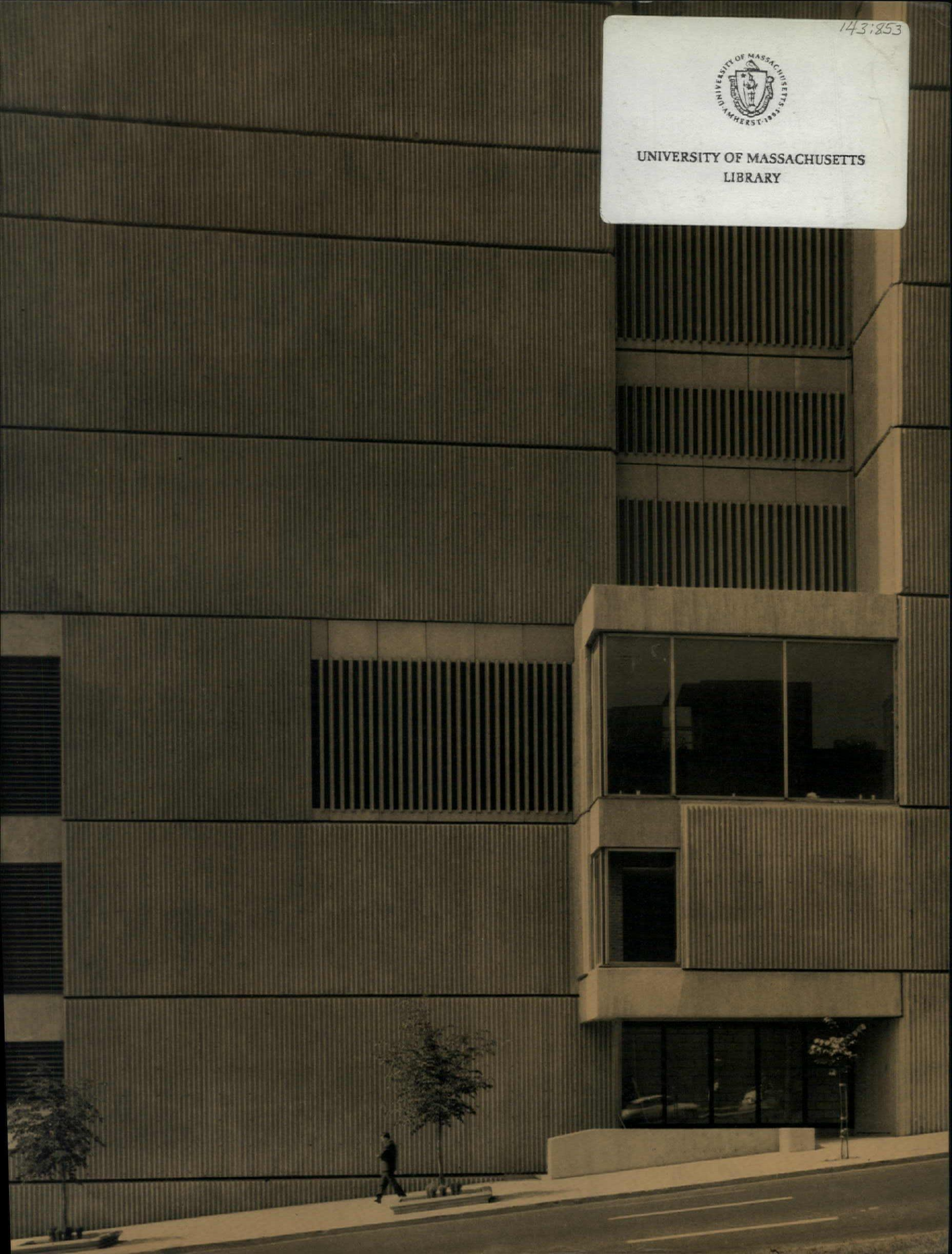


143:853



UNIVERSITY OF MASSACHUSETTS  
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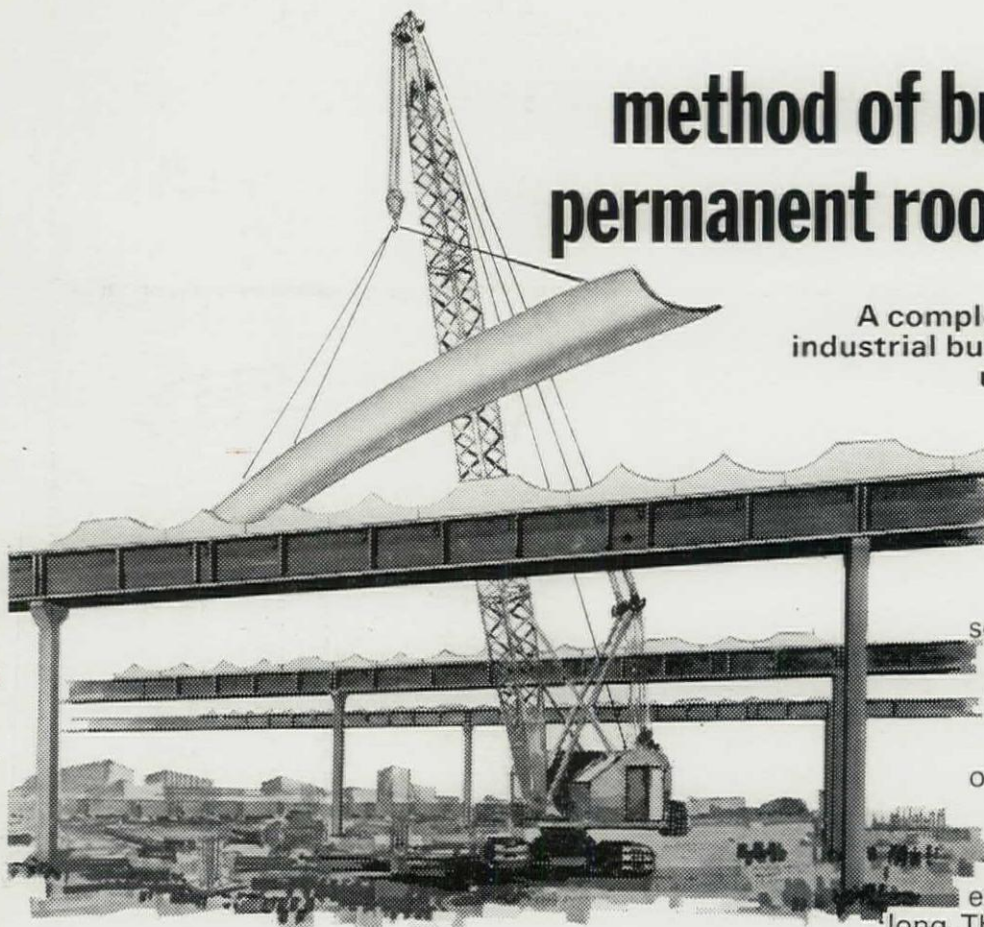


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**the quickest,  
simplest  
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permanent roof over any area**

A completely new approach to modern industrial building methods. They are made under ideal factory conditions.

***the only fully  
prefabricated  
concrete roof***



The unique shell shape has been developed as a rational solution to bridging long spans with a minimum thickness and weight of concrete. Completely functional as well as having aesthetic appeal, the units are beams and gutters in one, and provide their own drainage. Erection is speedy – maintenance costs negligible. Delivery of these smooth concrete shells is virtually ex-stock for spans of 20ft. up to 68ft. long. The units can be placed on a simple superstructure at the rate of 15,000 sq.ft. per day with one crane. The overall result is a low cost permanent structure

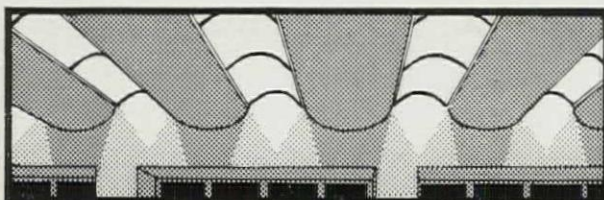
*Let us send you further details of this  
revolutionary industrialised roofing system  
– or ask our technical executive to call.*

**MODERN ENGINEERING (Bristol) LTD.**

Brislington Trading Estate, Bristol 4. tel: 70441

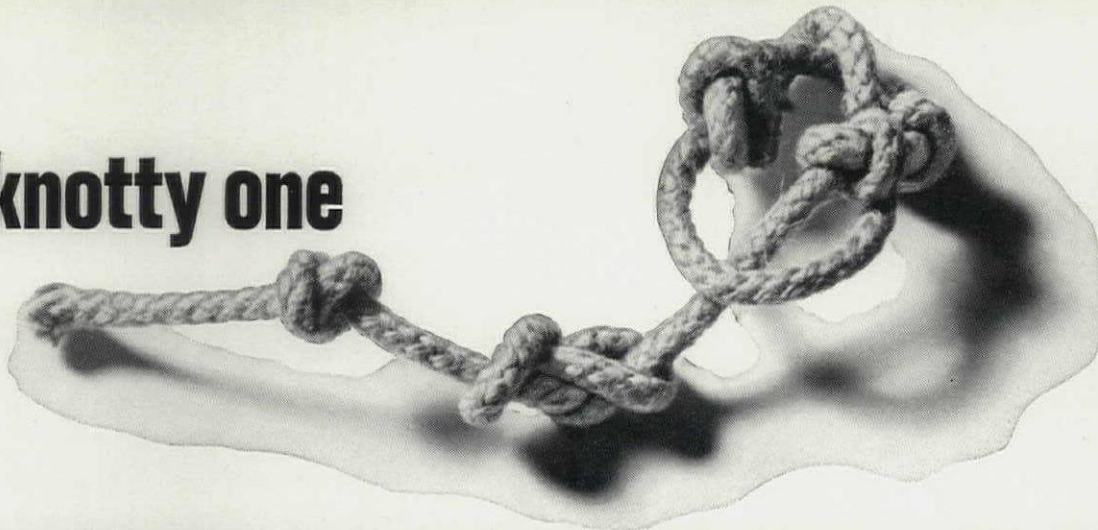
**BUILD THE MODERN WAY**

Pre-cast Concrete Units · Structural Steel · Metal Treatment





## A knotty one

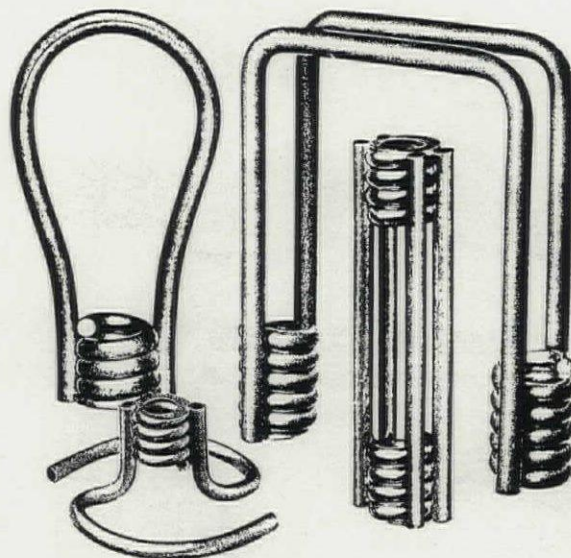


A question of time - how to support floor shuttering so that it can remain in position after pouring, yet allow free passage underneath for other work?

The answer?

### **RAWLPLUG FORMWORK FIXING DEVICES**

Use **Rawlhangers** to support shuttering from the steel beams. This gives free passage below the framework, and any number of floors can be worked on at once. Other Rawlplug Formwork Fixing Devices are Rawlties and Rawloops, used in millions in building and civil engineering. Rawlplug Formwork Devices are part of a complete range of Screw, Bolt and Cavity Fixing Devices to solve every fixing problem swiftly and safely. Free technical advice and literature on request. Or ask for a representative to call.



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# OUT



## **Tender - winning installed costs**

Sidecladding or rooflighting —the ease of handling and fixing Filon, with no glazing bars, adds up to the lowest installed cost.

Profiled Filon matches and nests closely with asbestos cement, iron, aluminium and protected metal profiles. With a natural shadow-free light transmission of 85%, Filon is made in translucent and tinted colours. There are three Grades, G.P., L.F.S., and S.E.

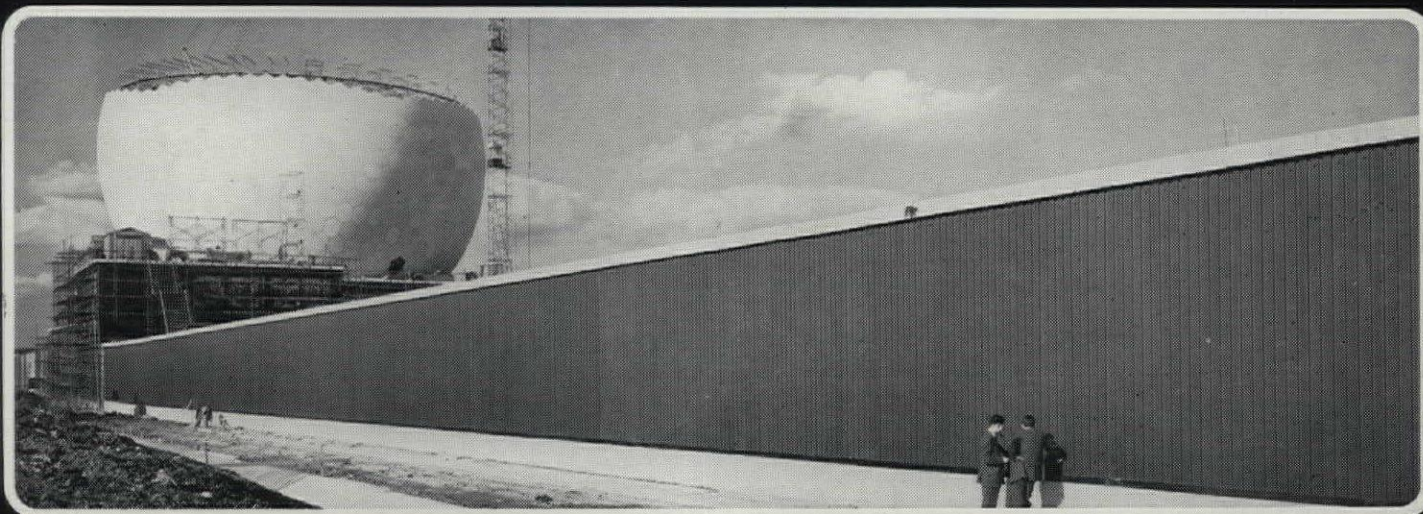
Millions of Filon sheets provide free-light in five continents. It's such a good-looking way of saving money.



# Filon puts itself out in defence of defence

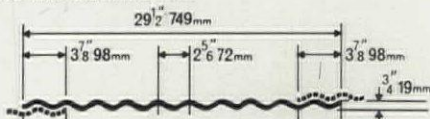
The 180,000 sq. ft. of sidecladding on the ballistic missile early warning station at Fylingdales is Filon—self-extinguishing grade. Its cool behaviour under fire protects this defence installation against flying sparks from heath fires. Shatterproof, Filon will also stand up staunchly to brick-bats, golf balls and catapult missiles launched by unfriendly powers. The pine-green protective colouring blends into the landscape well enough to satisfy the National Parks Commission.

Opaque or light-diffusing, Filon is light, tough and easy to work and fix. It is available in standard lengths and profiles, or in continuous lengths up to 60 ft. That's what makes the installed cost of Filon so attractive.

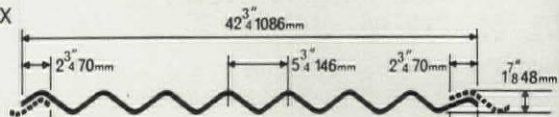


## A SELECTION OF OUR MANY PROFILES

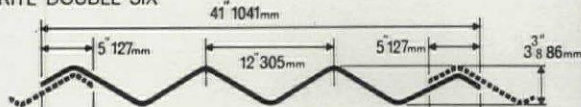
### 3" STANDARD CORRUGATED



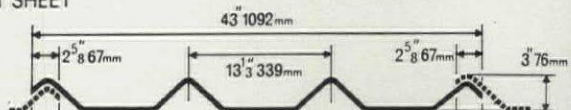
### BIG SIX



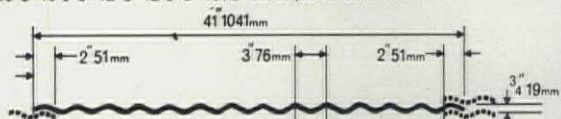
### 'EVERITE' DOUBLE SIX



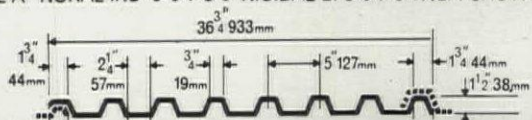
### FORT SHEET



### 8 3: 10 3: 10 1/2 3: 12 3: 12 1/2 3: 13 3: 14 3: (13 3 SHOWN)



### TYPE A NORAL IND 5:6:7:8:9 RIGIDAL LT 5:6:7:8:9. (LT7 SHOWN)



## NEW FILON-L.F.S. GRADE

### (Limited flame spread)

This new grade of Filon can be used for rooflights without restriction. It is designated AC. under B.S.476 Part III and is available to match BIG SIX ASBESTOS Cement profile. It has improved weathering characteristics and costs less than Self Extinguishing Grade. You can readily identify L.F.S. Grade FILON by blue nylon threads embedded in the panel.

**For further information please contact BIP at the address below.**

**FILON**

**B.I.P. REINFORCED PRODUCTS LTD**

Streety Works, Sutton Coldfield, Warwickshire  
Telephone: 021-353 2411

A Turner & Newall Company



# This door

## deserves a second look and gets it

Only the Gliksten Mark 12 Door creates the elegance that helps to sway a sale. It is finished in superb West African Cedar veneers, made by craftsmen under stringent conditions of quality control, and individually wrapped to give complete protection in transit and in storage. When required, the Mark 12 can be matched in pairs or in sets. You can find doors that cost less, but they don't have the Mark 12's looks and lasting quality. The Mark 12 does not warp when the temperature rises, and never loses its polish and smooth sophistication.

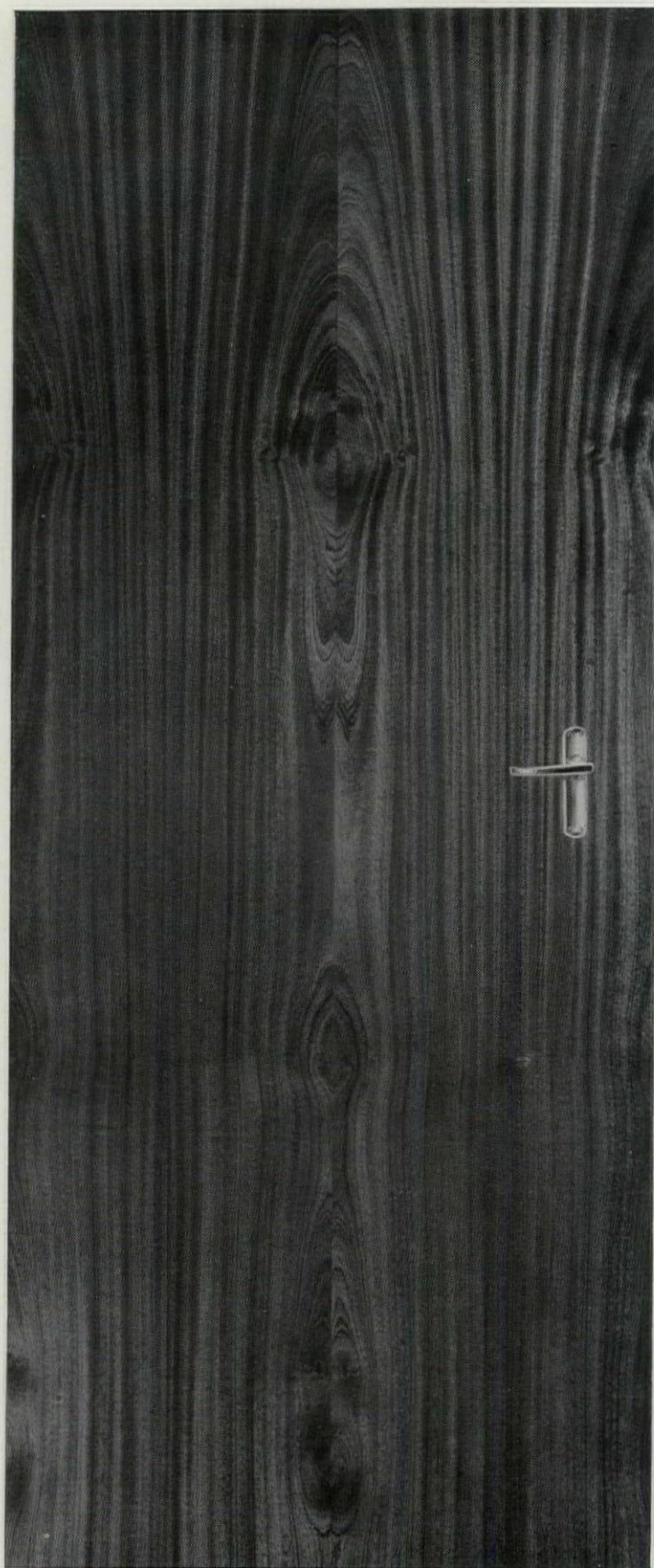
The Gliksten Mark 12 door and the famous "Silkstone" door, which is the best door in the world for painting, can also be supplied as complete Glikfit Door Units, with softwood frame, hardwood threshold, "Yale" latch, and rustproof butts.

Both these finishes are also incorporated in Gliksten "Pivadors"—space-saving folding doors for built-in cupboards and wardrobes. They glide easily on spring-loaded pivots and run in an overhead track, eliminating the need for a bottom track without loss of rigidity.

For full details of these and other doors in the Gliksten range, contact:

**GLIKSTEN DOORS LIMITED**

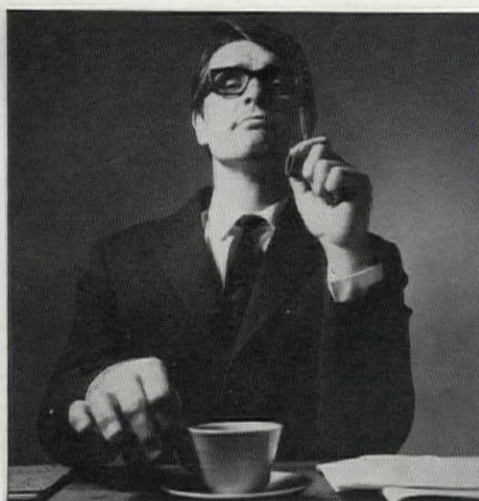
Leads Road, Hull. Telephone: HULL (OHU2) 71291/7





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“



”

Quotation from Briggs

When the architect presses the button, he wants action — not excuses about labour, long-haulage or short supplies. These are our problems and we keep them to ourselves. We have the best men, and plenty more in training. We have 14 local depots and ample facilities. We make all our own materials. We even refine our own bitumen. And when a new problem arises, like Vauxhall Motors 86,000 sq. yds. roof to be laid in 14 weeks, we invent new ways to solve them. But don't quote us. We'll quote you.

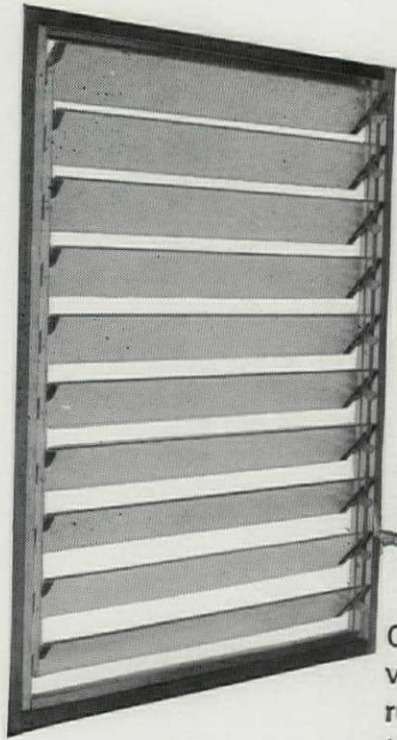
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and for cladding too  
Bitumetal roof decks/Built up roofing/Colorclad

William Briggs & Sons Limited Registered Office/East Camperdown Street, Dundee. Telephone: 82211  
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# ALUMINIUM LOUVRE WINDOWS

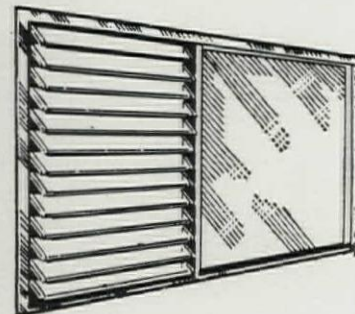
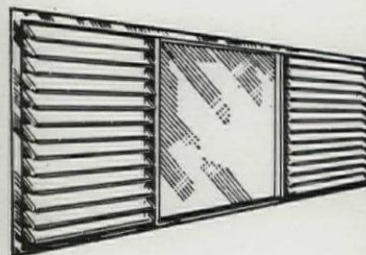
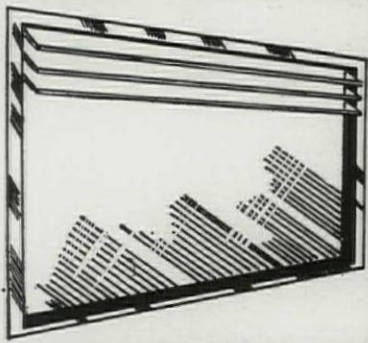
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(Tick where applicable)

Name \_\_\_\_\_

Address \_\_\_\_\_

A.R.3



**adamsez 'meridian two'** follows up their Design Award winning 'Meridian one' range

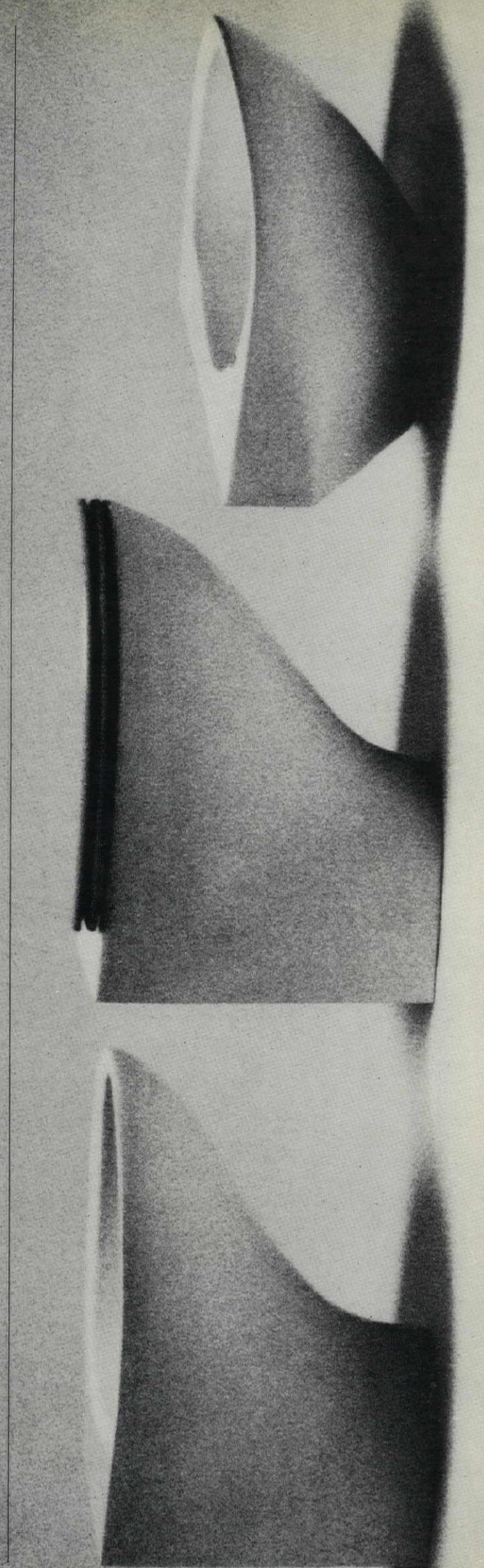
**'meridian two'** is a compatible suite of basin, bidet and WC in vitreous china, designed to a 10 cm module

by Holscher and Tye MAA/ARIBA in collaboration with Kenneth Adams MA Dip Fine Art (Slade).

**adamsez 'meridian two'** is now on display at the London Design Centre

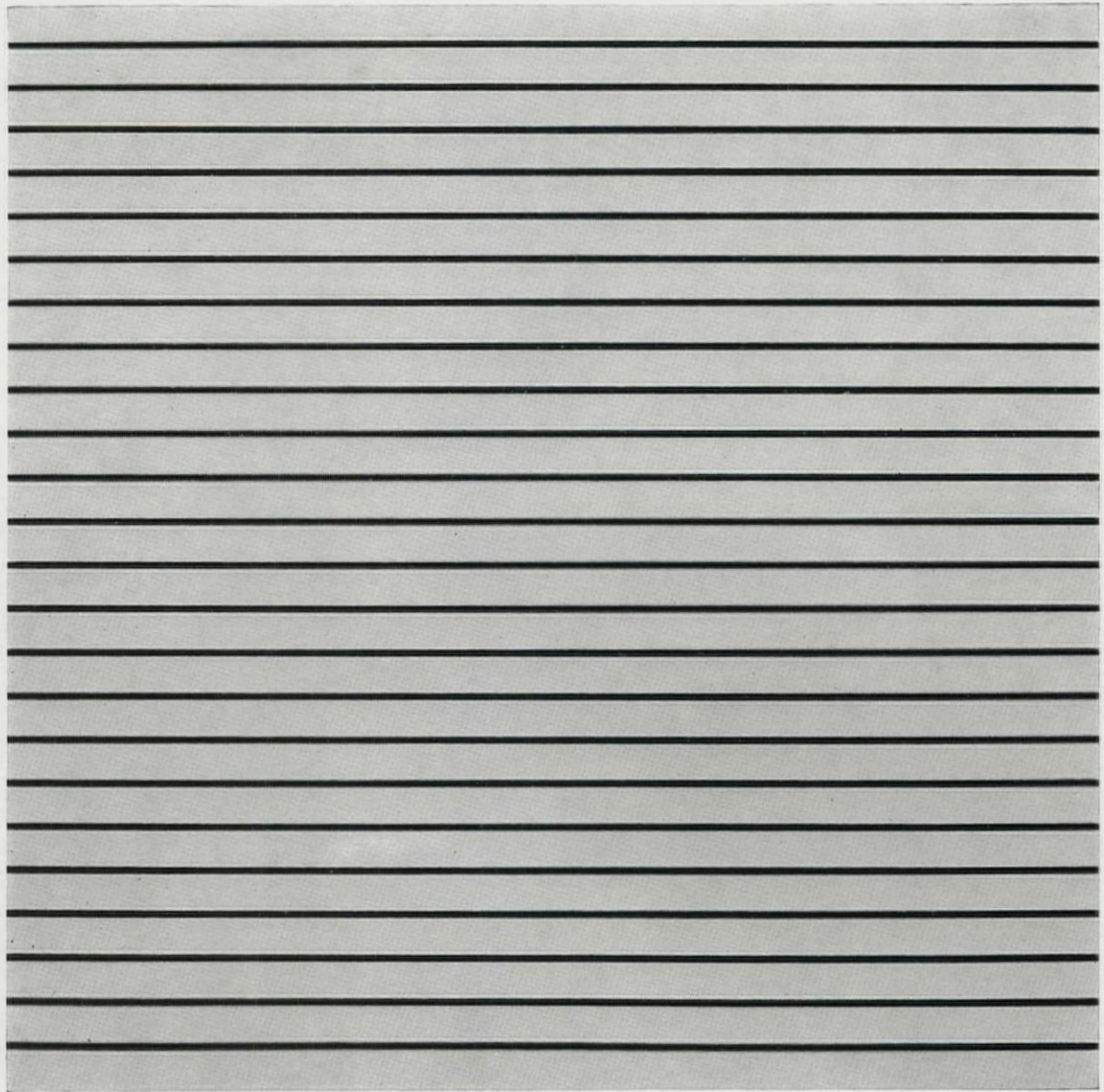
**'meridian two'** is readily available through leading builders' merchants.

Adamsez Limited 75 Victoria Street London SW1 and Scotswood-on-Tyne





# "You know Slotac.....



Design leaders in every field search out individuality in the products they use. In the field of ceiling design Slotac forged a new look. Crisp design, linear, wood fibre tiles and sheets. Slotac—functionally efficient as a sound absorption material attuned to modern architectural thinking. Slotac earned its reputation by usage. Now it is one of a number of Treetex original designs. For example .....

**Treetex Acoustics Ltd 8 Guilford Street W.C.1 Telephone: 01-242 5919**

# **Treetex**



# yet 'habitat' chose Glacier!"



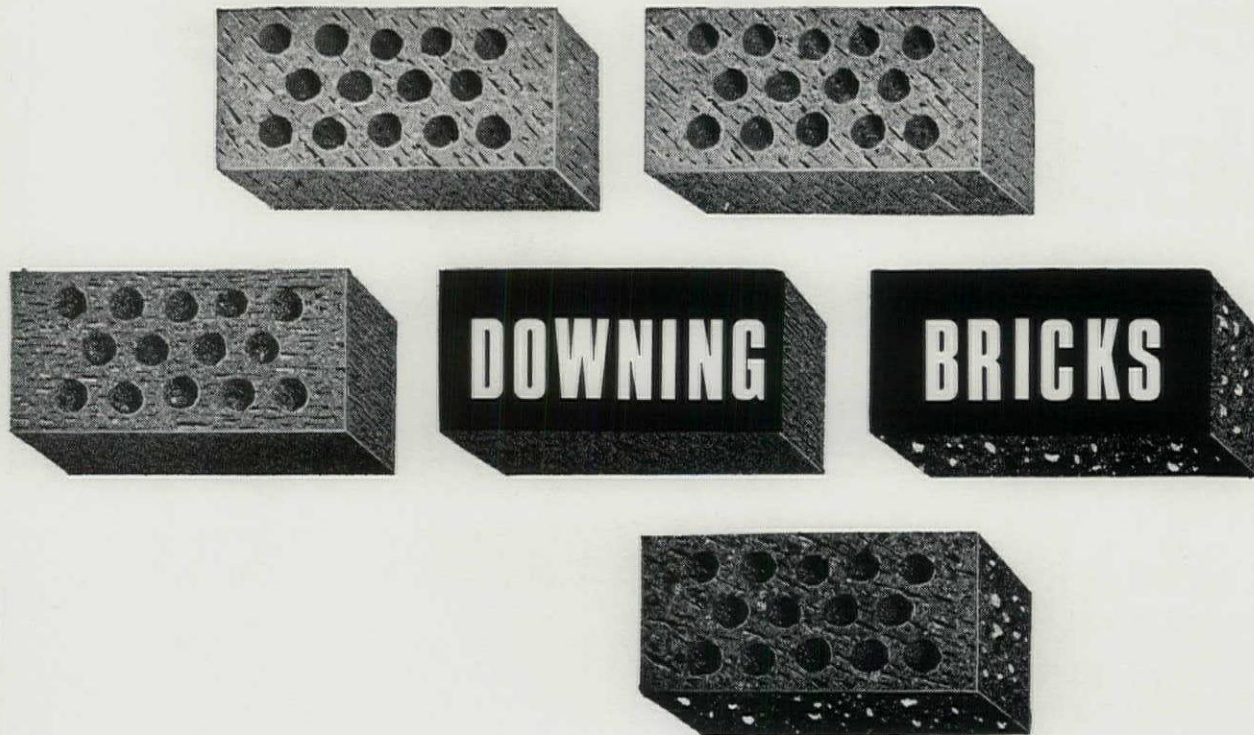
'Habitat' for Tottenham Court Road chose 'Glacier'—deep textured—of high quality incombustible mineral rock wool fibres—excellent sound absorption characteristics. Glacier is the first tile which provides a fully monolithic ceiling—an organic look without apparent joints or linear direction. Habitat, like Treetex, are 'design aware'; they specified something special. SfB technical sheets are in your Barbour Index, or please use the journal's Reader Enquiry Service for further information.

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## Treetex

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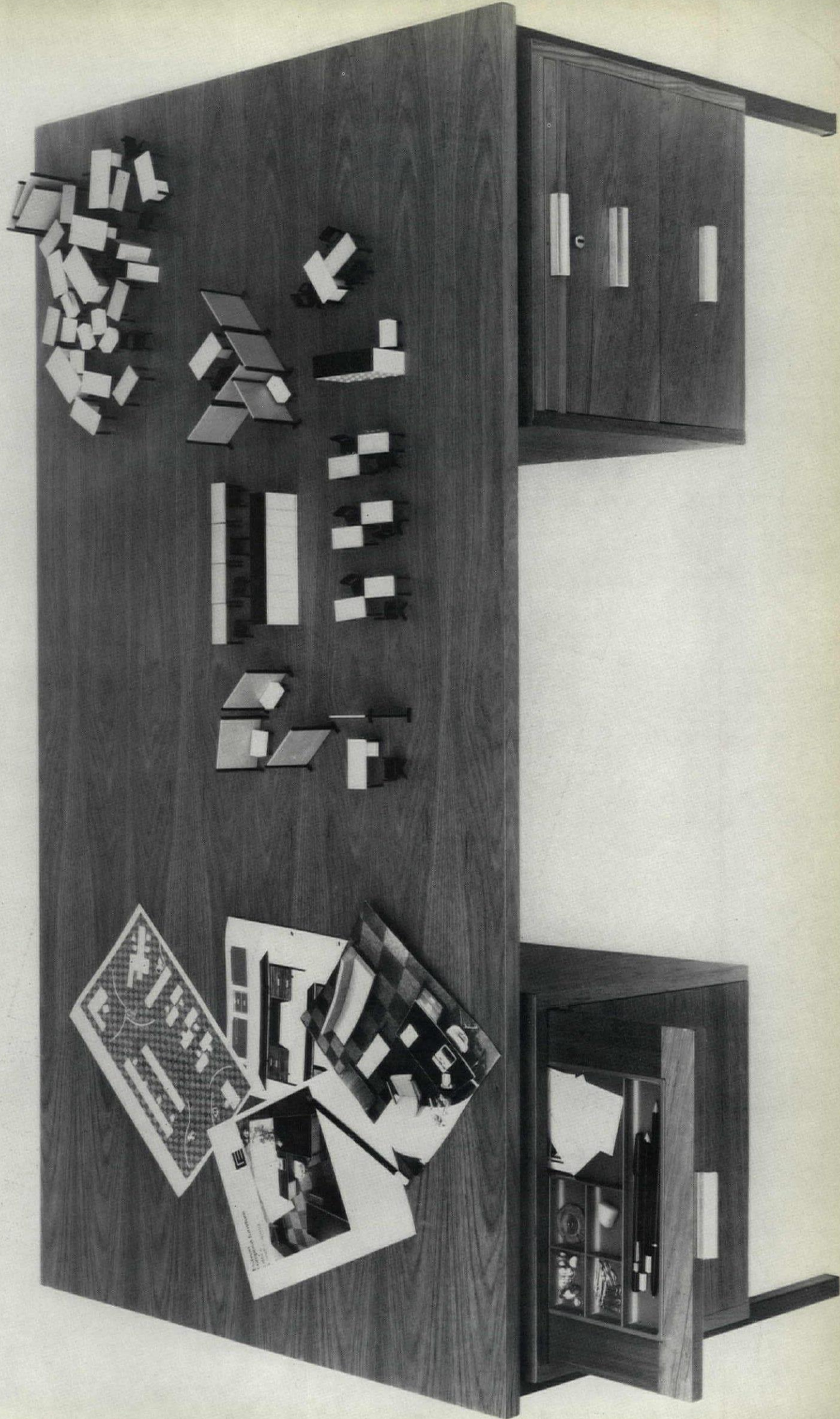
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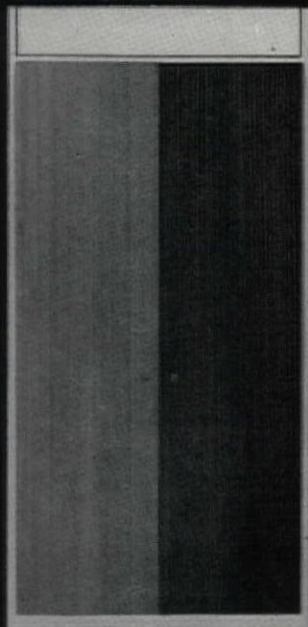
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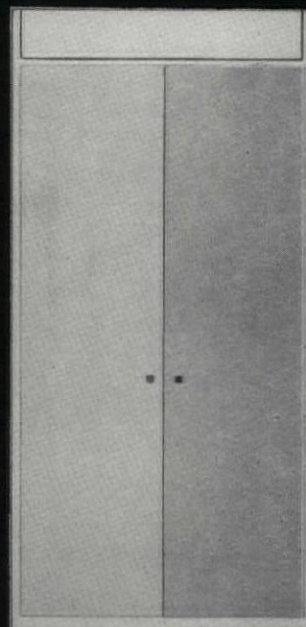


## study bedrooms and old peoples homes



oak

dark maple



eggshell  
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**CONSORT + one**  
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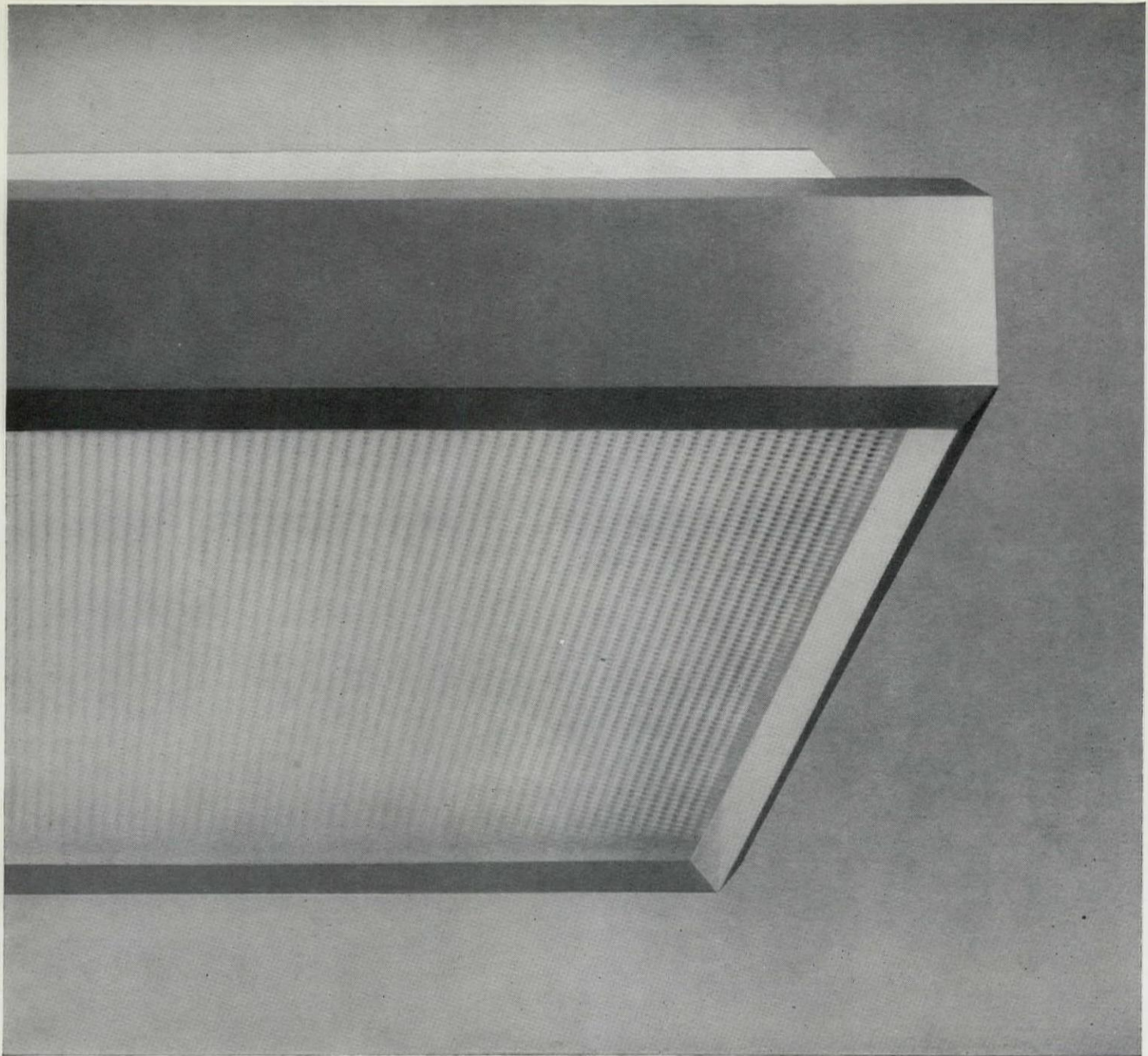


This is Gibbons lever handle number B4853. It is simple, well proportioned, easy and pleasant to use. It has style, not styling; the sort of design that transcends fashion. Please ask Gibbons for details of this and others in a distinguished range.

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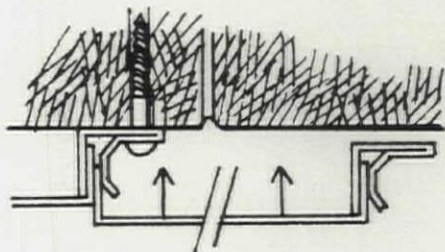


*Barbour Index (63)*



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sq ft

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*Burgess*

**INTERIOR WALL  
CLADDING PANELS**

WP/C



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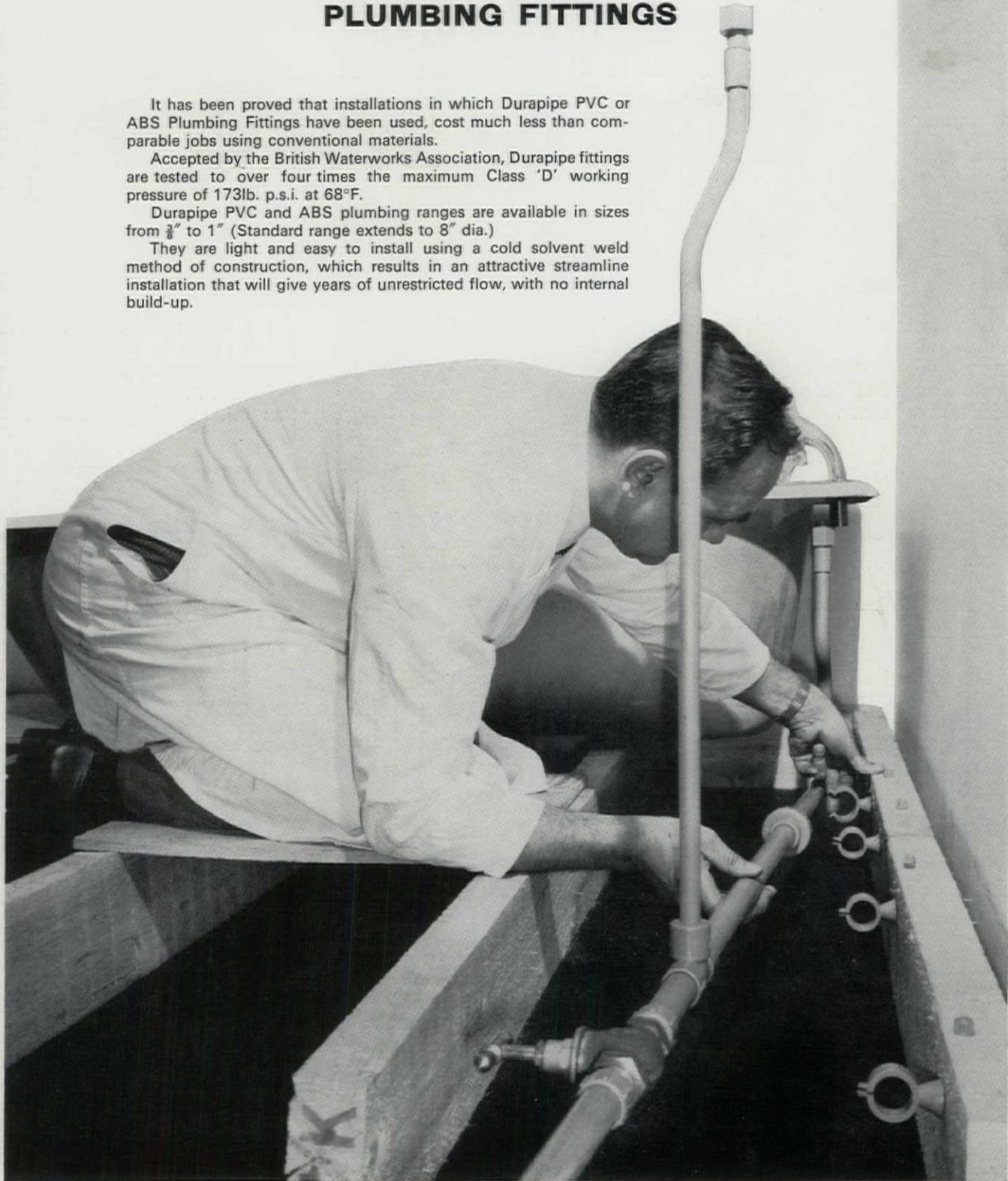
## PLUMBING FITTINGS

It has been proved that installations in which Durapipe PVC or ABS Plumbing Fittings have been used, cost much less than comparable jobs using conventional materials.

Accepted by the British Waterworks Association, Durapipe fittings are tested to over four times the maximum Class 'D' working pressure of 173lb. p.s.i. at 68°F.

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They are light and easy to install using a cold solvent weld method of construction, which results in an attractive streamline installation that will give years of unrestricted flow, with no internal build-up.



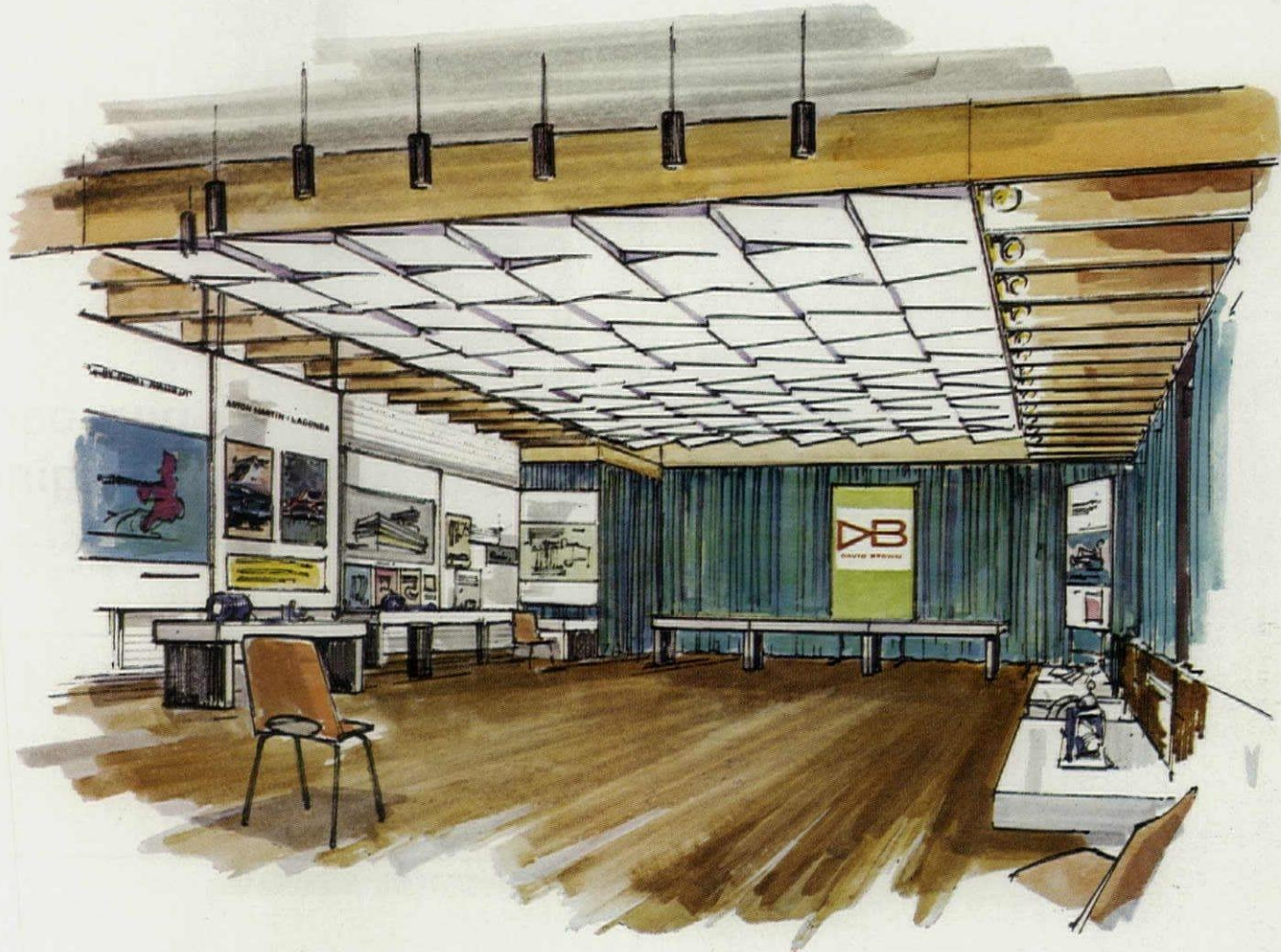
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## 96 **PICCADILLY** LONDON

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**GROUP**

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**INTERIOR DESIGN AND FURNISHING DEPARTMENT**

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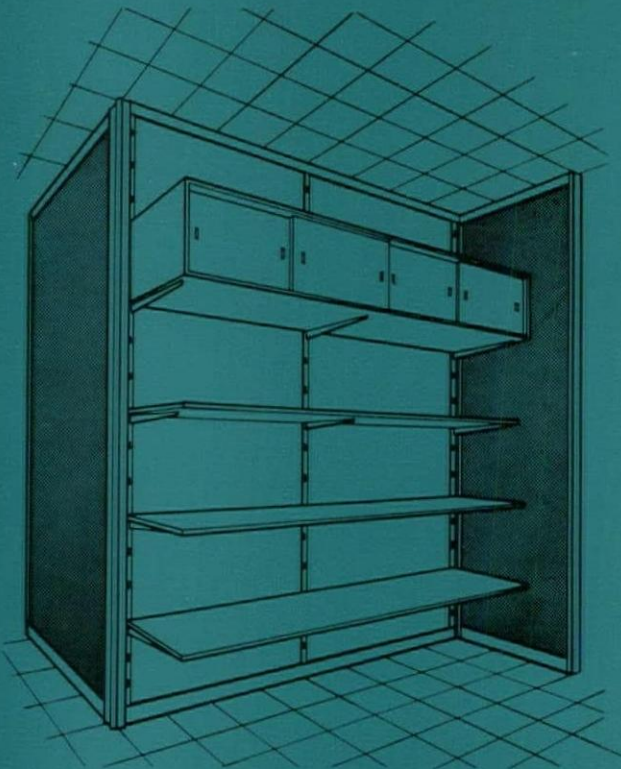
# problem

Combining all the normal features sought in partitioning performance — Dixaplan also provides a 'hook-on' facility for shelving and furniture within the standard design.

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Please write for complimentary copy of our twelve page Information Booklet detailing Fire Regulations applicable to Partitions & Ceilings.

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## Dixaplan

Acoustic Partitioning & Ceilings

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Telephone: 01-686 6633

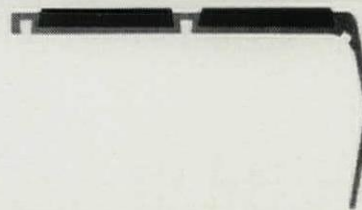
# GRADUS

## all purpose stair edging

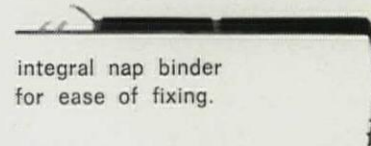
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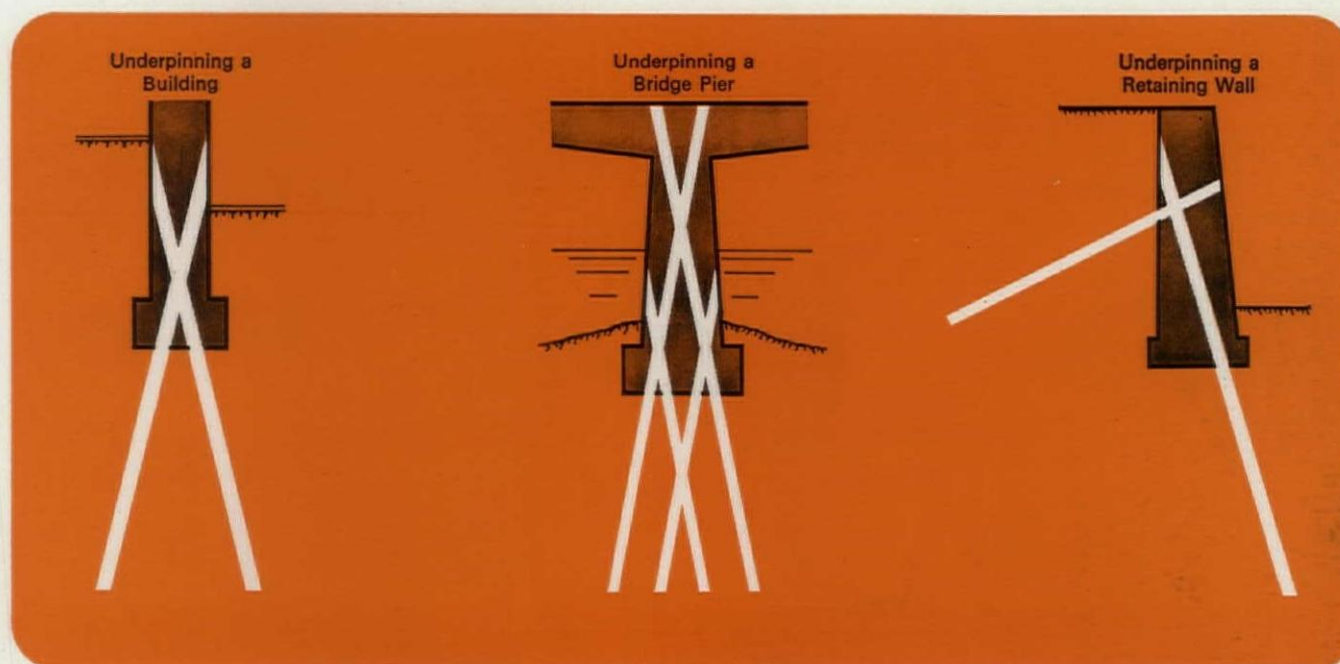
$\frac{3}{8}$ " range

Full details from  
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The carpet is 'Woodland Moss' by JAMES TEMPLETON & CO. LTD.



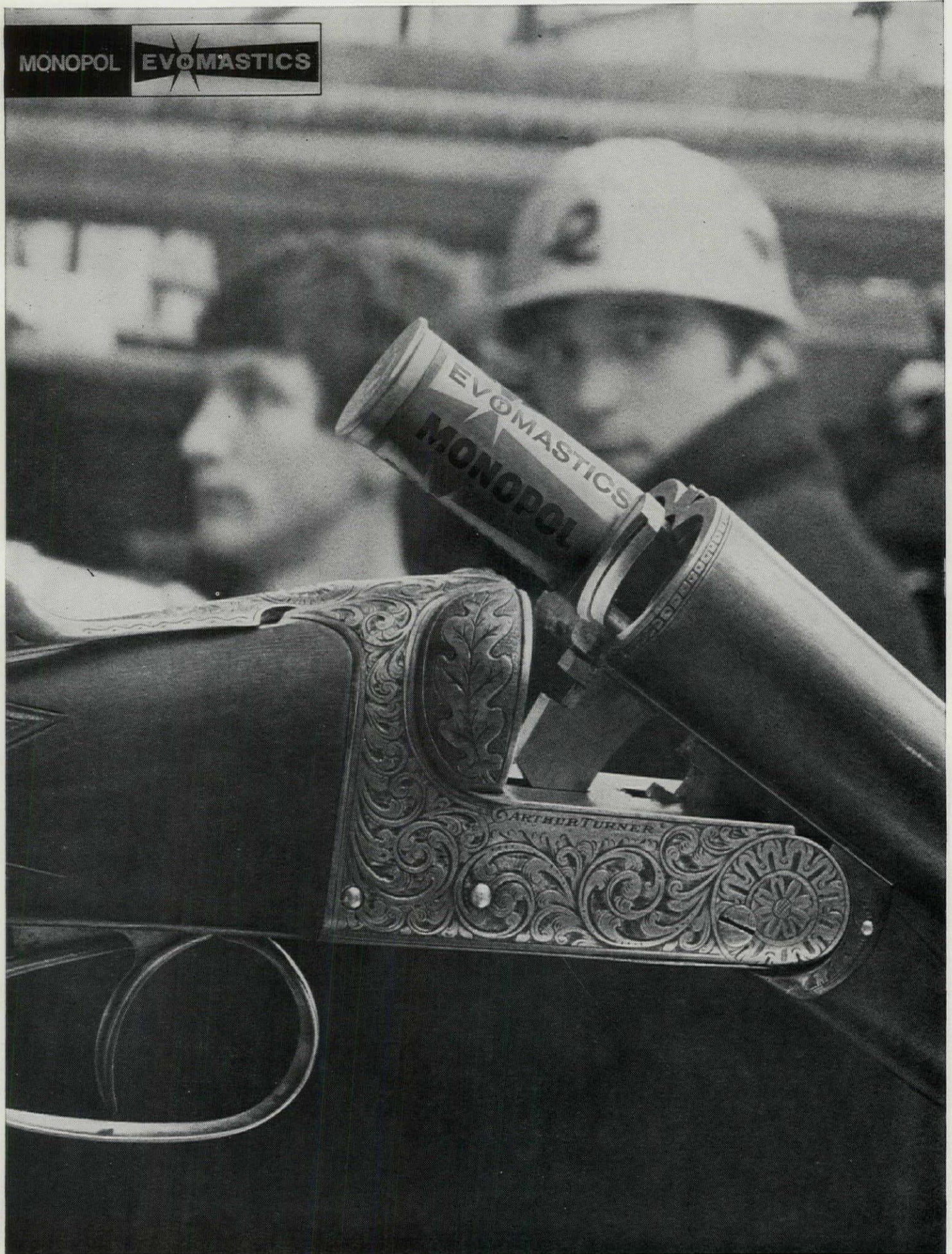
**Alberto Galardi**

### New Italian Architecture

This is the first book to be devoted to Italian architecture in the 1955-65 decade. Recent Italian work, highly individual and talented, has influenced architects all over the world, and is as notable for its engineering achievements as for its aesthetics. With a brief historical introduction, this book traces the recent line of development from the older generation—Albini, Ponti, Rogers, Figini, Gardella, Polloni, Zanavella, Nizzoli—to such younger architects as Mangiarotti, Castiglione, Morandi, Vigano, Zanuso, Fiocchi, and Bernasconi. 10×8½ in. 208 pages, illustrated throughout. 90s. net, post 4s. 6d.

**The Architectural Press**, 9 Queen Anne's Gate, London, SW1









# Evomastics kill a big grouse with one new cartridge

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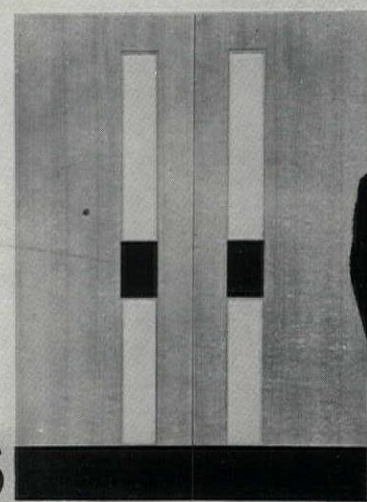
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## some are more special than others





# Steel DESIGN TO BEAT CORROSION

New ideas and advanced techniques in corrosion control give modern steel even greater versatility. The following pages feature some examples of the profitable application of latest design ideas and developments in this field. **British Steel Corporation**



**Design to beat corrosion—at the drawing board stage.** A highly effective means of combating corrosion is to 'design out' all features likely to promote it. Rounded contours and corners are preferable. Crevices which trap moisture and dirt should either be avoided completely, filled by welding or use of mastic paste. Provision of adequate drain holes can also eliminate collection of water and dirt. Joints and fastenings can be arranged to give clean uncluttered lines. Welded-in bulkheads at ends of box-section girders inhibit internal corrosion. Versatile tubular steel in the form of Circular, Square, or Rectangular Hollow Sections, can help the designer to avoid sharp edges which are prone to damage and cannot be evenly coated for corrosion protection. Suitable maintenance systems to achieve maximum economical service life must be planned at the design stage and all surfaces needing future attention should be readily accessible.

**New steel products and better coatings.** 'Pre-finished' corrosion-protected steel sheet with p.v.c. laminate, plastic

or paint colour-coatings can now be easily formed into products that need no expensive finishing. Available coated on both sides and also pre-galvanized, these pre-finished sheets are economically produced on continuous process lines and are now available in *any practical length*. In steel sheet cladding and roof decking applications, erection is thus speeded and costly site painting eliminated. The physically strong decorative coatings employed, which include alkyds, acrylics, p.v.c. and other high adhesion paints and plastics, provide excellent long-life barriers often equivalent in thickness to *seven normal coats of paint*. Dip coating of steel products also imparts tough, smooth adherent nylon, p.v.c. or polythene surfaces to combat rust or chemical attack. Modern calcium plumbate paints react to create an excellent bond when used on galvanized or other zinc coated steel surfaces. Other paints based on coal-tar epoxides, polyurethane, vinyl co-polymers, Neoprene or Hypalon, can also be used to give enduring protection and decoration. And in the finishing of large steel structures, the excellent barrier properties of micaceous iron oxide are also now being exploited.

**Special steels and anti-corrosion measures extend service life economically.** Various grades of Stainless Steel, and low-alloy steels such as Cor-Ten, can often be employed very economically today, to combat corrosive attack and maintain good appearance. They are particularly suitable where protective coatings are impractical or when regular maintenance attention will be uneconomic. Their high-strength properties are also useful in design. Higher first cost will often be well justified by long-term reduction of maintenance costs. Important anti-corrosion methods and steel finishes that also assist good design, by resisting rust and extending service life, include highly effective hot-dip galvanizing, vitreous enamelling, spray-coating or electro-deposition of anodic metals such as zinc or aluminium. These methods give mild steel suitable rust-protection for a wide range of uses and meet a variety of different service conditions.

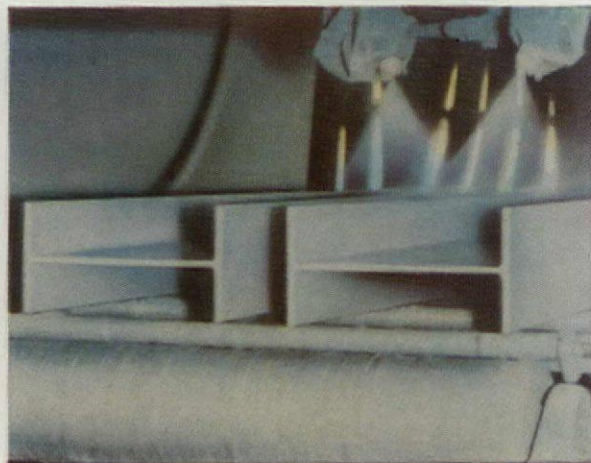
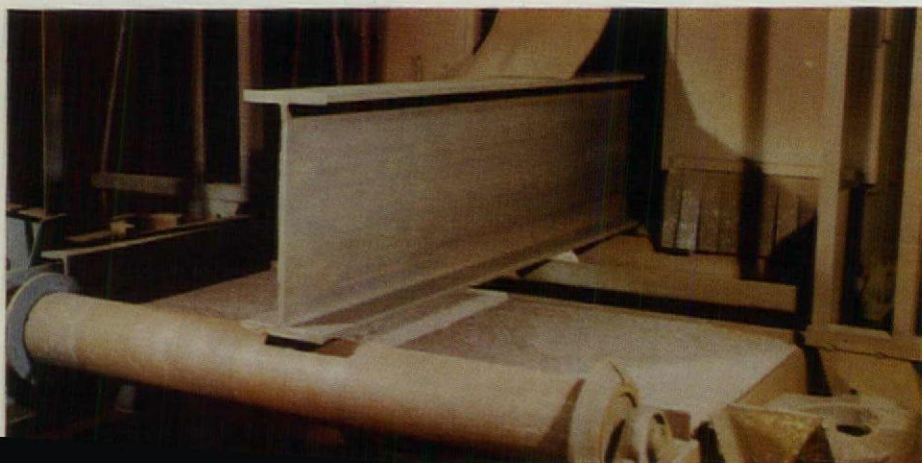
**Surface preparation—key to top protection.** Effective life of protective schemes is increased five-fold when mill-scale and residual rust are first thoroughly removed from steel by blast-cleaning or pickling rather than by ineffectual weathering and wire-brushing. Today, blast-cleaned and shop-primed steel plates and sections can be supplied by rolling mills, steel stockholders and fabricators. The quick-drying prefabrication primers, sealing, and rust-inhibiting coatings now used permit rapid handling, economical and efficient shop treatment of the steel by automatic plants under ideal, controlled conditions. The primed steel can be safely flame-cut and welded.

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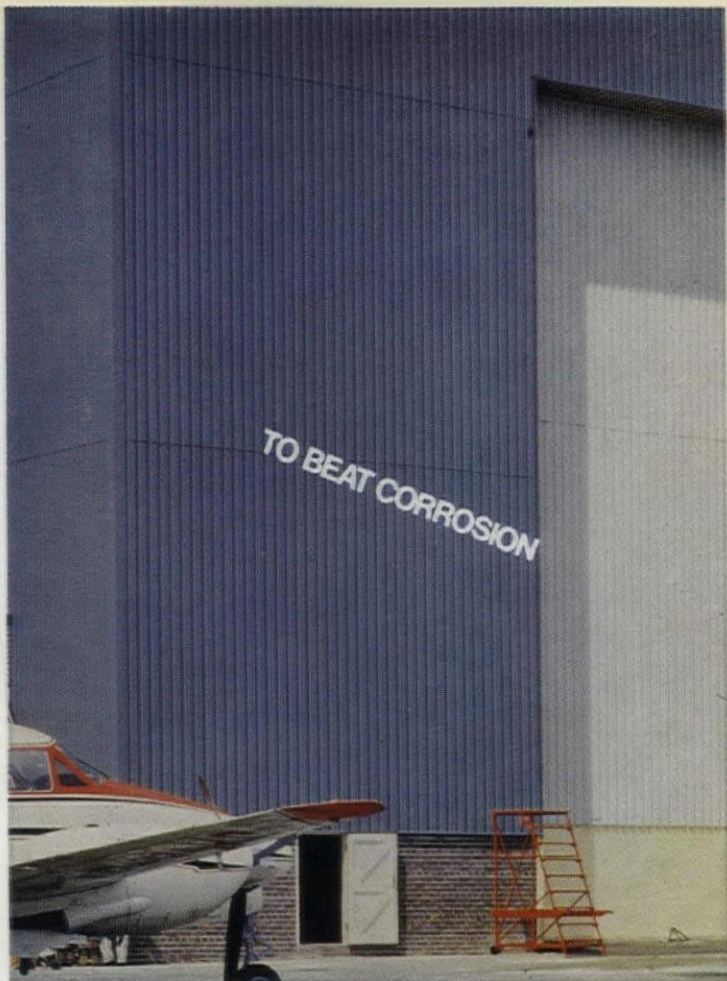
**Prefabrication Primers for rust-free steel.** *Molecular reactive coating is sprayed on to an ideal roughened, 'clean' steel surface immediately following the abrasive blast cleaning process. Metal coating in direct contact with steel acts as a sacrificial anode, and gives cathodic protection. Special anodic or stainless steel sealing coats applied later give long-term protection, under corrosive conditions.*

## Modern answers to problems of corrosion mean more scope for imaginative design in Steel

New ideas and improved techniques in corrosion control, special steels and newly-developed steel products together provide more efficient, cost-saving answers to every type of corrosion problem today. Developments and anti-corrosion measures described in these pages are succeeding dramatically in giving longer useful service life to steel components, products and structures, together with the advantages of lower maintenance costs or the elimination of maintenance altogether. Designers and manufacturers are profiting by the steel industry's investments in research and new plant. The results—in better defences against corrosive attack and rusting—yet further extend the potential uses of steel through increasing its durability and scope for imaginative design.

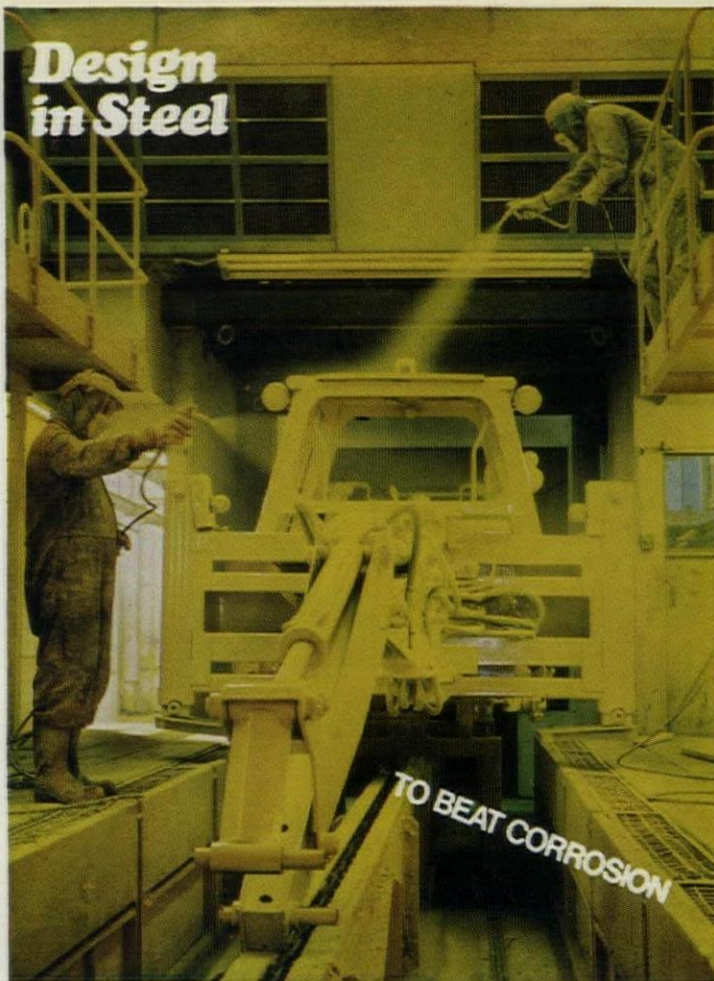






Long-life colour-cladding 'Colour Galbestos' is one of the versatile steel sheet architectural cladding products now giving attractive maintenance-free colour protection to modern buildings. Steel is degreased, pickled and passed through molten zinc. Pure asbestos felt is immediately pressed onto both sides, impregnated for additional strength and corrosion-resistance before colour-coating with modified polyester resin.

Corrosion-resistant fasteners which ensure freedom from plant failure and unsightly rusting, are well worth a little extra in cost. Improved forging techniques have actually reduced cost of many types in Stainless Steel. Special fasteners employing insulating gaskets, washers or sleeves prevent bi-metal corrosion.



**Design  
in Steel**

Better rust-protection. 'Zintec' electro-zinc coated mild steel sheet gives excellent paint adhesion for lasting finish, plus protection of hidden parts. Coating withstands severe forming, prevents creeping rust and eliminates the need for pickling, phosphating and chemical pre-finishing.

Architectural 'bare' steel. High strength low-alloy 'weathering' steels such as Cor-Ten offer high resistance to atmospheric corrosion. A distinctive decorative surface patina develops and darkens with time into a dense coat of purplish-brown colour. The tough oxide film forming on bare steel fenders and cladding sections of this multi-storey car park at Doncaster, eliminates all need for future maintenance.

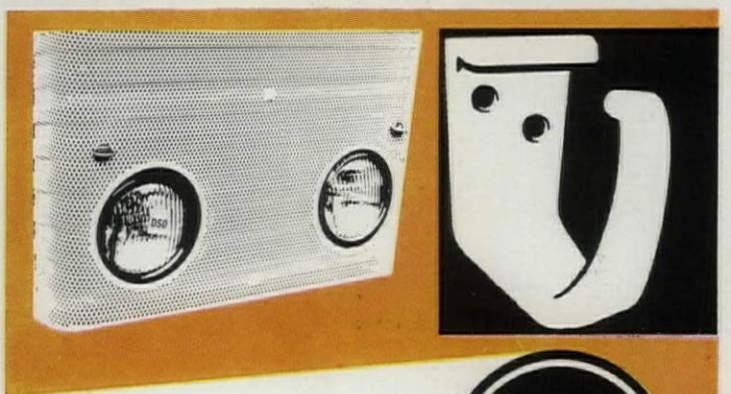
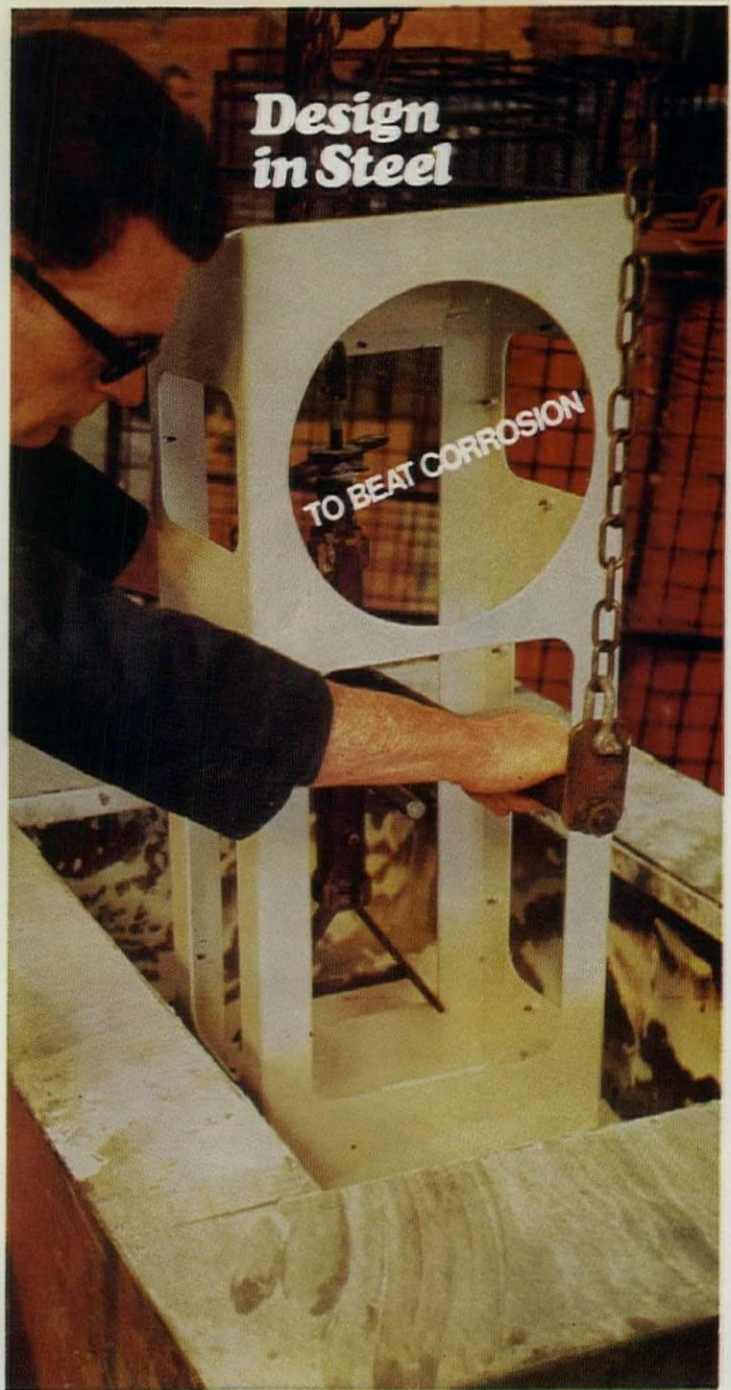






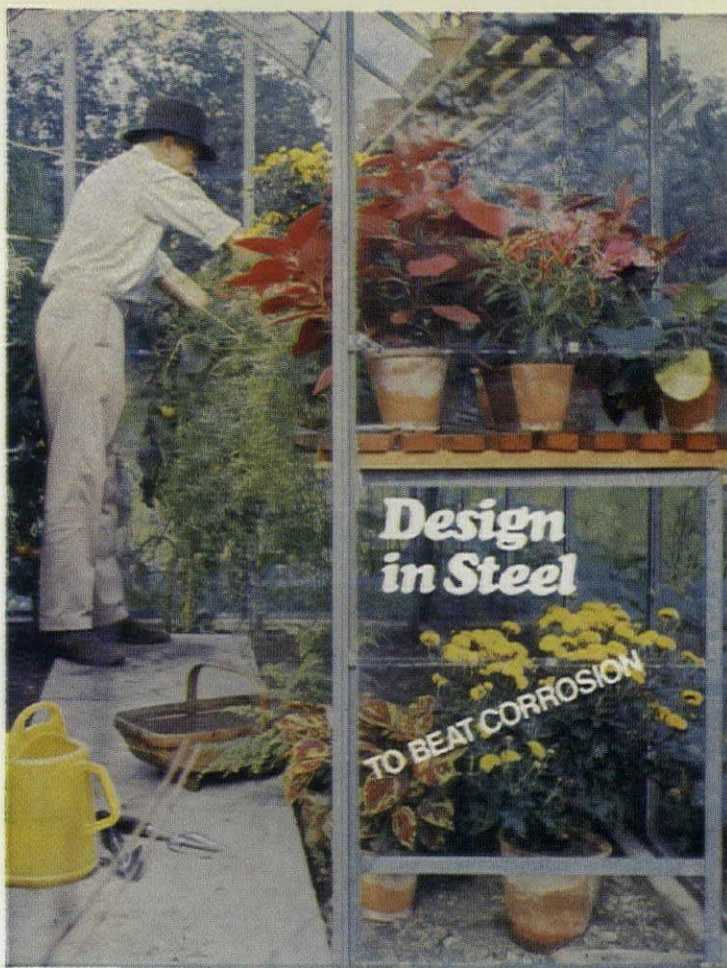
**Steel Sheet**—strong, light, versatile, corrosion-protected. Hot-dip galvanized steel sheet is one of the cheapest and most versatile self-protected sheet materials available to industry. Easily formed and fabricated. Additionally coated with plastic or paint colour finishes it gives even greater resistance to corrosion, and cuts maintenance costs.

**Corrosion-protected steelwork.** Standard steel-framed industrial buildings and special fabricated structures alike can now have the long-term corrosion-protection and maintenance-saving advantages which initial blast-cleaning and anodic metal priming of basic steel members provide. Welding and flame-cutting of the treated steel presents no difficulties.



**Plastic-coated—for good.** The latest thermoplastic coating techniques permit engineers to use the strength of steel with the excellent decorative, wear and corrosion-resisting properties of special coatings. Steel traffic bollard above is nylon dip-coated for long maintenance-free service. P.V.C. dip-coated roof gutter bracket and tractor grille combine strength with long-term corrosion resistance. Steel tubes with continuously extruded HD polythene sheathing, are ideal as maintenance-free signposts.





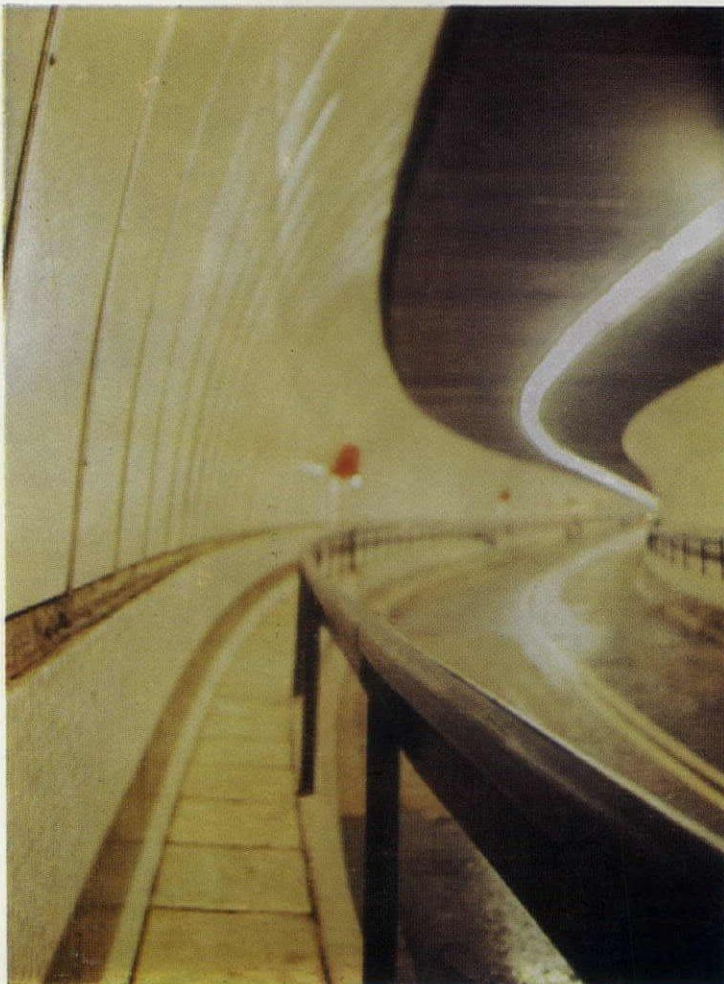
**Safeguarding appearance and strength.** Galvanizing provides highly efficient, consistent corrosion protection—and usually at the least unit cost. Steel window-frames and greenhouse components are typical fabricated steel products hot-dip galvanized for long maintenance-free service. Modern dipping plants with high throughputs can also handle large structural steel components.

**New vitreous enamelling techniques and special steels** mean more economic production of strong, light pressed steel products with tough colourfast hygienic glazed surfaces, resistant to severe corrosive attack. Porcelain-enamelled steel panels lining the new Tyne tunnel resist traffic fumes, are easily cleaned and held in pvc-coated steel channelling so that usual costly tunnel maintenance is eliminated.



**Stainless steel: good design policy.** Good design must aim to keep maintenance to a minimum. Stainless steel needs no special attention other than occasional cleaning, is ideal in high-rise architectural projects. Cover—Britannic House, London, headquarters of the BP Group of Companies. Stainless steel curtain walling and mullion cladding in highly corrosion-resistant 18/10/3 quality. Above—Stainless steel windows in multi-storey Council flats at Barbot St., Edmonton, will eliminate costly painting.

**Galvanized for 'Rolls-Royce' performance.** To combat corrosion and maintain vital structural strength over this superbly-engineered car's considerable life, some 150 pressings of hot-dip galvanized steel sheet are used for underframe parts and reinforcements. The new 'Silver Shadow' is the first Rolls-Royce with body of unitary construction.





## TO COMBAT CORROSION IN HOSTILE ENVIRONMENTS

The steel industry is meeting growing demand for 'clean steel'—blast-cleaned and ready-primed. For aggressive conditions, such as those met by marine structures, the shipyard practice of shot-blasting and immediate application of a suitable prefabrication primer to cleaned steel, is particularly desirable. Six basic types can at present be specified: Zinc rich epoxy; Extended zinc epoxy; Zinc silicate; Aluminium epoxy; Red iron oxide epoxy; Vinyl etch primers. The new BS Code CP 2008 outlines useful protective schemes for fully or partly immersed marine structures, including the vulnerable 'splash zone'. Cathodic Protection Systems also counteract electrolytic action of rusting by impressed current or sacrificial anodes.



## Design in Steel

**REFERENCES** Cover ☐ Stainless steel curtain-walling and mullion cladding, 'Britannic House', London, fabricated by Morris Singer & Haskins, Ltd., Basingstoke. Architects: Joseph and F. Milton Cashmore and Partners, London, E.C.4 **Inside** ☐ Automatic blast-cleaning and priming of steel by Sanders & Forster Ltd., London, E.15. Prefabrication primer by Metalife Limited, Harrogate ☐ Greenhouse by The Crittall Manufacturing Co. Ltd., Braintree ☐ 'Silver Shadow' body parts in galvanized steel sheet by Rolls-Royce ☐ Tyne Tunnel porcelain-enamelled steel lining panels by Escol Panels Ltd., London ☐ Stainless steel windows for London Borough of Enfield, by Drawn & Rolled Sections Ltd., Bridgend, Glam. ☐ 'Metalife Clad' steelwork for Joseph Sankey & Son Ltd., designed by W. S. Atkins & Ptnrs, Epsom, and fabricated by Modern

Engineering, Bristol ☐ Dip-coating of steel products by Plastic Coatings Ltd., Guildford ☐ 'Colour Galbestos' cladding by H. H. Robertson (UK) Ltd., Wirral, Cheshire ☐ Stainless steel fasteners, Fredk. Mountford (Birmingham) Ltd. ☐ 'Selascrews', '-nuts' and '-caps' by The British Screw Co. Ltd., Leeds ☐ JCB excavator with Zintec electro-zinc coated steel sheet cab and engine cover, by J. C. Bamford Excavators Ltd., Uttoxeter, Staffs ☐ Steel-clad multi-storey car park construction supervised by Doncaster County Borough engineer and planning officer, P. Greaves, CEng., MIMun, E. AMI Struct. E. AMICE, AMIWE. Designed and erected by John Mowlem & Co. Ltd., Westgate House, Ealing Rd., Brentford, Middx. ☐ BP's North Sea Drilling Rig 'Sea Quest', built by Harland & Wolff Ltd., Belfast.

**For Expert Advice on your corrosion problem**  
The British steel industry provides a valuable advisory service to industry on corrosion prevention and control, through the Corrosion Advice Bureau, Dept. X, British Iron and Steel Research Association, 140 Battersea Park Road, London SW11. Tel: 01-622 5511.

**Valuable aid to correct practice**  
'Protection of Iron and Steel Structures from Corrosion', BS Code 2008—an important new publication now obtainable from the British Standards Institution, Newton House, 101-113 Pentonville Rd., London N1. 205 pages. Price 42/-.



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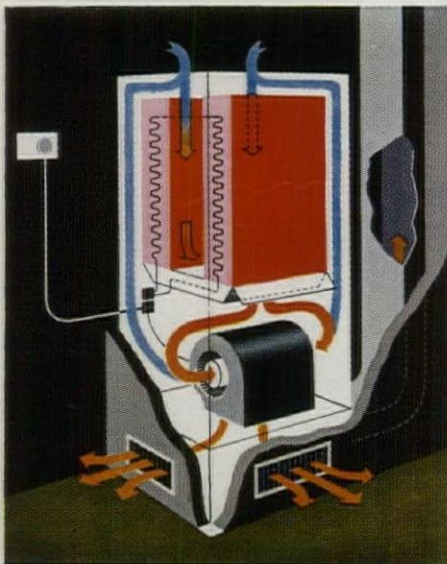


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House purchasers become really enthusiastic when they find a property fitted with Electricaire Central Heating. You've only to point to the fact that it runs on half-price electricity . . . show them the neat outlet registers . . . tell them about the trouble-free running and simplicity of control . . . and you've as good as clinched the sale. Electricaire—fits easily into your existing plans and has so many advantages it enhances the value of your houses. Electricaire—electric warm air central heating—consists of a central thermal storage unit in each house or flat. Units vary in size according to output required, but a standard unit can fit into a space a little over 2 feet square. All units heat

*A typical Electricaire unit*



up on off-peak electricity. A built-in fan, which can be manually or thermostatically controlled, delivers warm air whenever required and a boost provides for a rapid warm-up.

A thermostat in one of the main rooms controls the air temperature at the level desired by the occupier. Warm air is directed into individual rooms through outlet registers. These are unobtrusively sited near the skirting or in the floor. Whether you're building houses, bungalows or blocks of flats, Electricaire gives you efficient and economical central heating.

### 7 reasons for choosing Electricaire

1. Electricaire gives you complete freedom to plan homes the way you want to. The central unit can be sited almost anywhere and there are no flues to construct.
2. 100% efficiency. Electricaire, designed to Parker Morris standards, will give full value for every unit of electricity used.
3. Electricaire runs on half-price, off-peak electricity. The running costs are competitive with all other central heating systems.
4. It's the cleanest, healthiest heating, too. No fumes, dust, ashes and the re-circulated air is filtered.
5. No stoking, no fuel storage. In flats, no boiler attendant is needed and storage space is saved. Each occupier controls the heating in his home and pays for the



*The unobtrusive outlet register near the floor*

level of heating he selects.

6. Electricaire minimises condensation. The constant background warmth from the central unit, coupled with the absence of combustion, reduces the risk of condensation.
7. Electricaire is almost silent. The fan runs quietly and there is no sound of burners lighting and shutting off.

### Like to know more?

For advice and technical information about Electricaire, ring your Electricity Board; or write direct to: The Electricity Council, EDA Division, Trafalgar Buildings, 1 Charing Cross, London, SW1.

## Better things are electric

*Issued by the Electricity Council, England & Wales*





**Private developer at Cotham, Bristol chooses easy-to-install Electricaire!**

These luxury flats at Springfield House, Cotham, Bristol were completed in 1966. The developers: Messrs. J. T. Developments Ltd., decided on Electricaire heating because of the ease with which it fitted into their plans without any necessity

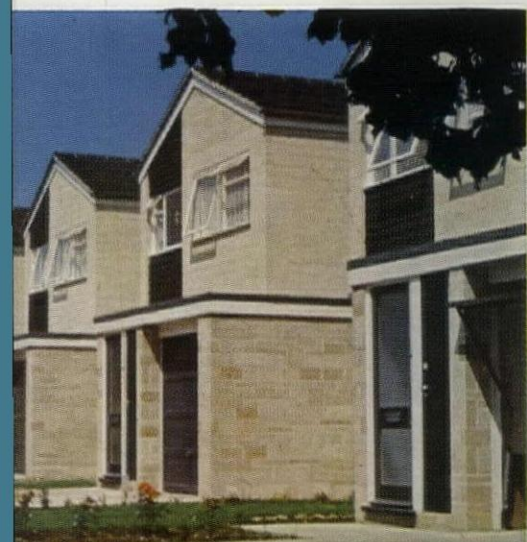
for flues. 8 kW Airdun storage units were fitted and ducted to supply warm air to the lounge, bathroom and main bedroom in each flat. Similar installations today would cost £110. Running costs have worked out at an extremely economical figure—the average over the year being 12/6 a week. Needless to say the occupiers are delighted. Electricaire not only keeps their homes clean and cosy, it saves them money, too.

**Yes, go-ahead builders everywhere are fitting every kind of home with Electricaire**

**BATH.** 3-bedroom Houses at Audley Park, Bath. Builders: M. P. Kent Ltd, Building Development, Bath. Heating: Electricaire—7 kW Creda units. Installation: Today's cost—£125. Running cost: Average, 23/10 a week, including water heating.

**TENBURY WELLS.** Bungalow on private estate at Tenbury Wells, Worcs. Builder and Developer: W. Heathcock, Tenbury. Heating: Electricaire—9 kW HVE units supply warm air to living room, kitchen, bathroom and hall. Installation cost: £190. Average weekly running cost: 28/5 inc. water heating.

**SEAFORD.** Bungalow on big private development near Seaford, Sussex. Builder and Developer: Edward Drewery Ltd. Heating: Electricaire—various units. Installation cost: £207. Average annual running cost: 18/6 per week.





# tretford make it!



## the tretford carpet tile

Now—a real carpet tile. Tretford carpet is now available with a cork composition backing in half metre square tiles. They require no special maintenance, can be laid easily and interchanged at will. Available in all 20 Tretford colours.



### New construction

The surface of Tretford carpet tile is 100% animal hair and wool, the backing is cork composition, the tile is about half an inch thick. Tretford is very tough, very durable—lasts as long as conventional pile carpet costing twice the price.

### Available in any quantity

—from one tile upwards, in any colour.

### Easy to lay

The tiles require no sticking or fixing, and no underfelt. They can be simply laid loose on any reasonably flat concrete screed or other hard floor surface. They won't slip. The cork back grips.

### Completely interchangeable

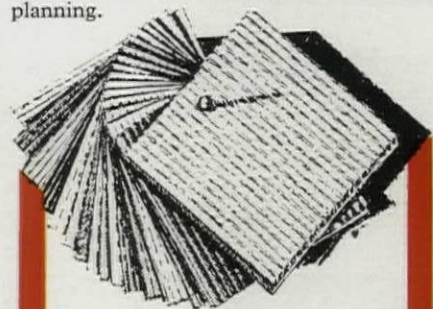
Tretford carpet tiles can be replaced or changed about at will to offset uneven wear or create new patterns. The 20 superb colours and the changeability of the direction of the cording permit endless permutations of effect. The only limiting factor is imagination.

### Practical properties

Tretford is easy to clean, resistant to stains and dirt, rot resistant, mothproof, colour fast, high in sound insulation, but conductive of heat. It can be laid over underfloor heating without heat loss.

### 20 co-ordinated colours

Tretford carpet tiles are available in the same subtle colour range as Tretford itself—colours chosen and co-ordinated to give maximum scope for imaginative colour planning.



### Send for a sample now

—then add Tretford tile samples to your hand swatch.

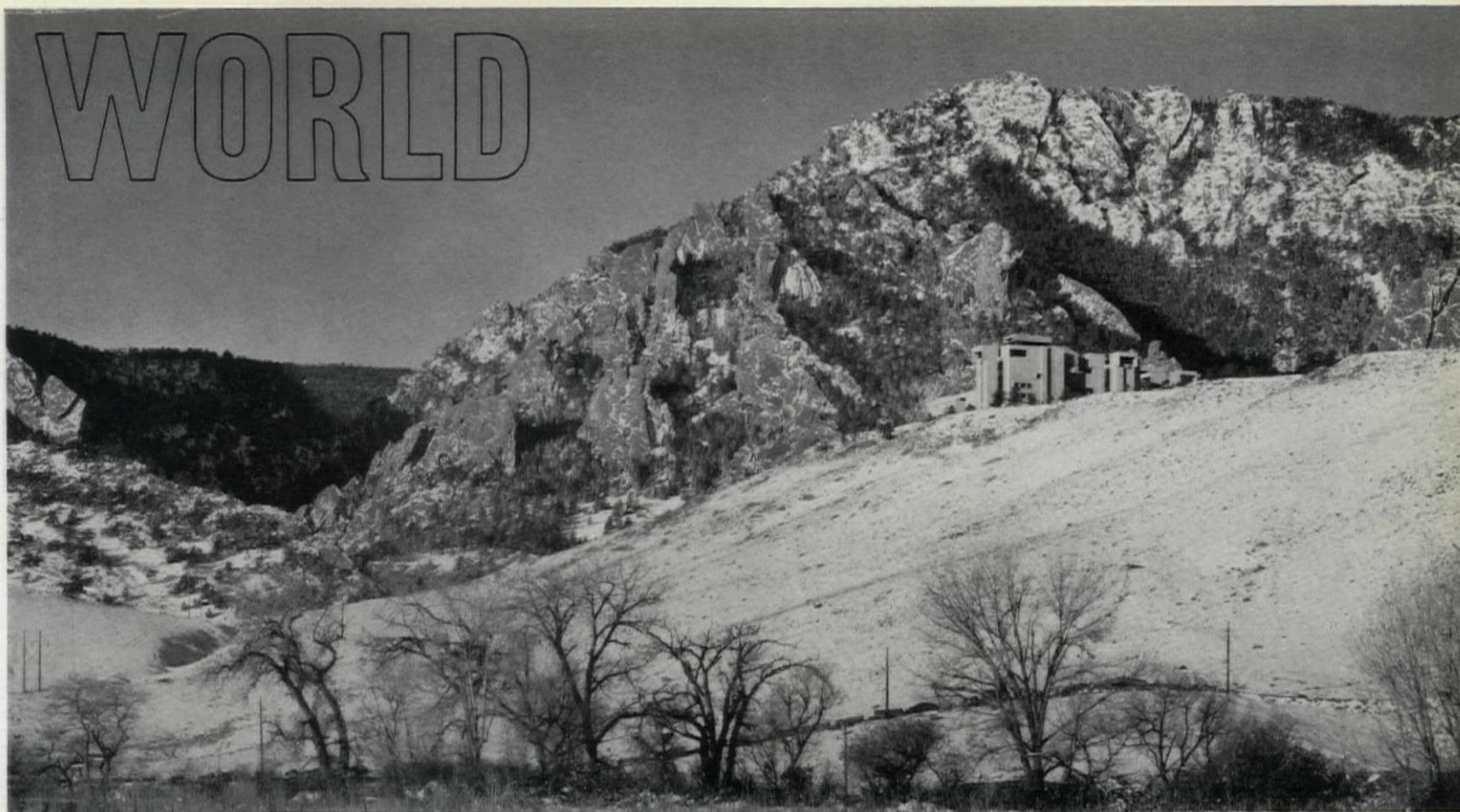
Our representative will be pleased to discuss the many contract applications with you.

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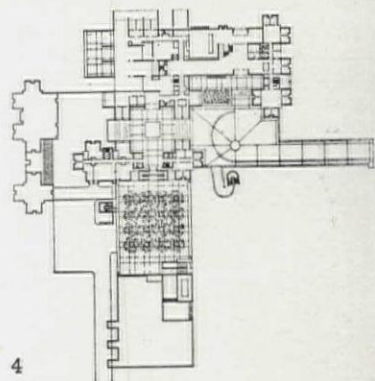


# WORLD

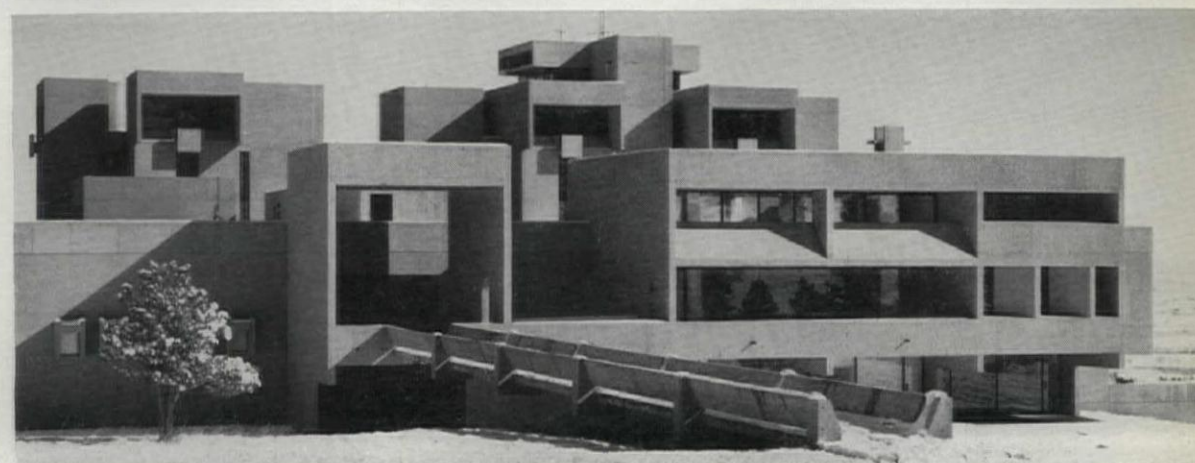
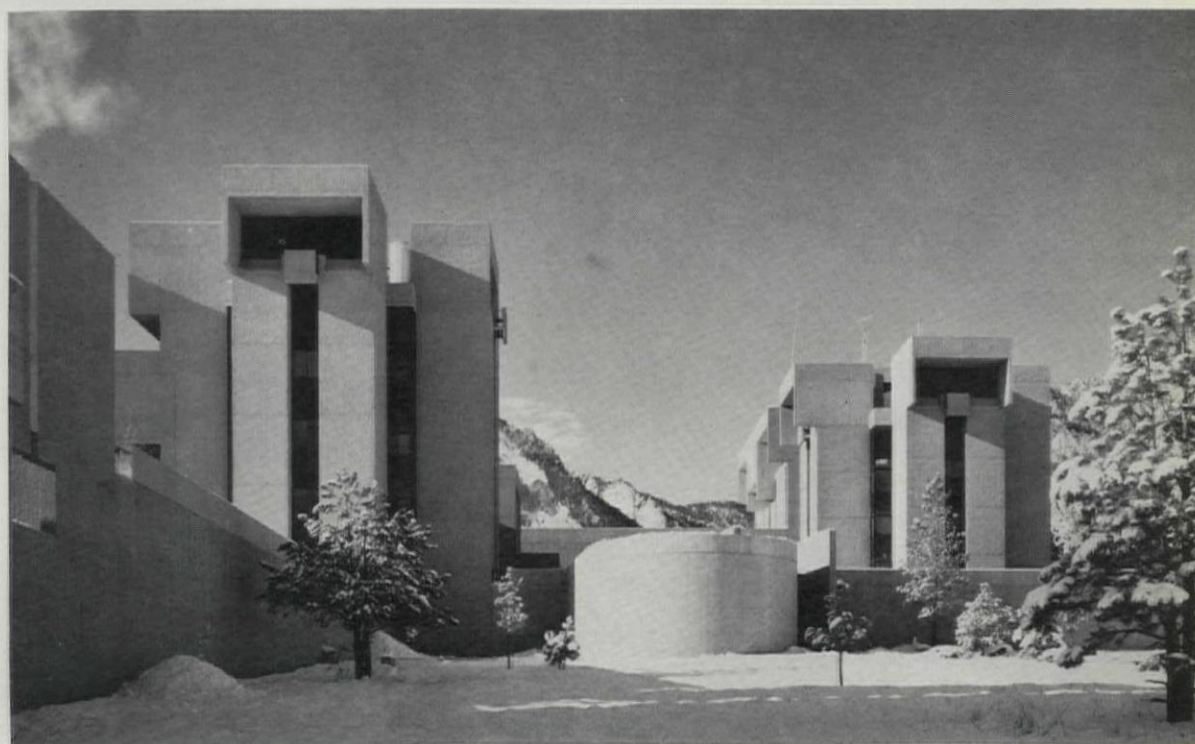


## PEI BOULDER

The astonishing setting of the National Centre for Atmospheric Research at Boulder in the Rockies, 1, is such that American critics to a man have lost their heads and have made romantic, and for the most part silly, comparisons with monastic or military buildings in Tuscany or Catalonia.



But the client's programme was that the new buildings should express two aspects of the scientific work that was to take place in them—its contemplative and its exciting aspects. The buildings were also to be symbolic, apparently, of the importance of the centre, and that may be the justification for forms which, though largely not original, 2 and 3, are uncharacteristically rich for Pei. Another requirement was that it should be difficult to find a man's office. The impression the build-



## acknowledgments

COVER: H. R. Jowett. WORLD, pages 171-174: 1-3, 5, 6, 10, 11, 13-17, Cervin Robinson; 7, 9, Martin J. Cooney; 8, Sunderland Aerial Photographs; 19, Eugene Fleming; 20-22, *Werk*. VIEWS AND REVIEWS, pages 175-177: 1, Pieter Boersma; 5, George Zimberg. FRONTISPIECE, page 178: David Roessler. TRADE CENTRE, MONTREAL, pages 181-188: 1, 2, 4, 6, 7, 10-12, 14, Michael Drummond; 3, 5, 8, 9, 13, H. R. Jowett. MOTORWAY SERVICE AREAS, pages 189-194: 1, K. B. Stewart; 2, 4, Publifoto Milan; 3, London & Wide World Photos; 6, 7, Rank Leisure Services; 8, 9, Rainer Fichel; 10, 11, TN Werkfoto. THE EXPLORING EYE, pages 195-197: Richards Arphot. WOTTON-UNDER-EDGE, pages 198-200: 1, 4, David J. Iddles; 2, 3, 5, 6, Browne Arphot. HOUSING AT KELSO, pages 201-203: 1, 2, 6, Dave Thomas; 3, Hector Innes; 5, Waverley Studios. BECKFORD IN BATH, pages 204-208: Hugh Crallan. GALLERY, pages 209-212: 1-3, Toomey Arphot; 4, Elsam, Mann & Cooper; 6, Philip Rathbone; 7-13, Fred W. McDarragh. INTERIOR DESIGN, pages 213-224: Centre Le Corbusier, 1, 9-14, Jürg Gasser. Frame and panel construction, 1-4, 11, Jürg Gasser; 5, *Architectural Design*. RAF Club, Piccadilly, Toomey Arphot. Furnishing fabrics, 1-7, Galwey Arphot; 10-12, Stewart L. Galloway. JAPELLI AND CICOGNARA, pages 225-228: 1, 5, Civic Museum, Padua. MISCELLANY, pages 229-242: Finnish Vernacular: 1, A. Ruusuvaori; 2, Kari Hakli; 3, Richards Arphot; 4, István Rácz; 5, A. Salokorpi; 6, Havas (1, 2, 4-6 are by courtesy of the Museum of Finnish Architecture). Clichy Market, 2-4, K. L. Bartlett; Aladár Arkay; 6, Richards Arphot. Escape from Euclid, 1, 2, Ugo Mulas; 4, 5, 6, Dordero. Do-it-Yourself Pavilion, S. F. James. THE INDUSTRY, pages 244-245: 1, Freddie Squires Ltd.; 6, *Cambridge Daily News*. STOP PRESS, pages 247-248: 2, 3, Marcus Whiffen, National Monuments Record; 4-7, Nairn Arphot.



This month's cover is an exterior detail from the most important recent building by Ray Affleck, the Canadian architect who gives the RIBA annual discourse on March 12. The building is Place Bonaventure, a trade and shopping centre and hotel in the centre of Montreal. It is illustrated on pages 181-188.



# THE ARCHITECTURAL REVIEW

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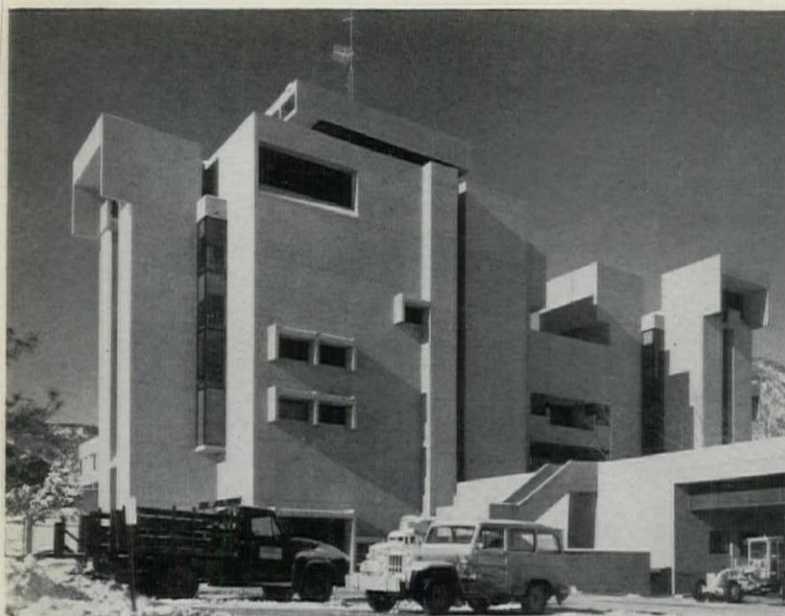
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## PEI BOULDER

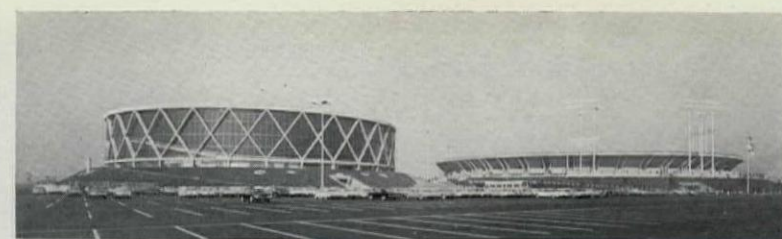
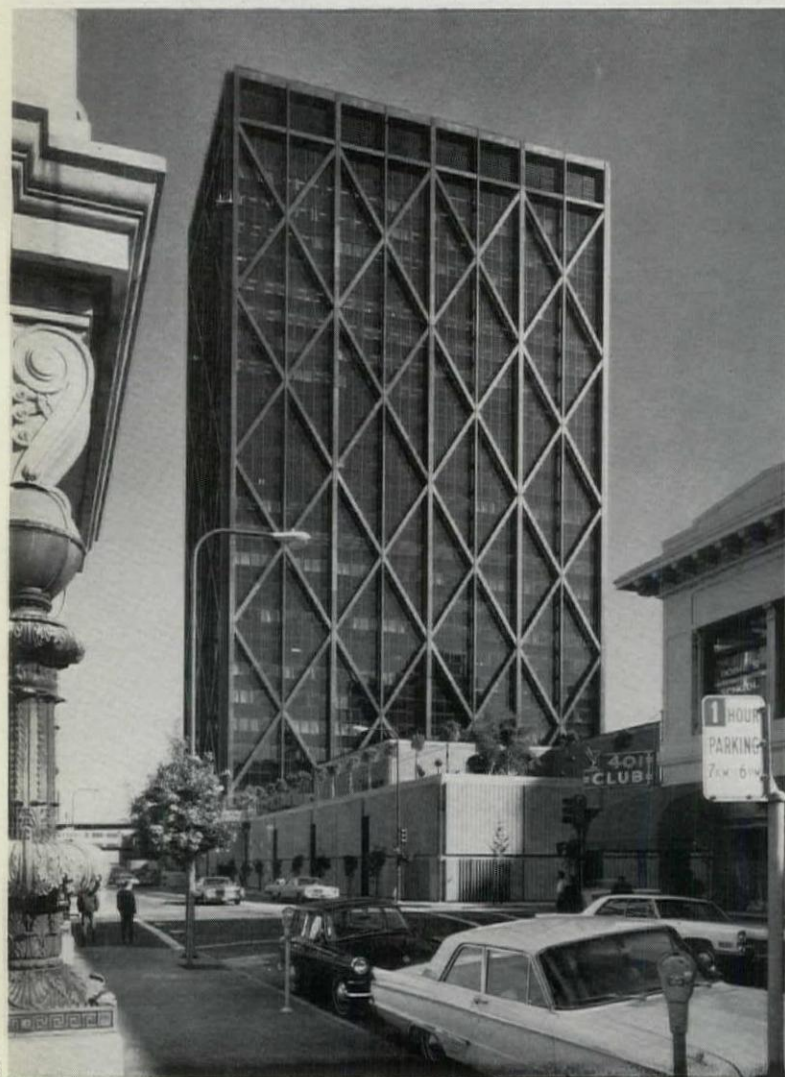
ings therefore give is one of great complexity, 5, though it is clear from

the plan, 4, that it is an admirably ordered one, the genuine complexity which Robert Venturi has written about and not 'the precious intricacies or picturesqueness of expressionism.'

# X-CAGES

Structure, when it is emphasized, turns out all too often to be merely a handmaiden of architecture, not quite con-

vincingly a part of it. Recently SOM has taken up X-members. For Alcoa (see AR World, September 1965), the



San Francisco office of the firm have placed some 600,000 sq. ft. of office space on a garage podium not of their design, just south-east of Telegraph Hill. X-bracing was used partly as a device for scale (in a city of bridges), partly to support lateral (primarily earthquake) forces. Whether or not this rigid bracing does in fact serve the latter purpose well, there is no doubt that it forms an arresting facade, 6. Here the lighter vertical members are tension members supporting five floor beams below each major crossing and thereby halving the 50-ft. horizontal spans. (The lowest sixth of each tension member, which carries it to the crossing below, is superfluous.) Across the bay from San Francisco,

the Oakland-Alameda County Coliseum Complex, 7 and 8, also by SOM, consists of a stadium seating 50,000-53,000, an arena with a seating capacity of 11,000-15,000 and 50,000 sq. ft. of enclosed exhibition space connecting them. Considerable ingenuity has gone into producing a stadium that would satisfy the various demands of three sports—football, baseball, and soccer, 8—but what is of particular interest at the Coliseum is the arena, 9. Here a cable-suspended roof hangs from a 420-ft. compression ring. The latter is supported by 32 pairs of tasteful but unimpassioned *in situ* concrete X-columns, which act as compression members for both vertical and horizontal loads.





## BEAUMONT HALL, Elderly People's Home, Sea Front Clacton-On-Sea. Essex County Council



This is one example of the many contracts carried out for County and Local Authorities in the United Kingdom.

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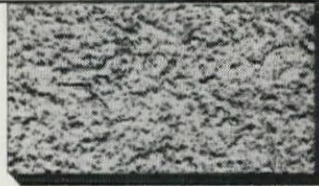
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# HSIR

Also in San Francisco, near Haight-Ashbury, on a constricted site between a steep hill and the older Parnassus Avenue buildings of the University of



11

10

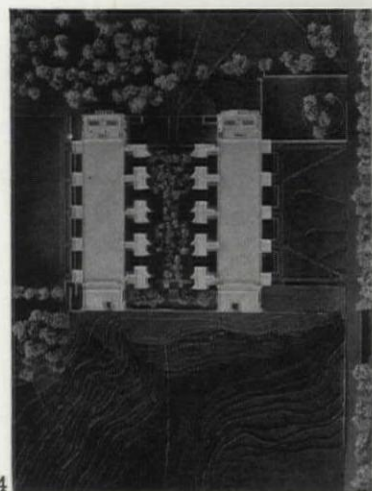


California Medical Centre, stand Ried and Tarics' excellent twin medical laboratory towers, the Health Sciences Instruction and Research Buildings. One tower contains a library; in the other tower two floors are taken up with lecture halls. Otherwise, 90-ft.-square floors of column-free, flexible, windowless laboratory space were called for. A concrete tower against the building contains a staircase and air ducts, 10, and the lower concrete shaft to the right contains an elevator which serves both buildings. Many of the buildings' details come so naturally that, like the pattern of the multiplying fume-hood ducts, 11, they may pass quite unappreciated.

## LABS SLAB

The duct runs in Louis Kahn's Salk laboratory buildings, now slowly reaching completion at La Jolla (see AR World, March 1966 for fuller report), count for less than early studies had led one to expect. The dominant motif in the composition of these relatively straightforward slabs of laboratory space is most clearly seen in a bird's-eye view of the model, 12. The motif is one of two long blocks facing each other, each with its series of attached stair-towers. At ground level, 13, this theme proves to be muffled by a fanfare of angular column walls, which sometimes act as brise-soleil, sometimes as brise-vents, or which simply form bays for the thirty-six Fellows' studies which perch in the inner stair-towers, 14.

Meanwhile, in St. Louis, Harry Weese is using the same motif with admirable clarity at the new Lake Forest Community College. Here the first of two monster classroom blocks—this one is just short of 500 ft. long—has been built, 15. Two-thirds of it is in use, while the interiors to the east are being completed. Weese's attached towers house staircases, elevators and lavatories. The block itself contains lecture halls, six in all, at ground level. Otherwise the south side of the building is taken up with offices and conference rooms, and the north side, 16, with



12, 14



13

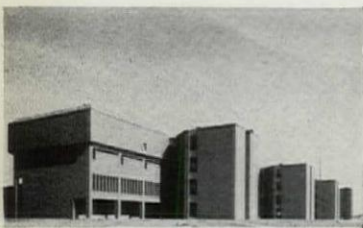


15



## LABS SLAB

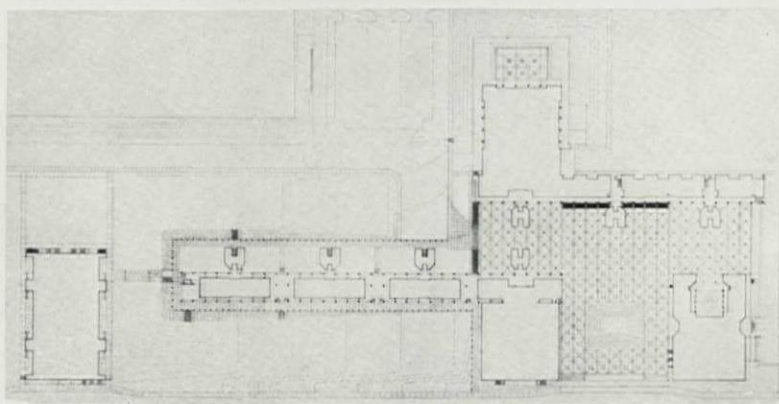
classrooms and, towards the top of the building, laboratories. The western end of the block, 17, houses administrative offices and is backed by a low library block. The focus of the campus falls just opposite this end, and to complete the Kahnian motif, in this case with a twist, a second block will start opposite this last stair-tower and will extend to the west for some 300 ft., 18. In the two-thirds of a block which is now in use, circulation areas opposite the stair-towers are clogged with ill-lit study booths. This can be corrected. Worse, however, are the corridors



17

which run the length of the building and which are so narrow that a conversation obstructs them. The areas where students can wait before classes are so small that the jams as classes change are simply beyond belief.

16



18

# HOK ZINC

Some of the pains of corporate symbolism are illustrated by Hellmuth, Obata and Kassabaum's handsome little American Zinc Building in St. Louis in the shadow of Saarinen's great arch, 19. The company wanted its building constructed of materials



19

174

from the metals industry, and so the stainless steel sheathing is in a form which reveals the steel vierendel truss beneath—the former in proxy for the softer metal, the latter symbolizing it.

## GOOD WERK

For the sixtieth anniversary of the Federation of Swiss Architects, *Werk* have produced their January issue in the form of a travel guide of modern architecture. Amongst the early work, four villas by Le Corbusier at La Chaux-de-Fonds are illustrated. Two of these, the villas Jaquemot, 20, and Stotzer, 21, both built in 1908, are in a rugged vernacular style and date from before his apprenticeship to

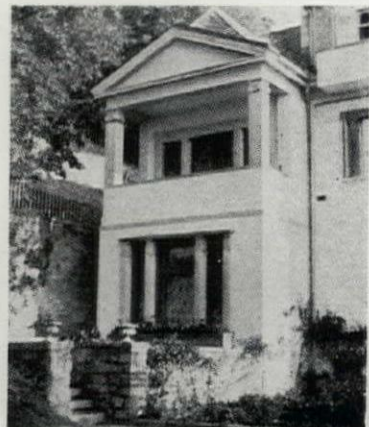


20



21

Behrens. The other two, the villa Favre-Jacot (1912), 22, and the more familiar villa Schwob illustrated in *Vers une Architecture*, are full of the neo-classicist mannerisms practised by both Behrens and Perret.



22





# Here's a Marley Wessex roof\* at 15° pitch in a gale force wind *with a rainfall of 2"/hour*

...and here's the inside story of this remarkable tile.  
Marley Wessex tiles were introduced four years ago after extensive research into the efficiency of existing interlocking roof tiles when used at low pitches. This showed that, at pitches below 17½°, water found its way into the weatherlock in quantities far greater than the capacity of the channels.

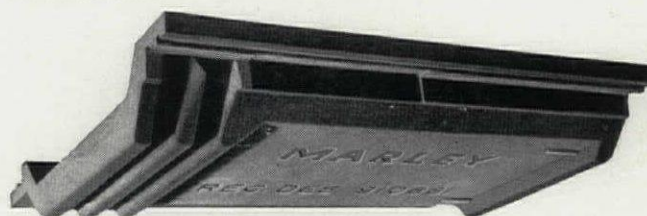
So Marley developed the Wessex with raised sidelocks. The flat area on either side of the weather groove is only 15% of the tile area and the small amount of water that falls there is soon diverted into the wide trough, as our picture shows. None of the water contained in the trough can ever reach or enter the weatherlock during its flow down the roof.

But there's more to the Wessex than that:  
A special weather check is formed by three ribs on the underside of the tile. The deep grooves between them, running the FULL WIDTH of the tile, act as turbulence cavities and are a double check against capillary action.

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Perhaps you should look into it? Ask for the technical leaflet.

\* Photographed on a test rig in the Marley laboratories, where extreme weather conditions can be accurately simulated to prove the effectiveness of roof tile designs.



Included in Barbour Index

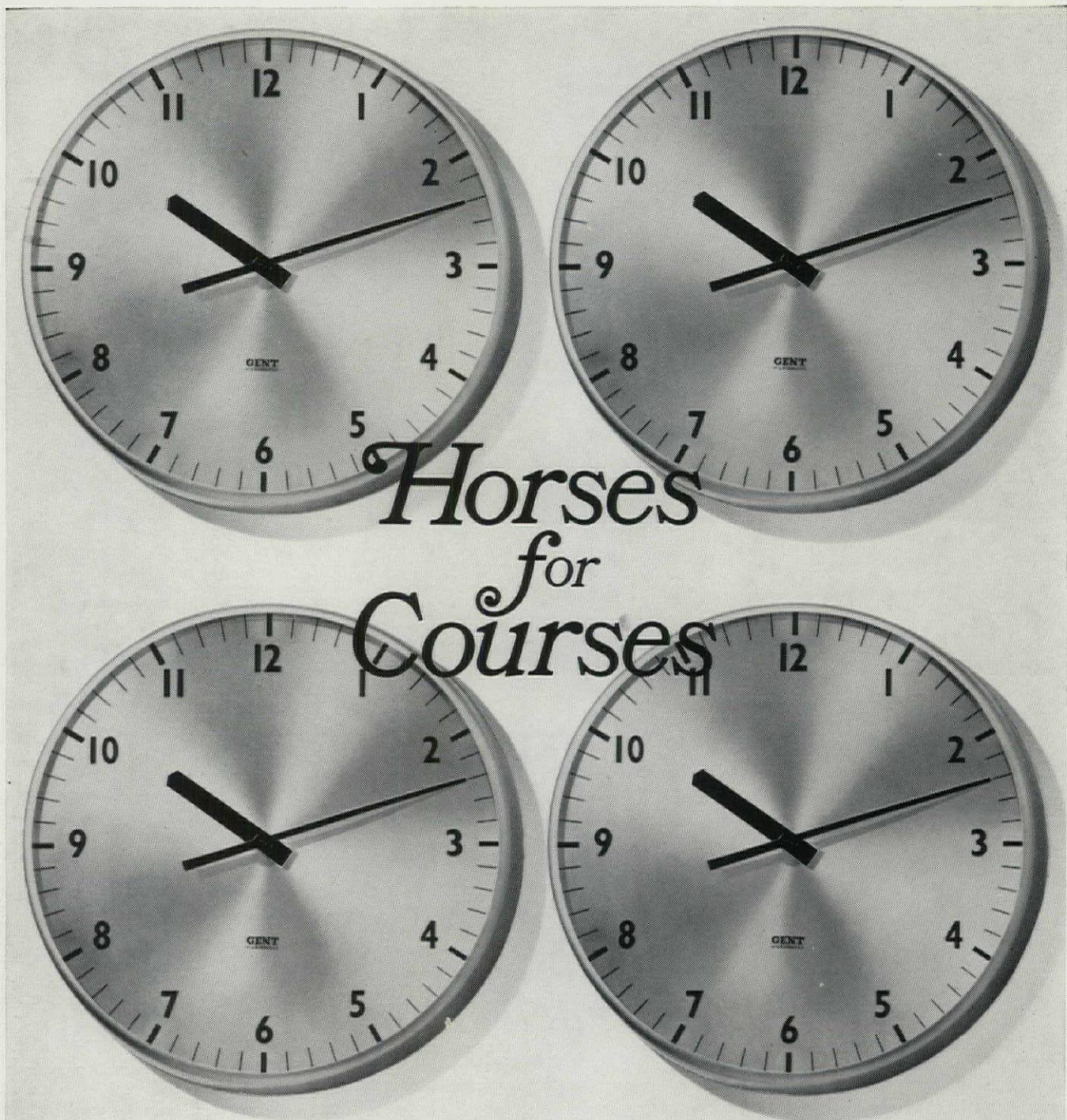
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# VIEWS AND REVIEWS

## marginalia

### IMPERIAL HOTEL, TOKYO

The frontispiece of this issue shows Frank Lloyd Wright's Imperial Hotel at Tokyo, which a world-wide campaign, addressed to the Japanese authorities and to the owner of the building, has not succeeded in saving. The owner seems to have been determined to replace this unique monument of the pioneering days of modern architecture by something that would use the site more profitably—something, it is to be feared, resembling the monstrous annexe that he built behind it ten years ago, which is one of the vulgarest buildings in all Tokyo.

Mr. Taro Amano, acting chairman of the committee that was set up in Tokyo to endeavour to preserve the hotel, sends to the AR the following progress report.

'Our success has only been partial. Comprehensive documentation is being undertaken of the Imperial Hotel. Three-dimensional photographs which can be converted into scale drawings are being taken extensively, as well as ordinary photographs. It is estimated that this will cost between two and three thousand dollars to just get it on the negatives, not including processing.

'Meanwhile demolition is being carried on by the Kashima Construction Company. They have shown a very co-operative attitude, more so than we had expected. We have designated approximately 90 places in the building which are to be dismantled with care and preserved intact. In some cases this will involve cutting out sections of reinforced concrete beams and columns. In some cases it will require the building of forms around the particular item, filling them with sand and then removing it so that it may be preserved intact. Several of our members are going to the site daily to supervise both the dismantling and the documentation. This dismantling is to cost somewhere around \$130,000 extra. We are still actively collecting contributions, and are sending letters to all those who sent us sizeable cheques and made pledges, seeking their permission to use the money for dismantling and/or documentation.

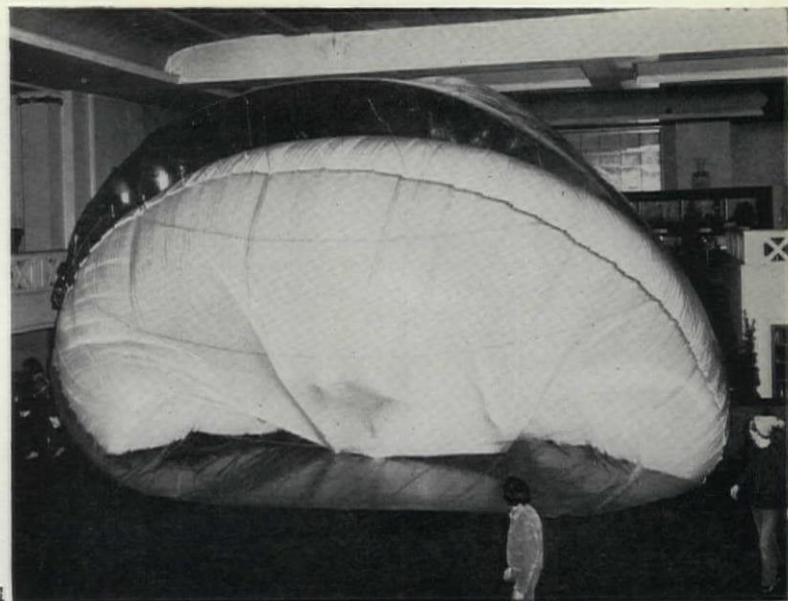
'There is a very strong possibility that the lobby and entry parts of the Imperial Hotel will be reconstructed, possibly in Meiji Village near Nagoya. We look upon this as a bare minimum, and are still pressing for more extensive reconstruction and for a more

appropriate site. In addition there is the possibility that our committee may grow into a permanent organization for the preservation of landmarks in Japan. We feel that the major cause of our failure was lateness in getting started. In the future, with a permanent organization already in existence, this disadvantage would become less.' Contributions should be sent to Mr. Amano at the Faculty of Engineering of the University of Tokyo, Bunkyo-ku, Tokyo, Japan.

### MOVIEMOVIE

The accompanying photograph, 1, shows Moviemovie, an 'event situation' seen in the casino at Knokke, Belgium, in December and January in connection with the Fourth International Experimental Film Competition. It was an experiment by Erg (which stands for Event Structure Research group) and took the form of a two-level white and transparent inflatable plastic structure.

This was Erg's second event situation, the first being the Corpocinema realized last summer in Amsterdam and Rotterdam. This was an inflated transparent p.v.c. dome with film projection on to its surface and various kinds of material action going on inside. It was erected in the open air, as a facility available to passers by, and financed by the two city councils. The members of Erg are Theo Botschuijver, a Dutch industrial designer at present working on the development of inflatables, Jeffrey Shaw, an Australian artist interested in inflatables and cinema, and Sean Wellesley-Miller, sociologist and mathematician. They also contributed to the 'L'Air et les Structures Gonflables' exhibition at the Museum of Modern Art in Paris in February of this year and to the 'Air



in Art' exhibition at the Philadelphia Arts Council in March. They are now at work on projects for the Brighton Festival and for a midsummer-day festival at Battersea Park.

### SEA CITY

Messrs. Pilkington, the glass firm, have made a practice in recent years of surprising us with science-fiction projects, worked out in impressive detail—technical as well as aesthetic. These are the work of their Glass Age Development Committee composed of Ove Arup, G. A. Jellicoe and Edward Mills. The latest in the series is a Sea City, 2, housing 30,000 people, conceived for them by G. A. Jellicoe and developed by Hall Moggridge.

The site chosen is some 15 miles off the coast of Norfolk. A concrete terrace wall supported on piles driven

into the sea-bed, measuring 4,700 feet from north to south and 3,300 from east to west at its widest point, incorporates sixteen storeys of housing. It is designed to deflect the wind and embraces an inner lagoon containing floating islands made up from concrete triangular pontoons, carrying houses, schools and other buildings of light-weight construction. The islands are interconnected by bridges to allow pedestrians to cross from one side of the city to the other. A combination of islands may be broken up and rearranged, and bridge connection quickly established, without the demolition of any of the structures.

A floating breakwater, forming a continuous band round the city (except at the harbour entrance), is made up of reinforced fabric bags 100 feet long by 6 feet in diameter, 90





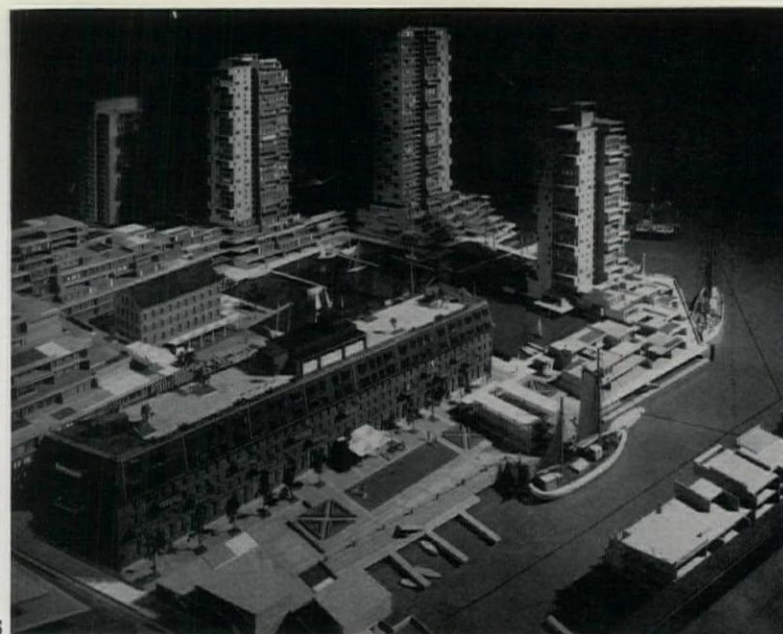
per cent full of fresh water so that they float almost submerged. Moored fore and aft in groups of three, they will halve the roughness of the sea. The harbour enclosed by the breakwater will handle vessels bringing supplies to the city, which will have commuter services to the mainland by hovercraft and helibus. The site of the city is close to the North Sea gas finds, and natural gas will be fed into high-speed gas turbines coupled to generators to provide electric power for the city. Waste heat will be used for district heating, air conditioning, provision of fresh water from sea water and fish-farming, and the remainder will be emptied into the lagoon to raise the temperature an estimated 5-7 degrees.

#### TIME TO CALL, LIVERPOOL

Since Eric de Maré's article in AR, July, 1966, told of the wonders of Jesse Hartley's Albert Dock at Liverpool and its threatened demolition, only one positive note has been sounded from within the city. Under Professor Gardner-Medwin, fourth-year students at the Liverpool School of Architecture have produced proposals for the rehabilitation of the

developer room to develop and to express this externally, and yet keeps untouched the quality of enclosure the Albert Dock has always had. It represents a very different approach from the suggestions put forward by Richard Reid in AR April 1967.

But Albert Dock is not just a preservation issue. The redevelopment of the docks is perhaps the largest central area scheme ever contemplated. As Oliver Marriott points out in *The Property Boom*, the initial application for 10 million sq. ft. of offices is equivalent to more office space than in the whole of Birmingham's central area. In its now reduced form, the outstanding application for 8½ million sq. ft., if granted permission, still makes nonsense of the city plan's proposals for a foreseeable growth of 2 million sq. ft. Since 1966 the city council has been deliberating—decide it cannot because the proposal constitutes such a major departure from the city-centre plan. That the Minister of Housing will have to deal with it everyone agrees, so why has Anthony Greenwood not called the application in? And so vast is the whole issue, a public inquiry is the wrong vehicle



they bought the entire Lewis Wharf property in 1966 and set up the Boston Waterfront Development Corporation as an executive agency. Like Liverpool the Boston Waterfront is integral with the city centre and Lewis Wharf lies neglected and unused just fifteen minutes' walk from the centre of government, the city hall and most of Boston's banks. In the tradition of I. M. Pei's tower blocks at Philadelphia paying for the rehabilitation of Washington Square, a series of high blocks coupled with the restoration and conversion of Lewis Wharf's dominant historical relic, a huge granite warehouse, are proposed, 5. A marina for America's major growth industry—water-borne sports—offices, shops, 1,000 flats, restaurants and large scale car parking provision are all included in this giant project. The Development Corporation has given the architects, Carl Koch and Associates, every freedom to negotiate the proposals and as a result the federal housing administration has given its approval—and more to the point money—to the first stage renovation project. Whether the rest of the proposals will go ahead depends now on the Boston Redevelopment Authority. But promotion by local businessmen has the ring of economic truth which, over here, local authorities anxious to preserve have been slow to find.

#### CRAFT IN INDUSTRY

An exhibition of craft work (including jewellery and sculpture) commissioned by industry, is being presented by the Institute of Directors and the Craft Centre of Great Britain at the Guildhall, London, until the end of March. It will travel to Leeds, Newcastle and Glasgow during the summer.

#### PREVIEW 1968

For the project for the Midland Bank, Huddersfield, illustrated in the January AR, the executive architects are Kitson, Pyman & Partners, with Mr. Roger Shaw in charge of the job. Mr. Peter Womersley, as consultant architect, is concerned only with the external appearance of the bank and the interior of the banking hall. The cost of the factory at Dundee, by Ronald Cuddon, should have been given as £185,200.

### correspondence

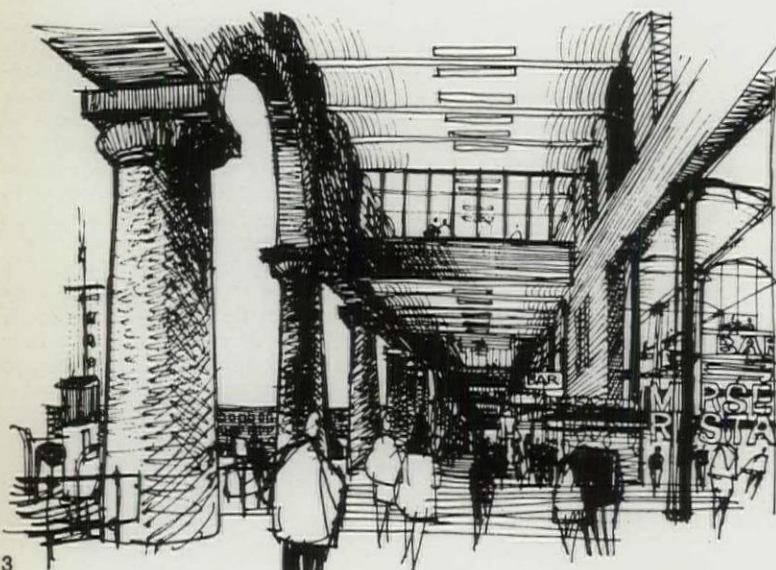
#### LOUISIANA FANTASY

To the Editors.

SIRS: To call Mark Twain's words in *Life on the Mississippi* about the Old Louisiana State Capitol 'a description of its exterior,' as does Clarence J. Laughlin in his admirable 'Louisiana Fantasy' (AR, May, 1967), is to miss another, more Ruskinian, fantasy. Twain wrote in chapter XL of the book, first published in 1883:

'Sir Walter Scott is probably responsible for the Capitol building; for it is not conceivable that this little sham castle would ever have been built if he had not run the people mad, a couple of generations ago, with his medieval romances. The South has not yet recovered from the debilitating influence of his books. Admiration of his fantastic heroes and their grotesque "chivalry" doings and romantic juvenilities still survives here, in an atmosphere in which is already perceptible the wholesome and practical nineteenth-century smell of cotton factories and locomotives; and traces of its inflated language and other windy humbuggeries survive along with it. It is pathetic enough that a white-washed castle, with turrets and things—materials all unguine within and without, pretending to be what they are not—should ever have been built in this otherwise honorable place; but it is much more pathetic to see this architectural falsehood undergoing restoration and perpetuation in our day, when it would have been so easy to let dynamite finish what a charitable fire began, and then devote this restoration money to the building of something genuine. . . . By itself the imitation castle is doubtless harmless, and well enough; but as a symbol and breeder and sustainer of maudlin Middle-Age romanticism here in the midst of the plainest and sturdiest and infinitely greatest and worthiest of all the centuries the world has seen, it is necessarily a hurtful thing and a mistake.'

In his travel books Twain often judged architectural monuments like state houses and cathedrals, but he was not



warehouses, 3. In their report, they diagnose as one of the main reasons why the Albert Dock is an unpopular preservation cause, the fact that Hartley's stern, brooding facades do not fit in with a dynamic city's desire to present a new face to the world at large. They propose therefore to embalm it on all sides, 4, but allow

for the Minister to inform himself. What the determination of this application calls for is little short of a sub-regional study.

#### SELF-HELP, BOSTON

While Liverpool dithers and the Greater London Council endlessly discusses the future of that other



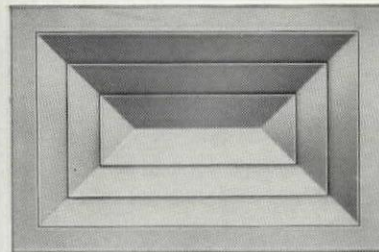
its inner waterfront face to stay unchanged. At first sight the solution sounds dangerously like Osbert Lancaster's classic 'amenity preserved.' On closer inspection the scheme has considerable merits because it allows the

dockland masterpiece Telford's St. Katharine's Docks, a group of businessmen in Boston, USA, have put forward a detailed project for preserving their waterfront. And they are well placed to see it through since





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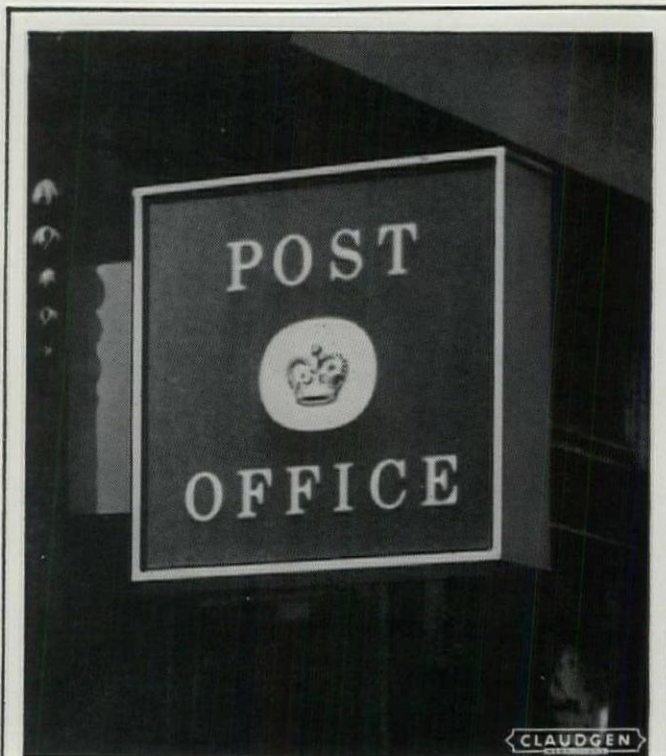
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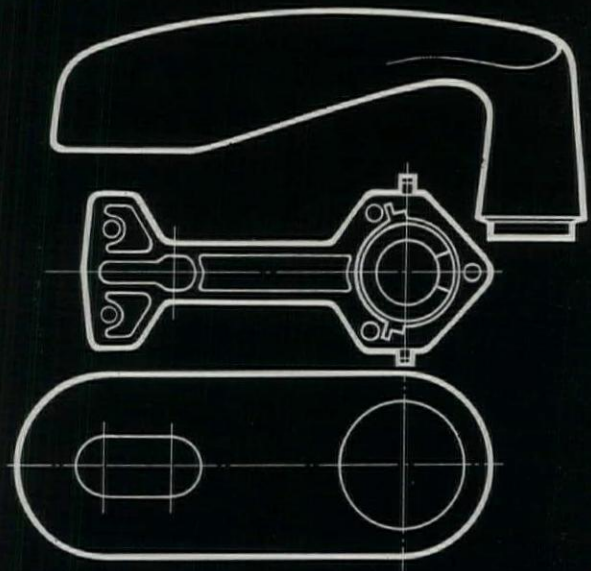
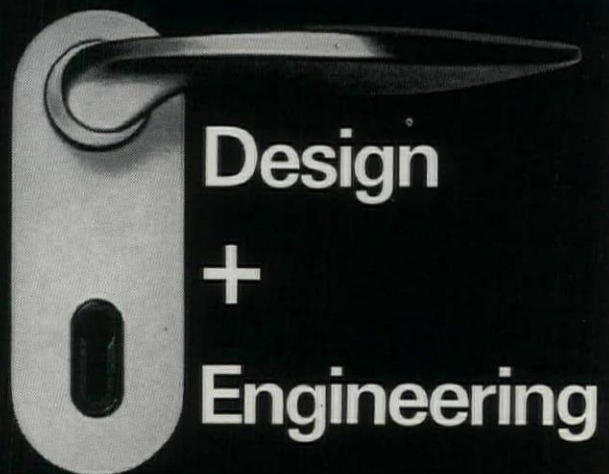
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troubled by a need for a consistent theory. His own house in Hartford, Connecticut, which he commissioned E. T. Potter to design in 1873, and where he and his family lived for almost twenty years, has bold, orange and black patterns across its red brick, High Victorian Gothic walls. In truth, what looks like permanent polychromy is but orange and black paint.

Yours, etc.,

RICHARD CHAFEE

London SW3

## obituary

### M. A. REGAN: 1899-1967

Maurice Regan, late chairman of the Architectural Press, who died on December 4, 1967, at the age of 68, had been a member of the firm for forty years, succeeding his father William Regan as joint managing-director when the former became in his turn chairman. Burly of build and square of shoulder, Maurice Regan had the look of a mountaineer, which in fact he was. He was also a keen swimmer, of the kind who likes to spend the whole day in the water. At Agay on the Cote d'Azur his would be the head about two miles away in the Mediterranean, farther out than any other—a head, incidentally, that never lost a hair. The hair instead became in the course of time a particularly gleaming shade of silver, which in combination with stiff collar, grey silk tie and charcoal suit caused him to look every inch the tycoon as he gorgonized wilting visitors from behind one of the biggest desks in London's West End, before receiving them with charm.

After a brilliant career at St. Paul's school, where he was head of the Upper VIIIth for two years (an unusual feat), he won a top classical scholarship to Corpus Christi College, Oxford. His service as a subaltern in the Gunners delayed his entry to Oxford, but he took up his scholarship in 1919. He duly got his First in Classical Mods and was all the more disappointed to finish with only a third in Lit. Hum. and thus to miss the double first in Greats which his tutors had confidently predicted for him. The fact was that he hadn't done nearly enough work, and had enjoyed himself far too thoroughly in other ways: rowing for the College, founding a dining-club and on one occasion becoming *victor ludorum* at the College sports by winning the high jump in a solar topee and a dressing-gown. It was at Oxford too that he started to play the accomplished bridge which was a life-long delight to him; he played a monthly game with several Oxford contemporaries right up to the time of his death.

A latter-day stoic, Maurice Regan had some of the qualities of Cato the Younger: the dourness, the ability to look on the dark side without blanching, the pragmatic outlook, the horse-sense and the contempt for pie-in-the-sky; in particular the sky-piety of politicians, public men, ministers of religion and doctors, the last of whom he cordially loathed and never ceased to call quacks. However, under this tough exterior beat a warm heart

easily moved by any hard-luck story. These were the qualities of character that made him such an admirable boss. A powerful brain combined with courage and judgment made him in any crisis the rock upon which the whole edifice rested, and the success of the Architectural Press over the years owed more than can be measured to his leadership. In the firm's publications he always put quality first; their standing and integrity meant a great deal to him and the various editors responsible found him always ready with wise and understanding advice, though he never put them under any sort of pressure or allowed them to feel they were not wholly in charge of their own departments. When he did give advice he expressed his views in the kind of ordered sequence used by Counsel presenting a case in court, a method which exposed to those who knew him well the Walter Mitty side of his character, for in the privacy of his heart he dreamed of himself as a barrister rather than a business man—and a very formidable cross-examiner he would have made.

To an outsider his immediate grasp of detail might seem magical as well as rather alarming, but in fact he would spend hours, days and weeks at his home near Leatherhead worrying a problem out.

Apart from bridge, golf and his family, the AP can be said to have been his sole hobby as well as his job; the Book Department in particular, of which he was justifiably proud. He was in fact largely responsible for the book-publishing programme, discussing their ideas personally with many of the authors. He had a wide knowledge of the technique of book production, as he also had of magazine production, paper, printing methods and all the other matters a publisher has to concern himself with.

His death was a stunning blow to his family, and to the AP; for during his tenure of office the firm's success multiplied tenfold while (apart from warehouses) its physical establishment grew from one shop-window in Tothill Street to five Georgian mansions in Queen Anne's Gate—from dignified obscurity, that is, to (comparatively) gilded affluence.

He leaves a devoted wife, two daughters, Jill and Susan, and a son Michael, who now carries the Regan family's participation in the direction of the Architectural Press into the third generation, covering the best part of seventy years.

## book reviews

### SCHINDLER SHORTCOMINGS

CATALOGUE FOR AN EXHIBITION OF THE ARCHITECTURE OF R. M. SCHINDLER (1887-1953). By David Gebhard. University of California. No price given.

Nearly fifteen years have passed since Schindler's death and, except for the usual spate of obituaries, both Europe and America have continued to ignore him. The exceptions, not surprisingly, are Vienna (the Schindler issue of *Bau*, IV—1966) and California, where Esther McCoy, who had worked in his office, continued to pioneer for him

in her excellent book *Five California Architects* (1960). Now comes David Gebhard (author with Robert Winter of *A Guide to Architecture in Southern California*, 1965) with a catalogue for an exhibition which was recently staged at Santa Barbara (April, 1967) and, in an expanded form, at Los Angeles (Autumn, 1967). The exhibition will be going to Europe and may come to the RIBA on its way back. It is important that it should, not only because those who know Schindler's houses are agreed that they have an effortless and relaxed quality which is rare in modern architecture, but also because Schindler is one of the last links with the Vienna of the Secession and so with an important source of the Modern Movement.

The catalogue is really a monograph by Dr. Gebhard with a short introduction by Mrs. McCoy. The author conscientiously examines every job in chronological order. There is no way of knowing from the text whether a job is illustrated or not, and the reader becomes more and more irritated as he searches, often in vain, for the picture which will clarify some elaborate description. The lack of sections, for instance, is particularly serious with an architect who was constantly varying his floor, window-cill and ceiling levels. One would also like to know why photographs which exist (see *Five California Architects*) were not used; of Schindler's own house, for example, and of the important pitched-roof timber designs such as the Bennati Mountain Cabin (1934) or the desert house for Maryon Toole (1946); and why neither furniture nor fittings, except for one last sad page, were included when Schindler devoted so much of his time to them. These criticisms may seem carping, but they are inspired by genuine regret that a catalogue which was clearly intended to do more than serve the purpose of the exhibition should fail to attain higher standards.

Dr. Gebhard's claim that Schindler's work became pure *de Stijl* after the 1920s needs substantiating. His repeated use of the term is misleading. Even if Schindler's houses were not there as evidence, his Manifesto of 1912 ('Functionalism is a hollow slogan used to lead the conservative stylist to exploit contemporary techniques'), and his belief that the post-war version was the result of regimentation and economy which left no room for joy, would be enough to show which side he was on. Schindler's attitude throughout his life is certainly anti-functional, but neither Mrs. McCoy nor Dr. Gebhard have yet produced evidence that he was positively inspired by illustrations of *de Stijl* (illustrations only, because he never returned to Europe after his arrival in America in 1914). Did Schindler meet one of the future leading lights of *de Stijl*, Rob van 't Hoff, who went to visit Wright in Chicago at a time when he himself was working there, though not yet for Wright? And if he did, would he not have taken a deep interest in van 't Hoff's Huis ter Heide of 1916?

In the absence of a clear answer, it would seem more profitable to examine the real influences in Schindler's life. First there was Otto Wagner, the great master and for Schindler one of

the three founders, with Sullivan and Mackintosh, of modern architecture. There was Adolf Loos, who had been to America and whom Schindler joined to denounce the Secession. Above all there was Frank Lloyd Wright, who became a dominating influence the moment Schindler discovered him in the Wasmuth portfolios. His handling of space—a free expression of functional volumes—was similar to Wright's, even if in the outward appearance of buildings they went their separate ways. The influence of Wright on *de Stijl* has been traced convincingly by Dr. Banham in his *Theory of Design in the First Machine Age*, and there seems no reason why Schindler, with his European background and Wright's direct influence, should not have arrived at the same aesthetic standpoint independently. *De Stijl*, reflecting the spirit of the times, became, in Dr. Banham's words, 'an interaction of Cubist forms and Futurist ideas,' and it seems plausible that this same interaction should have taken place in Schindler who had come under the influence of both Cubism and Futurism during his student days in Vienna.

Many other questions about Schindler still remain to be answered, and it is good news that his son, Mr. Mark Schindler, now intends to make all the drawings accessible by presenting them to the University of California. In matters of construction, for example, Schindler was experimental and adventurous, yet he contented himself with primitive design and building methods, refusing to finalize drawings and insisting on the freedom to make last-minute changes on site. In his Manifesto he declared that 'the twentieth century is the first to abandon construction as a source for architectural form through the introduction of reinforced concrete'; yet his masterpiece, the Lovell Beach House, is a superb piece of structural expression in reinforced concrete. His very presence in California seems a contradiction—a Viennese of wide European culture embracing a lifetime of provincialism and isolation.

SHERBAN CANTACUZINO

### BERLIN IN THE 'TWENTIES

FRUHE MODERNE IN BERLIN: WERKBUCH I. By M. Hennig-Schepold and I. Schaefer. Das Werk, Winterthur, 1967. D.M. 14.

The 'twenties have become history. Here is a book on nothing but Berlin buildings in the early so-called International Modern, all with few exceptions of between 1920 and 1930. The earliest are Behrens's famous Turbine Factory of 1909 and Endell's grandstands at Mariendorf of 1913, the latter hardly ever documented before. It has a totally exposed outer spiral staircase of iron, which looks decidedly radical-twenties. The familiar names such as the two Tauts and Mendelsohn are of course represented, but there are also unknown names, showing that in Berlin after 1925 this was an accepted style, not a prerogative of a few.

The book is carefully done, wherever possible with actual quotations from writings and sayings by the architects. The photographs are largely specially taken and include details never shown before. There are over 100 illustrations and over 20 plans, and the price is remarkably reasonable.

N.P.



An obituary picture of one of Frank Lloyd Wright's greatest buildings, the Imperial Hotel at Tokyo. After a long campaign to save it, backed by appeals from all over the world, demolition began last December and by the time these words appear nothing will be left standing of one of the classic monuments of the early days of modern architecture. The photograph shows the entrance lobby, which had survived very much as Frank Lloyd Wright designed it in 1920, with its bold, abrasive ornament in tufa stone. Its foundations had settled somewhat, giving a noticeable slope to the floor, but that was a small price to pay for its impressive survival of the great Tokyo earthquake, which it is cruel to celebrate, nearly half a century later, by wantonly destroying it.





Peter Collins

# PARADIGMATICS

'... the revolution that has taken place in the intervening years in the relation of the history of architecture to the practice of architecture. The two have separated; they are different employments—two games now, not one.' SIR JOHN SUMMERSON (speech given at the presentation of the Royal Gold Medal, 1967)

The differentiation of the species 'architectural historian' from the species 'architect' undoubtedly reflects a vital development in our present concept of architecture's relationship to its own history. But this development does not explain why architectural historians have tended more and more to become fused with the genus 'art historian'; a fusion so intense that the American Society of Architectural Historians, with a membership of 3,500, is virtually obliged to hold its annual meeting in conjunction with the College Art Association of America. The fusion seems to have little to do with the nature of architecture, and seems due more to philosophical developments in nineteenth-century Germany and to artificial pressures exerted by, or congenial to, academic administrations. That the two disciplines can derive mutual benefits from a close awareness of their related activities is incontestable; indeed, the concept of the 'unity of the arts of drawing' is of such venerable antiquity as to constitute, in some measure, a historical justification in itself. But for those architects and architectural historians who are concerned with discovering what, if any, is the practical value of architectural history, and with the means of conveying such significance as it may have with unequivocal clarity, there are dangers in this fusion which are greater than the dangers which arose from the fusion of architecture and archaeology a century ago.

Firstly, there is the danger of arbitrarily imposing a universal and interchangeable system of classification. The idea of an interchangeable terminology has, of course, been for over a century the harmless affectation of a small coterie of critics of painting and music, whereby, for example, paintings are commended for their 'tone,' and music is praised for its 'colour.' But

whereas such transpositions were originally innocuous literary contrivances, the ideal of a universal taxonomy has now become so solemnly orthodox and rigid that most of the standard textbooks on the history of music used in American universities divide the subject into 'medieval,' 'renaissance,' 'baroque,' 'rococo,' 'classical,' 'romantic,' 'post-romantic' and 'twentieth century,' as if these classifications were demonstrably fundamental to all forms of artistic expression. Indeed, Joseph Machlin's *The Enjoyment of Music* even includes numerous illustrations of painting, sculpture and architecture, in a transparent endeavour to convince juvenile musicologists that this universal classification requires no philosophical proof. In the history of music, this classification was introduced by Curt Sachs, who studied the history of art in Berlin before switching to the history of music. But the system fits so neatly into the concept of the 'unity of the arts' that other musicological classifications (such as the theory that the history of music has only three main divisions: 'candlelight,' 'gaslight' and 'electric'—a theory which has obvious important architectural implications) are seldom even considered.

The second danger exemplified by this universal art-historical taxonomy is the confusion between morphological and chronological classifications. In the musicological sequence just quoted, 'post-romantic' is obviously a chronological classification, though 'romantic' would seem to be morphological; and the ambiguity of mixing terms indicative of formal characteristics with terms indicative of specific eras would seem to me far more harmful than is usually supposed (if one may judge from the architectural histories published in recent years). Many architec-



tural historians actively support this confusion, and would presumably argue that formal characteristics are inseparable from the motives which produced them, and hence inseparable from the era in which they were produced. This point of view is well expressed by Kerry Downes in his rejection of Mannerism as a classification for the work of Hawksmoor. 'It is tempting,' he writes on page 47 of his monograph, 'to stretch an overworked stylistic term and call Hawksmoor a Mannerist, although none of the classic explanations of sixteenth-century Mannerism would account for a Mannerist Style in the England of Queen Anne. It certainly cannot be explained by reference to social history, for the 1640's and 1680's had passed without it.' Yet the claim that Hawksmoor was Baroque must surely be open to similar objections if we accept Joseph Machlin's explanation of its causes—the establishment of the 'absolute state,' Cartesian rationalism, bourgeois ambition and the intensification of piety (a summary which corresponds fairly closely with that given by Henry Millon in *Baroque and Rococo Architecture*). Hence we are left in the uncertainty as to whether the term 'Baroque' signifies the possession, in common, of a number of morphological characteristics, or whether it is simply a synonym for '1600 to 1750.'

Moreover (and here we come to the third danger confronting architectural history) there are many scholars who, whilst accepting these main art-historical categories, introduce sub-categories which are in fact the very negation of that basic classification. Confronted with the difficulty of transmuting such an individualistic architect as Hawksmoor into a general category, they would not hesitate to dub his work 'neo-Mannerist' or even 'Hawksmoresque.' Indeed, it can be argued that the promiscuous proliferation of sub-categories by such suffixes as '-esque,' '-oid' and '-istic,' or of such prefixes as 'neo-', 'proto-' and 'crypto-', constitutes the hidden complex mechanism by which the procrustean bed of stylistic unification is made to work.

This mechanism would not be such a danger if architectural historians could agree on a standard terminology. But there is not even any consistency among the leading authorities as to what precise distinction is implied by 'Early Gothic,' 'High Gothic' and 'Late Gothic,' so there must be even less unanimity as to the meanings to be attached to mongrel expressions like 'Late Baroque Classicism' or 'Classicist Rococo.' For some authors, terminological variations are frankly a device for providing literary piquancy, as in such adjectives as 'Byzantinizing,' 'Byzantinoid' and 'Byzantinesque': three terms which are all to be found in the same authoritative book. Nevertheless, the fact that the author of this book remarks that a certain building 'is not easily pigeon-holed stylistically' suggests that stylistic pigeon-holing is a taxonomical ambition which still survives with unabated force in the most orthodox Rickmanesquoid tradition.

Defenders of multiplicity in stylistic classification argue that, whatever its disadvantages may be, these do not outweigh its usefulness; and they claim that, provided an author defines his terms, no confusion need be feared. Thus the standard textbook on Early American Architecture begins by stating: 'Quite

arbitrarily, we shall in this book use the term "Colonial" to apply to those styles that flourished in the eastern colonies in the seventeenth century, and the word "Georgian" for the style that flourished in the eighteenth century in the English colonies of the Atlantic seaboard. The fact that the eastern provinces remained colonies of England until the Revolution may make such a distinction seem slightly illogical—as indeed it is from the standpoint of political history. There are three reasons, however, why it may be helpful in discussing architectural history.' The three reasons given are: (a) that this terminology is more forceful than a division into 'Early Colonial' and 'Late Colonial'; (b) that it avoids the use of confusing sub-categories such as 'Late Early Colonial'; and (c) that the term 'Georgian,' as a synonym for '1700 to 1780,' is now customary usage in the United States. Yet, whatever the validity of these motives, it is evident that a student initially indoctrinated into this terminology will be completely confused when he is later told, by other historians, of the importance of the Queen Anne Revival in nineteenth-century America—especially now that a later textbook on American architecture identifies 'American Queen Anne' with the period 1725 to 1750.

Finally, the greatest danger of all is that of giving undue emphasis to the identification of prototypes—a danger increased by the popularization of the erudite synonym: 'paradigm'. Few students of nineteenth-century architecture are now so ignorant that they cannot define a 'Ledolcian Paradigm' or explain immediately why 'Soufflot's Panthéon provides no such simple paradigm as Stuart's temple.' The importance, for architects interested in the history of ideas, of understanding the influence of Durand's didactic technique, and knowing why the Munich Glyptothek might aptly be described as 'generically Durandesque' is, I think, uncontestable. But in so far as Summerson is justified in describing both architecture and architectural history as 'games,' it is because the latter has become a game of 'hunt the precedent,' whereas the former has become a game of 'hunt the unprecedented.' I would claim that this antithesis is not just a play on words, but is the fundamental reason for the separation to which Summerson refers; a separation that is largely the fault of retarded developments in architectural historiography. The persistent emphasis on paradigms is obscuring what was *original* in buildings of earlier ages, and *why* earlier architects considered that their work was original; for it cannot be over-emphasized that the inner compulsion towards originality has always been the mainspring of every great creative impulse in architecture, and future architects must surely be more intrigued by the manner in which buildings of the past were considered original by those who designed them, than by any real or conjectural prototypes. The criteria of originality have changed from epoch to epoch, and it is these changes which have most significance in the history of architectural ideas. If architects today occasionally display an extravagant concern with novelty for its own sake, it may well be because architectural historians are still unemancipated from a methodology devised when the principles of Revivalism constituted the basic architectural philosophy of the age.

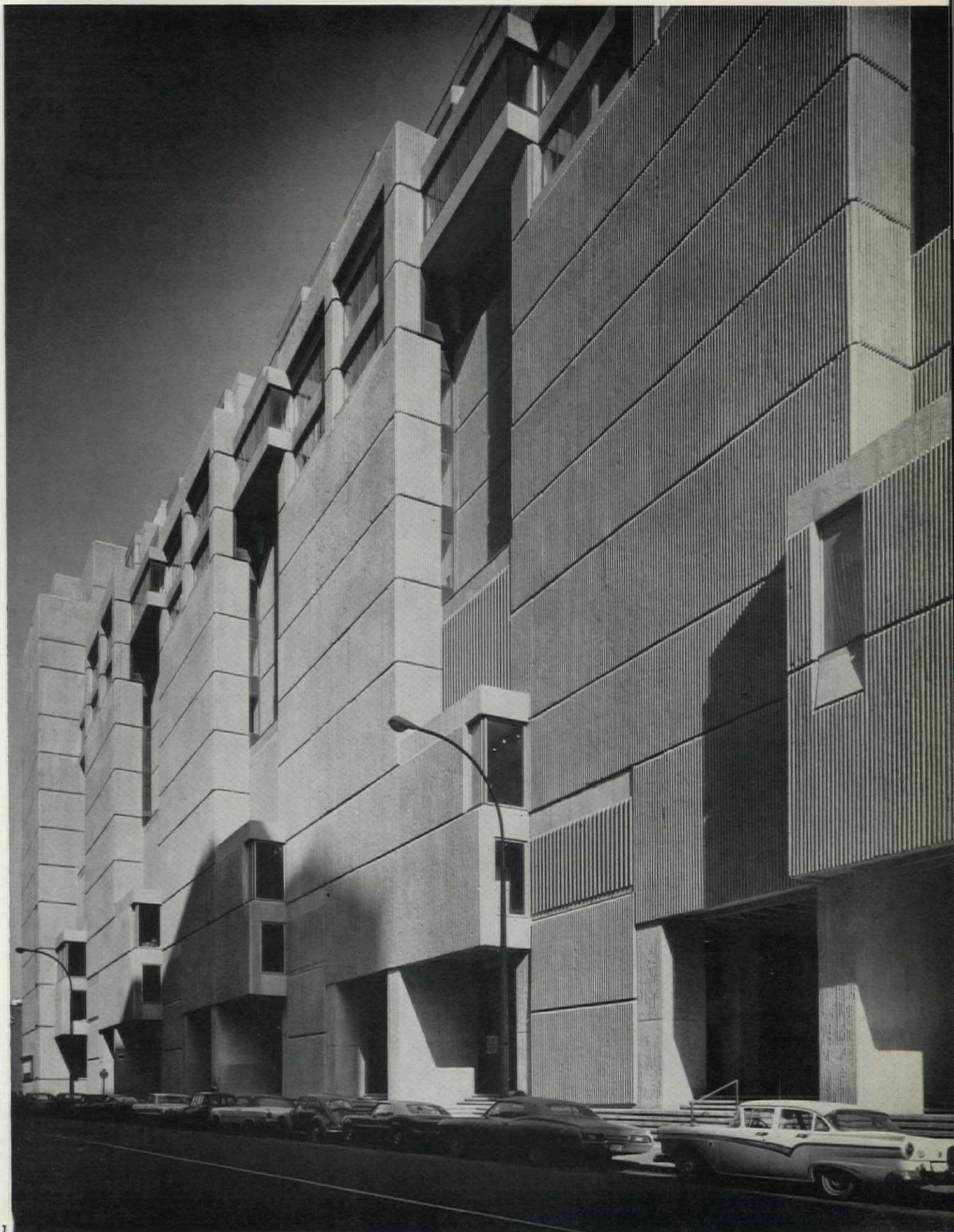


# TRADE CENTRE, MONTREAL

*photographs by Michael Drummond and H R Jowett*

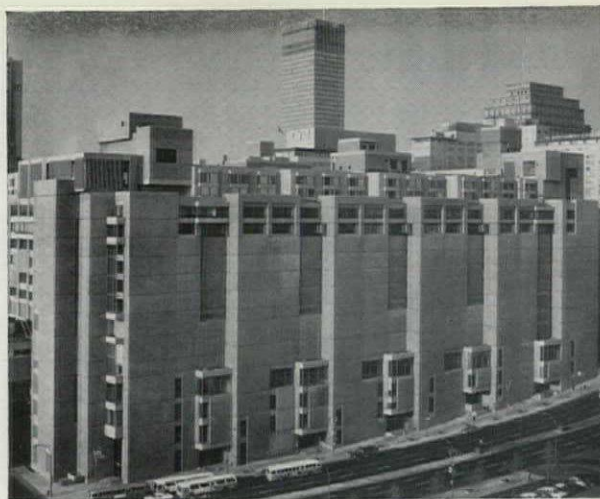
*architects* **AFFLECK, DESBARATS, DIMAKOPOULOS, LEBENSOLD AND SISE**

1, from La Gachetière Street. The windows in the upper part light offices and the hotel bedrooms.

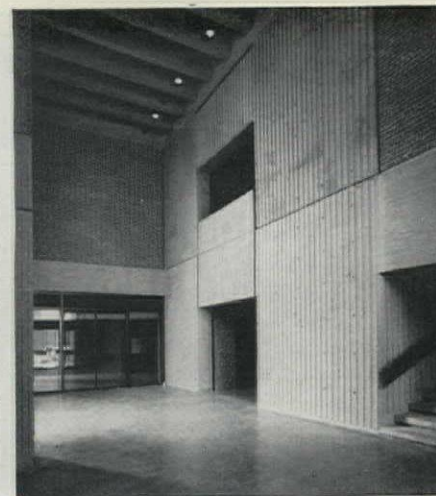




## TRADE CENTRE, MONTREAL



2



3

2, looking across University Street. The two upper storeys of set-back bay windows belong to the quadrangle of hotel bedrooms surrounding a roof-garden in which the public rooms of the hotel are placed. On the skyline can be seen some of the other buildings of the downtown area: far left, part of the CPR's Hotel Champlain (architects, D'Astous and Pothier); centre, Imperial Bank of Commerce (architect, Peter Dickinson); in front of it the CNR office building; right, the Sun Life building (1923—for a long time the highest building in Montreal); extreme right, the Queen Elizabeth Hotel.

3, one of the entrance halls, showing the use of the same ribbed concrete wall surface inside as out.

4, a corner of the building showing the 'shingle-type' concrete wall panels with vented joints.

5, (facing page), staircase.

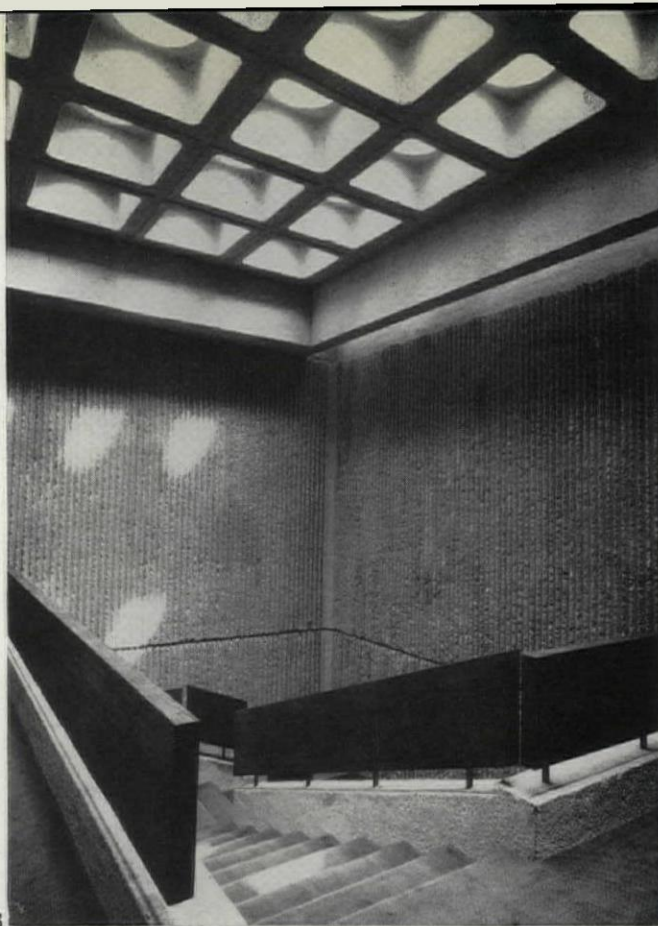
6, detail at one of the entrances. Another is shown on the cover of this issue.



4



5



Place Bonaventure is a multi-use building in downtown Montreal, tied in with the weather-protected pedestrian shopping and circulation system already developed as part of the Place Ville Marie and the Canadian National Railway projects (see the article 'Multi-Level City' in the August 1967 AR). It is also directly connected with the new Metro system and with the commuter terminal at the CN central station. The site, of 6 acres, has been made by building over the CN railway tracks and lies immediately south of Place Ville Marie.

The uses for which the various levels of Place Bonaventure are designed are as follows, reading from bottom to top: above the railway tracks, two levels of retail shops opening off covered, artificially lit promenades and connecting with the other downtown shopping promenades and with the Metro, as described above; a very large exhibition hall (250,000 sq. ft.), to be known as Concordia Hall and suitable for major temporary exhibitions such as the Motor Show, Boat Show, etc., with meeting, convention and other ancillary facilities in surrounding mezzanines and galleries; five floors together forming a 'merchandise mart,' each floor providing space that can be flexibly subdivided into showrooms of varying sizes, to be used as permanent display-space for Canadian wholesalers and manufacturers; one floor of offices for use in connection with the 'merchandise mart' below; an international exhibition area, with showrooms and offices to be permanently occupied by countries wishing to display their products available for export; a 400-room hotel, designed specially for conventions and block bookings arising out of the other uses of the building.

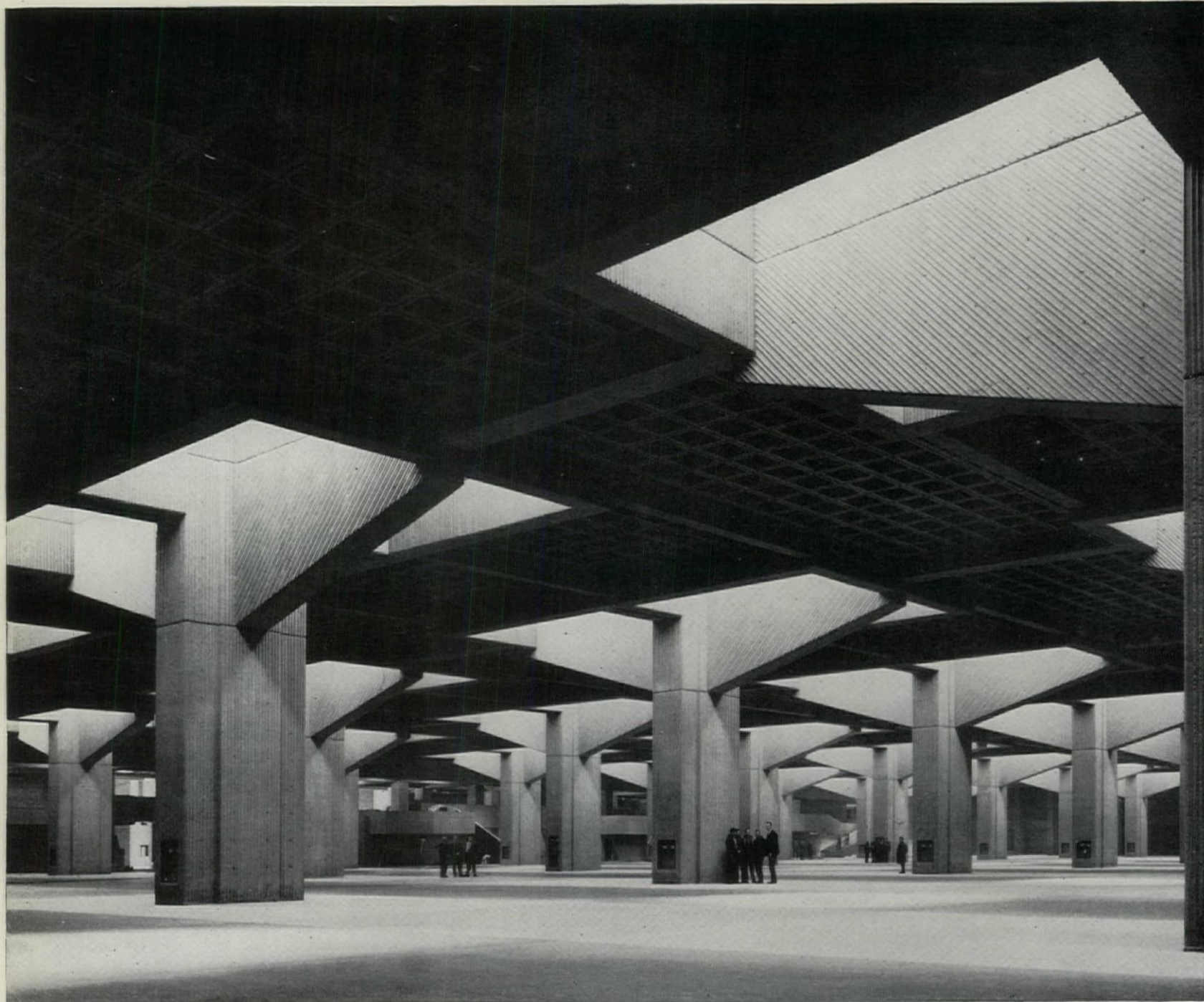
The hotel lobby and reception area are at roof level. They are surrounded by gardens, which are in turn surrounded by two floors of hotel rooms, facing inwards and outwards. Express lifts link the hotel lobby to the street-level entrance. There is a multi-storey parking garage, holding 1,000 cars, on the western side of the building, with its roof (at street level) forming a landscaped piazza from which the hotel is entered. On the south side a ramp, starting alongside the railway tracks and leading up to a covered dock, allows cars and lorries to drive directly into the main exhibition hall. The structure of the building is an *in-situ* reinforced concrete frame, with columns spaced according to a 25ft. by 25ft. grid established by the clearances of the CN railway tracks. At the level of the main exhibition hall, however, a long-span structure is introduced (75ft. by 50ft. grid), by the use of *in-situ* post-tensioned concrete transfer trusses. These occupy the depth of a complete floor and the truss space accommodates all mechanical, electrical and exhibit-handling services and allows easy access to them.

The design of the external walls—a double thickness of *in-situ* ribbed sandblasted concrete—is based on the 'rain-screen' theory evolved by the Building Research Division of the National Research Council of Canada for the taxing Canadian climate. Insulation is on the inner leaf, which is regarded as the main barrier to

6







7

the transfer of heat and humidity, and the outer leaf takes the form of large 'shingles' with open joints, thus venting the wall to the exterior, which also facilitates the equalization of air-pressures. The heavy concrete 'shingles' are made of *in-situ* concrete cast in movable forms of corrugated steel, using a warm coloured aggregate from the Ottawa Valley. There are very few windows, owing to the use of most of the building for exhibition and similar purposes. Offices and other open areas have metal windows. Partner in charge, R. T. Affleck. Project manager, J. E. La Rivière. Project designer, Eva Vecsei. Project architects, D. Lazosky and H. K. Stenman. Structural engineers, R. R. Nicolet & Associates and Lalonde, Valois, Lamarre, Valois & Associates. Mechanical and Electrical engineers, J. P. Keith & Associates. Developers, Concordia Estates, Ltd. Town-planning consultant, Vincent Ponte. Hotel consultants, William Tabler.

## TRADE CENTRE, MONTREAL

7, inside the Concordia Hall, the main exhibition hall of 250,000 sq. ft. at second-floor level. The photograph shows the hall empty; 8, below, shows it in use for a furniture exhibition, with one of the mezzanine galleries on the right.

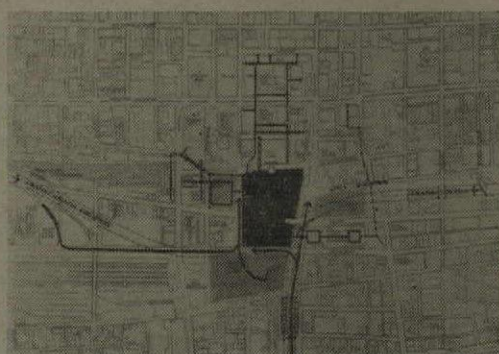


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## criticism

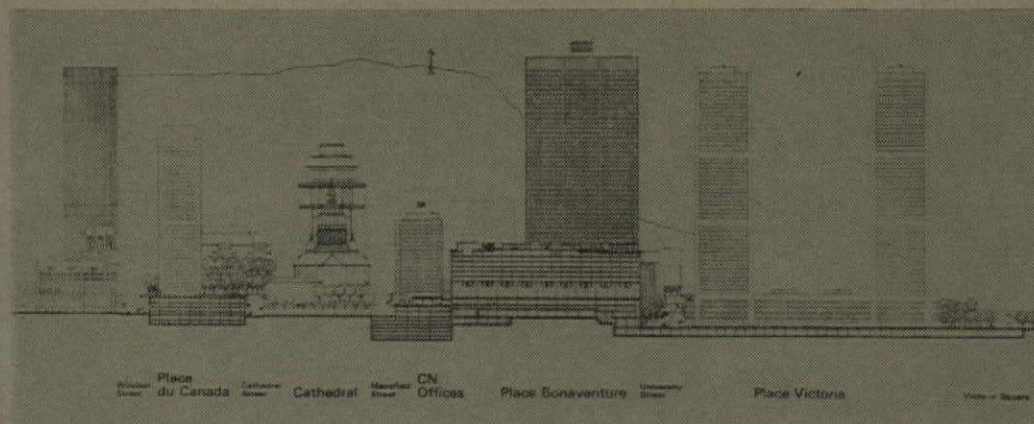
The heavily ribbed concrete walls that enclose the many and varied activities which Place Bonaventure so ingeniously caters for, provide an admirable foil to the aluminium and glass curtain walling of the other new buildings dominating Montreal's replanned downtown area, such as Place Ville Marie and Place Victoria (Why, incidentally, has the word 'place' lately come to mean, in Montreal, a tower block—surely a wanton distortion of language?). But it must naturally be asked whether this impressive display of solid walling really reflects the needs of the interior. We are accustomed today to factories and department stores that choose to do without daylight, and many of the floors of Place Bonaventure are for exhibition and display purposes and come into the category of interiors in which wall-space is



map illustrating the position of Place Bonaventure at the heart of Montreal, and the sheltered pedestrian network, linked with the Metro (shown dotted) surrounding it

more valuable than windows. But in some other floors this is more questionable; notably those given over to sheltered shopping streets.

These continue the system of shopping promenades built as part of the Place Ville Marie development, which by virtue of their position—surrounding the car-park beneath the paved piazza—and because of the advantages of linking up with the new Metro and the labyrinthine pedestrian circulation sys-



east-west section through Place Bonaventure showing its relationship with the other developments in the downtown area: immediately behind it is Place Ville Marie; only one of the two towers comprising Place Victoria, right, has so far been built

tem associated with it, inevitably rely on artificial light, except for a small amount of daylight filtering in from the sunken courts at the corners of the piazza. But the Place Bonaventure shopping promenades had no need to conform to this restriction. They are well above the surrounding street level and would surely have been more agreeable opened up—at least in certain places—to the light of day?

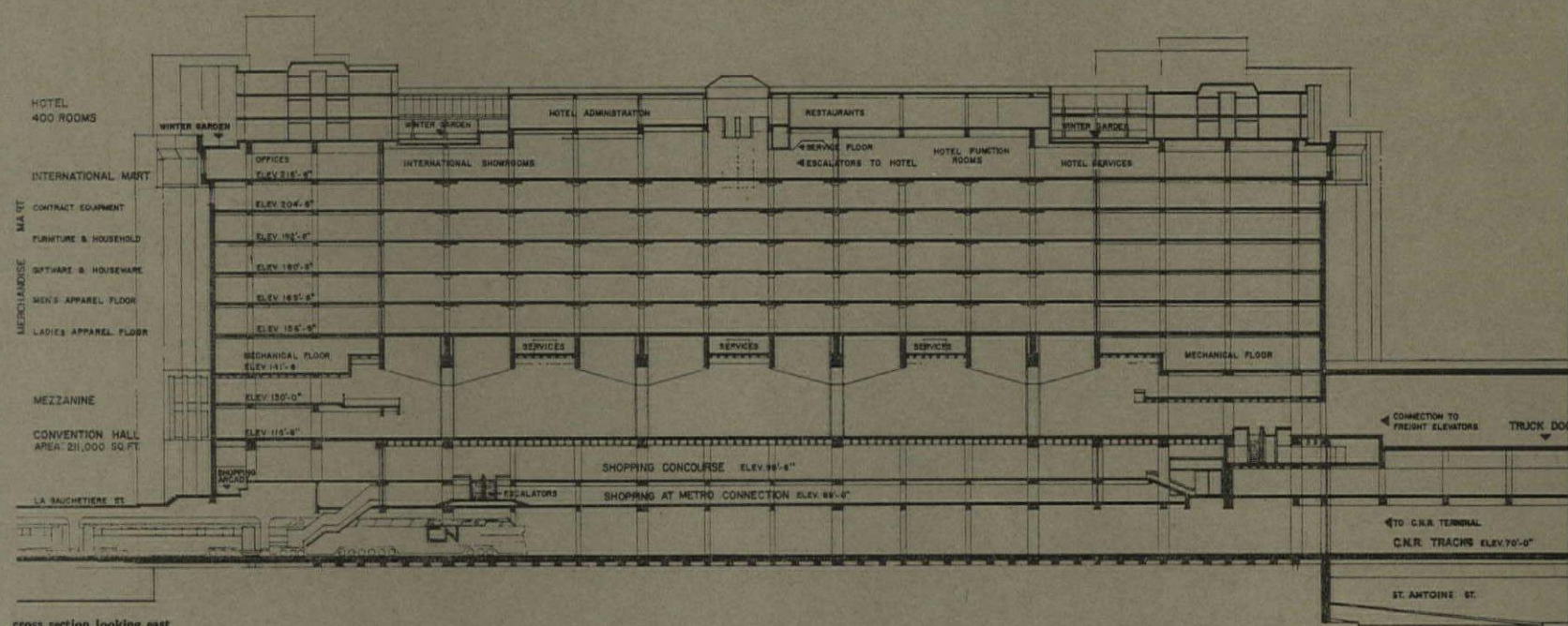
They are otherwise skilfully designed. The architects, for example, have struck an admirable mean between permissiveness and discipline in the treatment of shop fronts; imposing a unifying framework without themselves designing them in detail. These sheltered shopping areas will be an asset to Montreal, especially in the city's severe winter climate—as indeed the shopping promenades built earlier quickly became. The system shows signs of spreading all over the central part of the city and the only pity is that there is not a more direct connection between Place Bonaventure and the rest. This, however, was not the architects' fault. They planned a bridge at the shopping level across La Gauchetière Street, but for some reason this was disapproved by the city authorities, so that you have to dip down underground to reach Place Ville Marie, the CN terminus and the Queen Elizabeth Hotel.

There are two significant facts about this conscientiously thought-out building. One is

its multiplicity of use, which our cities increasingly need. With its underground connection with all forms of transport, its shops below and its hotel (which could equally well have been flats or small houses) above, it is a self-contained urban unit, which is surely a better basis for central city planning than the separate use-zoning which makes redeveloped cities dead outside working hours and duller to live in.

The other significant fact about Place Bonaventure relates to the ground it is built on—or, rather, to the fact that the so-called ground was created by building over the CN railway-tracks, which shows how meaningless in the modern city is the conventional conception of ground-level, above ground and below ground. In a development like this the ground, as Ray Affleck has himself said, is where the designer chooses to put it. The so-called underground pedestrian network with which the lower levels of Place Bonaventure link up is, in fact, hardly ever under the ground in the sense of being below the level of the surrounding streets. The ground—for example the Place Ville Marie piazza—is simply built on the top; moreover the levels outdoors can themselves be shuffled about as freely as the levels indoors. In a city the ground is no longer a fixed level to which continual reference is required, with the result that town design as well as architecture can now be fully flexible in all three dimensions.

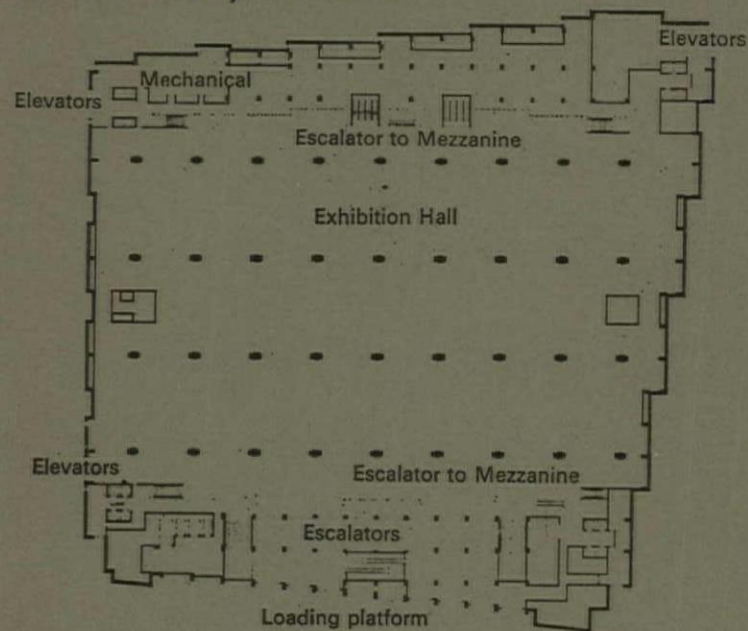
J.M.R.



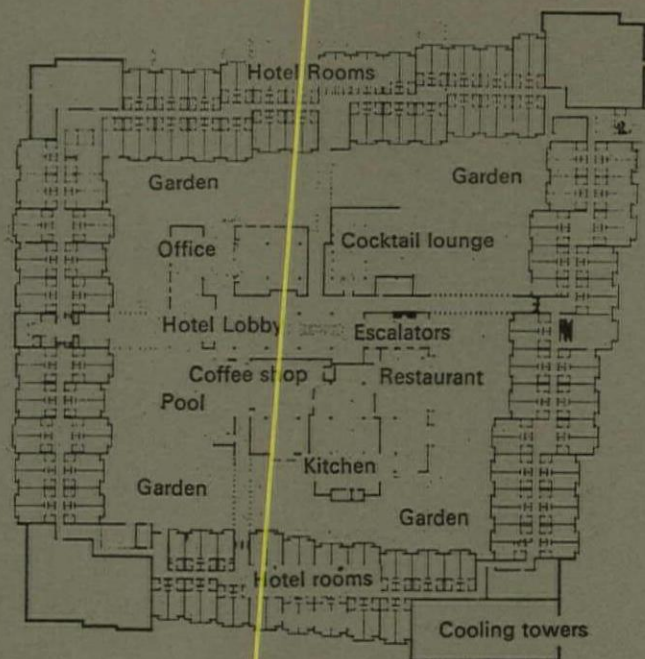
cross section looking east



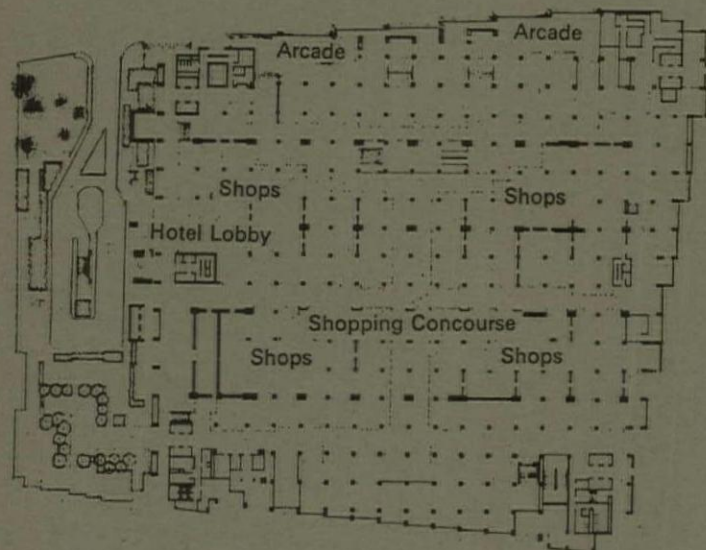
# TRADE CENTRE, MONTREAL



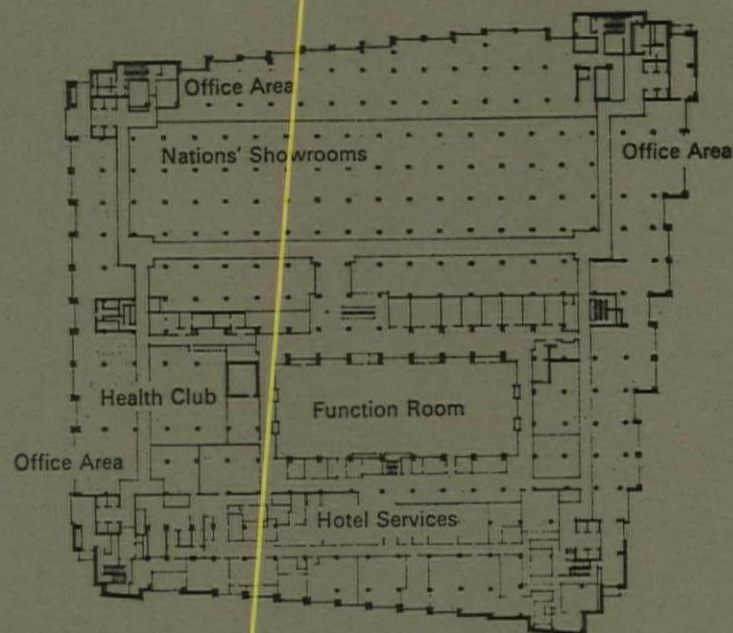
exhibition hall level



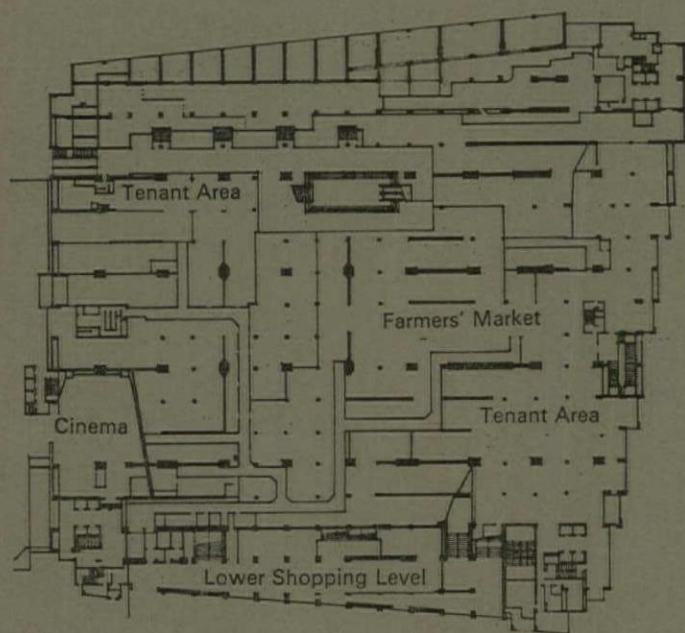
hotel level



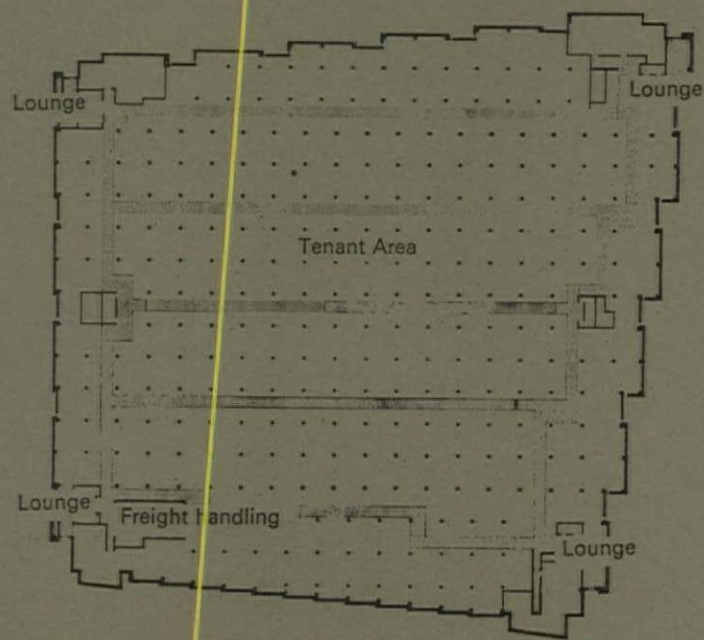
main shopping level



international showroom level



lower shopping level



merchandise mart level





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Three typical interiors in the lower (shopping) levels of Place Bonaventure. 9, on the upper level of the two-storey shopping concourse. The access lobbies, seen on right, are lined with purpose-made flint-faced grey bricks. 10, stairs and escalators linking the two levels of the shopping concourse. Note on right the unifying fascia treatment. This is also shown in 11, a jewellers shop at the upper level, by Cranfield Stephens & Associates, designers appointed by the tenant to work within the framework laid down by the architects of the building.



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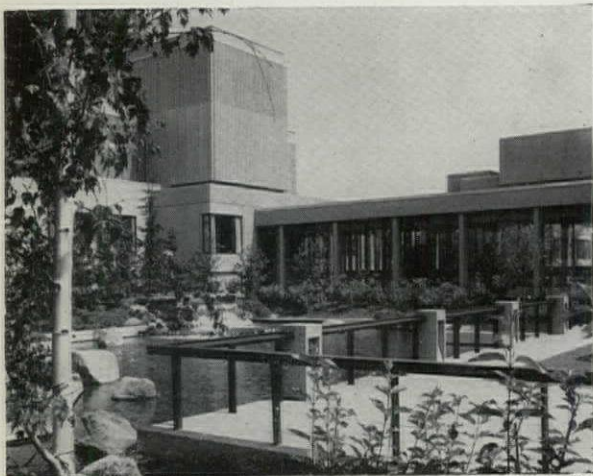




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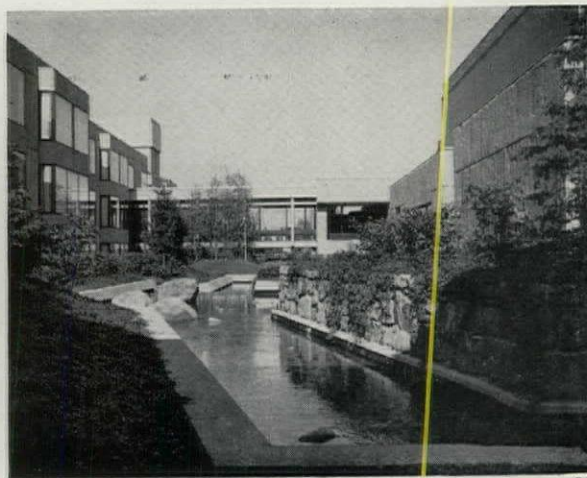
The hotel at the top of the building. The bedrooms surround a roof garden, in blocks two storeys high on three sides and three storeys on the fourth, 12. The garden includes a heated swimming-pool, 13. In the background of 13 and 14 are covered ways linking the bedroom wings with the public rooms in the centre.

## TRADE CENTRE, MONTREAL



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## Motorway Service Areas



An article by Raymond Spurrier on the design of Motorway Service Areas, published in the AR in December 1960, was the first to appear on the subject in this country. Since then a research study has been undertaken at University College, London, under the supervision of Professor Lord Llewelyn Davies. Mrs. Barbara Castle, Minister of Transport received the final reports from this study in February 1967. The following article, by one of the researchers involved, reviews the problems of Service Area planning encountered during the study. The views expressed are those of the author and do not necessarily represent Ministry policy.

Motorway traffic is increasing yearly. Yet it is impossible to predict and control the number of vehicles and people who may wish to stop at a Service Area. For the number of vehicles stopping at Service Areas varies widely with the month of the year, the day of the week and the hour of the day. Thus, there can be no finite brief for the operational life span of a Service Area development.

It is the parameters of the Service Area problem that are most susceptible to change. What innovations are likely in vehicle design? How soon will automatic road guidance systems be introduced on British motorways? How will travelling behaviour, eating habits, social customs and catering methods change during the next fifty years? It would be dangerous to design too tightly around today's answers to such questions. We should instead recognize the essentially open-ended nature of human activity and plan accordingly. We should therefore adopt commonsense policies which avoid rather than attempt to solve intractable problems of this nature.

### Expansion and adaptability

A planning policy of 'least commitment' is advocated in which parking areas, fuelling and catering facilities are designed initially to meet the statistically predictable demands of the next few years, but are capable of expansion in the future if and when additional demands arise. By the

same token, they should be planned to permit future adaptation to meet the changing requirements of both operator and user during the fifty year lease period.

### Shutdown.

To help combat the extreme variations in Service Area use, buildings should be planned to permit the shutdown of areas during slack periods. The functional requirements of the various elements of Service Areas have been well documented elsewhere.<sup>1</sup> Here I wish to focus on three critical sets of relationships. First the relationship between individual Service Area units on the route. Second, the broad relationships linking the fuelling, parking and eating facilities—the major determinants of the site environment and the circulation network. Third, the relationships of parking to eating and eating to kitchen areas—important for the convenience of the public and for the efficient and economic operation of the catering service. Some of these relationships are wholly quantitative in that they may be described with explicit data and rationally resolved by logical, mathematical or graphical means. Other relationships are qualitative involving value judgements of 'comfort,' 'pleasantness' and 'appearance.'

### Route planning

The planning of an individual Service Area unit will be influenced by the pattern of provision on the route as a whole. Its

capacity must be related to the level of motorway traffic, the type of route, its location in relation to urban areas, and to the number, size and spacing of the other units on the route.<sup>2</sup> Comprehensive tables showing the required capacities of fuelling and parking areas produced as a guide to the preparation of tender documents for future sites indicate that, if present trends continue, an increase of up to four times the initial level of provision will be necessary on some routes. But growth of this order will only be achieved if, in addition to the expansion of the existing areas on the route, new units are introduced from time to time. The location of these secondary developments must be carefully selected to minimize losses of trade at the established motorway businesses. The sites on the carriageways leading immediately away from urban areas should be developed first, since these are the locations where the greatest demand occurs.<sup>3</sup> Subsequent developments should be added in the direction away from the urban area so that the levels of trade at the earlier sites are not reduced. In principle there are seven possible forms of development:

- A Single-sided with the catering facilities serving one carriageway only.
- B Single-sided with the catering, fuelling and parking facilities serving both carriageways via a road passing over or under the motorway.
- C Single-sided located at the junctions



between the motorway and 'all-purpose' roads, serving both carriageways.

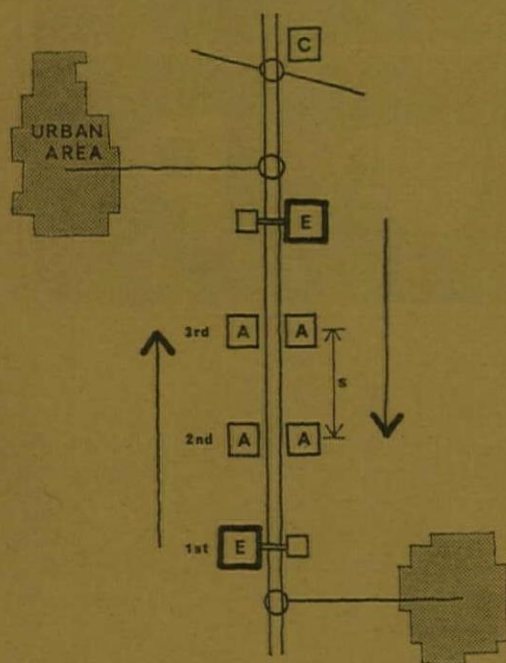
D Service facilities located between the carriageways of the motorway, serving the traffic from both carriageways.

E Double-sided with catering facilities on one side only, serving both carriageways via a pedestrian bridge or underpass.

F Double-sided with catering facilities on both sides of the motorway, connected by footbridge or underpass.

G Double-sided with the catering facilities located on a bridge over the motorway serving both carriageways.

Developments of type D have the serious defect that access to the Service Area will always be off the fast lanes of the motorway. A broad appraisal of capital costs and of costs in use suggests that only types A, C and E, are suitable for future sites.



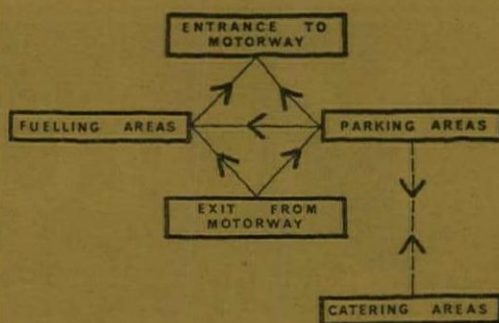
pattern of route provision showing size of units: A = single sided, C = developments at junctions, E = double-sided with catering facility on one side only, S = average spacing of 12 to 13 miles. Arrows denote sequence of opening.

### Site planning

The six vehicular routes that the public may wish to take at any site are listed below in order of demand. It is doubtful if there will ever be sufficient demand to justify the provision of the sixth route but the other five must all be incorporated.

- (i) Entrance slip road to Parking Areas.
- (ii) Parking Areas to exit slip road.
- (iii) Fuelling Areas to exit slip road.
- (iv) Entrance slip road to Fuelling Areas.
- (v) Parking Areas to Fuelling Areas.
- (vi) Fuelling Areas to Parking Areas.

There are certain limitations to circulation planning. Each route should be planned for one-way traffic flows with no cross circulation between different routes. To avoid confusion it is best to limit the driver's choice to two clearly signed alternative routes. The only important pedestrian route on Service Area sites is the one linking parking areas and the facilities. Obviously this route should not cross any of the major vehicle routes except by



principles of site circulation

bridge or subway. None of the routes should be impeded by the future expansion of parking, fuelling or catering areas. Disruption, inconvenience and expense will be avoided if these major routes are considered as 'fixes' with expansion directed away from the site circulation network. The degree of expansion necessary at the higher traffic levels has been estimated so we can therefore calculate the area that should be left undeveloped initially to accommodate these expansions when and if they occur. The general layout of the parking areas should be planned to accommodate the probable changes in vehicle characteristics. For example, in lorry parking areas, the conversion from 'aisle' to 'lay-by' types of arrangements is becoming increasingly common to satisfy the growing number of vehicles with trailers. Parking facilities therefore are best planned as large uninterrupted areas in which aisle and parking bays are shown by ground markings only. In the past traffic engineering has been allowed to outweigh the more qualitative planning considerations.

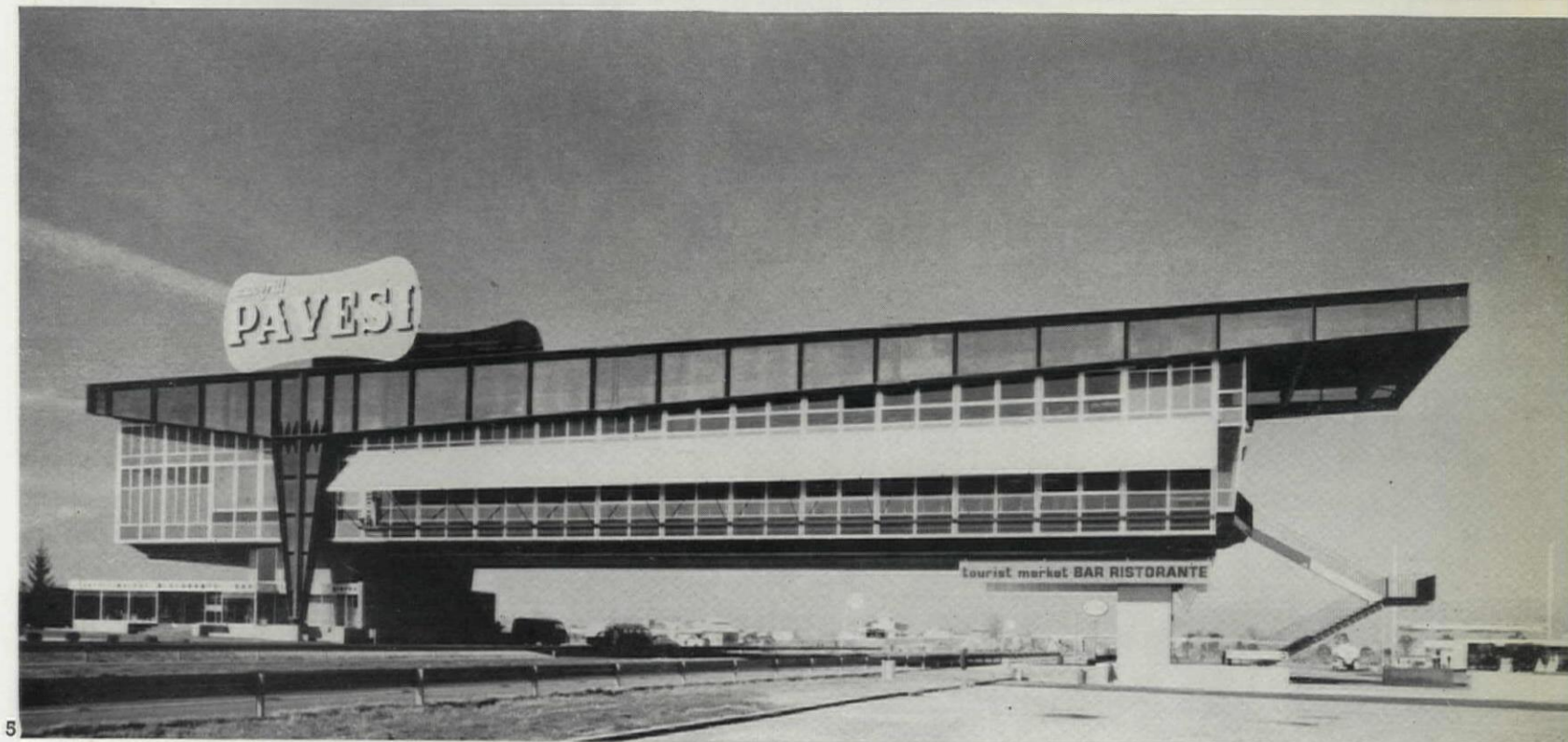
Most Service Areas are situated in open country but in England the environmental potential that such sites offer has all too frequently been ignored. The Ministry of Transport, in their Motorway Design Manual (section 24.12), recommend that 'As Service Areas will be used by drivers and travellers seeking rest and refreshment, they should (so far as other factors permit) be sited in quiet and attractive rural surroundings away from heavily trafficked side roads.' Most people would endorse this directive. Yet all but three of the existing English Service Areas locate the catering buildings directly over or immediately adjacent to the motorway.

As our motorway network is extended, the average length of motorway journey will increase and the Service Area function of providing temporary rest and relaxation will become increasingly important. The control of noise, the creation of something enjoyable to look at and pleasant to be in are, I believe, the most important factors affecting the qualitative environment of a site. Noise is defined as 'unwanted sound.' This means that any assessment of noise on a site cannot be restricted to measurements of noise on the site but must also take into account the subjective opinions

of the users concerning the sound levels. The major external noise sources are the motorway and the commercial vehicle parking areas. Since Service Area users are automatically motorway travellers they will be relatively tolerant of motorway noise. As environmental designers we should however attempt to protect those areas where the public eat and relax from this noise source. In site planning there are two major ways of doing this. First by placing the public's facilities some distance from the noise sources. Second by positioning the building elements acoustically to shield those parts of the development where quiet is most desirable. Next we should consider whether those walking on the site and using the various public facilities should be predominantly exposed to a backcloth of cars, parking areas and motorway or whether views of the surrounding countryside would be a more pleasant alternative. It may be argued that the studies made by some of the motorway caterers indicate that many of the public prefer catering buildings that are motorway orientated. In those countries with a longer motorway history than ours (Germany and America) the reverse is argued—the novelty of 'motorway gazing' seems to have died. For reasons of security the catering facilities for commercial drivers may directly overlook the lorry park. From an environmental standpoint, it seems commonsense to ally these facilities with the surrounding countryside and to locate fuelling and parking facilities by the motorway—the reverse of present English practice.

The broader environmental issues are difficult to discuss outside the context of a particular site. So much will depend on the local climate and geology and on the Ministry's choice of site. At the visual level, the needs of the Service Area operator and the public should again be uppermost. The costs of site maintenance, cleaning and replanting are frequently overlooked. Landscaping is too often based on pseudo-intellectual concepts rather than the psychological needs of the user. It is essential first to grasp the visual scale of the elements involved—the motorway—the tarmacked parking areas—the encircling countryside and its vegetation. We will never resolve the visual problems of scale with a fussy 'garden' approach to landscaping. The Service Area landscape should emphasize the logical chain of progression through the site, obscuring non-entrances, screening the parking areas, motorway and breakdown compounds from pedestrian areas. The site's contours and mature vegetation must be fully exploited and views of the countryside opened up, utilizing these for restaurants and terraces. For reasons of scale and also of planting and maintenance costs it is





Fuelling facility off an entrance slip road: 1, Strensham Service Area (architects: T. P. Bennett & Son). Catering facilities located on a bridge over the motorway: 2, Service Area di Feronia, Italy (architect: Dr. Angelo Bianchetti); 3, Charnock Richard Service Area, M6 (architects: T. Verity Associates); 5, Service Area di Montepulciano, Italy (architect: Dr. Angelo Bianchetti). Service Areas are in operation 24 hours a day, therefore their appearance at night is as important as how they look by day: 4, Service Area di Firenze, Italy (architects: Agip). Interior of one of the most recent British Service Area restaurants: 6, Aust Service Area, M4 (architects: Russell, Hodgson & Leigh). Restaurant with a view: 7, Forton Service Area, M6 (architects: T. P. Bennett & Son.)



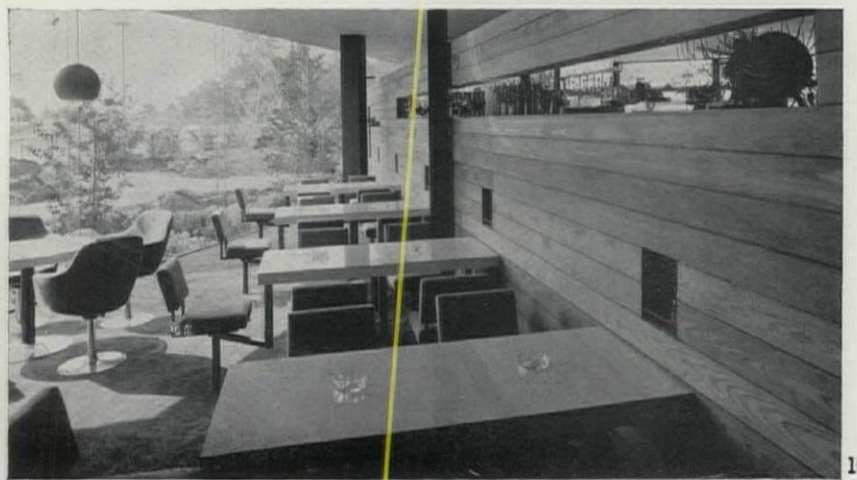




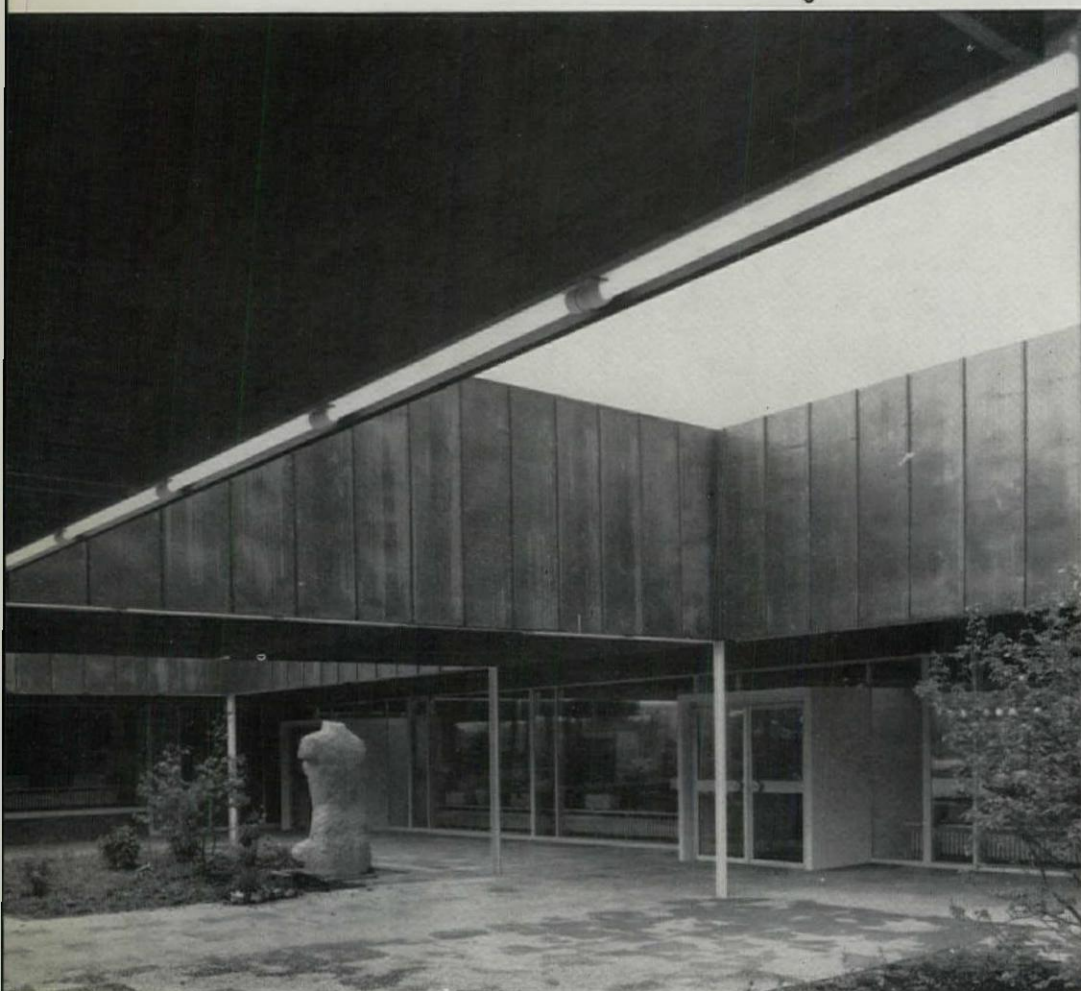
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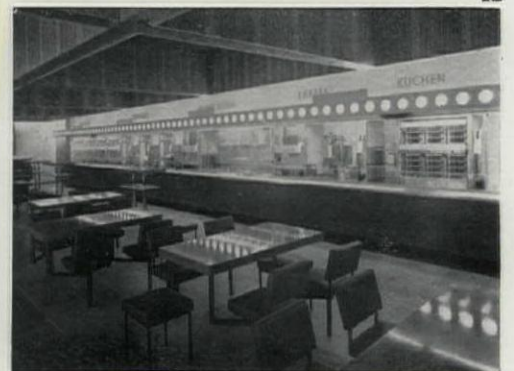


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In Germany a central government company (Gesellschaft für Nebenbetriebe der Bundesautobahnen) entirely finances and has overall control of the planning and design of all service areas. Obsessions with 'public image,' 'house style' and architectural gimmicks are replaced by a straightforward approach based on the needs of the public, the operator and his staff, and on the environmental potential offered by sites in the country.

8, fuelling facility, 9, general view of the catering building, 10, automated snack bar, 11, entrance to the catering building, all at the Bühl service area in Germany designed by Professor Paul Stohrer. 12, a typical modern German restaurant interior with standard furniture fittings as exhibited at the International Transport Exhibition, Munich 1965.

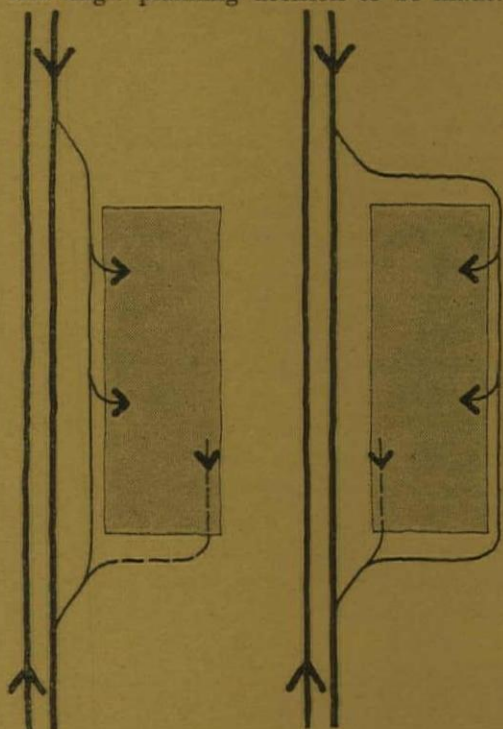
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better to rely on natural rather than man-made landscape wherever possible. Only at a few sites in semi-urban areas will it be necessary artificially to landscape sites on a comprehensive basis. Here the catering building may best be planned around a landscaped courtyard.

A wide variety of possible site circulation systems would satisfy the traffic, expansion and environmental considerations that have been described. On balance a 'sequential' circulation system, in which access to fuelling and parking areas is off one main through-route, shows the greatest benefits for the driver. The location of this main through-route is probably the most important single planning decision to be made.



alternative positions of site through-routes: parallel approach on the left peripheral, on the right. Tinted area marks the position of the fuelling, parking and catering facilities.

In comparing these possibilities again we must be careful to evaluate not only the traffic engineering aspects but also all the other planning requirements. At unrestricted country sites the parallel through-route has many advantages. With the parallel route the transition curve from the motorway may be very gradual indeed, overcoming the tight-bend hazard common to many Service Area entrances. With appropriate road surface treatment the parallel route position gives greater safety to the user, eliminating confusing layouts by providing a major axis by which the user can orientate himself. The signs to all facilities could occupy a standard position in the zone between the through-route and the motorway.

With the alternative peripheral through-route, common to most of the existing English Service Areas, the parking areas (and hence the eating areas) are all contained within the road network—an undesirable environmental situation. Future expansion is also impossible unless an area has been reserved within the road

network to accommodate this need. Thus the peripheral system is inflexible.

Finally the parallel through-route will have particular advantages at sites on the more remote motorway routes where it may not be necessary to develop full service facilities at the start. At first only a parking lay-by off the through-route may be necessary. Later fuelling facilities may be added, perhaps with a very limited drink and snack service. Finally the full catering developed. Throughout, the circulation system will remain unaltered if the parallel through-route has been selected.

This is therefore the sensible choice for unrestricted one-sided developments. This system should also be used at double-sided sites with the pedestrian bridge passing over the motorway and the through-route. At restricted sites on the edge of urban areas, where expansion of the initial provision is severely limited and views of the surroundings are poor, the peripheral system will usually be the best choice.

At the existing English Service Areas a great variety of circulation systems has been employed, which offer no real advantage to the public or to the operators. At the more recent German Service Areas, standard principles govern site circulation regardless of the topographical characteristics of individual sites. This helps to eliminate confusion and improves safety. Some degree of standardization in site planning is desirable provided that the principles to be applied are general enough to include the peculiarities of specific sites.

#### Parking—eating—kitchens

The handling of this complex of relationships—the ties linking the capacities, sizes and configurations of the parking, eating and kitchen areas—is fundamental to good functional and visual design. There are two further general policies which could considerably increase the economic viability of future Service Area developments. The first is a centralized kitchen area and the second, eating areas planned with an eye to future adaptation.

Most English Service Areas have duplicated kitchen facilities and in one case as many as four have foolishly been provided. This practice is the exception in German, Italian and American Service Areas. Only one centralized kitchen area should serve all the eating areas on the site to reduce initial capital expenditure and staff wages, the major element of running costs. For ease of catering operation, therefore, it is best that each of the eating areas such as restaurant, cafeteria and transport café has direct access to the centralized kitchen area. Horizontal access with the kitchen and eating areas on the same floor level is preferable.

It will almost certainly be necessary to modify the divisions of the total catering

provision (restaurant, cafeteria, transport café, etc.) during the fifty-year lease period, so different types of eating area should never be permanently separated from each other. The transport café should no longer be built as a separate entity. Structural divisions between adjacent areas which could not be knocked down at some future date should be avoided. Major service runs of gas, water, drainage, heating and ventilation ducting should not be placed along walls between adjacent eating areas since these would be costly to dismantle and reinstall when alterations occur. The capacities of the parking and eating areas are quantitatively related. The number of seats (S) necessary to meet the peak demands generated from a number of parking places (P) is given by the expression  $S = P (o.t_2/t_1)$ , where o is the average vehicle occupancy and  $t_1, t_2$  are the average lengths of stay in parking and eating areas respectively. Both vehicle occupancy and 'length of stay' vary with purpose of travel, whether it is for work or leisure. It is the average values of these factors during peak periods that are important for preliminary planning purposes. Applying these figures the following ratios are derived.

1.5 internal seats per car parking bay.

0.95 internal seats per lorry parking bay.

21 places per coach parking bay.

These ratios will ensure a reasonable balance between the amounts of parking and catering provision. The input of people is naturally limited by the number of vehicles that may park at any one time. If the catering provision is proportionately greater than that of the parking facilities, then the eating areas will never be used to their full capacity. If on the other hand the parking areas are disproportionately greater than the eating areas, then the catering facilities will not be able to cope with the numbers of people generated. At a well planned Service Area the parking areas should act as a 'thermostat' during peak periods to prevent overloading the catering facilities. The pleasing appearance and siting of the Service Area will not compensate for quantitative design mistakes of this kind.

The space requirements of the parking areas will be at least nine times greater than those of the eating areas they serve. Thus the walking distances from the various parking areas to the catering facilities unavoidably will be lengthened by this basic disparity in size. The parking areas should therefore cluster around the entrances to the eating areas to reduce the lengths of pedestrian circulation. By the same token parking for Service Area users with the shortest length of stay, for example the coach passengers, should be closest to the entrances. Studies show that with careful planning at single-sided sites, the maximum distance from the furthest



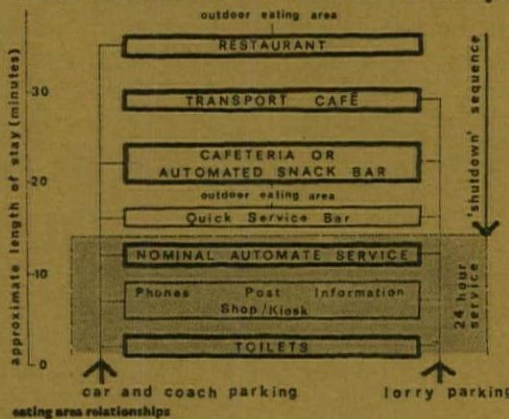
parked vehicle to the catering facility entrances need not exceed 400 feet for car travellers, 150 feet for coach passengers and 500 feet for the drivers of commercial vehicles, even at the larger service areas with the higher traffic levels. Similarly the space requirements for the eating areas will be approximately four times that of the kitchen areas. So for efficient staff operation, the eating areas should be closely grouped around the kitchen in much the same way as the parking areas cluster around the catering building.

It is the configuration of the parking areas around the catering facilities that most directly affects both the length and aspect of the public pedestrian routes. There are in principle only five possible configurations. Parking areas could completely surround the catering building, they could be on one, two or three sides, or they could pass beneath the building itself. The first and last possibilities have inherent drawbacks. At restricted sites with poor views planned with a peripheral through-route, parking areas completely surrounding the catering building may have advantages. At really restricted sites, catering facilities over part of the parking areas may be the only choice possible. The costs are inevitably higher. The additional capital costs of elevating the catering building above ground level would be considerable and running costs would be increased by the vertical supply and disposal to and from the kitchen and storage areas. Any of the other three possibilities—parking areas on one, two or three sides of the catering building—should therefore be adopted for the majority of future developments.

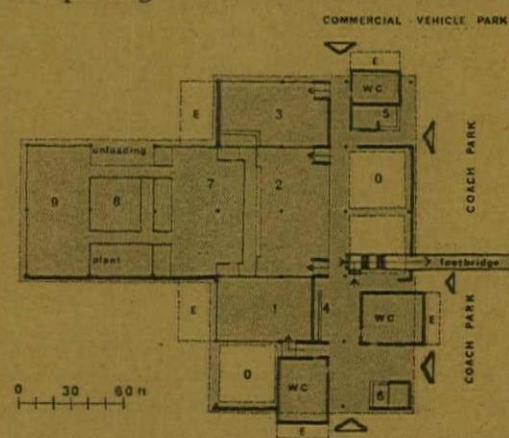
Quick and direct access from the parking areas is not in the same measure essential to each of the amenities provided. The toilet provision is the most heavily used facility at existing Service Areas and should be the first facility reached *en route* between the parking and eating areas. Congestion from queues is reduced where the main toilets are situated outside the catering building envelope. The catering service planned to give the fastest throughput for short-stop travellers should be located closest to the respective parking area. Ancillary facilities such as shop, phone, postal services, information, etc. are not critical in their siting but should be located adjacent to the entrances of the catering and toilet areas.

The pattern of eating area shutdown will influence the planning of the circulation routes to and from the parking areas. It will be necessary to close some eating areas for the whole winter period at those Service Areas on predominantly vocational routes. Others will only be closed for a number of hours in the day and during the night when demand is slack. Clearly eating areas that are to be open for the greater part of

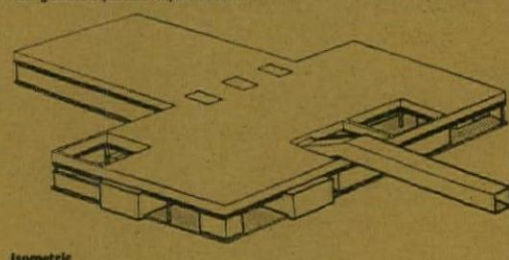
the time throughout the year should be located closer to the parking areas than those which will be closed down seasonally.



This ruling would prevent the public from having to walk past unlit closed sections. Thus the night automates and the transport café should be directly accessible from the parking areas. Cafeteria, snack bars,



key 1 restaurant, 2 cafeteria or automated snack bar, 3 transport cafe, 4 nominal automate service, 5 quick service bar (peak periods only), 6 shop/kiosk, 7 kitchen and local storage, 8 bulk storage area, 9 staff accommodation and offices, 0 outdoor eating areas, E possible expansion areas.



etc., should be the next nearest facility to the parking areas with the restaurants beyond.

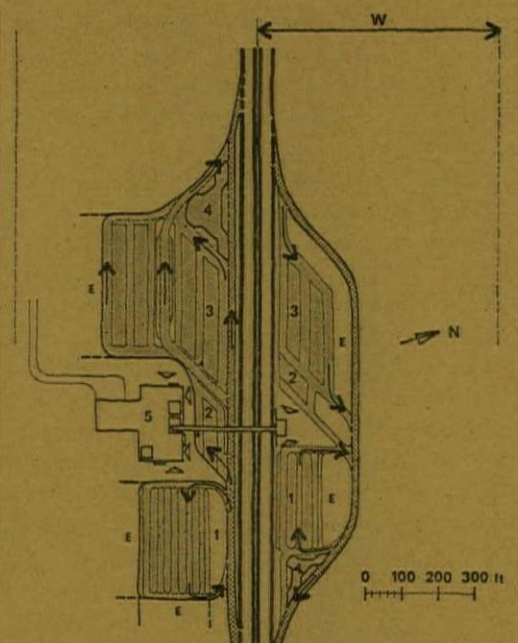
It is naturally only possible to tackle the detailed design problems with an actual site and for a particular client. There is a wide variety of possible forms for Service Area buildings. Variations in design and in the interpretation of the brief are inevitable and of course desirable. The principles that have been proposed are illustrated on this page.

#### The administrative framework

Tenders for Service Areas are divided into two interrelated parts, namely the Financial Offer and the Building Offer. There are only four types of tender.

These are:

- 1 F(n) and B(n). 2 F(c) and B(c).
- 3 F(n) and B(c). 4 F(c) and B(n).



design for a double-sided site adjacent to a large urban area (to the east) on a route with a high proportion of work-orientated traffic and an annual traffic level of approximately 8,300,000 vehicles. The southern half-site is planned with the parallel through-route system. For comparative purposes the northern half is planned with a peripheral through-route.

where F = Financial Offer.

B = Building Offer. n = Negotiated Tender.

c = Competitive Tender.

The Ministry of Transport operates a tendering system quite unlike those used in the rest of Europe and in the US. In England applications are invited in the form not only of a competitive financial offer but also a competitive building offer (tendering system 2 above). Selection of the best financial offer is easy to make. In assessing the building offer there is no overriding criteria such as 'most profit' or 'least cost.' In this situation the danger of awarding the tender largely on financial grounds is very real indeed. Instead a series of interrelated criteria should be applied many of which will be qualitative rather than quantitative.

Perhaps the general standards of Service Area design could be improved if a joint project were undertaken by the Ministry of Transport and a developer.

The current situation is that an architect has but a few months to prepare his initial design. He will know that it is to be submitted to the Ministry of Transport in competition with others to be assessed by civil servants including experts from many fields, but not from the fields of comprehensive planning and design. He will realize that his design effort could be wasted if the financial offer, which is not his responsibility, is unacceptable to the Ministry. Finally, if his design is rejected, he will obtain no detailed (written) feedback on its supposed faults. Is this likely to foster good design?

#### REFERENCES

- 1 *The Architects' Journal*, 'Car Parking Buildings,' 29.6.66; 'Garages and Service Stations,' March and April, 1964; 'Eating and Drinking Spaces,' May and April, 1964.
- 2 B. B. Nutt, *Traffic Engineering and Control*, June 1967, 'Research Report on Motorway Service Areas.'
- 3 B. B. Nutt, *The Hotel and Catering Review*, October 1967, 'Motorway Catering.'





**the exploring eye**

Ascension Island in the South Atlantic, seven degrees south of the Equator, was uninhabited until the Royal Navy put a garrison there when Napoleon was imprisoned on St. Helena—750 miles away to the south. It was also almost without vegetation, being composed of lava fields and conical mountains of volcanic ash. Only near the top of the central mountain, which rises to 2,800 feet, were there a few small springs, fed by the precipitation from clouds that hang about the peak. The Navy increased the precipitation by catchments and a dewpond and piped water down to their base at Georgetown. They also started a farm to supply the garrison with fresh produce, and as a result the greenery has extended and the whole

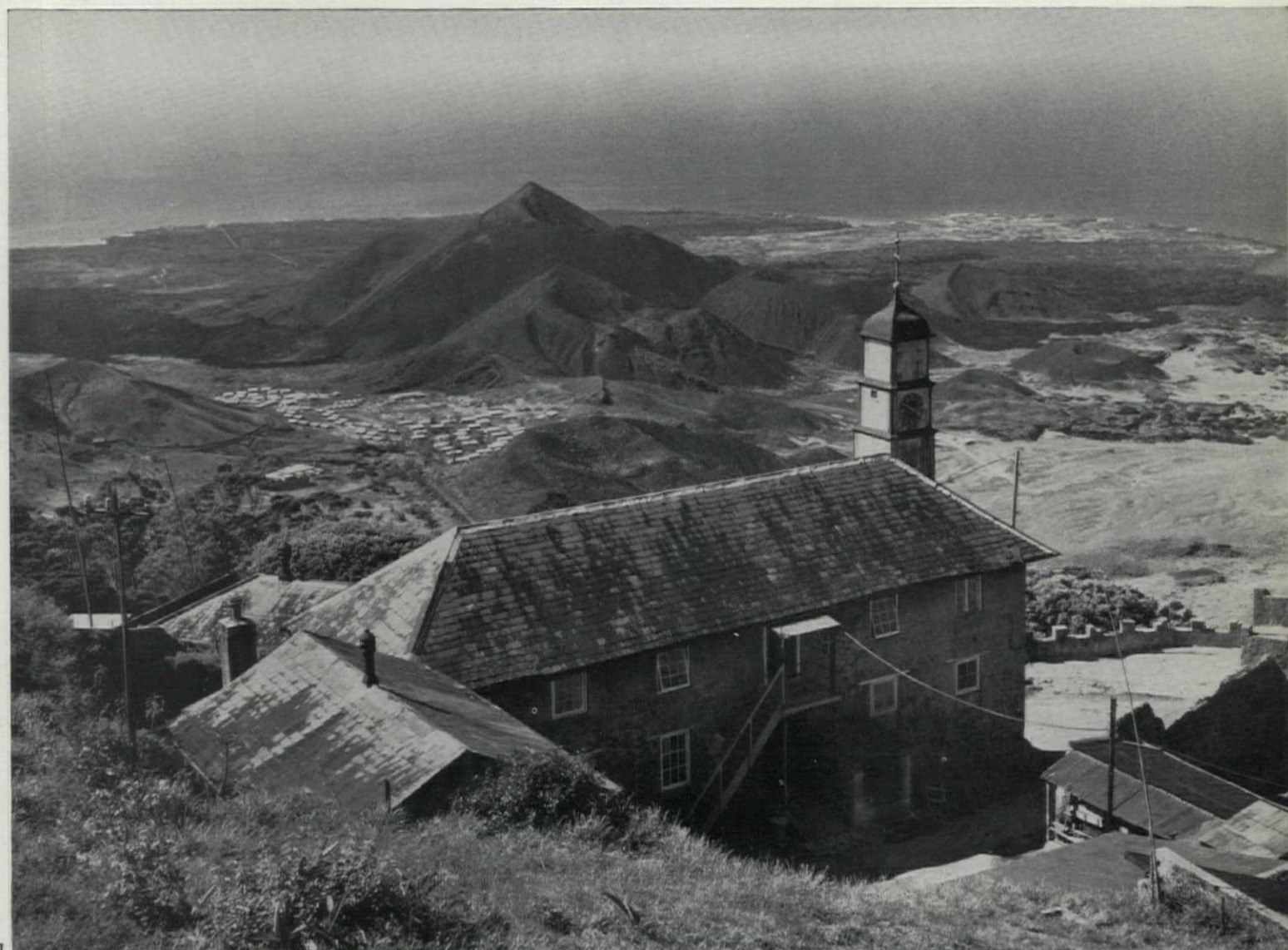
mountain-top, thick with trees and damp herbage, presents an extraordinary contrast with the arid moon-landscape—the gritty purple-brown hills like spoil-heaps and the stony plains between them—down below. The farm still flourishes, having been taken on by Cable and Wireless, who have a post on Ascension, when the navy left in 1922. Its various buildings—farmhouse, cottages, turreted barn and stables—stand among plantations of trees of many kinds; Queen Victoria, mindful of her sailors in this far-away garrison, sent out an expert from Kew to experiment with new species.

The small population manning the cable post at the old naval settlement at Georgetown has expanded in the last

few years with the setting up of an American satellite-tracking station in 1956 and a BBC relay transmitting station opened in 1966. For the BBC, the Ministry of Public Building and Works have built, since 1964, transmitting and receiving stations, a power station, workshops and a water-distillation plant on the coast, and a village for their staffs and their families and those who look after them 900 ft. up on the slope of the central mountain. Here conditions are healthier—within reach of the green mountain top and overlooking the dusty volcanic landscape, which is now adorned with a complex array of radio and other machinery, since Ascension is rapidly becoming one of the world's communication centres.



1, looking down from Ascension Island's central peak, with one of the farm buildings put up by the navy in the last century and, in the middle distance, the village now being completed by the Ministry of Public Building and Works. 2, prefabricated houses in the village. 3, the rocky shore, with some of the BBC's transmission aerials.







7

4 and 5, the fertile landscape high up on the mountain peak. 6, the contrasting arid landscape lower down, with conical hills of volcanic ash (the central mountain is in the distance on the right). 7, 8 and 9, the moonlike landscape of the lava fields that cover much of the island.



8  
9











1



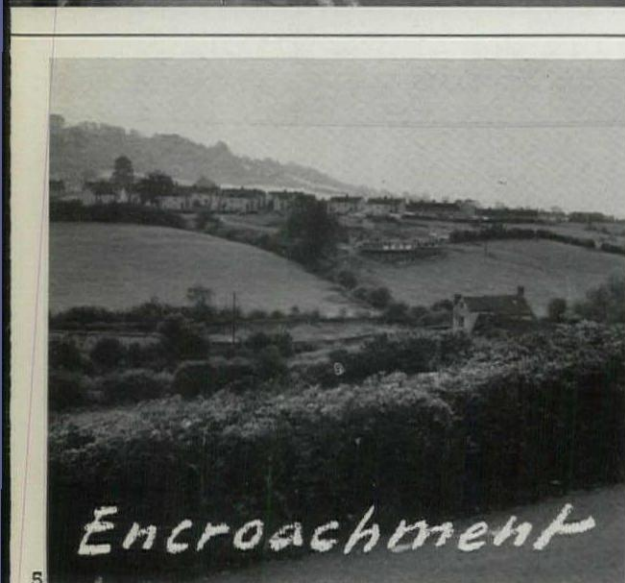
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5

**1-4** Wotton space containers: **1** junction of Market Street and High Street. **2** junction of Church Street and Long Street. **3** wing and angle in Market Street, looking south. **4** junction of High Street and Ham Street, with the police station boldly terminating the view. **5** encroachment in the valley. **6** valley footpath to Wotton, with church tower seen beyond unspoilt meadows.



6



Kenneth Browne

## WOTTON

## UNDER EDGE

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Street pattern of Wotton-under-Edge: **a** police station. **b** junction of Market Street and High Street. **c** junction of Church Street and Long Street. **d** junction of Church Street and Old Town. **e** Town Hall square. **f** Chipping. **g** waste land by Ram Inn. **h** St. Mary's Church.

The character of a town is the sum of many things. Unless we know what those things are in each particular case we cannot hope to safeguard its special qualities. Vague feelings are useless; we must know exactly what special aspects of shape, contour, site, colouring, are important there.

## BREAKDOWN

The chief threats to a town's character are that its form will be destroyed.

*On the inside:* firstly by the breaking open of the street 'walls,' the space definers. This generally happens on the pretext of easing traffic flow or in order to provide misplaced open space or suburban-type housing layouts. It results in loss of enclosure, of 'town-ness.' Secondly, character is destroyed by the tidy-minded but unimaginative borough engineer who irons out all irregularities in the name of efficiency, failing to appreciate that, as with people, idiosyncrasies are often an important part of identity. Thirdly, character is weakened by demolition or the unsuitable replacement of *key buildings* in the visual structure of the town. This is an important point insufficiently recognized in the Ministry lists, that some buildings are by their position vitally important to the town's personality. They may or may not be outstanding architecturally, but their importance soars on account of the role they play in articulating the street (see 1 to 4 opposite). In a mixed bag of a street, particularly are usually seen at a steep angle you can accept most buildings in reason so long as they respect scale and rhythm. However, the specially placed buildings, especially the end stops, not only hold in the space but are seen head on. What they look like is thus very important.

*On the perimeter:* character is repeatedly dissipated through confusion of town with countryside by sprawling housing or trading estates. Neither one thing nor the other, now they blur the junction between the two.

## WOTTON AS EXAMPLE

Here we take Wotton-under-Edge, Gloucestershire, as example. This is an attractive small town sited just below the western escarpment of the Cotswolds and extending up one of the beautiful combs which are characteristic of the area. The stream which runs through the town has been an important factor in its wool-weaving history. It is not a Cotswold showplace, like Broadway or Stow-on-the-Wold, nor is it built of uniform mellow stone and groomed to apple-pie order by some local big-wig. It remains a live, working town; a friendly, well balanced sort of place where butcher, doctor, garage-man, retired officer live side by side. This friendly quality is echoed in the buildings, with no regimentation but a wide variety of styles and materials all

fitting snugly together. There is also a strong sense of enclosure within the town mainly due to the way space is held in at the street ends.

The danger here is that, because it is not 'in the top twenty' it will fail to receive the planning consideration it deserves. Towns cannot stand still, but present character needs to be recognized, then reinforced, not weakened, by new development\*. This is where the existence and subsequent vigilance of the local civic society is so important. They should press first of all for a townscape survey to show what must be kept and where the opportunities lie.†

Nearby Dursley can serve as a warning of the disastrous effects of unsuitable development.

## QUALITIES

Immediately apparent assets at Wotton are:

*A splendid site:* on a ledge half-way between the top of the Cotswolds and the valley, with the town ringed by a great belt of trees. From the main streets, you see cows grazing above the rooftops. An intensely *built-up* quality, reinforced by the way the eye is nearly always contained within the town. Rarely are you allowed to look straight through at the ends of the streets. see 1 and 4  
*Clean edges:* that is to say a sharp and satisfying contrast between town and country. This is particularly noticeable leaving the town to the north, on the Coombe Road, and again to the south on the Bristol Road where from the town you look out across a wide prospect of countryside, marred only by a badly sited new school. It is important to preserve these edges.

## ENCROACHMENT

All is not well, however, for new housing estates at Synwell, on the east side of the valley, are an eyesore and threaten to spread down into it 5. This must not happen, for the combe is delightful, containing a favourite walk; a footpath, 6, by the stream winding through meadows and past one-time water-mills, eventually leading almost to the centre of the town. The last part of this walk is today scruffy and overgrown and marred by derelict buildings—but these defects could be rectified in an imaginative landscaping scheme. This would screen such eyesores as could not be removed and encourage good new building tightly compacted on the north side of the path. Wasted opportunity is most evident where the footpath strikes Synwell Lane, at the bottom of the hill by the Ram Inn. Here is the chance to continue the streamside walk through an attractive (not overdone) public garden, 12 (over page), replacing the present derelict scene, 11. The Synwell housing

\* The Full Moon pub is an example of anti-town new building.  
† For an example see the study of Hanslope carried out by Gordon Cullen for the Buckinghamshire County Council. A.R. July, 1967.

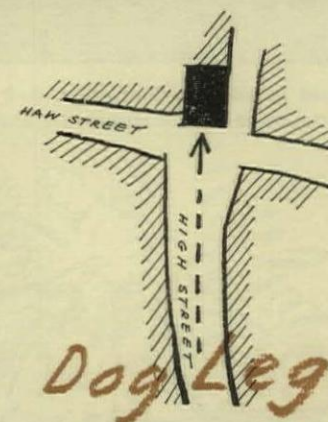
should not be allowed to encroach further into the green wedge of the valley and needs to be masked from it by a screen of trees.

## ARCHITECTURE

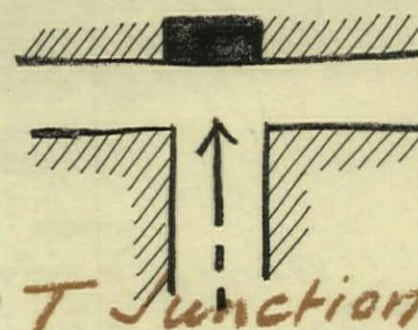
In addition to a mixture of honest, straightforward buildings from the fifteenth century onwards and a fine fourteenth-century church, the town contains a few houses of real architectural distinction. Unfortunately, some badly need repair. Hugh Perry's almshouses, Berkeley House, two bank houses and an early nineteenth-century police station are all very good. Indeed the latter, on account of its position, is in some ways the most important building in the town.

## SPACE CONTAINERS

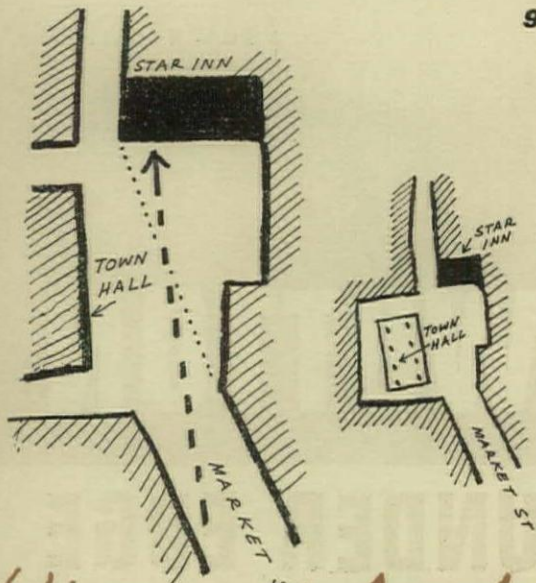
*Dog leg:* a building standing appropriately four-square at the west end of the High Street like a helmeted policeman, provides a perfect visual ter-



mination 4. No nonsense and set slightly forward from the adjoining terrace, it is seen dead ahead as you come up the High Street. The north side of the street breaks back at the last moment to reveal the road which runs up beside the police station, 7. It is a perfect building in this position and essential to the character of the town. Yet, largely because of its position, it is in considerable danger from the

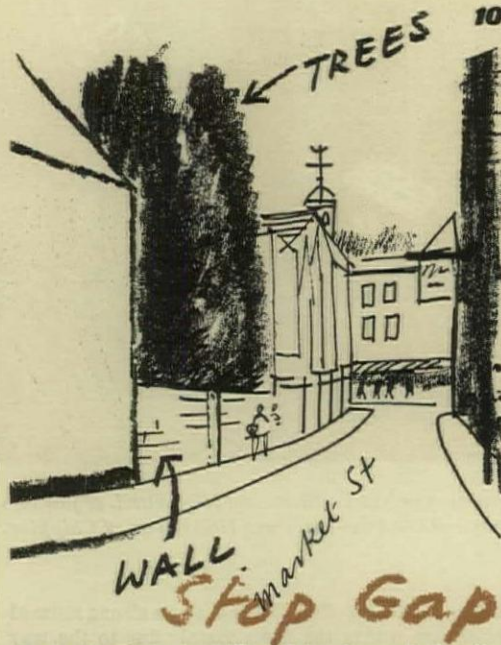






## Wing and Angle

road engineers. There is a threat to demolish a number of old houses in Haw Street (running off to the left in 4) which form part of the street wall and make a clearly defined entrance to the town.



This is likely to be followed by demands for the removal of the police station, now ominously empty, to ease the traffic at the junction. This must not happen—the importance of this key building to

the town needs to be recognized. A slight speeding up of traffic does not justify its loss.

**T junction 8:** other key buildings occur elsewhere and should be safeguarded. For instance, both Market Street, 1, and Church Street, 2, are well terminated by an appropriate building where they join Long Street. Neither building should be changed if the town's character is to be maintained. And, in the case of Market Street, the way the space is kept in at the other (south) end of the street is very unusual and again important, 3.

**Wing and angle:** here the key building is the Star Inn and the plan as shown in 9. The subtleties resulting from a kink in the street preceded by a slice back in the building line are again very important. Views out are successfully blocked (the inn sign finishing the job) and space contained, while in effect a small square between the Star Inn and the town hall is superimposed on the street. Look at the smaller plan and a further subtlety is revealed. The town hall itself stands in a larger square and at one time, the ground floor was open forming a covered market. The original effect should be recaptured if at all possible.

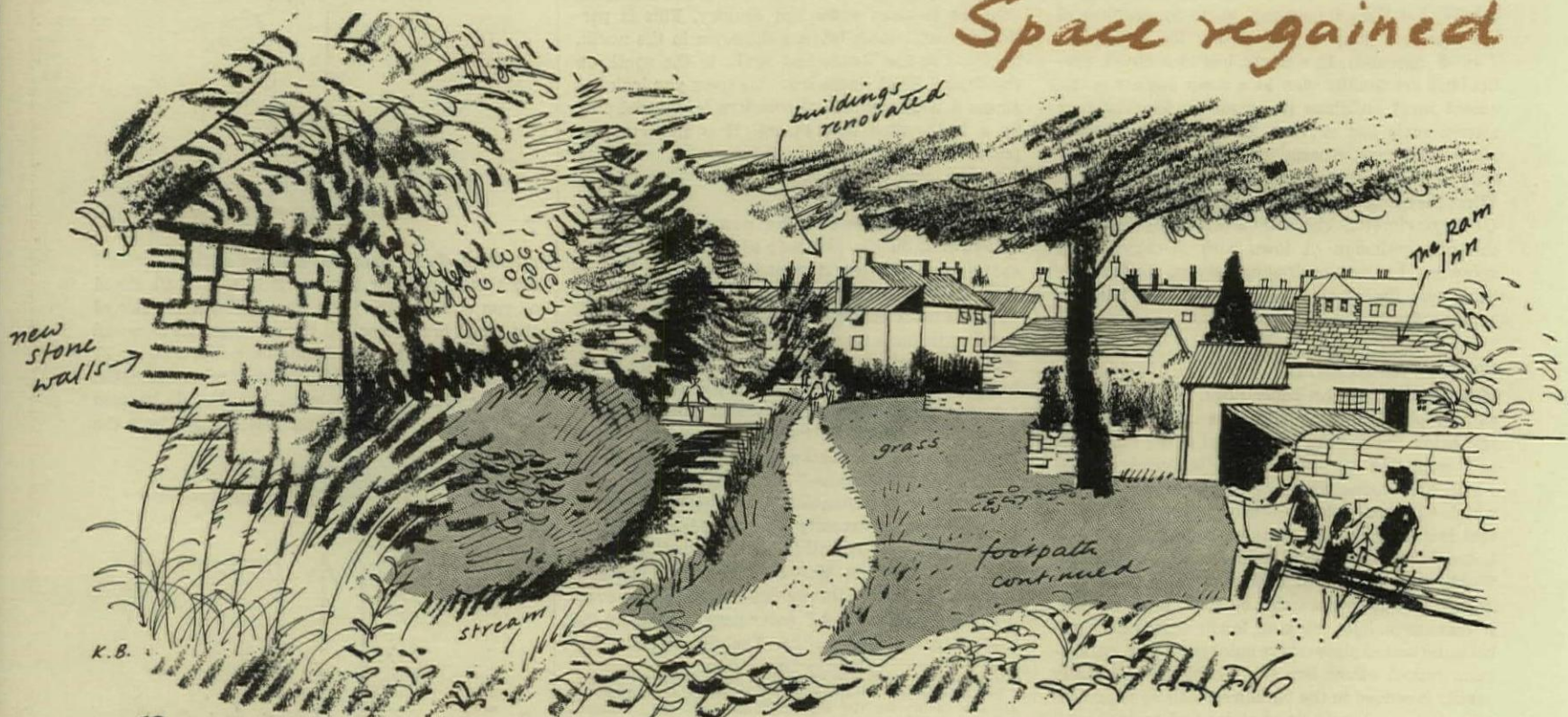
**Stop gap:** still in Market Street, it is worth noting that where there is no building, a wall, and better still a wall and trees, can carry on the street line—this is demonstrated directly opposite the Swan Hotel, 10 and on right in 3. This is a way in which so much new building fails, blasting open the 'rooms' of the town by unnecessary set backs and waste space. An example can be seen opposite the church in Culverhay where the new estate sets back suddenly breaking the line of buildings. A high wall backed by trees is needed to continue the line of the road.

**Square:** continuing along Market Street you come out into Chipping, once the market square and now unfortunately a car park, f on plan. While it still retains some elegant eighteenth-century houses on two sides, the south being particularly well maintained (after being at one time near derelict), the north side is shapeless. A screen of trees combined with good rebuilding along this side is needed, and it is important to keep the remaining area of grass for its softening influence. It should be extended on the west side and raised up with trees, not sacrificed to more car park.



Derelict land by the Ram Inn, above, as it is today and, below, as it could be, with the footpath continued alongside the stream and the space made usable.

## Space regained

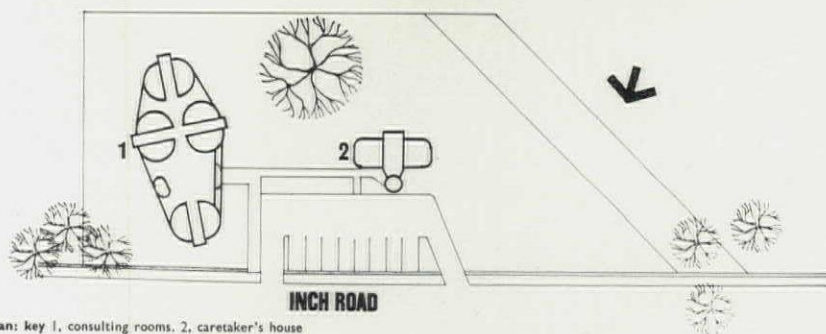


12 Waste space by The Ram Inn — as it could be

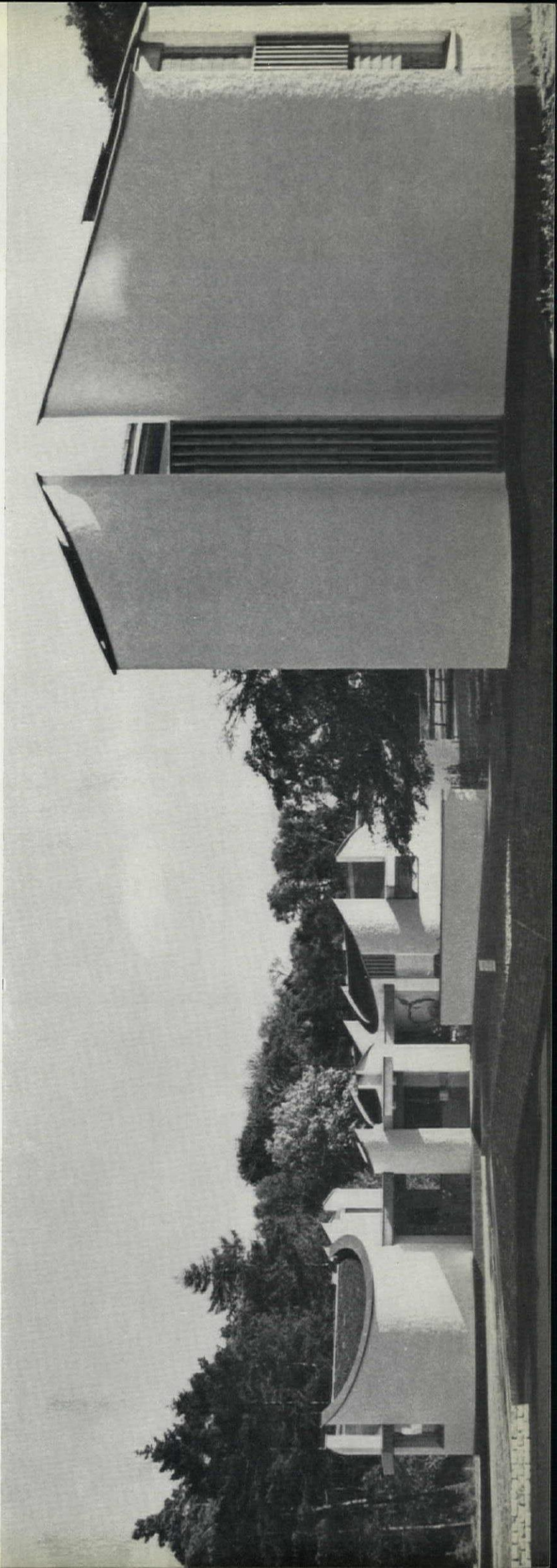


# KELSO

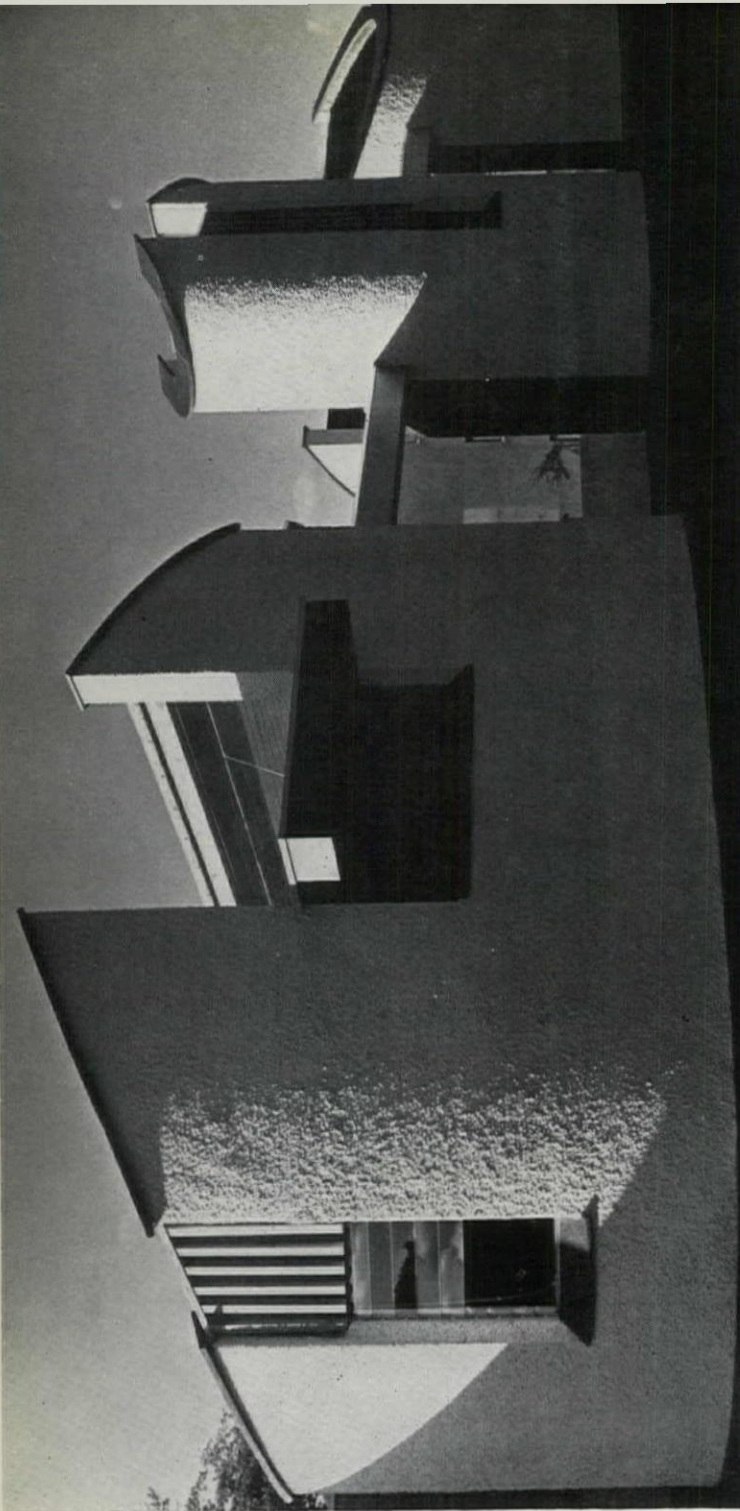
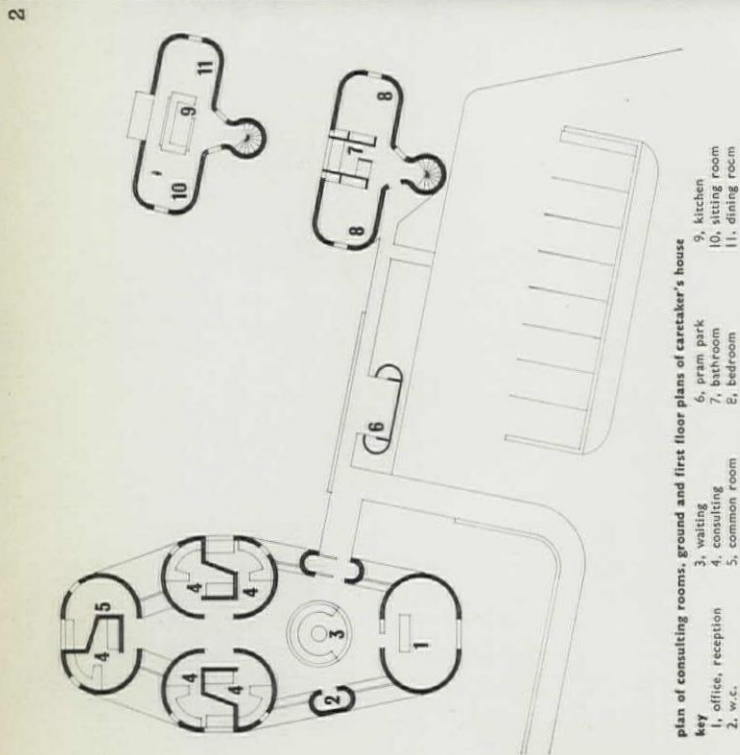
**CONSULTING ROOMS** *architect* **PETER WOMERSLEY**



site plan: key 1, consulting rooms, 2, caretaker's house



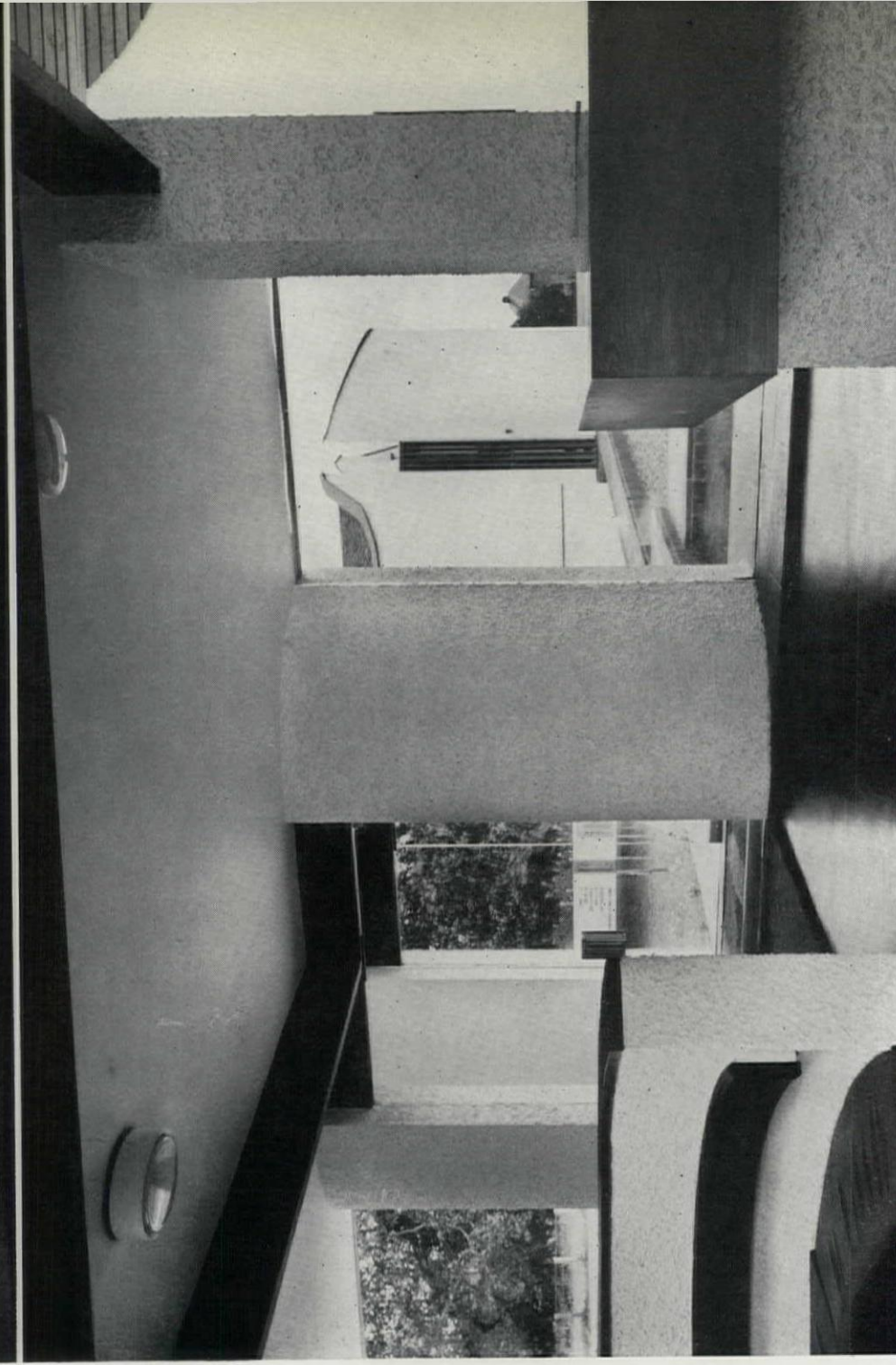




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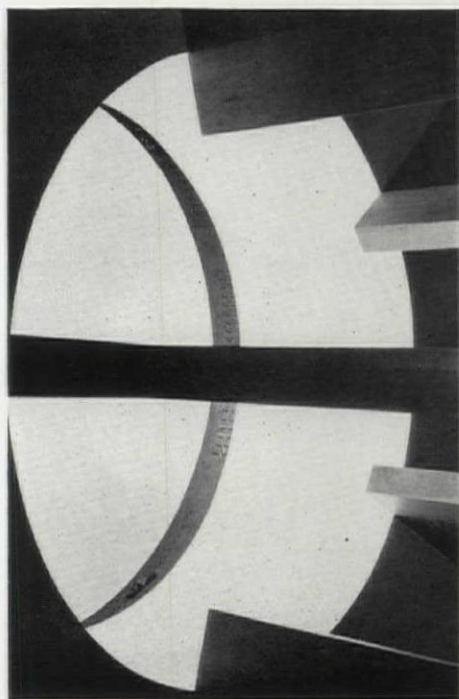
This group of consulting rooms at Kelso in the Scottish Borders is designed for five doctors, four of whom are two married couples. This fact suggested the pairing of consulting rooms together, particularly since the 'interlocking' of the examination cubicles produced an apparently larger consulting area, which is in actual fact based upon the minimal requirements of the Ministry of Health. Each consulting room is also planned as a half-drum in shape to increase further the apparent size, leaving one 'quarter' of the drum for each doctor (equipped with desk, shelving, drug cupboard and basin) and the other 'quarter' for the patient. Three full drums resulted; an office was conveniently planned inside one further drum, and two smaller drums provide an entrance porch with double doors and a small wash-room with water tanks sited above. These six drums are arranged round a sunken waiting area for patients, opposite the enquiry desk. The consulting rooms are largely clerestory-lit, with only small viewing windows to increase privacy for the patient. These clerestory windows give the building its characteristic angular silhouette, reminiscent of traditional Scottish dovecotes.

3



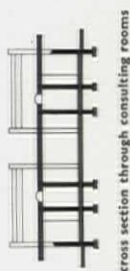
1 (previous page), from the north-west, with the consulting rooms left and the caretaker's house right. 2, the consulting rooms. 3, the entrance and reception area of the consulting rooms.



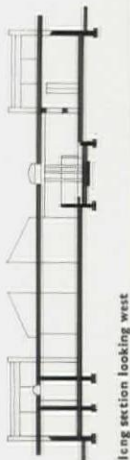


4

4, the perspex dome above the waiting area. 5, the circular waiting area with the office beyond. 6, the balcony on the first floor of the caretaker's house.



cross section through consulting rooms



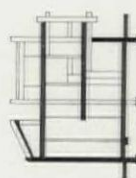
long section looking west



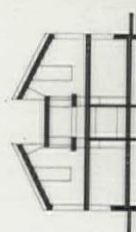
cross section through consulting room and common room



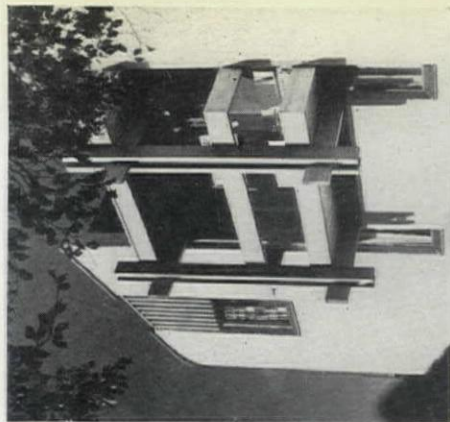
cross section through waiting area



section through caretaker's house looking east



section through caretaker's house looking south



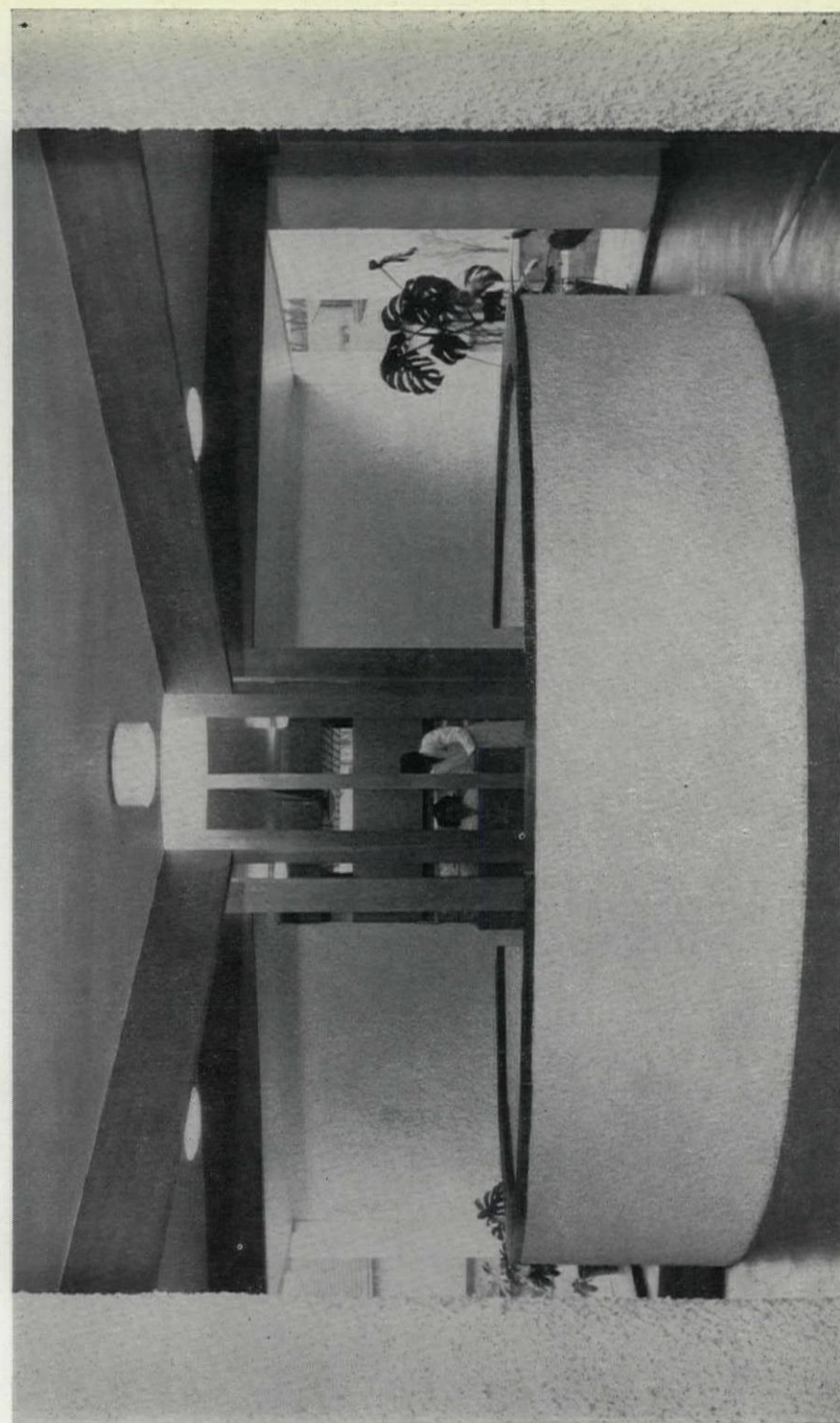
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## KELSO CONSULTING ROOMS

Space is allowed between the building and the road for a doctors' car-park, and the buildings themselves are raised 3ft. above this upon a landscaped 'shelf' formed of setts sloped at 45 degrees. The caretaker's house is planned on two levels with living accommodation on the first floor for privacy and a better view.

The drums are built of brick cavity walling with traditional harling on the external face, both inside and outside the building, the inner lived-in surface being smooth plaster. 4in. plate glazing, linking the drums, is let into grooves left in the harling and recessed into the slate floor and plastered ceiling. The drums are placed upon a black slate plinth and are roofed in black slates, with a black slate cope. Windows are either fixed plate (including clerestory) or opening louvres with Douglas fir slatted spandrels. The large area of flat roof between the drums is supported on five Douglas fir posts and beams, forming a subsidiary support for a circular plate-glass table, and a circular perspex dovetailed above. Floor finishes are slate coloured linoleum in the circulation areas and carpet in the consulting rooms and waiting area. There is electric underfloor heating in the consulting room area, with supplementary electric convectors or radiant units in each consulting room.

Architect in charge, Ron Russell. For contractors, see page 245.



5





1  
*BECKFORD IN BATH: 1, the bridge built by Beckford between two houses in Lansdown Crescent. 2, the library in No 19 Lansdown Crescent and, 3, staircase tunnel - vaulted in timber.*



2



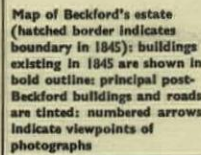
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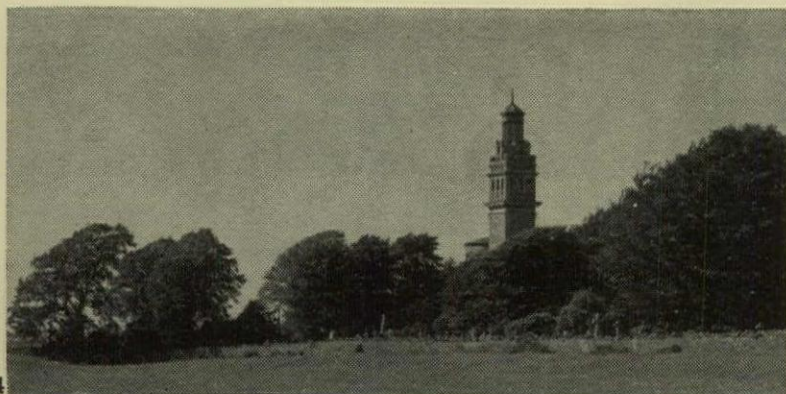
# BECKFORD IN BATH

The remaining building, 'The Embattled Gateway,' I refer to in connection with the gardens. There was also an addition to a cottage forming an archway in the Dyke Garden, but this has disappeared.

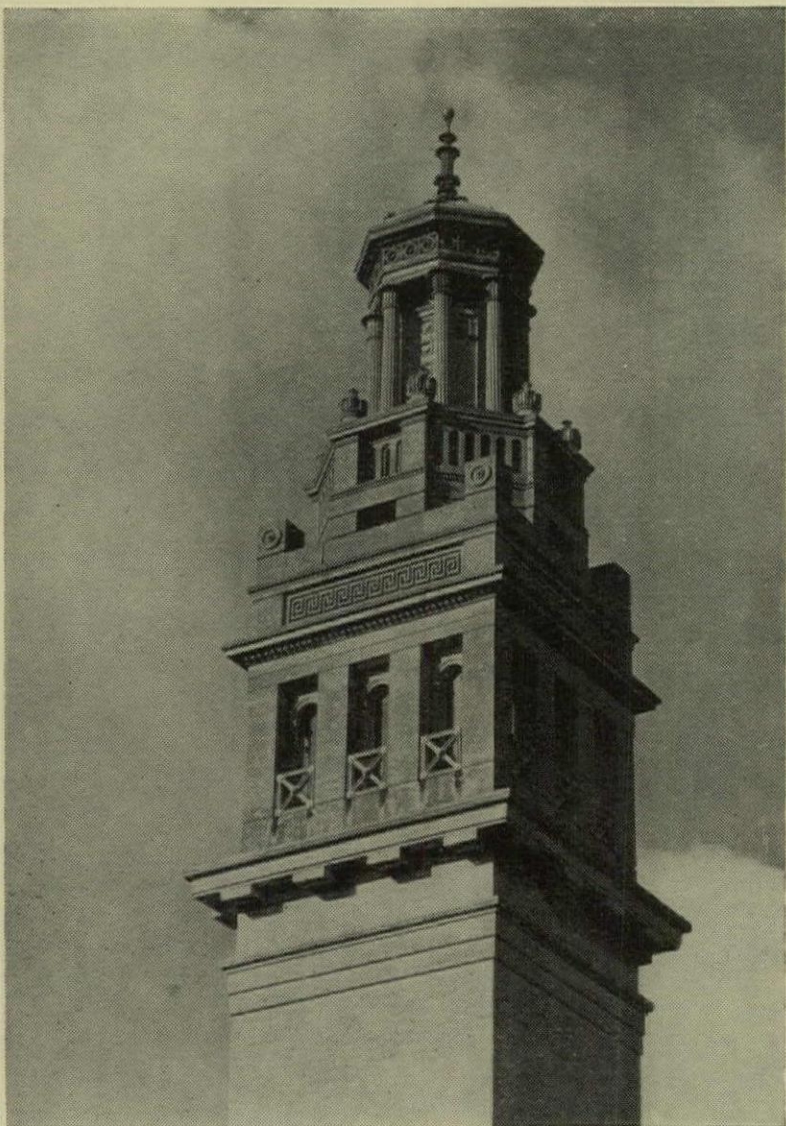
Returning to the gardens below, the pre-Beckford maps show a cottage or outbuildings on the north side. These appear still to be existing, and are joined to a wall running north and south which separates the present nurseries from the twentieth-century house built on the west side. In front of this house stands a vast cedar tree which must surely be of Beckford's planting or older. It may therefore be surmised that the dividing wall was







4, 5, Goodridge's Lansdown Tower of 1827, at the north end of Beckford's estate.



built in Beckford's time, and separated the kitchen gardens—known to have been extensive—from a more intimate 'pleasance' immediately behind No. 1 Lansdown Place West, although the contemporary descriptions do not allude to such an arrangement.

*The Planting:* Above the gateway the land was agricultural for some half a mile up the hill, and Beckford did little to it beyond erecting fences, getting some footpaths diverted and planting a 300-yard long avenue of limes on the west side of the road for the use of the public. Above that he laid out over seven acres of woodland to clothe the steeper slopes. This still exists, though tending to merge—in distant views—with the later building up and planting of the farmland below, 6.

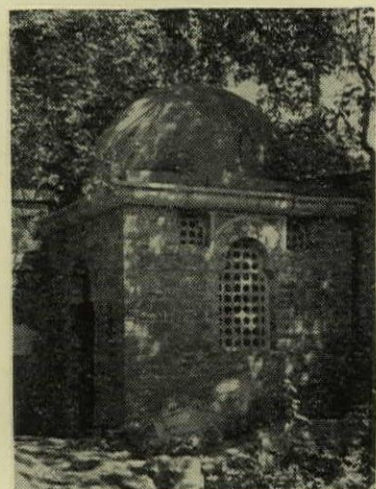
Above the main woodlands was a disused quarry of a rugged aspect which it has now lost. Beckford planted its westerly edges, and beyond—further west—another splendid clump on the brow of the hill, 11, which must have altered very little since it came to maturity. On the east alongside the road lay the Dyke Garden, walled and intimate, which led through a long grotto tunnel, 12, to a romantic boscage embellished with rustic ruins (no longer existing), and emerged to an open prospect of the Tower. It is apparent therefore that the whole conception, formed I believe at the same time as the decision to accept Bath as a substitute for Fonthill, rang all the changes of the landscapist's art as Beckford knew it; with dramatic progressions and contrasts between openness and enclosure, small and large scale—ruggedness and suavity—the works of man and nature.

After Beckford's death in 1844, the Tower Garden became a cemetery, and the Wesleyan College (Kingswood School) was built in 1851 on the site below the woodlands. The remainder was gradually built on, Alma Road (now Sion Road) with three pairs of large semi-detached houses having been completed by 1858.

In 1863 the rest of the farmland was offered as thirty-nine large building plots, and roads were laid out to suit

the boundaries of Beckford's former estate, but they did not go quickly. Many were never sub-divided as proposed, and it was not till the 80's that the big Victorian villas were built. Nothing, except perhaps Kingswood itself, has any claim to architectural interest.

An amusing footnote is provided by Lansdown's second and almost unknown 'folly,' 13. This was built about 1880 by Sir Robert Blaine, Mayor in 1872 and MP for the city in 1885, as a means of relieving unemployment in the building trade. He may have been inspired by his illustrious predecessor, but chose a far less conspicuous site. Beckford had picked the very highest spot, not foreseeing that this would ensure its ultimate desecration by a concrete water tower, painfully visible from practically every distant viewpoint.



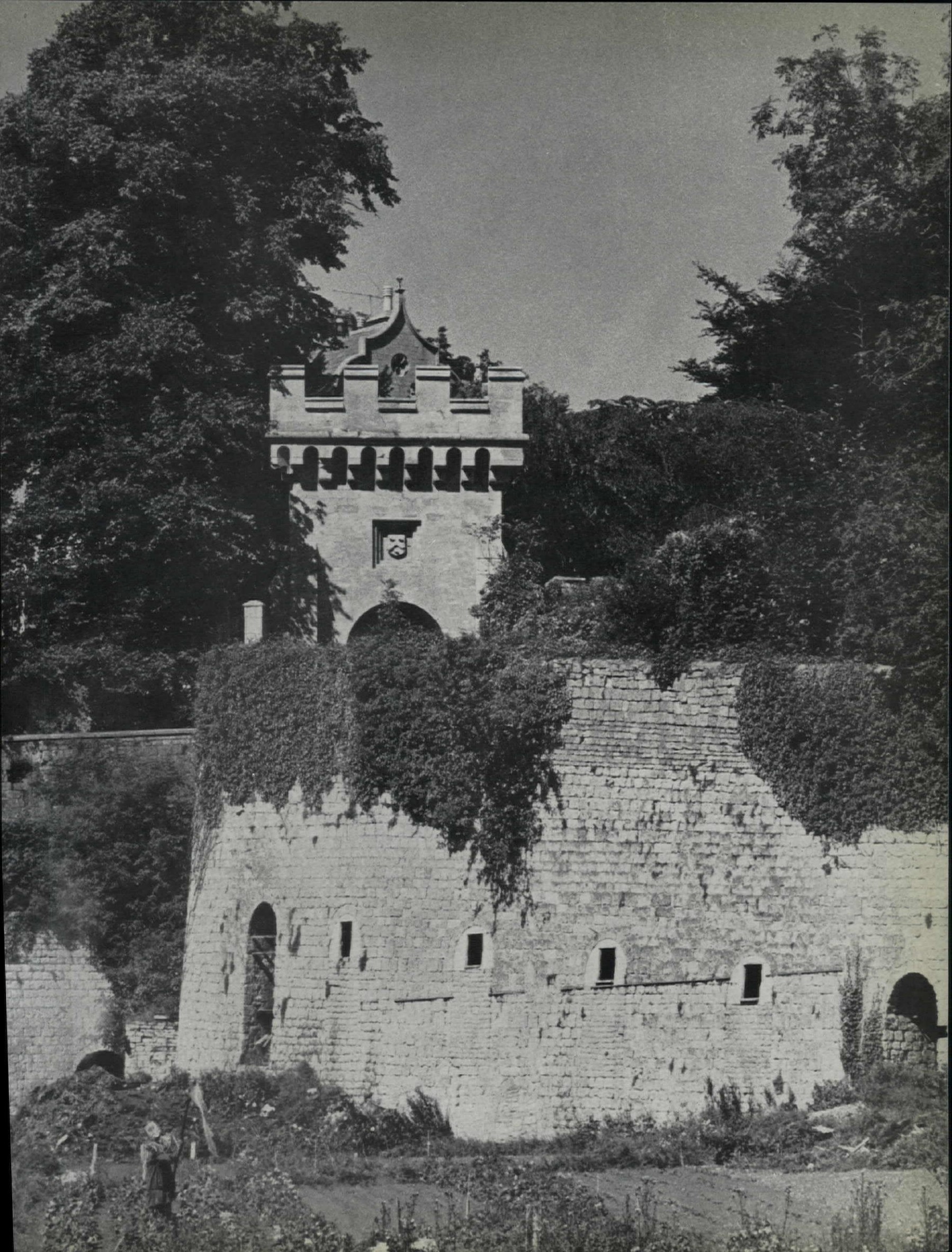
7, the miniature Moslem summer-house in the gardens behind Lansdown Crescent. 8 (opposite), the retaining wall at the end of the gardens with the 'Embattled Gateway' beyond.

The preceding notes owe nearly all to the research done by Peter Summers, of Kingswood School, in connection with the 1966 Bath Festival and subsequently published as a monograph: *William Beckford: some notes on his life in Bath 1822-1844*, and a catalogue of the Exhibition. Published privately; available from Peter Summers, price 6s. post free.



6, the area that made up Beckford's estate (seen from the centre of Bath). It stretched a mile and a half from the Tower to Lansdown Crescent.



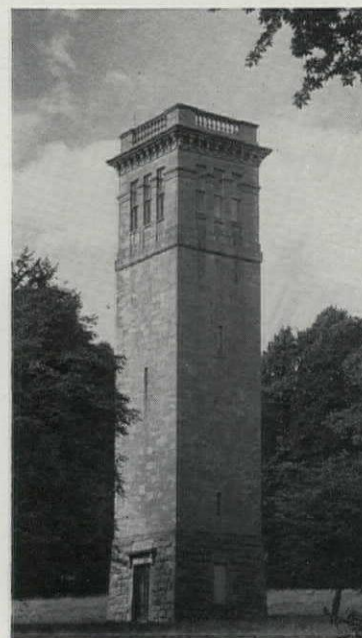
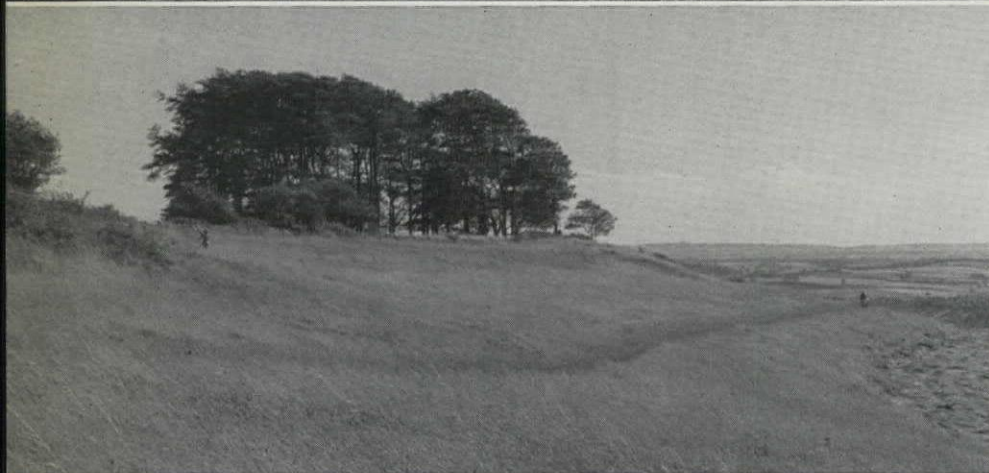






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10



11

13

9, 10, the 'Embattled Gateway' between the enclosed gardens and the open farmland of Beckford's estate. 11, the clump of trees on its western edge. 12, the grotto tunnel in the Dyke Gardens. 13, Sir Robert Blaine's tower of 1880.



12



## SCULPTURE ON THE STREETS

1967 was a cultural landmark for Britain. It was the year that a longstanding national scandal was partially rectified. Even then it had to be through the generosity of the sculptor himself and the Contemporary Art Society, that Henry Moore at the age of 69 could see one of his major works set in a prominent position in the capital. Ironically enough, the site chosen was a piece of urban folly perpetrated by the Ministry of Public Building and Works. Directly opposite the Palace of Westminster in Abingdon Street, the Ministry at great expense have created an underground car park, clothed it with a lawn bedded out with Portland stone and demolished the Royal Fine Art Commission's building to open up a meaningless void. Moore's 'knife-edge-two-piece,' 1, 2, now dignifies this senseless *tabula rasa*, shimmering in the centre of the lawn, against the dull black greyness of a flint wall closing off the space from the Abbey. Made in 1962, the work has not been exhibited before in this country; it is a second cast of one owned by Governor Nelson Rockefeller in the United States.

Almost simultaneously, another of Moore's works appeared in the forecourt of *The Times*, 3. Commissioned by Times Newspapers Ltd., the sculpture takes the form of a sundial and was created by Henry Moore working in collaboration with the architect of *The Times*

building, completed in 1965, Lord Llewelyn-Davies (see AR, July 1965). The architectonic nature of this sculpture—in that sense wholly untypical of Moore—results from a detailed study by Professor Llewelyn-Davies on the various forms a sundial can take. The study, done with the aid of Dr. F. A. B. Ward of the Science Museum, proved that the most accurate geometric form in which a sundial can be made is the cast of a shadow from a bow string on a semi-circular scale. This was the form adopted.

Liverpool also gained a major sculpture—again British-style, through the agency of a voluntary body, the Merseyside Civic Society—by Richard Huws, 4. Huws, who teaches at the School of Architecture, first produced a fountain for the Festival of Britain. In every sense a live sculpture, it threw out gushes of water with uncontrollable and unpredictable gusto and majestically shook itself to bits before the Festival ended. His latest fountain down by Liverpool's pierhead attempts the same kind of aquatic *tour de force*, 5, but this time is the product of a technological rationale—wind-tunnel tested.

In America, Chicago thought and bought big, pestering Picasso to produce a \$300,000 sculpture, 6, for Skidmore, Owings and Merrill's Civic Center. Picasso, ever unwilling to accept commissions, was unable to resist the com-

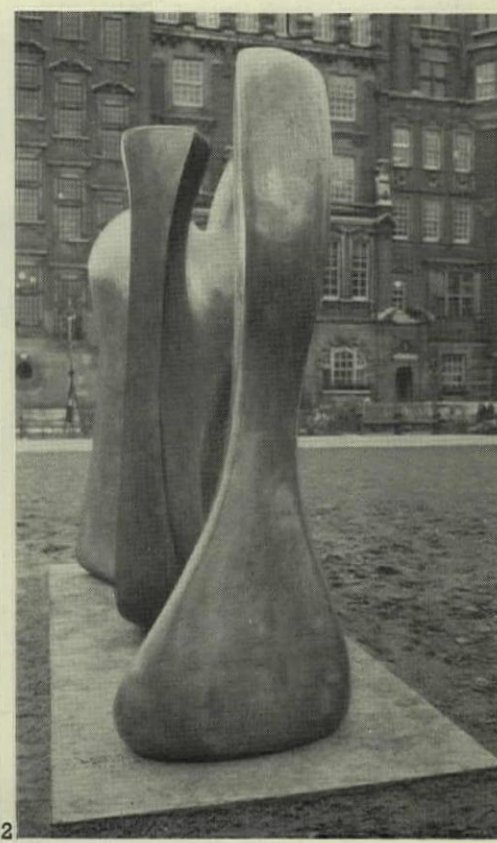


1, 2, 'Knife-edge two-piece' by Henry Moore, in Abingdon Street opposite the Palace of Westminster. 3, sundial by Henry Moore, in the forecourt of The Times building.

bined courtship of a Chicago delegation and his old friend Roland Penrose. The subject is a woman and Sir Roland Penrose has written of it: 'with admirable precision the profile rises through mouth and nose and eyes and forehead. Subtlety, simplicity and strength com-

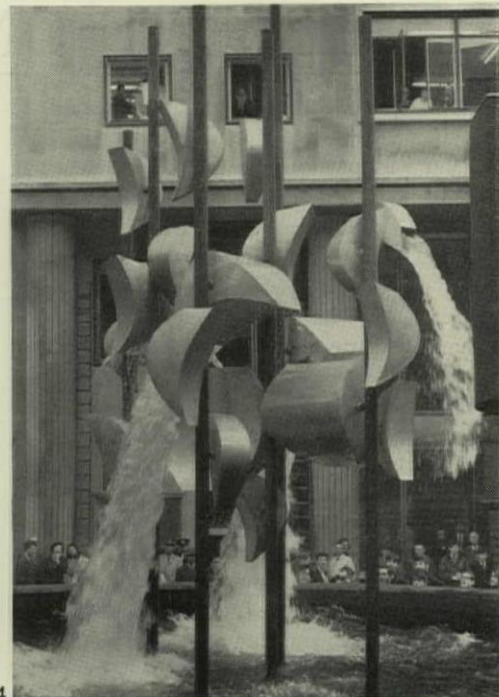
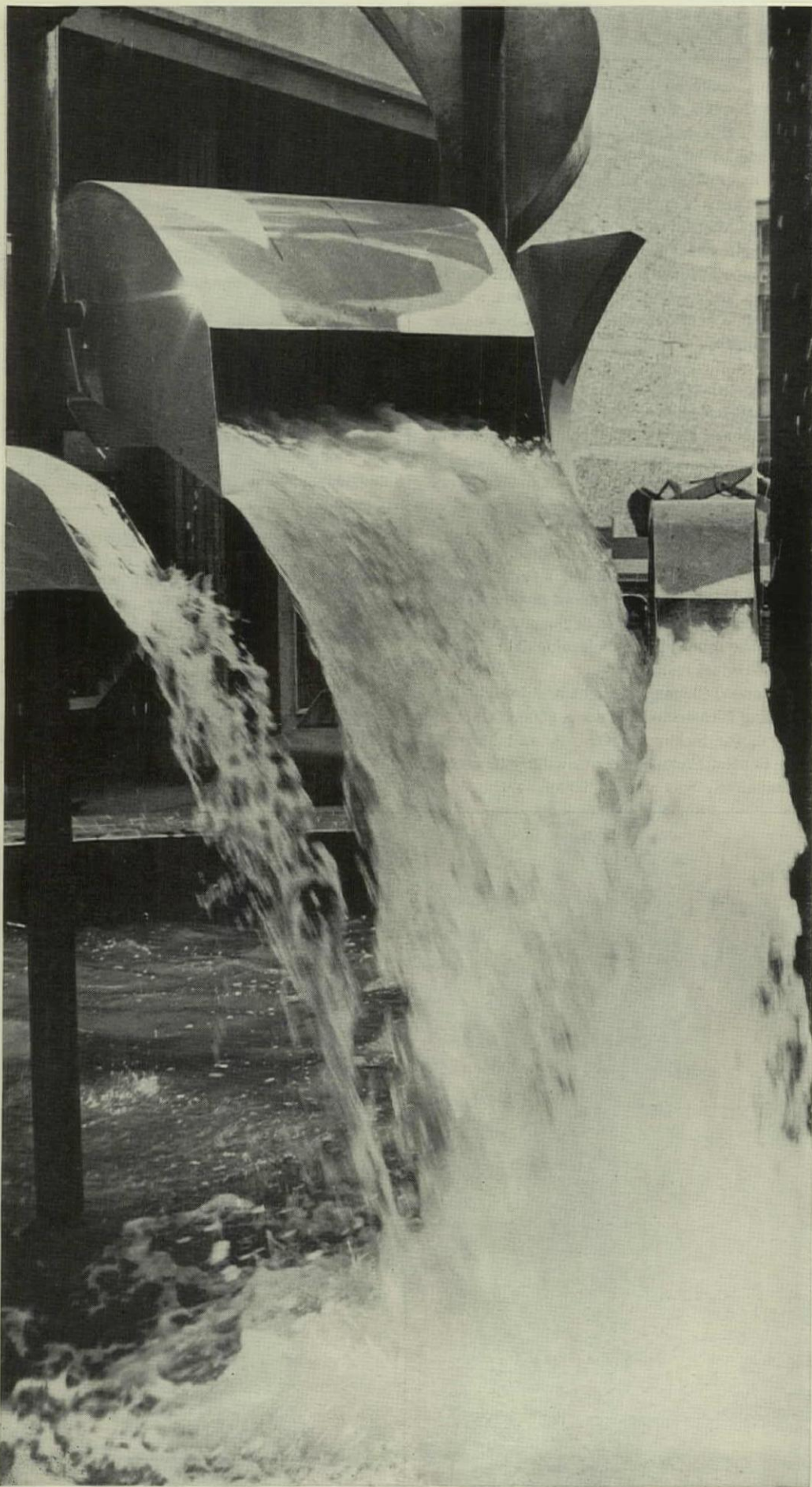


1



2





4, 'Water Sculpture,' by Richard Huxes, at Liverpool. 5, water gushing from one of the stainless steel 'mouths.' 6, 'Woman' by Picasso, outside Skidmore, Owings and Merrill's Civic Center, Chicago.

bine throughout to make this a splendid evocation of that concentration of wonder, a woman's head.' All things to all men, President Johnson hailed it as 'Another historic first for the city beautiful.' For the unveiling ceremony





poet Gwendolynne Brookes was commissioned to write something:

'Does man love art,

Man visits art but squirms . . .'

was her response. Shortly afterwards, New York University announced that a Picasso sculpture, 36 ft. high, is to appear amidst I. M. Pei's towers in Washington Square. And in New York, man has had a greater chance to 'visit art' than ever before. For six weeks, the capital of Governor Nelson Rockefeller's state and Mayor Lindsay's city staged an exhibition 'Sculpture in Environment.' This outdoor sculpture exhibition, unlike the Henry Moore exhibition at King's Lynn (AR November 1964) which set modern sculpture amid ancient surroundings, simply provided free showing space for extra large sculpture. Fears of the sculpture being damaged led to some overprotective siting, but most could be sat on, sat under, walked on, walked through, admired, hated, seen but hardly ignored. Twenty-four pieces were on show, nearly all on loan from galleries or private collection, and



7



8

7, 'Little fountain' and 'Triangle with ears' by Alexander Calder, West 135th Street, New York. 8, 'Searchin' by Forrest Myers, projected from Tompkins Square Park. 9, 'Alamo' by Bernard Rosenthal.



9





10

10, Claes Oldenburg's 'placid Civic Monument' being created. 11, untitled sculpture by David von Schlegell, outside the Union Carbide Building. 12, 'Diamond' by Antoni Milkowski in Kips Bay Plaza. 13, 'All Star Cast' by Les Levine, in America's Plaza.



11

as a symbolic push to patronage Bernard Rosenthal's 'Alamo,' 9, was purchased and given to the city and will continue to stand at Astor Place. The exhibition was privately financed and has led to a continuing exhibit 'Sculpture of the month.' The sculptures included Alexander Calder's bronze elephants, 7, Forrest Myers 'searchin' lights, 8. The cheekiest exhibit was Claes Oldenburg's unrepeatable 'placid Civic Monument,' 10, '108 cubic feet of Central Park surface excavated and reinserted [north west] of Cleopatra's Needle and behind the Metropolitan Museum of Art,' described in the catalogue as a 'gift by the artist to the City of New York'—God's own? And the most frequently ignored—or misunderstood—David von Schlegell's untitled sculpture, 11.

Robert Melville returns next month.

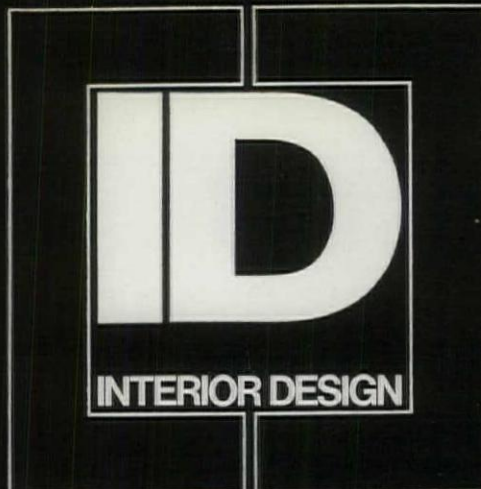


12



13





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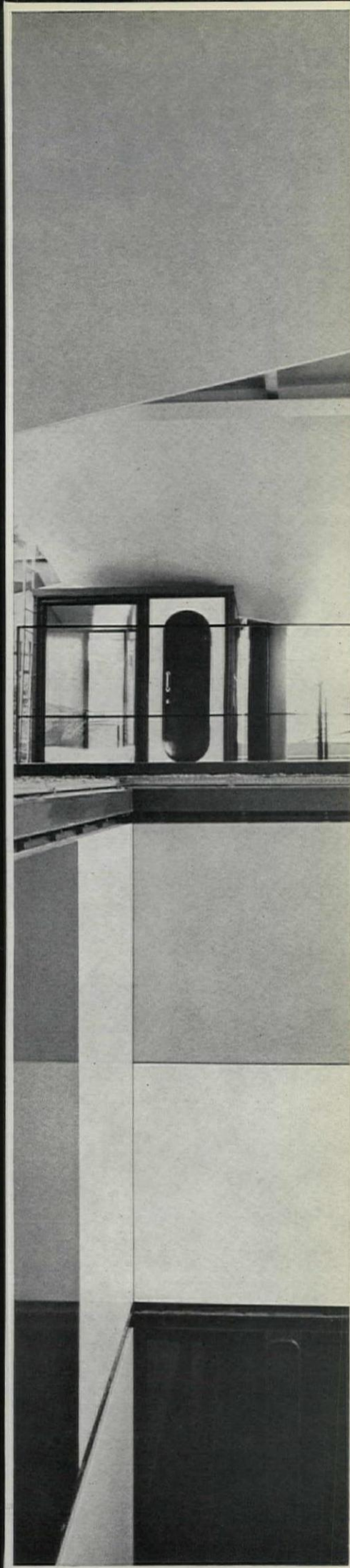
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### Centre Le Corbusier, Zurich

**Architect: Le Corbusier**  
**Collaborators: G Jullian, J Oubriere,**  
**A Taves, R Rebutato**

At the Pavillon de L'Esprit Nouveau in 1925 Le Corbusier declared his rejection of decorative art and affirmed 'that the sphere of architecture embraces every detail of household furnishing, the street as well as the house, and a wider world still beyond both.'<sup>1</sup> This broad statement has to be seen in the context of his life-long principles of catering for human needs and economizing through standardization. For Le Corbusier an interior consisted of windows, partitions and built-in or free-standing storage units, with tables and various kinds of chairs for different postures. His designs were based on anthropometric studies, somewhat rudimentary by today's standards but none the worse for that. The storage units, after being subjected to a rigorous analysis of requirements, were to be of steel and mass-produced. Later plywood, being a machine-made material, became acceptable and was used not only for wall panels and furniture as at Zurich, but for shuttering to concrete.

What sets Le Corbusier apart from many of his contemporaries in the nineteen-twenties and 'thirties, however, is his passionate belief that buildings must also be works of art. In a letter to the Czech architect Teige, critical of the latter's total faith in *Sachlichkeit*, he refuses to discuss the objects which are inside a house and insists that what really matters is the way they are put together, 'because we must not confuse the army with the battle; the army is like the objects in a house, while the battle is the architecture of the house.'<sup>2</sup> This 'architecture' creates a totality out of his buildings in which interior and exterior are closely related. Thus at Poissy half the ramp is inside the house and half outside, belonging to the terrace and roof garden. The outside spaces are always an integral part of the built form, indeed contained within it. When they are forcibly projected as at Garches, they act as a bridge linking the house to the garden—a favourite theme of Le Corbusier—to which further references will be made.



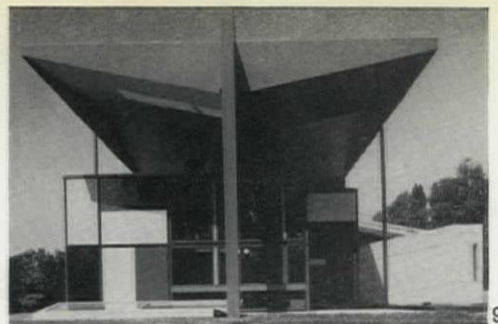


In the Porte Maillot scheme of 1950 for an Arts Centre (project B), 2, Le Corbusier created for the first time, in a manner close to Mies, an interior space which extended generously beyond the strict geometry of the structure into courts and gardens whose limits were defined by free-standing walls.

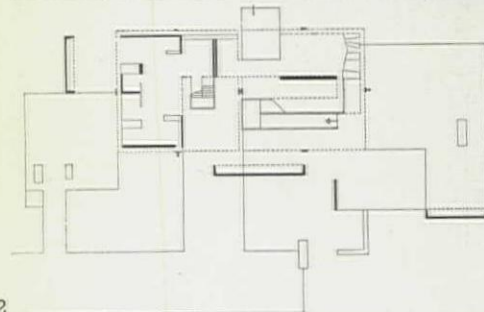
For Le Corbusier the quality of a building as a work of art was confirmed by the consistent use of a system of proportions and regulating lines. This discipline, somewhat academically applied to a plan or a façade in the inter-war period, became a tool of wider significance with his development of the Modulor and its three-dimensional application '... for the mass-production of manufactured articles, and also for the creation through unity of great symphonic works of architecture.'<sup>3</sup> In his first study for the Cap Martin housing of 1949 (Roq and Rob), Le Corbusier developed a system of construction based on steel angles which could be built up into skeleton cubes, 3. The dimension, based on the Modulor, would ensure a human scale, and

the cubes, which could be combined freely to suit any site however irregular, were intended to re-create in contemporary terms the character of near-by hill-town clusters. His studies show that he was moving towards an interior aesthetic of skeleton cubes defined by a frame-and-panel skin, 4. This was not to be fully realised until the Zurich building eighteen years later, and then in typically uncompromising terms where the same frame-and-panel system is expressed both inside and outside the building. The dimensions of the skeleton cube structure are the same as for Cap Martin, and with the exception of the reinforced concrete work—basement, staircase and ramp—all the construction is dry. At the opening of the Centre J. L. Sert declared that prefabricated systems seem to produce mostly unhappy results. 'Of all the buildings of this kind that I have seen, this is the only one which I believe has a truly plastic quality.'

The Centre Le Corbusier at Zurich was originally intended to combine the functions of a private house with that of

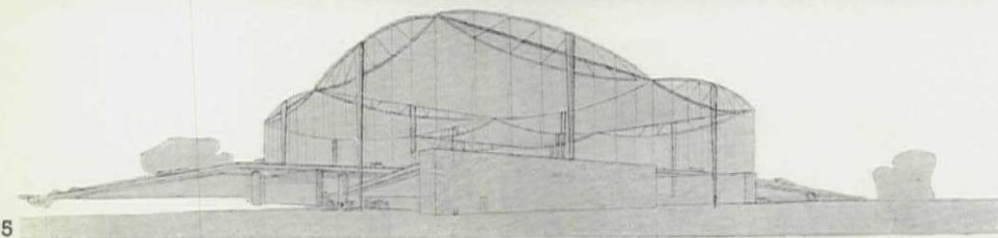
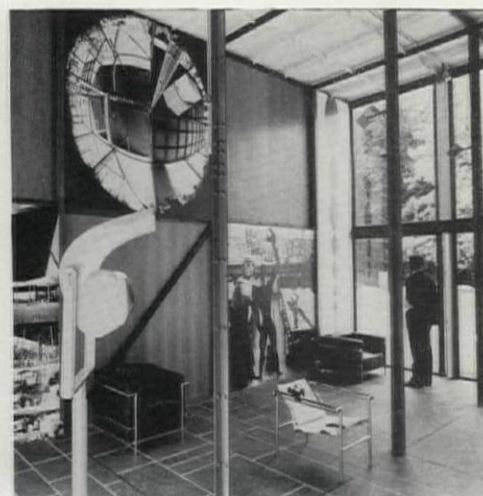
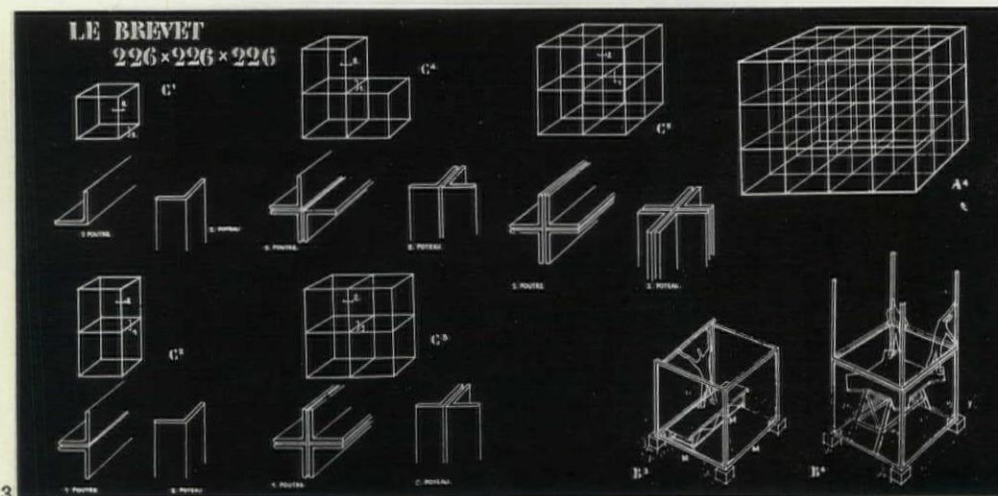


9, end elevation of the Centre Le Corbusier. 10, exhibition area. 11, (opposite), the pivoted door from the terrace.

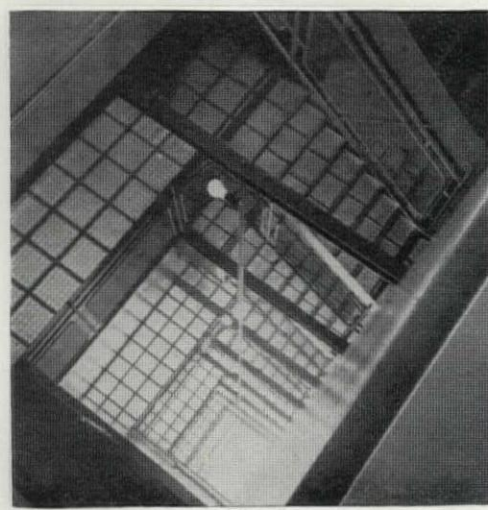
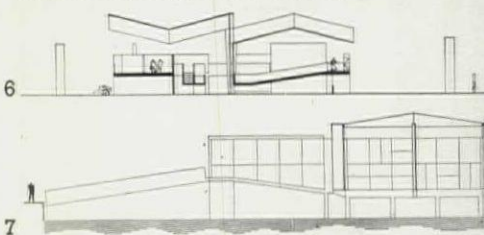


a museum, so that 'architecture and works of art should be shown in the modest and nomadic setting of a dwelling, where the dimensions conform to the human scale...'<sup>5</sup> The client understandably thought otherwise, and persuaded Le Corbusier to design the building solely as a museum and exhibition centre for his works. The result is a building of domestic scale, at least if we compare it to his earlier projects for exhibition pavilions. It has to be considered both in relation to his housing achievements from the beginning, and in relation to the series of designs for exhibition pavilions from 1937 onwards.

To understand the Zurich building it is necessary to see Le Corbusier as an idealist and polemicist who created building types as well as buildings. The double-height room with balcony, the

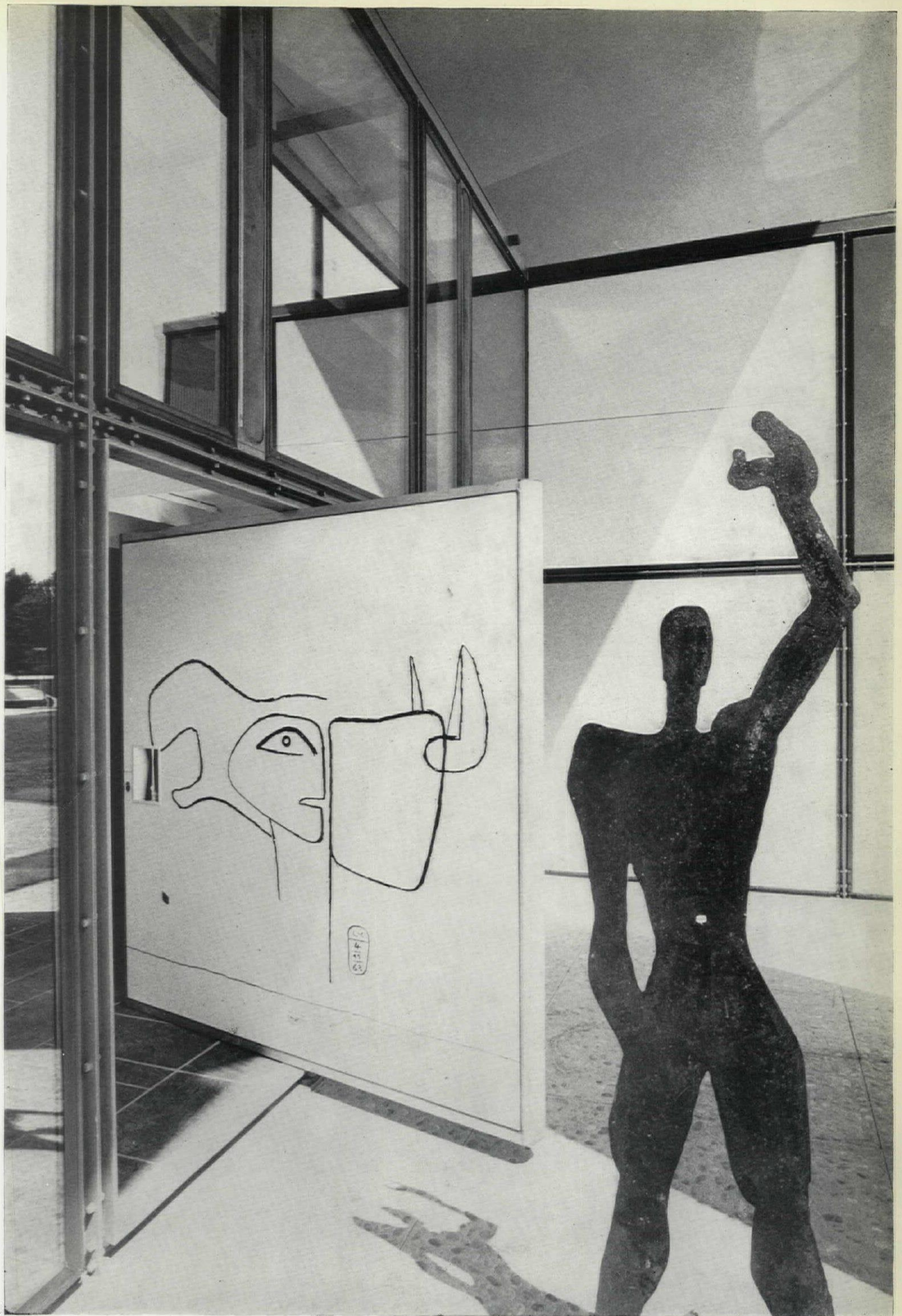


1 (previous page), the roof terrace of the Centre Le Corbusier, looking towards the staircase cage. Origins of the centre: 2, Porte Maillot scheme (project B, 1950). 3, system of steel angles making skeleton cubes. 4, Cap Martin housing (1949). 5, Liège and San Francisco exhibition project (1937). 6, section of the Porte Maillot scheme. 7, project for exhibition hall, Stockholm (1962). 8, staircase in the Clarté Building, Geneva (1930).

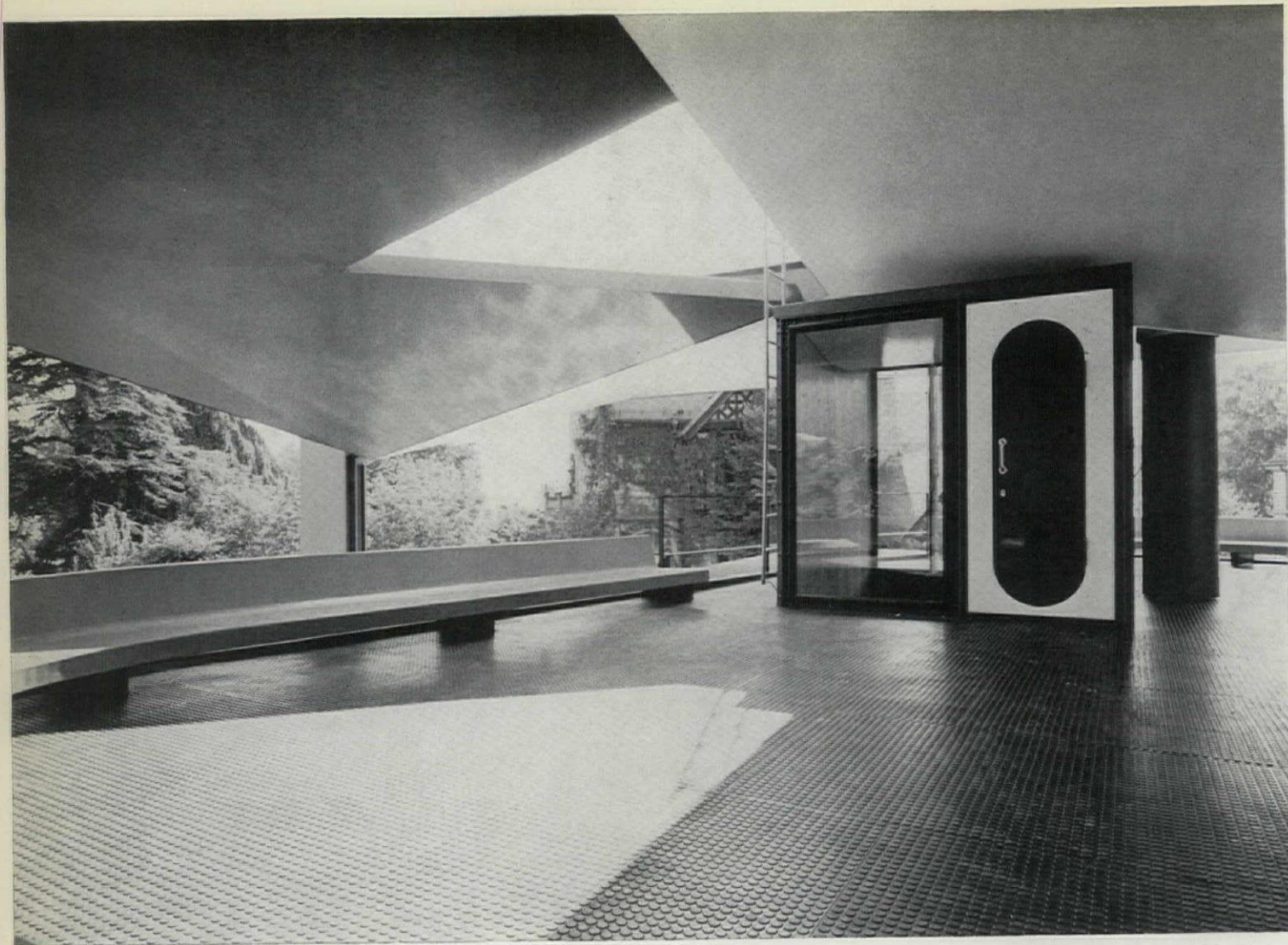


spiral museum, the Unité, the agricultural village, all these and many more were intended for universal application, irrespective of site. The Centre Le Corbusier belongs to the exhibition pavilion type, which was first developed for the Liège and San Francisco exhibition projects of 1937. The great parasol roof, supported at four points only and leaving the interior unencumbered for the free arrangement of exhibitions, was the logical development of his five points. The 'toit-terrassé' of the early houses was like the deck of a liner. Later in the rough concrete period it was grassed over; and now, finally, it is roofed over. For the Liège project the roof structure, consisting of perimeter lattice girders connected by welded metal sheets and supported at mid-point along each side, already shows the same principles if not quite the same form. 5. In several of his buildings of the 1930s, the Cité de Refuge and the Centrosoyus for example, Le Corbusier had used curtain walling for complete façades. The sides of the Liège exhibition building were to be fully glazed, 'to revive' as he put it, 'the great tradition of 19th century universal exhibitions (fer et verre)...'<sup>6</sup> A ramp was designed to drive through the upper level of the exhibition platform, thus providing again that bridge between the heart of a building and the outside world.

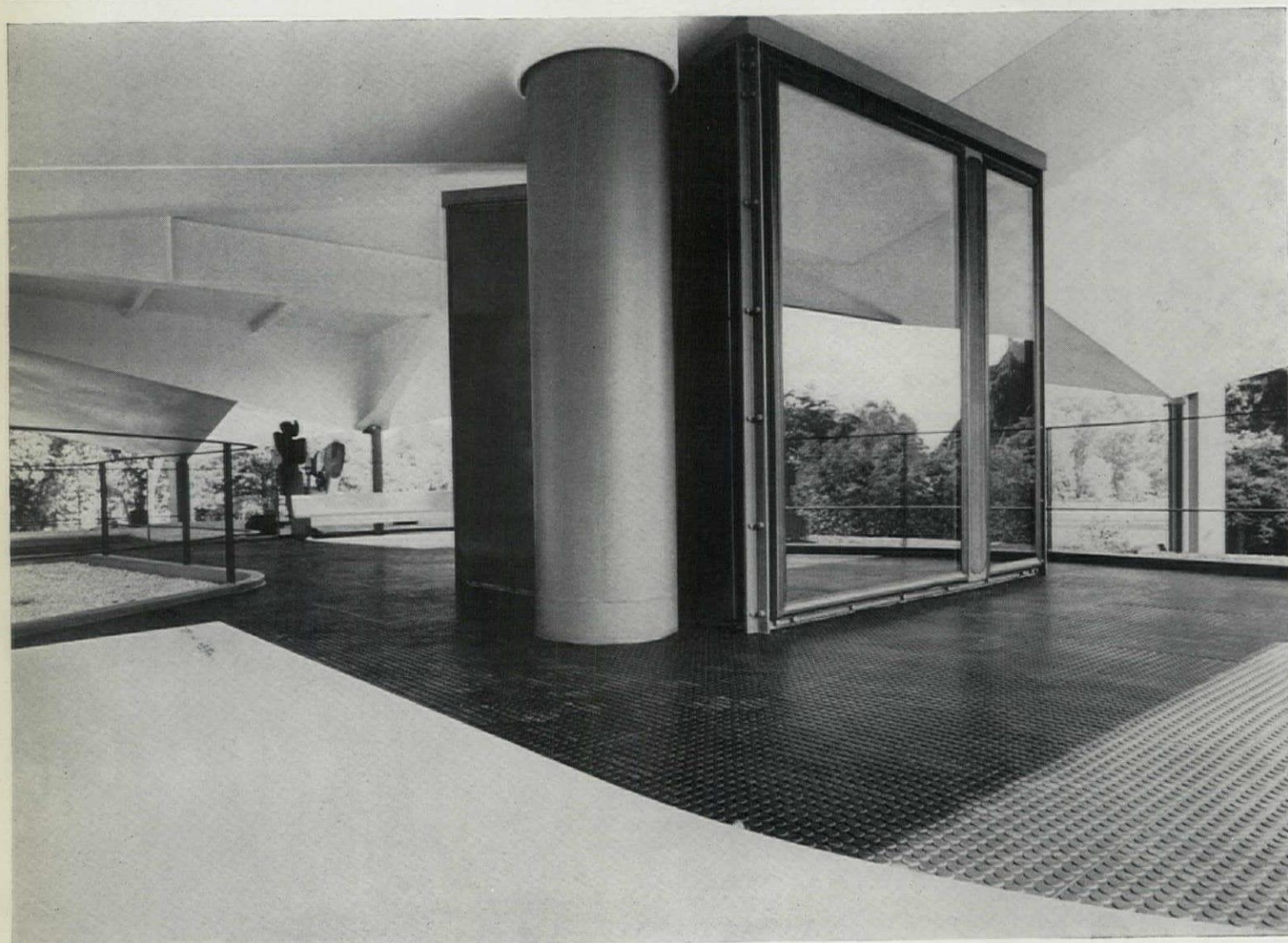






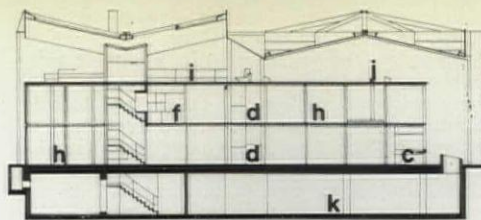


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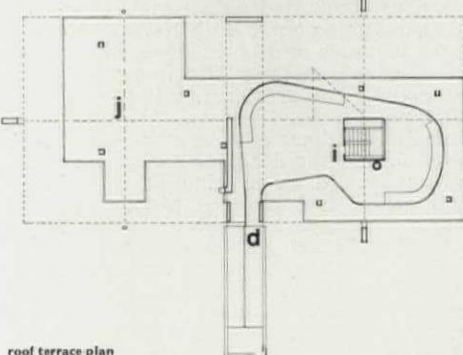
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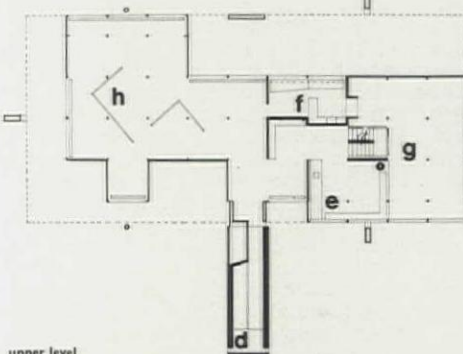


section of Centre Le Corbusier

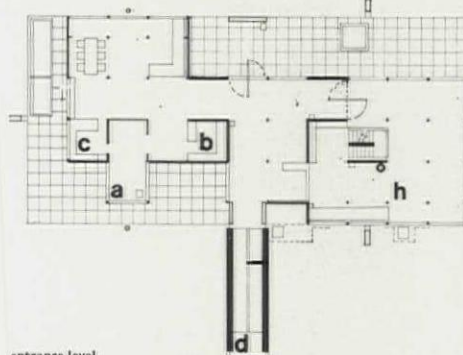
key  
a, entrance  
b, reception  
c, kitchen  
d, ramp  
e, library  
f, manager's office  
g, void  
h, exhibition area  
i, roof terrace  
j, sculpture display  
k, exhibitions and meetings



roof terrace plan

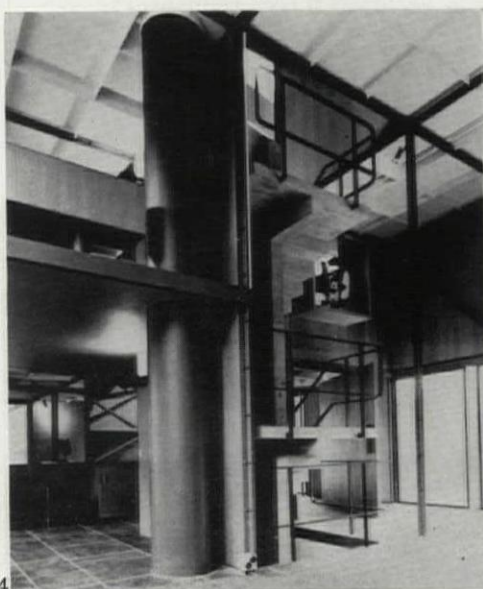


upper level



entrance level

12, 13 (opposite), the roof terrace of the Centre Le Corbusier, looking in opposite directions. 14, the staircase and chimney in the double-height exhibition area.



14

This theme was ultimately applied with great effect at the Carpenter Centre in Harvard.

The second project, and the true prototype for the Centre, is the Porte Maillot project already mentioned. The roof has now become two square saddle-shaped steel parasols, but without a gap in between which at Zurich was necessary to accommodate the ramp, 6. The ramp, which at Zurich stands apart and outside the building, is here in the centre and can play a full part in the relationship of interior spaces. Designed for temporary exhibitions, these spaces were to be filled with demountable panels in steel frames of Modulor dimensions. Le Corbusier re-used the Porte Maillot (project B) for his Art Centres at Tokyo and Erlenbach, but with the exception of the Tokyo museum, neither of these schemes came to anything. The last project is the Exhibition Hall for Stockholm, which is dated 1962 and therefore comes after the first design in reinforced concrete for the Zurich building. 7. Roof and building are here one structure for the very good reason that the building was to stand over water. As at Zurich the ramp stands outside the building, but acts once again as a bridge with the quay-side. At Zurich the ramp is an excrescence, and it is necessary first to come into the building to gain access to it.

The post-war image of Le Corbusier as the creator of bespoke buildings in rough *in situ* concrete has obscured the fact that he always had work on his drawing board concerned with the problems of industrialized building technique. The precast concrete balcony units and facing panels used on the Unités and many other late works do not concern us here, but his preoccupation with steel construction is of considerable interest. Projects in which the steel frame appears to be fully expressed include the Maisons Loucheur of 1929 and the Agricultural Village of 1934. In 1940 he co-operated with Jean Prouvé in an all-steel design for a portable school. Although the superstructure of the Pavillon Suisse is a steel frame, the building does not strike one as being obviously of steel. It is only when Le Corbusier is working with the added stimulus of a specialist in steel construction, his client and builder for the Clarté Building in Geneva, that he seems to achieve anything like a true steel aesthetic. Some of the Clarté interiors, the staircase for example, 8, are more uncompromising than the Zurich building with its reinforced concrete stairs and ramp giving the impression of being left over from the earlier design. Regarding the frame-and-panel construction of the Centre one may question the application of industrialized methods to a small building which is likely to remain unique; the benefits of such methods can only be fully realised in large scale repetitive work. One should remember, however, that these particular methods were originally conceived for housing, that Le Corbusier had to build his ideas whenever he could as a kind of laboratory for himself and others, and that to build once was better than not to build at all. 'Il n'y a de joie véritable que dans l'action.'<sup>16</sup>

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- <sup>2</sup>From special number on Le Corbusier of *L'Architecture d'Aujourd'hui*, 1934.
- <sup>3</sup>*The Modulor*. Le Corbusier. Faber & Faber, 1954. Translation by Peter de Francia and Anna Bostock.
- <sup>4</sup>*Le Corbusier. The Complete Architectural Works, 1957-1965*. Thames & Hudson, 1966. Translation: William B. Gleckman.
- <sup>5</sup>*Le Corbusier. The Complete Architectural Works, 1934-1938. Volume III*. Thames & Hudson, 1964. Translation by A. J. Dakin.
- <sup>6</sup>*Le Corbusier & Pierre Jeanneret. Oeuvre Complète de 1929-1934*. Erlenbach-Zurich, 3rd Edition, 1946.

In the following article John Winter examines the structural system of the Centre Le Corbusier and compares it to other similar contemporary examples.

## Frame and panel systems

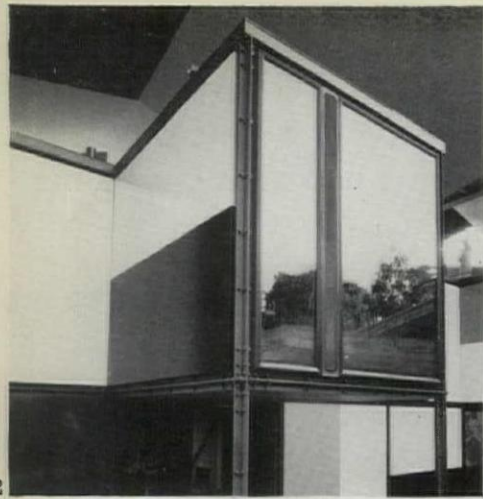
John Winter



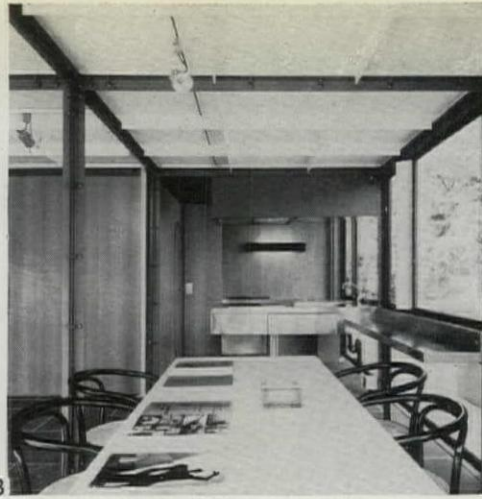
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After the last war, Le Corbusier made a half-hearted attempt to design the Marseilles Unité in steel, but soon fell back on concrete as an available material in post-war France. He had regressed technically from the 1930s, while the rest of the world advanced, and by 1960 his influence had become a real drag on developments. But with the Centre Le Corbusier at Zurich the wheel has turned full circle. Le Corbusier first designed a concrete building, then changed most of it to steel, which is detailed with a sophistication unsurpassed in Europe. Just as at Marseilles he had produced a new architecture suited to the years of shortage, so at Zurich he has shown his mastery of the tools belonging to an affluent and technically abundant society. But this 'third phase' of his work must remain forever half-realised and imperfect since he died when the building was only in a very early stage of construction, leaving many unresolved design problems to his assistants, Rebutato and Taves. The Zurich parasol is an inelegant, elephantine structure which looks like a hangover from Le Corbusier's heavy concrete period, while the box below reveals the new Corbu of enamelled steel and neoprene. The system consists of cubes of mild steel angle, 1. Each side of the cube is 226 cm. and corresponds to the most magical dimension of the Modulor, the height of a man with his hand raised. The 226 cm. cube was also the basis of Le Corbusier's own 'cellule de travail' at 35 Rue de Sèvres, though the fact that he enlarged one of the plan dimensions by 33 cm. suggests that he found the 226 cm. cube too small in practice. The sketches of the Roq and Rob system (3 on page 214) imply that the columns will build up from a single angle at the corner of an isolated cube to a complete Greek cross when four cubes meet—an arrangement of architectural significance comparable to Kahn's build-up of columns in the Trenton Community Center or to the doubling of columns where the span changes direction in the Smithsons' Hunstanton school. However, the size of a column cannot be reduced in direct proportion to its load, and at Zurich extra angles have had to be added, so that every column is a Greek cross and the integrity of the cubes is weakened. The width of the box under the parasol is three and a half cubes. The half bay and the division of each bay into two equal but differently coloured panels gives an un-typical and un-Modulor look compared to the ventilating slits which





2



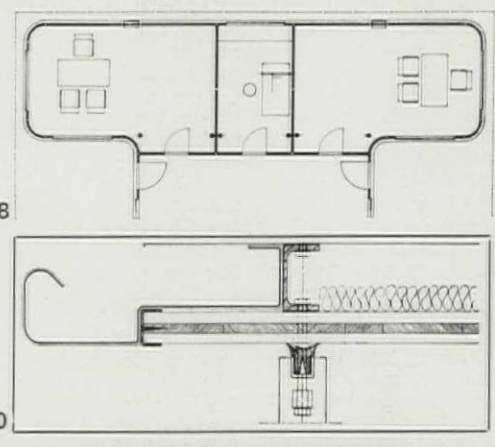
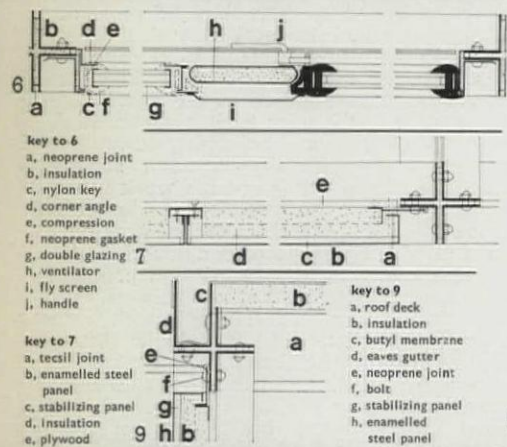
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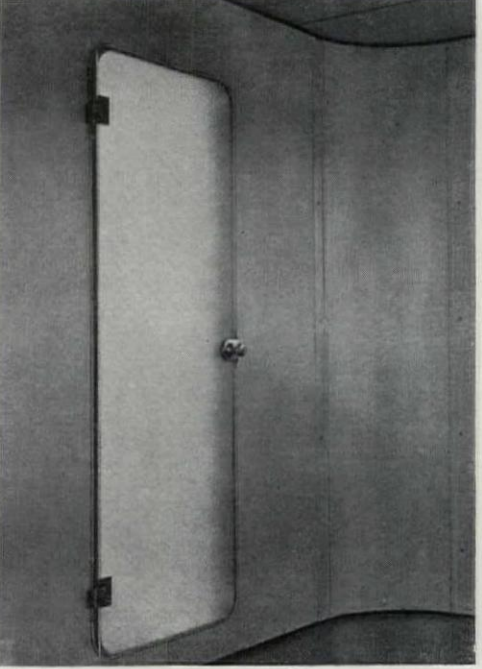
4



5



11



12

divide the glazed squares into more familiar Modulor proportions, 2. Internally, the solid infill is a simple oak-veneered plywood panel and the dark grey angles forming the cubes are totally dominant, 3, 4, being revealed everywhere except on the floor. They organise the plan, but as 226 cm. is not a generous span, they also restrict it. After a life-long concern with volume and mass, Le Corbusier here shows himself master of a stick aesthetic.

Although the Eames house at Santa Monica is almost twenty years older than the Centre Le Corbusier, they have much in common. Both are framed in dark grey steel, clad with panels of white and primary colours. Both have double-height volumes and both serve, to some extent, as a background to furniture designed by the architect. But the differences in mood is total. The Eames house is light-hearted and even whimsical inside, 5, and the designer-occupants continually add fresh bric-à-brac to their home, which is informally planned in accord with casual southern Californian living. The Zurich pavilion, on the other hand is very serious in mood, not only because the furniture of the 'twenties requires a more formal arrangement than the Eames furniture of the 'fifties, but also because of the circumstances of its construction: young disciples completing the master's last work. The Eames house was cheaply and lightly built and this lightness is emphasised by open web joists, thin fascias and suppressed floor beams. At Zurich economy was not a major concern and the parasol is very heavy. Partly for economy, partly for reasons of design philosophy, the Eames house is an assembly of ready-made elements, and the detailing is no more interesting than any other building employing standard steel windows coupled together; at Zurich the detailing is one-off and very carefully worked out. On to the cross-shaped columns and beams are bolted the external wall panels, with recessed joints so as not to impair the integrity of the column; the panels are either double-glazed with sealed units in neoprene gaskets, or enamelled steel on insulation with plywood internally, all framed on light steel members which bolt to the main frame, 6, 7. The floor and roof decks are steel panels with stiffeners of exactly the same depth as the beams. These are held back on the underside to reveal the full cross shape. At first floor level the steel deck is covered direct with a rubber flooring, and at roof level there is a layer of insulation and a butyl membrane.

Jean Prouvé gave his advice in the design of the Zurich building and his experience and skill have undoubtedly played a major part in the success of the detailing. Like this building, his structured houses, as at Meudon-Bellevue, have small spans and hence inconveniently placed columns. Prouvé is not an architect, and it would be wrong to talk about Prouvé-type space, but technical concern with eliminating non-standard corner mullions has led to the evolution of his curved corner panels which have major repercussions on interior space, and may lead to unhappy situations where right-angled and curved corners appear adjacent in the same room, 8. At Zurich Le Corbusier rejected this Prouvé device, and his 226 cm. cube system solved the corner situation in its own way, but Le Corbusier has obviously leaned heavily on Prouvé in the detailing. The horizontal gutters, 9, and the enamelled 'panneaux' with edges folded in, are typically Prouvé, 10, as is the use of neoprene gaskets. Except for the glazing, however, Le Corbusier is unwilling to let the gasket eliminate traditional detailing, and his door, 11, still has the usual weatherings and rebates, whereas Prouvé will construct an inward-opening, external door with only the pressure of the door against the gasket to keep the elements out, 12.



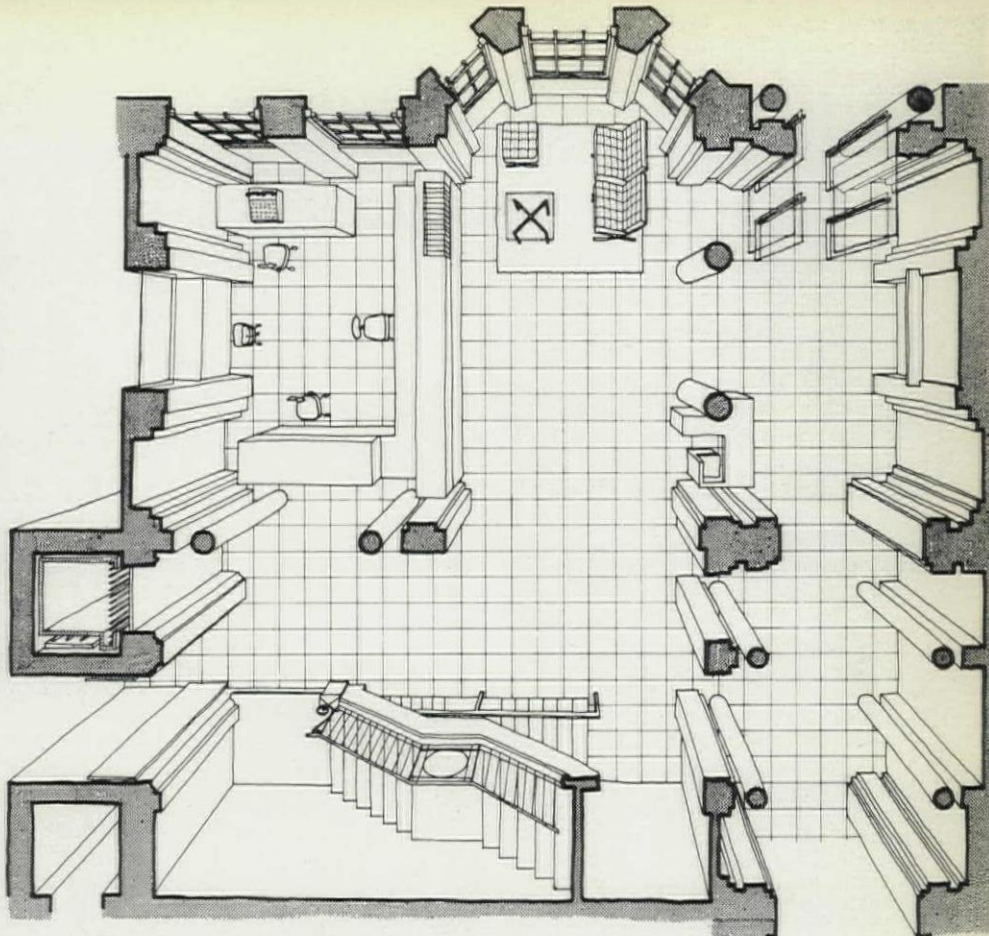


## Royal Air Force Club, Piccadilly, London.

**Architect: John Winter**

When the club recently decided to admit WRAF officers and wives of RAF members, it also took the opportunity of carrying out certain alterations and improvements to the building. Three main areas were converted, all of which are illustrated here.

The building is Edwardian baroque, built at the beginning of the century, and the interior, as the architect found it, was rich with plaster decoration in the familiar form of pilasters, false arches and the like. Some of the rooms had a good deal of character of the kind suitable for a club. Moreover, as an institution with thousands of members to please, a club is likely to act in a conservative manner when it comes to changes and improvements. In the event, the architect seems to have responded to these problems in an admirable way,

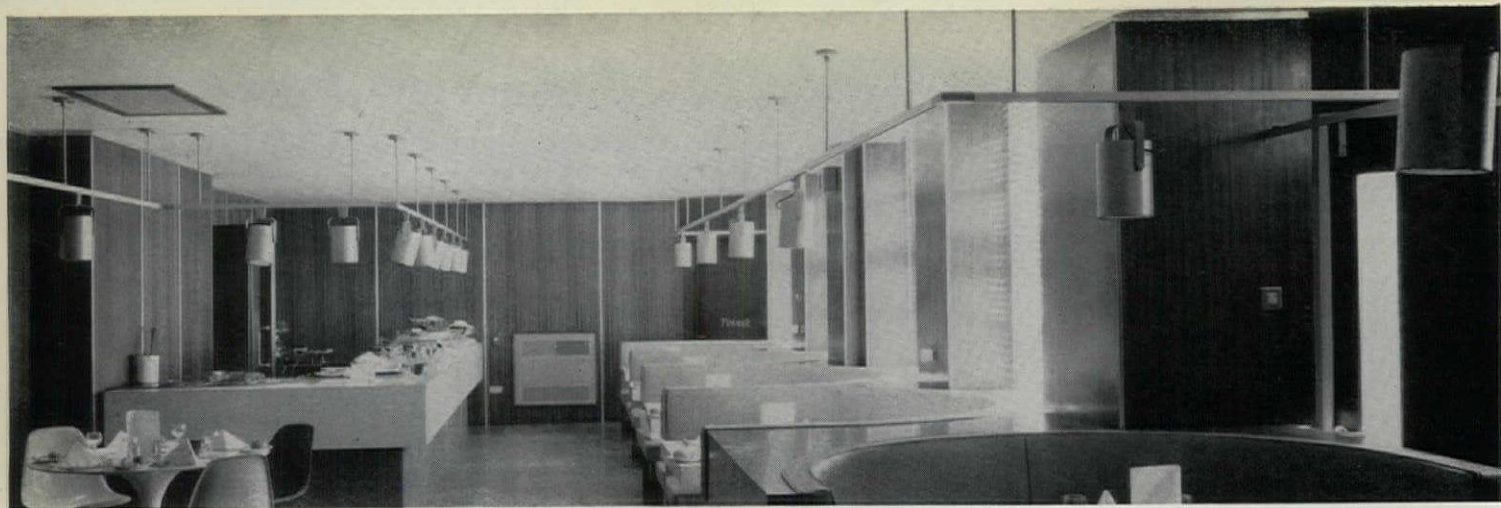


bird's-eye view of the entrance and reception area

1, the entrance and reception area.

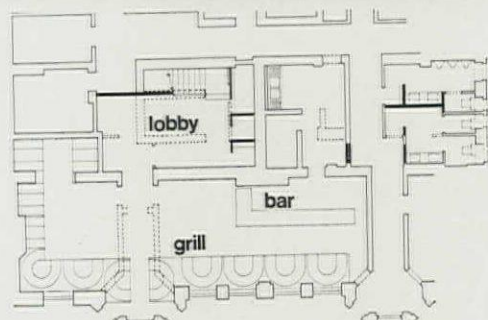






2

2, the buttery of the RAF Club, with the bar counter on the left. 3, built-in seating in the buttery.



plan of the buttery



3



neither making too much of a clean sweep, nor being content with just doing the place up. For instance, the vaulted corridors, even including the lights, have been retained and simply redecorated with honey-coloured hessian and white gloss paint. Some of the old furniture has been re-used, and the florid brass door furniture, formerly on mahogany panelled doors, has been put back successfully over new flush doors, clad in handsome brown leather.

#### ENTRANCE AND RECEPTION

Part of this was formerly a lounge and now combines the reception and waiting areas with a large L-shaped counter containing the administration. This communicates at the back with the dining room by means of a window at which all accounts are dealt with.

There is an unusual degree of sensitivity for details and materials. The teak counter tops are wax-polished while the handrail of the new staircase down to the buttery is french-polished—different finishes reflecting different functions. The marble cove and upstand under the counters, chosen to match the existing marble floor, are lit by concealed lighting, to bring out the veining. The ceiling lights are fully recessed and so are much more successful than in the Cowdray Room upstairs, where solid structure required them to protrude and form positive elements that seem inappropriate both in character and in scale.

#### THE BUTTERY

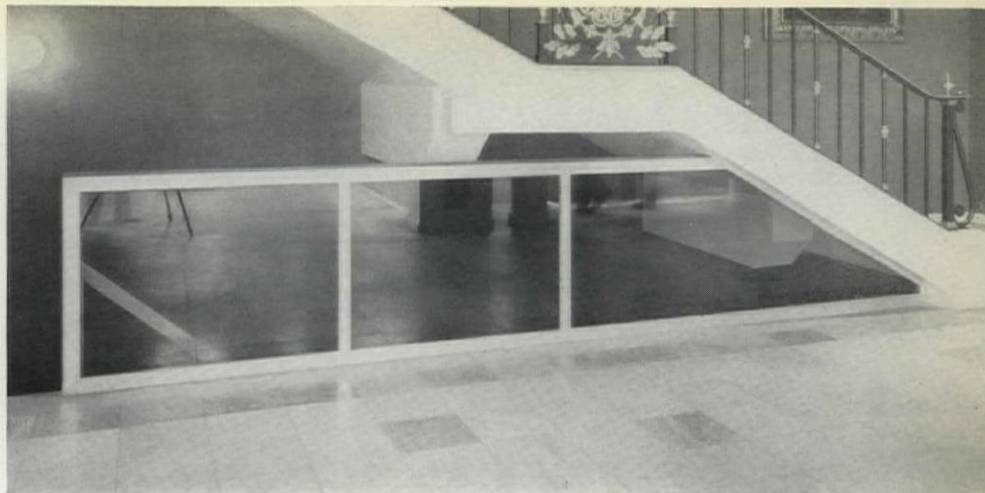
Part of the buttery in the basement was formerly store rooms, reached deviously by a remote staircase. A new staircase has been put in immediately under the main one leading from the entrance to the first floor. The problem of the new balustrade—grey glass panels in an aluminium frame—against the remarkably elegant black and gold iron balusters of the original staircase, has been successfully handled. The flat profile of the new balustrade, its contrasting proportions and the neutral character of its materials, prevent it from competing with the old one.

The buttery itself is in some ways the least successful part of the conversion because the exercise of a strict economy is somewhat too evident in the commonplace sapele panelling and slotted acoustic ceiling. Otherwise it achieves the right degree of privacy and cosiness with its built-in seating in horse-shoe form and its dimmer-controlled light fittings suspended low over the tables.

#### THE COWDRAY ROOM

Unlike the buttery, which had to be carved out of several spaces requiring considerable structural alterations, the Cowdray Room on the first floor was all there with the exception of the bar at the far end. The formal arrangement of rather formal-looking furniture is deliberate, the room's former cosiness having been transferred to the new smoke-room.

This regimentation, however, is broken up with a freer arrangement of chairs of a more curvilinear form in the bay windows. The robust Edwardian plaster decoration, slightly simplified by the architect, looks at its best in a room of this size, whereas in the much smaller entrance area, especially towards the dining room, it remains over-elaborate. The mouldings are painted white, and their quality is further brought out by the use of mirrors on the end wall and by emphasising the panel treatment of the walls. The colour is quiet, ranging from various tones of beige—the Chinese silk on the walls, the vermiculite plaster ceiling, the curtains and the carpet—to the brown leather upholstery of the chairs. Against this neutral background, the yellow and orange upholstery of the curvilinear chairs stands out bright and clear, and out of the large windows the view over Green Park is allowed to have its say.



4, the new staircase down to the buttery. The balustrade makes no attempt to compete with the elegant old one. 5, the Cowdray Room on the first floor, seen from the bar end.







## Furnishing fabrics

The rich textures of woven furnishing fabrics tend to fit more successfully into an architectural setting than the dominant patterns of printed fabrics. Both the look and the feel of a weave can have a timeless quality which has been recognised by architects, especially in the furnishing of their own buildings. Tamesa Fabrics continue to produce some of the most beautiful weaves on the market under the direction of Mrs. Tisdall (see DR in AR, February 1962 and April 1965 for earlier examples). A weave like Leo, 1, is a subtle blend of three close colours producing an unusually rich striped pattern, but with the texture remaining dominant. Copelia, 2, has an open-weave pattern, like embroidery, in the form of huge chevrons and comes off more successfully in the natural than in the bright colours. By comparison, Primavera's imported fabrics, also rich in colour, tend to have a more open weave, 5 and 6. One print is included, 7, because both the pattern and the surface quality of the fabric (a little linen added to polyester) bring this nearer to a textured than to a patterned material.



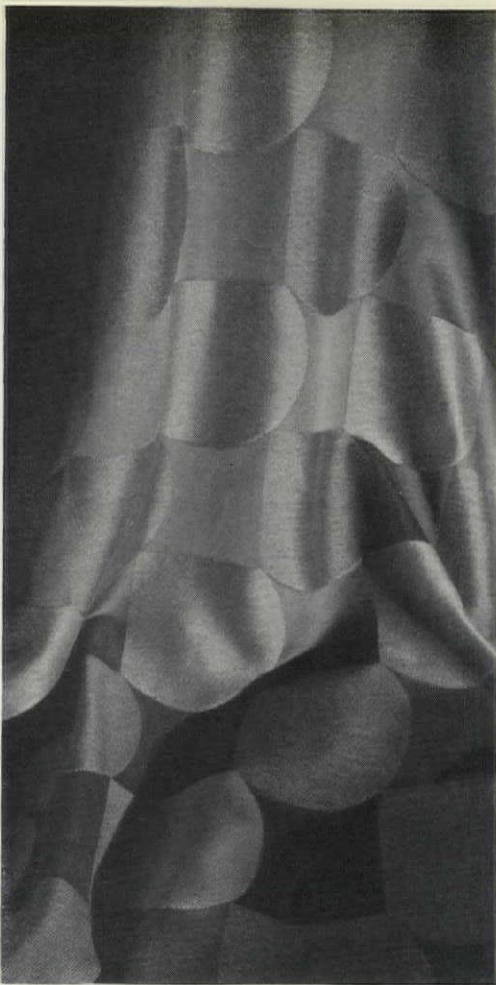
1, 2

- 1, Leo, by Tamesa Fabrics. Worsted and cotton back in eight colourways, suitable for upholstery.
- 2, Coppelia, by Tamesa Fabrics. Worsted in eight colourways, for curtains and bedspreads.
- 3, Venus, by Tamesa Fabrics. Worsted and nylon fine weight with silk-like sheen suitable for curtains.
- 4, Cicero, by Tamesa Fabrics. Cotton and spun rayon Jacquard in four colourways, suitable for curtains.
- 5, imported from Sweden by Primavera: Acryl in eight colourways, suitable for curtains.
- 6, imported from Germany by Primavera: Wool and nylon in three colourways, suitable for curtains.
- 7, Ibis, a printed fabric imported from Sweden by Primavera. Polyester and linen in seven colourways, suitable for curtains.



3





4, 5, 6

0

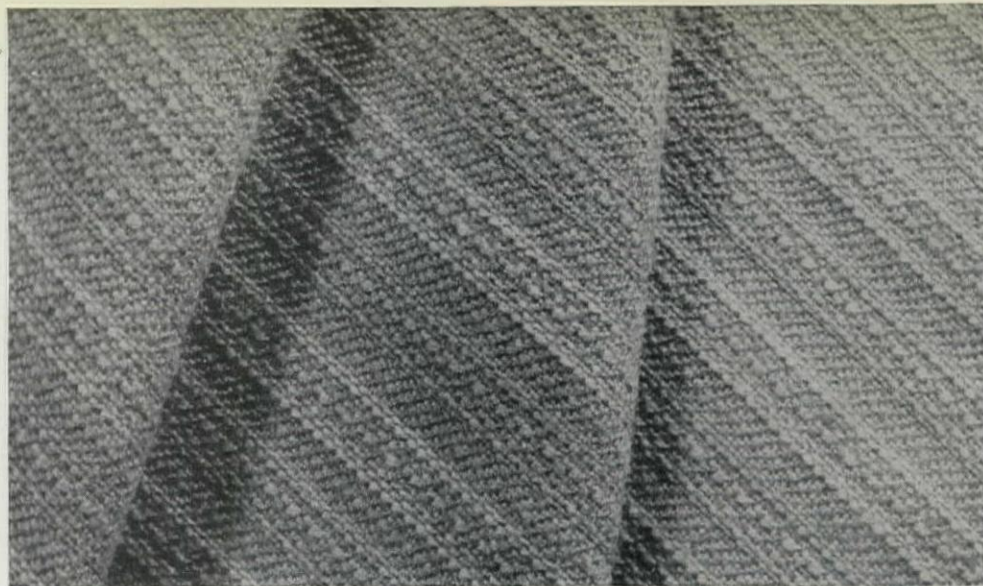


7

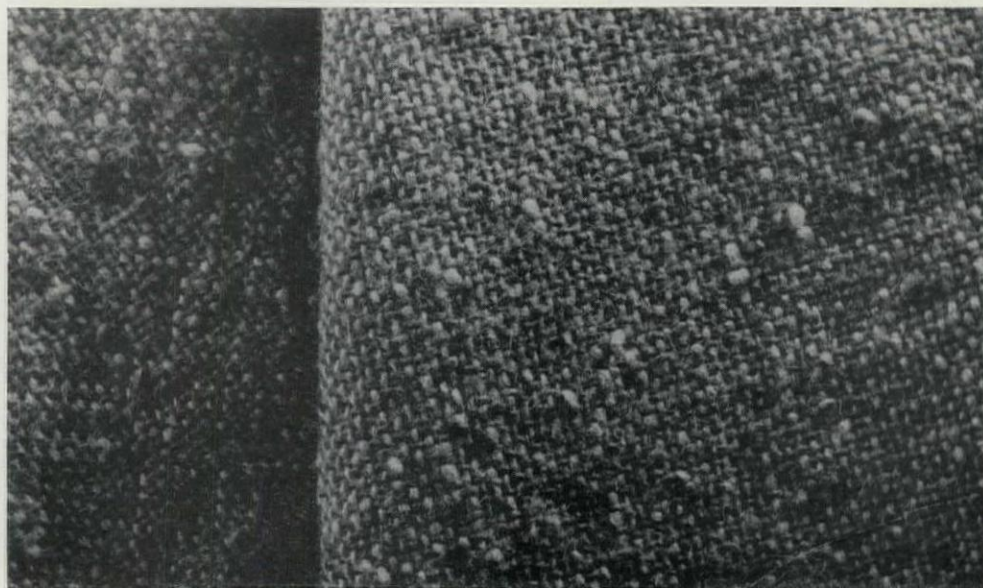


Margo Fabrics specialize in upholstery cloths and have recently brought out new ranges in Dralon, 8, as well as wool, 9, and wool mixtures. Dralon has been popular on the Continent for some time because of its high abrasion and dirt resistance. The fibre responds well to colour, and texture again plays a predominant part, the Dralon being made to simulate the texture of wool and worsted.

The three examples illustrated from the new Sekers range, 10-12, are all Jacquards in a mixture of Courtelle and rayon, an attractive characteristic of Courtelle being bulk without weight. The pattern of Campo, 12, was inspired by Cretan peasant art and gives the impression of having been insufficiently reinterpreted. It is an example of a woven fabric where the pattern takes over and in that sense provides an interesting contrast to Primavera's Ibis, 7.



8



9

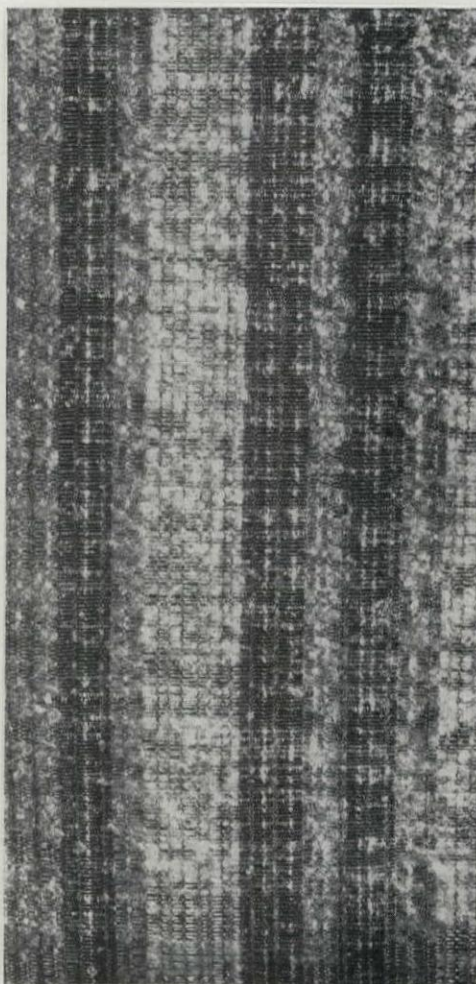
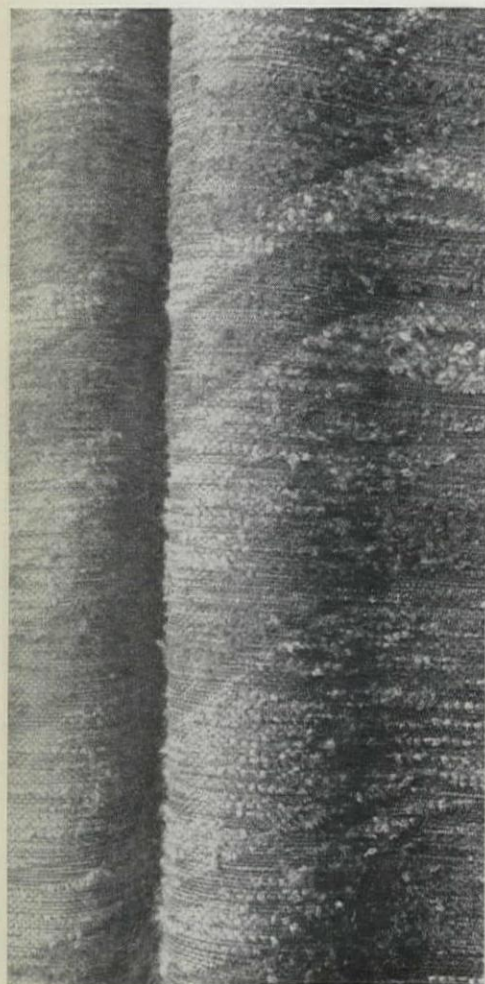
8, Brandon, by Margo Fabrics. Dralon in seven colourways, suitable for upholstery, curtains, loose covers, bedspreads.

9, Lanchester, by Margo Fabrics. Wool in fourteen colourways, suitable for upholstery, loose covers, bedspreads.

10, Carini, by Sekers Fabrics. Courtelle and rayon in eight colourways, suitable for curtains.

11, Canosa, by Sekers Fabrics. Courtelle and rayon in eleven colourways, suitable for curtains.

12, Campo, by Sekers Fabrics. Courtelle and rayon in seven colourways, suitable for curtains.

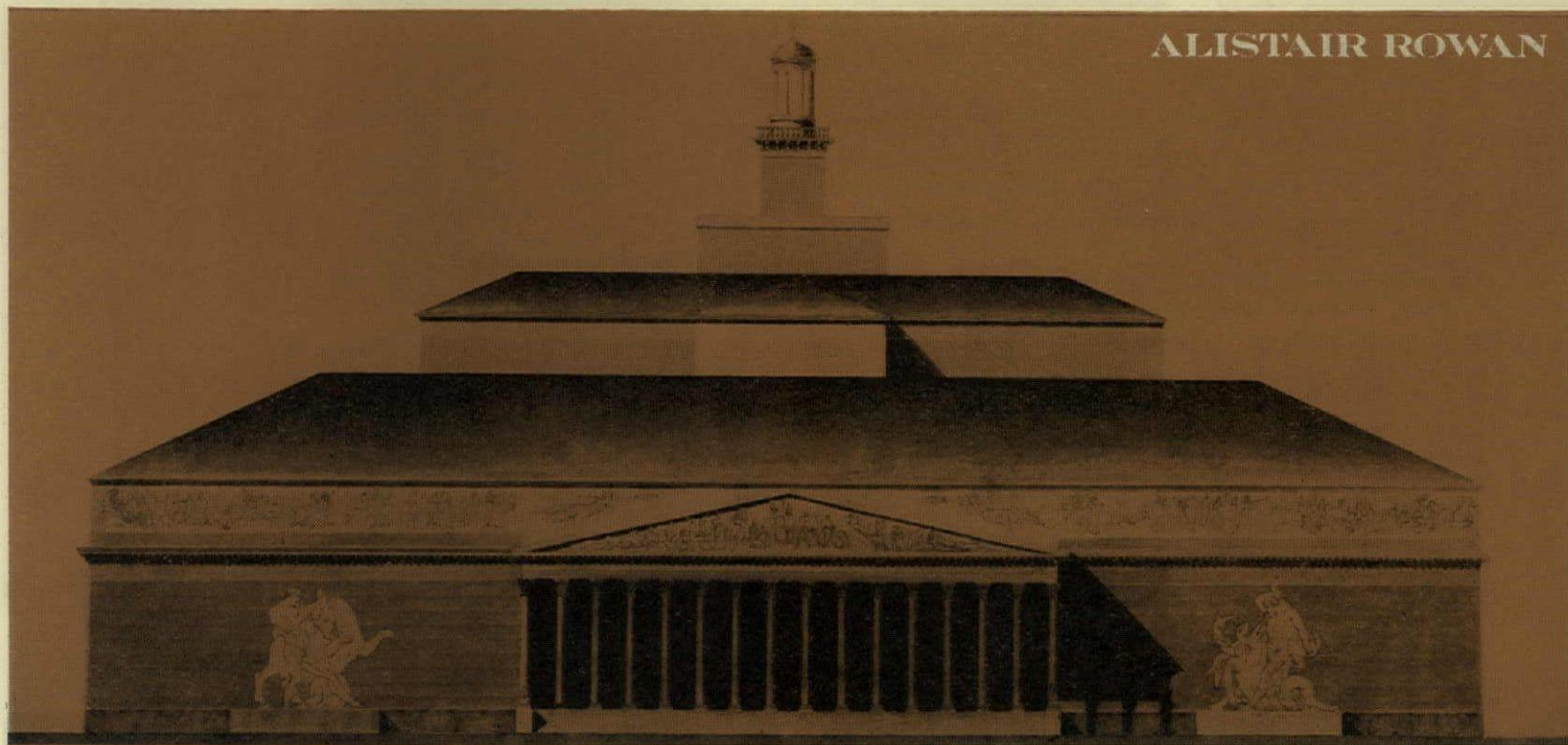


10, 11, 12



# JAPELLI & CICOGNARA

ALISTAIR ROWAN



1, Giuseppe Japelli's project for a university, commissioned by the University of Padua in 1824, which he designed with the help of Count Leopoldo Cicognara.

The story of the Pedrocchino in Padua—a spikey Neo-Gothic enigma of 1837 oddly placed beside the restrained classicism of the Pedrocchi café—has already been examined by Nikolaus Pevsner in the *REVIEW*<sup>1</sup>. Both the café and its bristling sham-medieval counterpart, 2, are the work of the same architect, Giuseppe Japelli (1783–1852). One of the most notable

early nineteenth-century Neo-Classicalists in the Veneto, Japelli was also the leading designer of *giardini inglesi*, the medium through which the taste for Neo-Gothic had first been introduced to Italy. Behind the Pedrocchino there is therefore a strong undercurrent of English influence. Japelli's first essays in Neo-Gothic were in his 'English'

garden designs, the earliest dating from 1815<sup>2</sup>; and the immediate source of much of the detail of the Pedrocchino apparently depends on a tour he made to England in 1836, the year in which the designs for the building were made.

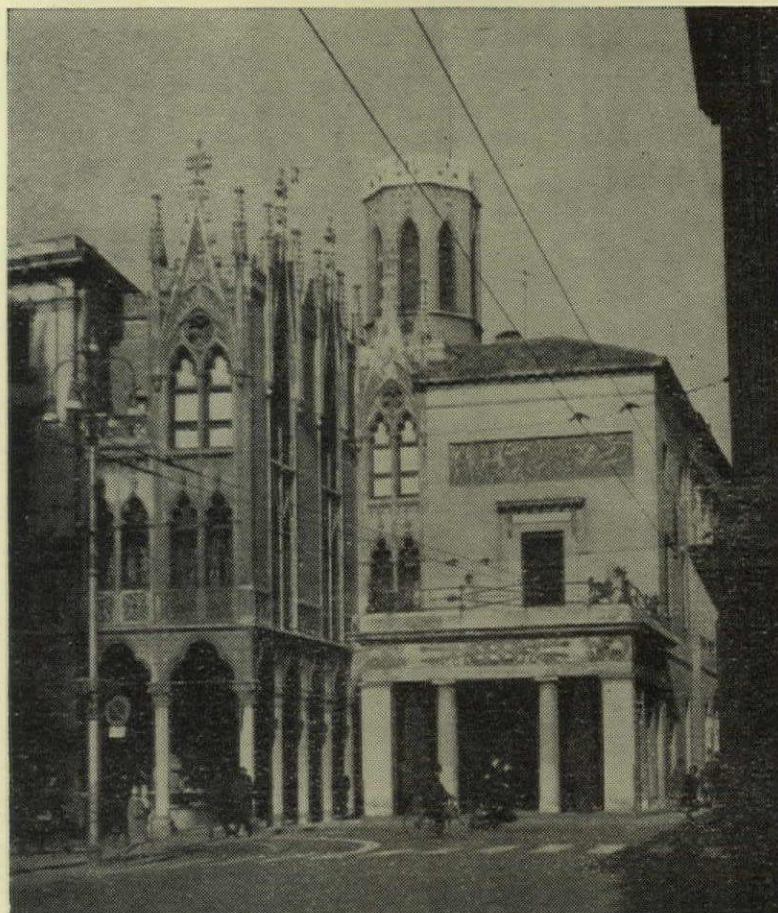
But there is one problem that is not fully explained by English precedent, or by Japelli's visit in 1836: in such a position as the

Pedrocchino is, why adopt a Gothic style at all? To be sure a mixture of Classical and Gothic is an English phenomenon: Castle Ward in Co. Down and Castle Goring in Sussex, both Gothic on one side and Neo-Palladian on the other, or Payne Knight's Downton are good examples. Yet even these instances tend to separate their various parts more carefully, and it is hard to think of a new building that Japelli might have seen in Britain, that presented such conglomerate incongruities as the Pedrocchi and Pedrocchino do together.

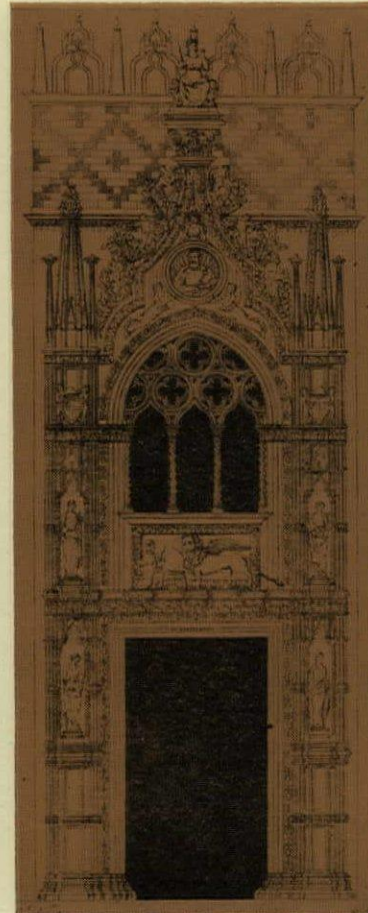
Perhaps therefore the decision to go Gothic depended less on English inspiration than the actual forms of Gothic that were employed. Japelli's neo-medieval garden buildings were all designed before he went abroad, and if the taste was ultimately an English one, his architectural inspiration must have depended earlier on a more local stimulant.

In such a situation it would be useful to know something of Japelli's reference books; and though no account of his library seems to exist, he certainly possessed one important book; for his name appears amongst the comparatively short list of subscribers to *Le Fabbriche più conspicue di Venezia*, published by the re-organized Accademia in Venice in 1815<sup>3</sup>. *Le Fabbriche* is an ambitious book, printing in two volumes the plans, sections, elevations and details of all the most significant buildings in Venice from the Middle Ages to the end of the eighteenth century. It gives generous space to the Gothic achievements of Venetian architecture, and as it is one of the first Italian publications to do so, it may be regarded as a major source

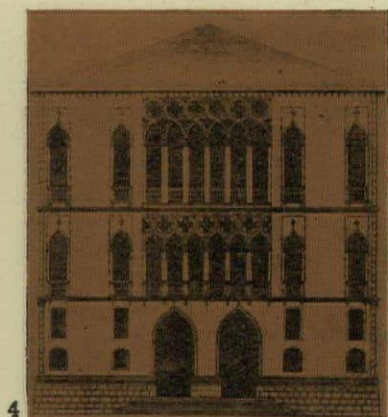
2, the Pedrocchino and the Pedrocchi café in Padua, both designed by Japelli in 1836.



3, the entrance to the Doge's Palace, Venice.







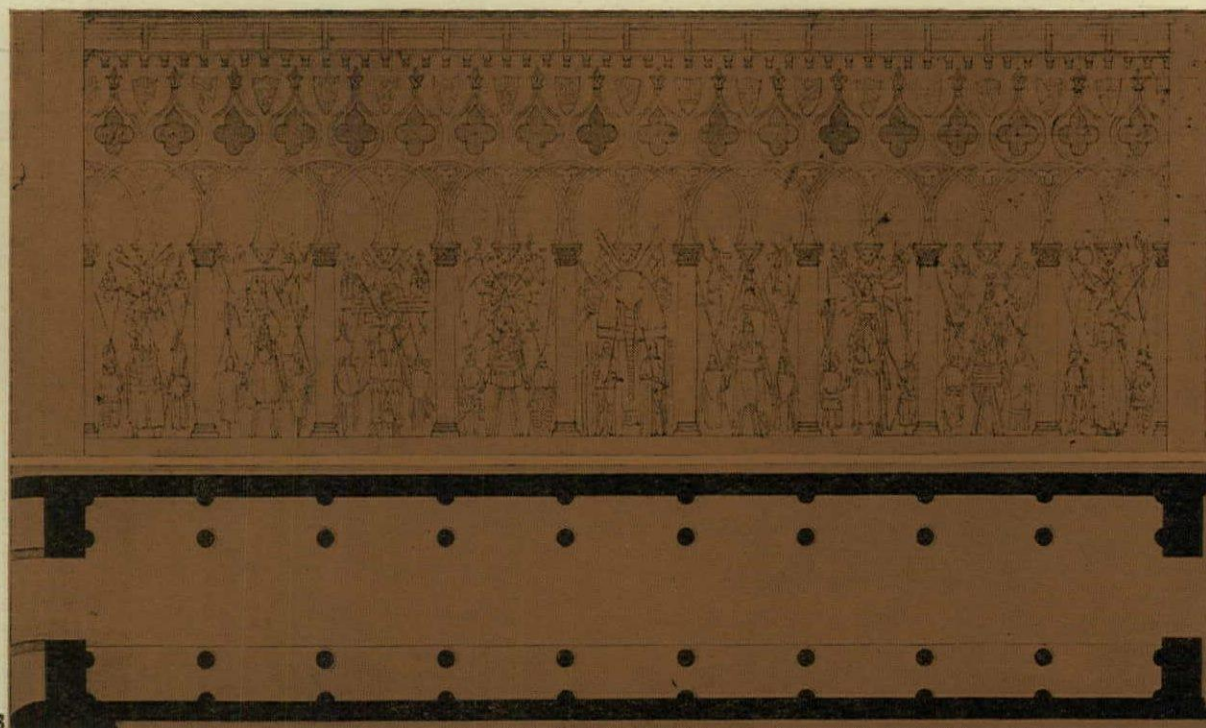
4, the Palazzo Pisani, Venice, which influenced Japelli's design for a gallery of armour at the Castello Pacchierotti in Padua, 1838-1840, 5.

book for the local Gothic Revival, in which Japelli played such a conspicuous part.

One plate in *Le Fabbriche*, the entrance to the Doge's Palace, commonly called the *Porta della Carta*, 3, seems to bear a particular relationship to Japelli's Pedrocchino design. Though in detail the two designs remain different, they are both in the same elongated spiky Gothic idiom, and more especially the theoretical arguments suggested for the design of the *Porta della Carta* give a very probable source of Japelli's choice of Gothic in Padua.

'The circumstances facing the architect, who had to design a magnificent entrance to the Doge's Palace, were unusual; for there were already two orders of arched loggias occupying the ground and first floors along the entire external circumference. Consequently it seemed ill-advised to erect the principal entrance with its decoration in such a position; for this would either have interrupted the alignment of the façade and the perspective rhythm and uniformity of the arches, that produces so beautiful and picturesque an effect; or else the entrance would have had to be limited to below the height of the arches of the first order, which would not be suitable to the type of magnificence that the entrance was intended to have, nor indeed to the dominant style of the architecture, in which pyramidal composition and decoration were deemed almost essential. The junction of the Doge's Palace and the Basilica, meeting in a re-entrant angle, provided a fortuitous opportunity in respect to these considerations, so that, by taking such a position for the entrance, the architect, then independent of the rest of the edifice planned and built by his predecessors, was left at liberty to execute a grandiose design, of equal dignity to the Doge's Palace, yet not in conflict with the earlier structure, and giving simple and immediate access to all parts.'

Now there are many affinities between the siting of the entrance to the Doge's Palace and the Pedrocchino, and the above passage would require only a little alteration to become an account of Japelli's ingenuity in designing his Gothic additions to the café.



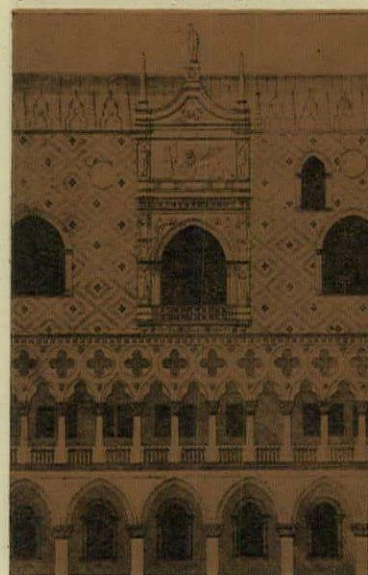
In place of the rhythmic (one might almost say classical) form of the Doge's Palace there is the distinctly classical form of the south facade of the Pedrocchino; in place of the organic structure of the basilica, an equally organic group of old houses; and in Padua as at Venice the building placed between is in a spiky Gothic style. Moreover it is joined to its regular neighbour in a shallow re-entrant angle, and the arcading at its base also acts as an entrance to the narrow *piazzetta* behind the facade. Given such an argument as *Le Fabbriche* presents, it is hard to visualize a Classical solution for the Pedrocchino that would have been more successful in such a cramped site. Instead of an attempted union Japelli decided to make his design boldly different, and rather like the *Porta della Carta*, it accords with its surroundings, if at all, by virtue of that difference.

Such theorizing is perhaps too neat to be always true, yet the argument does seem to lie behind, and to explain, Japelli's Pedrocchino design. Even so, had the

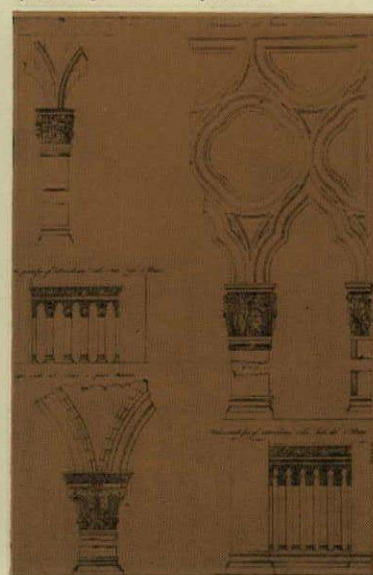
effect of *Le Fabbriche* been limited solely to the Pedrocchino, these similarities might be passed over as mere coincidence, and would hardly be worth recording here. But this is not the case. That the book influenced Japelli on other occasions may be sufficiently illustrated by a comparison of another of its Gothic plates, *The Palazzo Pisani* on the Grand Canal, particularly the upper loggia, 4, with the design for a Gothic gallery of armour, 5, perhaps for the Castello Pacchierotti in Padua, built to Japelli's designs between 1838 and 1840. Details of other plates, for example the Doge's Palace or the Ca' d'Oro, 6 and 7, must have been equally useful to Japelli, and it seems likely too that *Le Fabbriche*, or rather one of its authors, was instrumental in forming Japelli's original taste for Gothic. Japelli's interest in, and knowledge of, medieval architecture was thorough and much more profound than that of the majority of his Italian contemporaries. His designs might be weirdly inventive in themselves—like the Gothic gallery for the Pacchierotti,

literally turning medieval architecture inside out—yet some of the individual details of that fantastic *castello* had more pretensions to archaeological accuracy, 8. Similarly the arcading of the Pedrocchino reflects a very probable study of Gothic examples, English this time, while Japelli was in London in 1836; and for the homeward journey, the diary of his wife plots a progress in which Gothic monuments received a considerable share of the architect's attention. During their time in Paris (apart from the obvious plays and the Panthéon) the Japellis visited Notre Dame (just cleaned) and St. Denis, where Japelli explained the structure to his wife; and later at Lyons she herself noted '*delle belle chiese Gotiche*,' no doubt pointed out once more by 'Bepo.' Their journey continued through Provence, with its many castles, to Avignon, where the medieval gates of the city were singled out for attention, and so back to Italy. This diary is worth noting because such attention to Gothic is unusual in an Italian. It is not explained

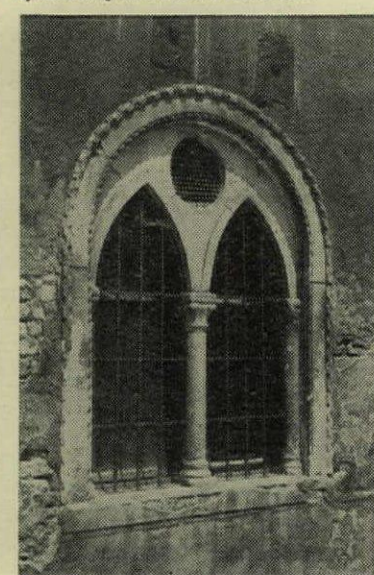
6, another elevation of the Doge's Palace.



7, details of the Ca' d'Oro, Venice.



8, window of the Castello Pacchierotti.





by Japelli's official career as a student of engineering in Bologna, or later as a pupil of Giannantonio Selva in Venice between 1803 and 1807; for neither in Bologna nor with Selva was he likely to have encountered a very sympathetic approach to medieval art<sup>8</sup>. On the other hand it is unlikely that his interests developed free from the influence of others, and it is here that the author of the medieval sections of *Le Fabbriche* takes his place—Count Leopoldo Cicognara.

Cicognara was perhaps the most notable writer on art and aesthetics in the early nineteenth century in Italy. Born of noble parents in Ferrara in 1767, he was educated at the *Collegio dei Nobili* of Modena, and later in the faculty of Philosophy at the university there. Early in 1788 Cicognara moved to Rome, where he was soon noted for 'una certa indipendenza di guidizii,'<sup>9</sup> and where as a member of St. Luke's Academy he was naturally involved in the growing Neo-Classicism of the day<sup>10</sup>. In these years he visited Paestum, Segesta and other Greek sites in Sicily, preparing at the same time his first work in art criticism, a poem, *Belle Arti*. But the times were unsuited to research and art-historical studies. In 1792, when Cicognara was still in Rome, the French invaded Piedmont, and four years later he is found serving as a member of the Committee of General Defence, set up as part of Napoleon's provisional government in his old university town of Modena. For the next six years political activities replaced academic pursuits, but Cicognara was never really suited to the life of a diplomat. His 'indipendenza di guidizii'—often contrary to Napoleonic schemes—was no less evident in his political career than it had been when he considered the arts, and by 1802, after having served on several committees and legislative assemblies, he was eventually accused of anti-French sympathies and was placed under close arrest in the Castello of Milan, pending investigations. In the spring of the following year however he was discharged, though exiled from the Cisalpine Republic, and from then on, despite later proposals and apologies, he resolutely refused political commissions, devoting his time to the life of a man of letters. A prolific writer with more than seventy publications to his name<sup>11</sup>, Leopoldo Cicognara is best known today for his *History of Sculpture*, an exhaustive study published between 1813 and 1818 that finishes not unnaturally with a eulogy and detailed discussion of the works of Antonio Canova—Neo-Classical par excellence and Cicognara's intimate friend. Neo-Classical, too, was the circle of artists and architects with which he was surrounded as President of the re-organized Accademia in Venice, a post to which he was elected in 1808<sup>12</sup> and that he resigned only in 1826.

It is in his position as President

of the Accademia that he may have first forged a personal link with Japelli. As head of the Accademia Cicognara had for the professor of architecture none other than Japelli's old teacher Selva, and, as the Accademia was then involved in alterations to its buildings, the work of adaptation and restoration brought the two together. Similarly they collaborated in opposing the demolition of Sansovino's church S. Geminiano in the Piazza San Marco, and, when the church was nonetheless destroyed, Cicognara published four plates and an account of the design in *Le Fabbriche*, while Selva built a replica nearby at SanMaurizio—departing from the original only



9, Selva's reconstruction of S. Geminiano, Venice.

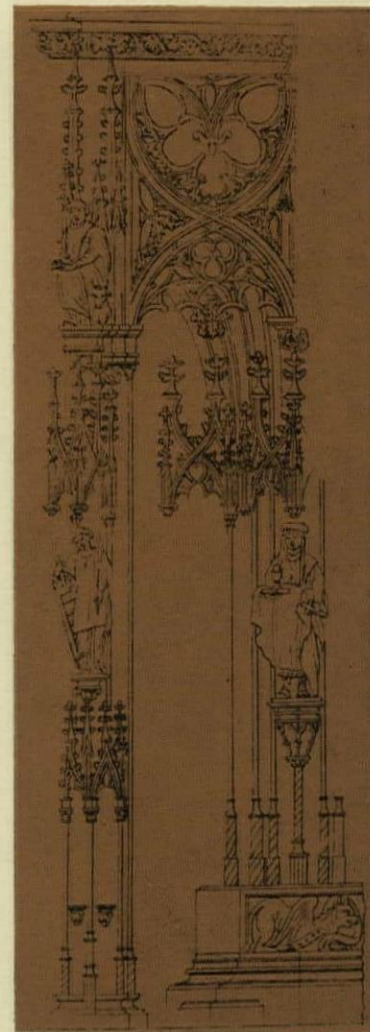
in the design of the façade, 9, that provided Venice with one of its very few overtly Neo-Classical monuments<sup>13</sup>. All this activity must have interested a young man like Japelli; and though there is no specific mention of him, some acquaintance with Cicognara may be assumed from early in the century. In later years there is definite proof of a considerable friendship between the two men: in March, 1824, for example, Japelli was approached by the Rector of Padua University for designs for a new university, and for this scheme he at once sought the advice of Cicognara and other members of the Accademia<sup>14</sup>. The design was to prove the greatest disappointment of Japelli's professional career, for after almost a year's work, throughout which he had periodically submitted draft designs, the final project<sup>15</sup>, though assured and majestic in its architecture, 1, was rejected out of hand. Only Cicognara continued to support Japelli, insisting that he had been unfairly treated, and having the designs exhibited in Venice. Japelli's letters to Cicognara from this and later periods demonstrate the friendship that had grown up between them: in March, 1825, he writes to thank Cicognara for his continued support in 'that cursed project,' happy to have gained 'a small place in your heart and the smile of your approval'; and later letters, signed

'your most affectionate friend,' tell of new projects, a mausoleum for the Velo family in Vicenza, and the latest *giardino inglese* for Baron Gaetano Aggealtatore, at Torre di Castel Guelfo, near Parma<sup>16</sup>.

Earlier accounts of Japelli's work, or indeed of the general architecture of the Veneto in this period, tend to ignore the contribution of Cicognara<sup>17</sup>. Perhaps this is understandable with a personality, who was essentially analytical rather than creative, yet it should not minimize Cicognara's importance. His position as President and author assured him a very considerable fame in his day. The number of eulogies on his death in 1834 attest this, and attest too that his opinion had always carried weight. The relationship with Japelli is just one instance of a wide cultural activity that embraced many other artists, and it may be useful to end with a few notes that help to place the count in his period.

Cicognara's political years were not as entirely wasted as their end in the *castello* in Milan might suggest. Diplomatic activities in 1799 had taken him to Paris, Amsterdam and the Hague, a tour which would have acquainted him with at least one important centre of architectural progress outside Italy; and, when he had returned, his frequent attendances at Councils at Milan gave him the opportunity to form a friendship with Count Ercole Silva, a fellow aesthete and author in 1801 of the most influential Italian book on landscape gardening, *Dell'Arte dei Giardini Ingresi*. Silva had already laid out several *giardini inglesi* in Lombardia, including his own park at Ciniello<sup>18</sup>, and it was there that Cicognara's wife and family stayed during the winter of 1802, while Leopoldo himself was in prison. When released he moved immediately to Tuscany to stay with the family of the Marchese Tassoni, and, while there, met another landscapist with English connections—the painter Philip Hackert, then working for the Grand Duke<sup>19</sup>. In both landscape and landscape painting, Cicognara left at least one example of his own creation. On the example of Hackert, he decorated a small room with landscape murals at Montalto, the villa of Count Del Testa near Pisa: and at the same time he produced a scheme for a *giardino inglese* for a Cavaliere Pesciolini, basing his design on what he had seen of Silva's work in Milan<sup>20</sup>. Thus in some aspects of his career he anticipates Japelli; and like him, Cicognara also made a tour to England in 1819, where he noted the leafiness of London, the new marvel of gas

lighting, the Royal Mint, and the banquet of the Royal Academy. His impressions of this tour are given in translation in an appendix below. Here it is interesting to note his attention to medieval Oxford and to the tower of London, for ultimately it is his concern with Gothic art that makes his career of interest to architectural historians. Cicognara was one of the first Italians to propose a systematic study of medieval art and architecture; and to conduct that study free from all the dabbling curiosity that had marred so much eigh-



10, illustration from Cicognara's *History of Sculpture*.

teenth-century research in England. It is typical of his approach that in the *History of Sculpture*, he should include an analysis of architectural style, as buildings so frequently formed the setting of the works he discussed. Thus details of medieval architecture are at least suggested in that Neo-Classical compendium, 10; and it may even be that the little vignettes of Gothic designs that keep company with Donatello, Michaengelo and Canova also have a role to play as prophets of the Gothic Revival.

#### AN ACCOUNT OF CICOGNARA'S TOUR THROUGH REGENCY ENGLAND

Cicognara and his wife arrived in London on April 20, 1819, and, after a mistaken but fortunately brief stay in a district of low repute, took rooms with a Mr.

Foves in No. 14 Sackville Street. Here they stayed for over four months, paying three and a half guineas a week. Malamani, in the second volume of his life of



Cicognara, pages 225-231, published some five pages extracted from Cicognara's own notes on England. Some of these may come from a diary, but other parts were clearly written at a later period, and evidently a lot has been left out. Malamani gives no clue to his sources nor to his editing. In what is published little of Cicognara's criticism is architectural or very specific, but his pages, filled with the incidental comments exhibiting his encyclopaedic curiosity, give a vivid impression both of the man himself and of the late Regency England that he knew.

'From whatever part of the world one may reach London, it is impossible not to admire it. Much as Paris may please a visitor, London surprises to such an extent that Frances grows small by comparison. . . . From a beautiful miniature by Petitot, I appeared to have passed into a fresco by Michelangelo. The huge mass of the population presents a very unusual and remarkably varied picture. The women, for the most part, are superb, and, enjoying the liberty of walking unattended, adorn the streets with their beauty. The carriages and horses are the very finest that may be seen. There is an infinite number of public carriages; and these are so large that they can take eighteen or even twenty persons, baggage included, and none has horses that might not figure in the stables of any monarch. The very great cleanliness, and beauty of the streets, shaded by dense trees, and the richness of the shops attract the gaze of the stranger. . . . You would look in vain for majesty in the major buildings or churches. The Royal Palace is quite miserable; another three or four of the most vaunted establishments where noblemen give their great receptions, may just possibly bear comparison with the most mediocre in Italy. These belong to the Marquis of Stafford, the Marquis of Londonderry (Landsdowne?), the Duke of Devonshire and Lord Grosvenor. But what are indeed most impressive and marvellous are the bridges which cross the Thames, especially two of the most recent, the one Waterloo, and the other Vauxhall, which is of only three iron arches, the largest in the world. There are a few buildings of note, though they are rare; yet on the other hand one does not see the sad spectacle of poverty. All is tidy and clean and pleases. The lighting of a large sector of London, where gas has been substituted for oil, is marvellous. There is no day there so bright that it may not be equalled by the lighting, as much in the streets as in the shops themselves. However gas costs a packet. I visited one of the principal gas furnaces to acquaint myself with the force of this portentous vapour, and the relevant calculations are now being made to see whether it will be worth while popularizing its use further. This form of lighting can be introduced in houses,

and in any other place that it is wanted. I have seen two grand examples of it, one in the exhibition hall at Somerset House, and the other in Lord Grosvenor's room of Rubens paintings; only that in these the light is too dazzling and strains the sight. In fact the eyes get tired looking at objects lit by gas, which seems to be destined exclusively to use in the streets and for the illumination of shops. Also in the theatres, that excessive light does not accord at all either with the needs of artificial scenery, or with the decorations.

'One might say that there are two Londons, the one permanent, the other transitory; thus, the part called the City, that begins at the West End and continues to the Bank of London (England?), is the emporium of every richness, and the centre of business, while the other is the fashionable quarter, and is the new London that runs from Westminster to Oxford Street. The *boutonnists* of London want to have at least a room in this quarter, from the beginning of spring until the closing of Parliament which happens round about the middle of July: in consequence in those months it becomes a pleasure resort, and the lodgings rise to exorbitant prices, and are also hard to find. But a blood would think himself dishonoured if he could not have, I repeat, at least a room. He will live badly, worse than a dog, but he is there! Parliament closed, there is a general flight, and in eight days that quarter, previously so tumultuous and crowded, becomes like every other, with the exception of the City which never changes at any time throughout the whole year. Balls are given with luxury and oriental magnificence, and in most cases they close with suppers of the rarest delicacies. Those which were really particularly beautiful were given by the banker Baring, Lord Grosvenor, the Marquis of Stafford, Lady Darnley and by the Prince Regent. Fancy dress balls, without masks, are very common. In its richness and grandeur that of the Regent surpassed all that I had seen previously, littered as it was with costumes from India which is one of his colonies; with this ball the Prince had hoped to encourage commerce.

'Although the English may not be a people of artists, nonetheless their richness procures famous masterpieces. In reality there are no history painters there, few passable portraitists, and only a few painters of small genre subjects. No one has yet ousted the portraits of Reynolds from the public memory, or the caricatures and expressive drawings of Hogarth; and the compositions of the aged West are still the best, though perhaps they will pass to posterity more for the merits of the points that engrave them than for the merit of the brush by which they are painted.

The galleries of London are very numerous, always open to the

public, and furnished with old and modern works of art of every school. The Academy of Arts—Somerset House—is maintained privately. The exhibitions are opened solemnly with a grand dinner of three or four hundred places, at which Princes of the blood, ministers, the great English nobility, and the artists most in vogue attend. As a fellow spirit, I too was honoured with an invitation and was seated with the members of the diplomatic corps. The ceremony at dinner was new and very singular, and from the beginning to the end was enlivened by old and choice pieces of national music, of a pathetic but harmonious style. At a moment when 'God Save The King' was being sung, a great chandelier was lit in a flash, by means of electricity, and though the sun may still have been shining outside, the vivid light of the gas was so unexpected and iridescent that it appeared as if a new and more splendid sun revitalized the room. I confess that I was stupefied by it—even the pictures, all of them very mediocre, when lit by that great sun, seemed for the moment to have acquired a beauty they did not possess. I visited the Academy, some private collections and the famous Tower of London. It is a building that is singled out for its antiquity. It was here that Julius Caesar unfurled the Roman flag; in the Middle Ages it was altered in various ways, and its rooms now house a collection of arms from the twelfth century to our own days. If the French had not carried off armour and bronzes from Italy, we too would have a similarly rich collection.

'I have also visited the Mint. It is a simple but very beautiful and imposing building. The employment of steam machines now introduced there accelerates production incredibly, the amount of money coined in one day exceeds, by a good way, that which is coined in the same period in the Mints of Milan and Paris. Pistancci, a Roman, is the coiner. His five shilling piece is a mixture of beauty and ugliness; it is neither a medal nor a coin; it is unlike Greek or Roman money, or any of the fine Italian pieces. Nevertheless these crowns have incontestable merit.

'I was in Oxford, and made a stop at Windsor, in which castle is confined the mad octogenarian King of England. Windsor is vast, but without beauty and very sad. I found nothing noteworthy apart from the very beautiful Van Dyke portraits, the best which I have seen by him. The University of Oxford, with a constitution more or less like that of Cambridge, has a more majestic appearance. The actual colleges that make up the university are very large and rich. What is more, it was here that I found to my sorrow the celebrated manuscripts of the *Biblioteca Canonici* sold last year in Venice. The impressiveness of the buildings, halls, courtyards and entrances, and also a certain external dignity

in the architecture, make this preserve of science and literature a venerable place. I met with courtesy and immense hospitality, and was treated by the professors both with respect and familiarity. I would add too that in London I had occasion to note an act of hospitality and of perfect nobility of character which I shall always remember with gratitude. A friend in Italy had asked me to procure for him the profiles and relevant notes on Etruscan vases and other remains should I come across any of these in public or private collections in England. One day I found myself beside that rich and lucid man of letters, Mr. Payne-Knight, who possessed copies of many of these very precious antiquities. I asked his permission to make notes, requesting that he should let me know the hours that I might visit him without inconvenience; and he, after having thought considerably, answered, with rare and extraordinary kindness, that for my greater convenience, he preferred to send a box to my lodgings, with all the objects that I desired, so that I might examine them at my ease.'

#### REFERENCES

- <sup>1</sup> 'Pedrocchino and Some Allied Problems,' *ARCHITECTURAL REVIEW*, August 1957.
- <sup>2</sup> Giordino Sommi Picenardi, Torre Picenardi, Cremona: it contained a small brick Gothic ruin—now almost non-existent.
- <sup>3</sup> The text is by Count Leopoldo Cicognara, Antonio Diedo and Giannantonio Selva: the plates by students of the Accademia.
- <sup>4</sup> *Op. cit.*, vol. I, p. 39.
- <sup>5</sup> Japelli drawings, Museo Civico, Padua.
- <sup>6</sup> For this see Pevsner note 1 above.
- <sup>7</sup> The diary is now in the possession of the Petrobelli family, Padua.
- <sup>8</sup> Selva never made a Gothic design, and spoke disparagingly of the campanili of Venice as 'inspiring no interest whatsoever,' *Le Fabbriche*, vol. II, p. 68.
- <sup>9</sup> Alessandro Zanetti, *Memoria d'intorno Conte Leopoldo Cicognara* (Venezia, 1834).
- <sup>10</sup> He attended the life class, and was for a time a member of a small group that met in the house of the painter Domenico Corvi (1721-1803), Camuccini, Benvenuti and Sabatelli being others of this circle.
- <sup>11</sup> For a list of these see Vittorio Malamani, *Memorie del Conte Leopoldo Cicognara* (Venezia, 1888), 2 volumes. This is the most detailed study of Cicognara that exists. There is also Zanetti (quoted above), and several eulogies published by the various learned societies to which Cicognara belonged. Of these, Becchi's *Elogio di Leopoldo Cicognara*, Accademia della Crusca (Firenze, 1837) is probably the best.
- <sup>12</sup> Amongst the appointments which Cicognara made as President were those of Teodoro Matteini (1754-1831) and Luigi Sabatelli (1772-1850) both ex St. Luke's Academy, and followers of Corvi, Batoni and Mengs. c.f. E. Bassi, *La R. Accademia dei Belli Arti di Venezia* (Venezia, 1941).
- <sup>13</sup> Begun circa 1805, but partly completed after Selva's death by Antonio Diedo. See Elena Bassi, *G. A. Selva Architetto* (Padova, 1936), p. 132.
- <sup>14</sup> Malamani, *op. cit.*, vol. II, pp. 287-292.
- <sup>15</sup> Japelli drawings, Museo Civico, Padua.
- <sup>16</sup> Japelli MSS, Museo Correr, Venice.
- <sup>17</sup> e.g. Nino Gallimberti *Giuseppe Japelli* (Libreria Draghi, Padua, 1963) and Carroll L. V. Meeks *Italian Architecture, 1750-1914* (New Haven, and London, 1966).
- <sup>18</sup> See Hugh Honour, 'English Gardens in Italy,' *Country Life*, November 1961, p. 1248. Selva's garden at Cinisello has been in part replanted but a substantial section remains intact.
- <sup>19</sup> On Hackert see N. Pevsner 'Richard Payne Knight,' *Art Bulletin*, vol. XXXI, 1949.
- <sup>20</sup> The murals have apparently been painted out, and the Pesciolini garden has not yet been traced. See Malamani *op. cit.*, vol. I, p. 276, and Zanetti *op. cit.*, p. 32. I am obliged to Giovanni Rugani who spent much time in search of Cicognara's works near Lucca.
- <sup>21</sup> Cicognara's library contained a surprising number of works by English architects: Aldrich *Elements*, Chambers *Civil Architecture*, Hoppus, and both Ware and Kent on *Inigo Jones*. Medieval architecture is represented by Sir James Hall *Essay on Gothic Architecture*; and notes in *Le Fabbriche* refer to Francis Grose *Antiquarian Repertory* and James Murphy *Plans, etc., of the Church of Batalha*—both books that represented the very best of earlier English scholarship. There were also two copies of Laugier. See T. Borenius, 'The Catalogo Cicognara,' *The Book Collector's Quarterly*, 5, London, 1932.



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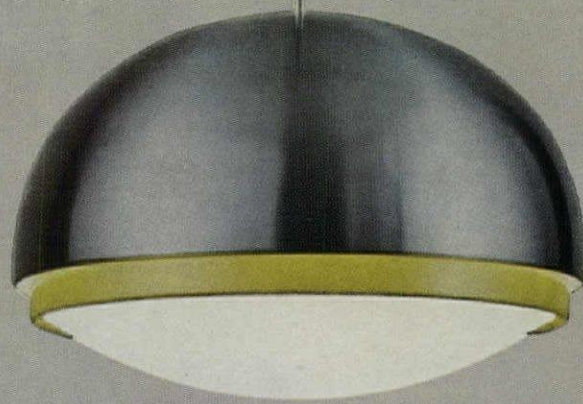
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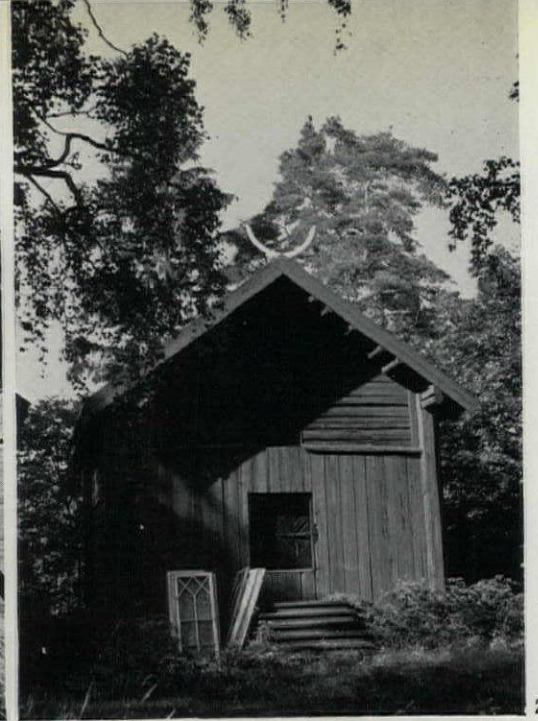


# FINNISH VERNACULAR

An omission in J. M. Richards's *Guide to Finnish Architecture*, recently reviewed in these pages (AR, May 1967), was any detailed examination of the vernacular timber buildings of the countryside. These share many characteristics with buildings of similar purpose in neighbouring Sweden (though the practice of staining the timber a dark earth red—'Falu red'—which is one of the obvious things they have in common, was introduced into Finland barely a hundred years ago and has never been general in eastern Finland), but such buildings are nevertheless an important element in the Finnish architectural scene if only because, until well into this century, Finland was largely a country of farmers, foresters and fishermen; town life developed late and the only popular architecture therefore was the architecture of the countryside. Timber was the universal building material, first in the form of overlapping logs and then with boarded walls, vertical and horizontal. At first roofs were of birch-bark, thatch or







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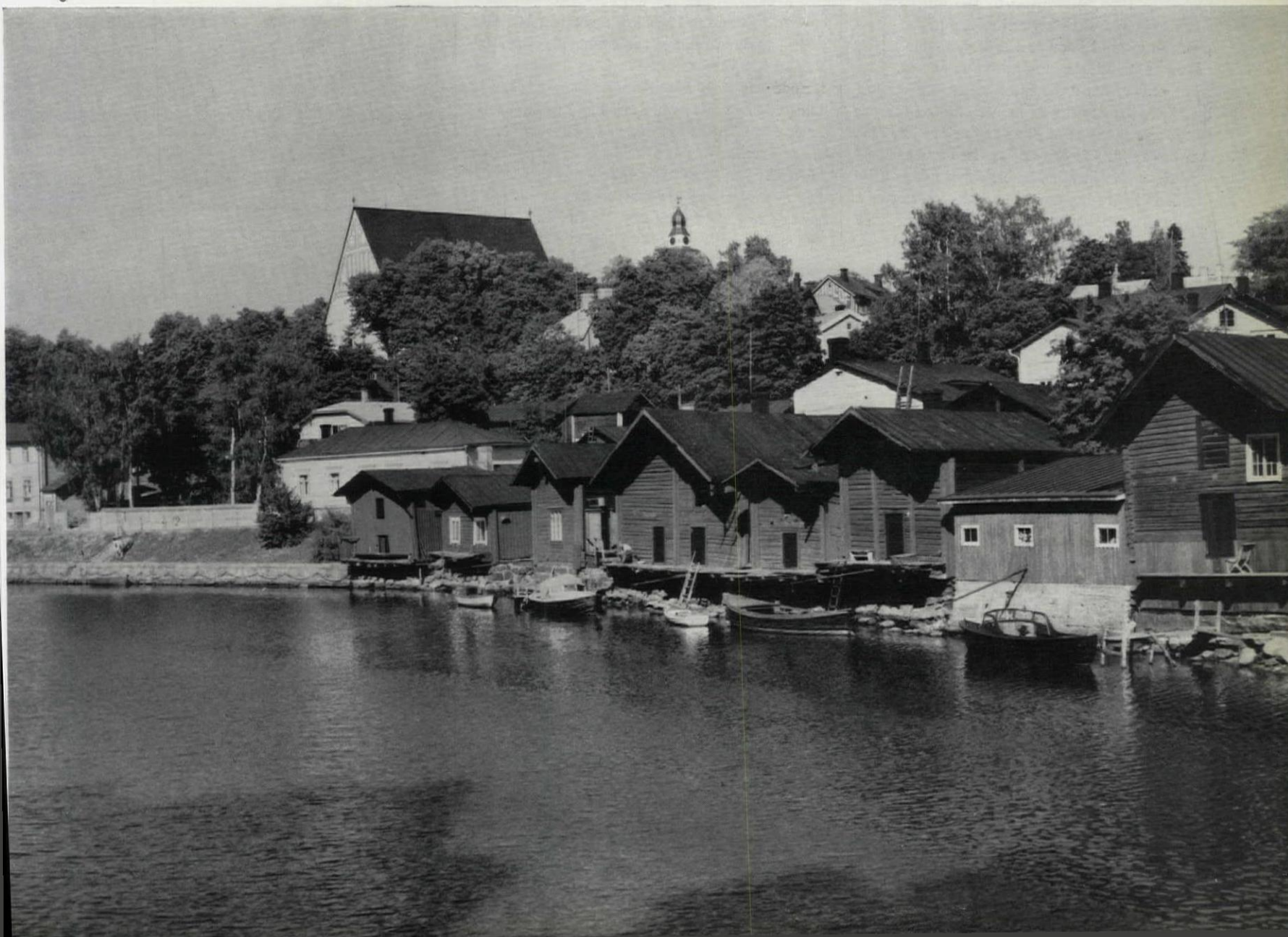
narrow poles, but about a hundred years ago wood shingles were introduced—along with the red paint—from Sweden. Examples of log building survive in many parts of the country: 1 shows a boat-house at Ruovesi, a lake-side village between Tampere and Virrat. For dwelling-houses of course the logs, similarly overlapping at the ends, were close set and caulked in between. 2 shows a variety of boarded structures forming a group of boat sheds and store-houses at Hammarland in the Aland Islands. Some of the earliest timber structures surviving *in situ* are farm buildings of various kinds like 3, a pair of grain stores on the manorial estate of Tjusterby, not far from Porvoo, dated 1752.

The best place however to study the form of structure of rural timber building is in the outdoor museum at Seurasaari, an island in Helsinki harbour, where old buildings from various parts of the country have been re-erected. The barns at Seurasaari shown in 4 include examples of the two-storey balcony-fronted type common in Ostrobothnia—the western area of Finland. 5—also from the outdoor museum—is a farmhouse moved from Säkylä, of a more sophisticated kind with white-painted window-trim. The arrangement of farm houses and farm buildings varied in different parts of the country; in Ostrobothnia and other parts of western Finland they were

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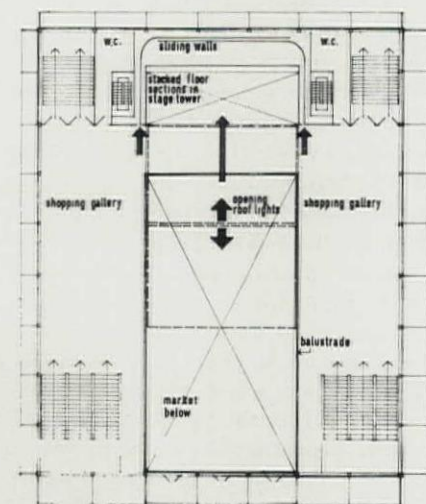
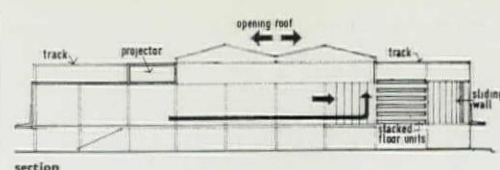
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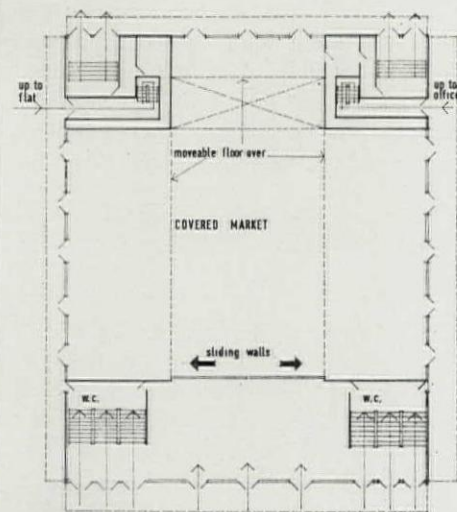


normally grouped round one or more enclosed spaces, whereas in Karelia and Savo—which were settled from the east rather than the west—buildings were more scattered and less formally laid out. 6, finally, returns to the

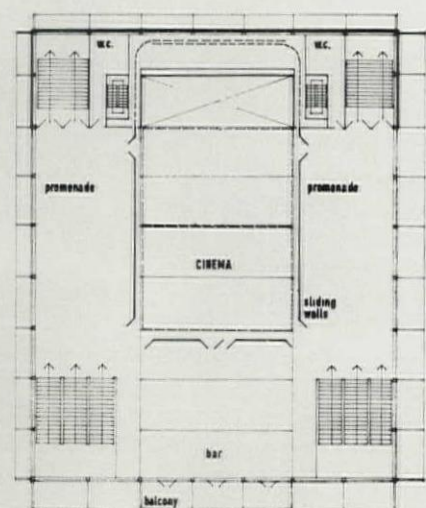
waterside buildings that Finland's water-borne internal transport developed so variously. It shows a row of timber-built warehouses along the water's edge below the old town of Porvoo, just east of Helsinki.



ground floor as covered market



first floor as open air market



first floor as cinema

# CLICHY MARKET

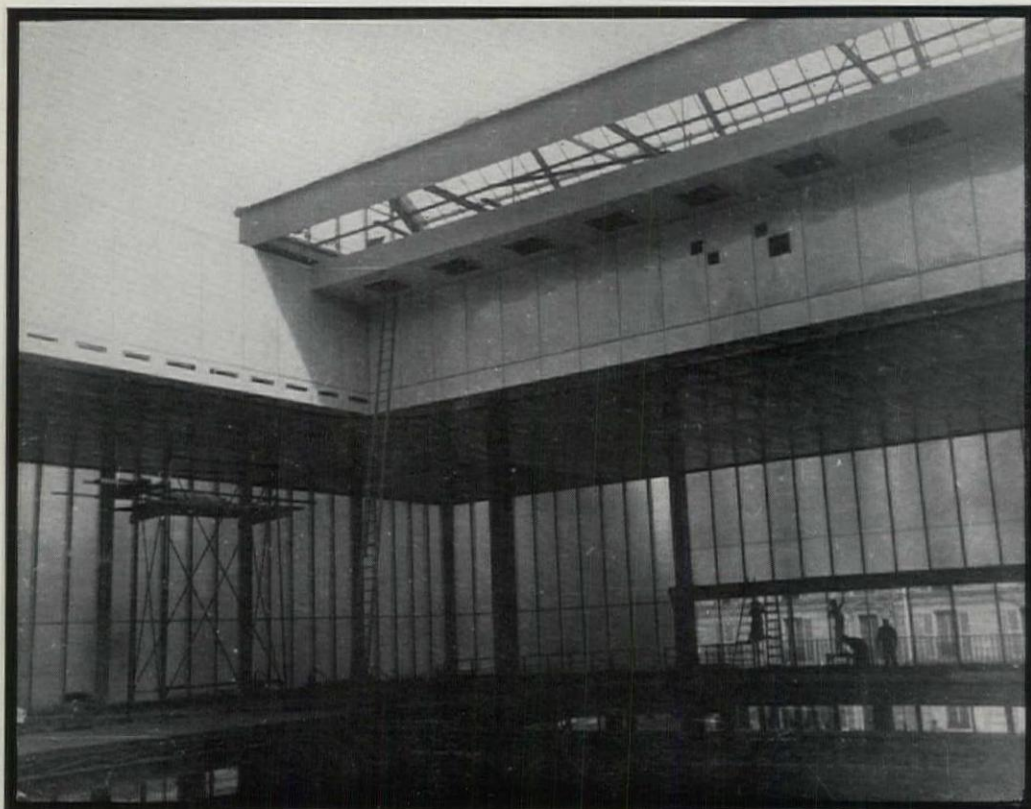
## A PIONEER CONVERTIBLE BUILDING

The Covered Market and People's Palace, 1, at Clichy, a suburb of Paris, is an unusually interesting multi-purpose building, completed in 1939, but owing to the outbreak of war it received little attention. A market occupies the ground floor and brims out on to the pavement under surrounding canopies. The front entrance to the market can be cut off by sliding doors to form an entrance foyer to the Grand Salle at first floor level, 3. This measures 40 metres by 38 metres and accommodates 2,000 people. The floor space can be divided by large movable walls to form a cinema or theatre for 500, providing also promenades, foyer and bar.

The centre floor of the Grand Salle is designed to open up and, sliding along horizontally, stacks itself in eight pieces up the stage tower like a pack of playing cards. Each card measures approximately 20 by 5 metres, the first lifting segment being the stage platform for theatrical performances. The galleries so formed are used for the sale of merchandise. The market below is visible through the central well, thus creating a shopping atmosphere reminiscent of Eiffel's Paris *Bon Marché*.

These structural acrobatics are sensational enough but the architects did not stop there. The entire centre section of the roof can be

rolled open, providing either an open-air theatre when the roof alone is open or an open galleried market when the floor also is open. There are some offices for various local syndicates and a caretaker's flat, all stacked on either side of the stage tower, giving a four-storey structure at the rear. The one flaw,





perhaps, in all this is that dancing in the Grand Salle is found to be unsafe for the structure because of the simply supported movable centre floor sections.

This is nevertheless a solution to a complex problem done with panache and courage: a piece of pure empiricism. Originality is carried beyond the programme to produce a new building technique. It is also the earliest surviving building exploiting the principles of industrialized construction by the pioneer Jean Prouvé. (An earlier building in 1936, the aero-club at Buc, was dismantled by the Germans in 1942, transported to, and re-erected on, an airfield in Germany where it was subsequently blown to pieces by the Allies.) The Clichy building was designed by architects Beaudoin and Lods with V. Bodiansky as the engineer.

What the Villa Savoye was to the Modern Movement, this building should have been to industrialized construction; but World War II,



2

following close on its completion, prevented adequate publication and the techniques tried out here were not completely appreciated. Methods of pressed panel jointing are being worked out afresh. Some of these have not solved the problem of keeping out the rain. Reference to Clichy might be of value. The panel joints there, 4, have remained water-tight for nearly thirty years.

This essay in curtain wall construction follows logically on the cast iron and glass facades of the late Victorian period. It aims moreover at catering for all climatic changes by meticulously detailed external and internal roller blinds. Following the doctrines of Prouvé, the building is of dry construction, free from all concrete and mortar—or so it is claimed, though what was used for foundations is not known. Metal is ubiquitous: metal cladding, partitions, doors and frames; metal staircases, ceilings, lightfittings and furniture. The floor of the Grand Salle is of timber—reluctantly one feels.

The building stands insignificantly, 2, in an untidy suburb of Paris on the Rue de Lorraine. It is dusted into obscurity with the surrounding buildings, poorly cleaned and maintained, yet very much in use. Unhappily, however, the lack of maintenance goes beyond the paintwork. The motors for the floors and roof no longer work and have not been operated for many years. Only the large moving walls are now in use. It is hoped that before neglect becomes irreparable some authority will discover it and set its mechanical heart working again.

K.L.B.

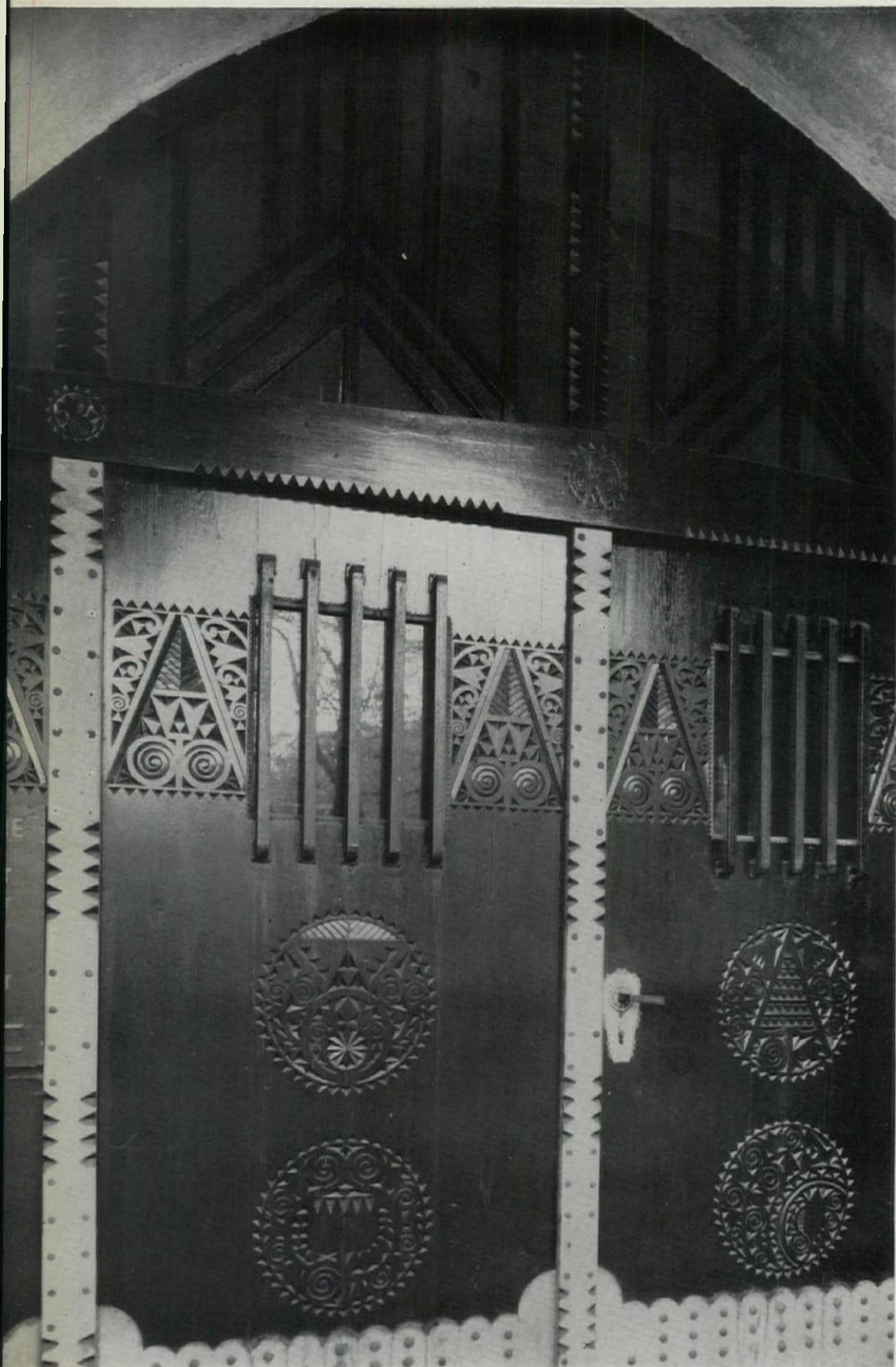


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# ALADÁR ÁRKAY

*In the person of Odón Lechner, Hungary produced an Art Nouveau architect of international calibre. Mr. F. Vámos's article in the July 1967 AR brought that out beyond any question. The continuation of what he had been bent on, but also the reaction against Art Nouveau, is represented in Hungary first and foremost by Aladár Arkay, who is introduced to countries outside Hungary in this article.*

Art Nouveau reached Hungary in the 'nineties. In the designs of Odón Lechner European inspiration is matched by a deep understanding of Hungarian folk art. Influence from Lechner, amongst those half a generation younger than he, was balanced by powerful influences from the Vienna of the Sezession and also from Scandinavian, and especially Finnish, architecture. Lechner's example—a parallel to the attitudes of Bartók and Kodály in music—led a group of young Hungarian architects to Transylvania; i.e. Hungarian Karelia. They explored the peasant architecture of the mountainous countryside, investigated materials, functions and structural solutions, copied the ornaments on the houses and things of everyday use and made sketches of the remarkable shapes of the roofs.

The most richly gifted member of this group was Aladár Arkay, who was born in 1868, exactly the same year as another architect inspired by the motifs of his native countryside: Mackintosh in Glasgow. His buildings of between 1905 and 1910 still bore the imprint of eclecticism, though an incipient antagonism to historicism can also be detected; his façades are calmer and so is his decoration. Lechner's influence is still noticeable. Arkay's cornices and window-heads undulate, and

1, front doors and 2, sketch, of the Calvinist Church of the Sixth District, Budapest, designed by Aladár Arkay in 1911-13.







3



4



6

3, villa by Arkay in the Buda Hills, c. 1910-13. 4, interior of the Calvinist Church, Budapest, and, 5, the main front. 6, Lars Sonck's church at Tampere, Finland.

large areas of wall are covered with stylized vegetable decoration.

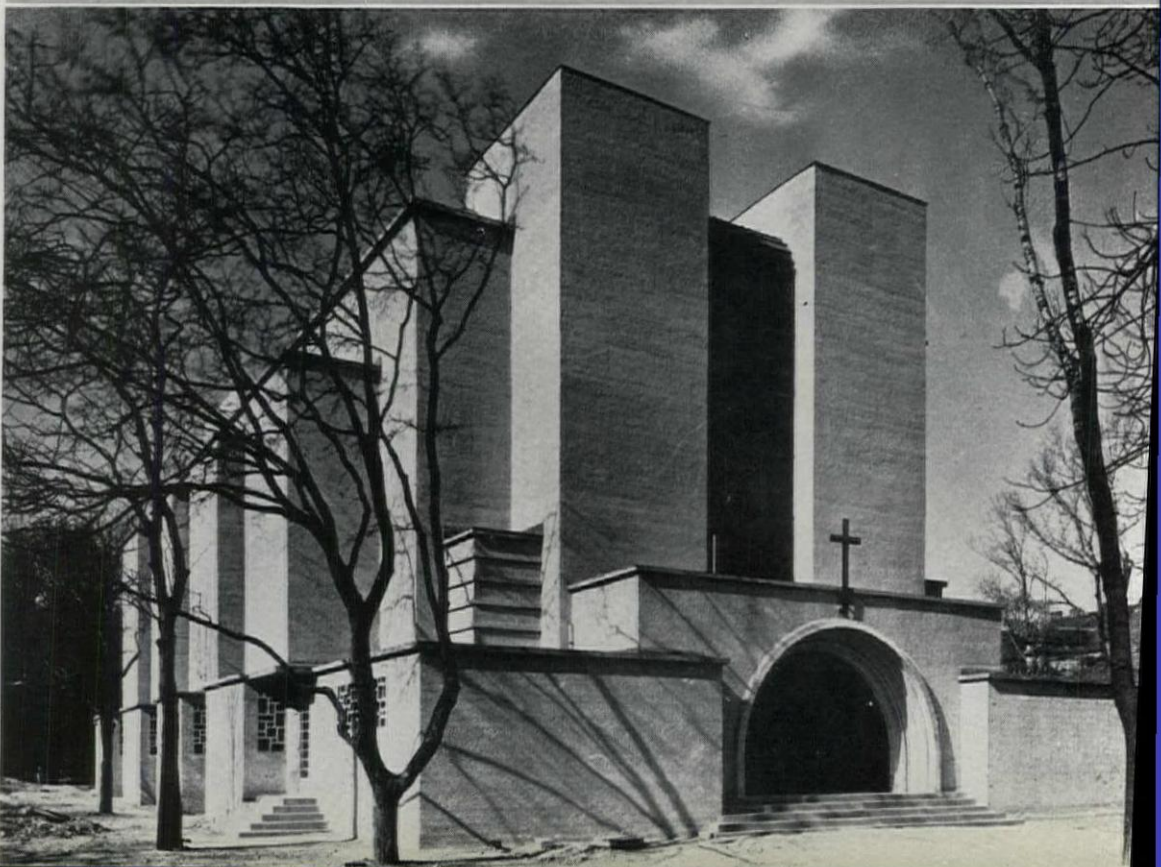
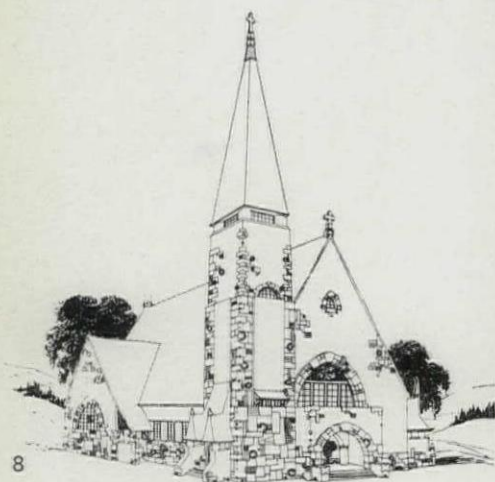
When, between 1910 and 1913, he built a colony of large villas for judges and attorneys on the slopes of the Buda hills, Arkay used motifs borrowed from peasant embroideries and roofs of many shapes, 3. But whereas these villas might still be left unnoticed by a traveller from Western Europe, as no more than progressive architecture of a generally



5



Austro-Hungarian character, it is different with the Calvinist Church of the Sixth District in Budapest, 5, which Arkay built in 1911-13. Here is a building which no architectural visitor will overlook, as powerful and as original as Lechner's. The plan is a Greek cross, and this fully met the functional requirements of the Calvinist service. The altar with the pulpit and organ behind it stands in the centre. The congregation is seated in the arms of the cross, both below and on a gallery, 4. The central space is covered with a dome, over 60 ft. in height, which rests on the barrel vaults of the cross arms. The huge windows on the front and on the sides provide sufficient light. The main façade is similar to that of Lars Sonck's church at Tampere, 6, being tripartite, with a bastion-like tower on the left, a portal with a pointed arch rising direct from the ground in the middle, and a short turret on the right. The decoration as well as the furnishings of the church were designed by Arkay. These furnishings include the large faience panel below the semi-circular window of the façade, 7. It seems to stand on eight stubby columns without bases or capitals, and the portal cuts into it. Faience facing is repeated



Aládr Arkay; 7, portal of the Calvinist Church, Budapest. 8, another design for a church. 9, the little church in Városmajor Park, 1923. 10, the Catholic Church in Városmajor Park, completed in 1937.



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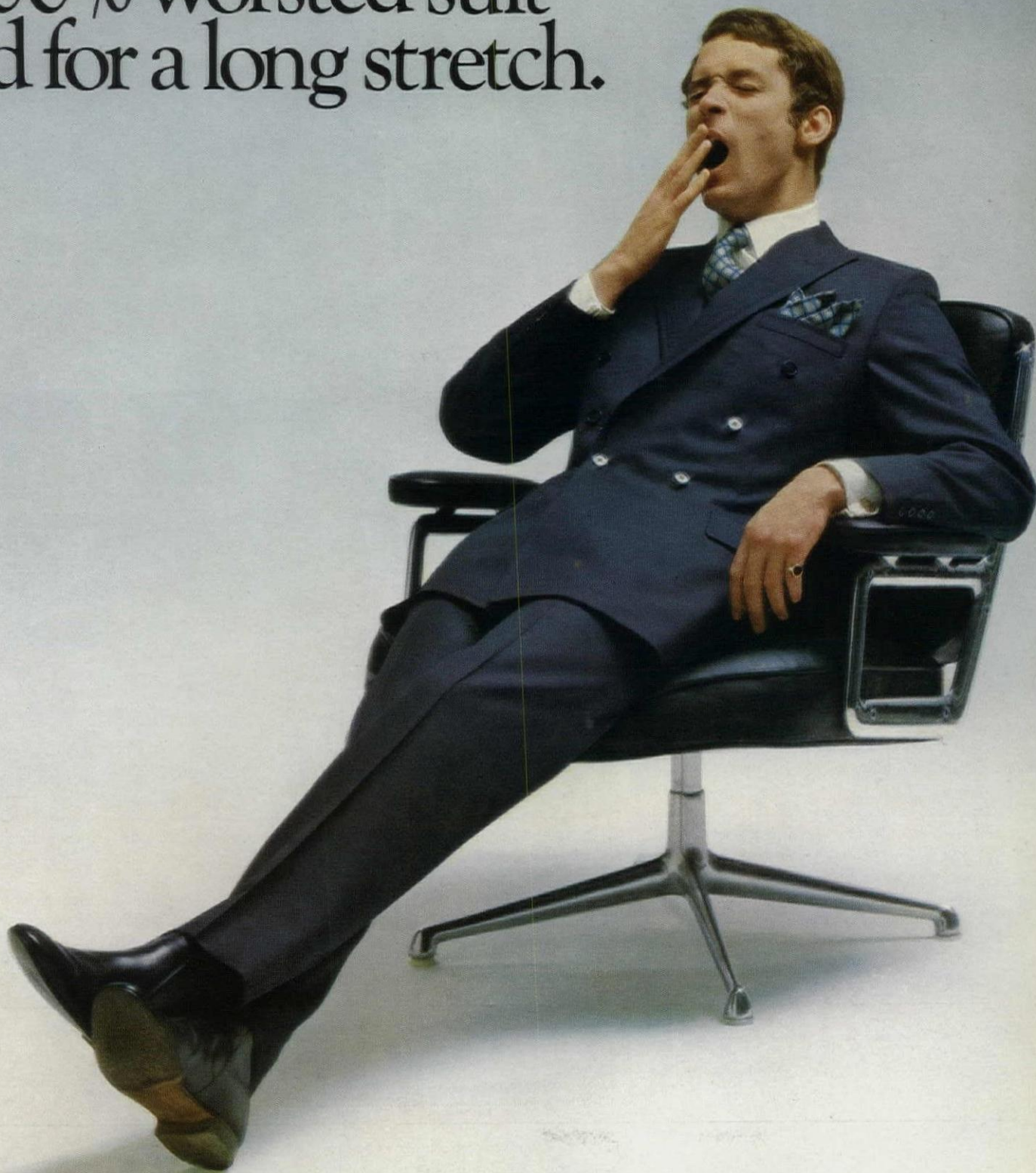
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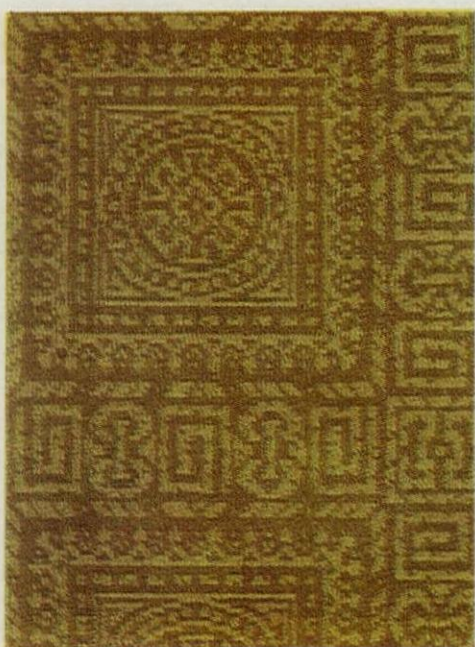
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inside above the pulpit. Equally remarkable and equally inspired by folk-art are the main doors, 1 on page 234.

The First World War nipped in the bud the promising work the group had begun, and after the war they could not carry on from the point where they had stopped. They were unable to rise to the height of Bartók's later music. In the post-war years Hungary's economic position was precarious; little was built, and most architects accepted any work that came along whatever the client's wishes. This explains the imitation Baroque of so much that was built in those years. But Arkay never accepted this situation. When in 1923 he designed a Catholic church in Város-

major Park, at the foot of the Buda hills, he stuck to his blocky masses and lively roof shapes of Transylvanian origin, 9. Then, in 1925-6, thanks to the stabilization of the country's economy and under the impact of West-European architecture, and especially of the Bauhaus, modern Hungarian architecture emerged, and up to the second world war numerous such buildings were created.

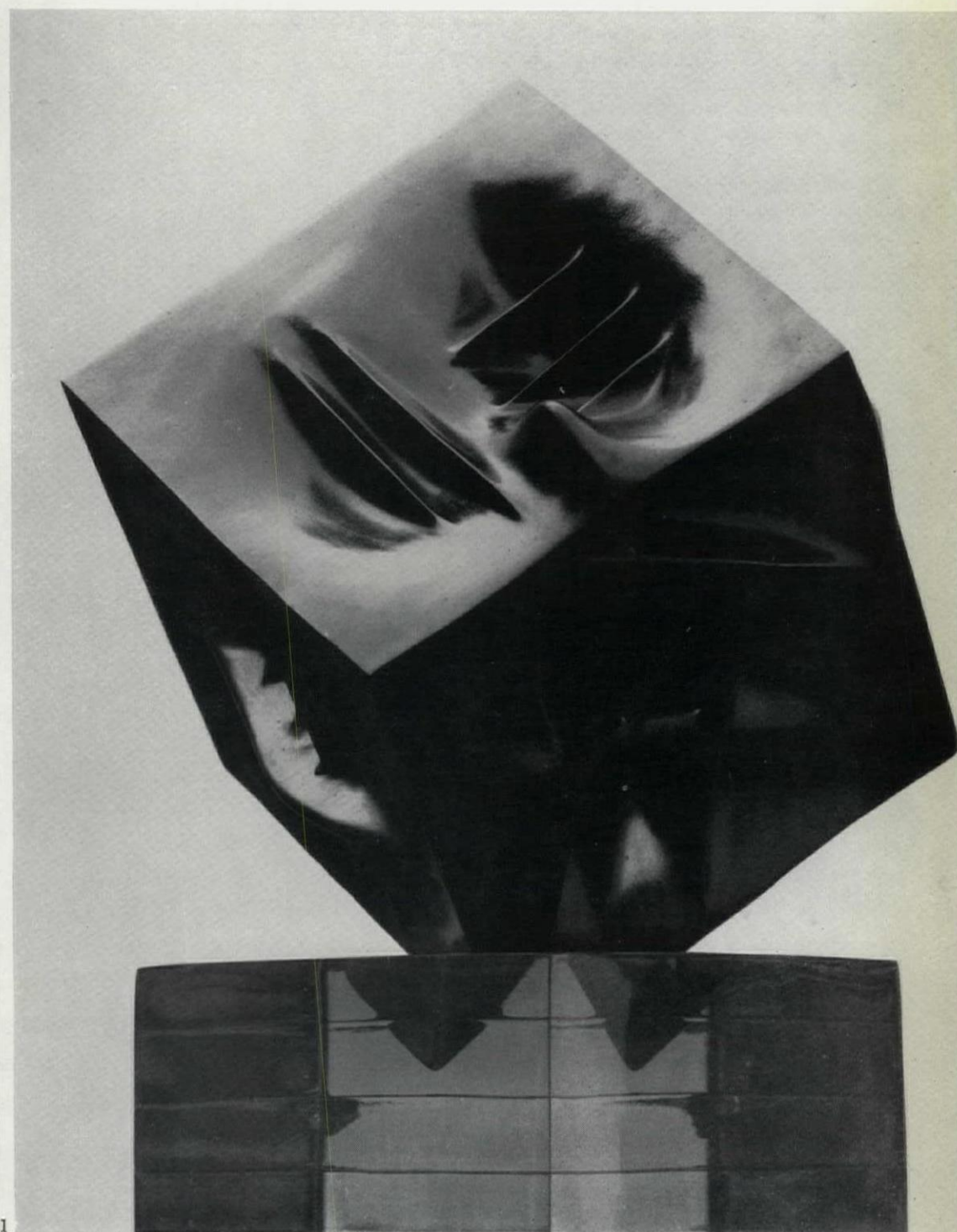
As for Arkay, in 1925-6, he was able to travel and see the new French, Belgian, Austrian, Dutch and German architecture. Under the effect of what he saw he realised that an independent national architectural style was out of the question in the twentieth century. There could no longer be a French or German

style. The only possibility was a national variant of the one style of all civilised nations. Arkay advocated this idea in lectures and articles alike, and made every effort to bring about a new Hungarian architectural style of international validity. Together with his son Bertalan Arkay, he began in 1931 a larger Catholic Church in Városmajor Park, 10, next to that of 1923. He worked on it until his death, which occurred in 1932, and the church was completed about 1937. That it is both internationally modern—see the detached campanile in 9—and yet, with its arched portal, not without originality, needs no pointing out. It forms a fitting end to the development of so genuine an architect. BALAZS DERCSENYI.

# ESCAPE FROM EUCLID

'Euclid's Doubt', 1, is the title of a recent work by Gio Pomodoro the Italian sculptor, but the title could stand equally well for almost any of his work in the last few years—or indeed for the whole problem of how to reconcile movement with the legacy of static three-dimensional space bequeathed us by Euclid via Renaissance Man. Problems of movement have increasingly preoccupied this sculptor in the last few years from his first 'Crowd' and 'Square' sculptures (sequences which occupied him from 1962-66) via the boxes, discs and radials of 1965 onwards to his current series of 'Gusci' or 'Shells.'

Pomodoro's starting-point for these developments was the famous Leonardo drawing of Vitruvian Man (a sculpture of 1960 was even called 'Homage to Leonardo') and the space he began to explore was the one-man space of Man inscribed in a circle and square (or in the case of the 'Crowds' several men)—tactile space, the amount of space one man can





reach out and touch without abandoning his static base. Almost at once, however, problems of movement began to influence him. These apparently static and severely rectangular reliefs had (like Man himself) positive and negative faces front and back—both equally valid. They needed a minimum of two fixed viewpoints in consequence instead of the single viewpoint of Renaissance Man. Furthermore the surfaces of the reliefs themselves came increasingly to ripple, fold and turn back on themselves, 2, so that eventually little but the four rectangular corners remained on a single plane. Finally even the basic space of Vitruvian Man became gradually compromised as the sculptor became more and more interested in the pre-existing space which surrounds all form and with its relationship to the two fundamental forms themselves: natural and geometrical; tree and Euclidean form.

In these researches Euclid was both an ally in the search for the simplest and most elemental forms and the centre of the static-dynamic conflict in the sculptor's mind, since while Euclidean geometry is always in search of rest, Pomodoro was increasingly looking for energy, tension and movement. Perhaps not surprisingly, the last phase of these reliefs was a somewhat Baroque one, two of the last reliefs being entitled 'Borromini Squares No. 1 and 2' and almost the final one, 3, with the cast forms reproduced in marble, was strongly reminiscent of Bernini's drapery.

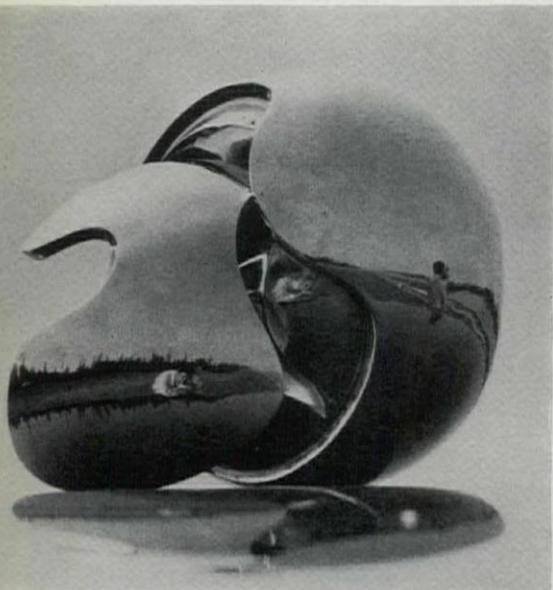
Simultaneously with the later 'Crowds' and 'Squares,' Pomodoro started a new line of development. He began to explore a variety of free-standing and free-running forms. One of the first of these was 'Euclid's Doubt' itself. This box-like sculpture, a regular cube with sides curved inwards and distorted yet further, with ribbed projections, clearly expresses the



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interior tensions and movements which are undermining the severe, secure rectangularity of Euclid's forms. The situation has become that of Vitruvian Man anxious to step out of his circle and move freely in space and time. With his next works Pomodoro did in fact escape, first with the limited movement of the radials and discs, and finally with the free

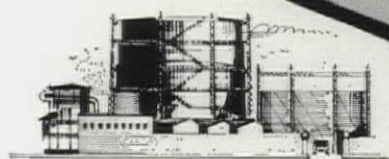
*(continued on page 240)*



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Stelrad 50 Mark 11 gas boiler converts instantly to accept the supply available. When change over from town to natural gas becomes necessary the Stelrad 50 will save time, trouble and cut cost. Balanced flue model, with special, telescopic unit that adjusts to wall thickness, will also be available. The new Stelrad 50 Mark II also features the Stelrad System Selector, to provide a fully comprehensive switched control for programmed heating and facilities that enable most forms of specialised control (night set back etc) to be used. In addition the unit can accommodate control of hot water and room temperature when used with convectors or skirting heating. The Stelrad 50 is the most technically advanced boiler for domestic central heating and hot water available.



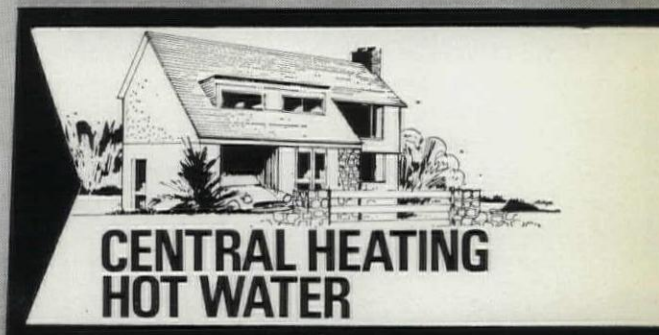
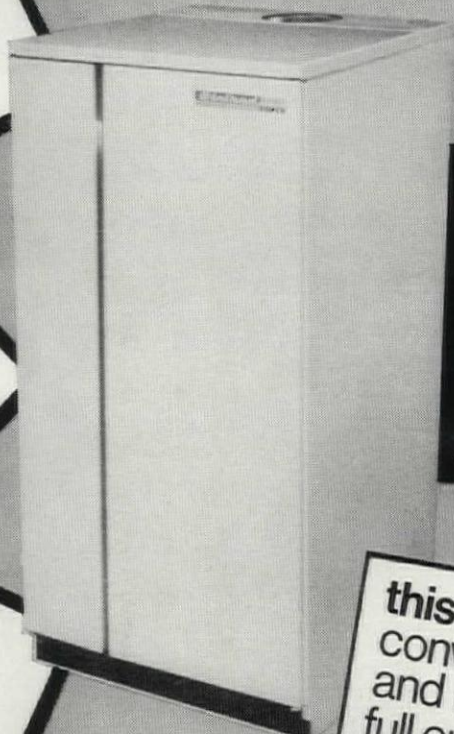
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**Steel Radiators Ltd** Bridge Road, Southall, Middlesex. Tel: 01-574 2603 Also at : Dalbeattie, Scotland.





movement of the *Guscii* or 'Shells,' 4, 5 and 6. With the 'Shells' he was at last completely free from the Euclidean box. Solid and void

became dynamic as an opposition of forces. Movement dominates these sculptures; the surface movement visible in the reliefs has

become the whole sculpture. Radials take on the forms of aero engines, discs become flying

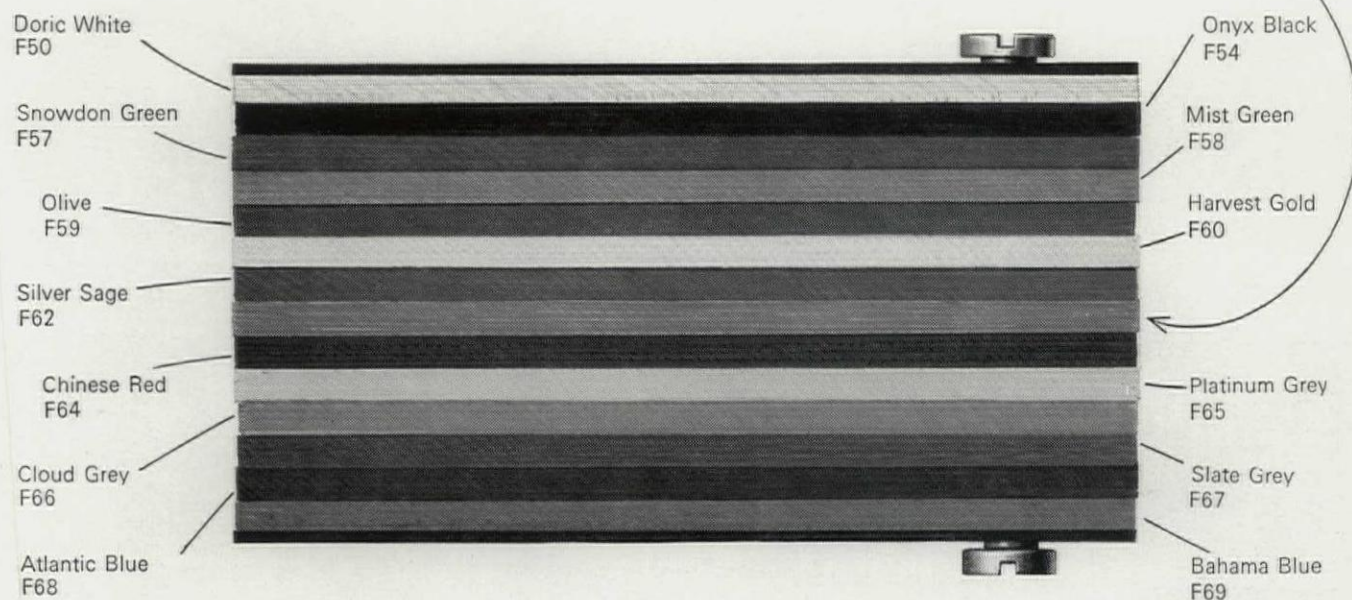
*[continued on page 242]*





# Stop ordering Marleyflor F30!

*You'll want Willow Fawn F63 — it's just one of our 14 latest colours*



Marleyflor has always been remarkable for its colour range. Pure, singing shades have allowed you to be really exciting or as calm and discreet as you please. Now they're even better!

14 completely new colours. From the coolest Platinum Grey through subtle Olive to flaming Chinese Red, these are the colours Marley market intelligence has picked for the late '60s.

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So be heartless. Throw away your old Marleyflor colour swatch. Send the coupon for the new one and the new Marleyflor literature.

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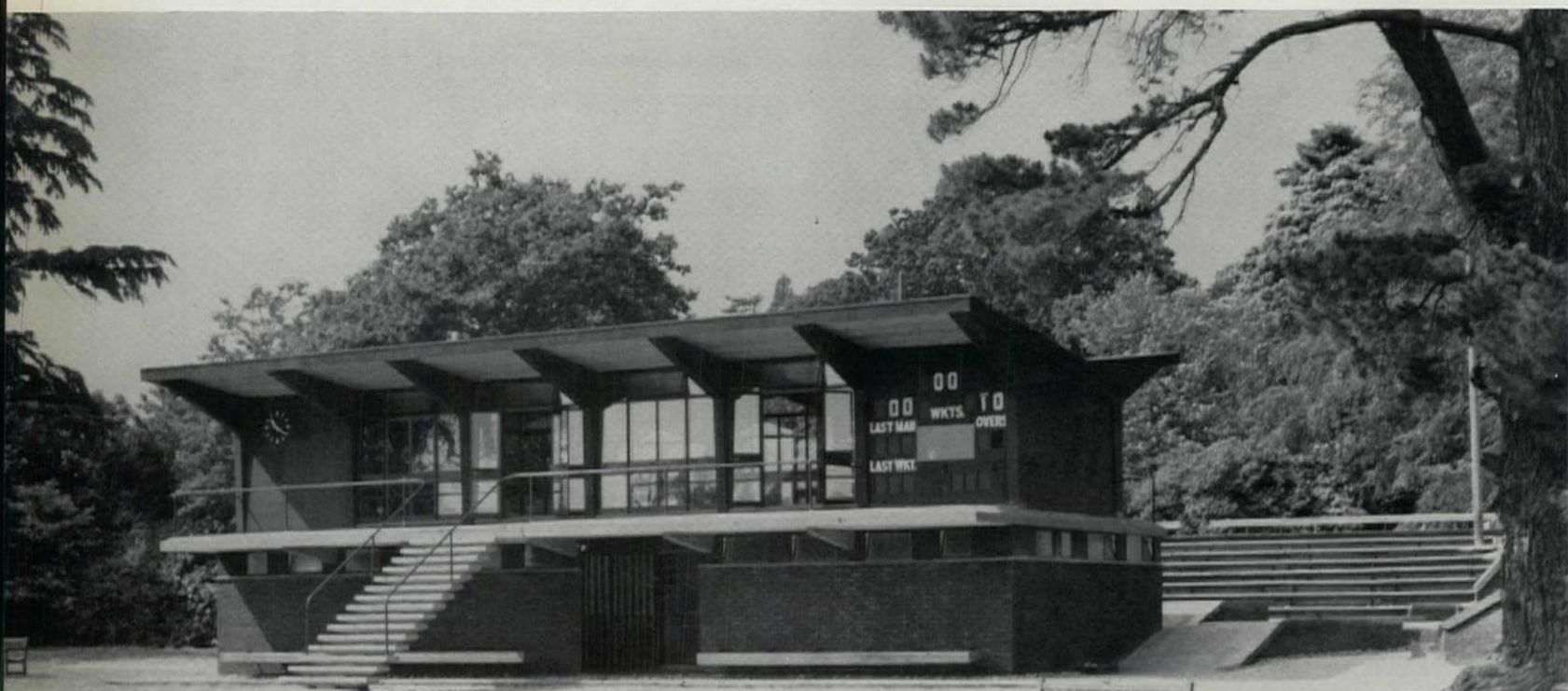


saucers and 'Shells', balls, space-ships and a sort of Martian-like architecture of the future all together. Curiously enough, these spine-chilling (yet warm), science-fiction fantasies with their rigorous architectural form are

almost back to where the sculptor came in. They epitomize his interests and origins, for Pomodoro began as a Surrealist sculptor strongly influenced by the architectural forms of nature.

JOHN HOPE

# DO-IT-YOURSELF PAVILION



1

The building of this new pavilion and theatre at Canford School, Dorset, was a three-year task undertaken in spare time by masters and boys in an effort to more-than-replace a picturesque thatch and weatherboard cricket pavilion which became a spectacular summer bonfire in 1964. The site was magnificent, surrounded by mature trees and lawns and in the distance the imposing facades of Canford Manor, built by Blore for the DeMauleys, then extended by Sir Charles Barry for the Guest family. An attempt was made to fit the pavilion easily into this landscape, 1, by using dark black-pointed brickwork, creosoted and natural sealed wood, slate eills and charcoal paint. There is no traditional cricket-pavilion-white, except for the numbers on the score-box and the clock.

The whole project was designed and managed by the Director of Art, Mr. Robin Noscoe, with the help of a group of regulars and a large ever-changing army of more casual labour; so that nearly every boy and master in the

school helped at some time or other during the job. Its scope originated from the idea that the services of a pavilion (showers, changing rooms, etc.) could also be used by actors, and the Long Room upstairs could become a useful back stage area, as well as for cricket-watching and teas. Therefore one building could form two functions, linking sport and the arts. Hence the two-faced box-beam structure rising out of a brick and concrete podium, looking towards the cricket field on one side and forming the apron staging of the theatre on the other. The angular auditorium rises to nine tiers of seats for some 600 people.

The entrance gap in the middle of the arena is bridged by the box, from which all sound and lighting are controlled electronically; and over this main approach is a sculpture, 2, designed by Geoffrey Clarke on the theme of Comedy and Tragedy, shuttered in concrete and erected in sections by the school. *Cymbeline* was chosen for the first production,

as this made full use of the large spaces and flexibility. The acoustics turned out to be very good; and on four fine evenings last June cohorts of Romans on horseback and ancient Britons were engaged in battle on the ramps and stages.



2



# How to solve the office storage problem completely. by Intercraft

## Intercraft System Wall Storage Units

Designed and developed by Intercraft to complement their existing System Roll-front Cabinets.

By employing these units no other office furniture is essential!

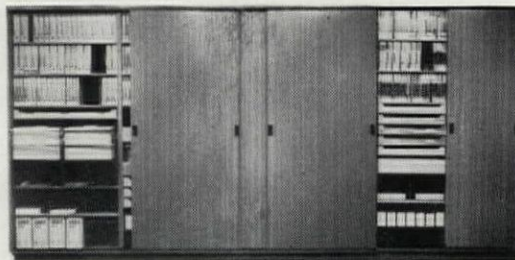
Apart from desks and chairs.

The construction is engineered simplicity and they are quickly assembled by Intercraft men on site.

(We even have a built-in levelling device to cope with any floor surface.)

They are manufactured in two modular widths and the Intercraft plastic groove system inside takes all standard Intercraft fittings.

Here are shown storage unit KL, KM, KM, KKM, KKR built together



Interiors can be changed, of course, and added to as conditions demand.

Intercraft have designed a special sliding suspension door system.

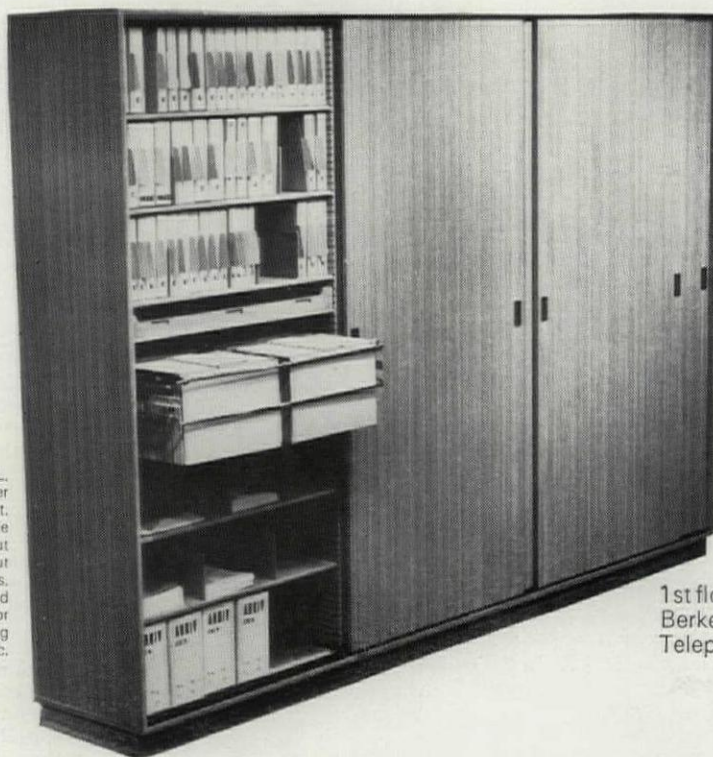
As well as made to be placed against existing walls or as free standing units they can be built to form partitioning.

Doors can face alternate directions if required.

By combining the two modules one can assemble various combinations and any length of storage units.

Continuity of supply is guaranteed over many years making standardisation possible!

Here are shown unit KL, KM, KKM, KKR together as a free standing unit. Internal fittings include lateral shelf filing, pull-out suspension filing, pull-out card index trays, adjustable shelves and drawers, pull-outs for drawings, sloping stationery trays etc.



See them in Intercraft's showrooms together with the complete range of Intercraft's system furniture:

1st floor, Berkeley Square House,  
Berkeley Square, London, W.1.  
Telephone 01-493 1725



## The Industry: New Products

### Plastic roof lights

The building materials and Wareite division of Bakelite Xylonite has recently introduced an improved range of barrel roof lights, 1, which are made in standard lengths up to 12 ft., based on stock sizes of 4 ft. by 2 ft. and 6 ft. by 2 ft. Continuous runs can be made up on site. The materials used are Cascalite glass fibre polyester resin and Armourbex wire-reinforced p.v.c., both of which have a fire rating of EXT SAA to BS 476. The rooflights can include several alternative types of ventilator.

*British Xylonite Ltd., Manningtree, Essex.*

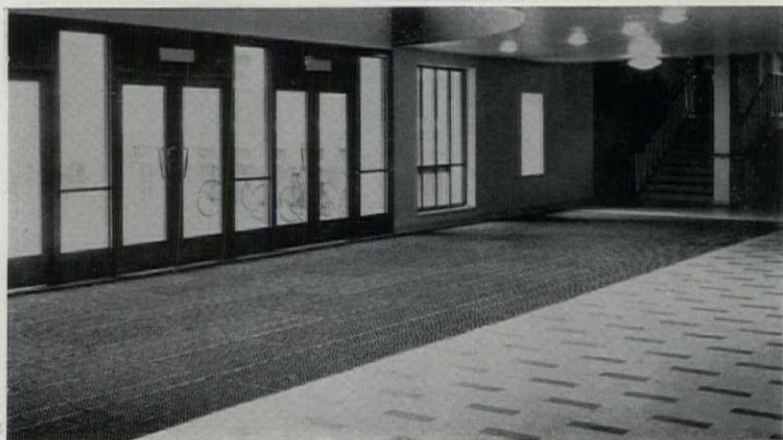
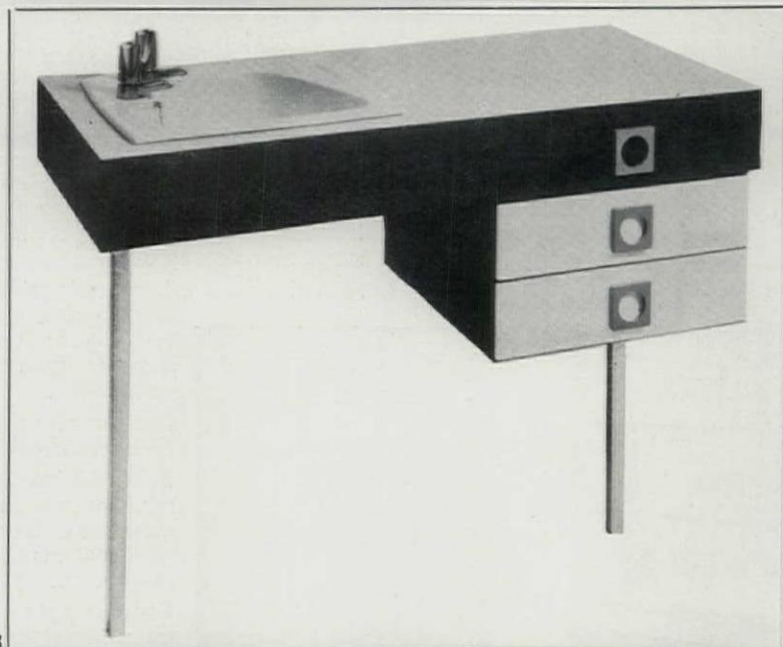
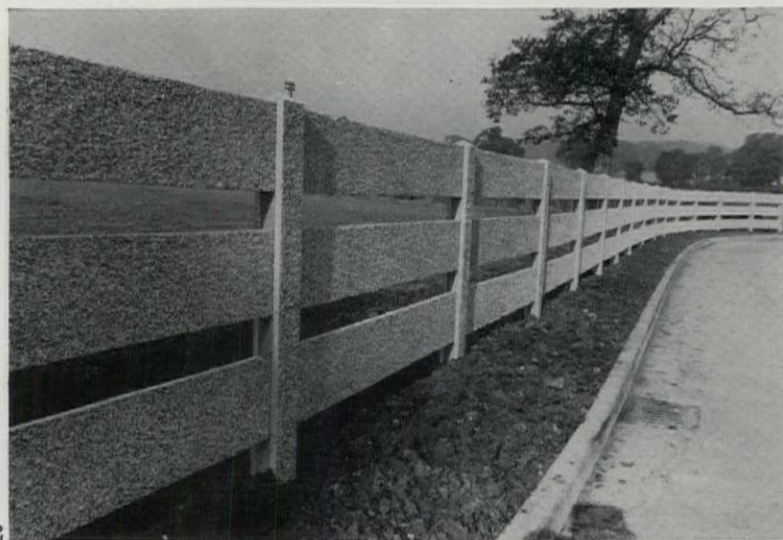
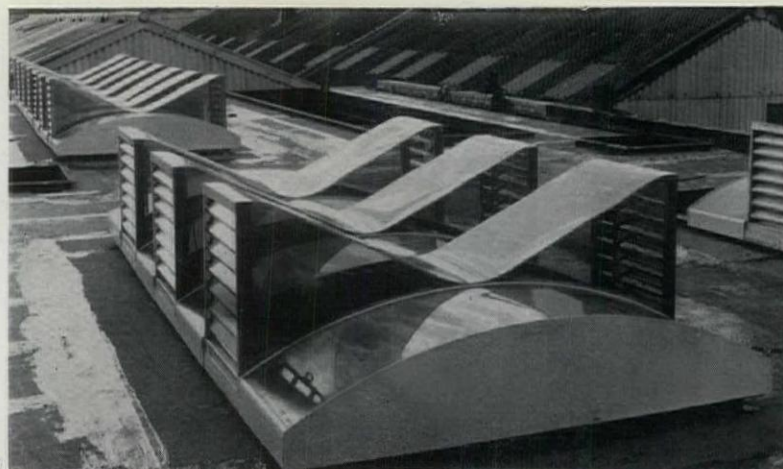
### Boundary walling

Marley concrete have recently issued a new folder about their precast concrete boundary walling systems, all based on post and panel construction. There are four types, one with timber infilling panels, made in various heights from 1 ft. 6 in. to 8 ft., according to type. Ranch walling, 2, is made with two, three or four 12 in. deep panels up to a height of 6 ft., while Vanguard walling gives complete enclosure up to a height of 8 ft. One face of all posts and panels has a Sparlite exposed aggregate finish and the posts are recessed on opposite faces to provide a fixing for the panels which are normally pointed in. The top panels have an integral coping which weathers and projects over the smooth face of the panels, and the tops of the posts are also weathered. Corner, gate and three-way posts are produced, and the walling can be built down to a radius of 22 ft. with the posts at 6 ft. 6 in. centres, or less than half this with 3 ft. 3 in. bays. For sloping sites the walling can be stepped up to 12 in. between posts using standard components. The leaflet is clearly set out and contains component prices of all types of wall, delivered to site at various distances from the various factories. Marley also run an erection service for larger contracts.

*Marley Concrete Ltd., Peasmarsh, Guildford, Surrey.*

### Heated w.c. seat

Robert McArd & Co., who already produce a considerable range of Celmac plastic seats for w.c.s are now making an electrically heated type, 3, which has been designed to be as safe as possible. The seat does not carry any current at all, but is heated by the cover, which contains heating elements supplied through a circuit transformed down to 12 volts. As an extra safety measure the current supply is cut off as soon as the lid is lifted. Seat and cover are in glass fibre reinforced plastic with special drip edges for easy cleaning, and there is a choice of white, black and six pottery colours. Running costs are negligible (less than 1d. for 24 hours) and there is a pilot light to show when the



current is switched on. Price is about £16 complete with transformer, including 25s. purchase tax.

*Robert McArd & Co. Ltd., Crown Works, Denton, Lancs.*



### Hand rinse basin

Twyford's new Parnis hand rinsing basin, 4, is a semi-recessed type which can be built into partition walls as it needs a recess of only 2½ in. The bowl size is 9 in. by 7 in. and the projection from the wall face is only 6 in., so that it is a useful fitting for washrooms where space is limited. It is made with a single tap hole in which a hot and cold mixer tap could be used.

*Twyford Ltd., PO Box 23, Stoke-on-Trent, Staffs.*



### Basins for bedrooms or bathrooms

John Steventon have introduced two vanity units for installation in bathrooms or bedrooms. The Spacesaver consists of a 18 by 16 in. Mitre basin set in a top with a laminated wood veneer finish and mounted on a timber cupboard, both doors and basin unit being designed to prevent water from entering the cupboard. The basin is available in white or a choice of colours. The Vanitor unit, 5, is the same basin in a 4 ft. wide top with a laminated wood finish and is made in three versions with one, three, or five drawers at prices ranging from £32 to £48. The upper drawer has the same laminated finish as the rest of the top, the other drawers are white with a choice of colours for the wood handles.

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

### Mats at entrances

Now that carpets of various types are increasingly used in public areas such as the outpatient departments of hospitals and the entrances of hotels and offices it is important to make sure that only a minimum of damp and dirt is brought in from the street, and it is therefore essential for any door mat to have an adequate depth from front to back as well as covering the full widths of the opening. Mr. Brook, of Nuway Manufacturing, makes this point with some emphasis, maintaining that no mat can be satisfactory if it is too small and that a minimum depth of at least 4 ft. is essential if both feet are to touch the mat on the way in. This seems to be a fairly modest request and a greater



depth would be much better, as is shown by the entrance to some Cambridge laboratories, 6, where the mat is 14 ft. 6 in. deep and about 55 ft. wide. To give adequate protection a mat should scrape shoes as well as absorb moisture. Nuway's new Tuft-guard design has a surface of absorbent pile set in fibre reinforced rubber strips separated by extruded aluminium sections to give a scraping action. The strips are threaded on to galvanized high tensile steel wires which are housed in aluminium edging strips. The surface is free from cavities to catch pointed heels and the mat can be cleaned by sweeping or vacuum. The mat is double-sided and can be reversed from time to time to equalise wear. It needs a sinking  $\frac{3}{4}$  in. deep and is made in standard sizes up to 2 ft. by 4 ft. Nuway Manufacturing Ltd., Endurance Works, Coalport, Ironbridge, Salop.

#### Wall and roof cladding

Trisomet is a lightweight cladding for walls, 7, and roofs. Walls consist of a facing sheet made in various profiles and in Galbestos, aluminium with a factory-applied paint finish or in galvanized steel with a p.v.c. coating on the weather side. The inner face consists of hot dip galvanized steel trays filled with a fire retardant grade of foamed polyurethane. U value of the composite construction is 0.19. External panels are made in lengths up to 40 ft. with a secret fixing.

The roof cladding consists of panels 2 ft. 5 in. wide with an outer weather-proofing membrane of bitumen or colour Galbestos, an infill of fire retardant polyurethane foam and a flat soffit made from zinc-coated steel finished in a stoved vinyl film. All three elements are factory bonded to form a composite unit with a U factor of 0.19.

H. H. Robertson (UK) Ltd., Ellesmere Port, Wirral, Cheshire.

#### Ready-backed carpets

The Tiara range of carpets, 8, is Swiss made in six grades and is ready mounted on a waffled back rubber underlay. This underlay is designed to prevent stretching and slipping so that it needs no fixing and will remain dimensionally stable when laid loose on the sub floor. The carpets are made in a range of materials from synthetic fibres to all wool and wool/hair mixtures in widths of 16 ft. at prices from 30s. to 60s. per sq. yd. supplied and laid. Since the carpets come from an EFTA country no duty is payable. There is a wide range of greens, browns, reds, greys and other colours in plain or tweed patterns, and the grades are suitable for all types of public buildings as well as for domestic work.

Scandinavian Flooring Distributors Ltd., 15-19 Cavendish Place, London, W1.



#### Lighting fittings

Churchouse have introduced a new range of circular tungsten lamp lighting fittings using a common glass diameter with a variety of canopies for recessed, semi-recessed and sur-



face mounting. The glass is satin finished opal and the metalwork is aluminium with all visible parts sprayed slate black, but colours and anodized finishes can be provided if quantities are reasonable. The type illustrated, 9, has a depth of 5 in. including the canopy, and is designed for two 75 watt lamps. Other designs include perforated and pleated surrounds and louvred patterns.

C. M. Churchouse Ltd., Lichfield Road, Brownhills, Staffs.

#### Paving slabs in metric sizes

Pentahex paving, 10, is now being produced by Mono Concrete, who appear to be the first firm in the country to produce slabs to metric sizes. The pattern is built up from a single pentagonal unit 750 by 500 mm. and 50 mm. thick, the layout having a basic grid of  $1\frac{1}{2}$  metres. Four of the standard slabs, grouped together, form a large elongated hexagon, an area paved with these large units producing an effect of large hexagons interlaced and running at right angles. The system can be used to produce many different

patterns varying in scale to suit large or small areas as there is a choice of eleven colours in plain or textured finish and a further five aggregate finishes: only whole slabs and handed half slabs need be used for rectangular areas. There are, however, a number of fittings such as tree grilles, planting kerbs, manhole covers and frames, gully gratings and a series of cycle stands. The manu-



facturers are members of the Wettern group of companies. Mono Concrete Ltd., Horton Road, West Drayton, Middlesex.

## Contractors

**Consulting Rooms, Kelso.** Architect: Peter Womersley. General contractor: M. & J. Ballantyne. Sub-contractors: Joiner/built-in furniture: L. R. Adams. Plumber: R. W. Charter. Electrician: George Henderson Ltd. Under-floor heating: Calidec. Roofing: William Briggs & Sons. Glazing: R. Mitchell Ltd. Paint work: Kelso Co-operative Society. Flooring: Fairbairn of Berwick. Slate work: Burlington Slate Co. Precast concrete: Border Concrete Ltd. Upholstery: Didecot Brothers.

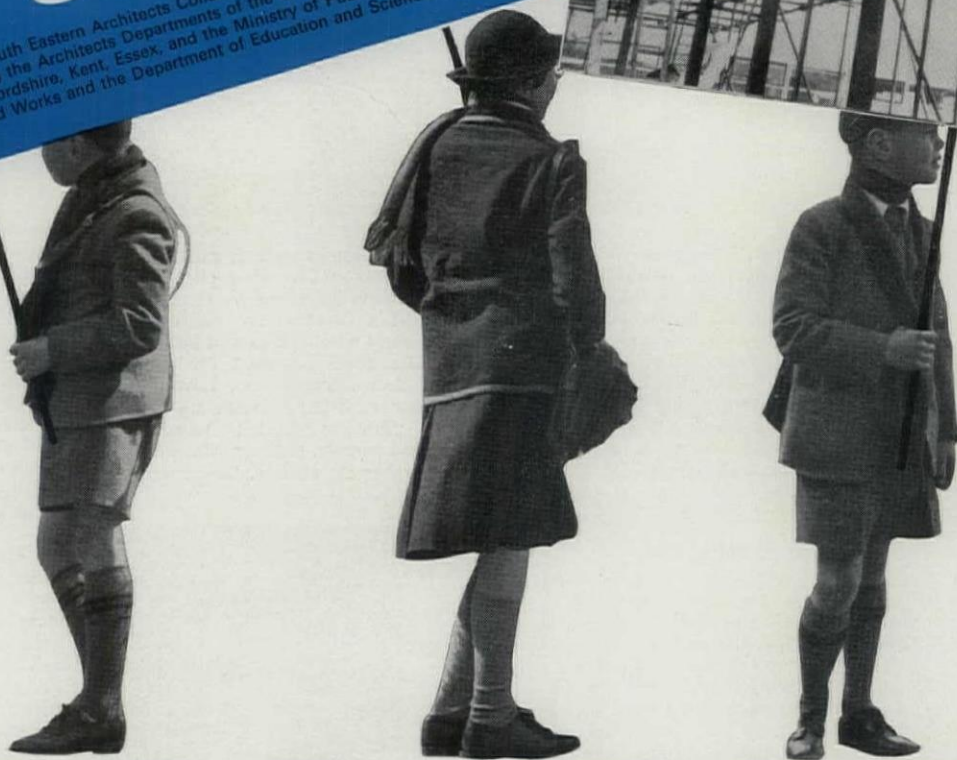
**RAF Club, Piccadilly** Architect: John Winter. General contractor: W. Loweth & Sons. Sub-contractors: Joinery, bronze entrance doors: Frederick Sage & Co. Electrical: Rashleigh Phipps & Co. Heating: Ellis Kensington Ltd. Nylon rolling grilles: Arthur L. Gibson Ltd. Signs: Pearce Signs Ltd. Aluminium and glass handrail: Morris Singer Co. Mirrors: James Clark & Eaton Ltd. Venetian blinds: J. Avery & Co. Leather: Connolly Bros. (Curriers) Ltd. Furniture and furnishings: Heal's Contracts Ltd. Marble: J. Whitehead & Sons.

Building techniques, materials and equipment, furnishings and fabrics are the tools that architects must use. Many British and foreign produce introduce themselves by way of the REVIEW'S advertisement pages—and the AR Reader's Enquiry Service, contacted by using the reply-paid form at the back of the magazine will produce more detailed information without waste of time.



# amascodek roofing system specified for 120 schools by SEAC\*

\* The South Eastern Architects Collaboration, the major members being the Architects Departments of the County Council's of Hertfordshire, Kent, Essex, and the Ministry of Public Building and Works and the Department of Education and Science.

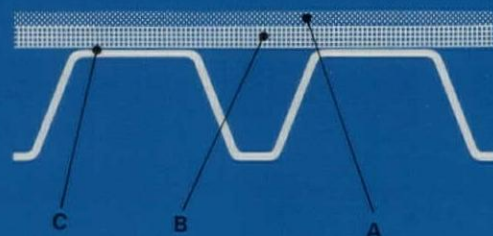


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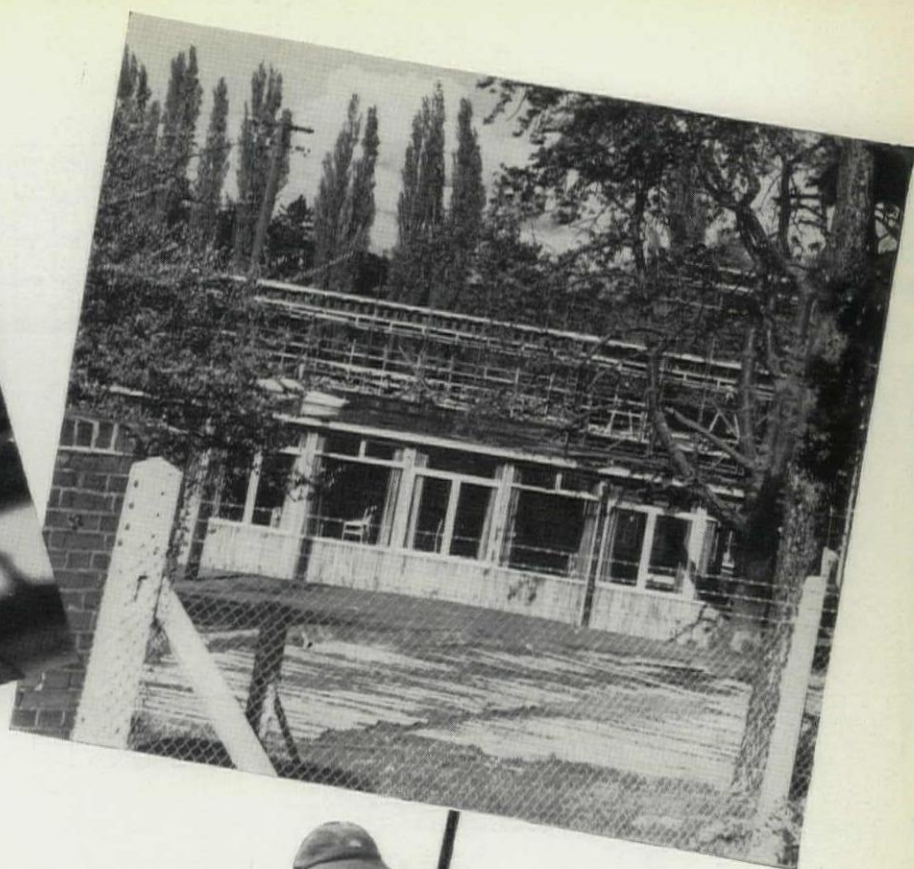
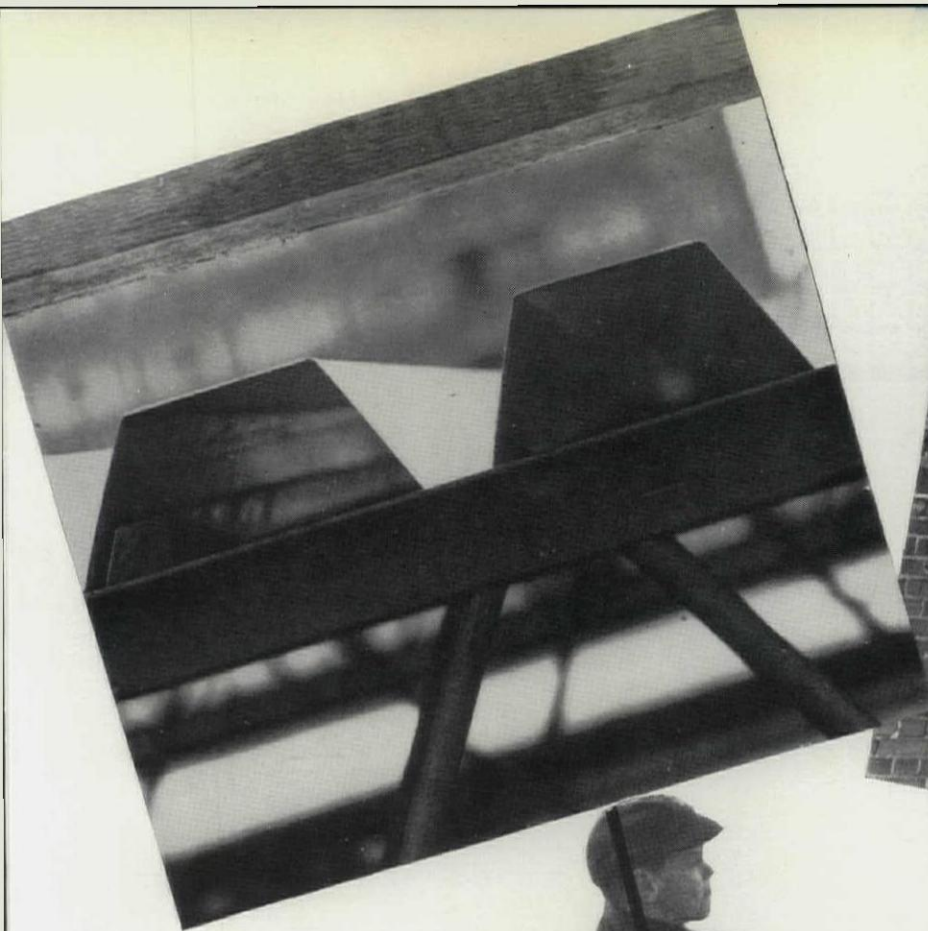
Specification used by S.E.A.C.



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● Write in for illustrated brochure and detailed data sheets showing fixing details.





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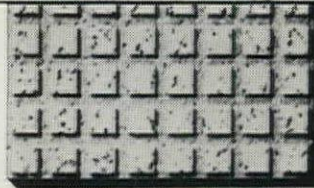


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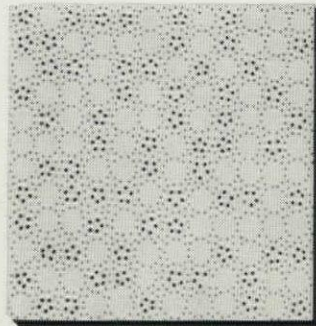
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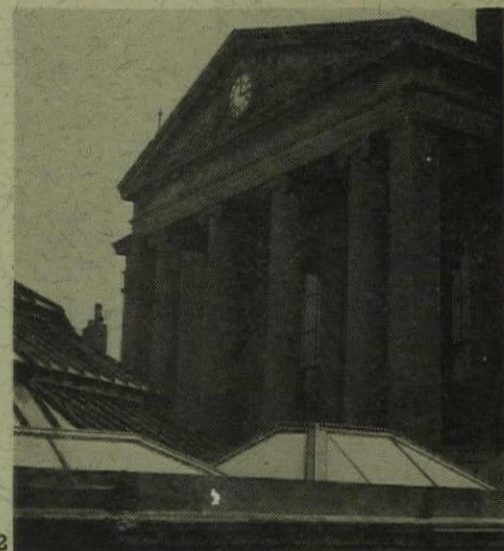
# STOP PRESS

A monthly anthology from all over Britain of townscape problems, outrages and opportunities compiled by Ian Nairn, with drawings by G. J. Nason.

## S.O.S.

OCKLEY, SURREY.

An unusual and attractive cottage orné on the western side of Ockley's splendid village green, 1. Empty and slowly mouldering, it seems astonishing that nobody has thought to convert it in a part of the country where permission for new houses is hard to come by.



2

BISHOP'S STORTFORD, HERTS.

The Corn Exchange, which is the town's focus, 2, 3, is about to come down. Grecian, built in 1828, and capable of restoration as an arts centre.

## OUTRAGE

WALLINGFORD, BERKS.

A remarkably crude and boorish new building, 4, in what used to be one of the most attractive towns in Berks. With all the talk of conservation and environmental areas, is this the best we can do? The building beyond it is the former Lamb Hotel (see an earlier Stop Press) which is still empty and seems ripe for demolition. This town needs first aid, quickly.

NEAR CHALTON, HANTS.

The infamous new 400 k.v. line from Dungeness to Exeter—a fair candidate for the worst run of pylons in the



1

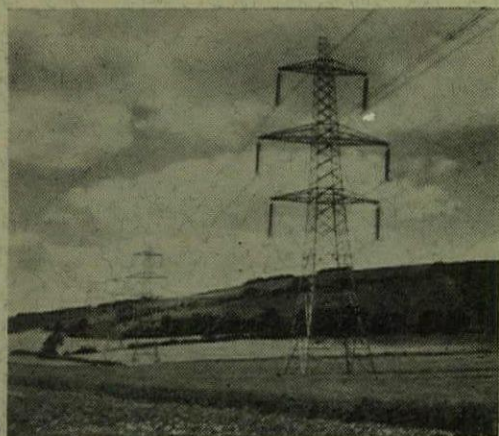


3



4





5

country—seen here tearing up a bit of the South Downs, 5. It is not only that the scale is busted open: these giant towers have none of the elegance of the earlier 275 k.v. designs. They were simply a botched-up expedient made by extending the centre arms.

## OPPORTUNITY

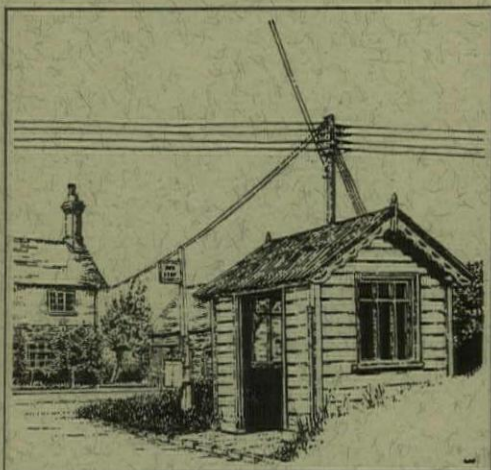
CUDDINGTON, BUCKS.

An admirable and accidental landscape effect, 6; thick hedgerows and big trees at the very edge of the village so that you can't see it at a distance and burst into it quite suddenly. With the technique of transplanting semi-mature trees now established, it would be possible to plan these exits and entrances deliberately: to enhance a village's character at very small cost. Better than a row of flowering cherries on the village green.

## CREDIT

CHEPSTOW, MON.

A bit of fun brightening up an otherwise ordinary council house at Bulwark Village, 7. This urge to decorate is perennial: the spirit of the Rococo lives on in all of us. But it is a sad commentary when someone who wants to make a splash like this has to turn to finicking wrought ironwork. It represents a recurrent human need, and it is the fault of modern designers that after fifty years there is no viable alternative to gnomes in the front garden.



8

BOXGROVE, BERKS AND LECHLADE, GLOS.

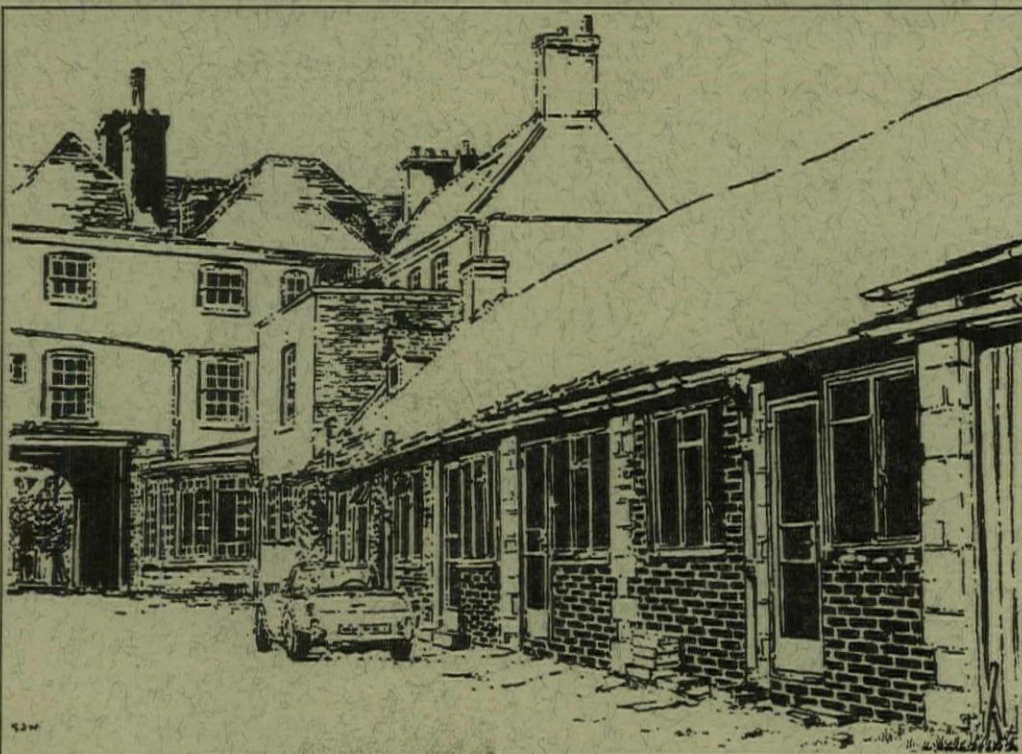
Two examples of imaginative re-use: one of the mini-stations on the defunct branch line to Lambourn adapted as a bus shelter, 8, and former stables belonging to an hotel at Lechlade, 9, being altered to become motel units.



6



7



9





## Meet Marleyrail's slim sister

That versatile vinyl handrail, Marleyrail, is now available in an interesting new version. Slimmer in profile, allowing a finer line and still more delicate curves.

Many a proud staircase and balustrade has been made more beautiful by Marleyrail. Its friendly touch, its ability to negotiate bends and wreaths without jointing... these qualities have added sparkle and harmony to thousands of offices, factories and homes. Now 'Slimline' opens up still more fields for the creative architect.

'Standard' Marleyrail is, of course, still available, but now in a new exciting range of colours.

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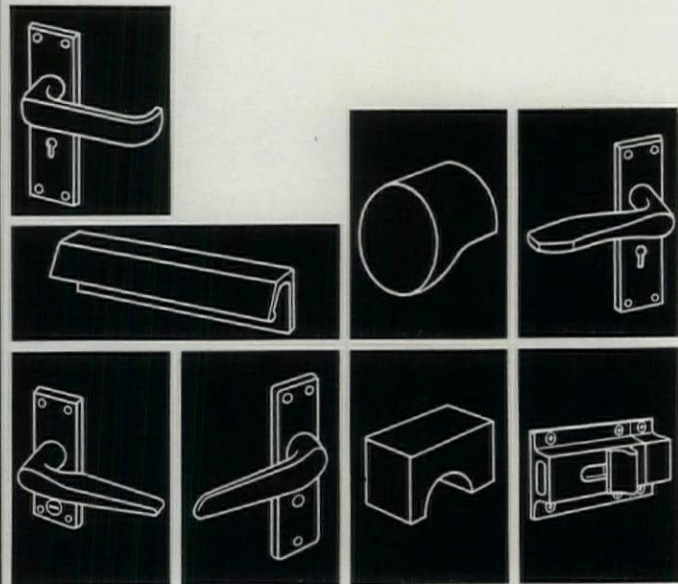
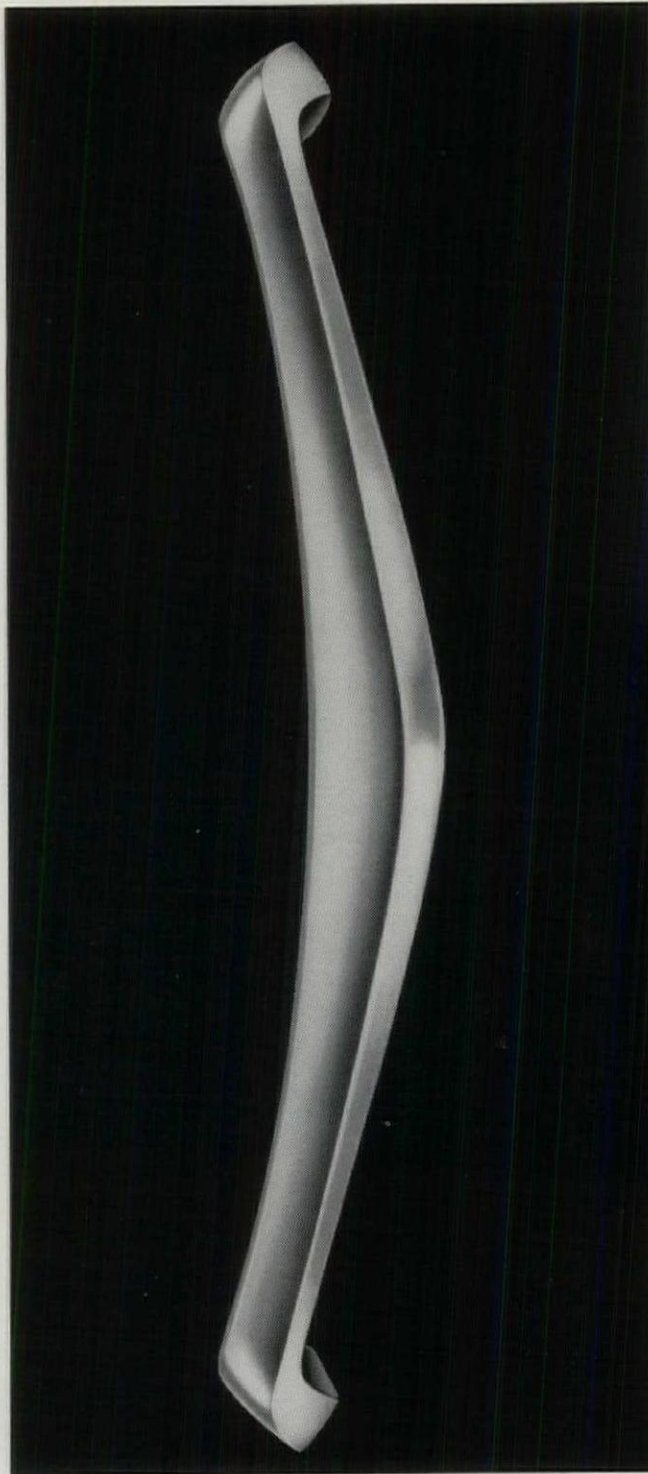


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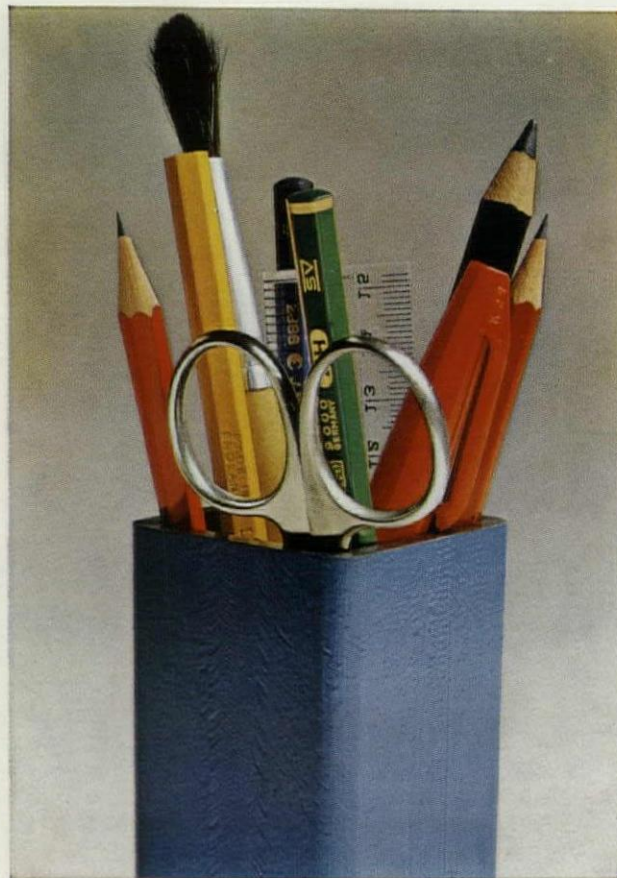


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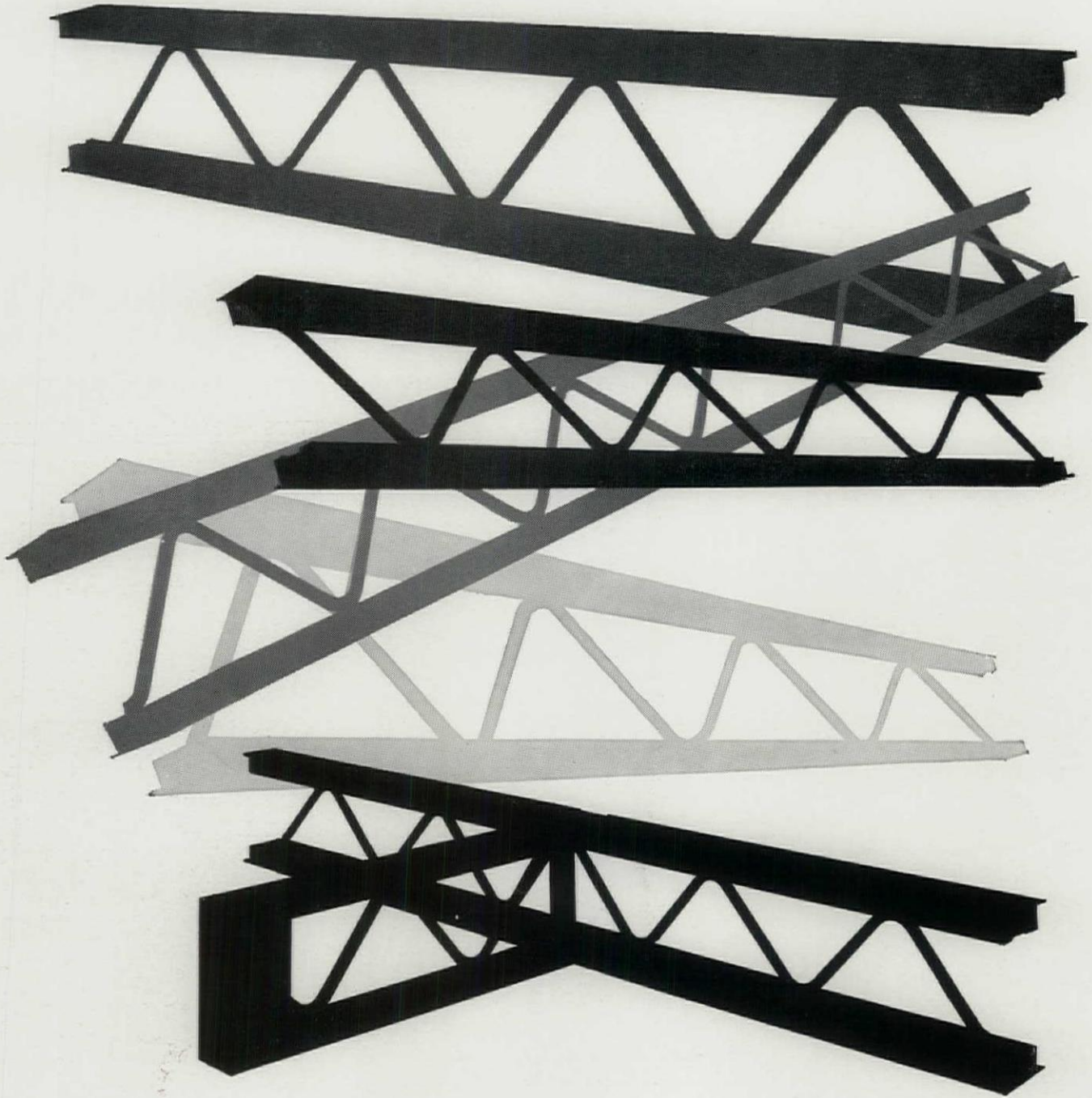
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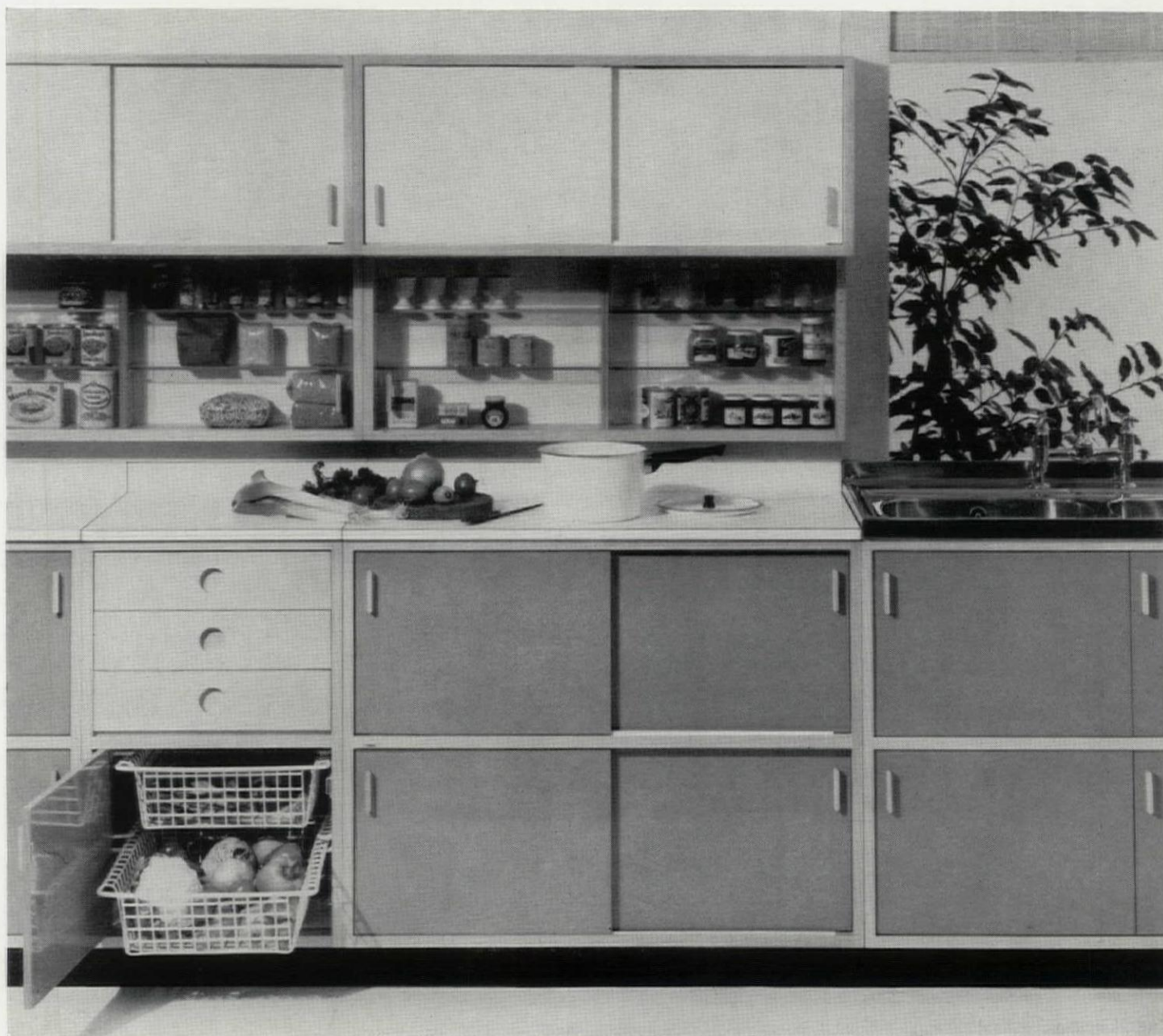
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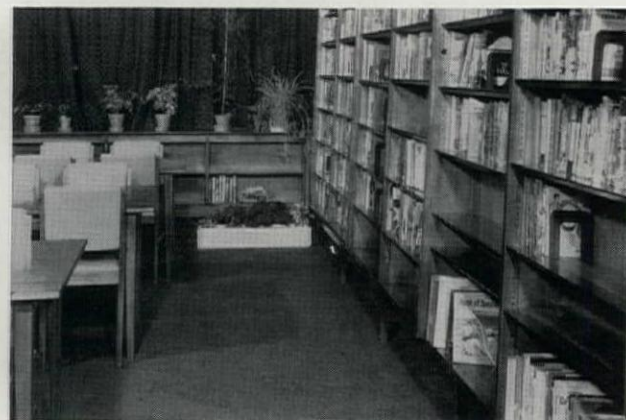
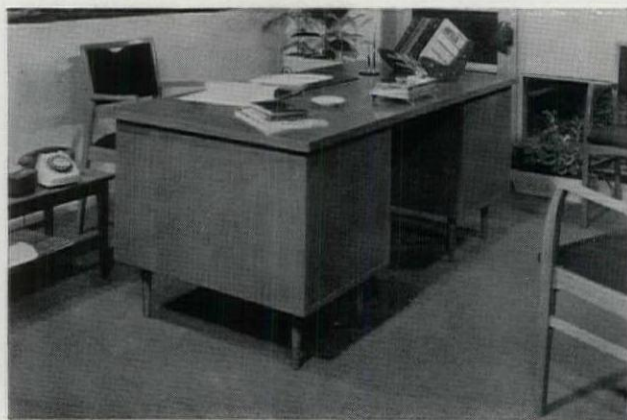
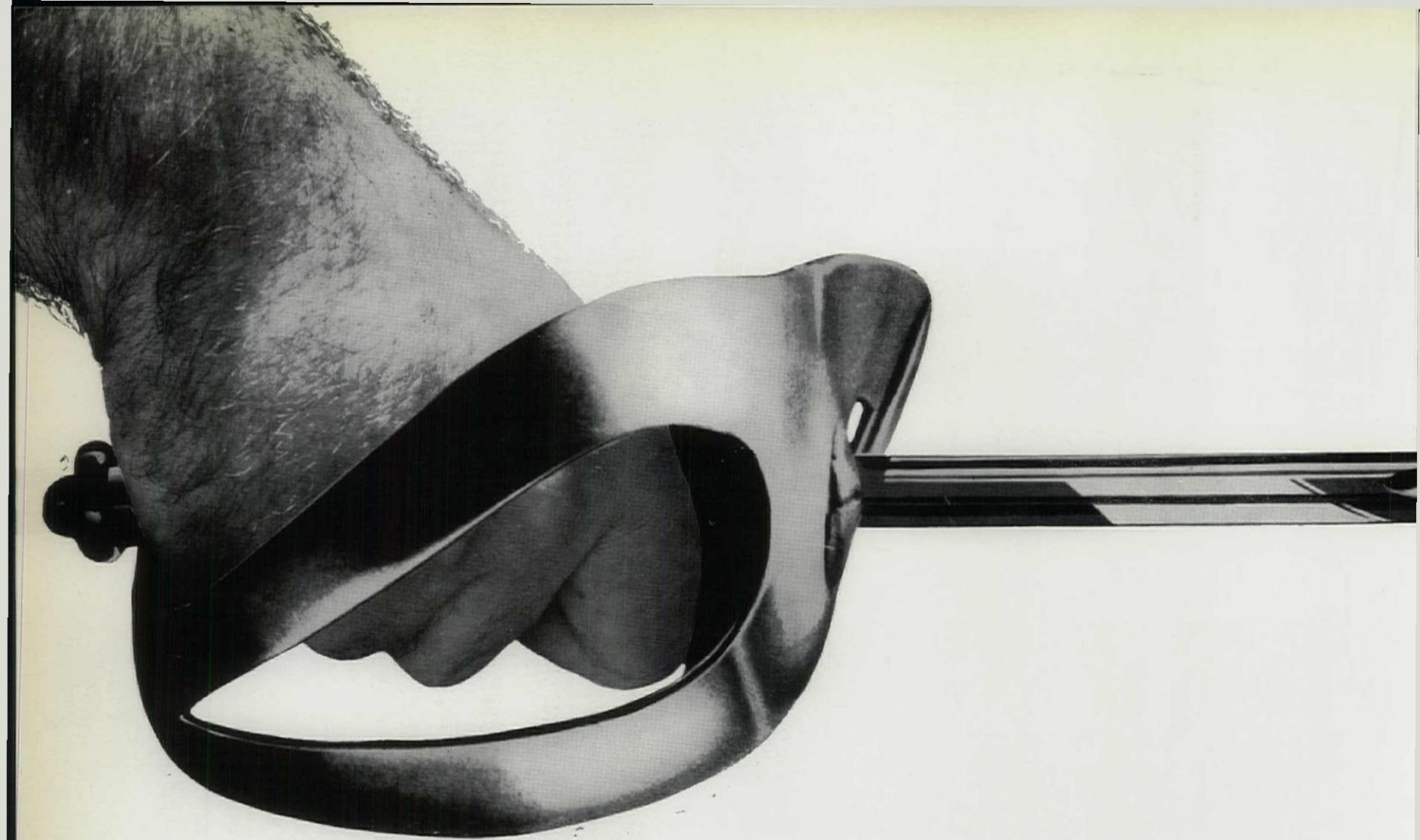
These new cabinets have natural polished beech and birch carcasses and coloured doors finished with hard gloss enamel on a polyester undercoat. Teak veneered doors are also available.

The Trimma Modular kitchens can be supplied in two heights, one as illustrated below 1735 mm. (68.3 in.) or with taller wall cabinets giving an overall height of 1950 mm. (76.8 in.).

Trimma Modular kitchen furniture is designed by Frank Guille DesRCA FSIA.







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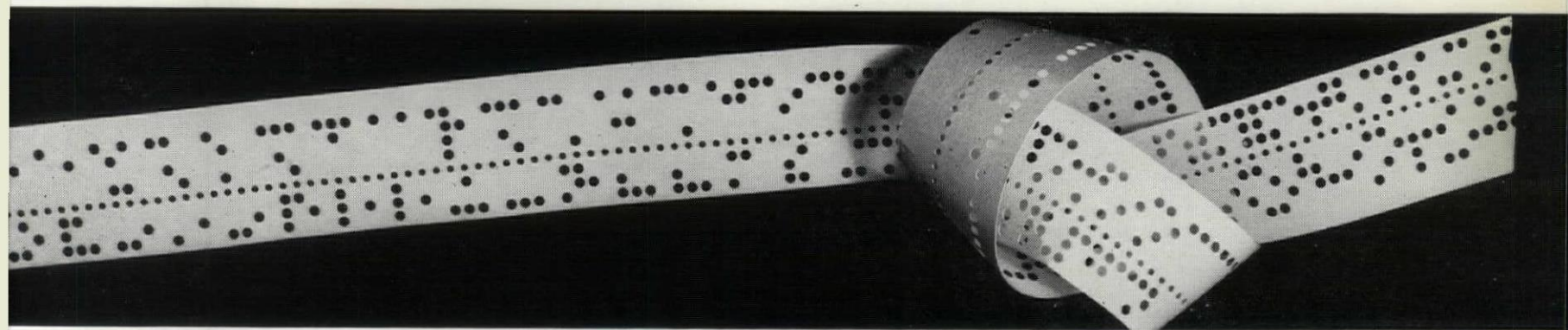
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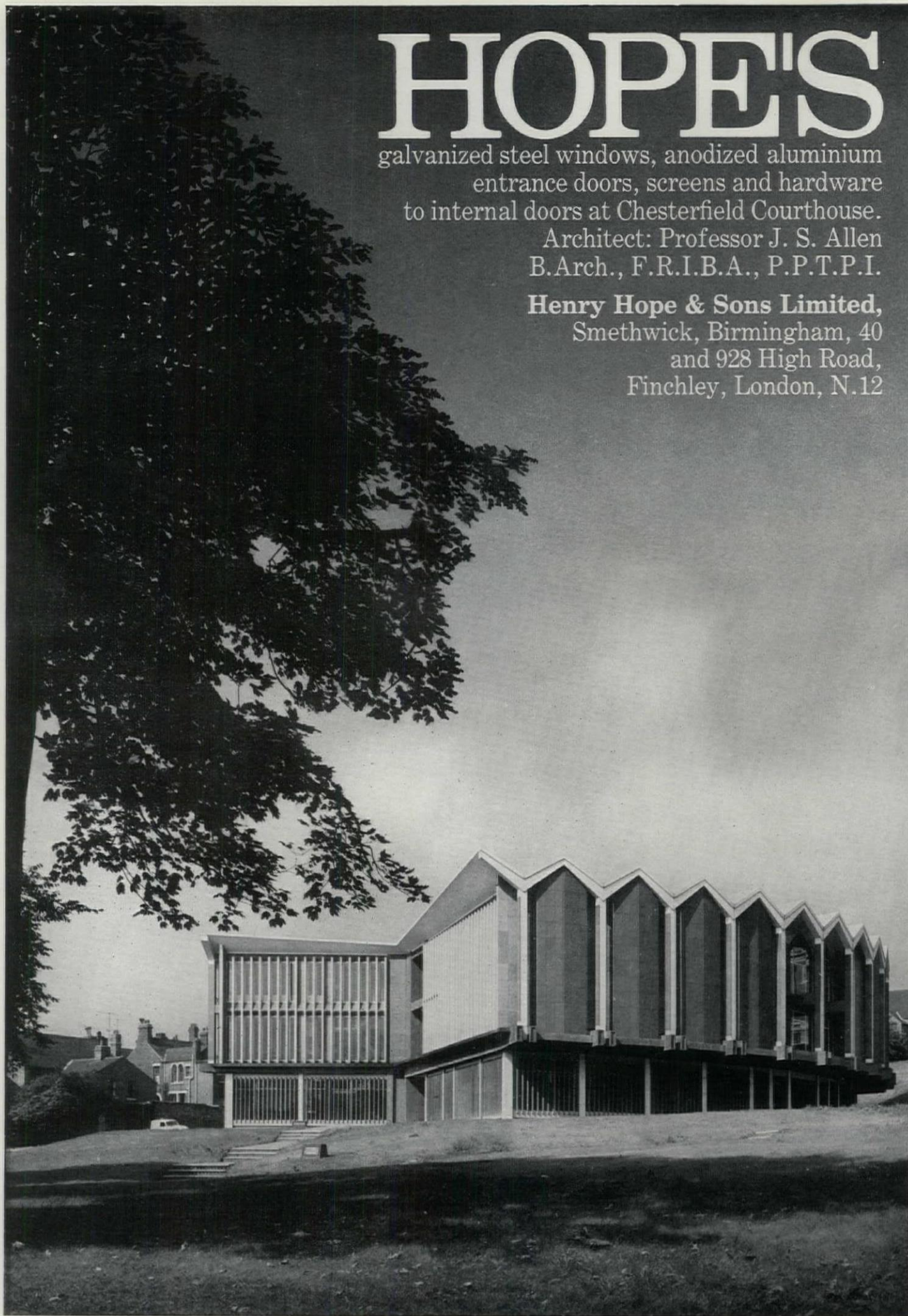


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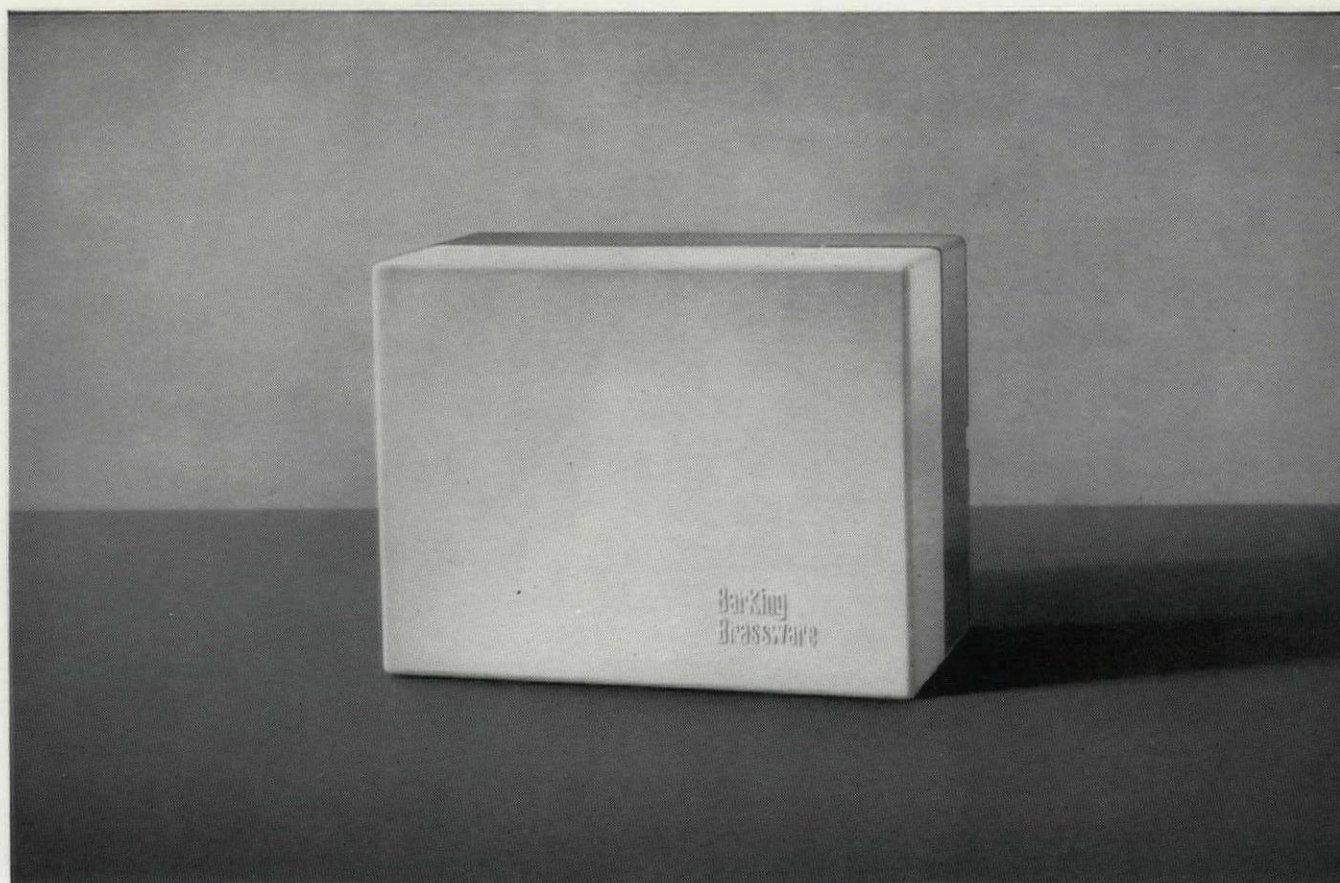
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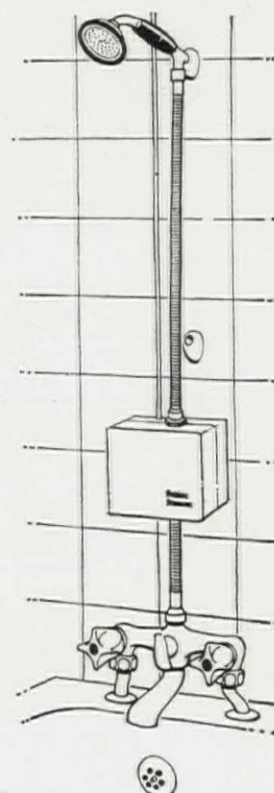
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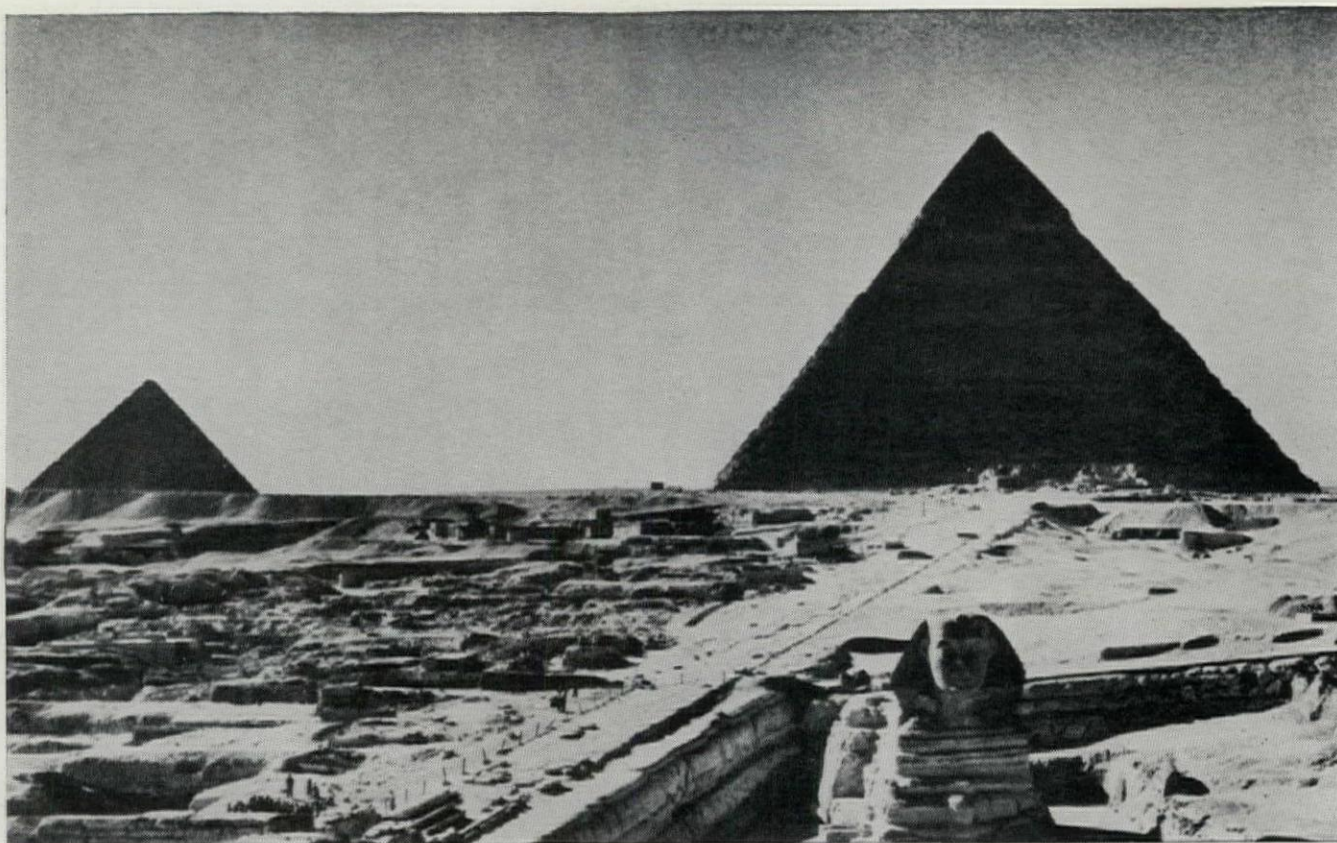
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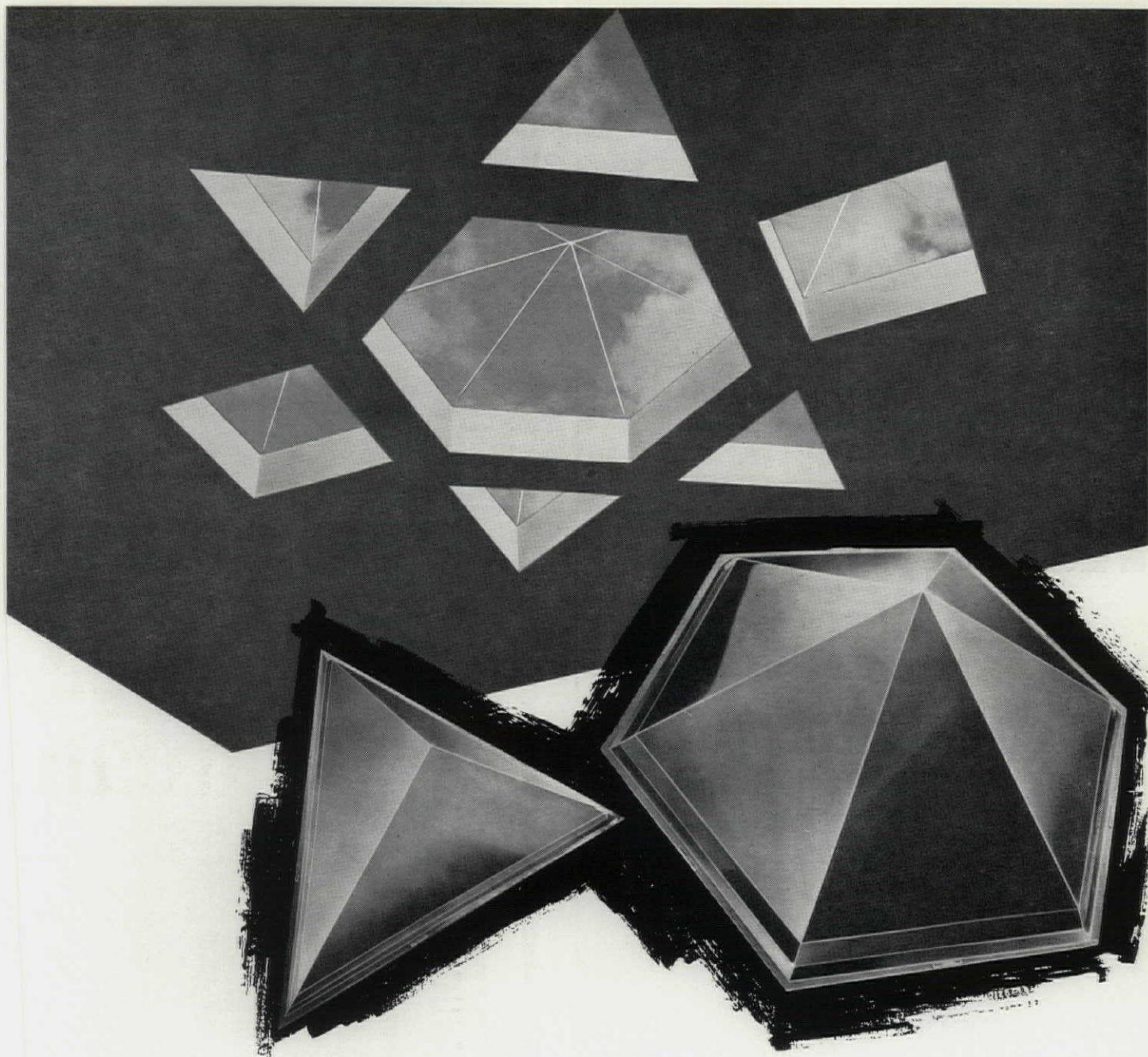
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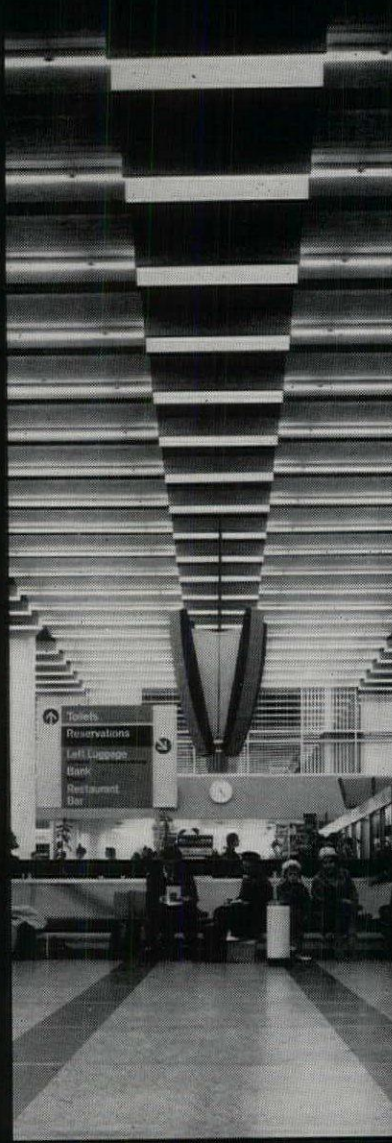
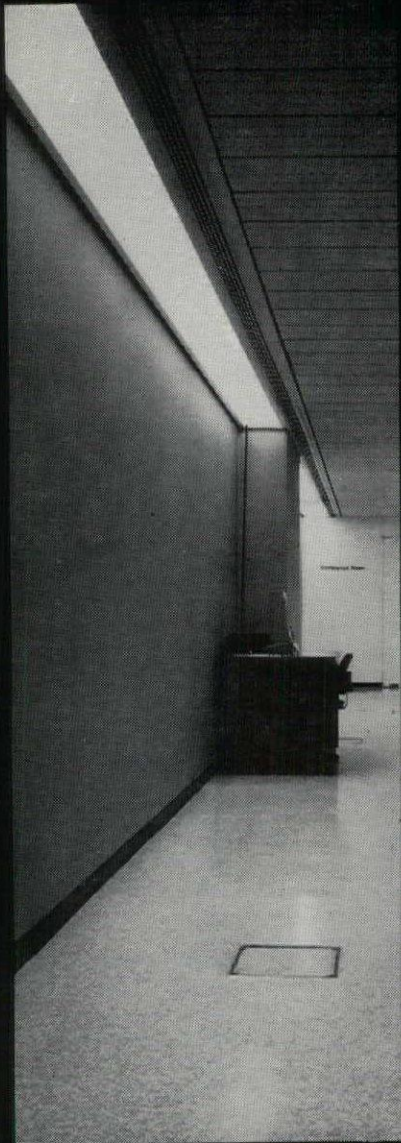


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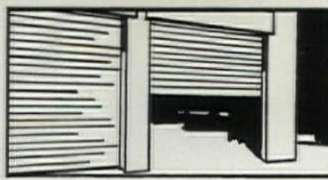
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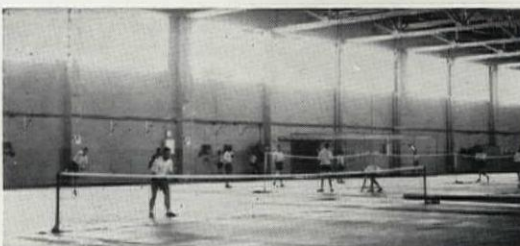
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