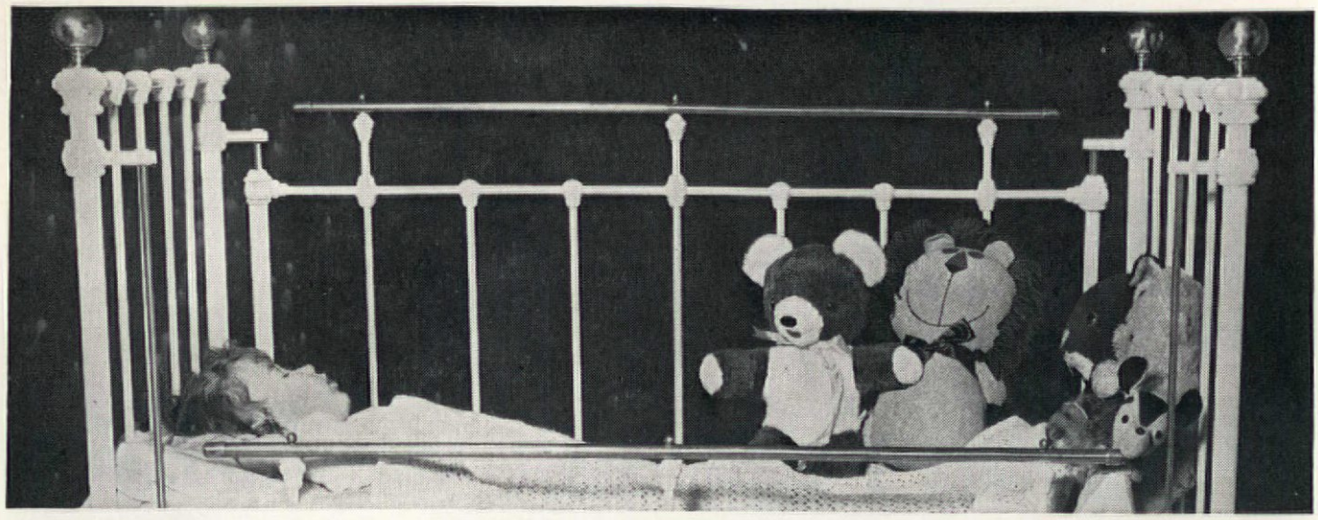
1045ft ×66ft trouble-free doors on the south

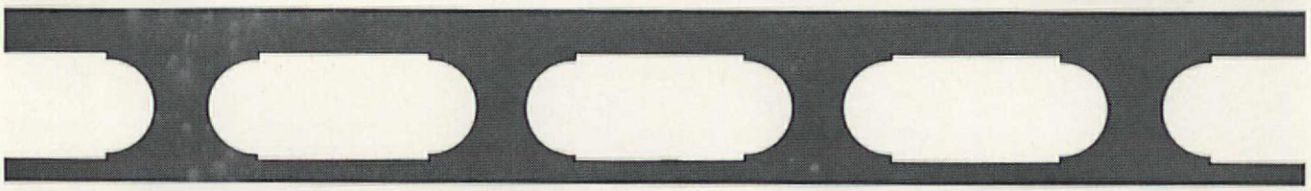


Assembly hall plan: in echelon in three sections and non-linear—hence all the towing arrows



Second prototype of the Anglo-French Concorde airliner in the assembly hall





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THICK WALL PATTERN

Topic

To make each house so personal, individual and well-adapted to its inhabitants, that 100,000 houses will be as different from one another as 100,000 people are.

Author

Christopher Alexander, June 1967.

Pattern

IF: there is given any dwelling—apartment or house, irrespective of the number of inhabitants. (This pattern may also apply to certain other buildings like offices which require an individual and personal character.)

THEN: *every wall, (both interior and exterior) is to be 3–5ft deep, and made of hand-carvable-space-frame. Floors are to be 2–3ft deep, and also made of hand-carvable-space-frame.*

Definition:

Hand-carvable-space-frame is to be interpreted as follows. It is a rigid space frame, with an exterior vertical surface made of materials which are readily available on the retail market, and easily cut, modified, painted, nailed, glued, replaced by hand, using only tools available at any hardware store. Possible examples are wood, plywood, fibreglass, styrofoam, polystyrene. . . . The space frame is to be made highly redundant, so that large sections of it may be removed without weakening it. It is also made so that pieces or sections may be added to it in such a way that these sections become continuous with, and indistinguishable from, the original surface.

These walls are *NOT* made of modular 'flexible' components in the standard sense. They are continuous structures, capable of continuous variation. Their flexibility comes from the materials, not from recombination of modules.

Problem

The basic problem can be stated very simply: In the world today newly constructed houses and apartments are more and more standardized; yet people are very different. They no longer have the chance to make their houses and apartments personal and individual. The basic question is: Under the conditions of advanced technology and mass production, how can we make dwellings in such a way that 100,000 dwellings are as different from one another, and as articulately personal, as 100,000 people?

The form of a building is good if it is well adapted to the individuals who use it. This is commonplace. But the adaptation between people and buildings falls into two distinct categories; mass adaptation and personal adaptation.

Mass adaptation is that part of the adaptation which deals with characteristics shared by all or many members of a culture. People are all about the same size; they are all sensitive to glare; most women want to be able to maintain their houses with minimum effort, most people want a spare room for guests, most people want to be able to unload stuff from the supermarket as soon as they come into the house. Since these characteristics are widely shared, those aspects of the organization of a house which deal with these problems are also widely shared: the design of windows so that they reduce glare, the size of doors and rooms, the use of easy maintenance materials, the location of the kitchen near the main door.

Define the process of adapting a house to these general and widely shared characteristics, as mass adaptation.

But there is a second kind of adaptation; that component of the adaptation which deals with personal, individual, or idiosyncratic characteristics. One person likes to dance in the living room, another likes to read; one person likes open places, another person likes to be enclosed; the members of one family have the habit of eating breakfast in bed, another family eats in the kitchen; one person has the habit of reading half lying down, another person reads in an upright position.

Define the process of adapting a house to these special personal idiosyncracies, as personal or fine adaptation.

The distinction between mass adaptation and fine adaptation is common in nature.

The fact that a plant has leaves at all, and that these leaves have a certain characteristic, is a fact of mass adaptation to the problems of energy intake. The fact that these leaves are large or small, turned this way or that, is a fact of fine adaptation to local conditions of food supply, soil composition, wind direction, sun and shade.

The organization required for mass adaptation is communicated to the plant by the genetic code. But the organization required for fine adaptation takes place as the plant grows: the plant is designed to be able to make its own fine adaptations as it needs to.

The organization required for mass adaptation can be provided by technological means—whether by actual mass production, or by mass communication leading to standard archetypes. But the personal adaptation cannot be created in advance by technological means of any kind. Dwellings must be designed in such a way that the personal adaptation takes place as people live in it. For the moment this is not true. Mass adaptation is crowding out fine adaptation. Similarities between people are crowding out the differences. The highly personal aspects of human life, which cannot be catered for by mass means, are being overwhelmed.

If a man lives in a building where the mass adaptation is perfect, but where the opportunity for fine adaptation is slight, he feels crushed, he does not feel like a person any longer. His opportunity to be a person resides entirely in his opportunities for personal adaptation.

The question then is: Under circumstances where mass adaptation is being handled very efficiently, how can personal adaptation be achieved?

To deal with this question we need to define personal adaptation more precisely.

We have already defined personal adaptation as that component of a person's adaptation that is specific and peculiar to that person's own idiosyncracies.

This personal adaptation requires many specific characteristics in the physical environment which the person lives in. A child's swing hanging in a doorway reflects the attitude of the parents to their children. Floor to ceiling book-cases reflect the life style of a book-lover. A window seat overlooking a favourite bush supports a contemplative, dreamy nature. Open counters between kitchen and living space are specific to informal family life; small closable hatches between the two are specific to more formal styles. An open shelf around a room should be at one height to display a collector's porcelain, best seen from above; at another height and depth if it is to be used to support a photographer's latest pictures leaning against the wall; and at another height for setting drinks down in the house of a perennial party-giver. A large enough fireplace nook, with enough built-in seats, invites a family of six to sit together. A special chair in a special corner under a specially adjusted light is someone's favourite place.

Each of these things gives us a sense of the people living in the house, because each is adjusted to the expression of some special personal need.

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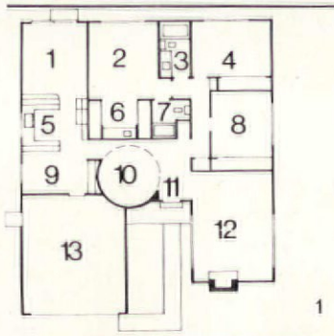
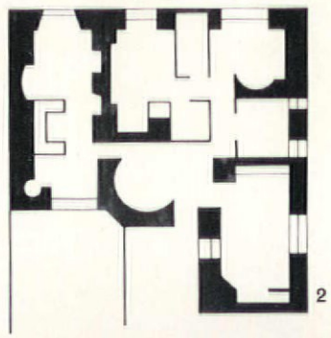
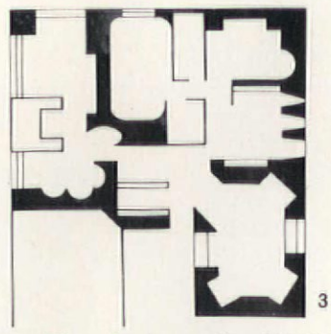






1. *Plan of a conventional California tract house*
2, 3. *Plans showing what two similar houses, modified to have thick walls, might be like after three or four years of occupancy. Each has its own characteristic pattern of niches, bay windows, breakfast nooks, seats built into the walls, shelves, closets, lighting arrangements, sunken parts of the floor, raised parts of the ceiling*

The most highly developed form of this fine adjustment is found in cases where a family has been living in the same house for many, many years. In these cases, we often find a very special kind of harmony between the people and the inside of the building: the fine adjustment is very highly developed.

I should like to emphasize the fact that this personal adjustment, though many of us never reach it, is highly specific and exact.

Evidence for this is simple. If we ask a realtor about his clients, and the process by which they choose a new house, one salient fact emerges. First of all, most clients are unable to state what sort of house they want, except in the most general terms. However, when the realtor shows them houses, which conform to the general description they have given in words, they reject many of these houses immediately, without hesitation: and then, all of a sudden, he shows them a house which they like, and they recognize it immediately, as being 'them'. Even though they couldn't put it into words, they are aware of this relationship between their life and the house they want to live in and when they find a house which is 'right', they recognize it at once. It is clear that they knew it all along, but were simply unable to put it into words. There is an almost lock-and-key-like relationship between people and the houses they live in.

We see further evidence of this, in the fact that a given individual or family, even when they move from one apartment to another, or one house to another, manage to recreate almost the same atmosphere, time after time. They choose the same kind of place, with the same kinds of relationships in it, and they do the same things to it.

It is clear that under traditional conditions, personal adaptation was easily assured. The two salient conditions were:

1: People lived in the same place for very long periods, often for whole lifetimes.

2: Houses were made of hand-processed, materials like wood, brick, mud, straw, plaster, which are easily modified by hand, by the inhabitants themselves.

Under these conditions, personal adaptation follows almost automatically from the fact of occupancy.

However, in a modern technological society, neither of these two conditions holds good. People move house frequently, and the houses are increasingly built of factory made, factory finished, materials like 4ft × 8ft sheets of finished plaster board, aluminium windows, prefabricated baked enamel steel kitchens, glass, concrete, steel—these materials do not lend themselves to the gradual modification which personal adaptation requires: indeed, the processes of mass production and mass adaptation provided by technological means are incompatible with the possibility of personal adaptation. The question then is this: what kind of house is both compatible with modern means of production, and also capable of providing a high degree of personal adaptation?

Several solutions to this problem have been proposed by modern architects: however, these solutions are all deficient in some crucial respect:

Solution 1. Universal space

It is assumed that the furniture inside the house can handle all the necessary personal adaptation. This is the solution which implicitly underlies the present-day construction of tract houses and plasterboard apartments.

The most extreme form of this school of thought is that of the Miesian universal space. It is assumed that the glass box is so neutral, that any individual and personal form of life can find its full expression against this neutral backdrop. *The trouble is of course, that the backdrop is in fact tyrannical, not neutral.* The same is true of the blank rectangular apartments built by more conventional developers—the possibility of choosing the colour of the walls, the style of furniture, the pattern of the carpet and the shape of dining table, does not permit the real personal adaptation to take place—it is a superficial effort to create this personal adaptation—yes—*but the environment does not support the adaptation properly—and the effort remains superficial.*

Solution 2. Custom made houses

At one time many architects aimed for this ideal. However, it is now clear that:

No more than 5 per cent of all houses are built by custom architects; and there is no prospect that this proportion can be significantly increased.

Even when an architect builds a custom house, though he does have the opportunity to study the client's personal idiosyncracies, *this rarely creates the same level of fine-tuned personal adaptation as is created by incremental changes over time.*

Solution 3. Do it yourself houses

This is essentially the idea of Le Corbusier's Algiers scheme, published in 1933, and has been restated many times with minor variations. The essential idea is this: the main structure of the housing complex—columns, floors, roofs, circulation and services—are built in advance, and the houses themselves are built as a kind of infill by the individual inhabitants.

Such a scheme has actually been realized in the six-storey low-cost high density slabs built in Kowloon, Hong Kong, where individual houses are built of packing cases, mats, and other used materials.

The trouble with this kind of solution is obvious. It may be possible to coerce slum dwellers and poverty-stricken people to construct their own dwellings—*but once people have enough money to give them freedom of action, most of them are not willing to undertake major do-it-yourself construction;* this is especially true in a society where people are constantly moving from place to place. *People want to move into finished houses.*

Solution 4. Architectural variety built in by a designer

In certain housing schemes the designer has tried to build in the necessary variety by making each house just a little different from the next one. This has never yet succeeded. *The variety which a designer can build into a large housing project is necessarily trivial—it creates superficial differences*—but the differences are not designed to support any specific idiosyncracies, and they do not therefore succeed in creating any genuine feeling of personal identity. The differences built in by this technique, because they still originate from one person, with one special set of idiosyncracies, are merely visual differences, they do not support any of the specific idiosyncratic needs required by personal adaptation.

Solution 5. Flexible interchangeable components

According to this school the personal adjustments can be made by choice from a preselected range of parts, which may be put together in many different ways.

This is essentially the idea behind the variety of extras provided for by automobiles, it is the idea behind the use of different style façades on tract houses, and it is the idea behind flexible modular component architecture.

At one scale, the SCSD schools in California, designed by Ehrenkrantz, are based on this principle; at a smaller scale, the system of storage walls designed by George Nelson for Hermann Miller are based on the same principle: the furniture itself is made of recombinable parts—and each user may put these parts together in such a way as to suit his individual needs.

This kind of solution has three drawbacks:

a: *Even though the flexibility seems as though it ought to provide for a great deal of variety, in fact the products of such variation all bear the unmistakable stamp of the system.* So long as you choose from a finite range of preselected alternatives which someone else has made available to you, your choice is very limited indeed: and you never really manage to create a truly personal environment: you never actually escape the system. As Sartre says: No man wants to be a cipher in someone else's system.

The reason for this is simple: In a modular system, the rigid non-modifiable pieces are still fairly large: many of the pieces of George Nelson's modular storage wall are between 12 and 36 inches. In contrast, the fine adaptations and changes required to make something really personal and unique to a given situation will often need to be carried out at a scale down to $\frac{1}{8}$in.–$\frac{1}{4}$in. Adaptations at this very fine scale can only be carried out by special fitting of relatively plastic materials —not by putting together dimensionally fixed prefabricated components.

b: *A house in which many of the components are genuinely flexible would have an air of impermanence about it which would destroy the feeling of security required of dwellings—especially by women.*

c: *Flexible systems, like systems of partitions, have to be highly constrained* in order to achieve flexibility and interchangeability of components—with the result that many other characteristics, essential for other functional reasons, will be sacrificed. Thus, for instance, modular systems are based on rectilinear grids—and virtually rule out the possibility of curved furniture—even though many human reasons concerned with ease of conversation, require curved shapes rather than rectilinear ones.

Tendencies

1. Technological forces make mass production of most of the components in a house inevitable.

2. People seek the identity of a house that

'feels like them' and they seek adaptation to their own personal idiosyncracies.

The demand for variety for its own sake, common in North America now, (and likely to be common in all urban cultures) occurs only because people have no *genuine* opportunity for personal adaptation. If we can provide a genuine opportunity for personal adaptation —so that they can really get an environment which is specific to *them* and feels like them, this other demand for superficial variety will fade away.

3. People will make the adaptation by incremental changes only if the materials in the building allow them to do so with home tools.

In a recent survey Robert Gay (Berkeley, 1966) asked people what changes they had made in their own houses, and what changes they would like to make. Among the changes which they had actually made they had changed *almost every piece of the house that could be changed with home tools*. Among the changes which they wanted to make, but couldn't, were many changes which were impossible only because the materials couldn't be cut, or joined, or finished with home tools.

4. When people are offered a sufficient variety of houses to choose from, they can make the adaptation to their personal lifestyle and needs by choice.

5. People want to buy a finished house; they are not looking for houses they will have to finish before they can move in.

6. Most people, women in particular, want a sense of security and permanence in a house; they seek a house which is fixed and solid—not made of impermanent movable parts.

7. People resist the sterility and monotony of large expanses of homogeneous surface. They seek variation which is at the scale of millimeters and inches. The more intricate an object or surface is, the more they can identify with it, and the more personalized it becomes.

This explains why people value grained materials like wood and brick; why surfaces are painted with decoration; why mouldings and ornaments are used on traditional buildings; why even pure white dinner plates have no more than a temporary vogue. The small scale is associated with the perceptible scale of the human body, and with that of nature.

8. People move from one house to another very often. In many cases, they stay in one house for no more than two or three years.

Derivation

It is clear that this problem can only be solved by some form of house which allows for incremental changes, so that inhabitants can adapt the house to their own personal needs while they live in it.

Before we discuss the kind of form which can provide for this, we must make a second, equally important point. It might seem that the house should have a basic or 'neutral' state, and that the house can always be put back into its neutral state when it changes hands. According to this theory, each inhabitant adapts the house to his own needs; but when one inhabitant leaves, the house is put back into its neutral state and the next inhabitant is again free to make whatever adaptations he wishes.

Under today's condition of social mobility this kind of solution cannot work. Although personal adaptation is best made by incremental action we must recognize that it would take ten or twenty years to create a house perfectly adapted to one family by incremental action. It is a slow process.

At a time when people hardly ever live in a house for more than a few years, and sometimes for as little as a year, we cannot hope to create adaptation purely by means of incremental action.

Adaptation through incremental action must be supplemented by the process of adaptation by choice. It is clear that people can achieve a great deal of adaptation by choice when given a wide enough variety of houses to choose from. That is partly why old houses are so highly prized: they offer a wider variety of choices.

In order to guarantee that the available stock of dwellings offers genuine choice to prospective buyers we must make sure that the stock of dwellings is highly differentiated. As we have already seen, this variety cannot be built in deliberately by design.

There is only one source of a sufficiently rich variety—and that is in the people themselves. In order to get this variety from the people into the buildings, the houses must be designed to accumulate variety, so that the variety of the inhabitants who live in them rubs off on them.

In summary:

Each dwelling must have a kind of built in, cumulative memory. Each inhabitant or family who lives in it makes certain minor changes to adapt the house to his own needs. These minor changes are designed to be permanent, so that they accumulate over time. Slowly each dwelling builds up its own personal character. Even if the dwellings are all very much alike when they are first built, as time passes they become more and more unalike. The variety of these dwellings, unlike the superficial variety built in by designers, is the product of tens of thousands of different life styles passing through—it is therefore specific to the real variety of people in the society—and therefore offers each new inhabitant a genuine opportunity to find a dwelling that 'suits him'.

This does not mean that the new inhabitant will have to live with every detail of the house left by the previous inhabitant; he can change whatever he wants to. But just because he has *chosen* this house above all others, it is clear that many of the changes made by earlier inhabitants are changes which he wants to keep.

In order to meet this specification, the building must have two characteristics.

It must be so constructed that each new family can leave their mark on it—it must, in other words, invite incremental fine adjustments.

It must be so constructed that these fine adjustments are permanent—so that they do accumulate over time, and so that the stock of available dwellings becomes progressively more and more differentiated.

Let us now ask what form of dwelling can meet this specification. We know, first of all, that large parts of the house will be built from mass produced components. There are therefore limits on the extent to which the house can be personal. In order to design a house which can be as personal as possible, we must identify those physical parts of the building which 'carry' most of its personal identity and character. We may then try to design these parts so as to make them especially easy to change.

Most of the identity of a dwelling lies in or near its surfaces—in the three or four feet near the walls, floors and ceilings. This is where people keep most of their belongings, this is where special lighting fixtures are, this is where special built-in furniture is placed, this is where the special cosy nooks and corners are that individual family members make their own, this is where the identifiable small scale variation is, this is the place where people can most easily make changes and see the product of their own craftsmanship.

We must therefore give the three or four feet near walls, floors, and ceilings, the two characteristics defined above. They must be easy to modify with home tools; and the modifications must be permanent.

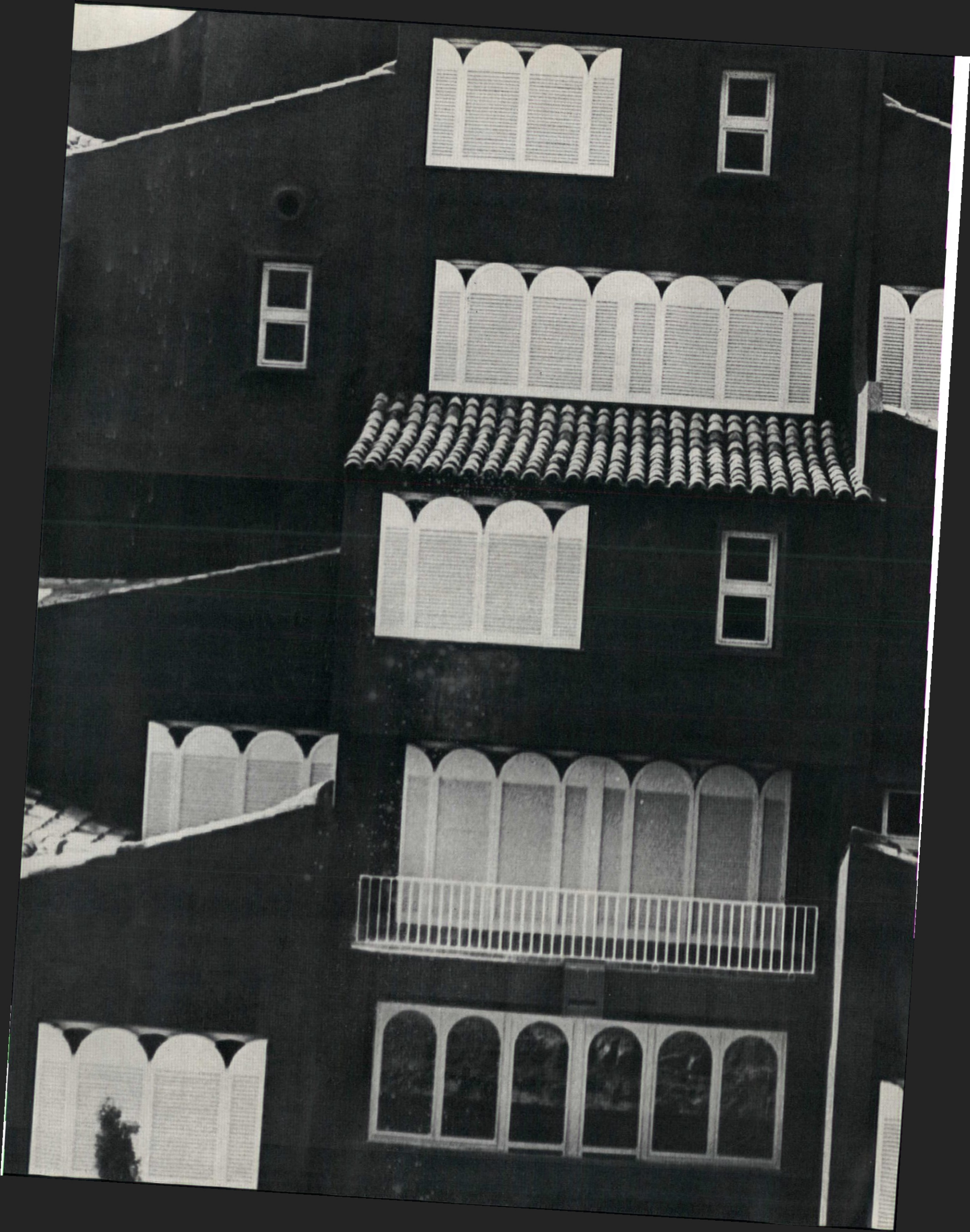
Present construction makes this virtually impossible. Walls, floors, ceilings are hard, brittle and thin. They are hard to work, most modifications require structural alterations and the finish is of such kind that local changes always look tacked on and amateurish. Since these changes are not properly integrated they are often 'cleaned up and removed' when the dwelling changes hands.

In order to give these walls the two characteristics defined above, they must be made of some material which is inherently structural—so that however much of it gets carved out, the whole remains rigid and the surface remains continuous no matter how much is removed or added, it requires only paint or paper or cloth covering to finish it. We may visualize such a material most easily by thinking of the internal structure of a bone—which is a kind of micro-space frame. We may carve out any amount of it—the rest still stands. This is the intention of *hand-carvable-space-frame*, as defined in the pattern.

In order to make walls which can succeed in accommodating the wealth of personal adaptation which different people are capable of, these walls must be extremely deep. To contain shelves, cabinets, displays, special lights, special surfaces, deep reveal windows, individual niches, built in seats and nooks, the walls must be at least three feet deep; if possible five feet deep. The floor and ceiling, to accommodate changes of level, special built in steps and seats, acoustic surfaces, lights, loudspeakers, displays, must be at least two feet deep. As time goes on, each family will be able to work the wall surfaces in a very gradual, piecemeal, incremental manner. After a year or two of occupancy, each dwelling will begin to show its own characteristic pattern of niches, bay windows, breakfast nooks, seats built into the walls, shelves, closets, lighting arrangements, sunken parts of the floor, raised parts of the ceiling.

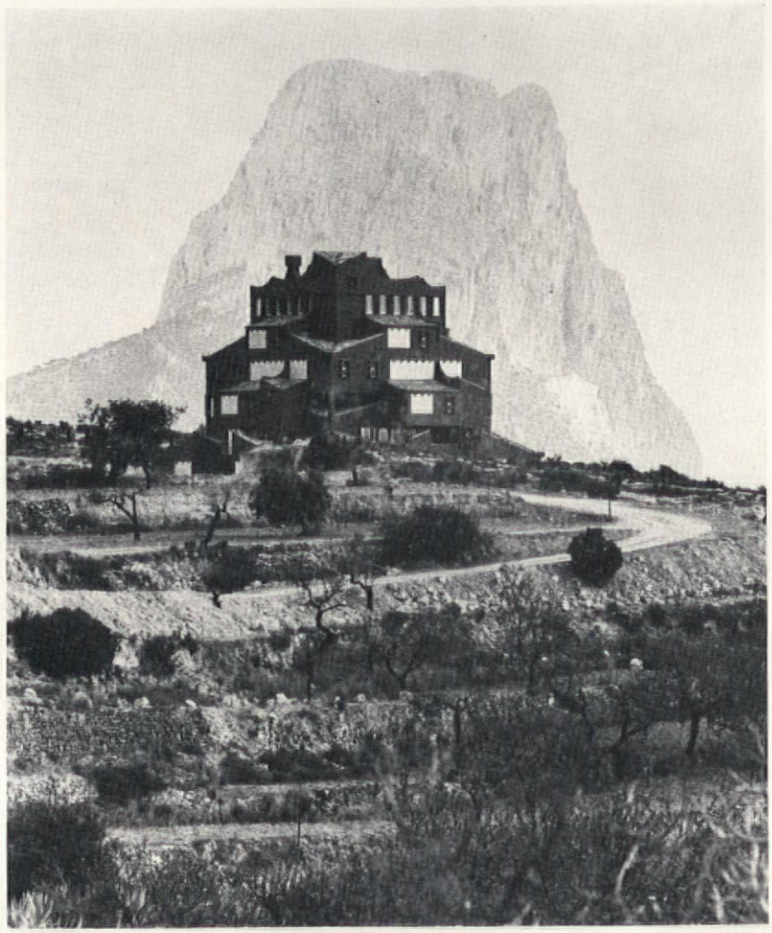
The fact that the gross spatial organization of many houses is identical, and the fact that each house contains the same mass-produced kitchen and bathroom components is no longer able to dominate the individual and drive out his personal idiosyncracies.

Each house has a memory; the characteristics and personalities of different human individuals can be written on these houses, these houses will become progressively more and more differentiated as they grow older, and the process of personal adaptation—both by choice, and by piecemeal modification—has room to breathe. □



XANADU

A tower of 17 apartments for all people of the world regardless of race, religion or colour, in Calpe (Spain) by the BOFILL office (Barcelona). Featured by Peter Hodgkinson and photographed by Deidi von Schaewen.

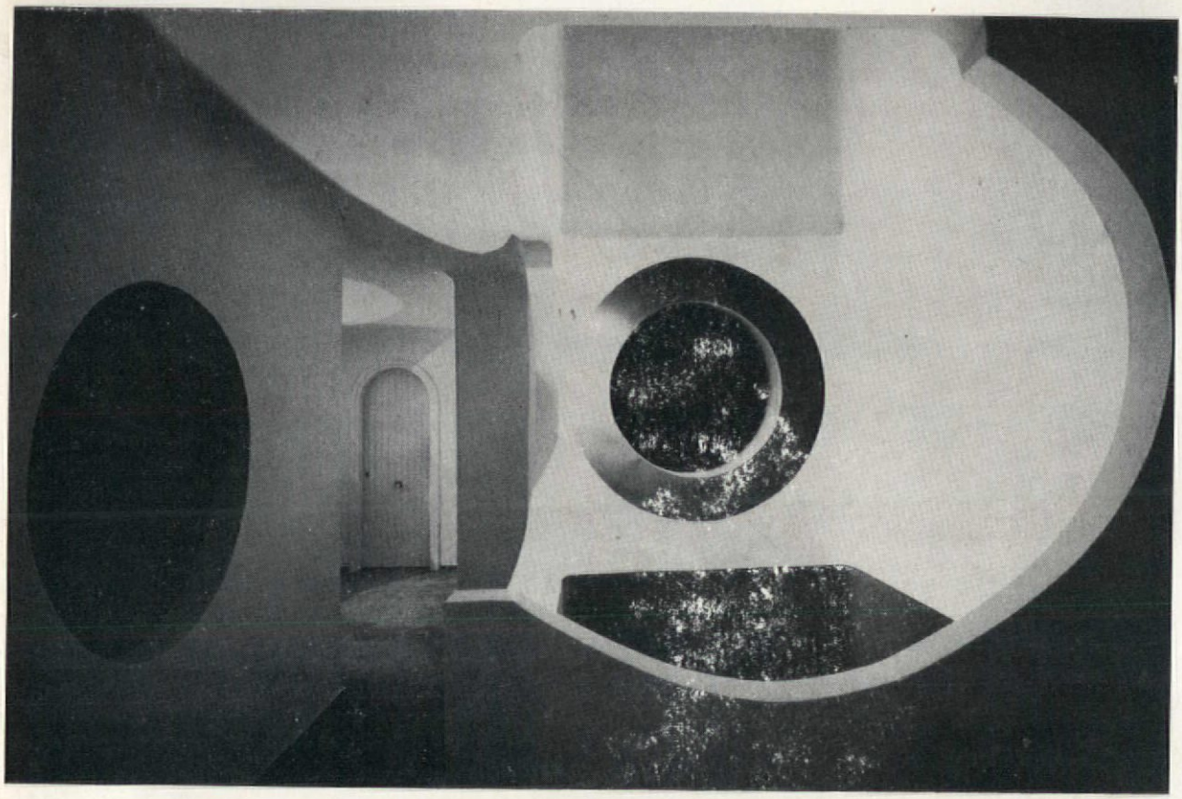


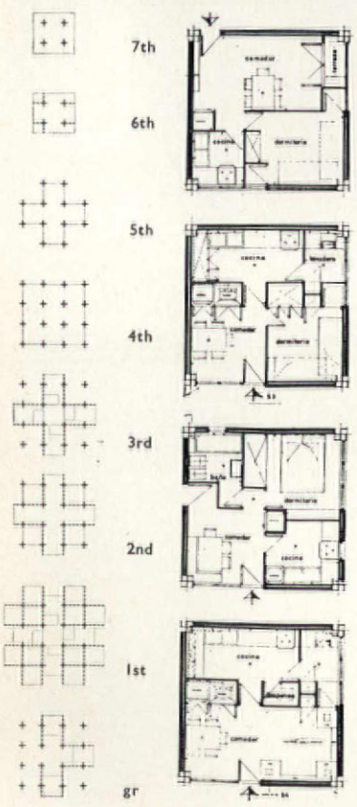
The Trip (Jimmi Hendrix)
Spanish Castle Magic
It's very far away
It takes about half a day
To get there, if we travel by
my a. . . dragonfly
No it's not in Spain.
But all the same You know
It's a groovy name
And the wind's just right.

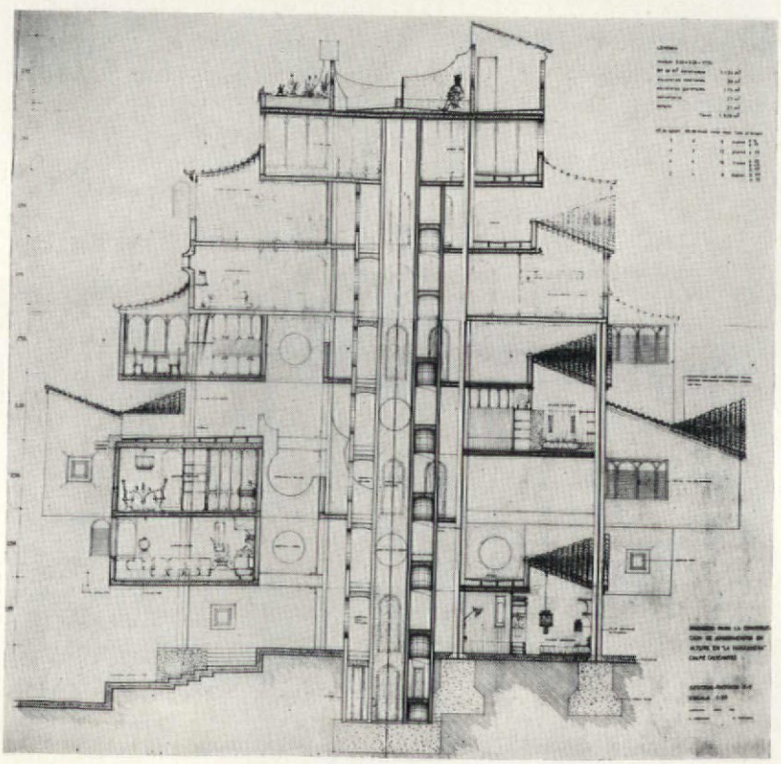
Hang on, my Darling
Hang on if you want to go.
You know it's a really groovy place
And it's just a little bit of
Spanish castle magic.

The clouds are really low
And they overflow
With cotton candy
And battle grounds
Red and brown.

But it's all in your mind
Don't think your time
On bad things
Just float your little mind around
Look out
Hang on my Darling, Yeah
Hang on if you want to go.
It puts everything else on the shelf
With just a little bit of Spanish
castle magic
Just a little bit of daydream
here and there.







The Style (Banham with changes)
Style is to architecture as erotica is to sex. You tolerate it, you indulge it and you thoroughly enjoy it. Even the nuttiest ideas serve to increase the stock of forms and possibilities open to architects.

The History (Hugh Thomas)
The anarchist faith of the workers and the demagogic atmosphere inculcated by the radicals made Barcelona at the turn of the century the wildest city in Europe. The great strike of Barcelona (1902) and Bilbao (1903) were real battles of class in which the nerves and strength of all were extended. The ornate architecture favoured by the prosperous bourgeoisie was the lavish backcloth to a mounting series of crimes. These years culminated in 'The Tragic Week of Barcelona' in 1909.

The Surprise (George Orwell on the Sagrada Familia)
For the first time since I had been in Barcelona (1937) I went to have a look at the cathedral—a modern cathedral and one of the most hideous buildings in the world. It has four crenellated spires exactly the shape of hock bottles. Unlike most of the churches in Barcelona, it was not damaged during the revolution—it was spared because of its 'artistic value', people said. I think the Anarchists showed bad taste in not blowing it up when they had the chance, though they did hang a red and black banner between its spires.

The Sane (Salvador Clotas)
The attempt to reiterate the closeness between the artist and the schizophrenic is something which is based on the profound conviction that a lunatic asylum could embrace more reality than a city, assuming it is accepted that a lunatic asylum is a place for the mad and a city is a place for the sane. The difference between them is rooted in the fact that, whereas the artist *exhibits* the total product of his schizophrenic imagination, the non-artist is intent on *concealing* and reducing them to his own intimate confidences. Perhaps it would be convenient to draw a comparison from a paragraph of the work *The Politics of Experience*.

H. S. Sullivan used to say to young psychiatrists when they came to work for him, 'I want you to remember that in the present state of our society, the patient is right and you are wrong. This is an outrageous simplification. I mentioned it to loosen any fixed ideas that are no less outrageous, that the psychiatrist is right and the patient wrong. I think, however, that schizophrenics have more to teach psychiatrists about the inner world than psychiatrists their patients.'
It may be affirmed that if the artist is not always inescapably a schizophrenic, he ought at least to have the disposition to be one at any given moment.

The Playful (Emmerich—also with changes)
Man is a rational creature, but only at times. Stiff rationality is tempered with 'Ludens' characteristics; man likes to play. He will accept control and uniformity only if it can be turned into a game. Modern architecture has proved highly unpopular. Beyond the satisfaction of his basic needs, man requires to express himself. Because he is so often prevented from doing so, he turns against the man-made environment. Our towns should be collective creations, not the result of team-work which is inevitably a mild and mediocre compromise, but the result of individual choice and expression.

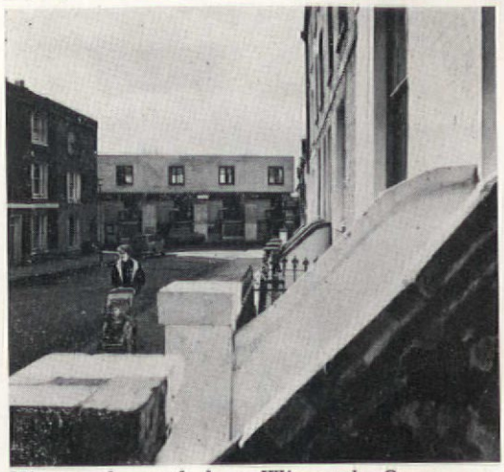
Bon Mot (Venturi)
Less is bore.

The End (Hermann Obrist 1919)
'Long live Utopia!. . . . it is in fact the only thing that survives. Let us then live in Utopia. Let us fabricate plans, castles in Spain; let us pretend and let us prepare for the time that will come 30 years hence. . .'

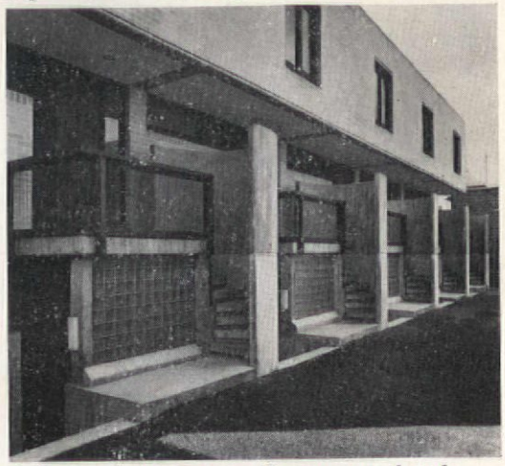
Xanadu was a prototype experience in applying a methodology to our theory of 'a garden city in space' and should be read as one of many larger interconnecting elements. An apartment is made up of any 3 cubes selected from a choice of living, and service units (see p. 329). These cubes are then applied to the supporting circulation spine determined on an orthogonal grid (p. 329 *left*), then broken down to satisfy requirements of the brief (in this case, shaded internal terraces to avoid the intense heat, hyperbolic roofing to give better views and adaptation to localized building techniques). This methodology is being applied in two further projects now under construction, one at Sitges of 88 apartments and another at Reus of 2500 apartments, and will be fully explained in a forthcoming publication entitled *The search for order*.
No plans or elevations were drawn, but each unit had its exterior walls pierced according to orientation, light need, kitchen extractors, ventilators, privacy and connection points, and was positioned after model analysis diagramatically on the engineer's structural drawings.
The cost was 5000 Pesetas a m^2 (approx. £3 a square foot), about average for good quality construction in this area.

LIFE IN N19

Five houses in Winscombe Street, London, by Neave Brown

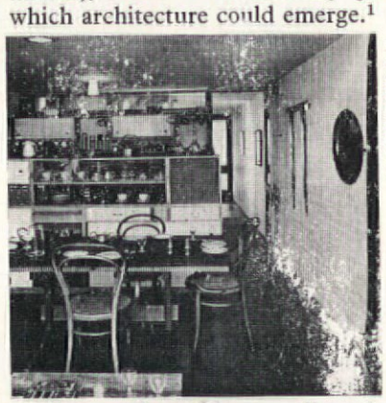


View to the south down Winscombe Street



A flurry of elements on the entrance façade

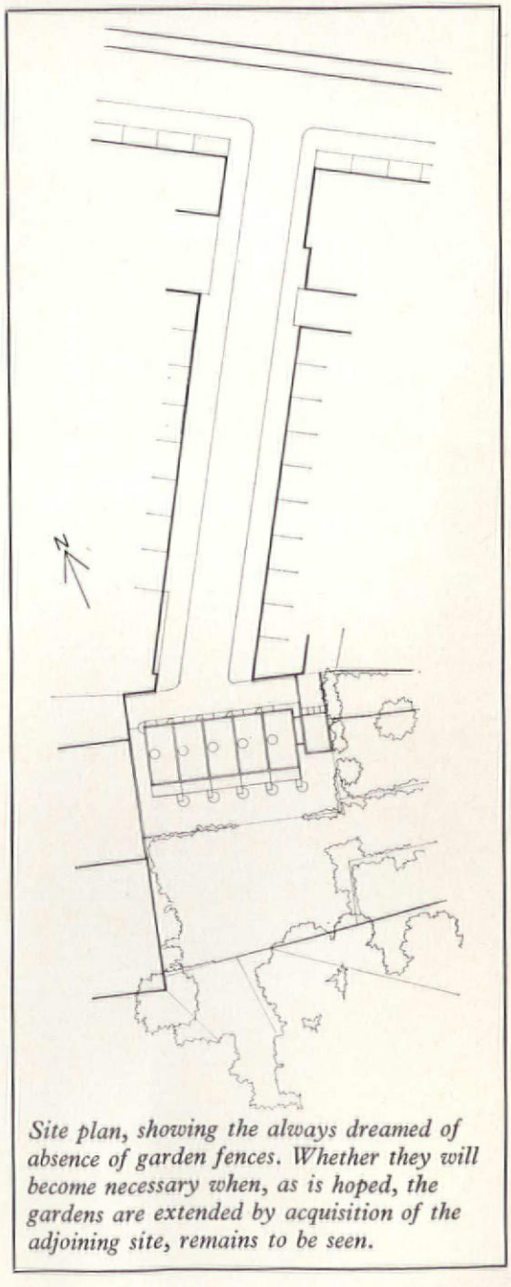
This group of five houses, one with an attached studio, closes the end of a depressed cul-de-sac in north London, and was built for a housing association of which the architect is a member. This may seem an ordinary enough way of getting houses built, but the difficulties of finding a site and acquiring it, local authority approvals and finance, finding a smallish contractor who is willing to care, and of holding together a group of articulate clients (three of the original five now occupy the finished houses), make it an unlikely process from which architecture could emerge.[1]



[1] The last memorable similar exercise being the row by Howell, Killick and Partridge at South Hill Park, Hampstead, *left*. Finished in 1956.

The number of houses allowed on the site, and their external envelope, were given by the planning authority and bylaws. From these, the fall across the site from street to garden, and the organizational idea of the section, the form of the row is developed. The five car places required are fitted onto the front yard, symmetrically but not very systematically, two each into the ends of the arms of the T of the cul-de-sac, and one at the cross.

The three floors of each house are zoned. Top floor: living room and master bedroom. First floor: hall to front door, bathroom and living-dining-kitchen opening onto a terrace connected to the garden by a spiral stair. Ground floor: hall, with plumbing facilities, to the lower street entrance, one single bedroom, a second bathroom, and a large divisible room onto the garden. The section thus allows



Site plan, showing the always dreamed of absence of garden fences. Whether they will become necessary when, as is hoped, the gardens are extended by acquisition of the adjoining site, remains to be seen.

a certain flexibility: the ground floor can be used as a separate children's suite and utility space; or as a separate, possibly lettable, flat with its own entrance and kitchen. The roofs are designed to allow their use as terraces, but so far none of the occupants has taken up this option. The floors are connected internally by a post-tensioned timber spiral stair whose geometry generates the arrangements of spaces and partitions, nicely flouting all the assumptions of the NBA's 'Generic Plans'.

It is now extremely difficult to describe or evaluate *in abstracto* the formal qualities of the internal architecture because, as the accompanying photographs demonstrate, the aspirant life-style of the majority of the occupant-clients, as expressed in their rituals and possessions, has closely and successfully matched the intentions of the architect and the implications of the planning. The interiors have that quality of just-beyond-Habitat: cool, well-serviced (two bathrooms, modern, rather than folk, kitchens) backgrounds and objects, lightly overlaid with not too much tat. That this is not now a particularly English style can be seen by comparison with, say, illustrations of the Siedlung Halen, Berne.[2]

The first impression of coolness is slightly deceptive, however, as there is still quite a lot of geometry going on: axes with small symmetries, and lining-ups. The degree to which this geometry affects the planning produces

[2] AD 2/63.

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FACTS AND FIGURES

5 houses and a studio, each house 1125 sq ft, not including terraces.
Cost £6 0s 0d sq ft approx.
Structural engineer: A. Hunt
Services engineer: M. Fordham
Contractor: Messrs Cramb & Dean
104 Belsize Lane
Hampstead.

Specifications:
Loadbearing cavity cross-walls of Class A concrete block.

Internal walls: concrete block fair-faced, except bathrooms and services block in kitchen, Plastered R.C. ring beam at 2nd floor, to support cantilever, fair-faced.

External walls: heather flint lime with white flush pointing.

Ground floor slab: concrete

Upper floors: 8in × 2in joists, except R.C. terraces, tiled floors—$\frac{3}{4}$in fourply, 5ft 0in × 2ft 0in.

Ceilings: plaster board skim.

Windows: Columbian pine with preservative stain.

Internal staircases: prefabricated plywood tread-riser units threaded over $\frac{1}{2}$in bolt, tightened at top to form post-tensioned column.

External stairs: special steel and p.c. concrete in *in situ* R.C. drum.

Services:
Electrical throughout.

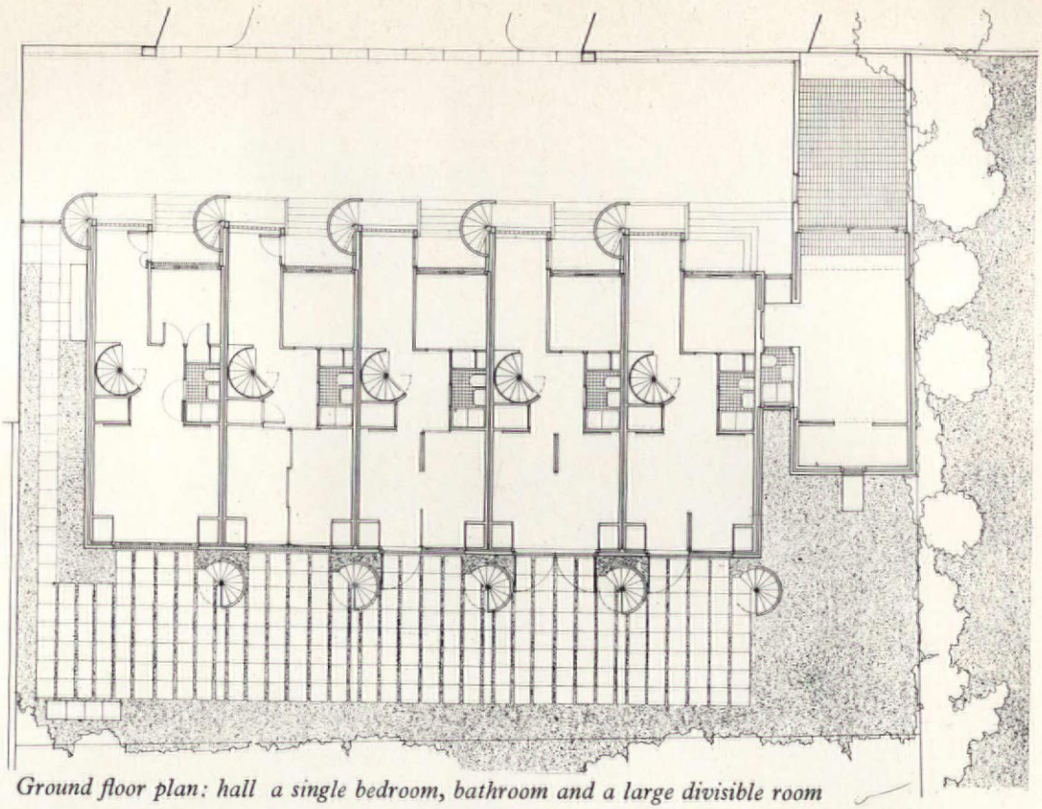
Heating: g.f. slab underfloor off-peak.
1st and 2nd floors—special block night storage heaters built in by G.C., and underfloor heating in threshold under kitchen window.

Kitchen: all electric, with Creda quick discs built into cantilever r.c. tiled kitchen worktop.

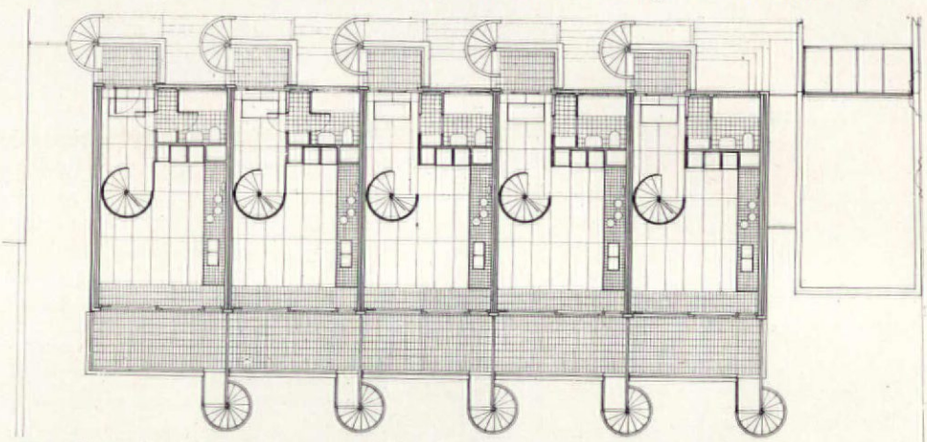
Accommodation:
Ground floor: one single bedroom
one double bedroom divisible
one bathroom
linen cupboard
utility entrance

1st floor: terrace
kitchen/dining room
entrance hall
cloaks
bathroom

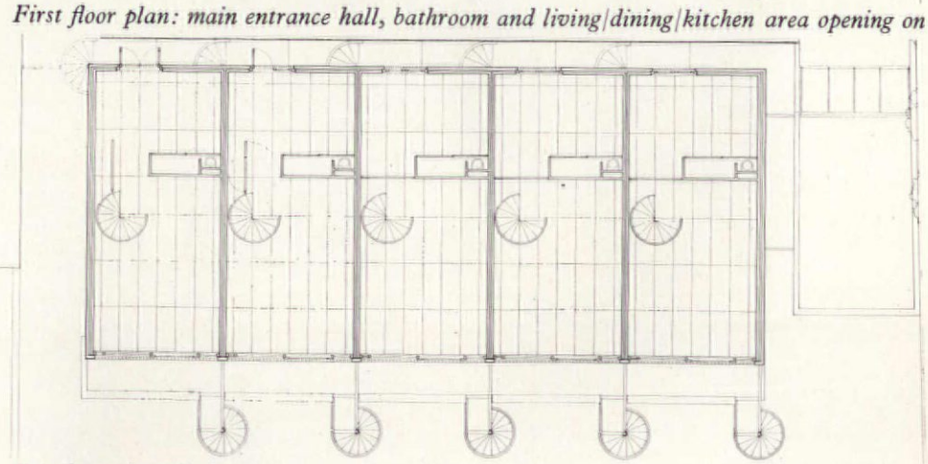
2nd floor: principal bedroom
living room



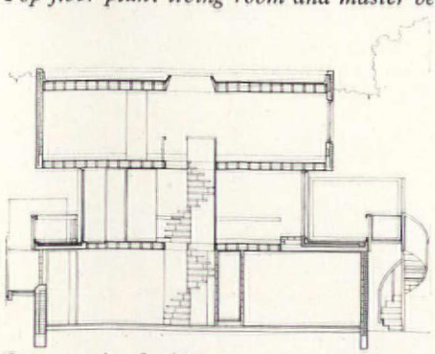
Ground floor plan: hall a single bedroom, bathroom and a large divisible room



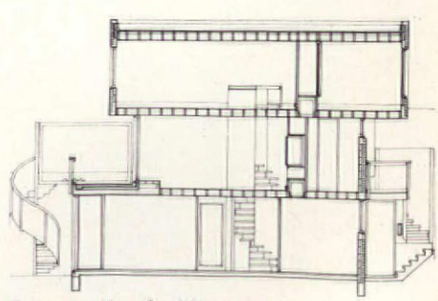
First floor plan: main entrance hall, bathroom and living/dining/kitchen area opening on to terrace



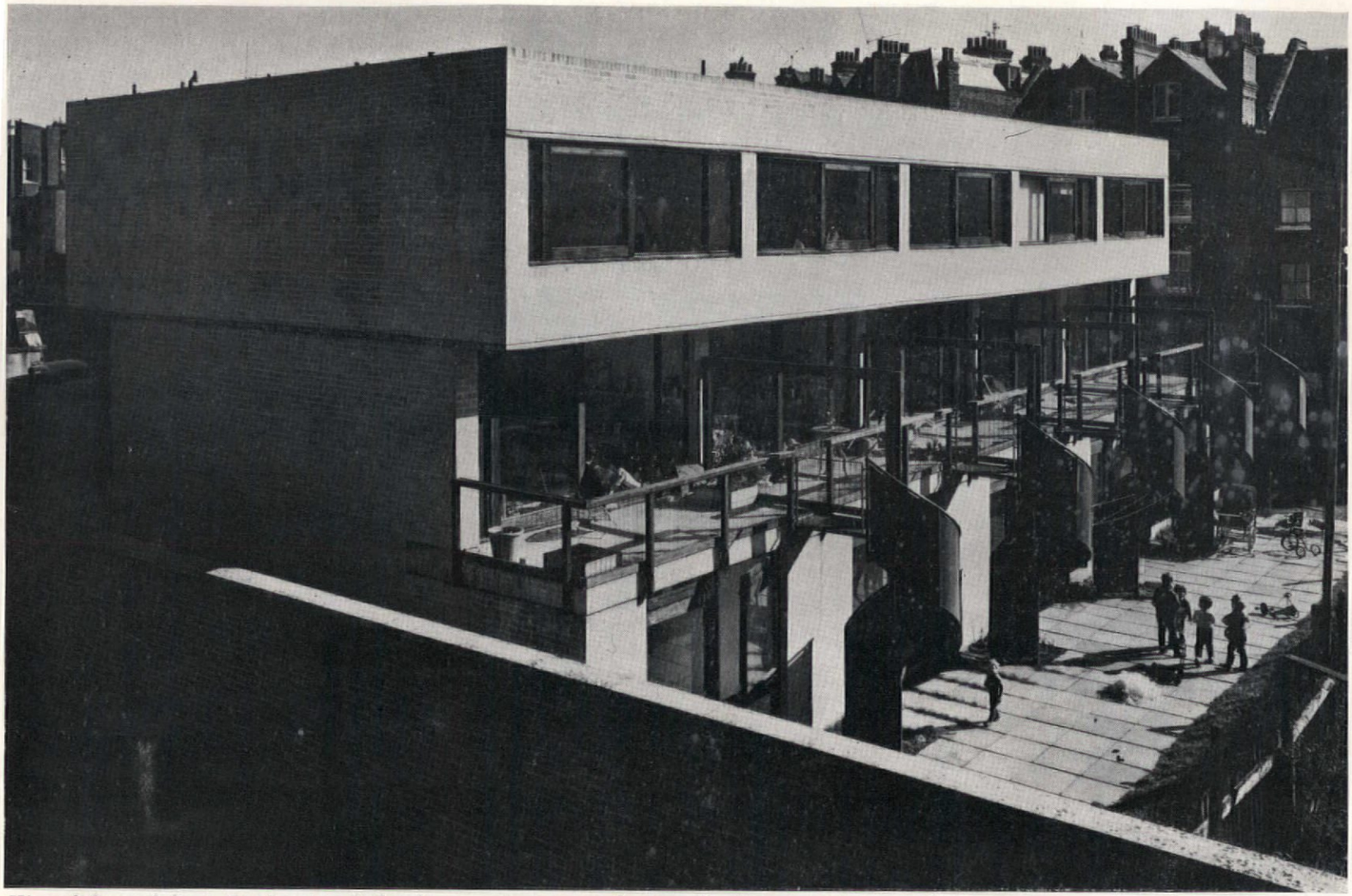
Top floor plan: living room and master bedroom



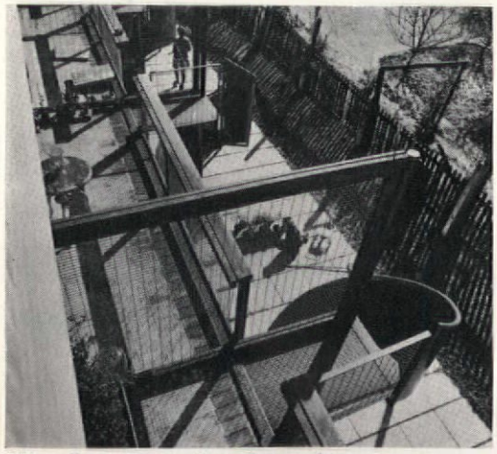
Cross-section looking east



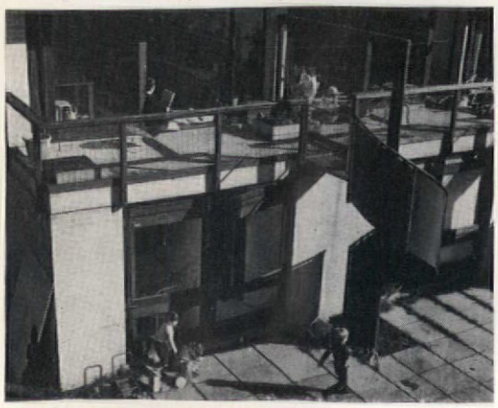
Cross-section looking west



View of the south front, showing the spiral stair connection between the upper level terrace and the paved communal space at ground level



View from the roof to the garden terrace



Garden room opening onto terrace

Divisible garden room opening onto terrace

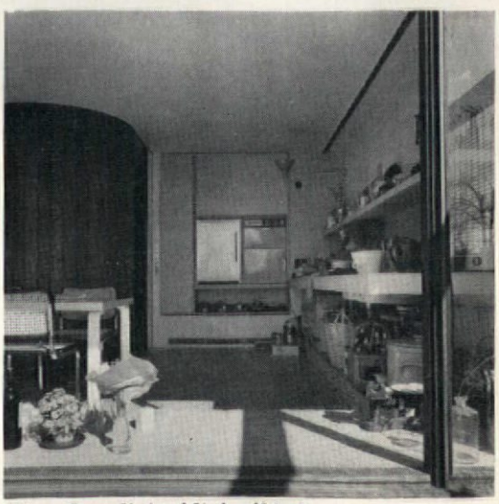
Top floor view through pivot door

Entrance hall at first floor level

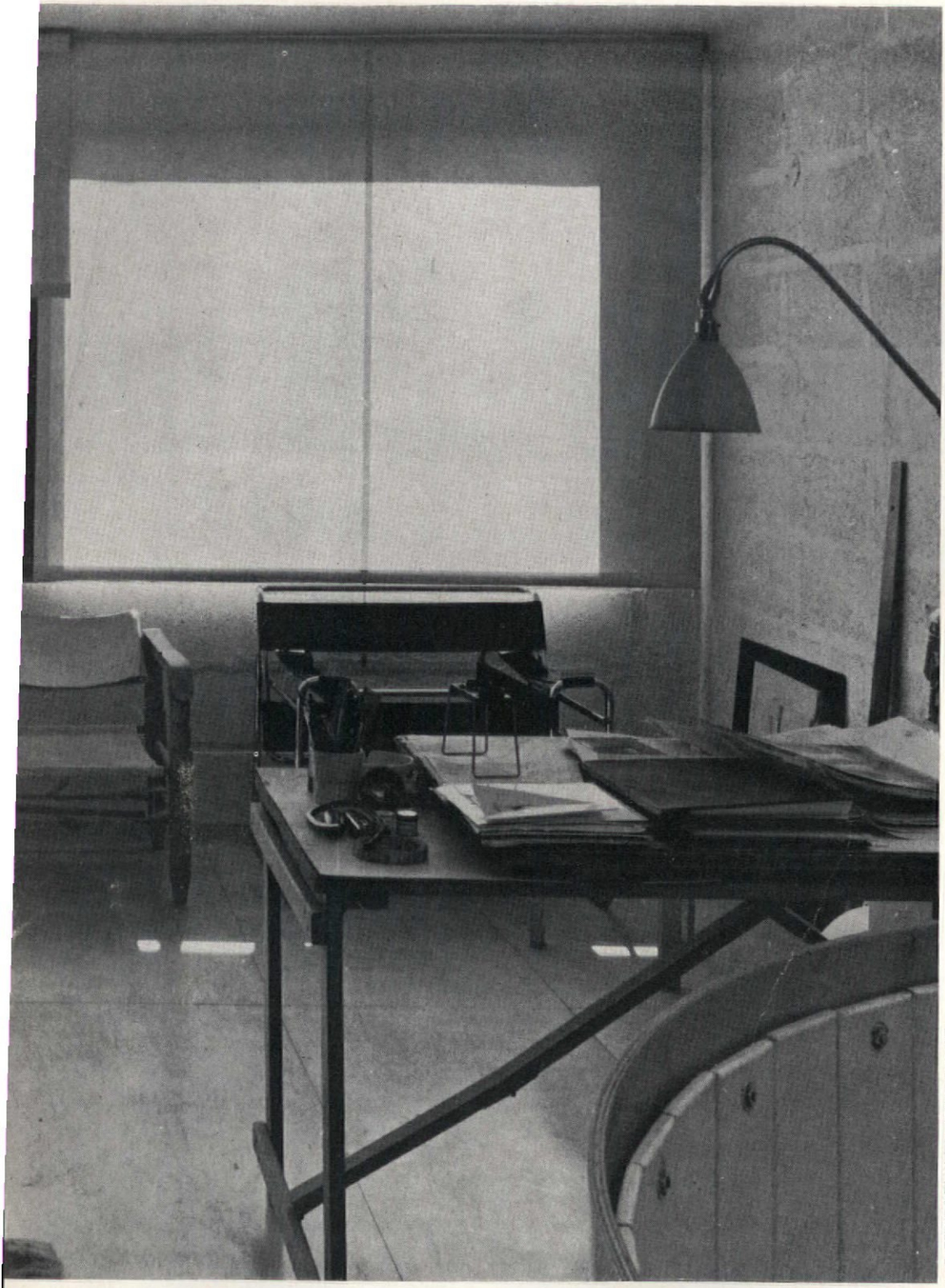
Living/dining/kitchen at first floor level

Top floor living room

Top floor living room looking towards pivot door



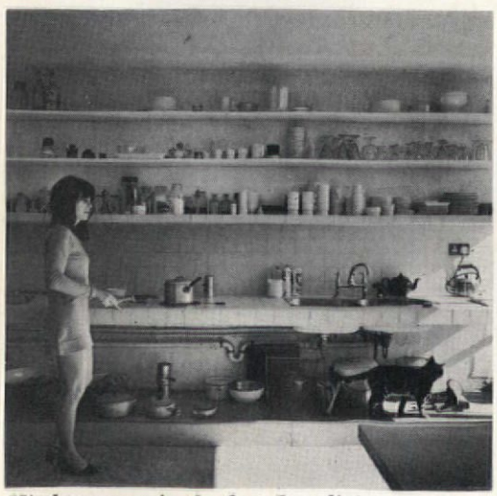
First floor living/dining/kitchen



ALL PHOTOGRAPHS: JOHN DONAT

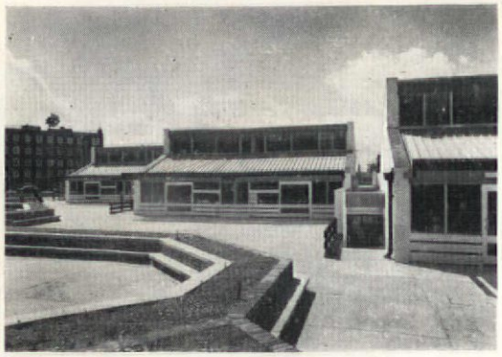
a very variable correlation between the intended functions of particular spaces, and their degree of articulated specificness or vagueness. This is shown most clearly by comparing the almost complete inarticulation of the top floor living room with the arrangement of the kitchen/living room, to which most of the activities of the house tend to gravitate, where, because of the exigencies of the enclosed spiral stair and the raised and heated threshold to the terrace, there is only one possible position for a 'space in the home' eating group. On the ground floor there is a similar disparity between the closed back room, and the open, divisible garden room, whose flexibility works well when occupied by two children.

Externally, the terrace has built into it on both street and garden sides the ultimately irreconcilable tensions between the social arbitrariness of *any* number of houses butted together for economic and urbanistic reasons, and the formal requirement of expressing some idea of collectivity. Within the open, and to a certain extent additive formal language employed, the tensions show themselves most clearly to the street in the small flurry of elements required and used (spiral stair to balcony-threshold, brick, smooth and board-marked concrete, glass blocks, dark stained wood balustrade and window frames) to mark the individual front doors, and the continuous brick faced overhang of the top floor master bedrooms, in which the party wall positions are not marked. I suspect that, had the terrace been designed for a public client, the small entrance balconies would have been joined to make a continuous upper pavement. The top floor overhang is reflected, with a Heroic flavour, to the garden—but with party walls marked—but below it the terraces to the individual kitchens are continuous, with the usual conflicting requirements of openness from inside, and privacy when outside—and the resulting necessity for the large wood-framed mesh blinkers. The ground floor rooms opening onto the garden having their blinkers parallel to the external wall are more private and make the always dreamed of absence of garden fences work. Whether they will become necessary when, as is hoped, the gardens are extended by acquisition of the adjoining site, remains to be seen. *Christopher Woodward*



Kitchen range in the first floor living room

Cupboard in master bedroom

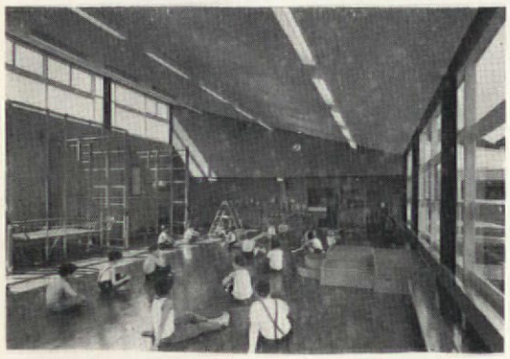


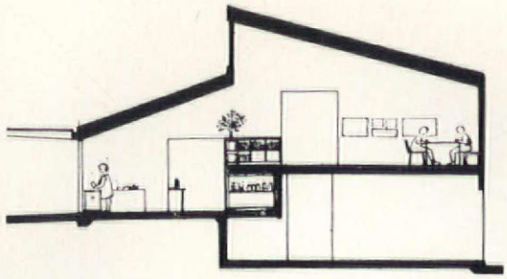
Vittoria primary school, Islington, London

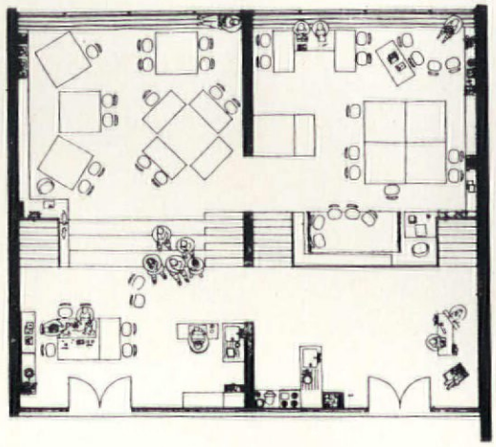
For Inner London Education Authority
GLC chief architect: Hubert Bennett
Architect in charge: R. W. Robson-Smith
Job architect: I. Plummer

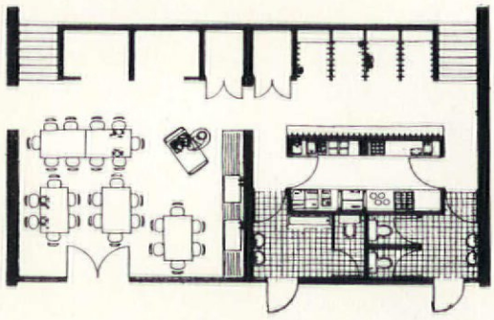
The Vittoria primary school (*Project Award* 4/66) is one of two experimental schools—the other being the Eveline Lowe school at Camberwell, (*AD* 1/67 p.1)—built in consultation with the Department of Education and Science to provide the Plowden council with examples of how theories on primary school education should influence the form of buildings. Both schools were built within departmental limits, Vittoria at a cost of £144,000.

The aim in both schools was to provide for a varied and active learning programme and to break down distinctions in classes and age groups. The solution adopted at Eveline Lowe, which was designed by departmental architects, was to provide a free, open plan with corridors of interconnected bays rather than separate classrooms. At Vittoria (320 pupils) pairs of split-level classrooms have been built.





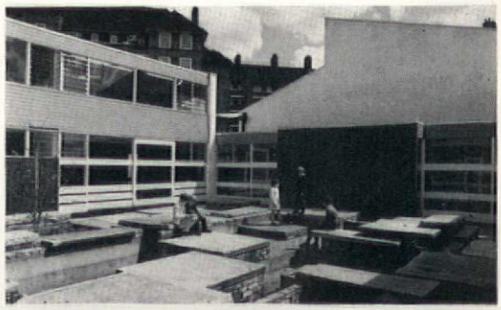




The intention was to ease the transition from home to school for four-year-olds by having half-day attendance at first in the scaled-down split-level classrooms—the upper part for quiet work, the lower for practical. Similarly, by pairing classes of successive age groups and allowing these to overlap, it was hoped to ease the transition from the nursery stage to infants' school, and from the infants' to the junior.

The three, paired classroom blocks are linked to a multi-purpose hall, playrooms, kitchen, dining and administration areas. There is a parents' room here to strengthen the home/school relationship. The buildings have been kept low to further a homely atmosphere and as much open space as possible has been provided, closely associated with the classrooms.

PHOTOGRAPHS BY SAM LAMBERT

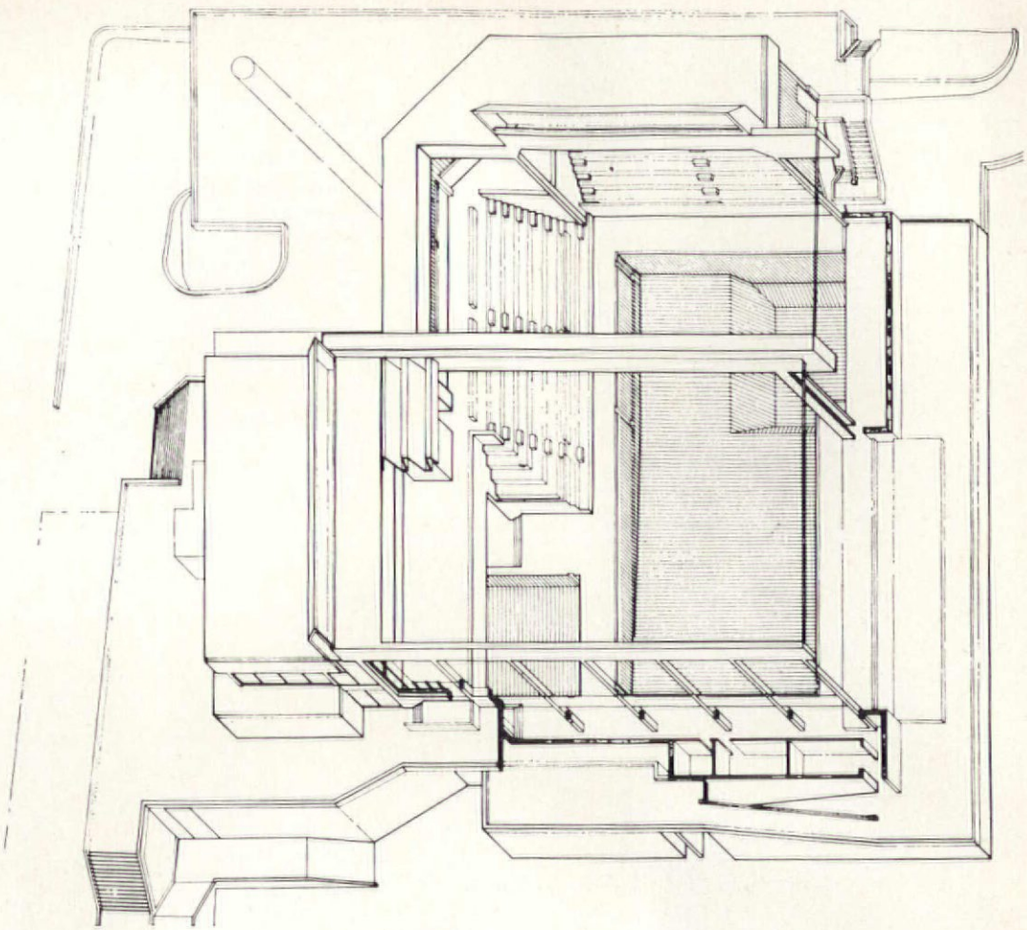


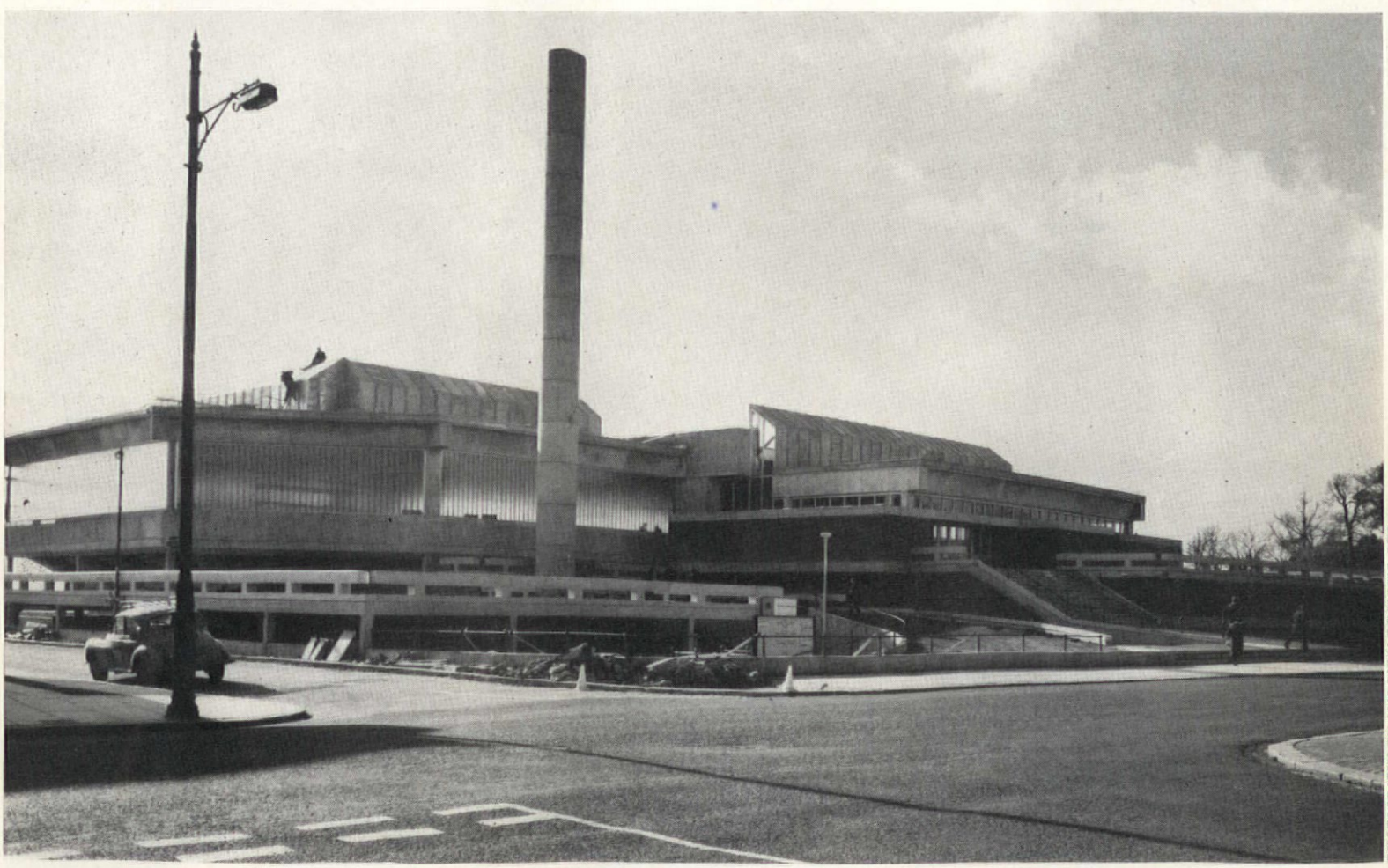
Aquarena, Worthing

For the Borough of Worthing
Derek Walker, John Attenborough and Bryn Jones
in association with F. C. M. Morris, Borough Architect

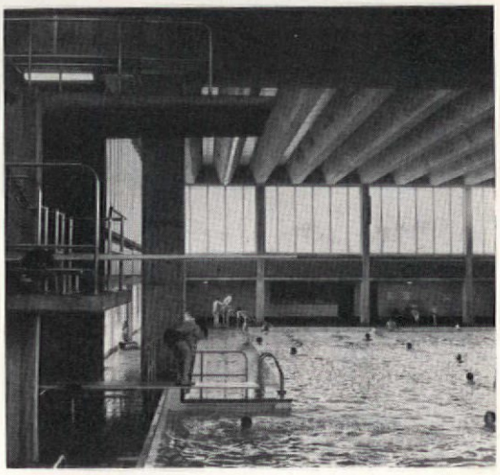
The brief (*Award* 4/65) incorporated the latest recommendations of swimming authorities and the Ministry of Housing and Local Government. Provision was to be made for a main pool 110ft by 49ft, with diving facilities, and a teaching pool 41ft 3in by 30ft.

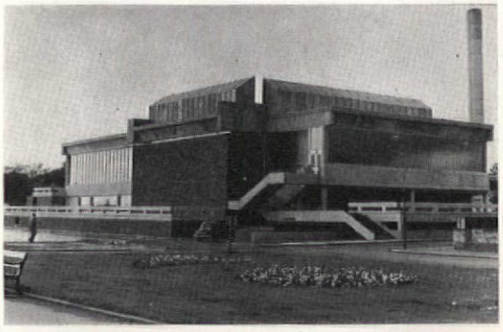
In developing the brief, three main principles were followed. The first is that of providing first-class swimming and teaching facilities with easy access between the changing rooms and the pool hall. Special attention has been given to the needs of the elderly, the disabled and to parties of school children. Secondly, the use of robust materials in areas of maximum use. The capacity of the pool at any one time is approximately 500 swimmers. From past experience, it has been found that swimming pools are subjected to very hard wear and to a considerable amount of abuse. Materials and finishes have been selected to stand up to these conditions. Thirdly, the building has been designed to provide a minimum of maintenance. Externally, the materials are brick, concrete, aluminium and zinc. All these materials are virtually maintenance free and improve with age.

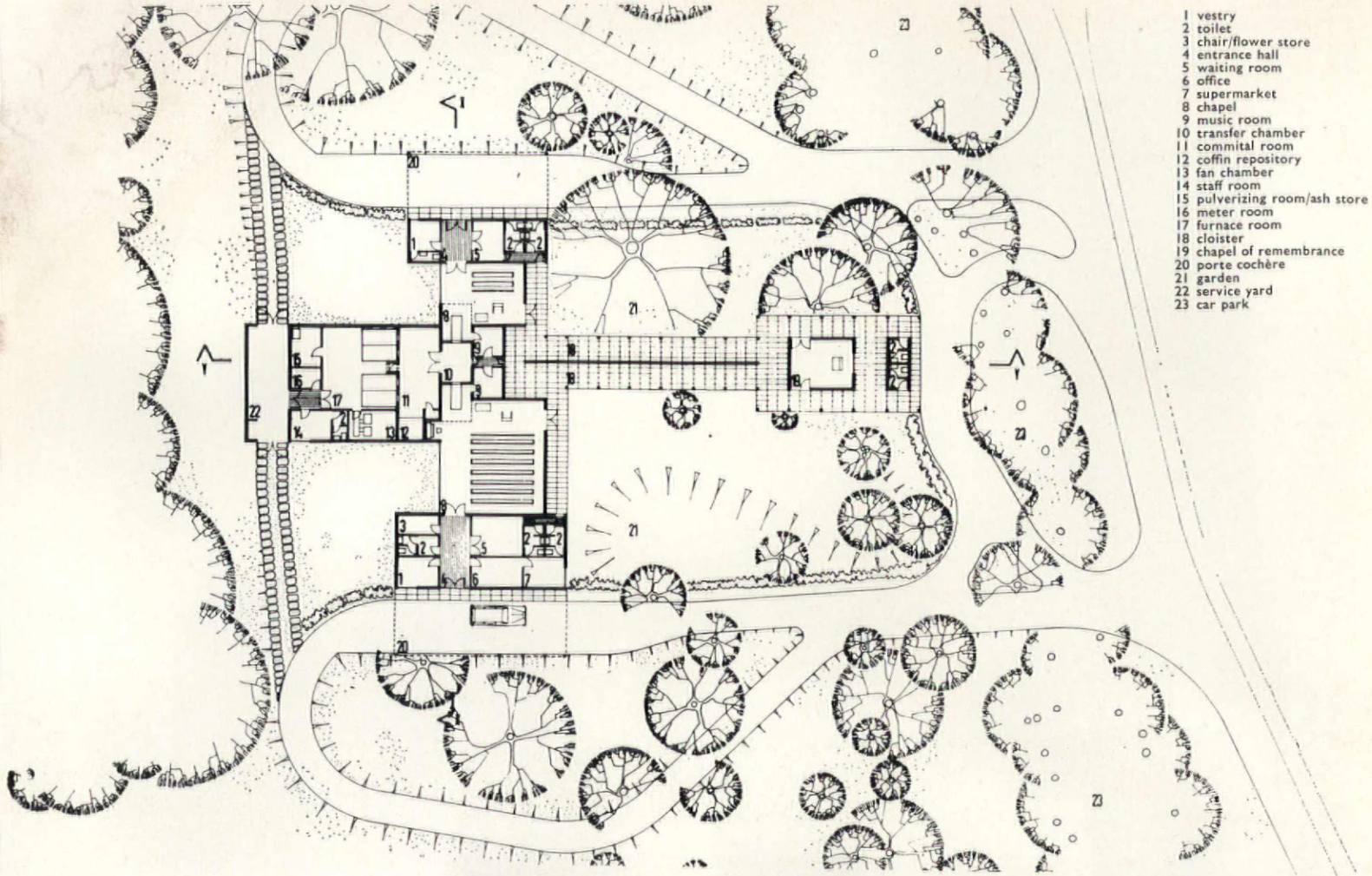




PHOTOGRAPHS BY MALCOLM PENDRILL LTD.







Crematorium, Worthing, Sussex

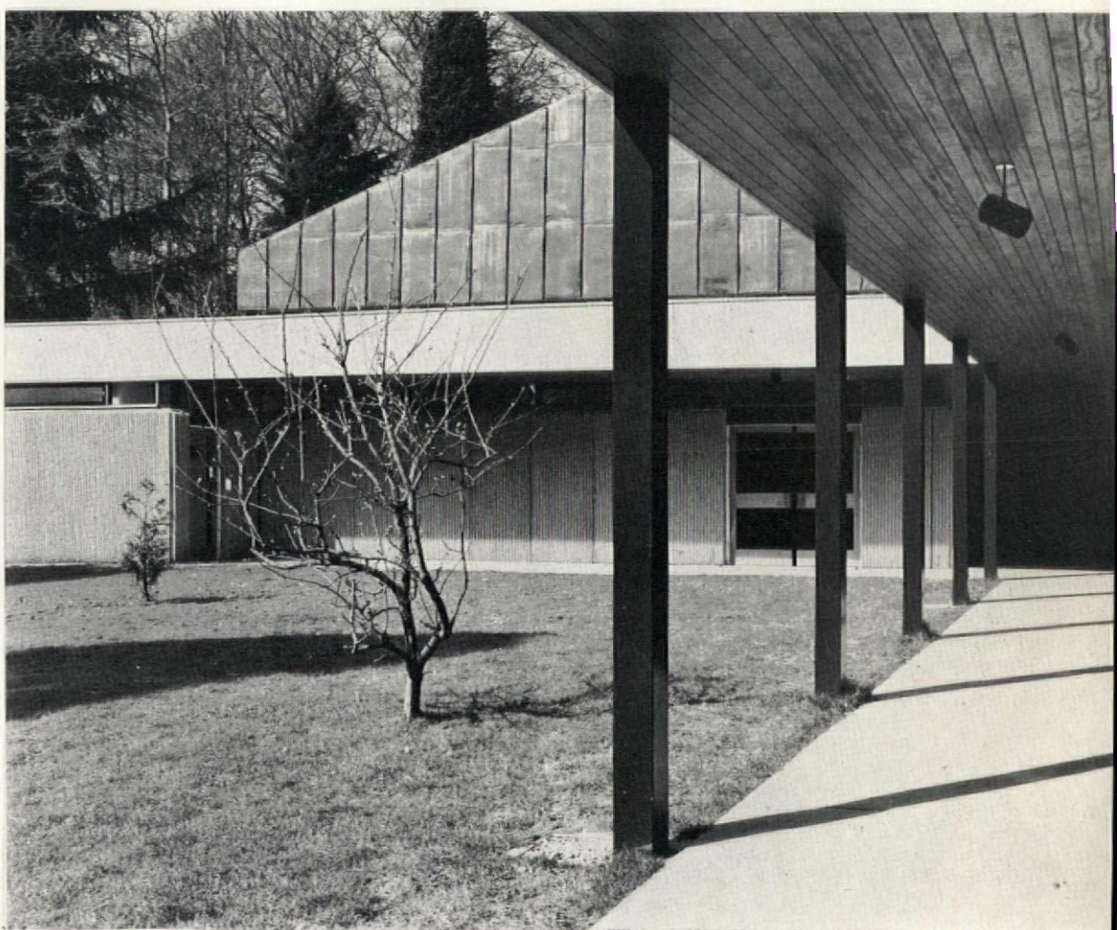
Borough architect: F. C. M. Morris

The site at Findon (*Award* 4/66) lies within the grounds of a large Victorian mansion.

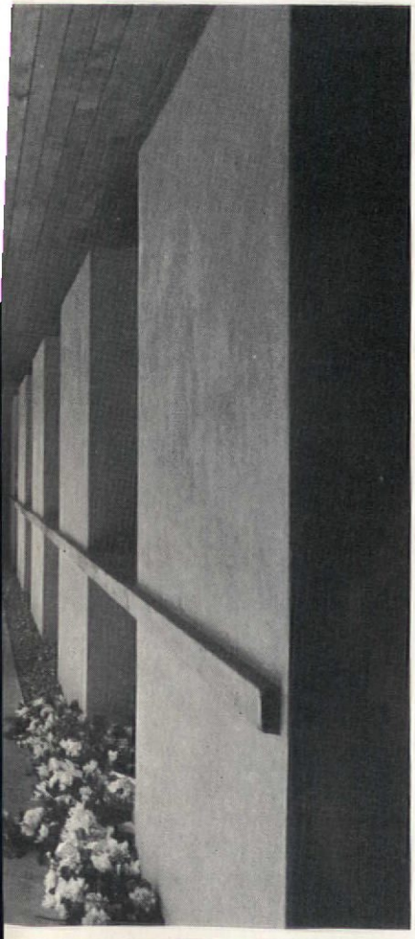
Only the first stage of the building, including the large chapel to seat up to 100 people, has been built. A small family chapel will be added. Representatives of the clergy and the local funeral directors were consulted and all agreed that the respective congregations in attendance at each chapel should be completely segregated from the moment of leaving their cars to the time when they regain them.

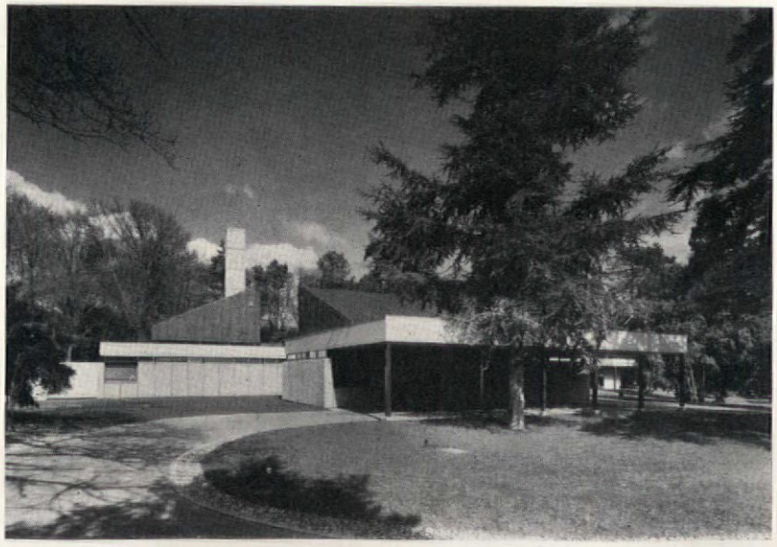
The other major consideration affecting the design was the necessity for service vehicles, technical operatives, etc., to be screened from the views of the public. The chimney, while being accepted as a vital item, was also to be concealed from the public, at least while inside the building, and was designed so as to overcome downdraughts from the surrounding trees, with the resulting smoke and smell.

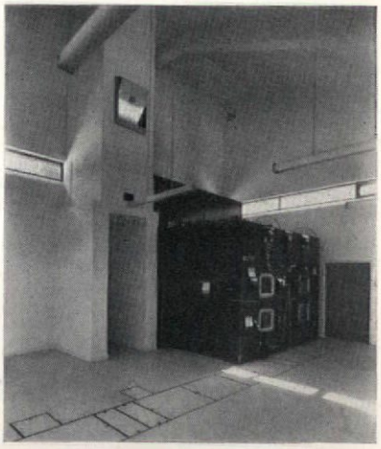
The population of the area served is approximately 180,000 and the number of cremations anticipated was 1500 over the first year, increasing to 2500 a year over a five-year period. However 313 cremations were carried out during the first month of operation, so that the total for the year could well be 3500. The council have accordingly approved the installation of two additional cremators and the building of Stage II.

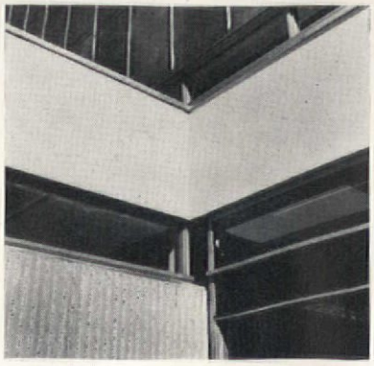


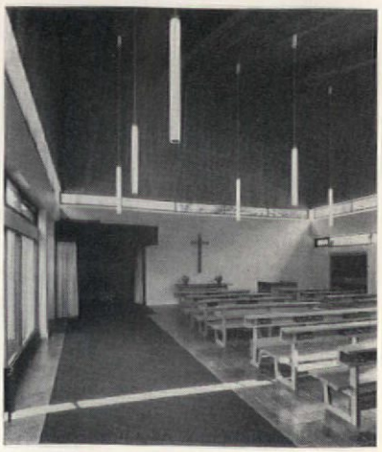
PHOTOGRAPHS BY SAM LAMBERT











Arborite have five grades in all their 52 plain colours. Nobody else has.

That's just the start. Actually, Arborite's five major grades: standard grade, solid grade, post-forming grade, bending grade and fire-retardant grade laminate are available in over 150 colours, patterns, woodgrains and marbles in all. 52 are plain colours and 42 of those are exact or close matched to BS colours.

But there's a lot more to Arborite than that. There are thicknesses and special grades to meet practically every kind of application. In addition to standard thicknesses of $\frac{1}{16}$" and $\frac{1}{32}$" – Arborite manufacture solid plastic laminate from $\frac{1}{8}$" to $1\frac{1}{4}$" thick. Also Post-forming grade for finely contoured working surfaces. Bending grade for forming larger radii. And Fire-retardant grade to comply with the surface spread of flame regulations. Standard sheet sizes are 10′ x 4′ and 8′ x 4′ with others, including 12′ x 5′, available. Arborite comes in three finishes: high gloss, furniture finish (semi-matt) and texture finish.

If you need any kind of information or advice, please call our technical service. They'd be delighted to help.

Please send me Arborite literature and samples.

NAME _____

ADDRESS _____

_____

COMPANY _____

To: Arborite Ltd., Bilton House, 54/58 Uxbridge Road, Ealing W.5. Tel: 01-567 0116

WCW 12

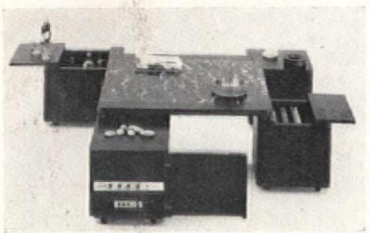
DESIGN

1

Eurodomus

The annual (two to date at Turin) Eurodomus exhibitions of the most up-to-date furniture and fittings are highly selective, participating firms chosen in consultation with industrial design associations and centres all over the world. The moving force behind the exhibition, Gio Ponti who writes in the introduction to the catalogue that it is intended as a guide to products which are distinguished by the four determinants of the veracity of the modern style (design expressive of culture, production expressive of modern technology, competitive standing expressive of use-value, and function) and which coincide with the requirements of a dignified way of life.

Letizia Frailich Ponti comments that it was interesting this year how most designs were variations of the same inspiration. For example, the fascinating idea of glass hooks brought out simultaneously, by two firms, Toso and Vistosi, for use as lamps room dividers, curtains, etc. The same applied to a lot of the furniture, the tendency always



being that of maximum flexibility of use and arrangement, most of it on wheels, accessible from all sides, centralizing and focusing many functions with elegant nonchalance. In general this can be ascribed not only to technological progress, but to the new young approach to design-for-living based on a free arrangement of units against the neutral background of modern flats.

New thinking about lights

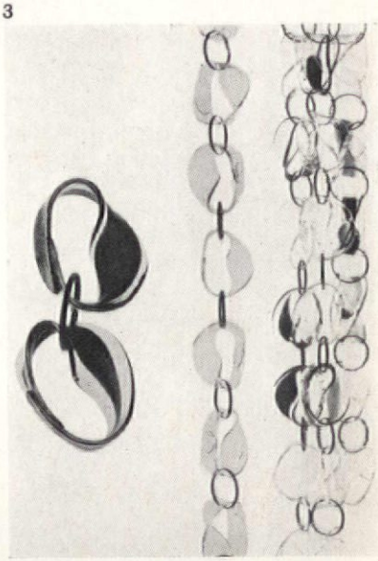
Angelo Mangiarotti, intrigued by the idea of 'glass + glass' free of any other material, designed for *Vetreria Vistosi* of Murano, Venice, the glass hooks **1, 2** (simpler than Enrico Capuzzo's earlier idea of glass chains with steel ring links **3**). They come in various shades—clear, grey, violet, ruby, tea—and are sold in tens, each hook measuring about $3 \times 2\frac{1}{4} \times 3\frac{1}{2}$ inches and weighing about 800 grams. He is also the author of their concentric-cylinder hanging lights **2**.

San Vio 866, Venice
Photos: Publifoto, Turin

Two other glass chains come from *Vetreria Fratelli Toso*, also of Murano. One is 'Gala', a C-shaped hook designed by the architect Giusto Toso, made in clear glass—colourless, pink or aquamarine—weighing 170 grams and measuring ten to the metre. The other is 'Laguna', a ribbon hook **4** weighing 1300gm, designed by the architect Renato Toso. This one comes in one or two clear colours, sometimes with an added contrasting line or circle. The maximum recommended length for a chain is 320cm. ▷342

Fondamenta Colleoni 7, 30121 Murano (Venice)

2



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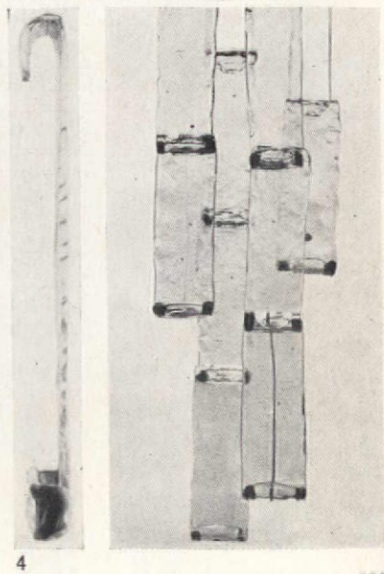
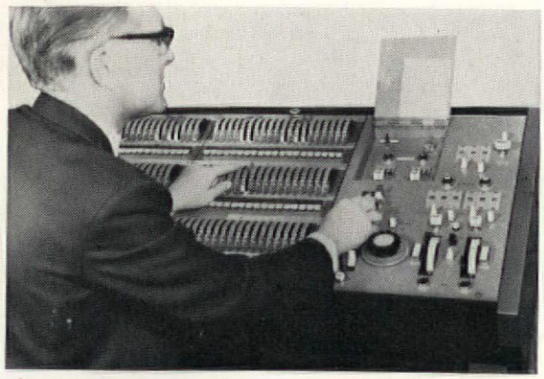
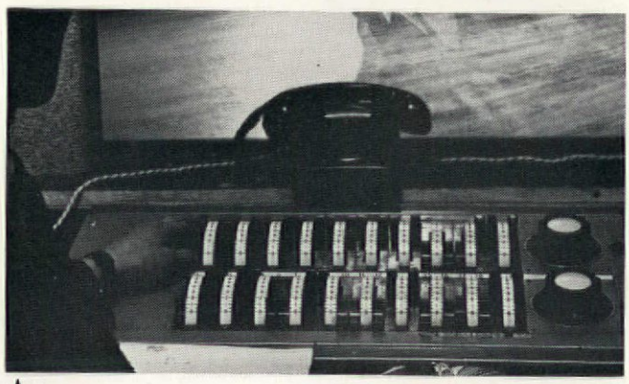


4

Only Strand make lighting controls in such variety and only Strand make them for every purpose

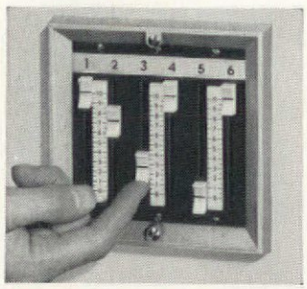


The latest Strand control is the IDM (Instant Dimmer Memory) System which is now going into the London Coliseum. This can provide 250 presets with recording and playback facilities on all channels.



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

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



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

The items shown here are just a few examples to indicate the wide range of control equipment available from Strand. Our catalogue describes all the standard systems, their application and operational facilities. But as few lighting control problems are exactly similar please make early use of our Advisory Services now available in London and Manchester.

STRAND ELECTRIC & ENGINEERING COMPANY LIMITED

LONDON—29 KING STREET, COVENT GARDEN, LONDON, W.C.2. 01-836 4444
MANCHESTER—CONSTABLE STREET, GORTON, MANCHESTER 18. EAST 4141

DESIGN

1341
Yet another of Venice's glass firms, *Leucos* of Mestre, make some handsome chunky floor lights **10**.
Via Caneve 21, 30173 Mestre (Venice)

Design M, Ingo Maurer of Munich showed the 'bulb' series **9, 11** at Eurodomus. The small clear one is 30cm high, the 'Spiral' 50cm; all have chrome or clear bases.
Habsburger Platz 2, 8000 Munich 13
Photos: Publifoto, Turin

BBI Lighting's 'Staccato' fittings **5–8** come in three lengths and four types, but are all based on a 75cm square base so they can be grouped together at will, any number wired from one point.

The lengths are 118·5cm, 196·5cm and 274·5cm, with an addition of 78cm for the square-section reflector, and finishes are matt white or chrome. Prices range from £4 14*s* to £6 10*s* per unit, or £6 17*s* to £8 8*s* with the added reflector.

Further variations can be effected by introducing any of the eleven types of lamp **7** currently on the market. The position of the adjusting screw for adjusting the lampholder on the base is shown in the section **8**.
Telford Road, Houndmills Estate, Basingstoke, Hants, and 58 Berners Street, London, W1

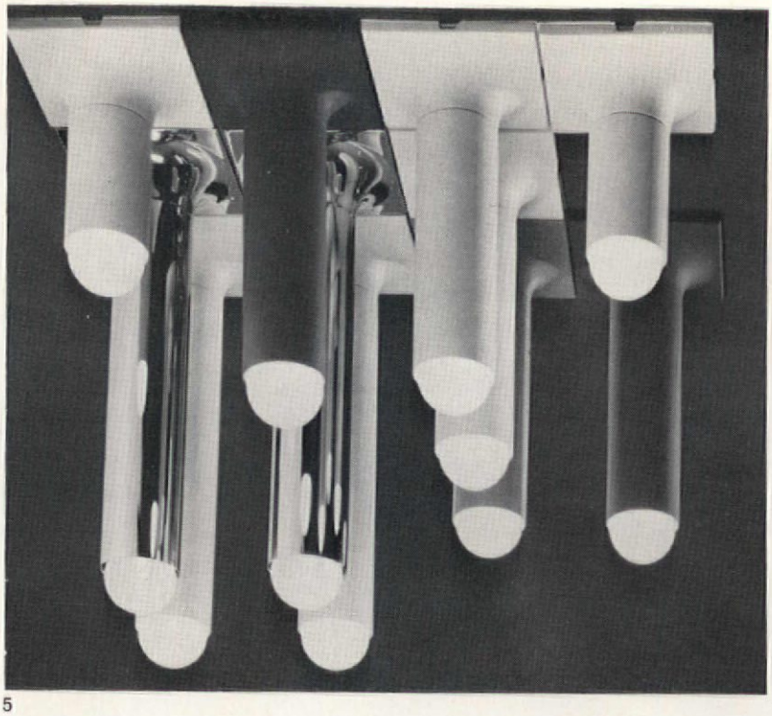
Sheer fabrics

A new range of printed sheer fabrics is being marketed by Form International Limited which includes 11 designs in 29 colourways. They are pigment-printed on a base cloth of white Celon and Vincel with a slub weft.

Designers of the collection are Dennis Lennon, Ross Littell, Angelo Testa, Ulrike Rhomberg, Eszter Harazsty and Wolf Bauer.

The fabrics in the collection come in 54in width and are washable. The recommended retail price is 31*s* 6*d* per yard.

Shown below are *Fibra 1115* by Eszter Harazsty, **12** and *Sequence* by Form International's design team **13**.
28 Avon Trading Estate, Avonmore Road, London, W14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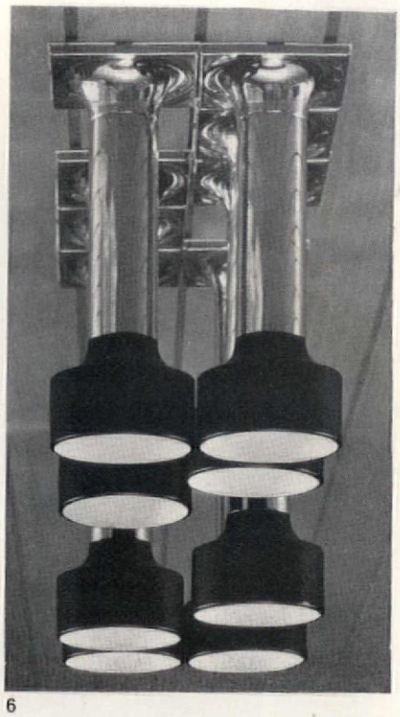
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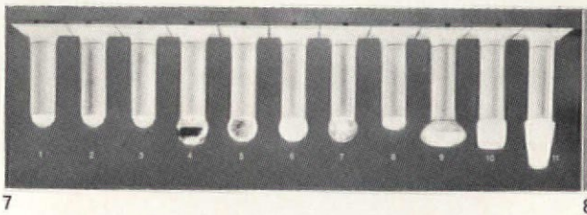
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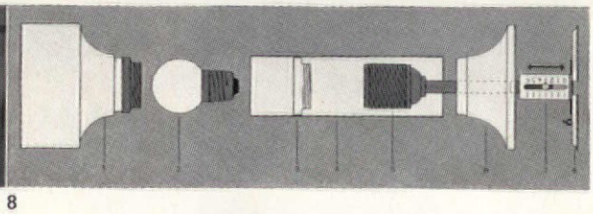
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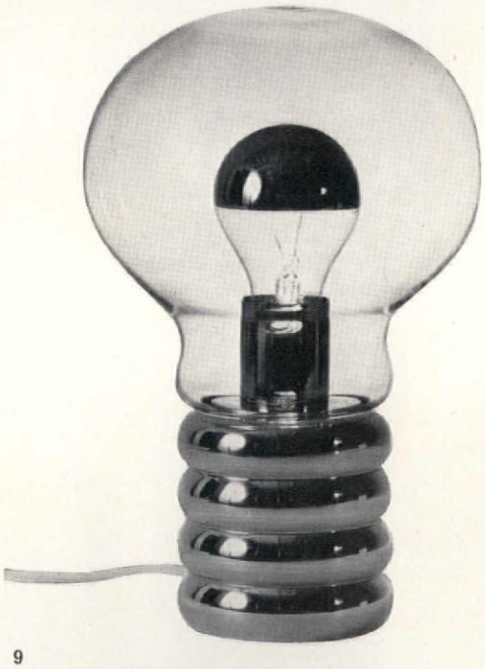
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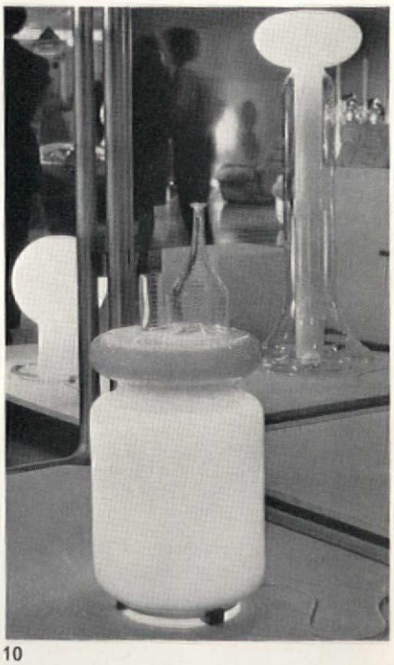
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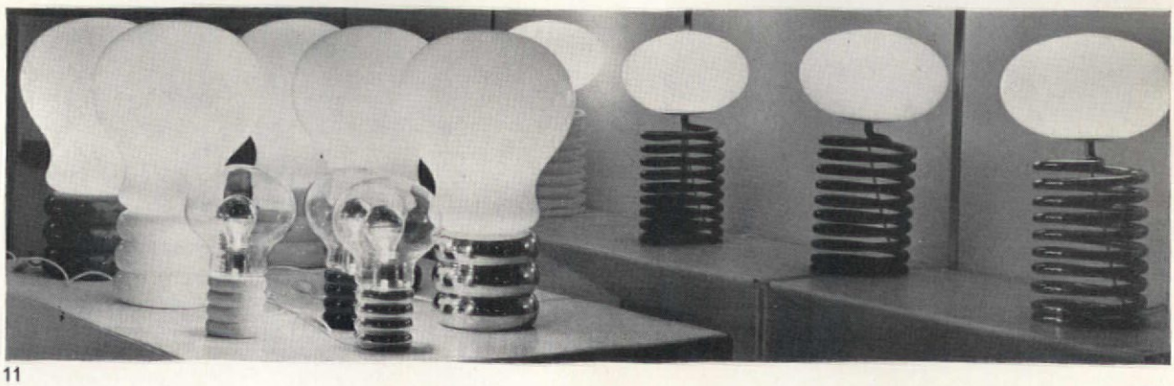
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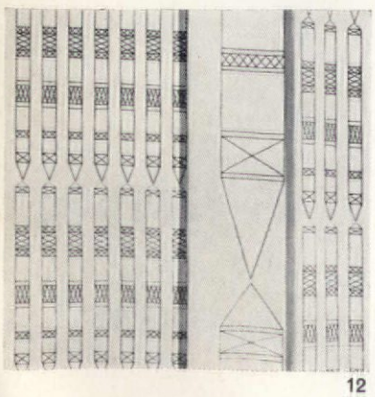
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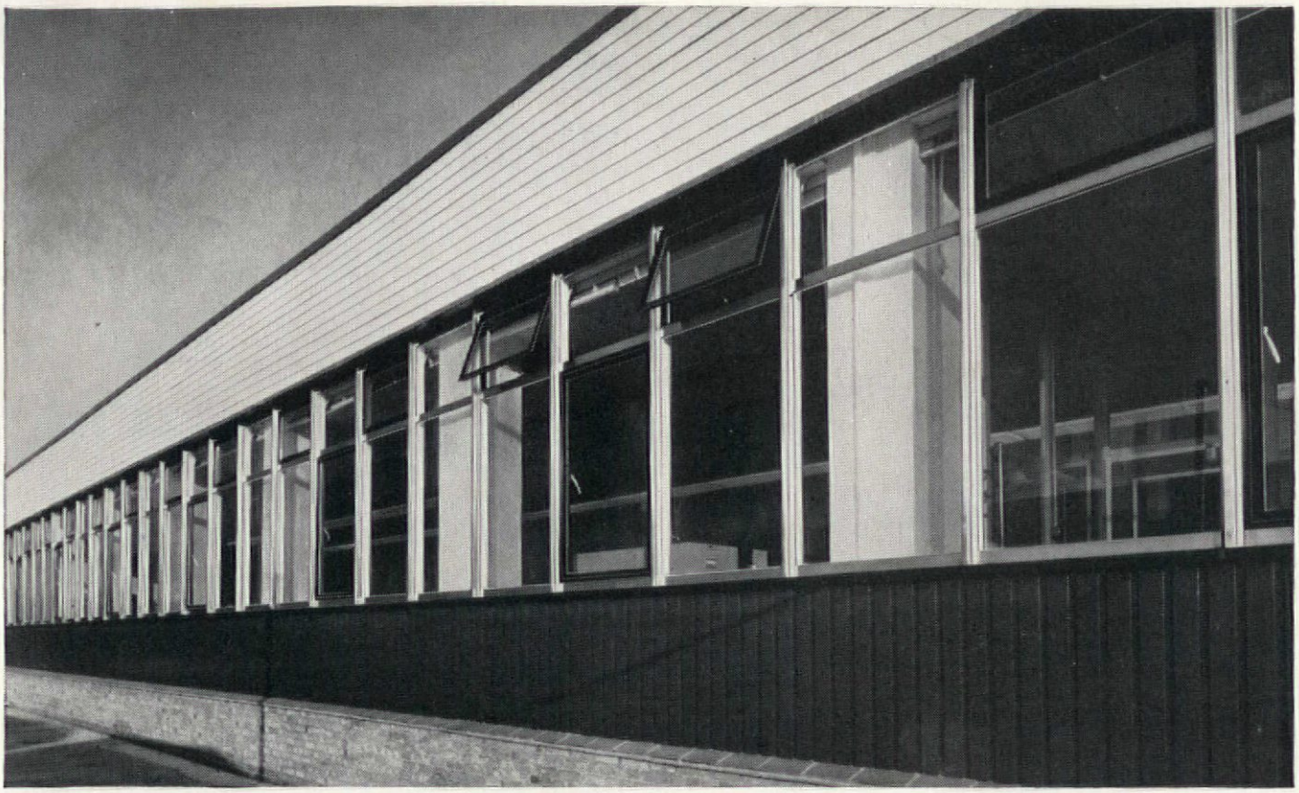
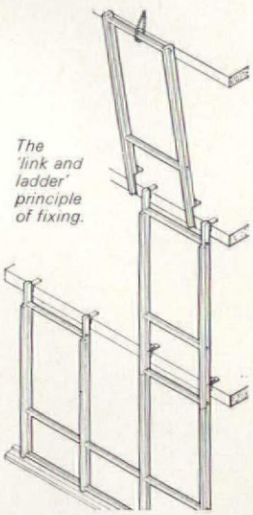


Centralised Service Unit & Stores of the North Thames Gas Board, 40/42, New Heston Rd., Heston, Middx. N.T.G.B. Building & Property Maintenance Dept.

Up goes curtain walling

clad in Silver Fox stainless steel



The 'link and ladder' principle of fixing.

down comes its price

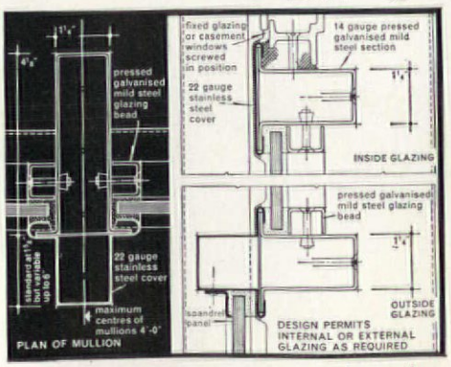
Today, more than ever, people appreciate the elegance, the long-lasting lustre of stainless steel. Its price is now highly competitive.

Thanks to improved designs and more advanced constructional and assembly techniques, stainless steel systems of curtain walling can compete in price with systems employing other materials.

Wherever 'Silver Fox' stainless steel is used, it will withstand hard wear and keeps its attractive appearance with very little maintenance. It does not require painting. An occasional wash-down will bring it up like new.

The Morris Singer Holoform Mark II stainless steel curtain walling was chosen for the Centralised Service Unit, Offices and Stores of the North Thames Gas Board at Heston. The system consists of pressed galvanised steel sections, externally clad with 'Silver Fox' satin polished stainless steel. For multi-storey applications, a "link and ladder" principle of fixing is employed. Units are fixed one above another in a series of ladders to occupy each plan module. Glazing can be done either from the inside or outside.

Further information on any aspects of 'Silver Fox' stainless steel and its use will be supplied on request.



samuel fox

& COMPANY LIMITED STOCKSBRIDGE, SHEFFIELD.

The makers of 'Silver Fox' Stainless Steel

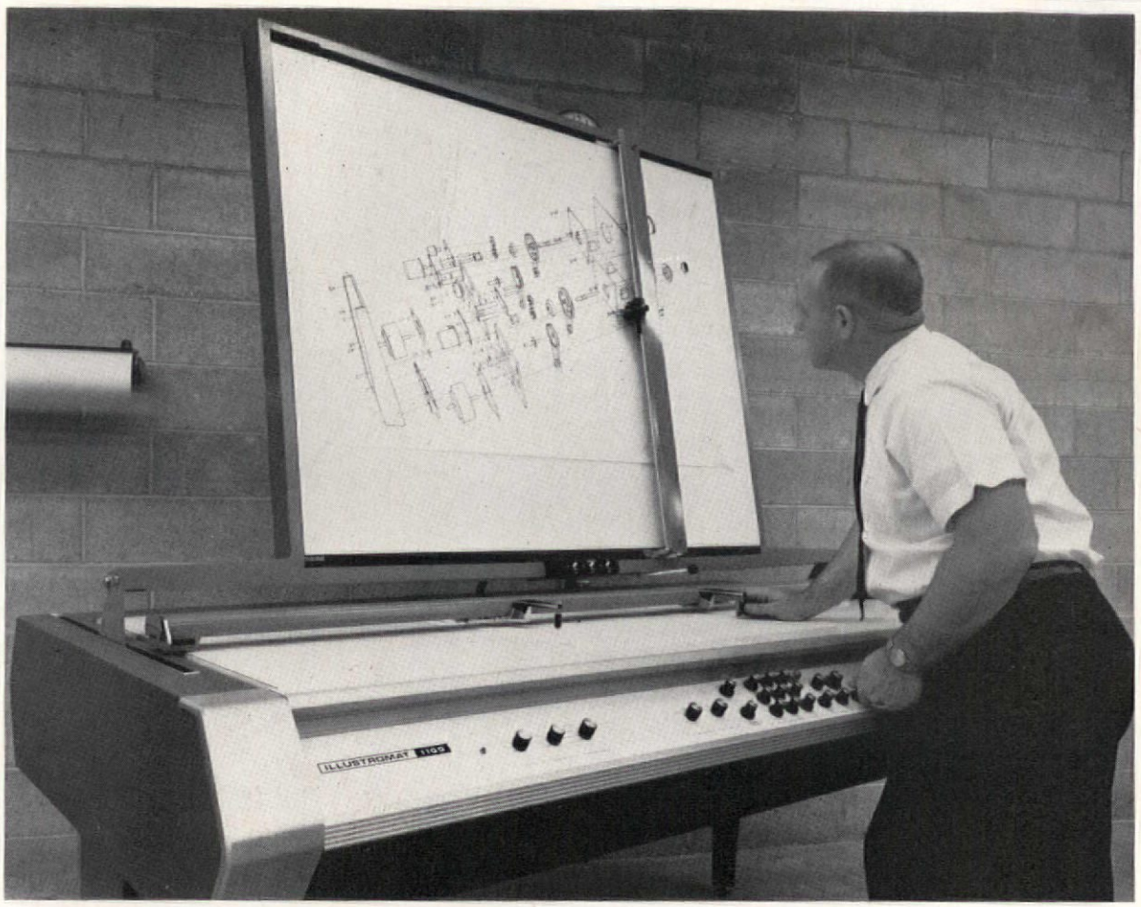
British Steel Corporation—Midland Group

1968 1967

F 554

ALEXANDER PIKE DEVELOPMENTS

To obtain additional information about any of the items described below, circle their code numbers (J1, J2 . . . etc.) on the Readers' Service Card inserted in this magazine.



J1 Draughting machine

Induscom International (UK), Friars House, 39–41, New Broad Street, London EC2

The "Sketchpad" technique for three dimensional design, first used at M.I.T., is now available in the form of a draughting machine which can produce perspective and isometric views from orthogonal drawings. The Illustromat incorporates a small analogue computer which enables the operator, by following lines on plans and elevations with a pair of styli, to produce a three-dimensional drawing which can be rotated through 360° in increments of half a degree. The apparatus is also capable of producing exploded views of complicated objects, and can produce distorted views along any one of the major axes. The equipment will cost about £25,000, estimated to be between a third and a fifth of the price of other computer-based units, and it is claimed that a trained draughtsman could learn to operate it in one day.

J2 Electric car

American Motors Corporation, Detroit, USA Gulton Industries Company, Metuchen, New Jersey, USA

Employing a new type of battery, a prototype electric car now being developed is expected to have a range of 150 miles without recharging, more than twice the distance anticipated in other electric cars now being considered. The car, which will be known as the Amitron, will be powered by two lithium batteries which are much smaller and lighter than any hitherto employed, and would give the vehicle a speed of up to 50 miles an hour. Full charge on the batteries will take about four hours, but sufficient charge for a distance of 20 miles can be given in about twenty minutes. A regenerative braking system will be employed in which the energy normally dissipated in slowing and stopping can be used to recharge the battery, adding up to 25 per cent to the car's range.

J3 Vehicle navigation

AGA Company, Stockholm, Sweden

An electronic navigation device utilizing a solid-state computer can be used in land vehicles, and provides an exact heading and four figure map references, accurate to within 0·5 per cent of the distance travelled in one hour. The initial heading and map references to within 10 metres are preset at commencement of journey. Thereafter the heading is continuously displayed on the compass indicator and position is shown on illuminated counters, one for eastings and one for northings.

J4 Cleaner exhaust fumes

A reduction of the amount of carbon-monoxide in the exaust gases, from 4·5 to 1·15 per cent, is claimed for a new car engine developed by Alex Nilsson and tested by AB Atomenergi, Studsvik, Nykoping, Sweden. The figures quoted were the results of tests at speeds of approximately 30 miles per hour, but in the average city traffic, travelling at half this speed, the carbon-monoxide content was reduced to 0·5 per cent. The improvements are achieved by incorporating an after-burner chamber in the cylinder into which air is injected, to burn some of the unused fuel.

J5 Improved holograms

Bell Telephone Laboratories, Murray Hill, New Jersey 07971, USA

The conventional Hologram made in laser light to reproduce a three-dimensional image of an object, presents only a limited angular view. The improved version is a composite of many narrow holograms each showing a different view of the object, permitting the viewer, by moving his head from side to side in front of the flat surface, to get the effect of rotating the object through 360°. It is claimed that the new holograms could be used in textbooks to demonstrate an all-round view of a complex shape, for example molecular models and biological specimens.

J6 Simplified videophone

L. M. Ericsson Telephone Company, Stockholm, Sweden

By employing a picture tube with a dot scan system which provides a higher resolution than normally obtainable, the amount of information needed to produce a satisfactory television picture can be considerably compressed. By using this system, Swedish engineers anticipate that ordinary telephone transmission lines may be used for a new videophone system, provided a sufficient number of repeaters are installed in the circuit.

J7 Improved telephone facilities

Standard Telephone & Cables Limited, STC House, 190 Strand, London WC2

A new system which, if generally adopted could eliminate the problem posed by the present partyline system, has been developed. It will allow two instruments to be connected to one line, either providing a completely independent

service to each subscriber now on a party line, or alternatively provide a second line for a single subscriber. The installation is simple and requires only two small plastic compartments fitted to an existing system.

J8 Portable telephone

Portatronic Systems, 60, East 54th Street, New York City, NY, USA

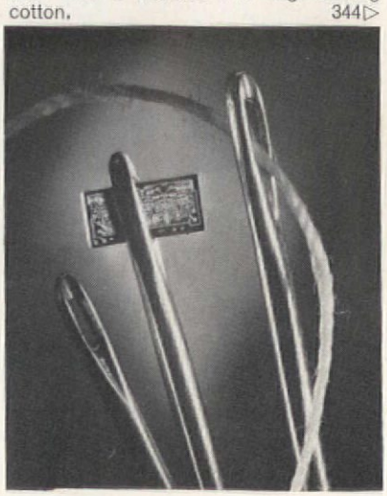
A portable executive telephone, installed in an attache case, incorporates a normal telephone and a short-wave wireless set. An essential piece of equipment for the devotee of one-upmanship, the apparatus can be used anywhere, but with particular effect at important meetings. On dialling a number the signal is carried by radio to the telephone network and the call is completed in the normal way.

J9 Microcircuits

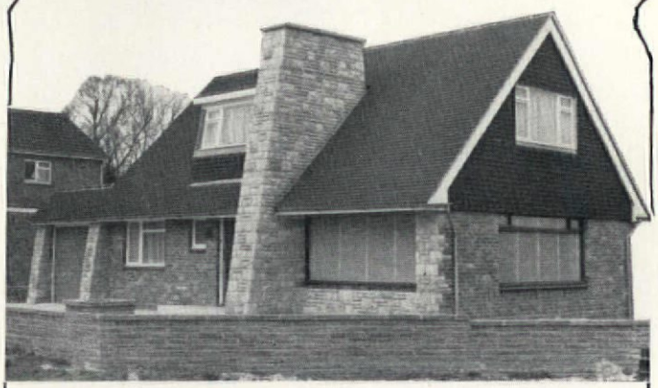
Mullard Ltd, Mullard House, Torrington Place, London WC1

Micro-miniaturization advances at such a rapid rate that we constantly require new visual similia to assist our appreciation of scale. The Mullard transistor logic decade counter contains over 120 components—as complicated as a fairly powerful radio. It is shown compared with Size 5 needles and 40g. sewing cotton.

344▷



Bradstone adds sales appeal to your designs



Prospective buyers are attracted by Bradstone's dignified appearance, which is virtually indistinguishable from matured natural stone. You'll find that reputations are built in Bradstone as readily as houses. Bradstone adds appreciably to the selling value of a property without significantly increasing material costs. Furthermore, your builder will be certain of delivery on schedule.

Cast by a perfected moulding technique, Bradstone offers a choice of finish—tooled or rough-hewn—in a full range of sizes, profiles and stone colours. In every random delivery there are subtle variations in shade that lend authenticity to the completed building.

Incorporate Bradstone in your future housing designs. It is widely favoured as a feature for chimney stacks and gable ends. Send the coupon for full details today.

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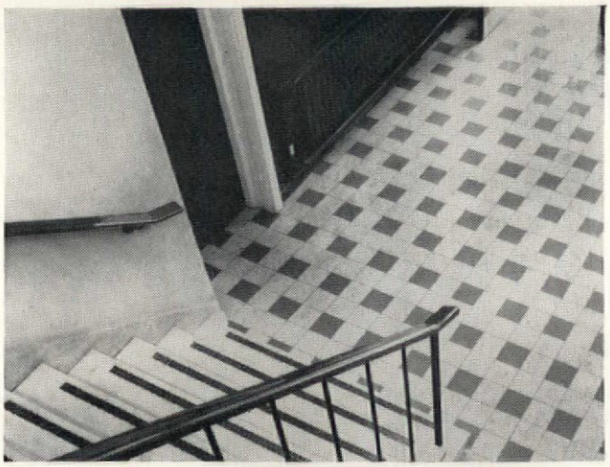

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DEVELOPMENTS

J10 New form of plastic

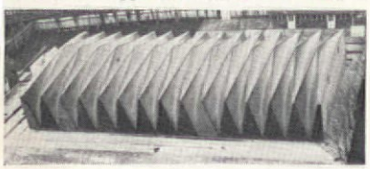
Monsanto Chemicals Limited, Monsanto House, 10–18 Victoria Street, London SW1

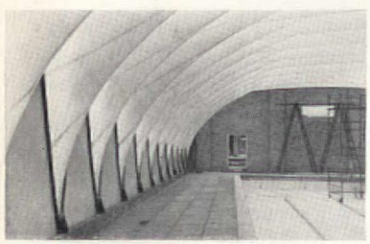
New solid polymers now in the development stage have unique properties which could make them attractive as structural materials. The new polymers are metal salts of polyacrylic acid which depend on ionic bonding for their unusual hardness at high temperatures, and result in a cross-linked structure giving an unusual degree of rigidity. Solid polyelectrolyte salts have a modulus several times that of conventional plastics, and their compressive strengths are more comparable to those of rock than of plastic. They have low coefficients of thermal expansion, and do not soften when heated. At 300°C, their stiffness is still several times greater than that of most plastics at room temperature.

J11 Structural GRP

Scott Bader and Company Limited, Wollaston, Wellingborough, Northants.

Interacting hyperbolic paraboloid sections of GRP $\frac{3}{32}$in thick have been used to





cover a swimming pool 100ft long and 50ft wide. The units are self-supporting, providing roof and walls without the necessity for a frame, and erection was completed in four days. This form of construction is claimed to be approximately 25 per cent cheaper than any comparable alternative structure.

J12 Experimental plastics house

The Royal Dutch-Shell Group, Delft, Holland

Two experimental houses, employing a high proportion of plastics in their construction, are now being tested. One is a laboratory version for tests on sound and heat insulation, the other for occupation, on which the tenant provides user reports. The houses have a steel frame with external wall panels manufactured from asbestos cement finished with a coloured sand incorporating an epoxy adhesive, with a urethane core. The service areas, the kitchen and bathroom, are the only fixed elements of the plan. The layout of the remaining spaces can be readily altered.

J13 Cement moulds for plastics components

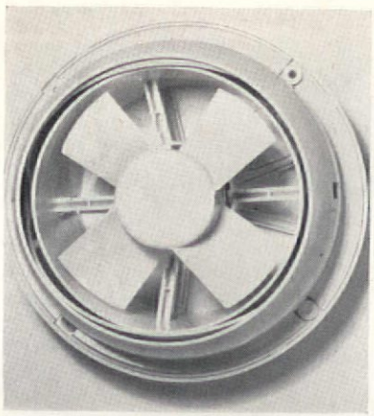
Lafarge Aluminous Cement Company, 73 Brook Street, London W1

Vacmould is a material consisting of Ciment Fondu and an aggregate, which can be rapidly formed to provide moulds for plastics, and may be used one day after casting. It has a high surface hardness and is resistant to heat and a wide range of chemicals. It is claimed that one mould, formed round a wooden pattern, is capable of making 2000 mouldings.

J14 Low-cost extractor fan

Argosy Engineering Ltd, Hertford Road, Barking, Essex

The Storkfan is available in two versions,



both 8½in diameter. Type 1520 operates at 2500 r.p.m. and has a capacity of 17,500cu ft/hour, Type 1515 operates at 1500 r.p.m. and extracts at the rate of 12,500 cu ft/hour. The cord control for starting and stopping automatically closes the shutters to the draught-free position on switching off.

J15 Window fan

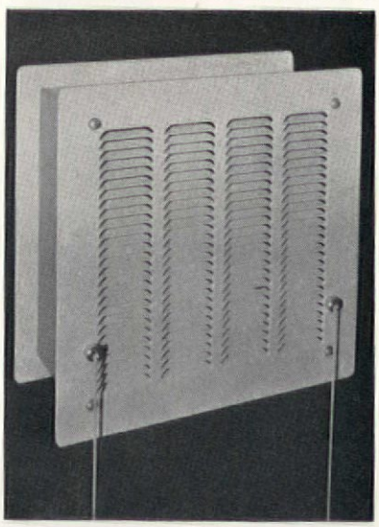
Philips Electrical Ltd, Century House, Shaftesbury Avenue, London WC2

Providing for both intake and extract, the Philips window fan has shutter, wind tunnel and fan blades in transparent plastic to minimize light loss. The fan has an air displacement of 150 c.f.m. and the motor housing and frame are in white polystyrene. Cost, under £7.

J16 Partition fan

Hills, McAuley & Chandler Limited, 2 Bamborough Gardens, London, W12

The Silentaire SP. 120 is a two-speed fan developed for installation into internal partitions for the distribution of warm or

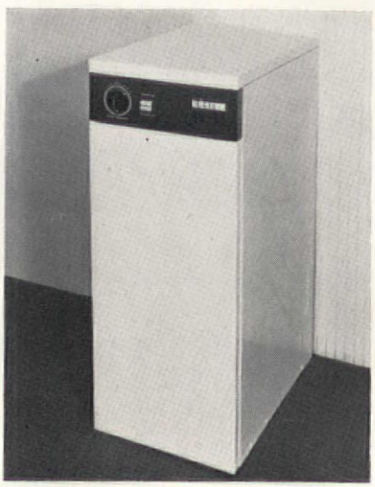


fresh air from one area to another. It may be installed in 4½in solid or stud partitions, fitting into a pre-cut aperture, secured by a louvred flange and four screws. It is constructed in steel and finished in white stove enamel. Two pull switches provide 'on/off' and 'slow/fast' controls. Fan diameter 7½in, capacity 120 c.f.m.

J17 House wiring system

Falks Limited, 91 Farringdon Road, London EC1

A new wiring system suitable for any form of industrialized building is claimed to be completely flexible, and any combination of cabling and accessories can be assembled to form a tailor-made harness, which can be used with on or off-site prefabrication, high or low rise, wet or dry construction. The system enables both lighting and power points to be fed from the main circuit, either by a T-joint taking the feed from the main to a 13-amp socket outlet, or, alternatively, by a socket and plug of unique 5-pin design. This socket has five tabs to accept line, neutral and earth from the 7/·029 triple feed, and red and black of the 3/·029 triple feed, the two earths being commoned. All cable terminations and connections are provided with simple push-on tabs fitted with insulated boots, of the same size for both lighting and power cables clearly marked for identification. Each completed harness and its identifying label leave the factory in a heat-sealed polythene sack.



J18 Gas-fired boilers

Allied Ironfounders Limited, 4 Stratford Place, London, W1

The Allied Heatwave range of domestic gas-fired boilers combined with a new series of Heatwave controls is claimed to provide an important advance in central heating systems. Outputs for the four models in the range are

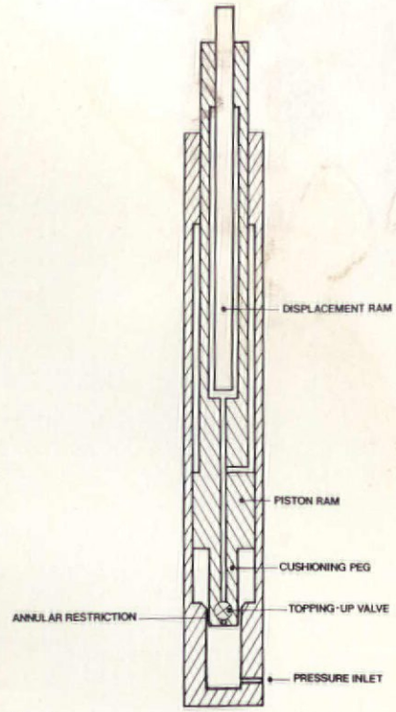
30,000–35,000 Btu
40,000–45,000 Btu
55,000–65,000 Btu
75,000–85,000 Btu.

All models are 36in high and in 14in widths for the two smaller models and 18in widths for the larger. All versions are available in four different permutations covering conventional and balanced flues and small bore and basic systems, with appropriate components interchangeable for rapid conversion from conventional to balanced flue versions. The programmers incorporate a new principle by which a common programmer base is capable of accepting one of three plug-in printed circuits, enabling additional facilities to be inserted into the programmer at any time with little alteration. Prices vary according to size and type from £80 to £165.

J19 Long-travel electro-hydraulic lifts

Becker Equipment and Lifts Limited, Rosemont Road, Alperton, Middlesex

The inherent advantages of electro-hydraulic lifts, smoothness of operation, levelling accuracy and quietness, minimal requirements for headroom, motor room or pit, etc., are well known, but until now the principal limitation has been that it was economical for only relatively short travel. A new system employing a special two-stage ram in which both stages are extended or retracted simultaneously, now enables the maximum economic travel distance to be doubled. In the retracted position a cushioning peg at the base of the piston projects a short distance inside the annular restriction, and oil is allowed to pass through a guide to the upper face of the piston. To extend the system, oil passes to the lower face of the piston and as the cushioning peg is lifted clear of the restriction the topping up valve is closed. The piston continues to rise, displacing oil from its upper face via passageways, to raise the displacement ram. The areas of the ram faces are designed so that the relative speeds of



the two rams are the same. The new system is considered to be particularly suitable for six-storey blocks of flats where single lifts are acceptable.

J20 Mixing tap

Nederlandse Gasmeterfabrick George Wilson, Loosduinseweg 241, The Hague, Holland

Connected to both hot and cold supplies, the single tap has a horizontal swivelling action, the position of the arm controlling the relative flows of hot and cold water. At the extreme limits of travel it gives hot water on one side and cold water on the other with intermediate temperatures at points between. The knob for regulating the flow is insulated.

J21 Lighting fitting

Falks Limited, 81 Farringdon Road, London EC1

The Isis fitting has been specifically designed for use in schools, but is equally suitable for hospitals, offices, administrative and municipal buildings, etc. It consists of a light stabilized opal polystyrene shade in the form of two concentric inverted cones, and gives an extremely high light output ratio of 92 per cent. For use with a 200-watt lamp, the price is £1 14s 8*d*, including purchase tax.

J22 Dry wall partition

The Marley Tile Company Limited, Storrington, Sussex

The Marley Domestic range has now been extended to include a plasterboard faced version of Marleywall. The partition has a wood wool core and is claimed to achieve a sound reduction of 37·4 dB and a one-hour fire rating—at cost levels well below traditional methods. □

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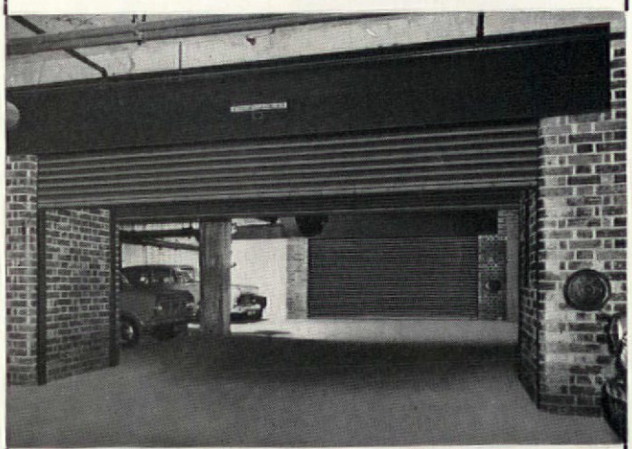

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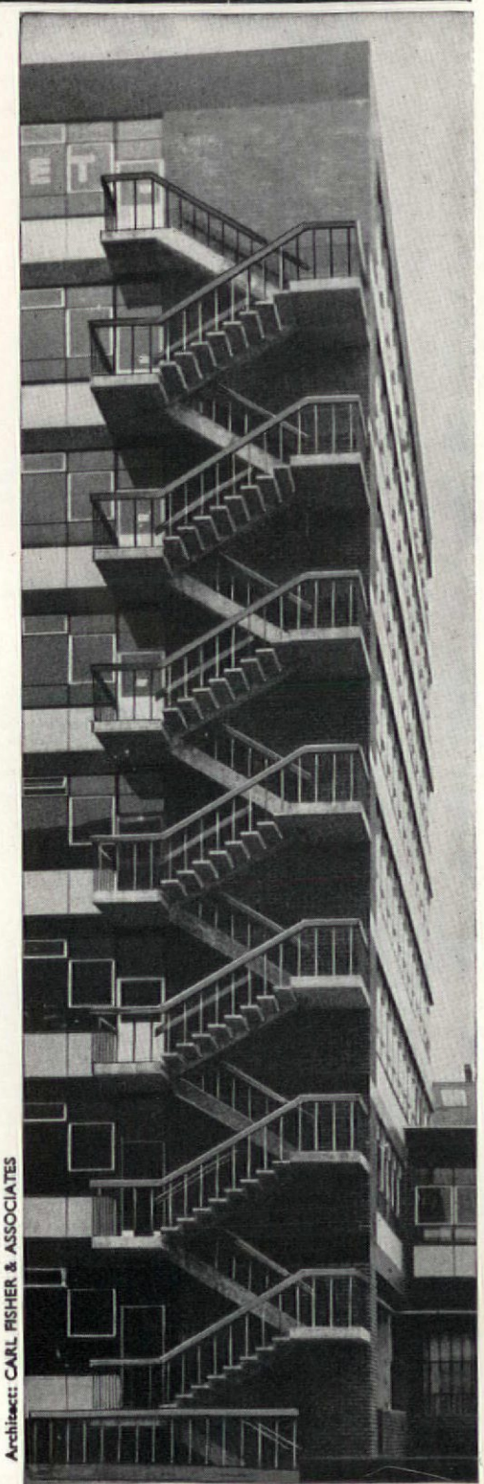

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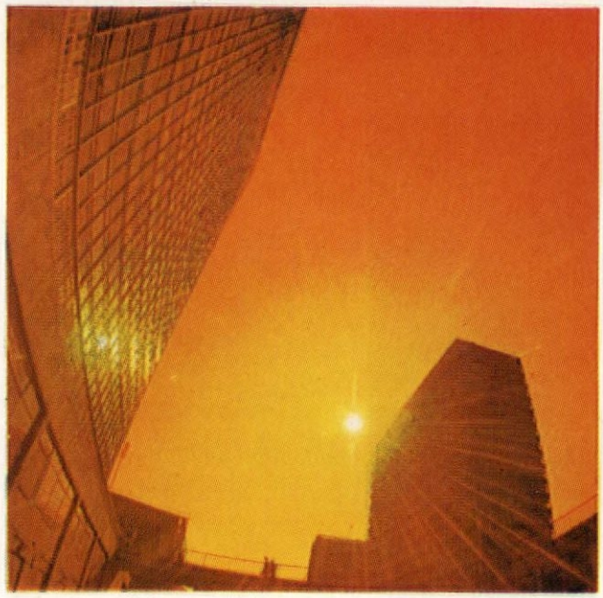

Now there's a new glass to start a window revolution

Pilkington New Spectrafloat

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

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

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

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

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

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

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

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

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

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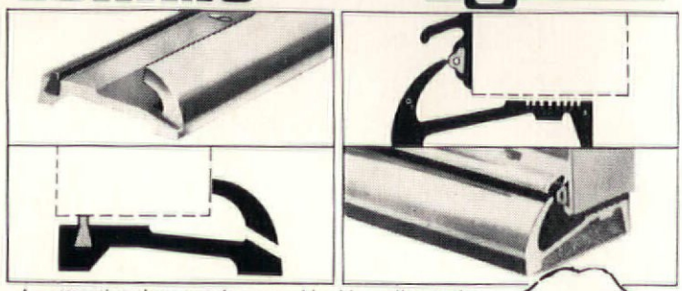

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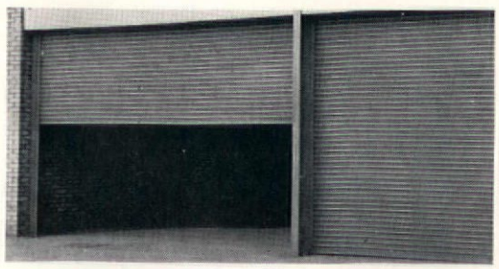

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