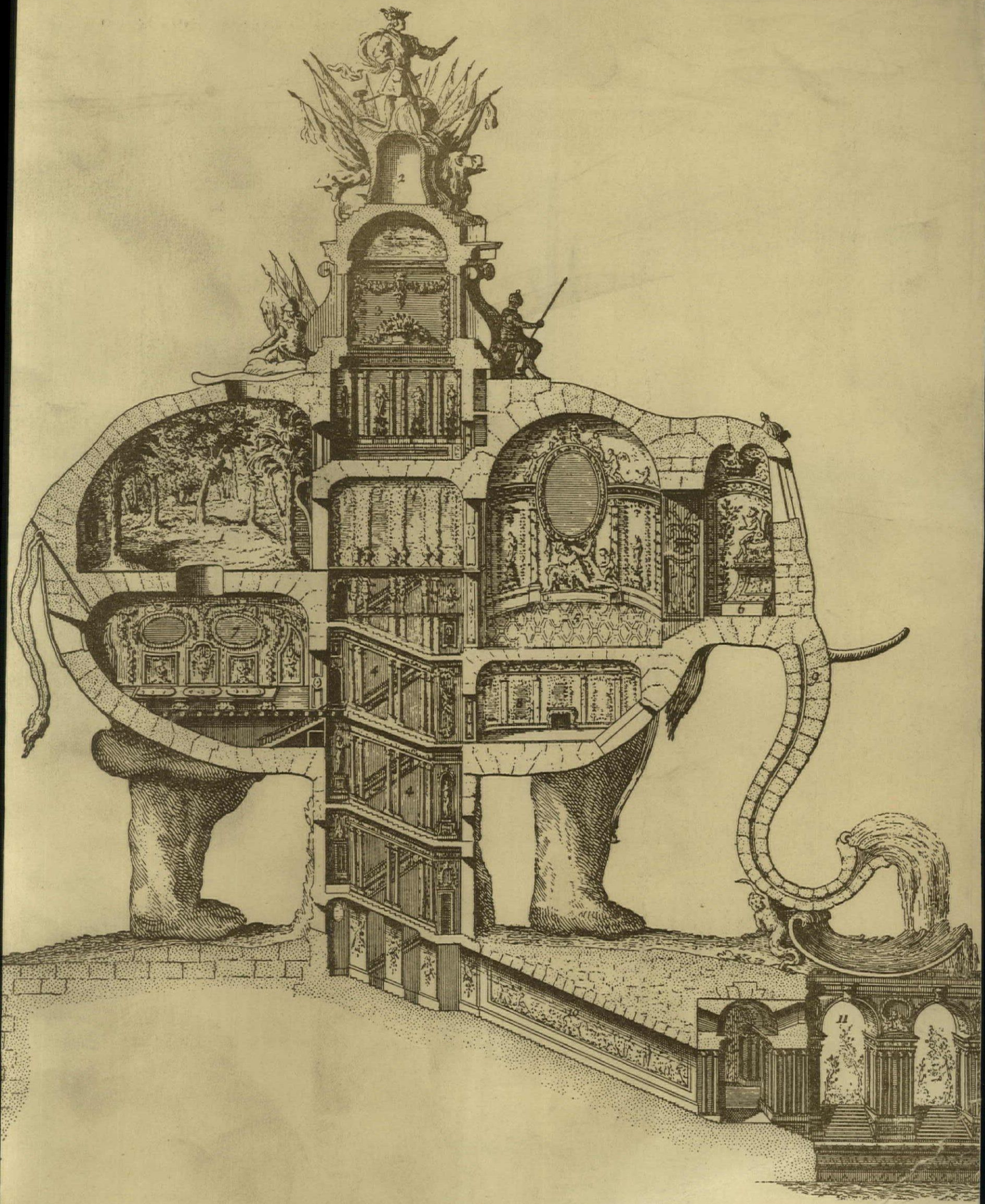
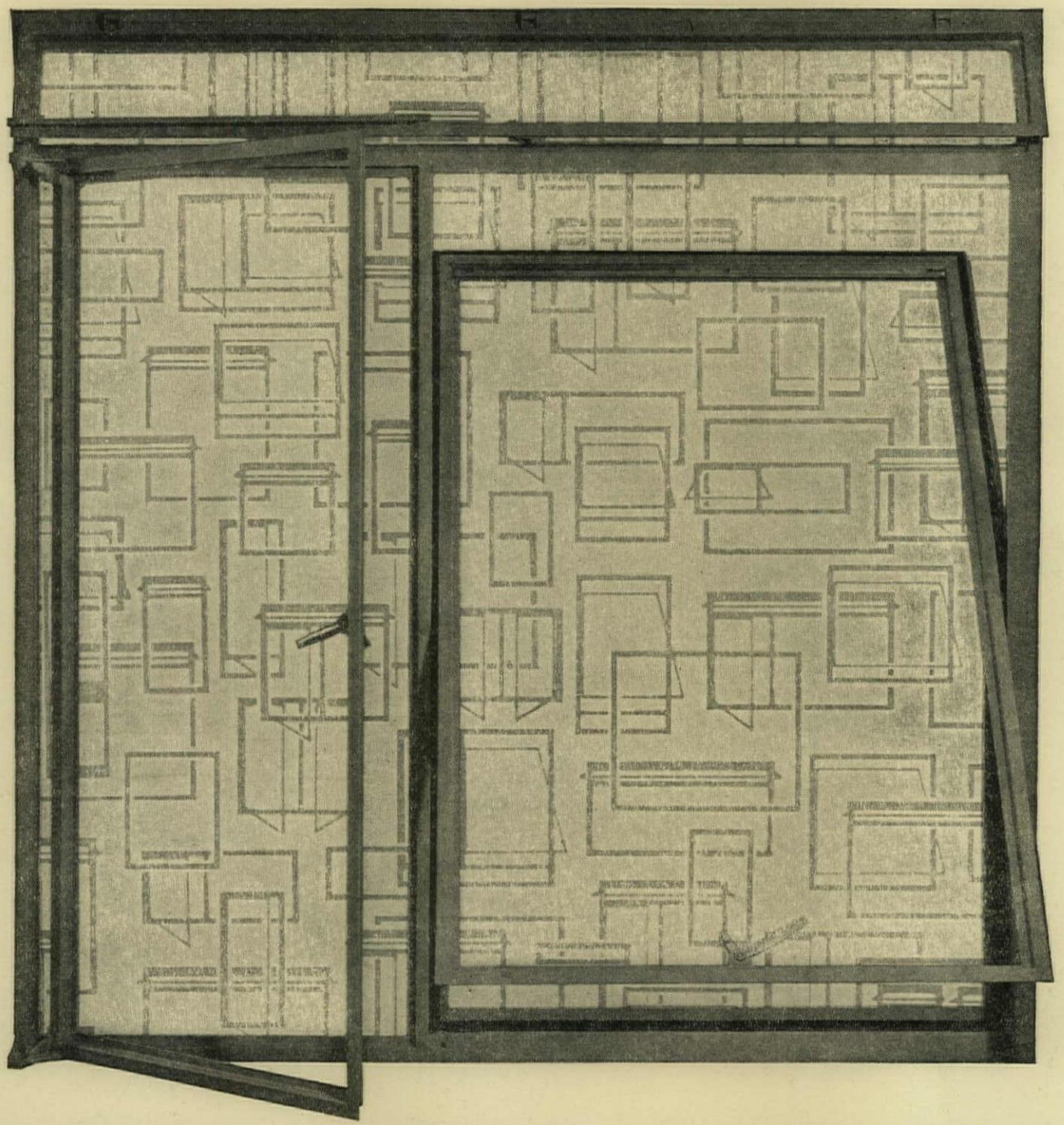


THE ARCHITECTURAL REVIEW VOLUME CXXXVIII NUMBER 821 JULY 1965 FIVE SHILLINGS



THE CRITTALL RANGE OF STANDARD STEEL WINDOWS MODULE 4

Module 4 represents a complete range of standard steel windows and doors which give a wide variety of single units and an even wider selection of coupled composite windows. Both single units and composite windows conform to the 4″ module with 12″ increments in width.

Hot-dip galvanizing, weatherstripping, and the accompanying benefit of warmth conservation, are among many practical features of the range. The remarkable versatility of Module 4, its clean modern lines and its wholly practical applications herald the most important advance in standard window design since Crittall produced their first Standard Metal Window in 1919. Crittall leaflet no. 318 gives a full description and complete details.

CRITTALL

THE CRITTALL MANUFACTURING CO., LTD., BRAINTREE, ESSEX. WCW 223

View from circuit road through housing into a local open space and, beyond, the central park. (From X to Y on Diagram D.)

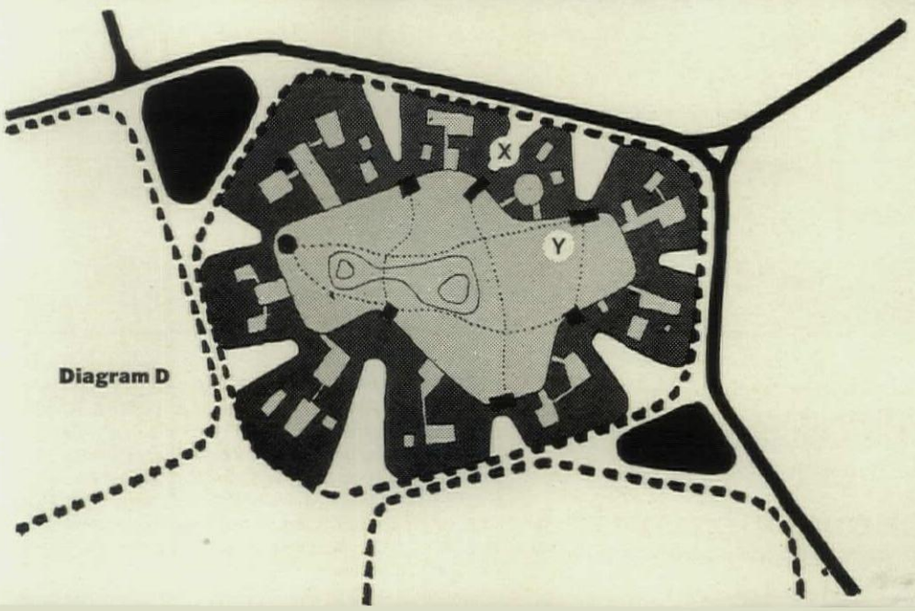


Diagram D

KEY TO DIAGRAM OF SINGLE CORRUGATED CIRCUIT

	URBAN MOTORWAY
	CIRCUIT AND SERVICE CORRUGATIONS
	BUSINESS/ COMMERCE
	FOCAL BUILDINGS
	HOUSING
	PARK AND SQUARES

ALCAN ALUMINIUM WILL BE THERE

In the new Britain we have been studying, aluminium will play an increasing part. Its growing use in building is stimulated by the wide choice of surface finishes now available to the architect. Alcan is continuously at work on the development of the various finishing processes, and has made several major advances, the most recent of which is Alcanodox self-colour anodising.

The following summary of the principal finishes for architectural aluminium may be helpful. Alcan Industries Limited will gladly give further advice on any aspect of finishing and can recommend firms to carry out this work.

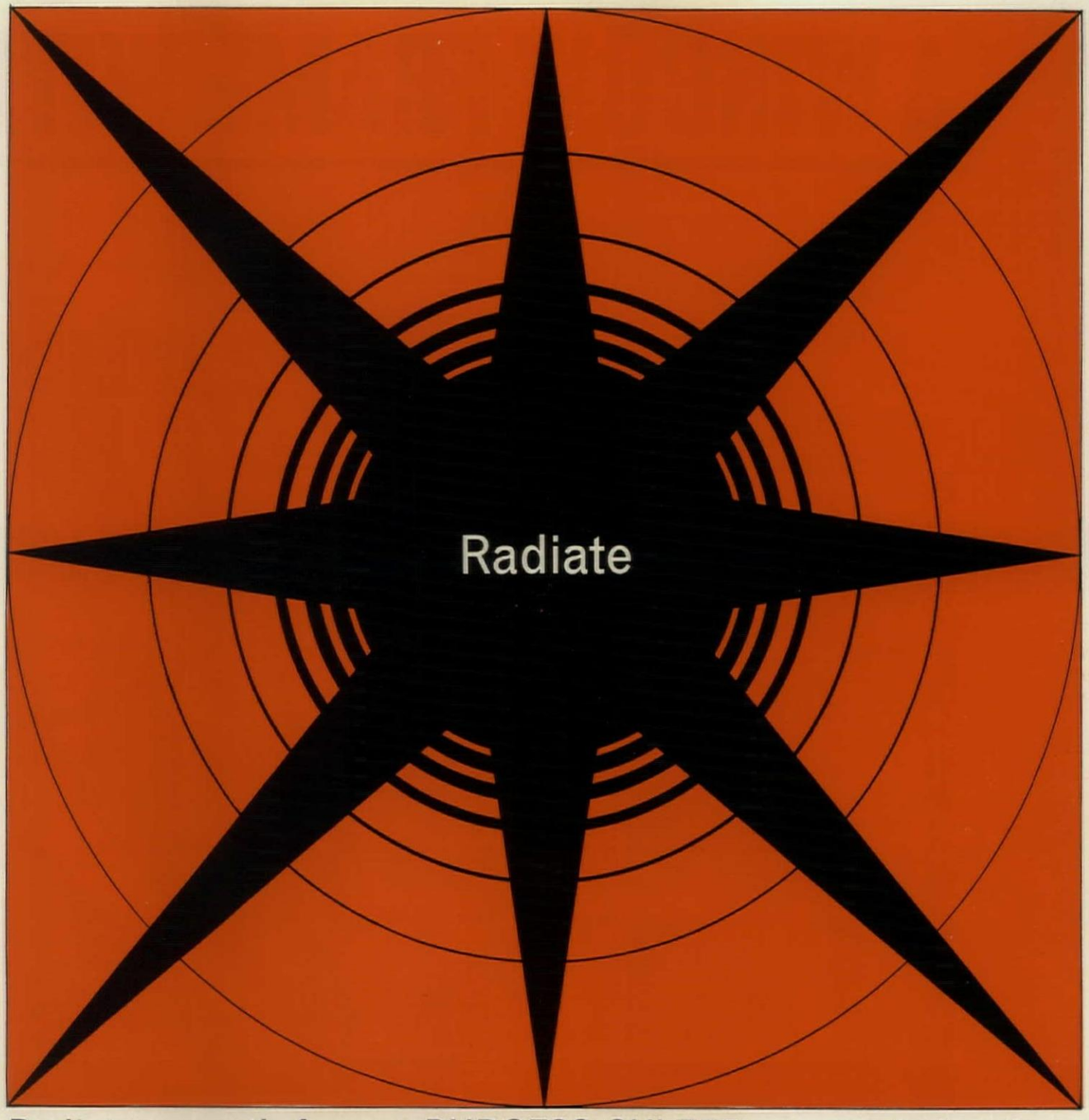
SUMMARY OF PRINCIPAL FINISHES FOR ALUMINIUM

FINISH	CHARACTERISTICS AND USES	MAINTENANCE	APPROXIMATE COST *(additional to that of material)*	LIFE OF FINISH
MILL FINISH—the untreated surface of the material as manufactured.	The natural oxide film gives adequate protection for many duties, such as roofing, cladding, glazing bars, and domestic windows.	Optional; regular washing if appearance is important as on windows, otherwise none.	None.	Appearance changes with weathering but performance is not affected.
MECHANICAL FINISHES—embossed or impressed patterns applied during manufacture.	These finishes are used on sheet products only, for decoration, to reduce marking in service (e.g. kickplates) or to reduce glare (e.g. roofing and siding).	Optional; regular washing if appearance is important, otherwise none.	¼d. to 4d. per sq. ft.	Appearance changes with weathering but performance is not affected.
NATURAL ANODISING—for external applications the film thickness should be 0.001 in., to satisfy test requirements of BS1615:1961, AA25. With appropriate pre-treatments, satin and other finishes can be obtained.	Anodising provides a hard, relatively thick oxide film which preserves the bright smooth surface of aluminium; used when appearance is important, as on shopfronts.	Periodic washing with emulsion cleaners is advised. Abrasives must not be used. The use of strippable lacquers or tapes is advised to protect against mortar splashes, etc., on site.	For 0.001-in. film, 9d. to 1/3d. per sq. ft. (1 sq. ft. of sheet has 2 sq. ft. surface area). Lacquers cost from 2d. to 6d. per sq. ft.	At least 25 years, depending on environment and frequency of cleaning.
COLOUR ANODISING, DYED—the parts are immersed in a dye bath immediately after anodising and before 'sealing.' For external use, there is a range of recommended dyes.	Surfaces retain their reflectivity, giving a characteristic effect of transparent colour, which may be combined with satin or other finishes for decorative work.	Periodic washing with emulsion cleaners is advised. Abrasives must not be used. The use of strippable lacquers or tapes is advised to protect against mortar splashes, etc., on site.	For 0.001-in. film, 1/3d. to 1/9d. per sq. ft. (1 sq. ft. of sheet has 2 sq. ft. of area). Lacquers cost from 2d. to 6d. per sq. ft.	The permanence of the colour depends on the dye used. Very little fading of recommended colours takes place in 10 to 15 years with reasonable maintenance.
ALCANODOX COLOUR ANODISING—a new process by which colour is obtained without the use of dyes. Sole authorized anodiser: Acorn Anodising Company Ltd., Hanwell, London W.7.	Alcanodox colours range from grey to gold. Their permanency recommends them for external applications such as curtain walling, fascias, and canopies.	Periodic washing with emulsion cleaners is advised. Abrasives must not be used. Temporary protection from on-site mortar splashes, etc., is advisable, by strippable lacquers or tapes.	For 0.001-in. film, 1/6d. to 2/6d. per sq. ft. (1 sq. ft. of sheet has 2 sq. ft. of area). Lacquers cost from 2d. to 6d. per sq. ft.	Alcanodox colours are inorganic and resist fading indefinitely. A life of 25 years or more is to be expected with reasonable maintenance.
ALCANCOLOUR—factory-applied stoved-paint film.	A durable plastic-based paint film on sheet products only; tough and adherent enough to permit forming. Offers a wide range of solid colours suitable for siding and infill panels.	Periodic washing.	6d. per sq. ft.	A minimum life of 10 years is accepted in U.S.A.; experience so far in the U.K., and test results, support this.
PAINT	With suitable pre-treatment (degreasing, Alocrom or etch-priming), conventional paint systems last particularly well on aluminium.	Periodic washing.	Current prices for painting.	Life of paint system, providing it is correctly applied. No rusting or lifting at scratches or chips.
ALOCROM—a chromate-fluoride-phosphate 'conversion' coating, obtained by immersion in chemical bath.	A good pre-treatment for painting. Grey-green in colour, Alocrom is sometimes used for its anti-glare properties, but should not be used where colour matching is important.	None.	½d. to 1d. per sq. ft. (1 sq. ft. of sheet has 2 sq. ft. of area).	2 to 5 years, depending on environment.

ALCAN SERVICE Alcan Industries Limited produces aluminium in all forms required by the building industry. It is obtainable through sales offices, or from authorized stockists who can offer immediate delivery. The sales force includes building specialists, and the company has the support of the largest aluminium research organization in Europe. Alcan Industries is thus well equipped to serve the architect and the building industry. For information, write to us at Banbury, Oxon.

ALCAN INDUSTRIES LIMITED
Supplying Britain's builders with aluminium

REPRINTS AND BOOKLET Reprints of this broadsheet are available on request. A booklet is being prepared containing all four of the studies of which this is the last. If you are a corporate member of the R.I.B.A., or have already applied to Alcan for the booklet, a copy will be sent to you in a few weeks' time: otherwise write, enclosing a crossed 2/6d postal order payable to Alcan Industries Ltd., to 'Alcan Town,' 19 Thornbury Road, Isleworth, Middlesex.



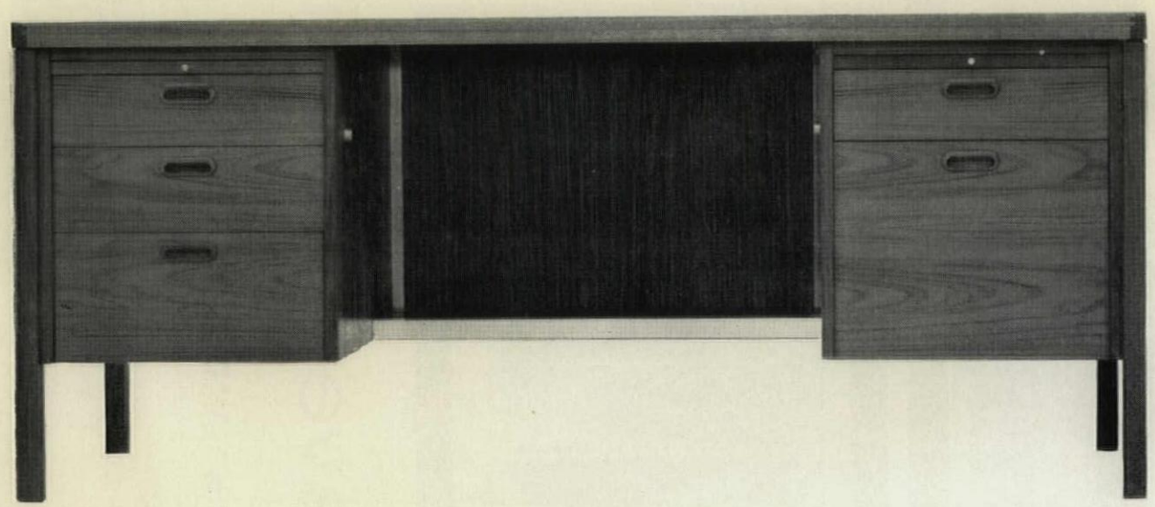
Radiate warmth from a BURGESS SULZER suspended ceiling

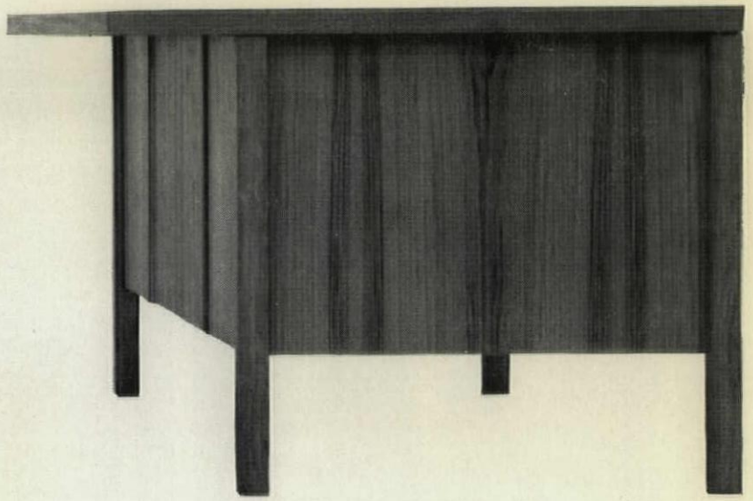
Radiant heating from a suspended ceiling has many substantial advantages over more conventional systems. Looks better, because all piping is concealed. Is better, because the heating system doesn't interfere with room layout, partitioning or furnishings. Evenly distributes warmth without wasteful convection currents. Quickly responds to thermostat adjustment. Costs less to run. Well worth your consideration.

Burgess
SULZER
two names —
one service

Burgess — Thermal Acoustic ceiling specialists. *Sulzer* — heating and ventilation engineers. Both big names in separate spheres. But both united to give you streamlined service in suspended ceilings with radiant heating by low pressure hot water. Complete schemes, including erection by specialist fixers, prepared by the Burgess-Sulzer team. Barbour Index No. 401.

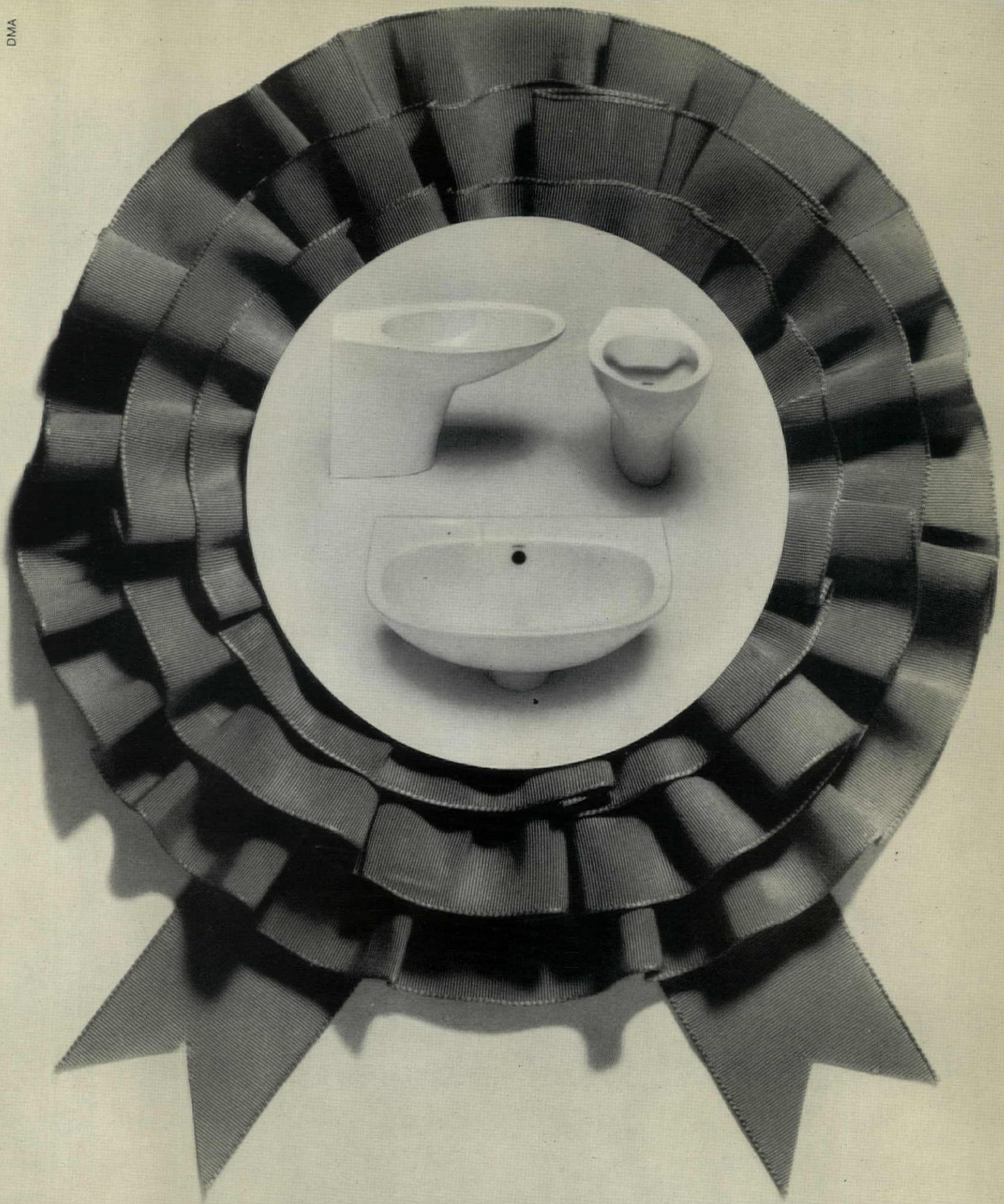
ACOUSTICS BY BURGESS PRODUCTS CO LTD, ACOUSTICAL DIVISION, HINCKLEY, LEICS.
HEATING BY SULZER BROS. (LONDON) LTD, BAINBRIDGE HOUSE, BAINBRIDGE STREET, LONDON W.C.1.





LUCAS FURNITURE Teak Range desks, designed by Herbert Berry FSIA and Christopher Cattle MSIA. Available with wood or satin chromed steel legs. Model T/DP53 is as sturdy as it looks, but easily demountable to get round tight corners. The price is £72 8s, including tax. Matching Teak Range pieces include single pedestal and typists' desks, storage, bookcases and tables. Lucas have furniture for all contract needs, including four ranges of desks, plan chests, unit storage, beds and a wide range of contract chairs. On show at The Design Centre, and in our showrooms. Write for details to Lucas Furniture, Old Ford, London E3. Advance 3232. Barbour Index No. 410

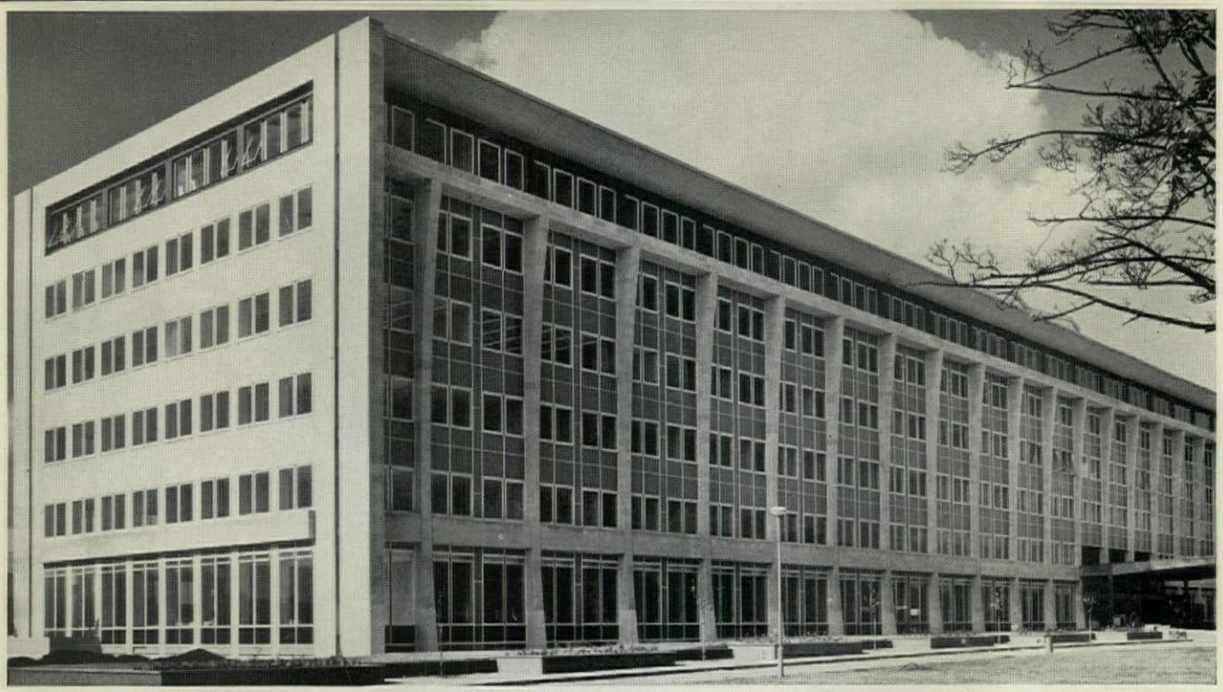
DMA



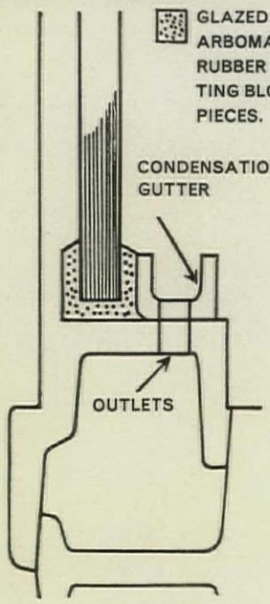
Award for 'Meridian One'–by **adamsez** who are proud to announce that their new sanitary suite designed by Knud Holscher MAA and Alan Tye Dip. Arch ARIBA (in association with Alan H. Adams) is one of the 16 Design Centre Awards for 1965. Designed for use with a duct – or similar concealed services space – the backs of the fittings align with a 6″ tile module and all unsightly connections are concealed. For an A4 data folder on the 'Meridian One' range, ask Adamsez Limited, 75 Victoria Street, London SW1 (Tel: Abbey 5846) or Fireclay Works, Scotswood-on-Tyne.

New Headquarters Building at Warley for

FORD OF BRITAIN arbosealed



Architects, T. P. Bennett & Son
Glazing, Robinson King & Co.
Contractors, G. Percy Trentham Ltd.
Vitroclad, Plyglas Ltd.
Crittall Hot-Dip Galvanised Steel Windows



ARBOSEALED by the ARBOGLAZE system

the glazing system which remains watertight under **all** exposure conditions.

In the new Headquarters Building for Ford of Britain, the ARBOGLAZE system comprised:

ARBOSEAL B.R.

The preformed sealant based on polythene and butyl rubber. This sealant has high adhesion and load bearing properties which enable it to accommodate movement and a considerable temperature range.

ARBOMAST 500 B.R.

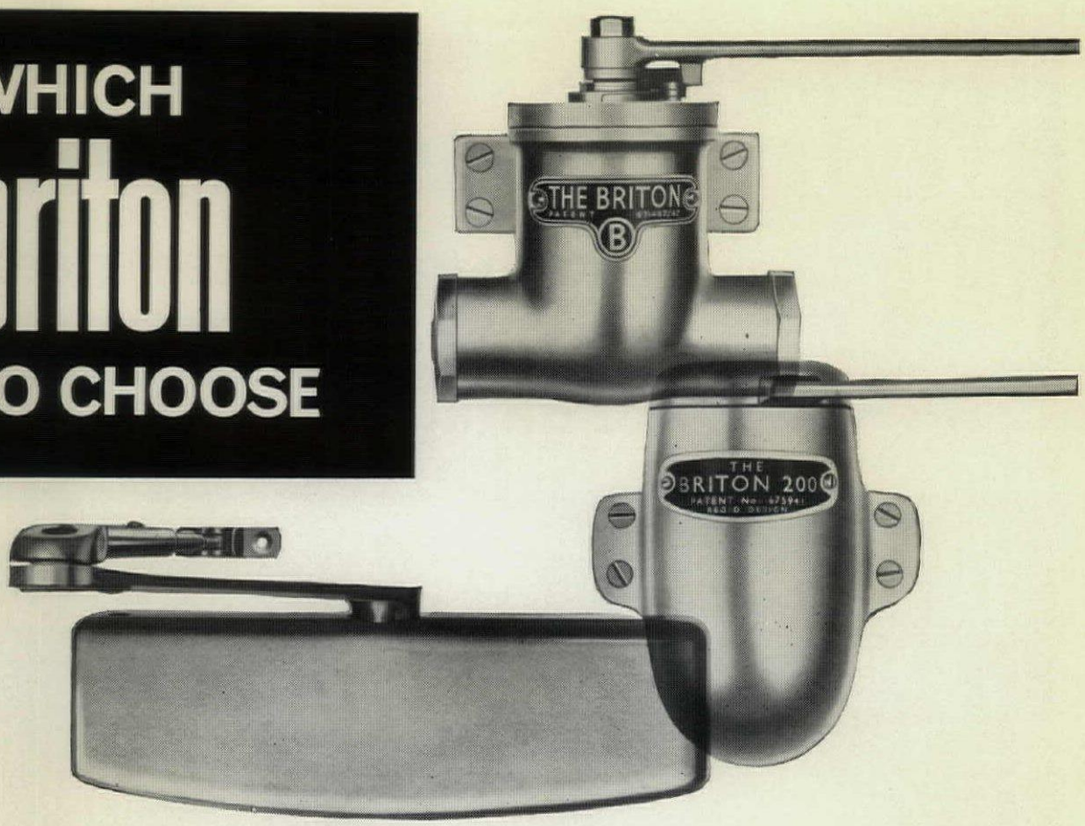
The hand-applied mastic sealant containing butyl rubber, the master sealant for fixing of D.G. insulation units and infills.

For further details of the ARBOGLAZE system, please complete the form below and send it to the manufacturers.

Please send details of the ARBOGLAZE system to
Name.....
Address.....
.....

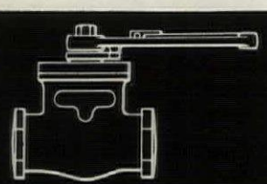
ADSHEAD RATCLIFFE & CO LTD
BELPER DERBY Telephone Belper 2891 (3 lines)

WHICH briton TO CHOOSE



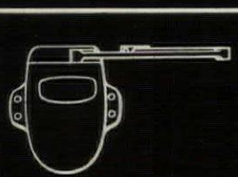
FOR MAXIMUM ECONOMY AND EFFICIENCY

briton



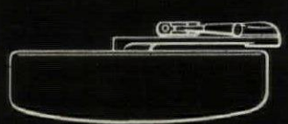
The orthodox surface fixing closer that is made in various sizes and types to suit every door whether internal or external. Suitable for both left and right hand doors without alteration.

briton 200



A stylized version of the Standard Briton, for internal or external doors up to 112 lbs. Suitable for both left and right hand doors without alteration.

briton 502



A new closer styled to blend with today's architecture. With the projection from the door being only $1\frac{3}{4}$" the Briton 502 is ideally suited for situations where the space behind the door is limited. For internal doors weighing up to 112 lbs.

briton 500

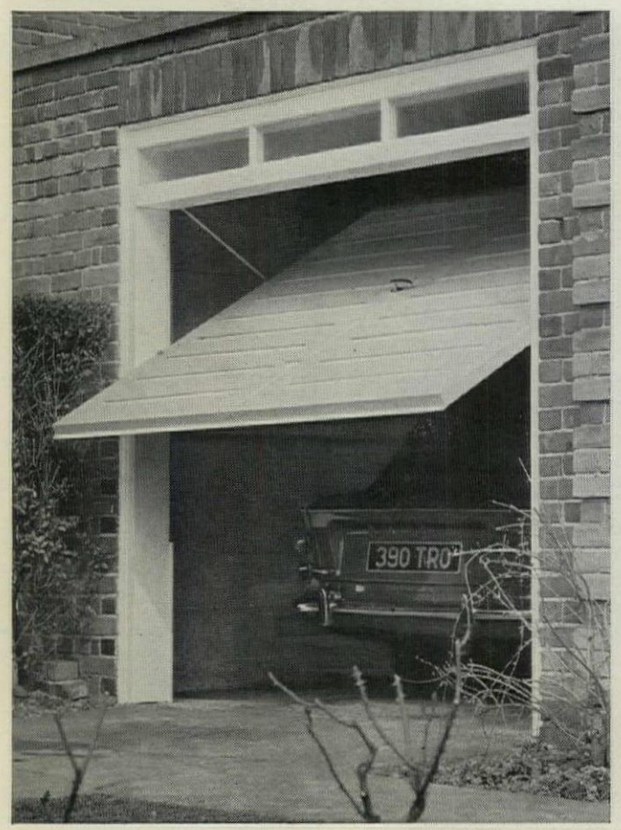
A concealed closer for situations where surface fixing is undesirable. (Latch action back check and hold-open are incorporated as standard.) For doors weighing up to 112 lbs.

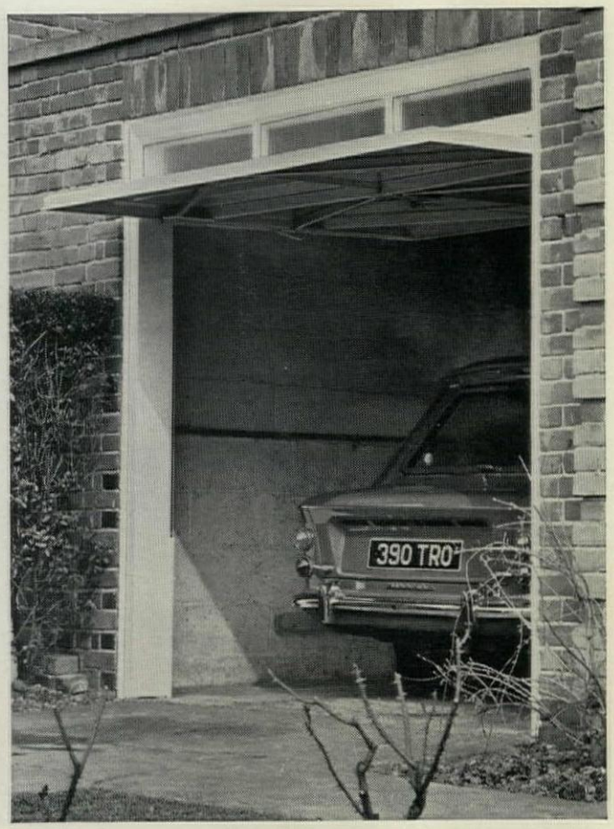
See our exhibits at the Building Centres, London, Birmingham, Manchester and Glasgow. All details can be found in the Barbour Index, File No. 53 and the Gorco Bureau, File No. 44/3.

WILLIAM NEWMAN & SONS LTD. HOSPITAL STREET, BIRMINGHAM, 19

NEWMANS

Which galvanized steel should you use for garage doors?





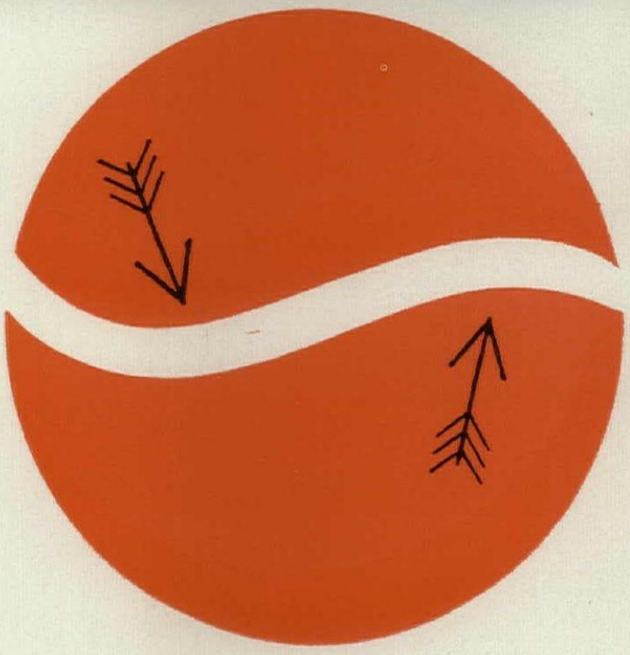
THE NEW GARADOR S/S combines great strength with low price and extreme simplicity of installation. There are no roof or sidewall fixings — the spring-operated Garador being entirely self-contained. (Garage door by Westland Engineers of Yeovil: Dragonzin galvanized steel by The Steel Company of Wales.)

The new Garador S/S garage door is made by Westland Engineers Limited. For this strong, but inexpensive door, Westland decided to use Dragonzin. (This is the name of the tight-coated galvanized sheet steel produced by The Steel Company of Wales.) Why Dragonzin? Westland say it is because Dragonzin gives the best possible protection against corrosion to a surface which is exposed to all kinds of weather.

DRAGONZIN

for the best possible protection against corrosion

THE STEEL COMPANY OF WALES LIMITED



MODERNFOLD SPOTLIGHTS ANOTHER FEATURE

The Problem of the curve. Instant cosiness or vital spaciousness was the requirement for the White Hart Hotel, Porchester, Hants., whilst at the same time maintaining unified appearance of decor and the ability to close off the **curved** bar. The versatility of the Modernfold range of expanding walls was able to meet these requirements immediately. First a fixed jamb single leaf Modernfold closing to the bar held in position with a footbolt with recessed spring-loaded floor socket. Then with **curved** track application a further single leaf Modernfold (recessed stacking) to the left of the bar. Using pendant pulls the nylon trolleys take this unit easily round the **curved** track effecting complete lock and latch closure with the lead post and the other unit. All the dividers in the Modernfold range are designed to suit individual requirements, they are draught proof and flame proofed to British standards and available in a variety of attractive colours.

Consult us immediately with your Curved Track Problem, or any other space division problem you may have.

Write for full details

modernfold

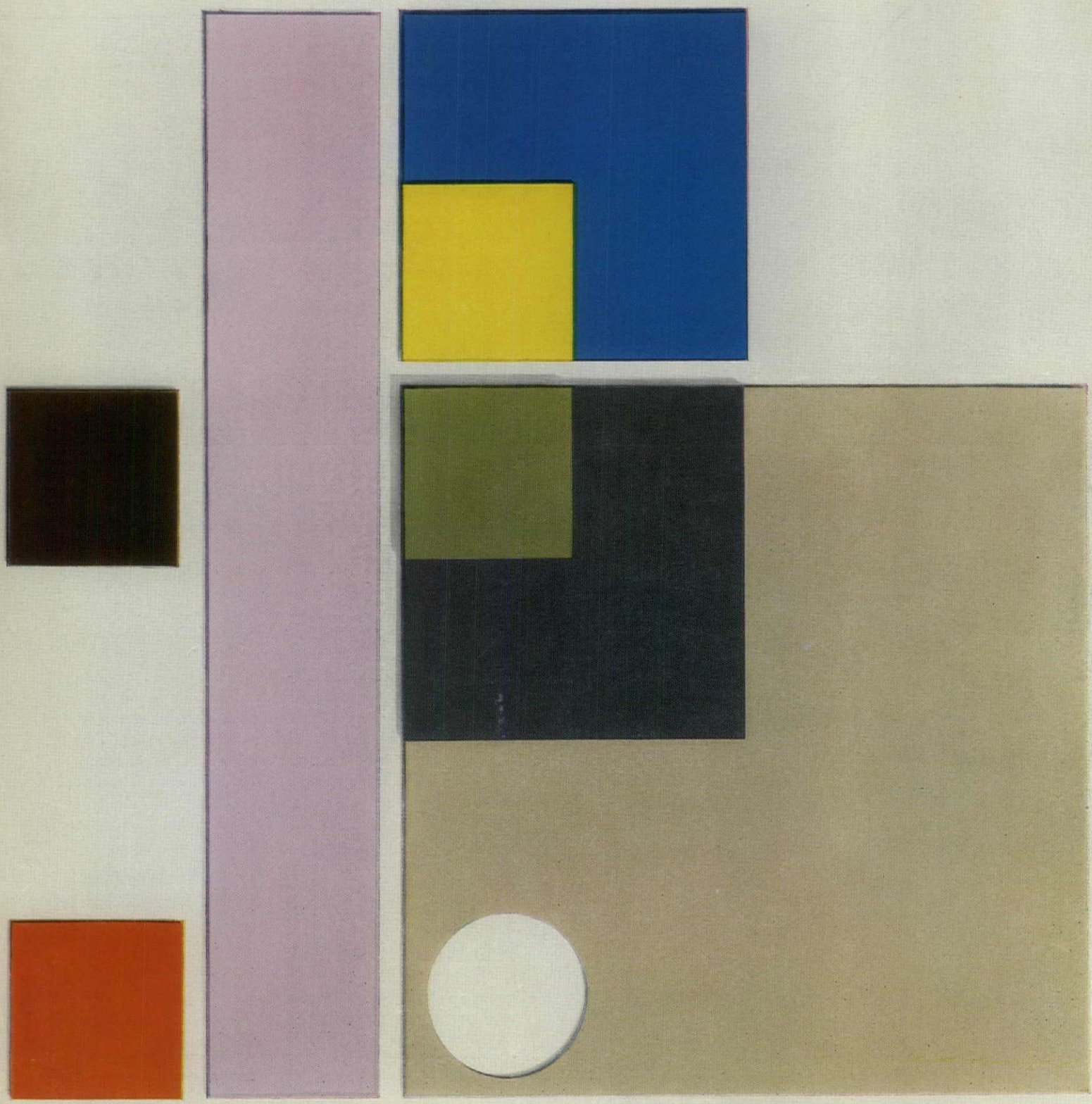
HOME FITTINGS (Gt. Britain) **LTD**

member of the world's largest manufacturers of Space Dividers

DEPT. AR 19, BRIDGE WORKS, WODEN ROAD SOUTH, WEDNESBURY, STAFFS. TEL: WEDNESBURY 0761

ONE OF THE BROCKHOUSE COMPANIES

Portrait of the Architect as an Arborite user



using some of the 46 new plain colours in the Arborite Pageant range

With the introduction of the ARBORITE Pageant range the total number of decorative laminates – including patterns, woodgrains and marbles – produced by ARBORITE is now well over 300. No other source offers such a wide selection of attractive designs. Samples are available on request.

MORE FACTS ABOUT ARBORITE

Made in England □ Also Canada's leading laminate □ Three finishes: High gloss, furniture finish (Matt) and texture □ Variety of grade thicknesses from $\frac{1}{32}''$ to $1\frac{1}{4}''$ □ Special grades for bending and post-forming □ Standard sizes 10′ x 4′, 9′ x 4′ and 8′ x 4′ – others available □ ARBORITE Edge-Trim and Twin-Trim offer ideal methods of finishing edges and joints □ The ARBORITE Pageant range has been accepted by the Council of Industrial Design for Design Index.

surface right with ARBORITE® decorative laminate

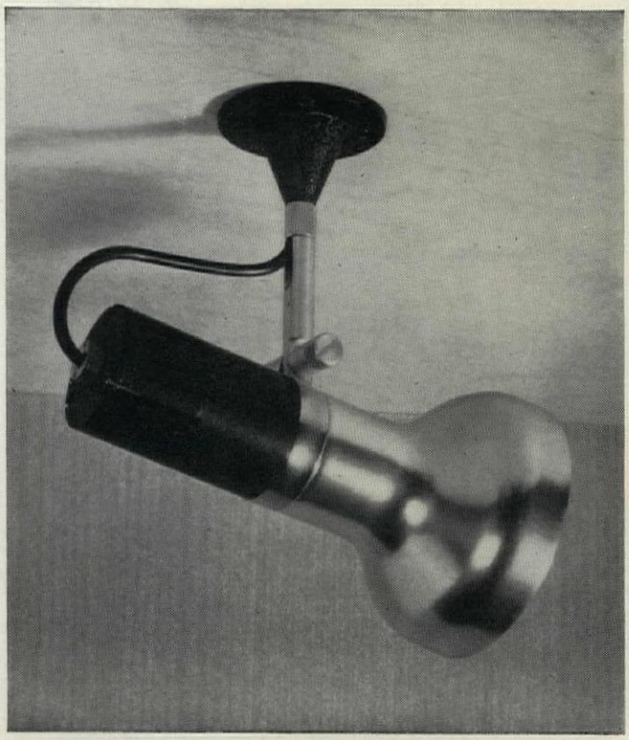
Arborite Limited, Bilton House, Uxbridge Road, London, W.5.

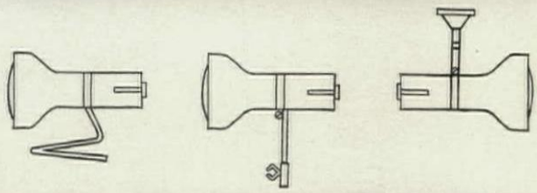
Arborite standard grade (1/16") is tested and approved by BSI to BS3794

DOMTAR COMPANY

MARLER HALEY mainstream

There are over 20 standard types of Mainstream light fittings. They are designed to accept both 100 and 150 watt internally silvered reflector bulbs and the 150 watt sealed beam bulbs. They are all available with the choice of wall and ceiling fixings, clamp fittings or free standing leg. Mainstream components are interchangeable, this allows the assembly of non-standard units. Our Design Department will be pleased to advise on the development of fittings made to individual requirements not covered by the standard range.





In addition to the Mainstream lighting range we produce two types of Low Voltage Spotlights with built-in transformers and several straightforward systems for re-arrangeable shop fitting and display. Please contact our Design Department for full details. ■ Marler Haley (Barnet) Limited Dept. 15, Queens Road, Wood Street, Barnet, Herts. BARnet 9611-2-3-4

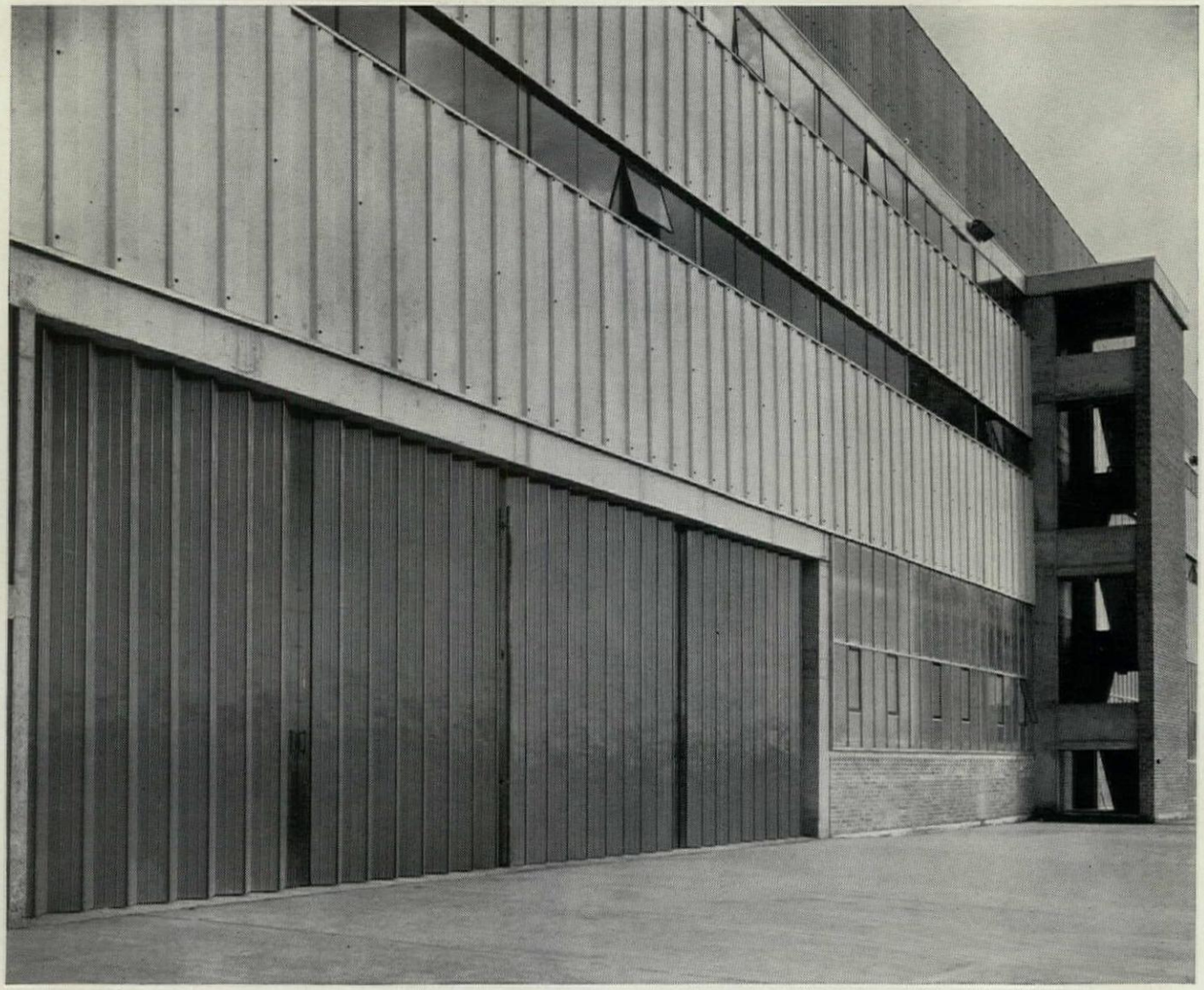
Marler Haley DISPLAY SYSTEMS

Our fortunate friend, and his father before him, have been specifying Stelrad steel radiators for the last 27 years. Of course, in 1936 Stelrads were the only steel radiators available. They are still the only ones if you want the best for your client. Just the right rad. for any situation, domestic, industrial or institutional can be found from Stelrad's enormous range. MEMO. Send for catalogue. Most of the innovations in central heating over the years have been pioneered by Steel Radiators Ltd. The latest are the revolutionary Stelostat, a thermostatic valve similar in size to an ordinary valve which controls the heat output from a radiator to achieve a pre-set room temperature. Easily specified for existing or new systems. The Stelostat effects considerable economies in fuel and soon recovers its modest cost. Then there's Stelerator a new circulating pump, completely silent, very economic to run (less current than a 25 watt lamp) with lavish use of stainless steel and careful choice of accompanying metals and alloys to eliminate corrosion. MEMO. Don't send! Just 'phone for the catalogue. SOUTHALL. 2603 STEEL RADIATORS LTD

Southall · Middlesex · Telephone: Southall 2603 · Works also at: Dalbeattie · Scotland · Telephone: Dalbeattie 491

Barbour Index No. 427

19 shutter doors



Architects: Messrs. Scott, Brownrigg & Turner
Builders: Messrs. Richard Costain Ltd.

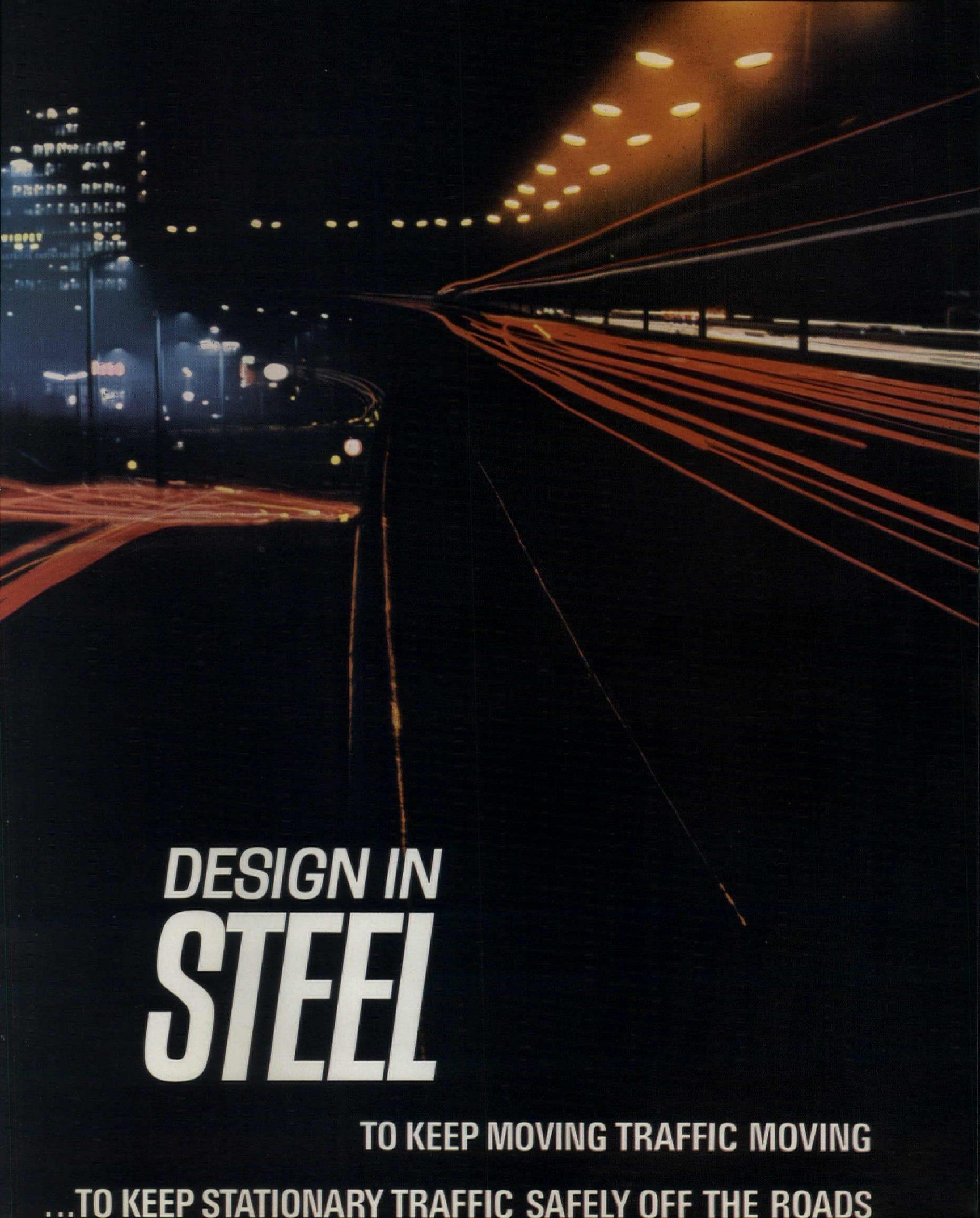
For Messrs. J. SAINSBURY LTD at their Distribution Depot Basingstoke, Hampshire.

Haskins manually operated Steel Shutter Doors were chosen for this important installation for their weatherproof and fire resisting qualities and reliability over years of heavy and continual usage.

Barbour Index File 303
Gorco Bureau File 23/4

Haskins

Sales enquiries: 159 St. John St., London EC1. Tel: CLErkenwell 2741
Factory: 'Kingsland', Reading Road, Basingstoke. Tel: 2641


DESIGN IN
STEEL
TO KEEP MOVING TRAFFIC MOVING
...TO KEEP STATIONARY TRAFFIC SAFELY OFF THE ROADS

STEEL SPEEDING TRAFFIC FLOW

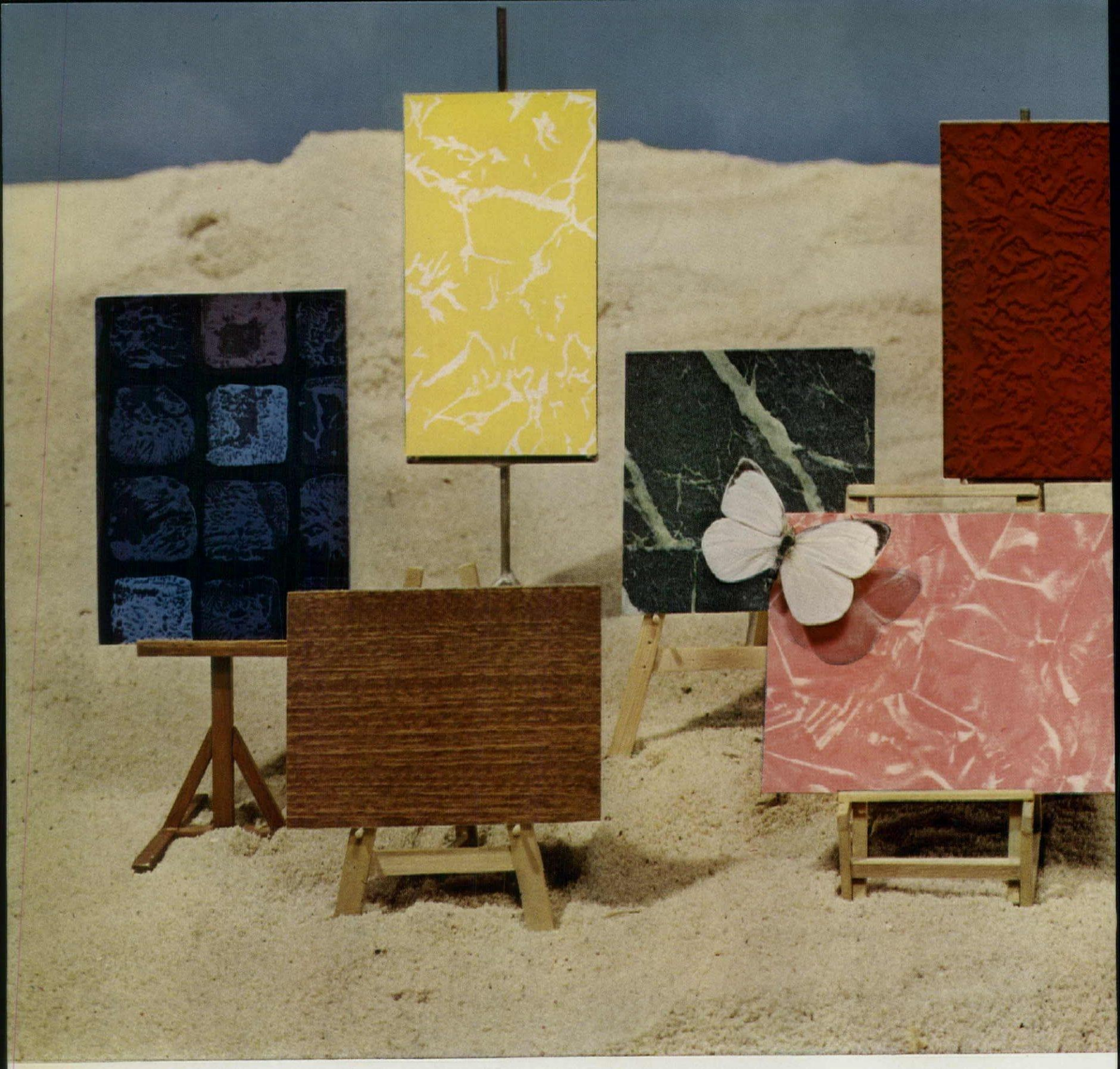
Steel—for the road ahead The speed of steel construction is just one of its vital contributions to Britain's expanding road programme. Rapid progress is essential if traffic flow is to be maintained satisfactorily in view of the fast-growing volume of traffic. Even now steel is showing how this can be done—with economy and efficiency—in swiftly-erected bridges, flyovers, elevated highways, off-street car parks, multi-level interchanges and other road structures. Advanced design in steel, new developments and new techniques in its use, are together providing efficient solutions to modern-day traffic problems that Britain's economic progress demands.

Steel elevated road Fylde Junction Higher Bridge at the 3-level Broughton M6—A6 traffic interchange. This attractively designed welded steel box girder viaduct, supported on steel piers, has a curved length of 1,300 ft. *The Structural Deck* (above) comprises a 14 ft. wide, 8 ft. deep, three-cell welded spine beam with 14 ft. long cantilevers on each side.

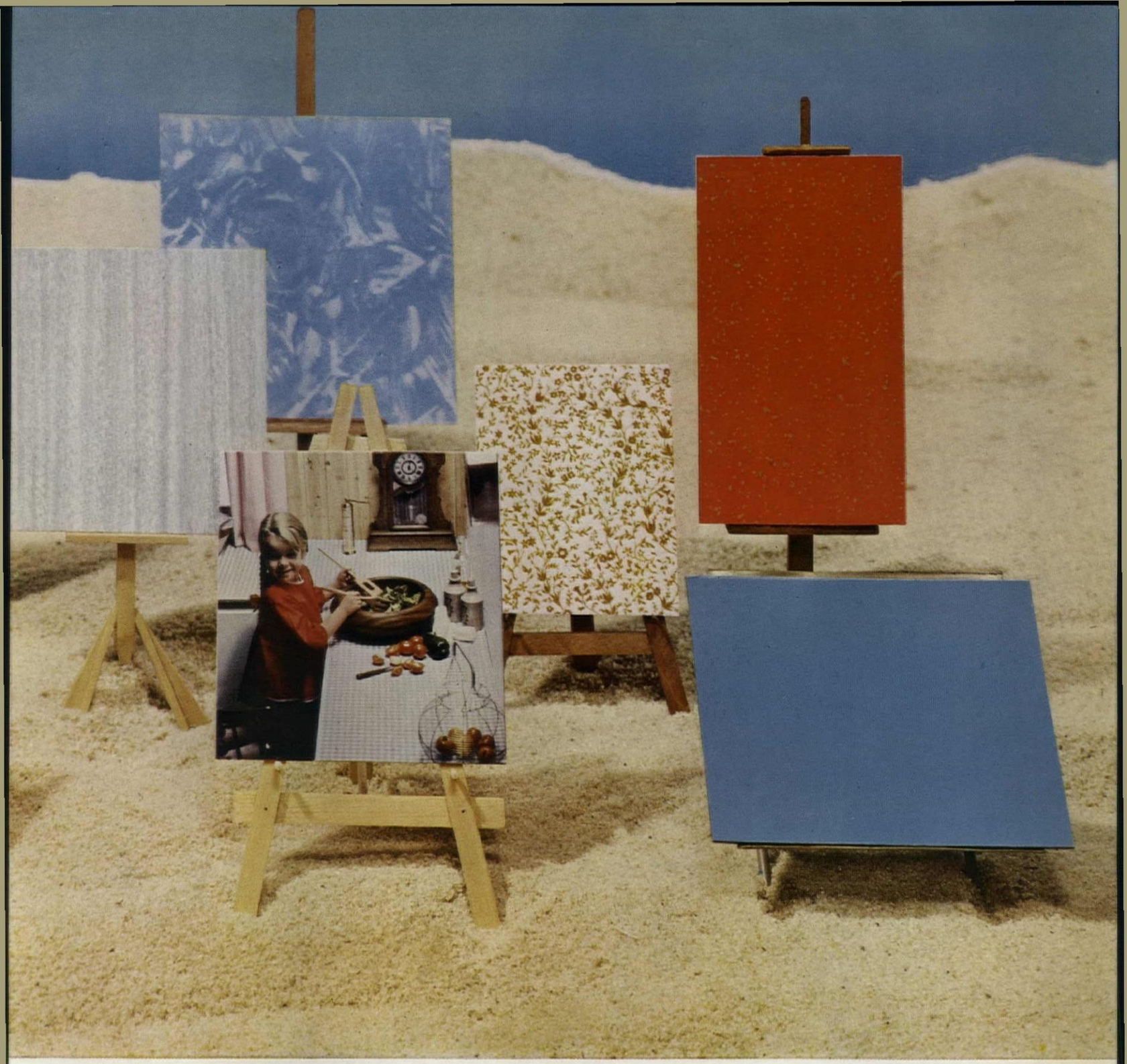
SOLVING THE PARKING PROBLEM

Quick solutions—in steel Many multi-storey steel car parks are easily dismantled and re-erected, and can thus meet temporary demands for central area parking on vacant sites during urban renewal schemes. 'Wheelright' 3-arch ramp-type car park, Birmingham, holds 400 cars on a site due for future redevelopment. This system is quick to erect and available in many forms.

Urgently needed: More off-street parking, to give the motorist a clear road ahead. Choose your car park in steel—for the simplest, *speediest* solution to your parking problem. Park *up*, with the help of steel and vehicle capacity of an existing car park or new site can be quickly multiplied as many times over as planning demands. Standard steel units keep down costs in all types of multi-storey parking systems and fire-encasement of steelwork is often unnecessary. Open-deck one-level, split-level or sloping-ramp 'drive-in' parks employ high-strength lightweight steel frameworks with the cost-saving advantages of fast, dry, all-weather construction.



Today's most exhilarating choice of colours and designs... and only WARERITE has them all!



Ask our technical representative to show you the Warerite pattern compendium

Only Warerite decorative laminates offer architects so many advantages. A wide range of exhilarating colours and designs *and* a planned variety of grades and thicknesses. Warerite has a tough super-hard melamine surface too, that will stand up to years of hard wear without losing its handsome finish. On any consideration ... aesthetic, functional or economic ... Warerite is the best surfacing material of its kind.

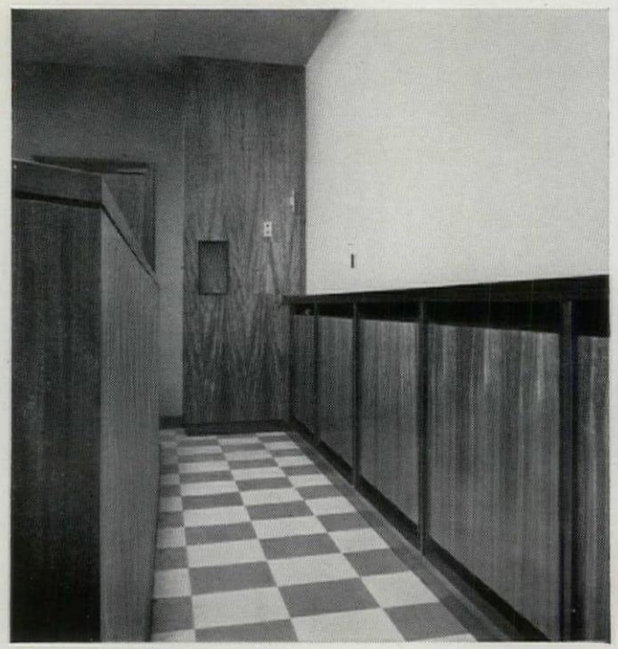
Write for technical data and colour brochure to the manufacturers: Bakelite Limited 12 18 Grosvenor Gardens London SW1 A Bakelite Xylonite Company

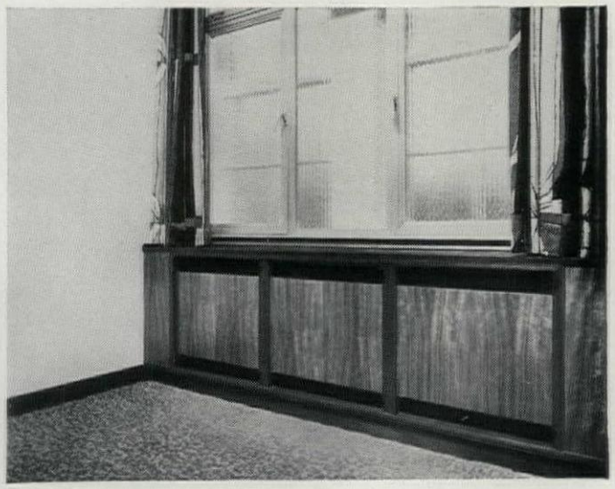
WARERITE

THE BEST OF THE DECORATIVE LAMINATES

W412

weyroc goes into the Bank





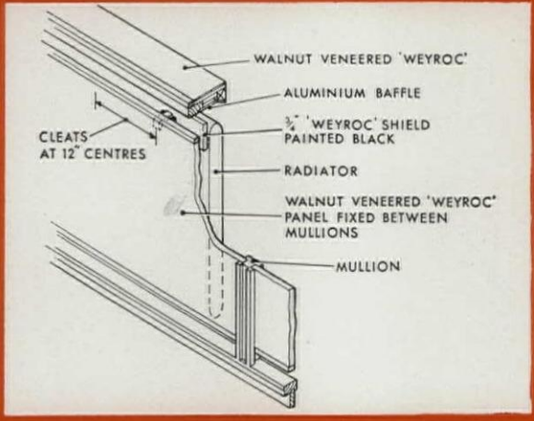
Weyroc, veneered with European Walnut, is used for radiator fascia panels at a bank in Staffordshire.

Weyroc baffle strips—set back at a depth of 1½" and painted black—conceal the top sections of the radiators.

The rigidity, stability and smooth, close-textured surface of Weyroc make it particularly suitable for high quality veneered panels.

Architects: Hollins, Jones, Oldacre & Partners, Newcastle, Staffs.

Contractor: Gaskell and Chambers, Birmingham.



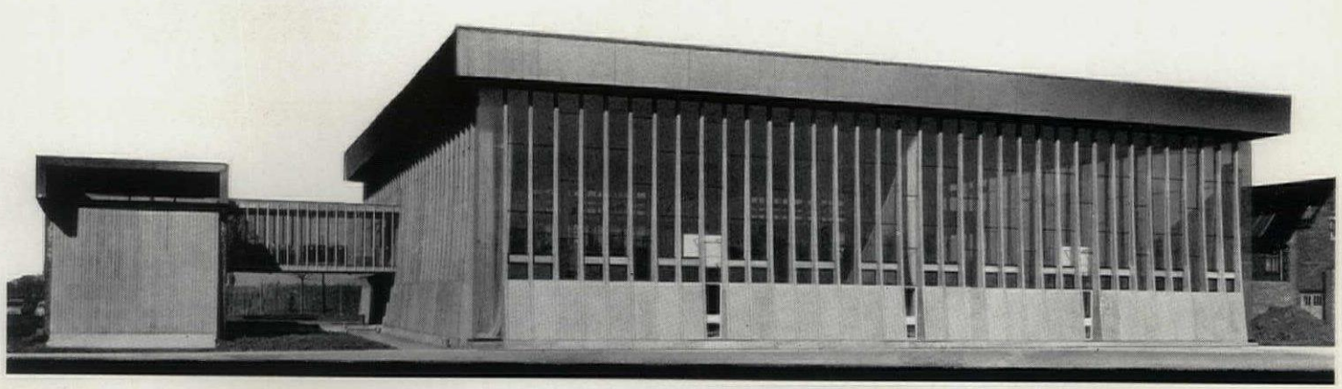
Veneered weyroc

A PRODUCT OF AIRSCREW-WEYROC LIMITED, WEYBRIDGE, SURREY. PHONE: WEYBRIDGE 45599
BARBOUR INDEX FILE No. 252

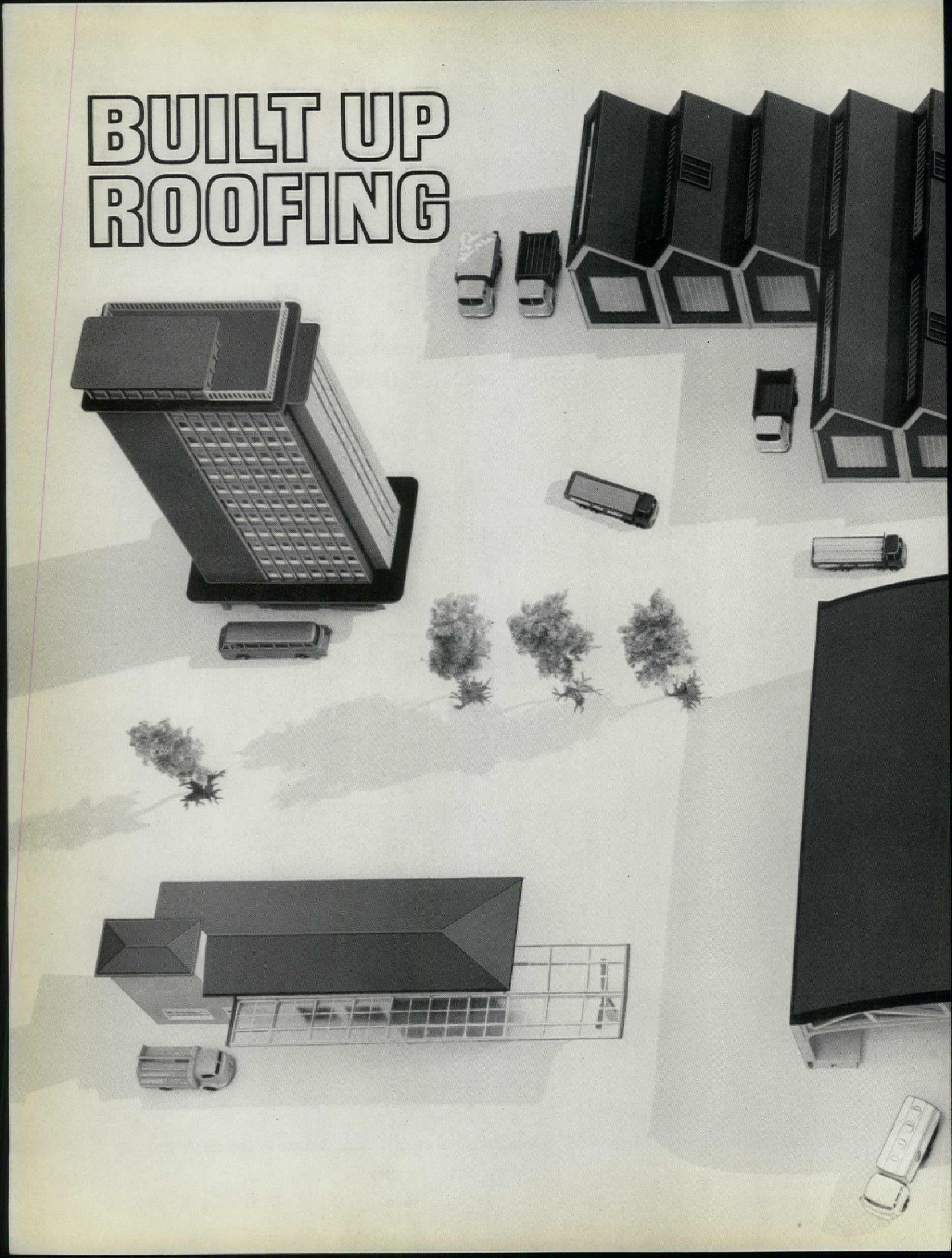
AP196

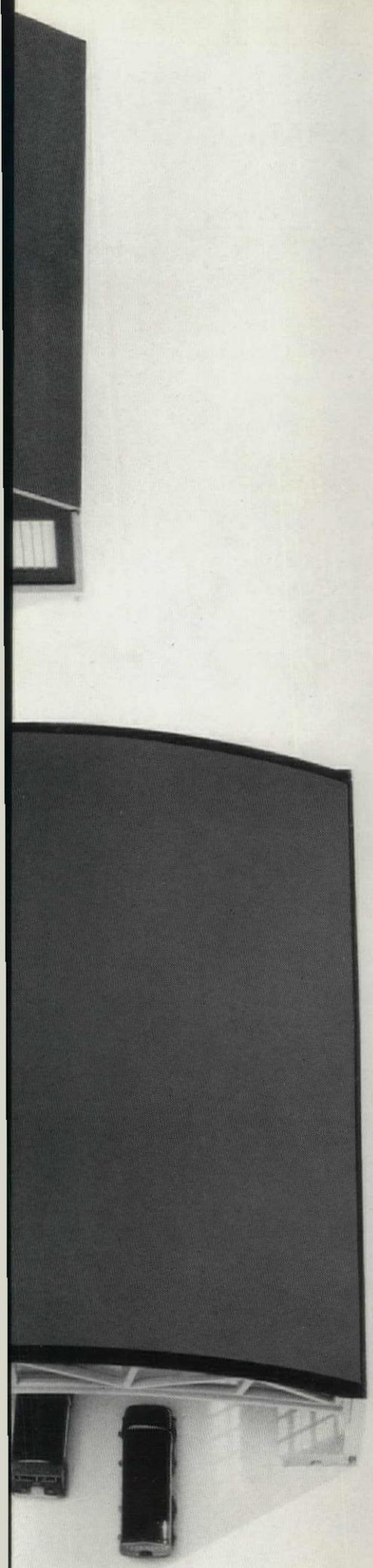
UNIVERSITY OF HULL SPORTS CENTRE

Featured on pages 30 to 34



BUILT UP ROOFING





SURVEY OF ROOF SUBSTRUCTURES

The selection of a weatherproofing specification by the designer must be made in relation to the type of substructure and its shape —flat, pitched or curved. Other factors which have considerable influence on the long term performance of the roof covering are thermal or moisture movement, deflection under load, and the cycles of moisture vapour migration.

TIMBER BOARDED SUBSTRUCTURES

The finished timber thickness must be adequate ($\frac{3}{4}$" T and G or 1" close butted) and properly supported for reliable fixing and performance to be achieved. Normal humidity within a heated building will diffuse into the roof substructure, and since the weatherproofing is impermeable, ventilation must be provided between the roof soffit and ceiling to prevent timber decay and dry rot. Timber, being combustible, requires a weatherproofing specification which complies with the Building Regulations or with the stipulated fire test designation.

PREFABRICATED SLABS AND PANELS

There are many varieties of materials in this group, which have different physical properties. One characteristic is common to all—the panels abut one another; consequently, they may be subject to differential deflection under load and lateral movement caused by thermal changes and moisture content. Movement arising from any of these causes sets up severe local stress in the weatherproofing. The designer should reduce the effects of such movement by reference to manufacturers' data and fixing instructions, and by appropriate specifications of roofing materials and techniques to prevent failure of the weatherproofing due to fractures.

IN-SITU CONCRETES AND SCREEDS

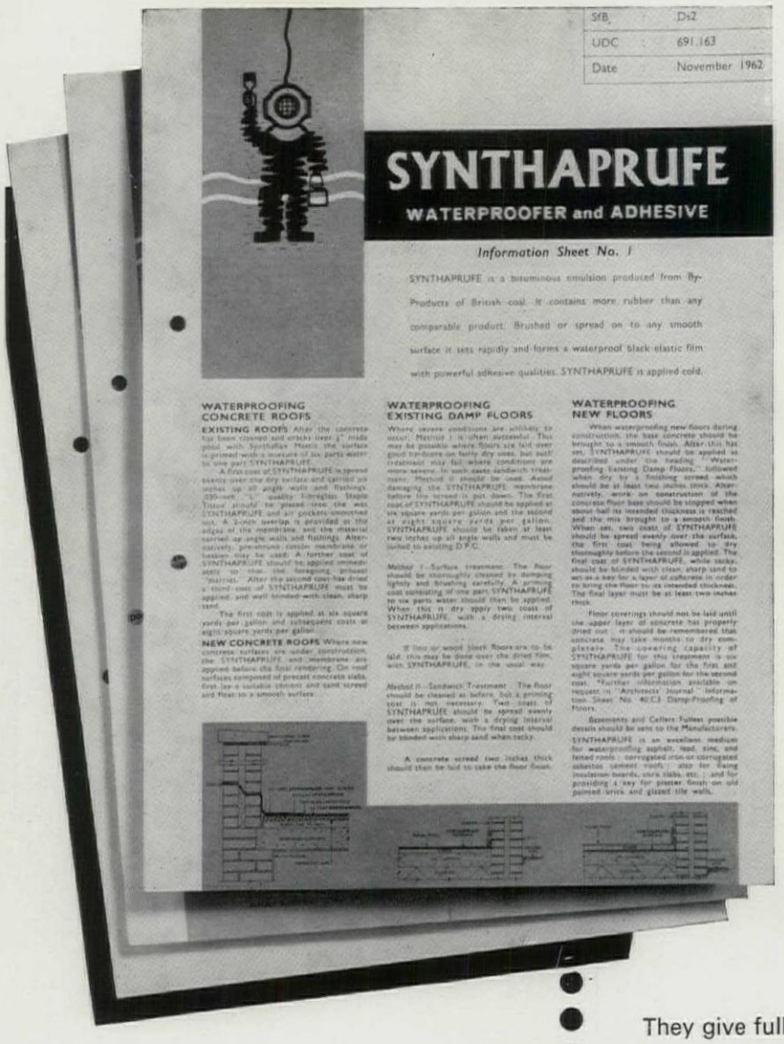
In-situ concretes with sand/cement or insulating screeds contain residual structural moisture in varying degrees; some lightweight screeds are very porous. Moreover, normal humidity within a heated building will diffuse into the roof deck. Solar heat vaporizes this moisture, and the consequent pressure weakens the bond between weatherproofing and substructure and a blister forms unless special techniques are used. Shrinkage hair cracks which may rupture the weatherproofing membrane present a further factor in this type of substructure. On large roof areas, thermal movement takes place according to the coefficient of expansion of the substructure material, and movement joints should be incorporated in the structure at points determined by the designer. These joints must be satisfactorily mastered on the roof.

As a result of an extended programme of research into the physical and chemical properties of roofing materials and their relationship with the substructure, Ruberoid can assist the designer in producing a more efficient, more economical roof. To quote but one example, the Rubervent system neutralizes the effects of minor movement and also of vapour pressure underneath the weatherproofing. Consultation at an early stage in the design will enable you to benefit from our research. The Ruberoid service is nationwide and readily available. The reference manual for your file is No. 1812—"Ruberoid Built-up Roofing"

RUBEROID

THE RUBEROID COMPANY LIMITED

WF COMMONWEALTH HOUSE · 1 NEW OXFORD STREET · LONDON WC1 · HOLBORN 9501



These information sheets on waterproofing are invaluable to every architect...

They give full technical information on the uses and application of SYNTHAPRUFE waterproofer, the bituminous emulsion widely specified by leading architects for major building projects everywhere. SYNTHAPRUFE contains more rubber than any comparable product, and forms a completely damp-proof film with powerful adhesion and exceptional flexibility. If these information sheets are not already on your files — or if you would like further copies – complete and post the coupon below.

Synthaprufe Information Sheet No. 1 gives general instructions on treatments for roofs, floors, walls, columns and beams, backing to masonry and facing brickwork, etc.

Synthaprufe Information Sheet No. 2 deals exclusively with FLOORS both new and existing, including sections on underfloor heating, laying floor coverings, and moisture testing.

Synthaprufe Information Sheet No. 3 is concerned with ROOFS of all kinds, including treatment of gulleys and water outlets, and is fully illustrated with isometric diagrams.

To **COAL PRODUCTS,** Powell Duffryn House, Docks, Cardiff. *Please send Information Sheets Nos. 1, 2 & 3.*

NAME.....

BUSINESS ADDRESS.....

.....

..... AR4

CPS.15

COAL PRODUCTS • A DIVISION OF THE NATIONAL COAL BOARD

swedish lighting

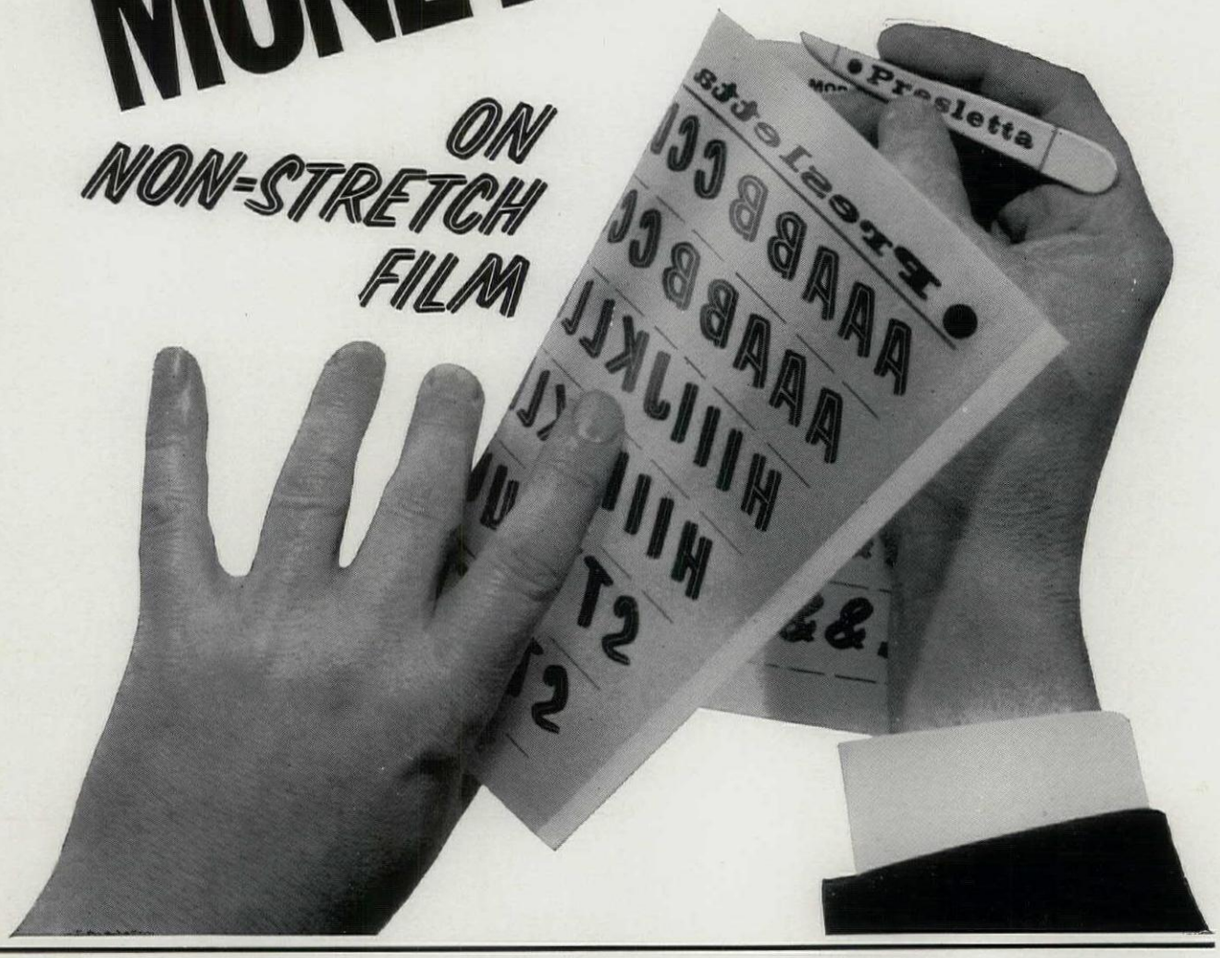
A 267777 Outdoor wall lamp with finish of blackish-green and inverted clear glass shade with air bubbles. 100% waterproof, with galvanised iron bracket, and with cable totally enclosed in metal tubing. Dimensions 40 x 27 cm (16″ x 10½″). 100W maximum.

cebe

Sole UK Concessionaires M J GLOVER & Co (London) Ltd 8 Evelyn Grove London W5 Telephone ACOrn 2176

ASK FOR NEW •Presletta THE SLICK QUICK MONEY-SAVER

ON NON-STRETCH FILM



New Presletta dri-transfer lettering is produced on exclusive non-stretch film, so there's never any possibility of distorted or broken letters.
Presletta comes in smaller, handier sheets, easier to use, easier to store when not in use. Choice of typefaces including many fashionable 'continentals' is excellent, and every letter is an **exact** type point size. Then there are sheets of extra vowels and numerals, and a wealth of conventional signs and symbols. New Presletta gives the professional look to all display work, even when it is done by juniors. Ask for Presletta next time—it's the slick quick time-and-money saver you should be using.

Manufactured by PRESLETTA LTD., 77 PORTLAND ST. SOUTHPORT, Lancs.

Please send a sample of Presletta and fully descriptive leaflet.

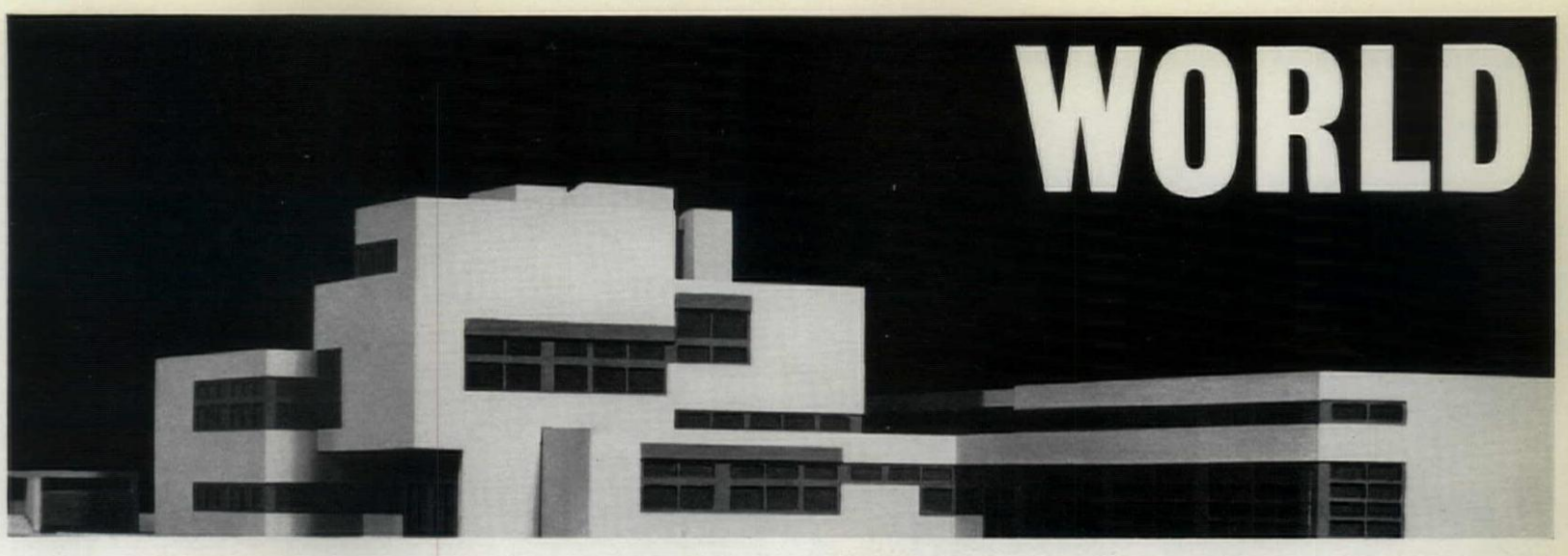
Name _____

Address _____

_____

Stationer _____

AR5



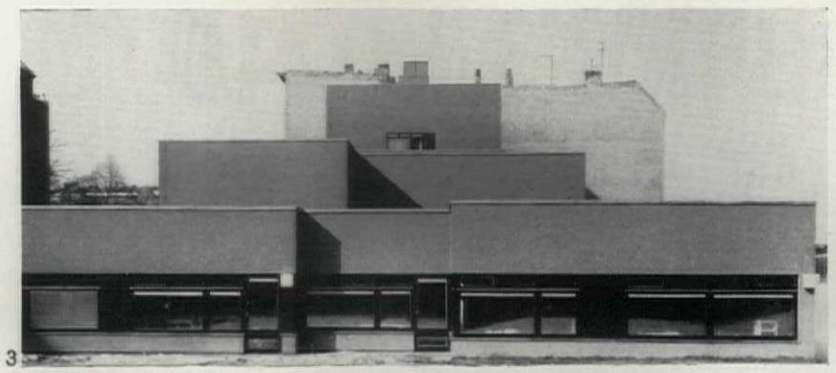
1

BERLIN: FROM THE TWENTIES

Apart from the occasional *Philharmonie* or Eiermann church, post-war Berlin architecture has conformed to the West German norm of efficiency. However, in the last two or three years, specifically since the appointment in 1960 of Professor Werner Düttmann as city architect, there has been an upsurge of activity amongst the younger architects, who are drawing directly on the vocabulary of the 'twenties to produce crisp, elegant architecture in small buildings (not the 'great' architecture usually inspired by the masters). The youth centre at Borsigwalde, 1, by Jan and Rolf Rave is a good example, clad in red brick with dark blue window frames. The common room block is pivoted round a central staircase which decreases in size at each landing. A similar control by modular window detailing of otherwise irregular forms is shown in buildings by Müller and Heinrichs, such as the Protestant parish and youth centre at Berlin-Wedding, 2, stepped up to clasp an adjoining five-storey tenement, and stepped down again to the kindergarten, 3. Works by the same architects include the youth hostel in the Tiergarten, seen in 4 with Fahrenkamp's famous Shell Haus in the background, and the Protestant hall of residence at the Free University, 5, in which yellow bricks and brown-painted woodwork are combined with a spreading pavilion layout. The stepped link between two residential blocks, 6, shows the growing care for spaces between buildings.

One of the most attractive of these schemes for young people is the student village of the Free University at Berlin-Zehlendorf, 7. The buildings are arranged informally, 8, with good attention to townscape, around a central group of common rooms (see plan, 9). The architects, Fehling, Gogel and Pfankuch, have also designed an extraordinary group of Expressionist church buildings, 10: the Roman Catholic church of St. Norbert and the Protestant Paul-Gerhardt-Kirche with its community building, 11, forming a precinct with the eighteenth century parish church of Old Schoeneberg. The roughcast interior of the Paul-Gerhardt-Kirche, 12 and 13, is

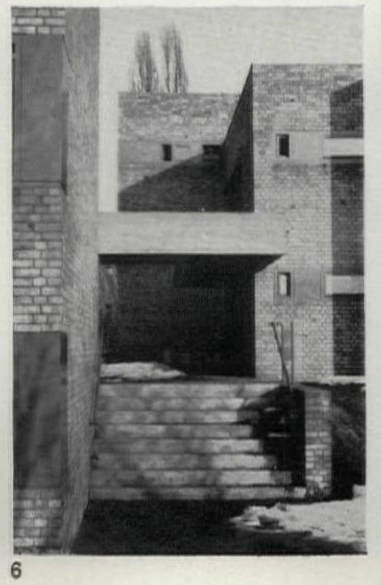
2



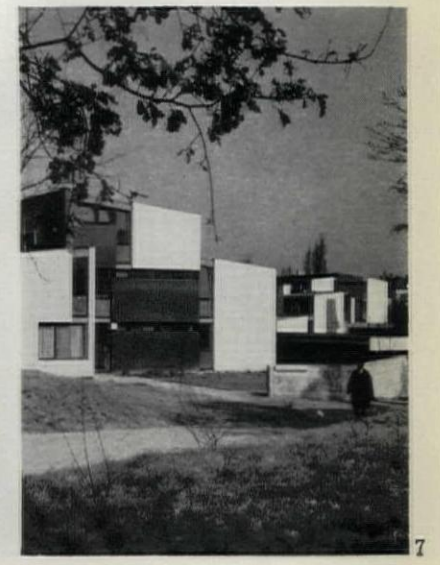
3

5

4



6

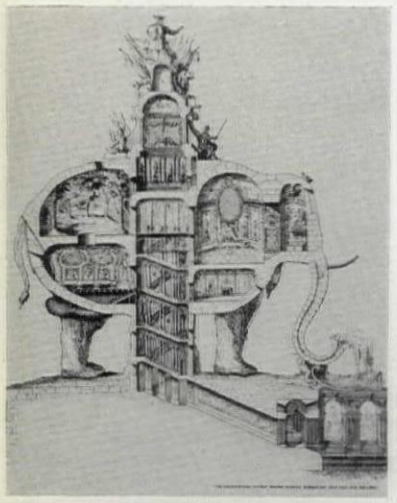


7

1

acknowledgments

WORLD, pages 1–4: 1, Uwe Rau; 2, Erich T. Middendorf; 3, 5, 20, 21, Wolf Lücking; 4, Borutta; 7, Fritz Eschen; 8, Siegfried Maruhn; 11–13, Kessler; 16, 19, *Die Bauverwaltung;* 22–26, Maurice Jay; 27, Israel Govt. Press Office; 28, 29, *The Japan Architect;* 30, *Architectural Forum.* VIEWS AND REVIEWS, pages 5–7: 7, Zoological Society of London. FRONTISPIECE, page 8: Penelope Reed. ELEPHANT AND RHINOCEROS HOUSE, ZOOLOGICAL GARDENS, LONDON, pages 13–20: 1–4, 7, 10–13, Galwey Arphot; 5, 6, 8, 9, Henk Snoek. LANDSCAPE IN DISTRESS, pages 21–29: 14, Toomey Arphot. SPORTS BUILDINGS FOR THE UNIVERSITY OF HULL, pages 30–34: Sam Lambert. GEORGE HADFIELD, pages 35–36: 1, 3, Library of Congress; 2, Abbie Rowe, National Park Service, US Dept. of Interior. INTERIOR DESIGN, pages 37–39: 1, 2, 4, Galwey Arphot; 3, 5, 6, Colin Westwood. NORWICH: RING AND LOOP, pages 40–47: 1, 15, Sam Lambert; 2, Aerofilms and Aero Pictorial; 7, 8, 13, 14, 17–19, Browne Arphot. NEWSPAPER OFFICES, PRINTING HOUSE SQUARE, LONDON, pages 48–54: Galwey Arphot. GALLERY, pages 55–58: The Amazing Continuity, 1–4, British Museum; 5, Rossi, Arts Council; 7, Brompton Studio, Kasmin Ltd.; 8, Eric Pollitzer; 9, Rudolph A. Bender. Nail Ceiling, 1, 3, J. S. Markiewicz; 2, John's Studio. OFFICES AND CLUB, AHMEDABAD, INDIA, pages 59–60: Charles Correa. MISCELLANY, pages 63–68: The Barbarians Nearer Home, Ivy de Wolfe. Do-it-yourself Playground, Nicholas Harper. THE INDUSTRY, pages 74–76: 2, 3, Dennis Hooker; 5, John Tarlton. STOP PRESS, pages 77–78: 3–5, 7–10, Nairn Arphot.



This month's cover *to accompany the Casson and Conder elephant house at the London Zoo (pages 13–20 of this issue) shows a building that, rather than being merely designed for elephants, is designed in the form of an elephant. It is taken from one of the plates in a very rare French volume of engravings (by courtesy of the Bibliothèque Nationale, Paris) by Charles Francois Ribart, entitled* Architecture Singulière *and published in 1758. The title of this and one other plate (showing the elevation instead of the section of the elephant edifice) is 'L'Elephant Triomphal: Grand Kiosque à la Gloire du Roi.'*

THE ARCHITECTURAL REVIEW

9-13 QUEEN ANNE'S GATE, WESTMINSTER, SW1 WHITEHALL 0611 FIVE SHILLINGS

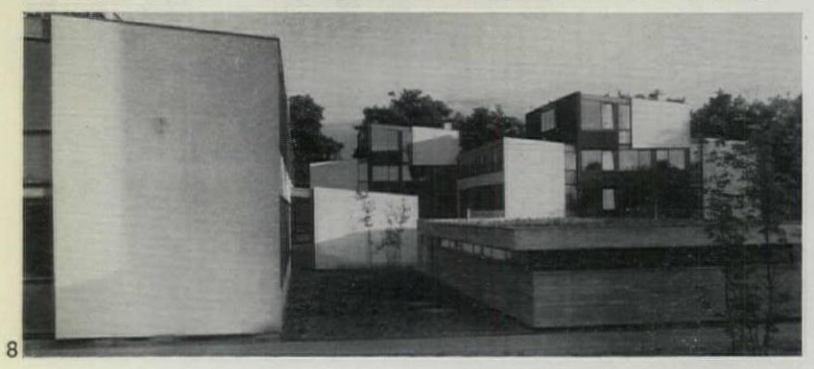
VOLUME 138 NUMBER 821

JULY 1965

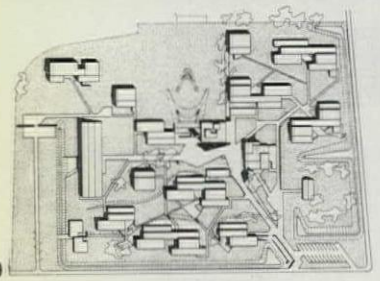
SUBSCRIPTION RATE:— *The annual post free subscription rate, payable in advance, is £3 3s. 0d. sterling, in USA and Canada $10.50, in Italy Lira 6940, elsewhere abroad £3 10s. 0d. Italian subscription agents; Librerie Salto, via V. di Modrone 18, Milano; Librerie Dedalo, Via Barberini 75-77, Roma. An index is issued half-yearly and is published as a supplement to the REVIEW. Subscribers may have their copies bound in half-yearly volumes at the price of £1 10s. 0d. Postage 2s. 9d. extra on the completed volume.*

CONTENTS

BERLIN: YOUNG ARCHITECTS



8



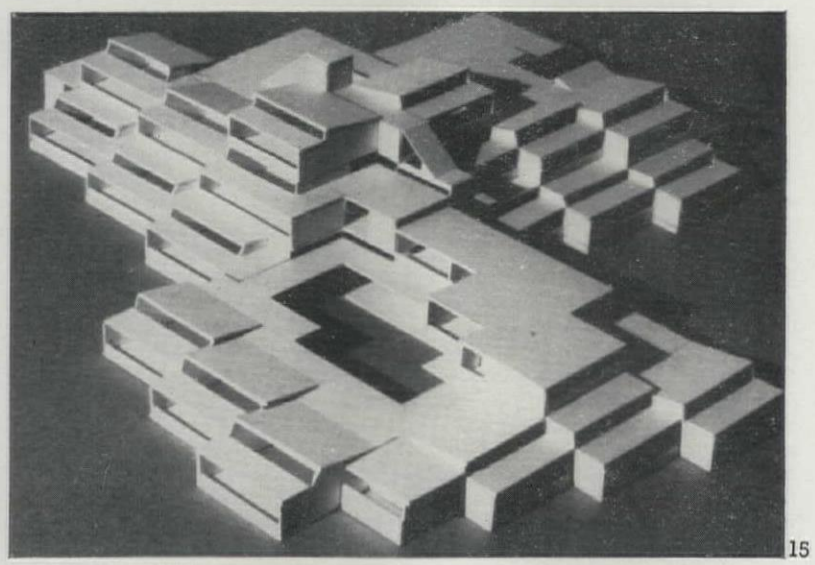
9

well planned for the liturgy.

In one respect grandeur is still aimed at, in the creation of successors to the heroic *siedlungen* of Taut and Gropius. It seems hard at first sight of the model, 14, to believe that the 1,400-dwelling Märkisches Viertel housing scheme is by the same Müller and Heinrichs who specialize in intimate hostels. At least one can hope for greater attention to matters of townscape than before (Georg Heinrichs worked in England on Gatwick airport); on a small scale, the primary school project by G. and M. Hänska for Gropius's vast Buckow-Rudow estates, 15, shows a new understanding of the individual.

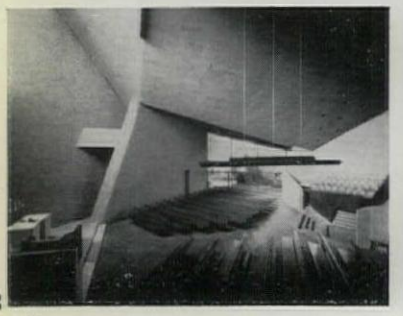
10

14



15

11

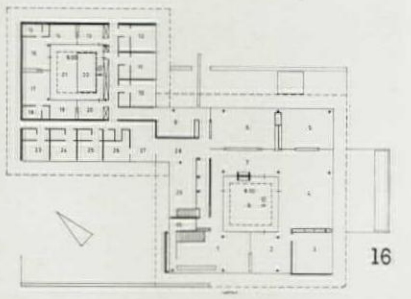


12

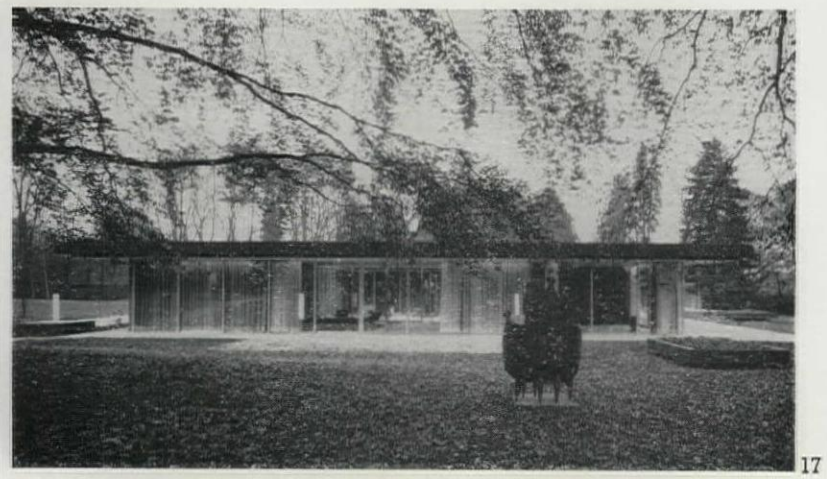
13

BONN'S NO. 10

The final crushing comment on the Macmillan regime's acres of neo-Georgian in Downing Street comes, as might be expected, from Bonn, where the official residence of the Federal Chancellor was recently completed. Designed by Sep Ruf, Eiermann's colleague on the 1958 Brussels pavilion, this calm Miesian pavilion, 17, has two courtyards, 16, one for receptions surrounded by free spaces with movable partitions, the other private with small living and bed rooms looking



16

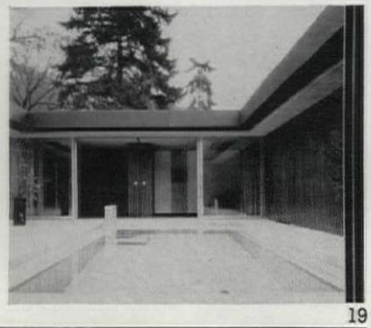


17

ERHARD HAUS

18

into it. 18 shows the view from the main reception area towards the court, with its open fireplace, and the dining area on the right. 19 shows the private court and the swimming pool (without, alas, the *Bundeskanzler* himself in it). Although Erhard says the house shows his own philosophy, 'observe moderation,' its real virtue is that it is equally adaptable for anyone else's personal touch—something which is rarely remembered in the design of official residences.

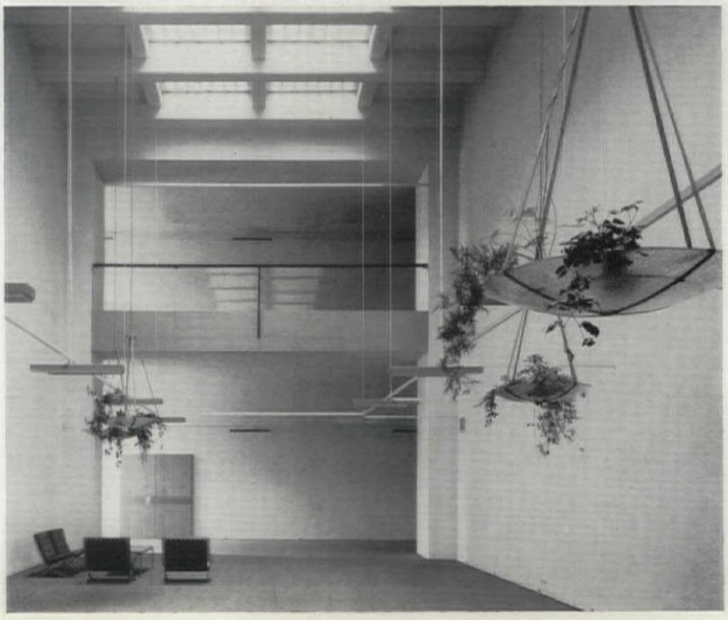


19

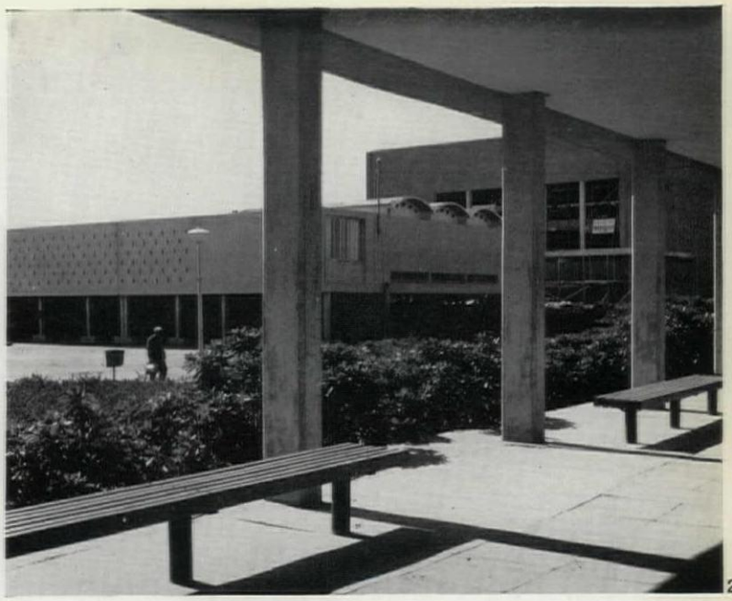
NO GOTHIC EXTRAS

20

The recent visit of the Bundestag to West Berlin coincided with the re-opening of the rebuilt part of the Reichstag building, burnt 32 years ago. It is an ice-cool design by Prof. Paul Baumgarten. No idea of Gothic extensions here. The classical exterior, mildly Baroque, now has broad spaces within of a smoothly machined perfection, of which the entrance hall, 20, and upper floor corridor, 21, are typical, Barcelona chairs, hanging plants and all. The southern wing is now complete. One must hope for a more inspiring expression of the new German democracy in the assembly hall, which is now under construction.



21



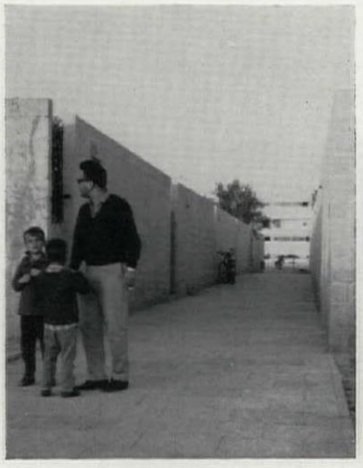
22

NEGEV NEW TOWNS

The other democracy born directly out of Hitler's aftermath, the state of Israel, has made outstanding progress in the cultivation of the deserts of the Negev, but until recently the architectural results in the new townships were dismal—windswept garden city layouts, perhaps consciously in reaction to the ghetto, standardized by bureaucrats from the Ministry of Housing and Labour. The latest immigrants, however, uprooted mainly from North Africa, positively demand high density housing, in order to weld them together as a community and avoid a feeling of isolation in the desert. In the newest part of Beersheba, the centre of the Negev, pedestrians are segregated from traffic, in cloisters shaded from the sun in the shopping centre, 22, and in alleys giving access to patio houses, 23. The quality of the flats, 24, has greatly improved, with the adoption of a straightforward idiom of rough concrete, and in addition some attention is being paid to landscape.

The most interesting new town in progress is Arad, 2,000 ft. above sea level (and 3,000 ft. above the nearby Dead Sea). The architects for the basic plan and some of the housing are an Anglo-Hungarian partnership, David Best and Adam Eyal. The low rise, high density housing (36 families to the acre, but most families have 3-5 children) is given its distinctive character, 25, by the inclusion in each

23



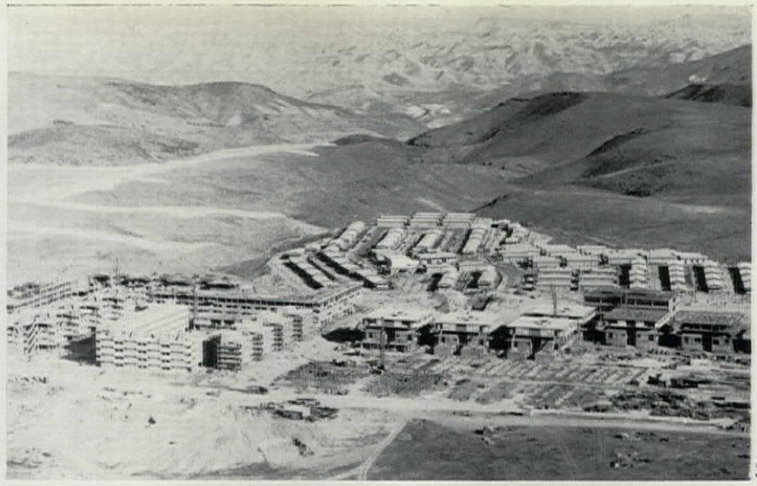
24

25

ISRAEL: ARAD NEW TOWN

dwelling of a large enclosed balcony which can be used as an outdoor living room. Although the climate is good (Arad is to be a health resort as well as an industrial town), there is an extremely high degree of radiation in midsummer, and the neighbourhood units are therefore planned so that it is possible to walk from end to end under cover, 26. Flats are being built around central courtyards to shut out the terrifying view of the arid region surrounding the town, 27. Outside the central area, plots are being set aside for private house-building, but it seems possible that in these circumstances the flats may be more popular.

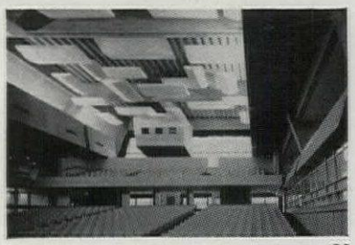
26



27

CHIBA SHRINE

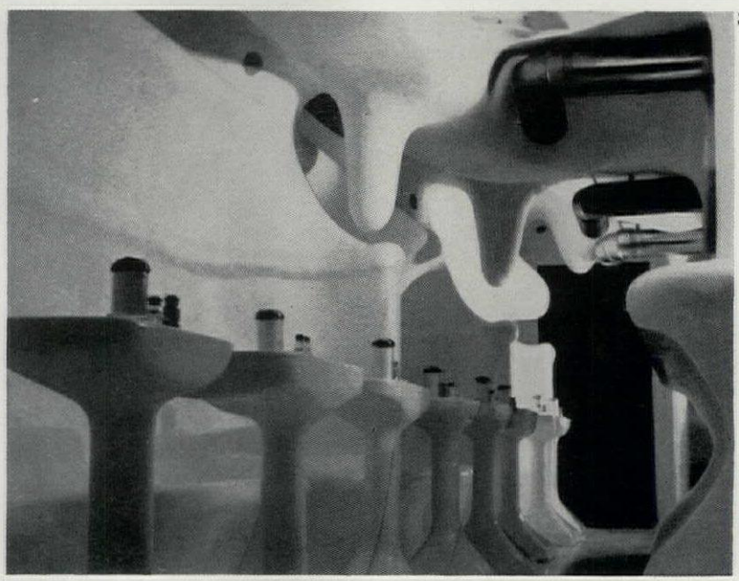
Latest of the evocative shapes of the new monumentality to come from Japan is the Chiba University Memorial Auditorium, 28, designed by Fumihiko Maki, the young urban designer at present at Harvard. It effectively combines sloping walls in concrete and copper, reminiscent of Kikutake's building at Izumo shrine, with a battery of lift and stair towers rising vertically. The idea of a shrine was foremost in Maki's mind, because the site is a clearing amid a grove of trees on a hill overlooking Chiba City. The concrete finishes are superb. Because of the quietness of the site, an unusually close link was possible between auditorium and exterior. The interior itself, 29, with its restless suspended baffles and light fittings, fails to maintain the dignity of the exterior.



29

SEXPOT

The new *Architectural Forum* (to which, welcome) achieved new heights in architectural hilarity in its five-page account of Le Drug, a drugstore-boutique- restaurant-gallery-discothèque in Montreal by Francois Dallegret, whose car designs were shown in *Forum* last year. In the restaurant, 30, fantastic Freudian exercises are combined with exposed roof ducts. In odd Franglais commentary, Dallegret says: 'is difficult for the public to knocke their head (mine safety helmets in plastic to protect are coming)'. His account partly clarifies this 'sexy labyrinth igloo mold on channel and metallic lath structure with cement paint white.'



30

28

VIEWS AND REVIEWS

marginalia

NATIONAL THEATRE: PRELIMINARY DESIGNS

Illustrated herewith is Mr. Denys Lasdun's model showing his preliminary designs for the National Theatre and Opera House on the South Bank of the Thames, which has been approved by the responsible board. Mr. Lasdun has shown great skill in unifying the various accommodation required into one design, and has thereby overcome the problem of how to fit two large buildings into a relatively narrow site without letting them appear uncomfortably squeezed together. His use of a stratification of terraces also succeeds, more than could possibly have been expected, in making the unfortunate Shell tower seem to belong to the site and giving it a geometrical relationship with the river-front development.

Shell have contributed to this result by agreeing to forgo the open space between their tower and the river which the LCC planners had promised them. Instead there is a valley between the theatre (alongside County Hall) and the opera house (alongside Hungerford Bridge), which is occupied by lower terraces available to the public as a promenade and as the scene of performances, pageants and the like—an imaginative way of merging the groundspace into the life of London. Performances can be viewed from the upper levels and even, on occasion, from the still higher level of the receding terraces which are in fact outdoor extensions of the opera house and theatre foyers.

This series of terraces is punctuated by the flytowers of the opera house and theatre, and that of the smaller (proscenium) theatre which is partly detached from the main building containing the larger open-stage theatre. The two theatres will seat 700 and 1,100; the opera house 1,650. The latter has its backstage structures placed so as to insulate the auditorium from train noises on Hungerford Bridge. All three auditoria are approached from the same low-level setting-down lane, 400 ft. long; this is reached from the corner of Chicheley Street, from which there is also access to a three-level underground garage holding 500 cars. From the setting-down lane escalators lead to the foyers.

Mr. Lasdun's designs promise a distinguished group of buildings. They will cost £9½ m. plus £4 m. for site works and car parks. The Government and Greater London Council have still to provide the funds. Work could begin in 1967 and finish in 1973.

A LA MODE

Students' projects that experiment with the unorthodox are often worth attention, even though their economic and technical implications may not have been fully worked out, because of the challenge they present to accepted ideas. Some years back the AR illustrated a highly original design by an Australian student, Jason Pickford (see 'Beyond Brutalism,' AR, February, 1961), which aroused some interest. Herewith is a recent design by a student at Bradford College of Art, exemplifying a style that has become evident in a number of student designs in the last few years and that can be labelled the intestine style or—more unkindly—*Tripes à la Mode*. It is by Mr. R. G. Dickinson, of Bingley, Yorks, and is a design for a museum of modern art in a provincial city, a subject set in the course of studies for the RIBA Final.

Mr. Dickinson says that he was concerned 'with the relationship of conventional buildings, with their rectangular plan-section design, with the human form' which 'exists unharmoniously with the straight line.' The method of construction is the spray concrete method producing a thin shell. Heating and ventilating services are housed in the spaces that occur at the junctions of the circular shapes.

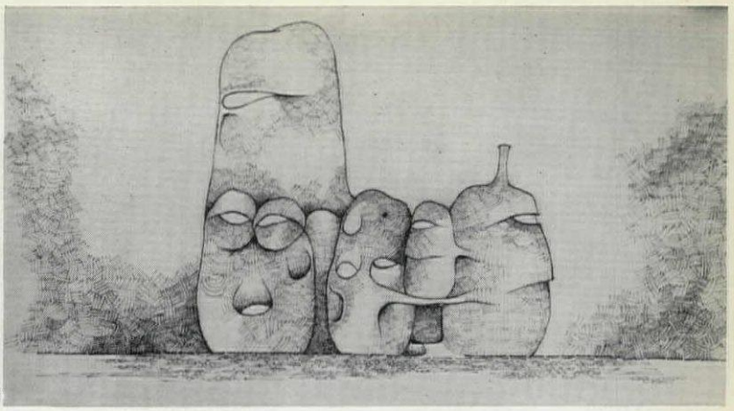
PICCADILLY: NEXT STAGE

The traditional way of enjoying and admiring the life around Piccadilly Circus—from the top of a bus—will no longer be possible if the plan for reconstructing the Circus, announced in May by the Minister of Housing and Local Government, is carried out. But there will be compensations. One is that life in the Circus will not be made entirely subservient to motor traffic, and pedestrians perhaps driven underground, which is what was feared when Sir William (now Lord) Holford's 'piazza' plan was turned down for not allowing enough road-space for traffic growth. The other compensation is that at last some action is to be taken about the Circus—after the succession of reports and inquiries since the notorious Cotton scheme for the Monico site roused public interest (and alarm) about its future as long ago as 1959.

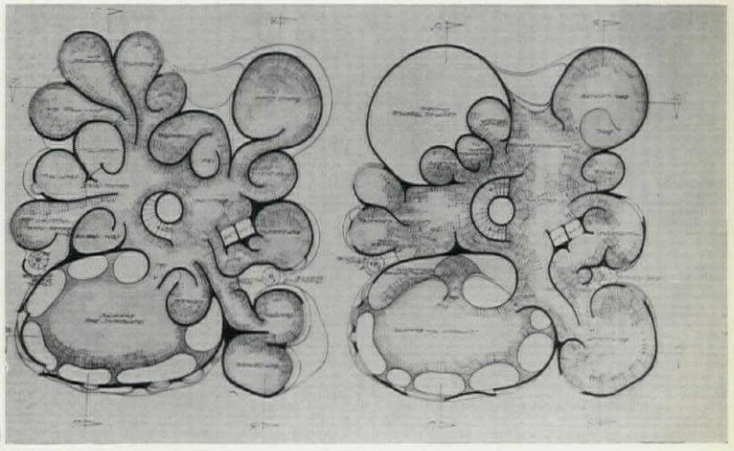
The new plan has been agreed by the Government, and by the Greater London Council and the Westminster City Council, as a basis for an actual design which has yet to be made. This will be commissioned forthwith (architects not yet appointed) and put in hand, it is hoped, in a year's time. The plan is embodied in the report of the working party set up by the Minister after the rejection of the Holford plan in 1963. The report endorses the feasibility of a two-level circulation system, with motor-traffic below and pedestrians above, and the design for the new Circus will be on this basis.

Such a system—already developed or developing in other parts of London—can only work efficiently on a fairly large scale, so it is encouraging that, at the same time as the Piccadilly Circus working party produced its report, the Crown Estate Commissioners published their ideas for the future of Regent Street, which include a similar two-level traffic system. Their project, however, is in an earlier stage. They have not yet made a technical study of its feasibility, and even if this study is favourable it will be many years before rebuilding along Regent Street takes place, and therefore before it and Piccadilly Circus can operate as a continuous two-level system.

The Commissioners have stated that the design of the new buildings will be left to each developer when the time for rebuilding comes, subject to some overall control. Unless the control is very strict and takes the form of a positive architectural framework for the whole street, the present unity of the street will be lost, the pedestrian decks will not be integrated into the design of the buildings and

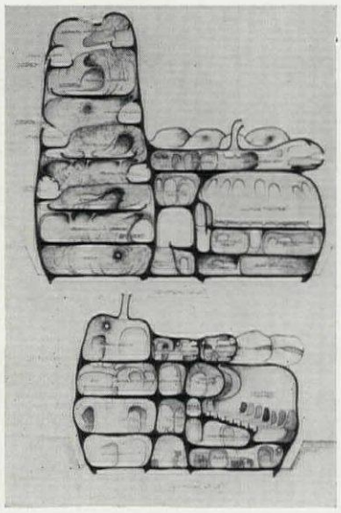


2



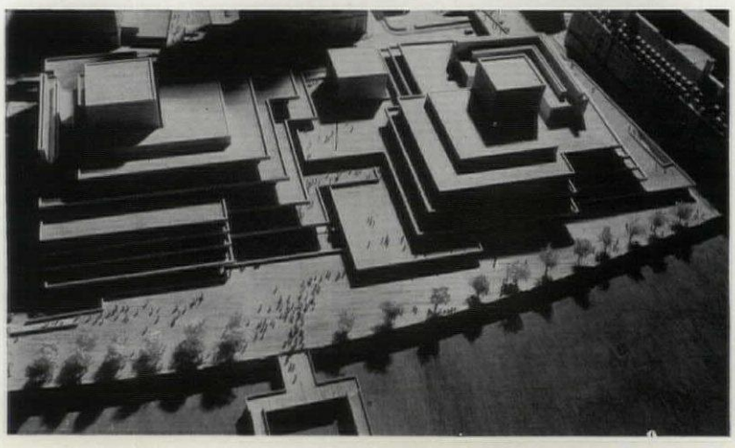
3

R. G. Dickinson's design for a museum of modern art: 2, elevation; 3, first and second floor plans; 4, sections. See 'A la Mode.'



4

1, looking down on the model of Denys Lasdun's design for the National Theatre (on the right, against County Hall) and Opera House (left). The Thames is in the foreground. See first note on this page.



architectural standards are unlikely to be kept up.

Besides Regent Street, there are other parts of London that ought to be woven into the system proposed for Piccadilly Circus—Covent Garden, for example, now very much in the melting-pot; and in order that the picture can be looked at as a whole, Sir Leslie Martin's report on the Whitehall-Parliament Square area, now with the Minister of Public Building and Works, ought to be made public as soon as possible. The traffic problems of Piccadilly Circus, in fact, are inseparable from those of London as a whole. There does not yet exist a road and traffic plan for central London, and the somewhat nebulous project for an urban motorway surrounding the central area only raises more questions about the ultimate growth of traffic inside it and the means that may have to be taken to re-route and control it.

NEW GLASGOW SOCIETY

'In our time a great city is being rebuilt. The success of this vast enterprise will depend upon the energies and aspiration of all its citizens.' Here is the challenge, the promise and the watchword of the New Glasgow Society which held its inaugural meeting in April.

The origins of the Society are threefold. They lie in the 1964 conference of the RIBA, held in Glasgow, when Lord Esher, summing up the delegates' admiration and astonishment at the wealth and quality of the city's Victorian inheritance, proclaimed Glasgow as 'the most complete and remarkable of all our Victorian cities.' There was, too, the suggestion that an offshoot of the Victorian Society should be formed at the same time, as some people were becoming increasingly alarmed at changes within the city. So a Victorian Group was formed and had its first airing when a Walk was announced for a Sunday afternoon in September and four hundred and fifty citizens gathered for it in the St. Vincent Street Church of Alexander ('Greek') Thomson.

Rather than be stuck with a title which had already aroused some adverse comments about sentimental preservationists, and to be able to present itself as positive and forward-looking, the Victorian Group became the New Glasgow Society under the chairmanship of Professor Frank Fielden of the School of Architecture, University of Strathclyde. In a few months it has become known much farther afield than Glasgow. Its impact through the columns of the powerful *Glasgow Herald* and its own bulletin on issues like the Park Church have made the Society a household name throughout the Glasgow conurbation. 1,400 people attended its first meeting and over a third of them became paid members there and then. Since the war amenity societies have sprung up all over Britain. Unfortunately, and all too often, they came into existence because of controversy over a local issue—generally involving preservation. Admirable though this may be the approach is wrong as it is, in most cases, both negative and against the local authority. According to Professor Fielden, 'The official side of the city often needs moral support to get things done and we want to help them.' It is this positive approach which explains in large measure why the NGS has made for itself a public image which is bigger and better than that of many an older amenity society.

Other reasons for success are not hard to find, such as the composition of the Society's committee. By and large its members are architects, town-planners and writers—that is, professionals who not only have an interest but also a deep knowledge of the problems which confront the city during the agonies of rebirth and the correct approach to possible solutions. Moreover, by the generosity of one of the committee a paid organizing secretary has been appointed, relieving the committee of much routine work and getting rid of the amateur status which is so often the bugbear of amenity societies.

A professional organization, publicity and ideas are the secrets of success. An interesting idea is to channel the enthusiasms and interests of Glaswegians into new projects. Indeed, the scale of these is so considerable that they can only advance with the co-operation and work of many members. Of the projects few can be labelled antiquarian. Certainly, there is the problem of the astonishing collection of nineteenth-century city churches and their future uses when hit by declining congregations. The list also includes a study of the effects in scale and design of the new ring road, the adoption of a riverside walk along the Clyde (the most neglected river in any major city) and discussions between planners and members on the new housing estates. By co-operation with the Corporation, Civic Trust, COID and other organizations 'the total environment of Glasgow will be rehabilitated.'

The Society has demonstrated the sense of disturbance of many responsible citizens at the physical changes and the pressures which the twentieth century has brought to bear on a nineteenth-century city—one that is undergoing an agonizing reappraisal of its status, economic, industrial, commercial and cultural. The major achievement of the Society might be to enable the layman to participate with understanding in Glasgow's comprehensive programme of renewal round a central heart, which is the most perfect expression of nineteenth-century thought in architecture. JAMES MACAULAY

PARK CIRCUS POSTSCRIPT

There is a grim addendum to James Macaulay's panegyric on Glasgow's Park Circus in the June REVIEW: the Glasgow Presbytery of the Church of Scotland has now commissioned Derek Stephenson and Partners to design an eleven-storey tower block of offices to take the place of Rochead's Gothic Park Church (1858). Planning permission has not yet been given. The Park area is the finest Victorian urban layout in Britain, and Park Church is a vital part of its skyline. The New Glasgow Society and the Victorian Society are fighting the proposals.

ALUMINIUM AWARD

The Reynolds Memorial Award—a cash prize of 25,000 dollars for a 'significant work of architecture in which aluminium has played an important role'—goes this year to James Stirling and James Gowan for their engineering building at Leicester University (AR, April 1964). This is the ninth year of the award (which is administered by the American Institute of Architects). The jury who made it consisted of five architects: W. S. Allen of San Francisco, Marcel Breuer of New York, George Harrell of Dallas, Texas, Vernon De Mars of Berkeley, California, and Mario Pani of Mexico City.

obituary

WILLIAM PURCELL, 1880-1965

News has been received from Mr. David Gebhard, director of the University of California art gallery at Santa Barbara, of the death last April, in Pasadena, California, of William Gray Purcell, one of the major figures of the American prairie school of architects.

Purcell, who was born in Chicago in 1880 and whose parents' home was in Oak Park, near the home of Frank Lloyd Wright, was the last to survive of those who had worked with Louis Sullivan in his greatest days; he joined the Sullivan office in 1899 when the Carson Pirie Scott building was being designed. He later worked with John Galen Howard in Berkeley, California, and became a close friend of Bernard Maybeck. In 1909 he went into partnership with George Grant Elmslie and the firm produced some of the most distinguished American buildings of the dozen or so years that followed. One of them was the Merchants Bank of Winona, at Winona, Minnesota, illustrated here, 5, built in 1911–12. The basic design was by Purcell; Elmslie was responsible for the ornament.

They built other banks, churches (one of which, at Minneapolis, resembles Frank Lloyd Wright's Unity Temple of 1906—three years before), business buildings of various kinds and a number of houses with basically simple rectilinear plans. A house in Wisconsin, of 1913, was one of the earliest experiments in modular design and construction and Purcell's own house in Minneapolis, also of 1913, was a fine example of the most

6

5

5, Merchants Bank of Winona, by William Purcell, 1911–12. *6, plan of Purcell's own house, Minneapolis*, 1913.

TO OVERSEAS SUBSCRIBERS

Copies of THE ARCHITECTURAL REVIEW posted to foreign and other overseas subscribers are normally sent rolled and wrappered because it has been found that this gives them the best protection against damage in transit. Any overseas subscriber, however, who would prefer his copies to be posted flat in a cardboard carton (which is the method of packing used for home subscribers) can have them sent in this way if he will write to the REVIEW's Subscription Department, 9-13 Queen Anne's Gate, London, SW1.

Leo works very well at work...

is perfectly at home, at home

In fact Leo has the sort of strong but well mannered personality which people everywhere find attractive and relaxing. Designed by Robin Day, it is the latest addition to the Hille range of easy chairs and one of several in the range which have proved equally successful in working and domestic environments.

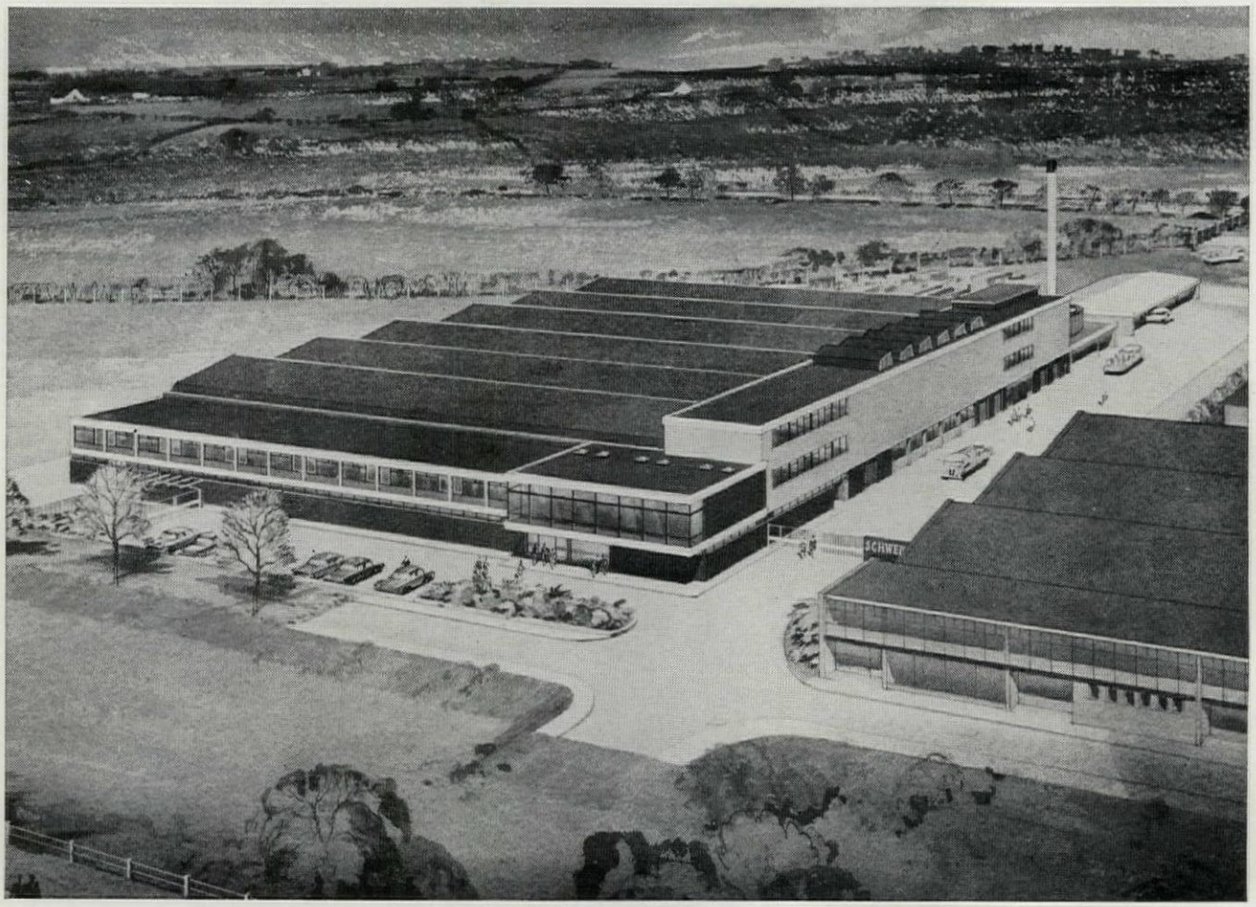
Generous proportions, soft latex cushions and the reclining angle make this an extremely comfortable chair. It is available on a five pronged swivel base or on a shaped metal support (both bright chrome plated). The upholstery is leather, pvc or fabric and the chair is knock down in construction for easy transportation. The Leo chair can be seen at our showrooms: London: 41 Albemarle St. London, W.1. Tel: Hyde Park 9576-9 Watford: 134 St. Albans Rd., Watford, Herts. Telephone Watford 42241 / Birmingham: 24 Albert Street, Birmingham 4. Telephone Midland 7378/Edinburgh: 25a South West Thistle Street Lane, Edinburgh 2. Telephone Caledonian 6234/ Manchester: Sackville St. Manchester. Telephone Central 6929.

hille

New Bottling Plant for Schweppes Ltd.

At East Kilbride, Scotland.

Architects: Tripe and Wakeham.
Quantity Surveyors: Langdon and Every.
Consulting Structural Engineers: Lowe and Rodin.
Contractors: Gilbert-Ash Ltd.



Included in this 'multi-services' contract are the design and installation of all the Water, Electrical, Heating, Ventilation and Air-Conditioning Services, and the services supplying the clients process machinery.

advanced open-planned domestic architecture of its time. Its plan is shown in 6.

Purcell suffered much from illness in middle age and retired to California, where he continued writing and criticism. He had always been active as a propagandist for the new architecture and it was through his help that H. P. Berlage was brought to the United States.

correspondence

SEVENOAKS

To the Editors.

SIRS: Thank you for an excellent counter proposal in your May issue to the Sevenoaks town plan. I regret only that the authors, William Carr and Richard Reid, did not widen their investigation.

To suggest that the A225 traffic (increased by some 60 per cent since the opening of the Dartford tunnel) should be diverted through the narrow lanes between Otford and Riverhead is ludicrous to anyone who has ever traversed them. The real solution is not to tinker with the A225, nor is it to build an eastern Sevenoaks bypass (which the council proposes and you rightly condemn) but to expedite the construction of the South Orbital Road.

This would allow south- and west-bound traffic from Dartford to reach the A21 (the *west* Sevenoaks bypass) and the A25 without destroying the amenity of the Darenth valley and the villages of Eynsford, Shoreham and Otford. It would allow the A225 to become again a useful road for local traffic and would enhance the value of your plan for Sevenoaks.

Yours, etc.,

R. E. PLUMMER

Shoreham, Kent

Mr. William Carr replies: Yes, Mr. Plummer is probably right. Our point was that somehow and somewhere the Dartford traffic must be diverted on to the new Sevenoaks bypass west of the town but, as he suggests, it would be better to effect this farther north in order to keep heavy traffic out of the unspoilt Darenth valley.

7

The new Elephant House (pages 13–20 of this issue) is one of the most conspicuous, but not the only, achievement of the Casson-Stengelhofen development plan (1958) for the London Zoo. Another important improvement has been the rationalizing and redesigning (by Messrs. Mather & Crowther) of all notices and direction signs. An example is shown left, 7, the colours being white on black or dark grey and (for warning notices only) white on red. The notices in Whipsnade Park are also being redesigned, 8, the colours there being white on dark green.

8

book reviews

FOR THE LIBRARY TABLE

THE GREAT AGES OF ARCHITECTURE. *By Bodo Cichy. Oldbourne Press.* £6 6*s*. 0*d*.

The global art books keep rolling along, the modern publisher's *tour de force* (and sometimes, *de Babel*). In general, one handsome set of plates serves a series of texts, translated successively, if not always successfully, from the original author's tongue into three or four other languages. An English translator, perhaps, might have to cope with a German original, the French translator's version of it, and the probable reception in America. So far as illustrative material is concerned, certain monuments inevitably get served up again and again by publisher after publisher: Parthenon, Chartres, Ronchamp like a pack of cards dealt and played and shuffled and dealt once more. As for the texts, even with translators of feeling and integrity, the original point of view, if not clearly expressed in the first place, can be quite filtered out. Such a work as an English history by Trevelyan, say, representing one mind, one language, one point of view, comes like a breath of salt sea air after some of these. This is the pessimist's opinion: global art books are Cook's *tours de force*-meat.

However, when I was fifteen and desperately keen on architecture, and my relations were kind enough to give me illustrated books about it, the plates were black and white, not very well reproduced (the years of the Great Depression, in fact). There were also, still lying around, those drawing-room-table albums of two generations earlier, Great Cities of the World and so forth, vast textless folios of views that were exciting even in various shades of grey, and predecessors in size and weight of today's global tours *de force majeure*. How I should have loved the colour plates in the book here under review. Not that it has a teenage text, but enthusiastic beginners ought to be partly surrounded by books that are too old for them, just as the buildings themselves are partly beyond their grasp. This is the optimist's opinion: Cook's tours can be a Good Thing.

And so to *The Great Ages of Architecture*, which appeared in Germany as *Architektur und Baustile* in 1959, in France as *Art et Secrets des Batisseurs* in 1961, in Britain under the present title in 1964 and presumably also in the United States, the spelling in the English edition being (unobtrusively) American. The author, Dr. Bodo Cichy, is a German scholar and editor of, it would appear, both sense and sensibility. It is meant as no denigration of him to say that it is impossible to gauge what proportion of each is due not to him, but to his English translator, Miss Susan McMorran. Both appear to have done a difficult job matter-of-factly well. I doubt if anybody will read this text straight through from start to finish, but no harm would be done if they did.

Twelve chapters of text in uncrowded double column, interspersed with drawings of plans, sections and details, take us from Greece and Rome (no Egypt) up to today (1957), skating over the last two centuries with disproportionate speed. (One suspects Dr. Cichy would have liked to stop at 1750.) Only the earlier chapters are well provided with drawings: the plans are almost entirely of religious buildings, the latest secular plan being that of Diocletian's palace at Spalato, with no plan whatever later than Neumann's Vierzehnheiligen. However, there are numerous plates of several half-tones each, with long captions, supporting cast to the prima donna plates—about 65 in colour, about 45 in monochrome—which, with a few exceptions, are very good indeed, and some are beauties.

The glossary at the back, a necessity often neglected, has sketches with the definitions; neither sketch (e.g. Transept) nor definition (e.g. Stilted arch) is always as clear as might be, but on the whole it is helpfully done. There is a short bibliography of books in English, some quite properly cited in their latest revised editions, others quite confusingly only in early unrevised editions (e.g. Pevsner's *Outline of European Architecture*, actually revised and reissued many times since 1943, and both Richards's *Introduction to Modern Architecture* and Wittkower's *Architectural Principles* since 1949). The index is one of those group-headers (indexers, for the convenience of): enthusiastic beginner looking for Parthenon won't find it (except under Temple), nor the Pirelli Building (except under Commercial).

On balance, though, harking back to my opening generalizations, optimism might win with this one. The best of the plates are worthy furnishings for any visual-minded hoarder's private stock. True, neither visual hoarder nor enthusiastic beginner will read captions about organization of masses; students concerned with those won't have six guineas; scholars don't read one-volume syntheses even if they sometimes write them; librarians catering for students and scholars must choose from many such syntheses. I think the libraries should have this one: the proportion of genuinely informative text to plates is high; in fact it is library-table more than coffee-table.

PRISCILLA METCALF

PALLADIO: DOCTRINE AND STYLE

PALLADIO'S LEHRGEBAUDE. ACTA UNIVERSITATIS STOCKHOLMIENSIS, VOL. IX. *By Erik Forssman. Almqvist & Wiksell, Stockholm, etc.* 1965. 45 *Kronor.*

Dr. Forssman made his name with *Säule und Ornament*, 1956, and followed this by another book on the Orders in the sixteenth to eighteenth century in 1961. In this new book he promises to discuss Palladio's *Lehrgebäude*, i.e. the edifice of his doctrine, but only one chapter is dedicated to this, a chapter describing the contents of the four *Libri di Architettura* in detail, comparing them with Vitruvius, Alberti, Serlio and Barbaro's Vitruvius Commentary, and demonstrating what is original in Palladio.

The other chapters deal with a selection from his buildings and with his style. They contain excellent observations, notably on the Palazzo Valmarana which is interpreted less manneristically than by Wittkower and others. On Palladio's style also Dr. Forssman comes to original and convincing results. He says that we tend nowadays to equate greatness with originality, but that must be a mistake; for otherwise neither Raphael nor Rubens would be great, since their achievement was to represent the style of their period in the highest degree. This is also Palladio's case. His originality is 'undemonstrative.' His secret is 'the harmonious meeting of the antique with the Venetian tradition.' He is not a classicist, in spite of his wide research into ancient Roman buildings. Nor is he a Mannerist, though there are more Mannerist features in his buildings than Renaissance features. In his doctrine he is concerned with certain types of building, ideal and real, and he believes that the way the Romans realized them deserves study, but theirs is only one of several forms the type can assume. Hence his palaces and his villas take notice of the '*case degli antichi*' in towns and countryside, but in his book he illustrates side by side with them his own as actually built. Dr. Forssman writes in an impeccable German which helps to convince of the truth of his theses.

N. PEVSNER

Even where film-making has ceased, fantasy and Hollywood still go together. This photograph was taken by Penelope Reed looking over the land on which Twentieth Century Fox used to build their outdoor film-sets. They have now sold it, and a vast new town, Century City, is being developed there. In the photograph, against the background of Beverley Hills, are seen two of the four large buildings that have been constructed so far, with between them an oil-well derrick, camouflaged as far as possible and padded against noise—multiple use enlivening the Californian scene.

Nikolaus Pevsner

PHILOSOPHY OF FURNISHING

Arredamento is untranslatable. *Ameublement* may represent the same concept, if it is taken to mean *ensembles*, not individual *meubles* put into whatever room. Furnishing usually signifies just the assembly of pieces, and hence the title of this essay is not really accurate.

Filosofia dell'arredamento is what Professor Mario Praz, of Rome, author of distinguished works on the English romantics and on seventeenth-century imagery, has called his most recent book. To translate that title, as his publisher has done, as *A History of Interior Decoration, from Pompei to Art Nouveau** is certainly not permissible and makes readers of Professor Praz's book expect things it does not fulfil. For interior decoration would include the four styles of Pompeian wall-painting, the history of medieval wall-hangings, Renaissance furniture and Baroque furniture, all skipped by Professor Praz—rightly, because they are not *arredamento*.

When in fact did Europe wake up to the possibilities of *arredamento*? When was a room first conceived as an *ensemble* by its owner? When was a room first designed as an *ensemble* by an architect, furniture, curtains, carpets and all? Or, if neither an owner nor an architect, who was first to see that a room could be an ensemble? The answer is complex and quite unexpected. In the Middle Ages and the Renaissance rooms had few pieces of furniture, and the pieces lived independent lives. Architects had nothing to do with their design, although a sculptor in wood such as Jörg Syrlin at Ulm in the later fifteenth century could at the same time be a joiner and design a cupboard, and a painter of the new Renaissance status such as Holbein could design a chimneypiece or a clock-case, as he designed decorated daggers and goblets. But, once again, they were all individual pieces.

On the other hand, when Jan van Eyck, in his youth and more precisely about 1415, painted in the *Book of Hours of Turin* the Birth of St. John he saw that this room was a room with an atmosphere, and he even saw that, to establish it at the same time as part of a larger *ensemble* of rooms, an open door at the back into another room was the ideal procedure. In Italy the moment of discovery of a room and rooms as beings comes a little later, and—very characteristically—not in Florence or Rome but in Venice: in Carpaccio's *Dream of St. Ursula*. The open door at the back is present too. Did Antonello da Messina act as a link here as in other ways? So what has fascinated generations of admirers in the still interiors of Pieter de Hooch is a device more than two hundred years older.

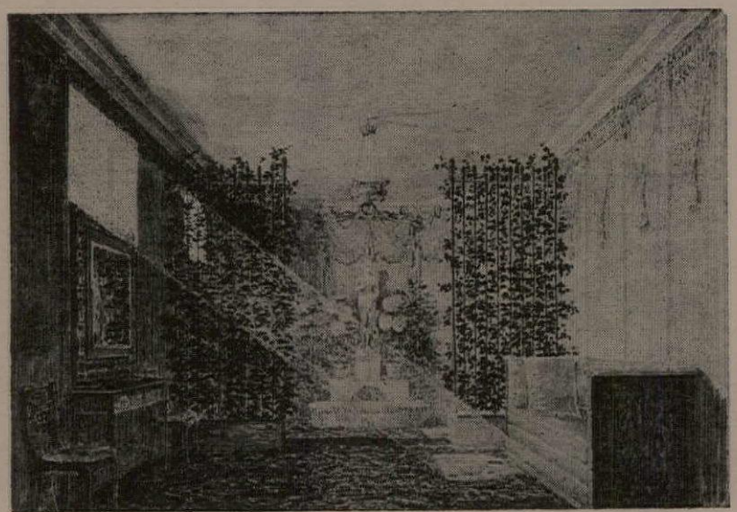
The seventeenth century altogether is the great century of the painted interior—in Holland, not in Italy (and so Professor Praz is justified in leaving out the Italian Baroque entirely). Modestly, a little puritanically, but affluently furnished rooms, and warm sunshine out in the back yard or back garden—here is *Stimmung* (Professor Praz also uses the German word), and Vermeer even succeeded in expressing the

* Thames & Hudson. £8 8s.

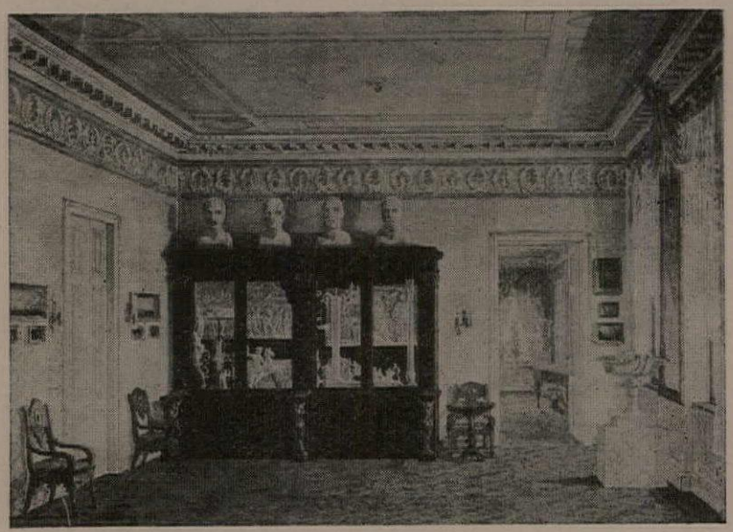
Ida von Berstett: grandmother's room, 1835. Mario Praz, Rome.

Stimmung with no more than a wall and a window or even the light from a window. And of course a figure. So this ecstasis of peace is the peace of her whose life identifies itself with her rooms. It is always her rooms, not his. The men are busy in their jobs or drink in the pub.

Here then, for the philosophy of furnishing, what we learn is that, as Professor Praz puts it, a room is the sheath of the private being. He also calls the room the



Sotira: bathroom of Princess Baryatinsky at Pavlino, 1835. Don Agostino Chigi, Rome.



Sotira: small drawing room at Prince Razumovsky's house, 1835. Don Agostino Chigi, Rome.

projection of the ego, but that belongs to a later age. In the Holland of de Hooch it seems almost as though the ego were the projection of the room. Its calm, the flow or filtered trickle of its light, creates the mood of the inhabitant. There was here a great discovery. Chardin carried it on into the mid- and later eighteenth century, and, according to one of Professor Praz's over 500 exceedingly well and resourcefully chosen illustrations, even occasionally Hubert Robert.

By factual definition the North German Romantics also belong here: Friedrich, Kersting, Carus who were so inadequately represented in the great exhibition of Romantics in London some years ago. Here again is the quiet, almost bare corner of a room, and a window in the side or back wall, and the inhabitant. But the mood has changed. It is not just we interpreting into these pictures what we know of the Romantic Mood. Instead of contentment there is here a pervading sadness, and only vaguely directed nostalgia expressed by Friedrich in the inhabitant looking out of the window so that we see her or him from the back. This way of expressing communication of man with the infinite is a favourite motif in Friedrich's landscapes too, and so his interiors and those painted by his followers, lack the blissful self-containedness of the Dutch. Carus once, in a painting in the Behnhaus at Lübeck (not illustrated in Professor Praz's book) even painted the window alone—no person, hardly a room —the quintessence of reaching out of the sheltered interior into a distant uncharted external world.

The portraits of rooms without inhabitants are Professor Praz's great discovery. He is the first to present them, survey the many examples we have, and interpret them. His earliest example is one solitary one of 1776, then one of 1811, but they culminate in the 1830's and 1840's, the *Biedermeier* which followed after the high tension of the Friedrich time had spent itself and the high formality of the Empire style had relaxed. There are of course ensembles of Empire rooms without figures also, in Percier and Fontaine and then in Thomas Hope, but they are samples of how to furnish, not real rooms and hence not meant to have *Stimmung*. Even so, it is worth remembering (especially because Professor Praz does not do so) that the complete *ensemble* provided by an architect goes back to Louis XIV's, if not even to Rubens's, time, though the actual furnishings were not yet included as part of the scheme. The scheme which includes the pieces of furniture and the soft furnishings is a creation of the late eighteenth century, and very probably of Robert Adam. The carpet repeats the pattern of the stuccoed ceiling, and even the wine coolers are 'architect-designed.'

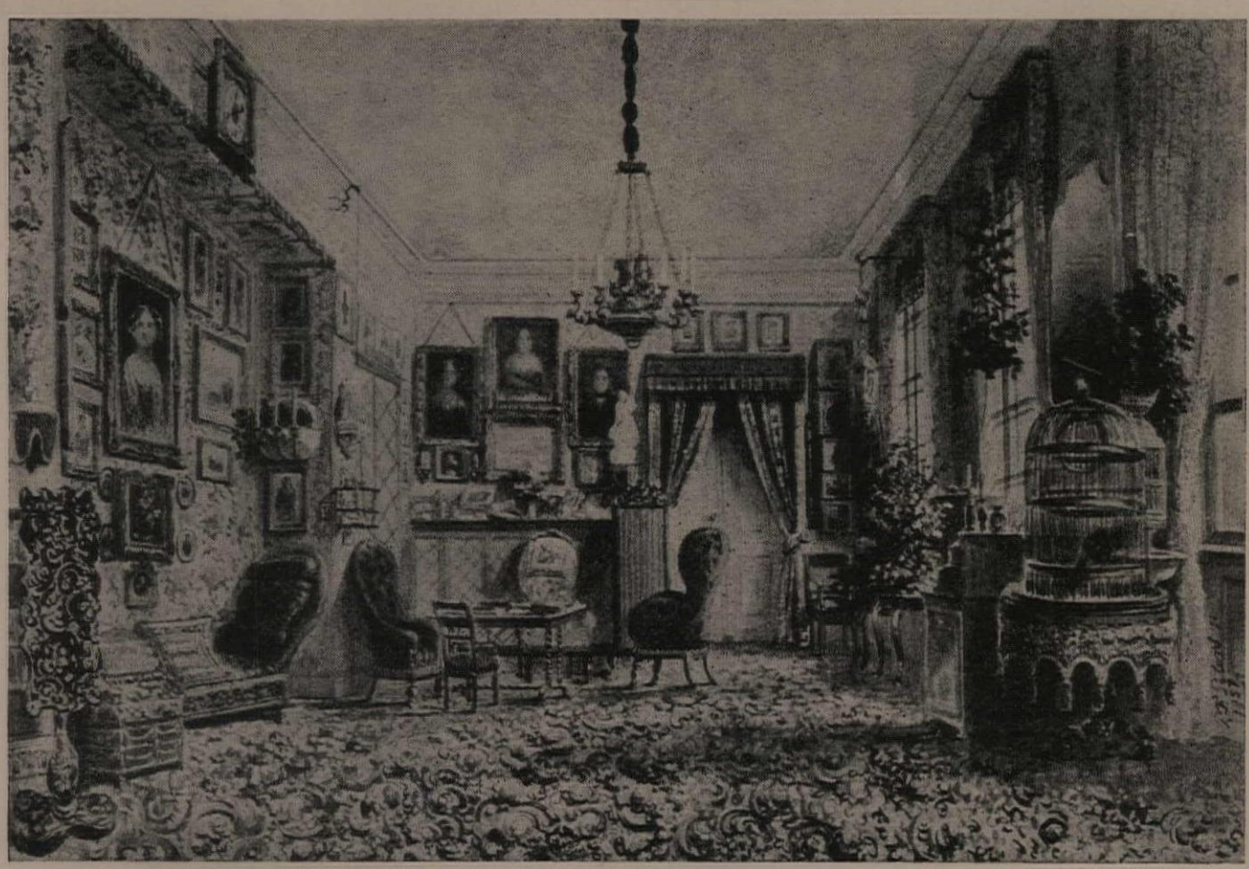
Once such complete schemes had become the fashion, we may well understand how the pastime of visiting other people's mansions came about. Professor Praz quotes an early example of it from La Bruyère's *De la mode*. Even more telling is Horace Walpole writing in 1763 about so many visitors coming that he should put up a sign: The Gothic Castle. Visitors he says, receive tickets, and he hides. Similarly, as first quoted by Mr. Ketton-Cremer, at Holkham in 1772 visitors were taken to a room to wait 'as there was a party going round' and there found 'another large party awaiting the guide.'

F.-E. Villeret: bedroom in the Château de Madrid in Paris, 1843. Don Agostino Chigi, Rome.

So the bane of complete furnishing goes back at least two hundred years—for a bane it is, because it is the negation of two things indispensable if furnishing is to be alive: personal initiative and growth. Adolf Loos knew that when he wrote his parable of the Poor Rich Man who tries so pathetically to add to his house little objects of affectionate value. 'Don't you see,' says his architect, 'you are complete.'

In the glorious display of illustrations which Professor Praz has assembled of the years between 1800 and 1850—these fifty years make up nearly half his book—there are plenty of formal *ensembles*, by architects such as Schinkel, but there are far more totally informal ones, accidental ones even, but all intensely inhabited, now truly (to use more of the beautiful terms of Professor Praz's introduction) the museum of the soul and Narcissus's pool. Often Narcissus is there, often also the inhabitants appear curiously as if they too were only incidents of furnishing, and often the rooms speak entirely for themselves. Here is the climax not only of Professor Praz's book but of *arredamento* altogether. Nearly every one of these rooms appears as many-sided, as contradictory, as attracting and repelling, as mysterious as a human being. You explore them as you explore Stendhal and Balzac. And you discover not only moods, but also foibles, quite apart from motifs of furnishings whose

Gabriele Carelli: loggia of a villa near Naples, 1845. Lemmermann Collection, Rome.



P. F. Peters: drawing room at Kirchheim, 1857. Oranje-Nassau Museum, The Hague. All the illustrations are taken (reduced in size) from Professor Mario Praz's A History of Interior Decoration.

early history we had never pieced together.

Who remembers that cushions on a wooden seat exist already in 1438 (Campin, Werl-Altar; then Dürer, St. Jerome) and brass chandeliers at about the same time (Rogier, Annunciation, Louvre), that upholstered furniture begins in the early seventeenth century (e.g. Knole) and sprung armchairs in the 1830's? Flowers and other plants in pots were favourites in the early nineteenth century, even whole indoor trellises, and Professor Praz's earliest rubber plant he dates to *c.* 1853.

But by 1850 the halcyon days were over. Professor Praz is severe on the later nineteenth century with its balloon-back chairs, buttoned upholstery and heavy drapes. He speaks of 'a swampy mess of all styles' and a 'bankruptcy of taste,' and he might have dated back the collapse of Empire discipline to the Brighton Pavilion to which he understandably devotes six illustrations. So scornful is Professor Praz of the later nineteenth century that even Art Nouveau is not appreciated by him as it might be. In fact it is here that he is not quite sufficiently informed, whether he speaks of Baillie Scott-Bedford or calls Slevogt Art Nouveau.

And after 1900 Professor Praz does not explore. That is a great pity; for the true collapse of furnishing belongs to the twentieth century. The shrinkage of domestic culture over the last two generations is indeed horrifying, if one has the courage to face it. There is the flat too small to put in generous furniture, to hang pictures and keep souvenirs; too small also to preserve the pieces handed down to us from the past. There is the mini-kitchen with no place for anyone to linger and chat while cooking is going on. There are the hotel-rooms, the more like cells the more recent the building. There is the car, our abode more and more for several hours a day and several weeks a year, and yet less and less comfortable. What damage would head-room do to the speed really attainable? And how ignominious is the job of climbing in and out. And there are the planes packing in more and more people per square yard, jet being worse than turbo-prop. These are facts; they are not just nagging. Why this deterioration? A philosophy of furnishing ought to give the answer, but Professor Praz's does not, though he is obviously no more in favour of today as against his beloved *Biedermeier* than I am. But his reasons are different, or at least sound different.

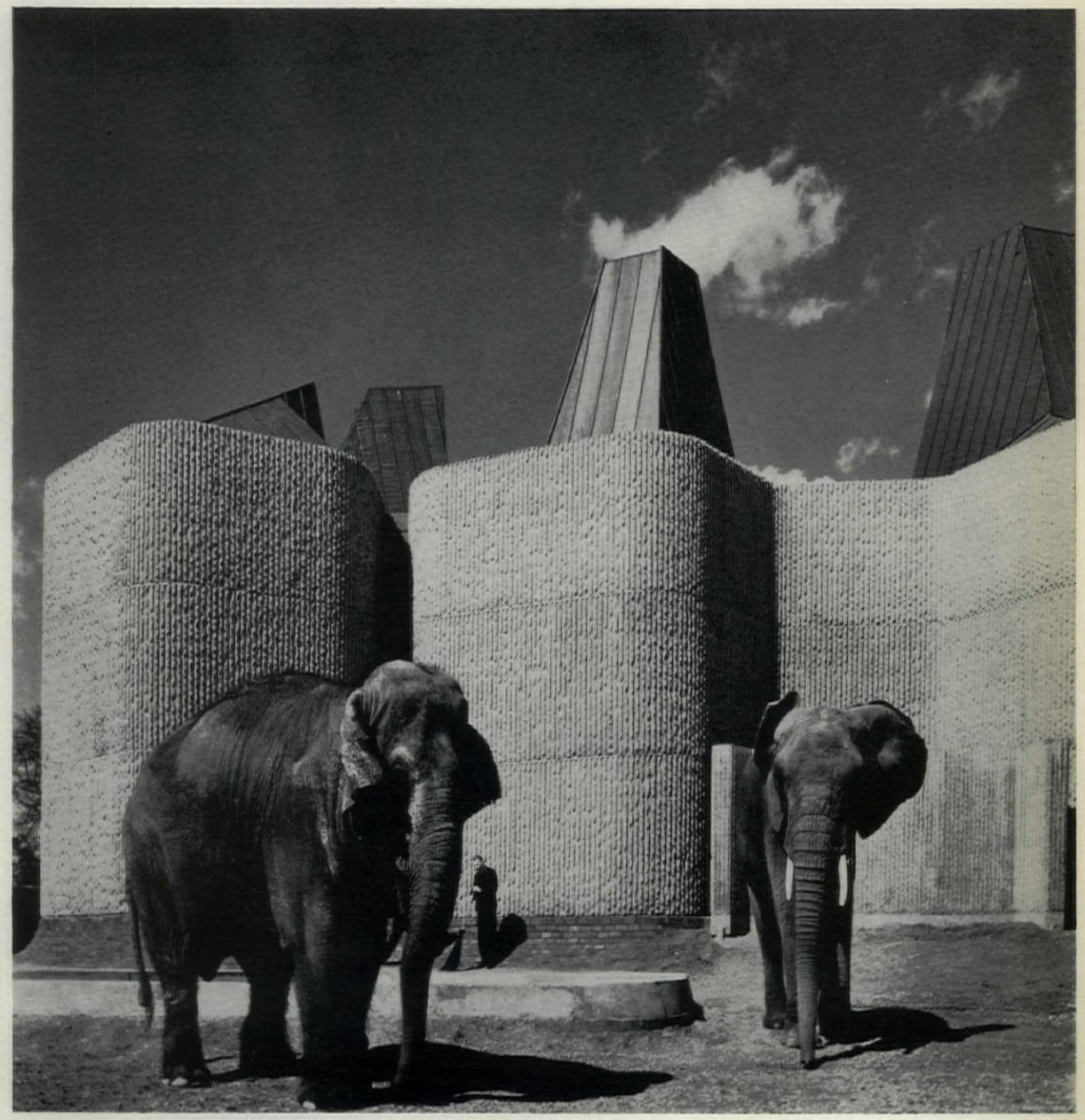
He writes beautifully, too beautifully in fact to be quite convincing in English. According to his foreword ('1944–63') he took twenty years over this book, which in the end came out published in Milan, printed in Zurich, translated into American ('gotten out of control') and laid out with the kind of bleeding that shaves off half-inches from original paintings and must hurt so sensitive an author intensely. His introduction is in the most accomplished essay tradition, with appropriate quotations from Ovid, Cicero, Gogol, Huysmans and such phrases as 'a daedalian ceiling.' In England Mr. Sacheverell Sitwell comes nearest to Professor Praz, even in the loving care with which the genealogical intricacies are followed: 'The boy with the sabre, at right, is Luigi, Conte d'Aquila, husband of Maria Januaria, sister of Pedro II of Brazil' or 'Ludwig Adolf Friedrich, Fürst zu Sayn-Wittgenstein (whose) first wife was Stephanie, Princess Radzivill (and whose) second wife was Leonilla Barjatinski, who bore her husband four children: Antonietta, Friedrich, Ludwig and Alexander. Antonietta married Orazio Chigi . . .' It is like an intoxication with all these splendid names. He who writes like this of the privileged of the *ancien régimes* must be out of sympathy with the attitude of furnishing of today. But this is how he expresses it at the very end of his introduction: 'Old Europe, beautiful were the richly decorated salons of your palaces, the calm rooms of your old bourgeois homes, the rustic kitchens of your simple dwellings in the mountains; beautiful also was your furniture with its time-stained patina, your objects lovingly worked by generations of cabinet-makers, potters, and goldsmiths! We who have known all these things in their splendour, who have—if only for a day—made ours the life of so many cities that are no more, how can we forget? As long as there are four walls that still keep the aroma of that vanished Europe, it is among those walls that we wish to die.'

ELEPHANT & CASTLE

ELEPHANT AND RHINOCEROS HOUSE, ZOOLOGICAL GARDENS, REGENT'S PARK, LONDON

architects **CASSON, CONDER AND PARTNERS**

photographs by H de Burgh Galwey and Henk Snoek

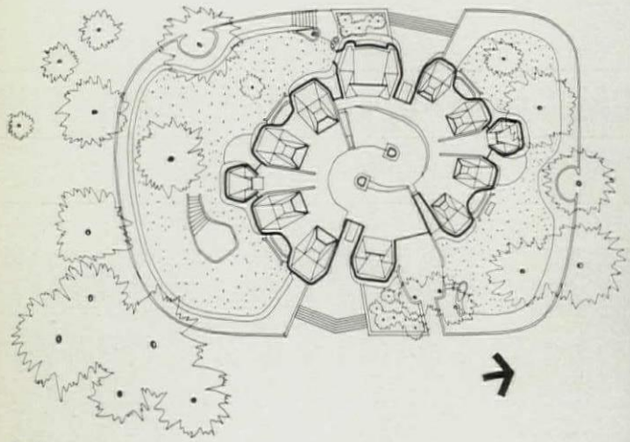


1, the south-east corner of the building, seen from the paddock.

ELEPHANT AND RHINOCEROS HOUSE, ZOOLOGICAL GARDENS, LONDON

The elephant and rhinoceros house at The Zoological Society's gardens, Regent's Park, occupies an island site near the southern boundary of the gardens, and is the first major building in the main area of the gardens to be completed in accordance with the redevelopment plan prepared in 1956 by Sir Hugh Casson and the Society's architect Mr. F. A. Stengelhofen.

The building houses four elephants and four rhinoceroses in paired pens, each with access to sick-bay pens and to moated external paddocks. The pens are arranged round a central hall for the public, who circulate through the building at a slightly

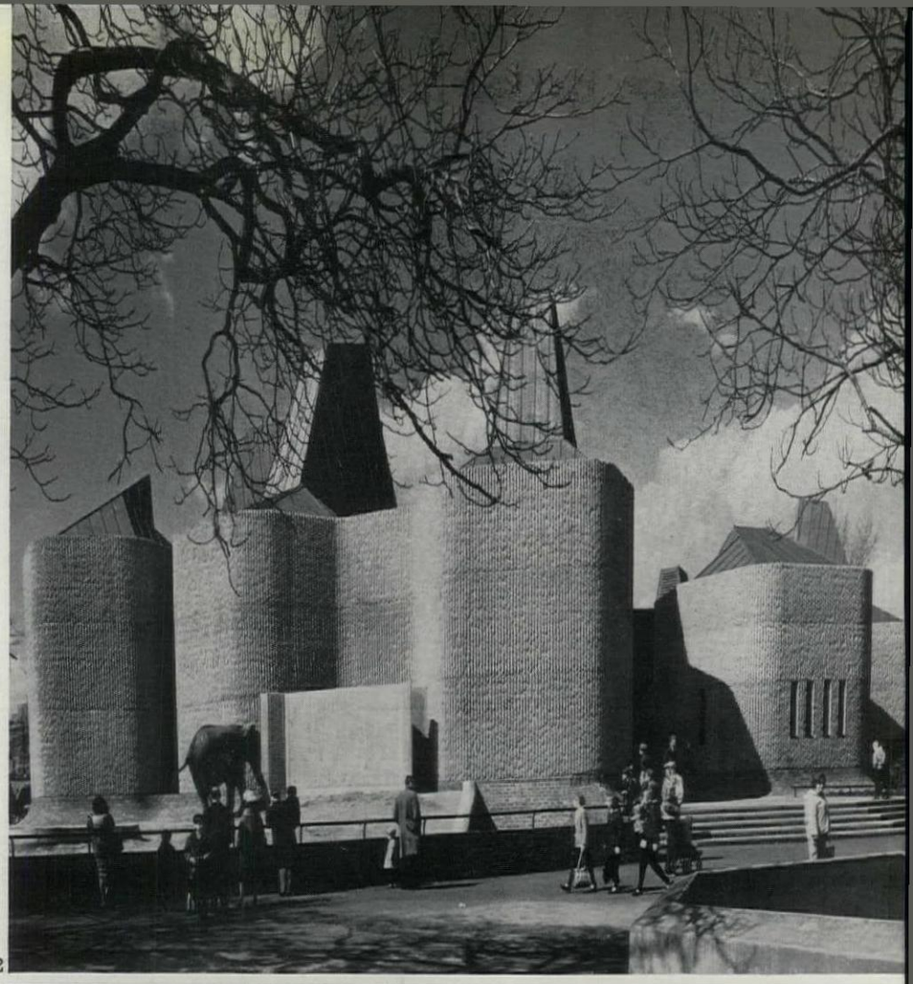


site plan

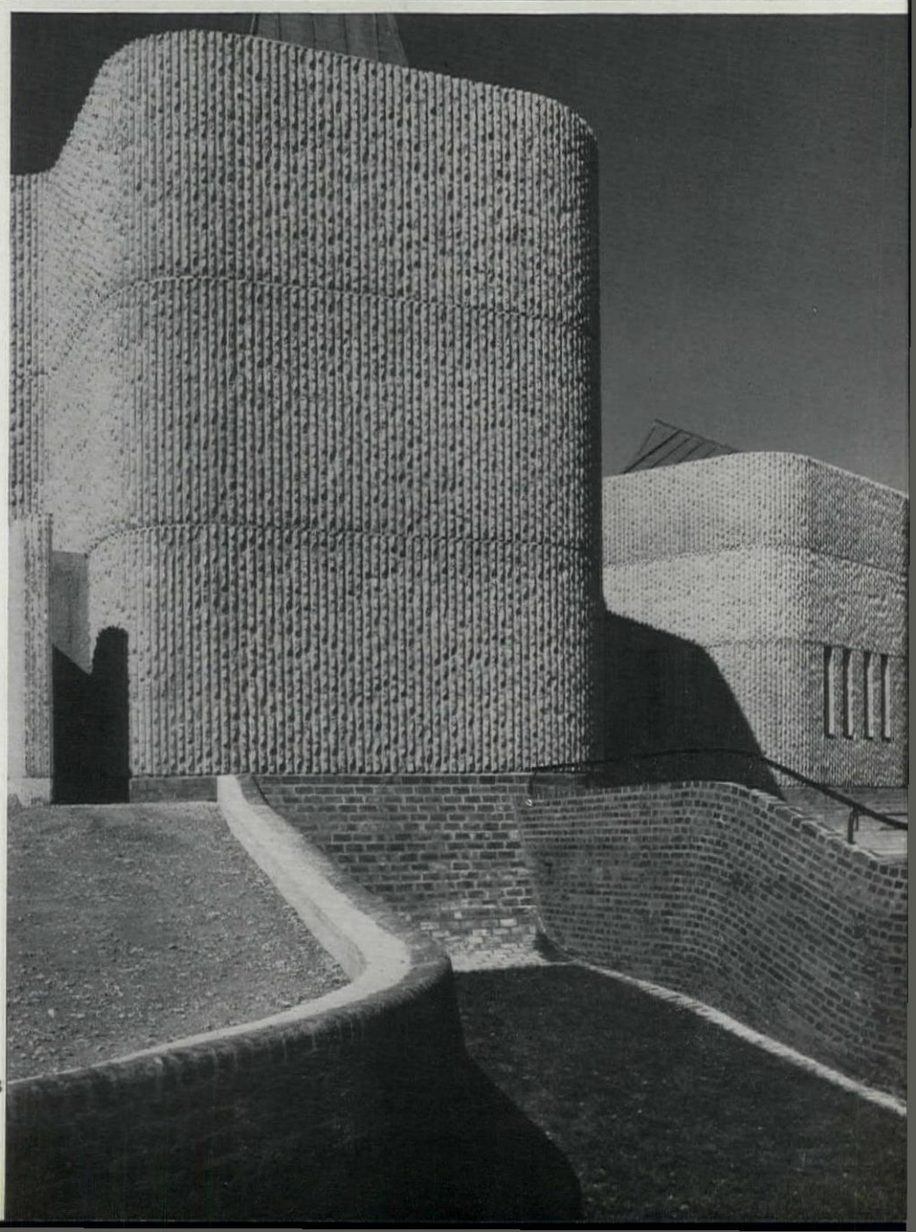
lower level on an S-shaped route. This can become a one-way system on busy days. The public can also stand aside from the main route into viewing areas stepped down opposite each pen. On the main level there is a washing-pool for the animals in view of the public. On the same level is a staff mess-room and in the basement are a plant-room and accommodation for the storage, preparation and distribution of the animals' food.

The building stands among existing trees on a small mound formed from the excavated soil, and the animals, when in their paddocks, are seen against the curved concrete walls, which have a vertically ribbed texture. When in their pens they are seen against cyclorama walls, lighted from above through tall lantern lights in the form of copper sheathed funnels that give the exterior its unusual silhouette.

Construction is reinforced concrete with a brick inner skin protecting 1 in. polystyrene insulation. The inner walls of the pens are faced with light grey-blue ceramic mosaic. The roof structure over the public area is of laminated wood beams set in metal shoes and spanning from the concrete perimeter columns to a cluster of laminated timber columns set round a central flue and air-intake. Blue brick is used for paving throughout and for the plinth, yard walls

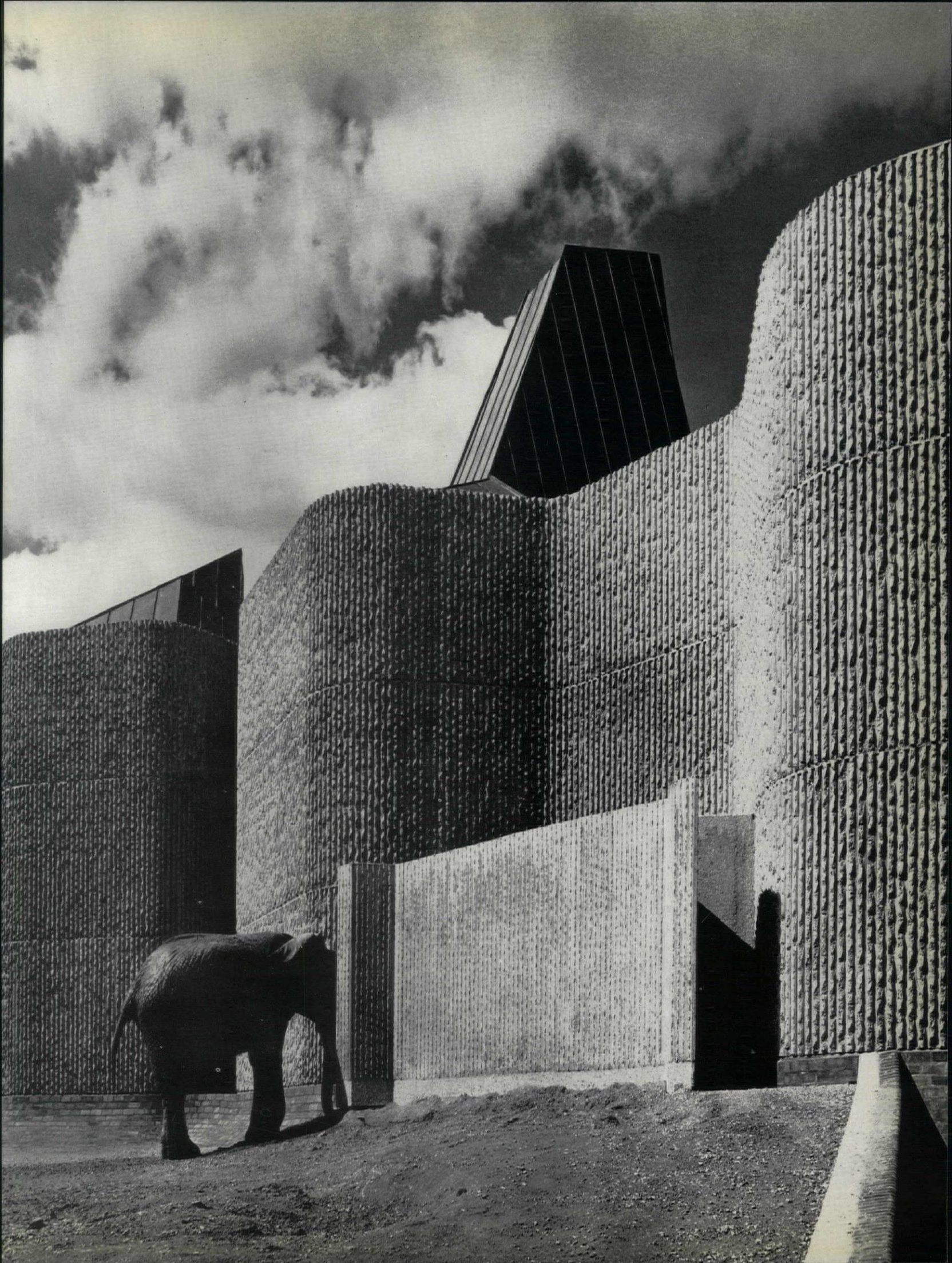


2



3

2, general view from the south-east; the elephant pens are on the left and the steps on the right lead up to the public entrance. 3, one of the elephant pens, with part of the surrounding moat in the foreground. 4 (facing page), close-up of the elephant pens; the screen walls shield the drinking troughs placed between the pens.



5

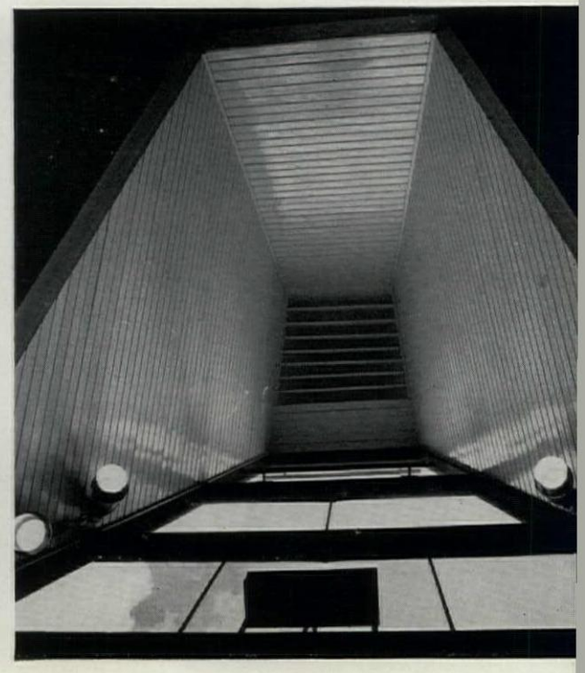
5, general view from the north, with service yard and ramp on the left. The tall funnels which light the animal pens are copper-sheathed on three sides. 6, the south side of the building from Regents Park. 7, looking up one of the funnels over the pens.

and moat retaining walls. Air extract fans are incorporated in the glazed funnels over the pens, which are supported on concrete ring-beams. The funnels also contain concealed spot-lights. Heating is by warmed air rising from the basement.

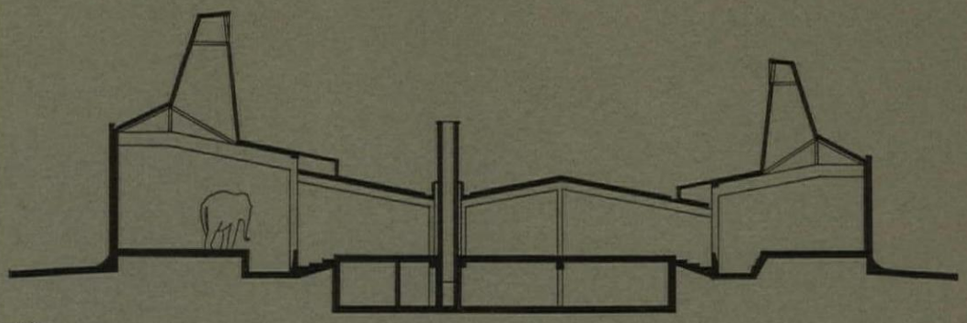
Partners in charge, Sir Hugh Casson and Neville Conder.
Associate in charge, Montague Turland.
Structural engineers, Jenkins and Potter.
Services consultants, G. H. Buckle and Partners.
Quantity surveyors, A. S. Wilson and Partners.

6

7



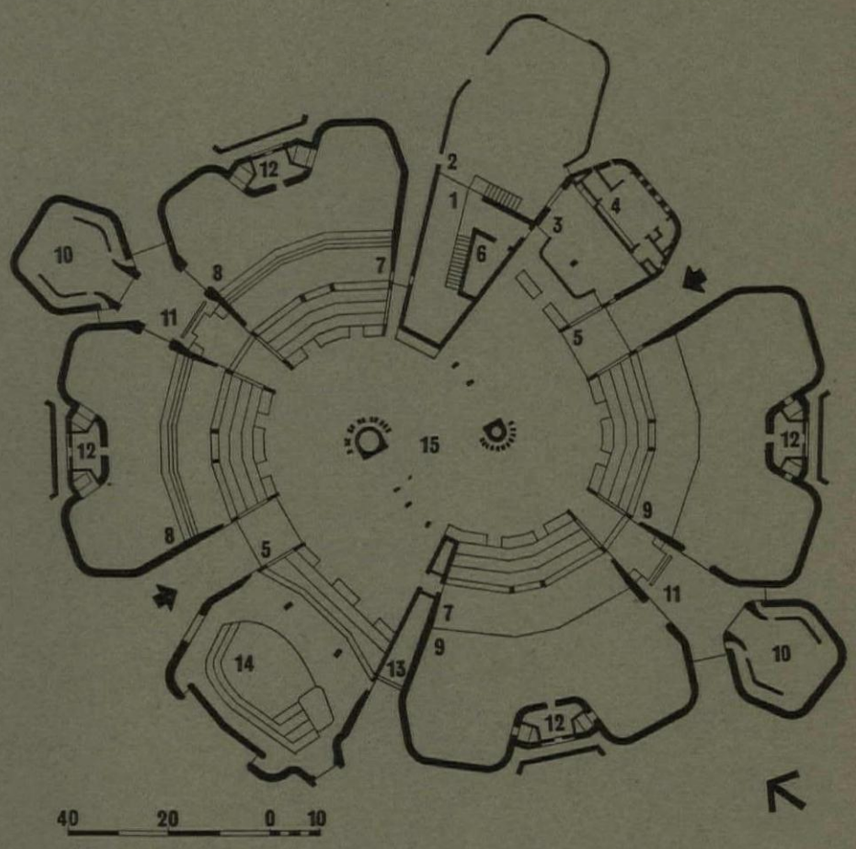
criticism



section

key

1. ramp from service yard
2. service yard
3. staff mess room
4. staff lavatories
5. public entrance
6. store
7. animal ditches
8. rhino pens
9. elephant pens
10. sick bays
11. pen lobbies
12. drinking trough areas
13. main rising ducts
14. elephant pool
15. public space



40 20 0 10

plan

ELEPHANT AND RHINOCEROS HOUSE, ZOOLOGICAL GARDENS, LONDON

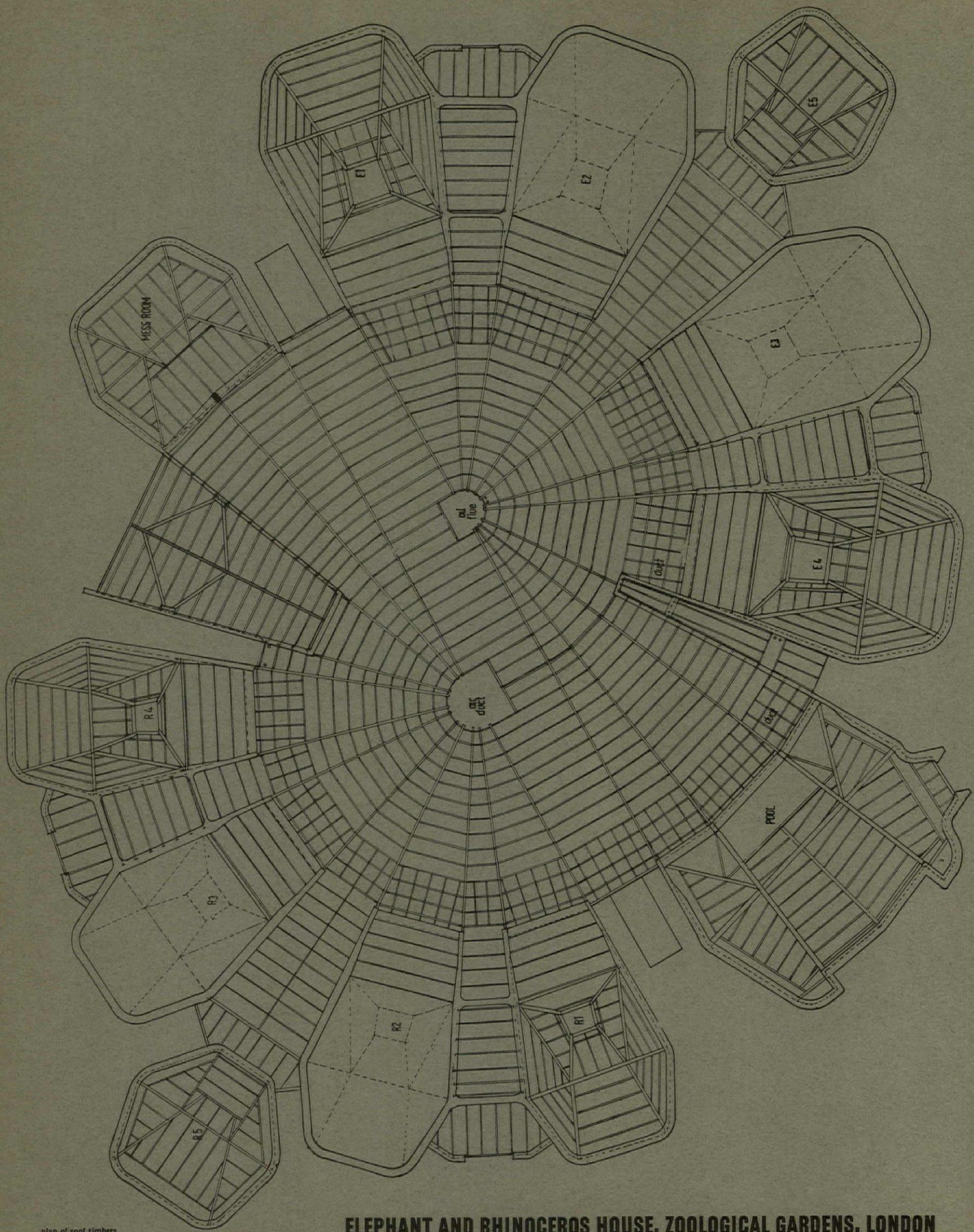
Elephants are such architectural animals that there is a temptation to look at a building housing them as a kind of analogy of themselves. This building, for example, could be described in terms of its massive curves, its wrinkled hide and its curious silhouette. But it would be an injustice to the building to do so, and even more an injustice to the architects to suggest that they had made the possibilities of such an analogy their starting point, because it is a serious building based on a thorough analysis of function.

Nevertheless the pictorial resemblance to the elephant image—to the bunch of rounded bodies with their heads in the air—exists, and even more strongly than this there exists an element of deliberate fantasy not usually associated with a building designed round so strict a set of practical needs. It is in fact something of an achievement that these—the fantastic and the functional—have been so combined without being mutually destructive. In a building whose purpose is partly display and entertainment, a vivid individuality of form is however itself functional, and on the particular site the elephant house occupies, which will be one of the focal points in the replanned zoo, a striking architectural form is not inappropriate; and the somewhat fantastic silhouette has landscape value as part of the distant view that has now been opened up from Regent's Park.

The display function of zoo buildings raises more difficult problems when we come to the inside of the elephant house, such as how far it is justifiable to dramatize these extraordinary animals if to do so means some risk to their dignity and means also providing them with a stylized, highly artificial, setting when the accepted policy in modern zoos is to aim at naturalism and informality. This is basically a question of zoological policy—of the client's brief—but since architecture is the means of implementing the policy it cannot be evaded in any appraisal of the building. The policy decision, in this instance, was clearly to go all out to highlight the animal's peculiar qualities—and highlighting is literally what the architects have done: they have posed each animal on a kind of stage, lighted from above. The architects have managed, in the writer's view, just—but only just—to stop short of displaying the elephants so consciously that they resemble acts in a circus rather than specimens in a zoological garden. The technique with which it has been done, depending first on lighting, secondly on scale and thirdly on colour, is masterly. Its only defect is in relation to the scale. One of the most impressive characteristics of the elephant is simply its bigness, but the great height of each elephant's pen, and the way the indirect lighting falls on them from above, in fact makes them look surprisingly small.

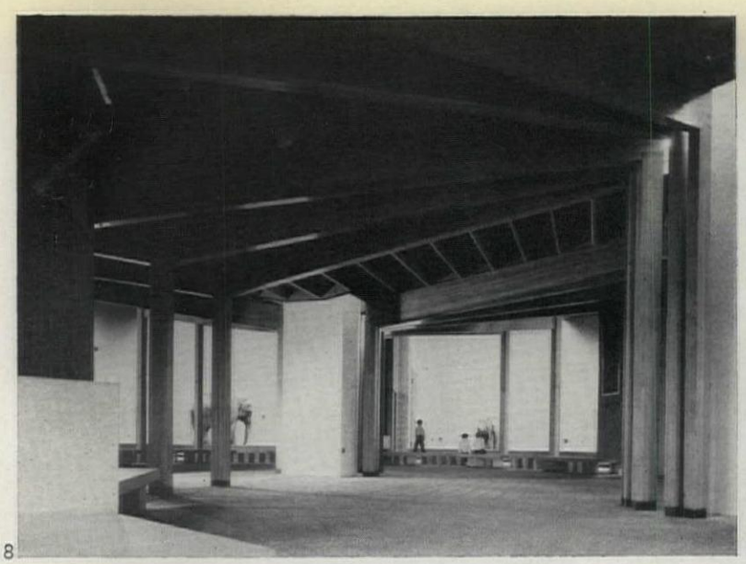
The exterior form of the building clearly reflects the chosen style of display: a cluster of stages, or raised open-fronted pens, with curved cycloramas as background, and a cluster of tapered funnels above them through which they are lit; and its plan clearly reflects (and efficiently serves) the basic need to let the public circulate comfortably through the building but at the same time to let individual members of the public stop and stare at the animals without impeding the general circulation. This is successfully achieved by the lower level viewing areas in front of each pen, which also give the public a remarkable sense of closeness to the animals, the barriers that keep them apart forming surprisingly little visual impediment. In deciding the size of the public space a nice balance has been kept between the need to keep the central area in scale with the surrounding pens and the need to allow crowds room to move. The public space may be uncomfortably crowded on the zoo's busiest days, but however much it had been enlarged there would still have been days when it was not large enough.

To assist the dramatic effect of the top-lighting of the pens, the public area is kept relatively dark. But it is not gloomy, largely because of the pattern and colour given to the ceiling by its radiating timber beams of laminated construction and reddish colour. Colours and materials throughout the building are well chosen and well used. Their effect is decorative, but they are clearly related to their function and do not therefore appear contrived. Outside too, the combination of ribbed concrete, blue brick and copper for the roofs is sober and practical. This and the way the materials are handled ensure that the building, in spite of the total absence of right-angles, remains a structure, not just a fancifully moulded shape. J.M.R.

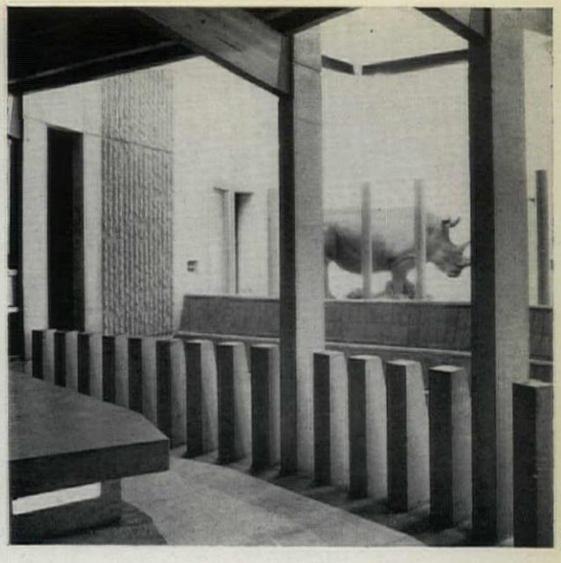


plan of roof timbers

ELEPHANT AND RHINOCEROS HOUSE, ZOOLOGICAL GARDENS, LONDON



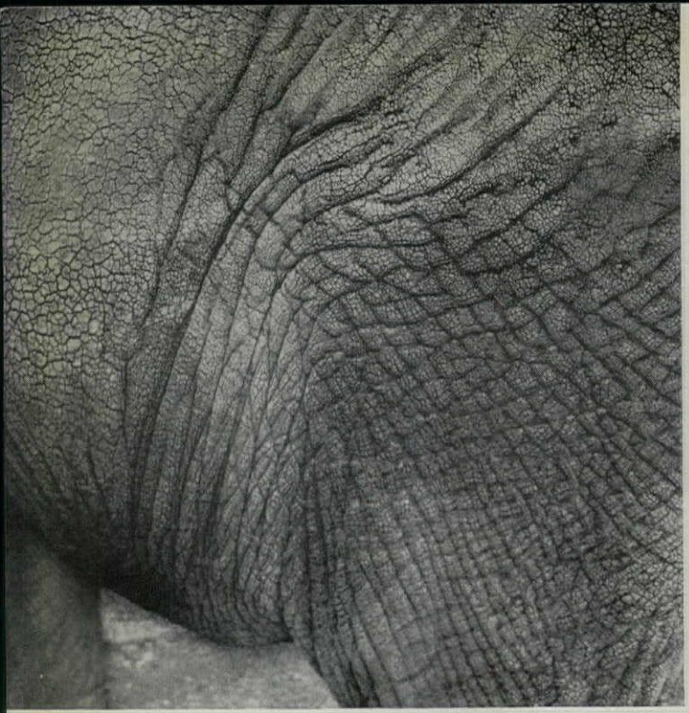
8

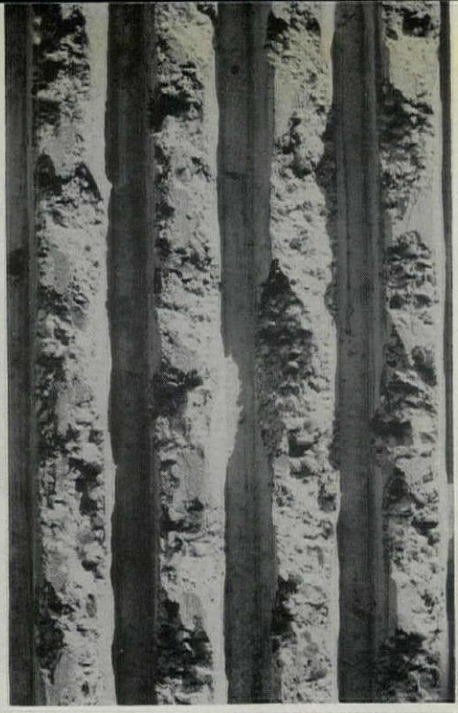


10

8, 9, two views of the public area, looking towards the elephant pens. The roof is of laminated wood beams (see plan on facing page). 10, looking into one of the rhinoceros pens from the public area.

9





11
12
13

ELEPHANT AND RHINOCEROS HOUSE, ZOOLOGICAL GARDENS, LONDON

Elephant house textures: 11, elephant. 12, 13, vertically-ribbed concrete walls. The slit windows in 13 light the staff mess room. The plinth and paving are of blue brick.

Lionel Brett

LANDSCAPE IN DISTRESS

The following article forms the concluding essay of a book* shortly to be published under the title above. The book is a detailed survey—mostly in the form of photographs and maps with a running commentary—of the post-war changes and present state of the landscape of a typical sample of 'green' countryside in south-east Britain; namely the southern section of Oxfordshire. The survey however does far more than illustrate the problems of this locality, for southern Oxfordshire is typical of the surviving open country within commuting range of London and its problems are those which must be solved if the whole south-eastern region is not to become a sprawling formless suburb. The extent to which this is happening already emerges from the pictorial survey which forms the bulk of the book, some sample specimens of which are reproduced on pages 25-26—a survey, incidentally, carried out at week-ends and summer evenings by teams drawn from the author's office. In this concluding essay, entitled 'Rescue' in the book, he discusses the factors responsible for the unsatisfactory state of affairs his survey teams found, the elements of society who are involved in it and some of the measures that could be taken to remedy it.

There wasn't anything exciting in our area that hadn't been there for centuries.—One of our survey teams, ex-Londoners.

This is our unhealthy mental state in the English countryside, and sometimes it makes us all wish we lived in Montana or Siberia, where everything that is built is a gain for humanity. There was something embarrassing and even shameful in snooping about these villages with camera and notebook, photographing for our aesthete's bestiary spick and span new houses and neat gardens in which young families were presumably entirely happy. We were reminded of MacNeice's lines of 1938:

> It is so hard to imagine
> A world where the many would have their
> chance without
> A fall in the intellectual standard of living
> And nothing left that the highbrow cared about.

More is worse, in other words. But MacNeice went on: 'Which fears must be suppressed,' and shortly, in his poem, resolved his problem by going to sleep.

Twenty-five years later, we don't think that the dilemma of the ten million private dreams that make a public nightmare can be escaped by repressing it. We know we are not alone. We know that those who drive out into the country want it to be country, and that those who discover a village want it to be a village. We doubt whether public opinion realizes the damage the last few years have done, or the worse damage that lies immediately ahead. Two things are worth getting clear from the start. One is that this field of small house building is unique in our national life in the width of the gulf that lies between our capacity (as shown by one or two architects in this area) and our normal practice. The other is that the long moan of which our survey so largely consists and of which the reader must be so tired is not the familiar pre-war moan of elderly preservationists about the pop vulgarity of a new generation. Only two of our survey team of ten were over thirty. The failure of the best to influence the rest and the failure of two elements of the same generation to speak a common language denote a breakdown in communications on a phenomenal scale. We therefore think we were justified in making our survey, which we have done not with nose in air or with contempt for any of the people at work in the countryside, provided we have something to offer at the end. This we must now set about doing.

It seems as good an approach as any to take these people at work one by one, and to try them in the balance.

First, the **PRIVATE LANDOWNERS**, great and small, who created so much of the beauty of our area and rarely lived to see it mature. Of their survivors (except for institutions like Oxford University and its colleges) less must nowadays be expected, because to plan and plant on any scale for a posterity outside one's own family needs an exceptionally rich man or an exceptionally public-spirited one. Yet even now, the difference in feel between a bit of country that is part of a good estate and one where the estate has been broken up is as unmistakable as it is intangible. The trees seem larger and more rounded, the lanes more seductive, without the threat of an unpleasant surprise round the corner. Where good Chiltern valleys survive, for example, it is because they are in

* *Landscape in Distress*. By Lionel Brett. London: The Architectural Press. 30s.

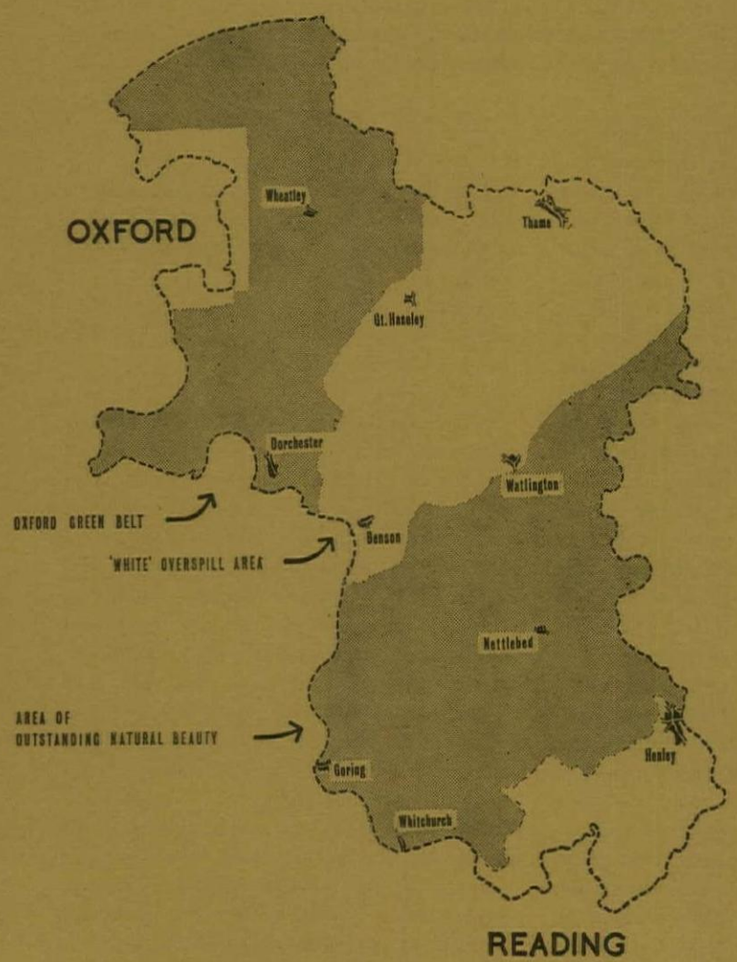
large-scale private or public ownership; elsewhere, so near London, even the most careful zoning seems unable to ward off subtopia, often in a form more subtle than mere building: signposts, litter, wirescape, dumps. Yet though they still hold the fort here and there, landowners cannot be relied on. Keen CPRE supporters one day, they are not above flogging a few sites to builders the next. Being human, they tend to be against everything but their own right to build the house they want. The test is when times are bad, when money is needed in a hurry: much of the worst development has been on land sold off to keep a big house under repair. This is inexcusable, for it should at least by the country landowner's pride that he knows subtopia when he see sit, and is visually educated enough to put any development for which he is responsible, however modest, into the hands of a well-chosen architect. That this is no longer the case is one measure of our deterioration. Another is the disappearance, with conspicuous exceptions like Haseley and Greys, of purely scenic tree-planting by landowners, inexpensive though this still is. Most eighteenth-century parks are now in the last stages of decay, and in very few has even replacement planting been undertaken. It was melancholy not to find the University among the conspicuous exceptions.

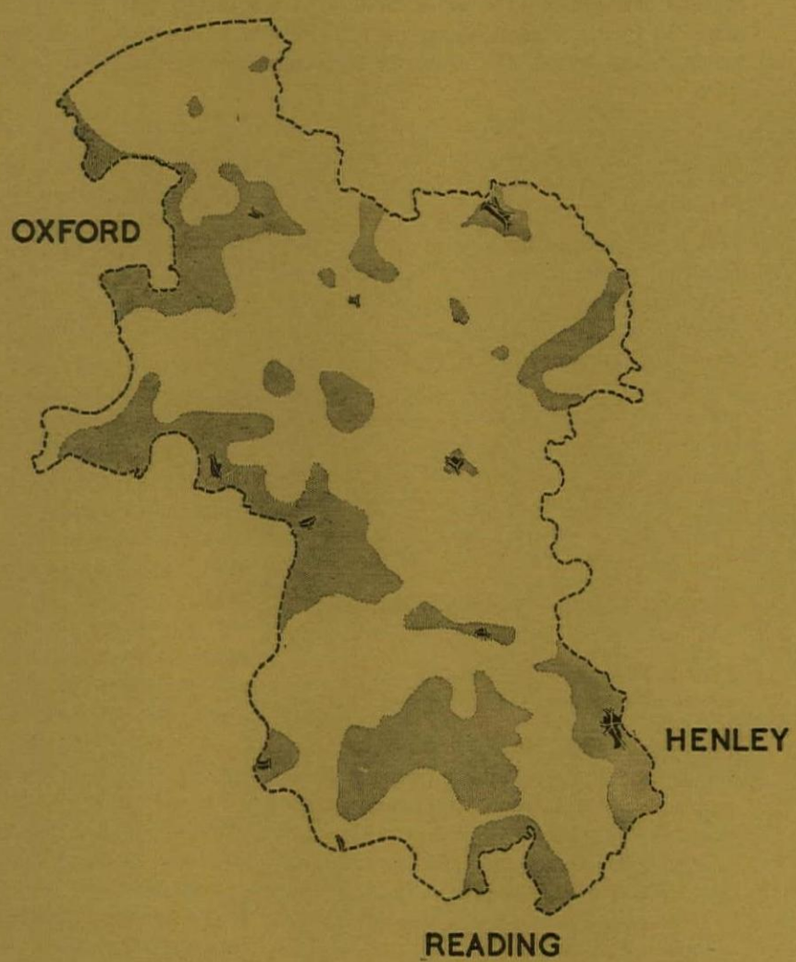
FARMERS, like landowners, come in all sizes, from do-it-yourself smallholders living in open-air attics to big businessmen rocking the balance of Nature. The two kinds of visual damage are quite different. The small man is not the rural craftsman you might imagine, laying a hedge, thatching a rick, weather-wise. He tends on the contrary to be a sucker for small ads and travellers and accumulates industrial junk in penny sizes. You never know what may come in handy. Rusting cars and tractors lie about waiting to be cannibalized, old prams and radios foul the dewpond, old sheets of tin or bedsteads fill the gap in the hedge. We were inclined to blame the Council until we realized that each farm had its own junkheap—a thing unknown in Thomas Hardy's England. Many farms *were* a junk heap.

This was one extreme of dereliction. The other is the fully mechanized factory-farm, its hedges mechanically trimmed or bulldozed out of existence, its hedgerow trees chain-sawn, its vast fields chemically fertilized and mechanically combined, baled, ploughed and drilled. There is no use in such agriculture for the isolated farmstead or row of low-ceilinged cottages. Labour is better off in a bungalow, animals under asbestos, implements in a garage. We are up against the brute fact that the countryside of great elms and thatched cotts and barns like churches and churches like little minsters is as pretty and pointless as a sailing ship. This summer, many farmers demonstrated their contempt for it by putting a match to large parts of it.

It is at this stage of the argument that some people fall into what Geoffrey Scott called the Mechanical Fallacy—the crude functionalism which asserts that if a thing works it is bound to look all right. This is no truer of farms than it is of furniture or motor cars. The difference is purely commercial—that farms don't sell themselves on appearance. (When land *does* have to sell itself, it is surprising what is swept

Below left: landscape classification map showing the sample area as divided into official categories of landscape by the County Development Plan. Below right: map showing the true state of the sample area: compact urban settlements (all that is normally mapped, and normally admitted to exist) are in black; suburban areas are shaded; genuinely rural areas are white.





LANDSCAPE IN DISTRESS

under the carpet). It follows that in the normal run of business only pride—equivalent to the pride of housewives or sea-captains—keeps the landscape in good shape, and this cannot be counted on. We shall be coming back to the wider aspects of this, but meanwhile we must record that not all the farms we saw were junkyards or prairies. Some were medium-sized and smiled all over with love and pride. We remember with particular pleasure Payables Farm, Checkendon, Hollandridge Farm, Stonor, Lane End Farm, Newington, Manor Farm, Emmington, and Chippinghurst Manor, Denton.

But none of these farms were of the kind of architectural interest that one nowadays often finds in equally functional enterprises such as workshops, health buildings, boiler houses, abattoirs, etc. We did not find a single modern farmstead in our area. Crudely detailed and often inefficient prefabricated buildings mixed unhappily with old barns and elements of God-wottery in farmhouse gardens. Little evidence was to be seen of the efforts of the Council of Industrial Design to influence the manufacturers of these buildings: even a darker roof material, which would greatly ease them into the landscape, is still prohibitively expensive, since manufacturers have not proved willing to subsidize such a material in the interests of amenity. Nearly every farm we saw was in that unhappy state of transition, both functional and visual, between the age of handicrafts and the age of mechanism, which other industries passed through over a century ago.

Eventually we shall no doubt see most of the farm population moving back into the villages, we shall see the farm buildings neatly grouped and fully industrialized, artificial fertilizers that fit into the ecological balance, and tree clumps and shelter belts disposed for both functional and visual purposes. But we shall see none of these things until farmers like other people get round to running their businesses with a sense of style.

FORESTRY and silviculture are to most people a more obscure and esoteric subject, presumably because of their much greater time scale, and few probably realize that nowadays the majority of Chiltern woodlands are managed and cropped in a more or less rational way. This is something fairly new. The beechwoods ran wild through the nineteenth century (while landowners interested themselves in conifers), and it was not till World War I, with its mass demand for rifle-butts, vehicles, decking, tent pegs, etc., that wholesale deforestation occurred. This, on the national scale, led to the setting up of the Forestry Commission in 1919. World War II produced further forced sales, and timber merchants began the practice of buying woodland for its standing timber and selling it cleared, either to the Commission or to individuals or companies interested in tree-planting as a form of tax-loss farming. The County Council, having no power to put blanket Tree Preservation Orders over whole areas, has had to keep its ears open to news or rumour of estates breaking up or other emergencies, and its forestry consultants have generally been able to arrange with the Forestry Commission that felling licences should not be issued in cases where a TPO seemed justifiable. In other cases, neglected woods have had to be clear-felled and replanted, generally with beech nursed by Scots pine, larch, tsuga or Douglas fir. Pure softwood plantations are generally in the depths of woodlands behind preserved beech screens.

All this sounds reasonably well under control, and by and large it is. But while some beech woods have been successfully thinned three or four times since the war, others are pitchdark with congested growth and will sooner or later have to be cleared. In several local instances the Commission, perennially short of land and without powers of compulsory purchase, has to endure the sight of derelict or savagely exploited private beechwoods right alongside its own handsomely managed woodlands.

After the Forestry Commission, one thinks next of the other Statutory Authorities: railways, gas, water, electricity. Of these, the first had done its worst and best before our period, the second operates only at Thame and Henley (with a profusion of Brunswick green), the third built a few clumsy water-towers before the war and some subterranean tanks with turfed tops after. None do serious landscape damage. The **ELECTRICITY AUTHORITIES** (CEGB and SEB) are another story altogether.

We have or shall soon have in our area samples of the complete gamut from the 400 k.v. super-grid with its 165 ft. towers down through the 275 k.v. and 132 k.v. national grid with ninety-foot towers to the 33 k.v. and 11 k.v. cables on wood poles which carry power to the individual transformer for each small settlement or group of new houses.

The grid lines are scenically damaging in different degrees. The super-grid will finally write off Nuneham Park and the national grid is the one flaw in the beautiful landscape back of the Miltons and Haseleys. Another 400 k.v. line will swing round the southern green belt from Sandford to Wheatley, spoil the last fine landscape between Nuneham and Oxford and cut the skyline s.e. of Horspath. At Sandford Brake all will come together in a striking group of electronic topiary beside which the present transformer station on B.480 is a toy. But this is our local fragment of a national problem, and this is not the place to recapitulate the seven-figure arguments on both sides.

Our worry, in nearly every village and in many open stretches of country, has been the close-up wirescape—poles, insulators, transformers—which is often more obtrusive because always closer to the eye. The striking thing about this network is its cat's cradle irrationality and confusion—nobody's fault, just an airborne diagram or paradigm of the growth process of a free-enterprise society. Two courses of action are available and in a minority of cases taken. One is what the SEB calls a 'clean-up'—taking advantage of a new demand to reorganize local distribution, recover wastefully planned extensions, straighten poles, etc. This is welcome in its small way. The other is undergrounding—burying cable and dropping transformers on to the ground where they can hide behind wall or fence. This happens without fuss and neatly in new developments large enough to justify it, and in one or two close-knit old places like Wheatley, but it does not happen, because it is uneconomic, in the picturesque loosely-planned villages that are characteristic of our area and most vulnerable visually. The places that need undergrounding most are thus the least likely to get it. This is acknowledged by the CEGB in tiny annual 'goodwill' grants to Boards to enable them to make ex-gratia gestures in special cases. It is here that there is scope for action on a scale that would not provoke a Treasury crisis. An 11 k.v. line underground is at present only five or six times the cost of airborne, and undergrounding individual supplies only three. If the CEGB were to triple its present amenity grants to Boards, which it could well afford to do without significant consumer reaction, a survey could be made in the villages and the most damaging eyesores could be brought down out of the sky. A concerted move by county planning authorities could surely secure this helpful improvement.

Meanwhile the GPO is quietly burying its lines whenever opportunity offers, and one needs to look at old photographs to realize that while new wirescape proliferates, at least the old retreats. It seems reasonable to expect to see the whole lot cleared up within a century.

LANDSCAPE IN DISTRESS

Apart from these statutory authorities, all other land users, great and small, operate under the eye and with the permission of the **COUNTY COUNCIL** as Planning Authority, and we must now turn to them. Development control in Oxfordshire is not delegated to Rural District Councils, but is operated by Area Planning Committees directly answerable to the County Planning Committee, and within the framework of policy laid down by means of the County Development Plan, and other documents. To date, as elsewhere, this framework has been sketchy in the extreme. The County Development Plan itself conveys virtually no information, and is supplemented, as far as our area is concerned, by Town Maps for Henley and Thame which are still under confidential discussion and by red lines drawn round a dozen of the larger villages to indicate the present 'urban fences' or limits of development. Apart from this, some fairly crude work has been done on population trends, to which we shall be referring later; gravel and lime workings have been tied down to an agreed long-term extraction plan; caravan operators have been steadfastly refused permanent planning permission, and the County Map is evidence of an energetic campaign of woodland conservation. There is even a new small community, Berinsfield, on a disused camp site near Dorchester. Considering the miniscule staff available for creative planning, averaging three in number (excluding the County Planning Adviser himself) and not including an architect or landscapist, it is remarkable that even this amount of policy-making has been possible.

But the striking thing about town and country planning in our area is how sensible it looks on paper and how wretched on the ground. One must in fairness make the normal qualification that it might have been worse—that whereas the doctor buries his failures the poor planner buries his successes. The revolting might-have-beens are not even on the files. One must also recognize that the things that worried our parents—ribbon development and indiscriminate advertising—have been almost (though not quite) stopped, which should hearten us. The idea of an urban fence round even the smallest community has bitten deep, so that planners nowadays feel genuine embarrassment if a developer slips through it and pops up outside. But what goes on inside the fence has been nobody's business; and the fence itself is mobile. We must ask ourselves whether the whole concept of infilling, which we all thought could make such a useful contribution to the housing shortage, has become a fallacy because it has been proved a failure.

Shelving for the moment the larger question of immigration and regional population movements, and looking at our area (as the planning authority has hitherto done) in terms of local growth only (including of course the growth of Oxford and Reading), it seems clear that there can only be one answer. It would have been pleasant, and it is still beguiling, to think of embalming a few star villages like Brightwell Baldwin or Woodeaton or Little Haseley—about the only candidates left. But villages are not geriatric hostels, and have to build for the young. And except for a few tied hamlets under the skirts of country houses, they all have, or rather had, ideal sites going to waste—abandoned allotments, decayed or uneconomic orchards, unwanted paddocks, superfluous ends of gardens—indirect effects of motor transport, deep-freeze and television. Not to use such sites in a period of insatiable housing need would have been unthinkable.

The question to pose is therefore whether the way they have been handled—sitting tight and waiting for applications—has been the best available. It was clear to us that with the type and size of staff allowed to him the County Planning Adviser could do little more, and it seems equally clear that even if a steep rise in quantity and quality had been authorised it could scarcely have been implemented because of the national shortage. It is no answer to point to a minority of exceptionally 'good' authorities who seem to get the staff they want: this only underlines the shortage.

Yet the technique has been available, ever since the pioneering work of Dr. Thomas Sharp. Village development plans showing every new house and tree to a scale of 1:500 could have been drawn and negotiated with developers, as planners are finding perfectly possible in the far tougher circumstances of urban renewal. So that the first criticism of the County Council becomes this: that not having the staff to draw such plans they did not appreciate their necessity and did not build up a group of consultants to fill the gap. The sole exception, Berinsfield, was an isolated council housing scheme and not therefore a typical case.

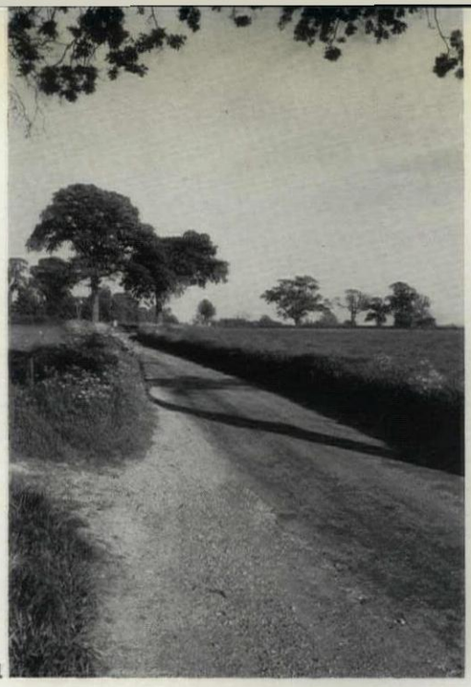
Even without statutory town-maps or three-dimensional village development plans, the County Council could have adopted a policy of reasonably high density in village centres which would have had two immediate effects. It would have enabled at least twice and in some cases three times as many village houses to be made available on the same area of land, and it would have forced developers to employ architects of some skill and ingenuity. But it would admittedly have made greater demands on official staff for both firmness in negotiation and judgment in evaluation.

For we must not wave aside the difficulties of planning and then getting out of speculative builders and private people houses that are sympathetic, simple, saleable and *wanted* by a corrupted public taste. To these we shall return when we consider another failure: that of the architects.

But the next people down the line are the 'housers,' public and private. We take the **PUBLIC HOUSING AUTHORITIES** (borough, urban and rural district) first. Public housing has the advantage of being wholly under one control from start to finish, and in some parts of England, both urban and rural, this has been turned to good account, setting a standard that few private developers have been able to match. That this is not so in our area is not because the houses have not been architect-designed. Both Bullingdon and Henley Rural District employed a consultant for the basic design of their standard house types. The reason for the failure (and it is a universal one, only becoming more abject as one moves northwards) is quite simple. It is that council housing has nowhere been integrated with the village scene. Tacked on the edge of villages or dumped in the middle, a clutch of Council houses with its chain-link fencing and concrete posts is as alien as a Boots in Venice. If house types had been designed which could wrap themselves round small spaces like a game of dominoes; if colours of brick or roof rendering had been chosen to suit each particular village rather than a general-purpose battledress which suits none; if the problem of furnishing the space between dwellings had been seriously faced as the problem it is; if house groups had been edged with hawthorn instead of chain-link, and if, all else failing, even a small number of true forest trees rather than sissy flowering ones or none at all had been planted ten or fifteen years ago when most of these houses were built, an example would have been available for today's private builders, instead of a warning.

Coming now to the **PRIVATE BUILDERS,** we have suggested large-scale three-dimensional village development plans and we have suggested a better example by local housing authorities, but neither suggestion absolves these developers from their own homework. To many this will be an old story, familiar since the days of *Britain and the Beast* and *England and the Octopus.* The cruder vulgarities of

[*continued on page 27*



1

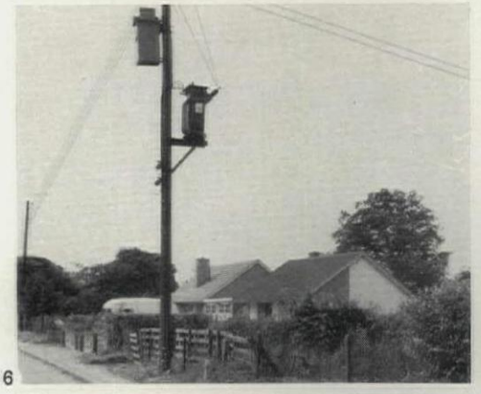
2

3

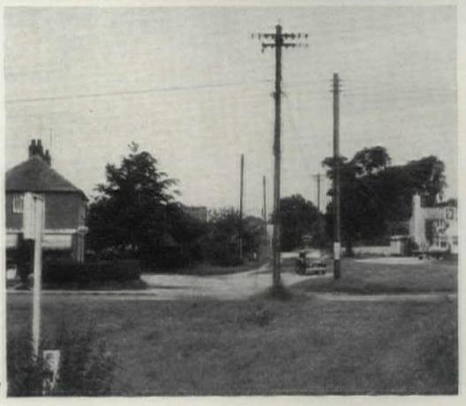
'Binfield Heath and Dunsden, midway between Henley and Reading, used to have something of the character of the Berkshire canasta belt, with tennis and pony clubs. Now both little places have been betrayed and blown open by the bungalow builders, and there is no knowing where it will stop. We may be seeing only the first instalments of what could be claimed to be justified almost indefinitely as "infilling" (2-5). This is definitely a growth area of the wrong kind, but is still secluded from the sprawl of Caversham by a couple of unspoilt sub-Chiltern square miles running north westwards from Dunsden Green (1), with a wide view of woodlands to the west.'

4

5



6



7

8

9

6, wirescape at Stoke Row. 7, a cross-roads subtopia, Cray's Pond. 8, 9, opposite sides of the road at Checkendon: public and private housing.

10

11

12

13

10, 11, *Benson, described in John Piper's guide (1953): 'Street of old houses with coaching inns. It looks strange, like a dried river bed or an estuary with the tide out.'* 12, *new shopping parade and,* 13, *typical new houses in Benson.*

14, *hill-top industry and,* 15, *caravans at Garsington.*

16, *Stadhampton, with 'infill' consisting of council semis on the right and a private enterprise estate on the left. Question: where does infill stop?*

14

15

16

continued from page 24]

those days have (to some people's regret) gone out of fashion, but the builder will still remind you that he has to sell his houses, for which subtle shades of gimmickry and snob-appeal are thought to be essential. Considering that they have to compete along all our town fringes in a kind of permanent Ideal Home Exhibition, many builders feel they should be congratulated on their reticence. It would be fair to say that the picture isn't any longer uniformly black. We have noted good examples in Henley, in Stanton St. John, in Studley; on the other hand many places, notably Goring, Sonning Common, Woodcote, Benson and Chalgrove, have sunk in a sea of subtopia in the last few years. Builders' Allsorts feature strongly, but the really with-it post-war commercial success is the low-pitched plastic-stone picture-window bungalow or ranch house, built either speculatively *en masse* or to order. This is not only totally alien to the village scene, but also wastes land on account of its low density.

This brings us back to the question of grouping. The problem here is quite simple: it is that most people would ideally choose a detached house, but the national interest requires attachment if we are not to drown in suburbia. That classic British compromise, the semi-detached house, worked much less happily than Miss Eden's semi-attached couple. What to do? There can only be one answer: 'Consult the genius of the place in all.' Odd corners fit only for single houses exist in every village, and in towns and villages streets exist where piecemeal renewal of single houses is what is wanted. But where larger sites, a paddock or an allotment area, come into the market, the density laid down should be one that only an ingenious architect with a sure sense of outdoor scale can handle. Let them, in other words, be urban. The idea that towns are one thing and villages another is a sentimental fallacy. The one fatal error, prevalent all over our area, is the row of miscellaneous detached (*just* detached) houses, whether they are bungalows or anything else and whether they are 'architect-designed' or not.

We come to the **ARCHITECTS.** How much private development is truly architect-designed has been hard to discover. There are so many shades. Our enquiries suggest that contrary to the prevailing view among architects, they have a hand in much of what goes up, though very often this takes the form of a sketch design subsequently jazzed up or corrupted in the supposed interests of saleability. Undoubtedly too many of us initially, for bread-and-butter reasons which gradually become second nature, prostitute our art (if the Victorianism may be forgiven). But the truth is worse than this. The truth is that even with a free hand few of us are capable of an architecture that is 'solid, proportionable according to the rules, masculine and unaffected.' Architects complain a good deal of the builder's age-old habit of serving up last year's clichés, but we are ourselves for ever inventing new ones.

Here again one must not be too sweeping. Interesting modern work is to be seen at Carmel and Borocourt. We have noted such examples of decent village housing as we could find, and one or two small housing projects in Henley that are better than decent. Henley is the only place in our area where the younger generation of architects has made itself felt, mainly through an active Civic Society. This accentuates the famine elsewhere. But whether one likes or dislikes the face of this building or that, the real trouble lies deeper. It is that architects have forgotten how responsible they are, whether they like it or not, for the whole set-up—the planning machinery, the attitude to old buildings, the paint colours, the flowering trees, the eye-catching tricks of the builder's trade. They got us into this mess, and they are the only people who will get us out of it.

We shall not, however, solve our problem and rescue our landscape by taking its different users, as we have done, and standing them in the corner. By what criteria, for one thing, do we presume to do this, unless we have a philosophy of landscape we are able to put into words? This we must now try to formulate.

The best road to qualitative judgments is by trying to quantify. The problem is fundamentally one of living space, and to this there are two sides, the problem of population and the problem of space.

The 1961 population of our area is shown below, and alongside it are the figures planned for by the County Council in 1971 and 1981:

	1961	1971	1981
Henley Borough	8,993	12,000	13,100
Henley Rural District	22,472	30,000	32,250
Bullingdon Rural District	40,947	48,000	53,500
Thame Urban District	4,197	8,000	8,600
	76,609	98,000	107,450

The figures for Oxfordshire as a whole are as follows:

1951—177,061; 1961—199,588; 1971—270,500; 1981—300,051.

The rapid acceleration during the present decade should be noted—no doubt an acceptance of self-evident fact, particularly in the case of Henley Rural District. By contrast, the projected deceleration during the period 1971–81 has an aura of wishful thinking or whistling in the dark.

LANDSCAPE IN DISTRESS

These figures are claimed to be all-embracing and to allow for population growth, overspill from London, Oxford and Reading and migration from outside the region, and it is important to note that in allowing for a growth of over 100,000 (or 50 per cent) in the county's population for the period 1961–81 the County Council accepts (and may indeed have inspired) the quota allotted to Oxfordshire (including Banbury) in the South-East Study.

Two remarks seem worth making at this stage. One is that so large a proportion of the projected growth has already occurred that the problem for the future is obviously going to be how to apply the brakes, if Oxfordshire's population is to be held anywhere near the South-East Study projection, which many people regard as itself excessive. The second, which follows automatically, is that we have in these figures a strong case for rural conservation—for regarding the present broad pattern of town, village and farmland as valid—rather than for thinking in terms of a more intensive residential use of the whole landscape.

We come to the problem of space. The map on page 22 shows the tiny compact urban settlements which are probably still all that appear in our old-fashioned atlases and are certainly all or more than are admitted to exist on the pretty and highly misleading coloured map supplied with the South-East Study. It also shows, and this is its point, the parts of our area that can still be said to be truly rural in character and the parts that have been suburbanized or otherwise (as by airfields) transferred to the other side of the balance sheet. Now any such line is open to two objections—that it is a value-judgment of a purely subjective nature, and that such a balance sheet is itself an obsolete concept based on old-fashioned dreams of a rural England which have no validity in an age of power-lines, industrialized agriculture, two-car families and television. To the first objection the answer is that of course there is no black and white but shades of grey; yet we have found in our survey as definite a distinction between the 'residential' countryside (irrespective of the density of houses in it) and the functional farmland or woodland as between any other classifications of landscape. Bungalows and wirescape exist in the truly rural zone just as farms and woods exist in the suburban-

LANDSCAPE IN DISTRESS

ized zone, but the feel of the landscape is totally different. The line we draw, in other words, represents a distinction of *fact* and not (as do green belts) of *intention*.

To the second objection it must be conceded that our classification begs the main question we try to answer in this chapter—the question of what future we foresee for the farmed countryside: whether it is to remain just that, or be taken under the wing of the words 'multiple use,' which can have visually disastrous end-results as well as visually exciting ones. We have, in fact, in drawing our line, assumed an attitude which we must now justify.

We confess, first, that we started our survey predisposed for multiple use. We saw our whole areas as weekenders' and commuters' country (which indeed it is) superimposed on its productive function, with walking and cycling and cruising and picnicking and field sports superimposed on them. We saw the disused gravel pits planted with dark shade trees, flashing with white sails, dotted with anglers. We saw games of stump-cricket on the commons and new rides opened through the woodlands. But we subsumed as matrix for all these activities the great broad bosom of rural England, and it was not until we looked more closely at what is actually there, on the ground, that we realized that the matrix itself was being nibbled from so many different directions by so many kinds of animal that great stretches of it had ceased or were at that very moment ceasing to be a decent setting for any of these activities at all. Then the sun rose and all the fields flooded and overflowed with the great golden harvest of 1964, and in the silence before the combines got to work we realized that the real need of our urban and motorized millions, whether they know it or not, is not for all these busy and harmless activities but for silence itself, for secluded villages in which voices and laughter can be heard, and for oceans of waving grass and corn that have nothing to hide. We therefore mark on our map the diminishing acres where this sense of space is still to be had.

So we come hard up against the brute fact—an irresistible force meeting an immovable object—of a landscape that only by a hair's breadth retains enough space to convey any sense of space, yet is required to bear its share of further population burdens of which the South-East Study only shows us the beginning. No use crying over the spilt milk of BMC and Pressed Steel or of all the land wasted by thoughtless planning and house-building. No use either pushing the problem over some boundary into some other landscape in distress. If our study is to have any value, we must bear not less than our fair share of the burden of choice.

It must be crystal clear from our survey what the choice would be if we were free to make it: a double embargo, first, on building in or on to the villages, and second on building in the unspoilt landscape. As far as the villages are concerned, our age has had ample time and space to prove itself incapable of achieving good village housing, and proved it. It is not that the designers do not exist, but that there are too few of them, and those under-used or ill-used. One day no doubt architects and builders will learn the trick, or more likely side-step the obstacle by producing an acceptable kit of parts for a civilized urban environment. At the moment the trouble is that everybody concerned is too small—the planners, the architects, the builders. So the whistle should be blown and the exercise called off.

As far as the landscape is concerned, we have shown how much of it is now in varying degrees residential or suburbanized, how little truly rural. This little is invaluable, unreplaceable. It follows that only the residential landscape should be built in, except for agricultural or, in certain cases, recreational purposes. One other exception might be made: the precincts of country houses in enclosed parks, where these are invisible from the landscape at large. New villages for such sites will be worth considering when we have the designers for them.

The corollary of this double embargo would be full exploitation by multiple use of what we call the residential landscape. This would require planning of a much more positive order than we are accustomed to in most counties. For example a feasibility study for a new town for a population of 50,000 in the 8,500 acres that we consider no longer rural north of Caversham would be worth doing, among others.

But we are not free to make choices of this kind. For the alarming fact is that planning permissions, conditional or otherwise, have already been given, but not yet used, for a greater increase of population than the South-East Study thought it necessary to allocate to Oxfordshire by 1981. It is this flood of permissions now in the pipe-line which makes our whole survey a mere still in a movie film. We have only seen the beginning, but it isn't hard to imagine the end.

Here is this great investment, much of it in the hands of speculators and comfortably appreciating, while the County Council is too poor to employ the planning staff it needs or to make grants to the people prepared to use their own initiative. If even some small part of this land, in the places where its development could be most fruitful or most damaging or both, had been bought by the local authorities years ago when it was cheap, how much better off they and we would be now. As it is, one of two things must be happening. Either the land is being deliberately held back from building to increase its capital value, or the demand for houses in our area is not what it was thought to be, and the case for an immediate embargo on further permissions is unanswerable.

But the hard core of the problem is the 'outline' permissions already given. Our survey demonstrates that it would be intolerable to allow these to materialize in the forms current as of now. We have had enough of the argument that because Builders A, B, C, D, E and F got away with their bungalows or allsorts, Builder G is entitled to his. The question now is by what methods an immediate and dramatic change can be achieved in the quality of what is being done. The answers, for what they are worth, will be relevant for most of the growth areas in this country.

The first thing most architects will beg for is that planners should know what they want. Drawing a red line round a few villages on the Ordnance map is about the most primitive form of 'planning' one can imagine, and the one making least demand on technical skill—although to be sure it is a stage beyond anything we had before 1939. The next stage, as we have already suggested, is for planners to build up and make available a vivid picture of how the community should grow, how its buildings and trees and spaces between them should be related, and (in appropriate cases) what their materials and general form should be. The words in brackets cover the present mile-wide gap between educated and sensitive design and the other kind. Not to bring the latter under fully qualified and tight control would nullify the whole exercise. Conversely, to put our best designers in a strait-jacket could be stultifying to our architecture and would not be tolerated. It seems evident that the kind of discrimination necessary could only be found among architect-planners and will only be acceptable from them.*

If developers were first briefed in this way, they would not have to be subjected to the present irritating and time-wasting aesthetic control by trial and error. They would get the message, or they would go away and hire somebody who spoke the language, as the big urban developers have learnt to do. But for the time being the

* Evidence for this statement can be found in the present operation of aesthetic control, which cracks down far harder on the imaginative architect than on the builder offering up the third-rate but familiar.

present controls would have to run on, and they would have to run on in a dramatically tougher and more assured way. Thus the sequence would be, first, to build up a planning staff suitably qualified for the work it would be doing, second, to support that staff in the new line it would be taking with applicants, and third, to draw up or commission town and village development plans whose existence would enable economies in staff to be made.

All this would go some way to mitigating the distress we are in. But it would also be necessary to look into the case for revoking some planning permissions already given, before the cost of doing so becomes altogether prohibitive. We do not have the information to be specific, but two things are obvious from our survey. One is that the lamentably short list of unspoilt villages and the longer list of places already near the edge of final disaster are the first that should be looked at. The second is that of our two recognized towns, Henley and Thame, the one with the larger growth potential, Henley, is the one with the intractable planning problem. Partly because of inexpendable old buildings, partly because the developers have been allowed to get in first, the stock contemporary solution of the pedestrianized shopping street with service roads and parking offstage can no longer be made to work in Henley. The town will almost certainly have to stop growing, even at the cost of revocations, or see its centre seize up, or damage itself severely by demolitions. In comparison, Thame is plain sailing.

But none of these mechanisms and makeshifts will get us far unless they presage a new attitude to our landscape, or rather an old one. A 'renaissance' is called for.

For many centuries two attitudes have co-existed in the world. Young countries have helped themselves to what nature provided and moved on, leaving the dust bowls of the American Middle West or the bleached skeleton trees of the Australian paddocks. Old countries like China, Holland and Japan, perennially short of cultivable land, have evolved a philosophy of conservation permeating their whole culture and placing a powerful taboo on waste of resources or damage to the beauties of nature. That we should use the emotive word 'vandalism' for such damage shows that we are with the old countries in this, and of course all the physical facts—not only our tiny land area in relation to population but also the human scale of our landscape—place us irrevocably there. In many ways our situation is like the Japanese. But we have never shared their miniscule, and we would think almost neurotic, reverence for the small detail of nature. This is partly a temperamental difference, partly due to the circumstance that at the moment when our population first began to press on our resources we acquired half the world to play around in. The non-visual culture we developed in that age, the taste for action rather than thought, and the sublime sense of God-given genius in government, are not the best possible equipment for the handling of the very subtle and sensitive landscape we have also inherited.

For older than this tradition of philistinism, and overlapping it chronologically, is the tradition of the English landscape as a balanced, orderly and humane thing—one of the most fruitful and disinterested manifestations of human creativity. Humphry Repton, whose career coincided in time with Pitt's and Nelson's, was no aesthete torturing nature into arbitrary shapes, but claimed that all his work exhibited 'a just sense of general utility.' This balance between beauty and function was simply one aspect of the economy of a properly integrated and interdependent country estate. The good landowner made it his business to study all aspects and reconcile them.

Our rural authorities are the direct heirs of this man. This is the vital fact. But they have let the unified view he took of his whole estate disintegrate among rival and quasi-independent departments, and outside bodies both superior and inferior. Alibis are easily come by, as when a Planning Committee has to stand by while the Highways Committee widens and kerbs a village street, or is unable to enforce tree-planting in a RDC housing scheme, or to control a refuse dump or a wirescape or a sodium lighting scheme. Excellent relations may exist between all these committees and authorities and issues be settled at site meetings in a spirit of give-and-take. Our survey is evidence that the amenities have had to give too much.

To allow Planning Committees the veto, as has often been suggested, would be impracticable and inconsistent with the ministerial system of government of which local authorities are a model. Anyhow what matters is prestige rather than power. What matters is that a county planning committee should be a group of men and women prepared to make a life study, whether as professionals or as amateurs, of the English landscape and townscape as a historical and evolving work of art and science. If such people are not to be found within the ranks of elected representatives, they should be recruited by co-option. Or planning committees could be appointed by their authorities on the analogy of Government Boards or of the Australian National Capital Commission at Canberra. This could break the vicious circle of local government being too frustrating for the type of mind it desperately needs in order to break through its frustrations.

A planning committee of this character and authority would not rest content with the present crude solutions to such problems as refuse disposal, wirescape, aesthetic control and the handling of spaces between buildings. It would be able to judge whether it could safely delegate its powers. It would not need to be guided by temporizing and essentially immature directives such as green belts, areas of outstanding natural beauty, listed buildings and so on, because it would see and feel its country, with all its landscapes and all its buildings, as a living whole.

We have taken an English county as our model because it is there, timeworn and deeply rooted, commanding a loyalty and love that is not given to more recent if more rational divisions of local government. An English county is of a size you can learn to know in minute detail; and that you can feel for it is attested by their names, fulfilling no functional or legal requirement, on the backs of cars. We are in a sense unlucky that in rural England local loyalty is to the county and not, as in France, to the region, because regionalism for many of the purposes of local government including strategic planning, is essential and inevitable. But the subjects of this book have been the tangible, three-dimensional objects that appear and disappear out there in the field, in the village and the town—the ultimate criteria, but not the elements, of strategic planning. In any organization of large numbers of people, human beings are not the elements of strategic planning, but they are its ultimate criteria and need their own level of command for their proper handling. The same goes for the individual enterprises that are the stuff of local planning.

This is not to say that present county boundaries or the relations between counties and boroughs are happy or should be perpetuated. Over the whole of rural Britain outside the conurbations there is a strong case for amalgamating county boroughs and municipal boroughs with their rural hinterland in what Mr. Derek Senior has called 'continuous counties,' and there is no more conspicuous example than the city and county of Oxford. This city as the capital of a reconstituted county could with ease command the services of the kind of planning committee we need.

All this must happen some day, but before that day, how much more damage do we have to suffer? Deep down, this is a test of our national will and imagination. After the last war the tiny minority that cared about the man-made environment achieved legislation that was a long jump ahead of public opinion. The same thing had happened before to the minorities that cared about slavery, poverty and the colour bar. The task for us, as for them, is to hold the ship off the rocks until the tide comes in.

ATHLETICS CENTRE

SPORTS BUILDINGS FOR THE UNIVERSITY OF HULL | *architect* PETER WOMERSLEY | *photographs by Sam Lambert*

This has been designed for building in stages. The first stage, illustrated here, consists of a sports hall, two intercommunicating gymnasia, temporary staff and student accommodation and two squash courts. Future stages will add four further squash courts, changing accommodation, permanent staff accommodation with a caretaker's flat, a lecture theatre, a studio for dancing and one for judo, wrestling and weight training, and finally an indoor swimming pool with its own suite of changing accommodation, and a cricket pavilion and rowing tank.

The sports hall completed as part of the first stage is the heart of the whole scheme. It contains at ground floor level a multipurpose hall 30 ft. high, 60 ft. wide and 120 ft. long, which houses a variety of activities —three badminton courts (or one for lawn tennis), hockey, golf, cricket, football, javelin, discus, etc. A system of floor-to-ceiling netting used in different combinations ensures that many of these activities can be simultaneous and that all can be overlooked by spectators or staff from a gallery at first floor level, above the sports hall storage accommodation. This first-floor gallery forms the social centre for the first stage, being equipped with a tea bar; it also has to provide temporary facilities for fencing. The north side of the gallery opens on to the two gymnasia which can be used together as a smaller sports hall by opening the 20 ft. high sliding door dividing them. They can also be used separately— the eastern half for dancing, the western for weight lifting and judo. The western gymnasium is equipped with gymnastic equipment—ropes, beams, wallbars, etc., for training purposes. Overlooking the gymnasia in turn, at second floor level, is a further glazed gallery which houses a students' common room, lecture room, a staff teaching room and temporary staff rooms and changing rooms. From this gallery it is possible to look down into both the sports hall and the gymnasia.

The roof of the sports hall is supported on extremely slender concrete mullions every 3 ft. 3in., parabolic in section. Spacing them at this relatively close span has made it possible to spread the load, obviating the need for piling which has been necessary on other new buildings at Hull University. The concrete mullions taper to a cross section of only 5 in. by 6in. 31 ft. above the ground, where they support an oversailing roof built up from a grid of prestressed, open web concrete beams 4 ft. 6 in. deep, spanning 60 ft. Mullions of such slender section are thought never before to have been cast in this country to such a length (over 30 ft.). The surface treatment of the concrete is designed to achieve overall weathering. It has a system of grooves which, whilst helping in the assembly and the jointing to the mullions of the precast cladding panels, also canalizes rain water so that the board-marked face of the concrete is left clean.

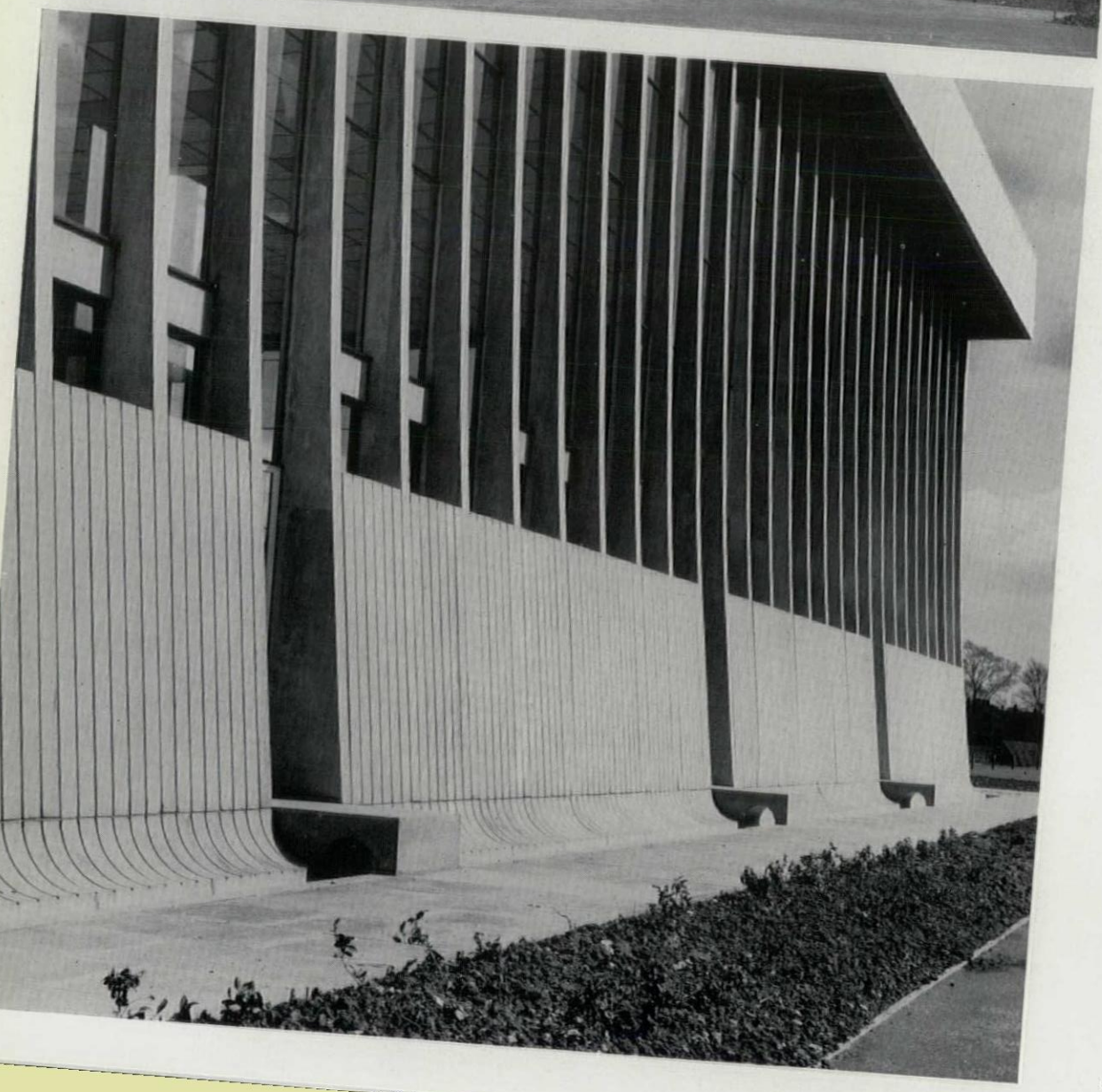
Rain water running down the windows is first collected in a cill gutter in each structural bay, and from there finds its way down the grooves into a precast concrete gutter which encircles—or will ultimately encircle—the building. The grooves also serve to conceal the bolts connecting the concrete shuttering together. Special toughened float glass is used throughout the building to withstand the hard wear to which it will be subjected. It is glazed directly into the grooves left in the concrete mullions, with no window frame as such, whilst the corners of the building have been in effect 'dissolved'—there is no corner mullion, the glazing being half suspended from the roof and turned through 90° by mitring, to form a completely transparent angle. Finishes are fairfaced concrete or brick walls, floors are sprung timber or ribbed black rubber, with a fairly elaborate ceiling designed on the same overall grid (3 ft. 3in.) and covered with panels 3 ft. square which are either acoustic panels or illuminating panels of light-diffusing plastic. Between these panels the structure shows through and provides concealed 'trackways' in both directions for the complicated system of nets and gymnastic apparatus suspended from the roof. Heating is by low pressure hot water convectors sunk flush into the walls wherever possible.

The squash courts, two out of an eventual total of six, are comparatively simple brick and concrete structures arranged either side of a spectators' gallery which will eventually form the spine of the completed sports centre. The shape of the concrete roof follows the 'play line' inside the court, giving a winged appearance to the building. The back wall of each court has the same parabolic section as the main building and is of concrete. A glazed bridge links it to the main building and this and the squash gallery are used for table tennis.

Architect in charge, Paul Jones. Structural engineers, Ove Arup and Partners. Service engineers, Edward A. Pearce and Partners. Quantity surveyors, Tulley and Maguire.

1, the main entrance at the eastern end of the sports hall. The ground floor car-park shown will eventually become a changing room.

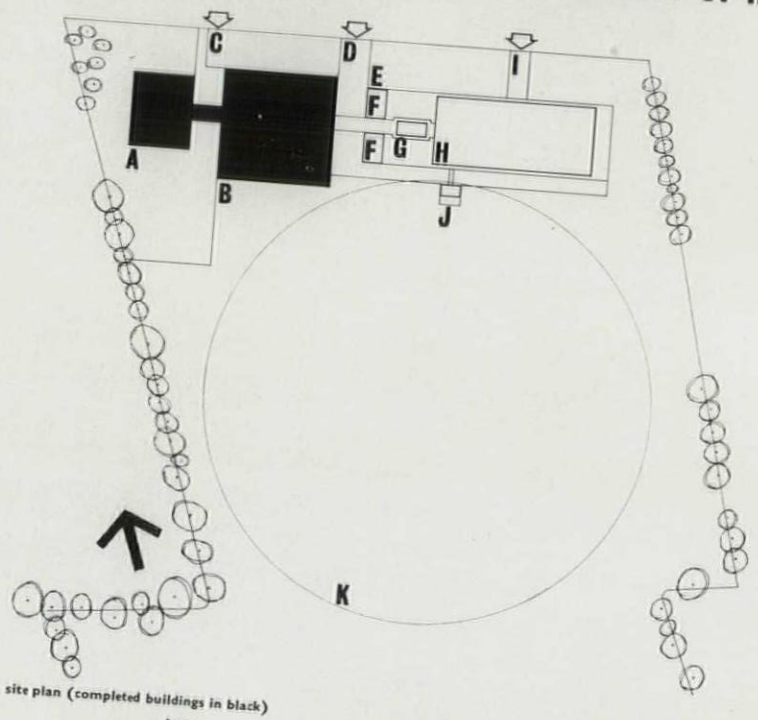
2



3

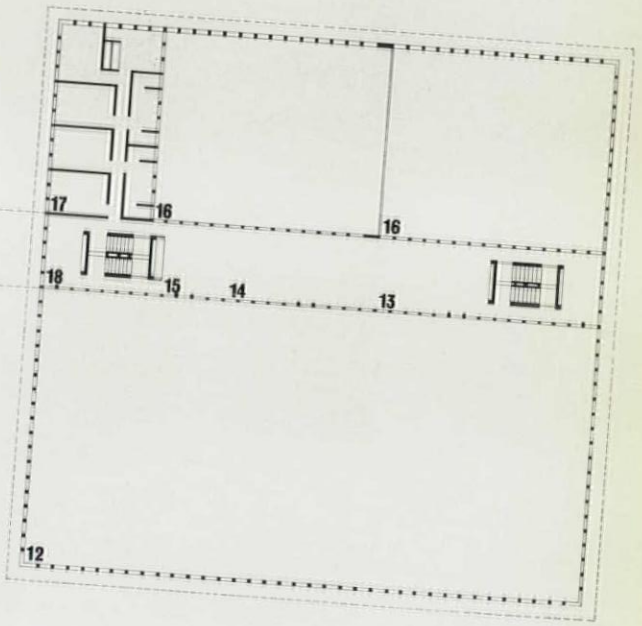
2, general view of the whole first stage. 3, detail of the south front of the sports hall. The concrete 'bridges' connect doors from the hall to the outdoor play area.

SPORTS BUILDINGS FOR THE UNIVERSITY OF HULL



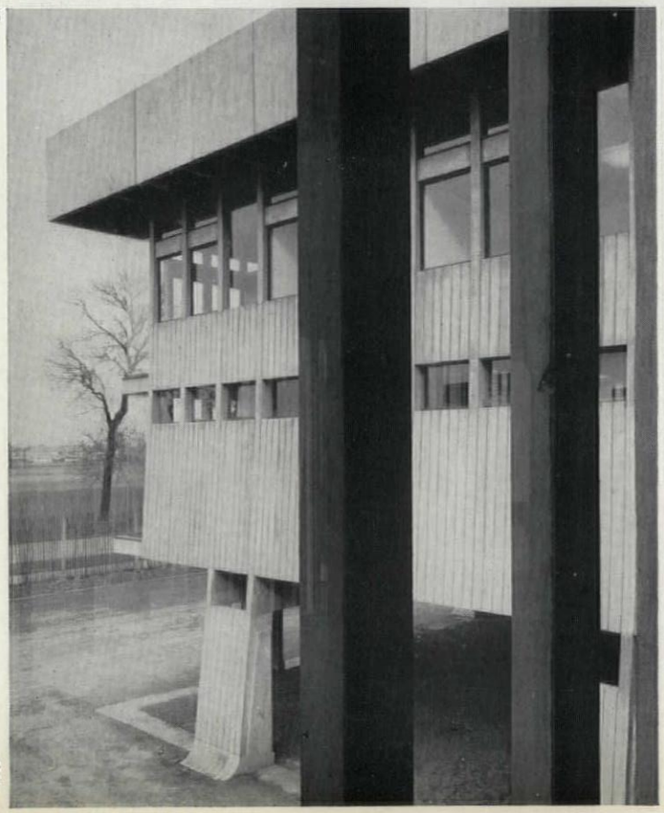
site plan (completed buildings in black)

key
A, squash courts
B, sports hall and gymnasium
C, goods entrance
D, main entrance
E, parking
F, staff rooms
G, lecture theatre
H, swimming pool
I, public entrance
J, pavilion
K, cricket circle



second floor plan

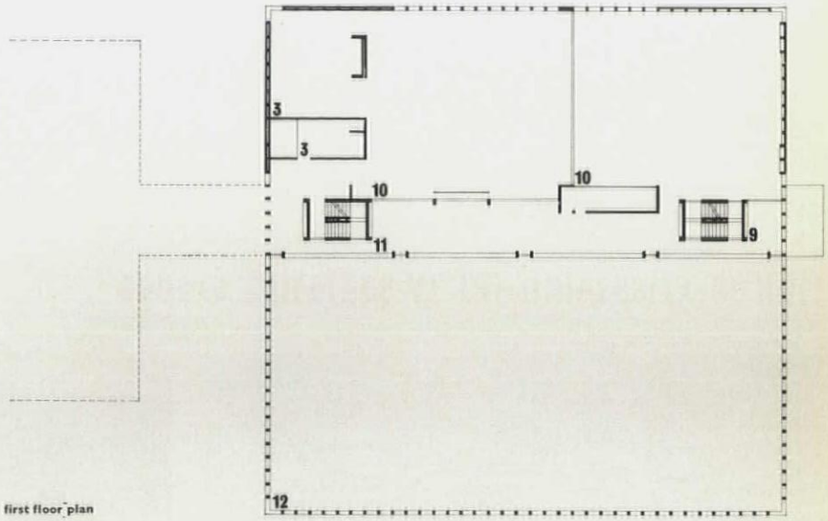
4



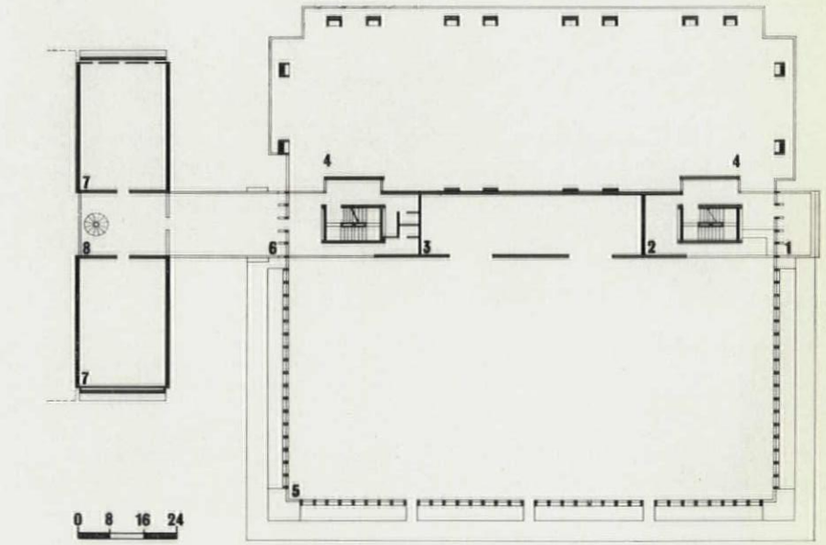
5

6

7



first floor plan



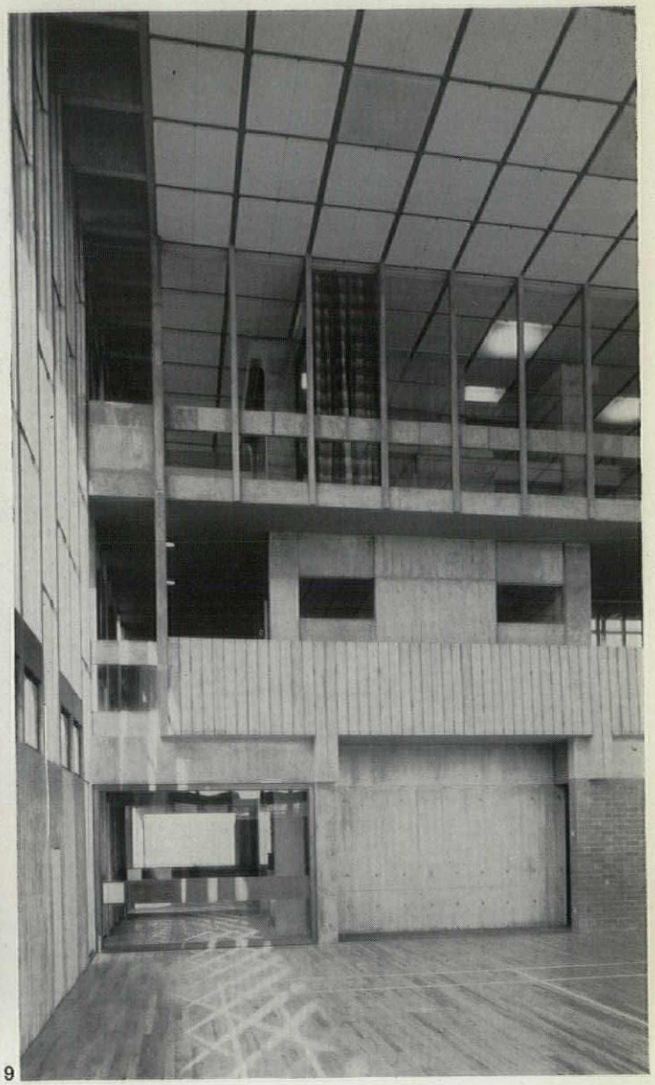
ground floor plan

key

1, students' entrance
2, cloaks
3, storage space
4, car park/future changing rooms
5, sports hall
6, staff entrance
7, squash court
8, access
9, tea
10, gymnasium
11, concourse-spectators' gallery, table tennis, fencing
12, upper level of sports hall
13, common rooms
14, lecture room
15, seminar
16, upper level of gymnasium
17, staff rooms
18, office

4, the squash courts and connecting bridge. 5, north-west corner of the sports hall from the bridge. 6, first floor level gymnasium with the second floor lecture gallery on the right. 7, circular staircase giving access to the gallery between the squash courts.

8

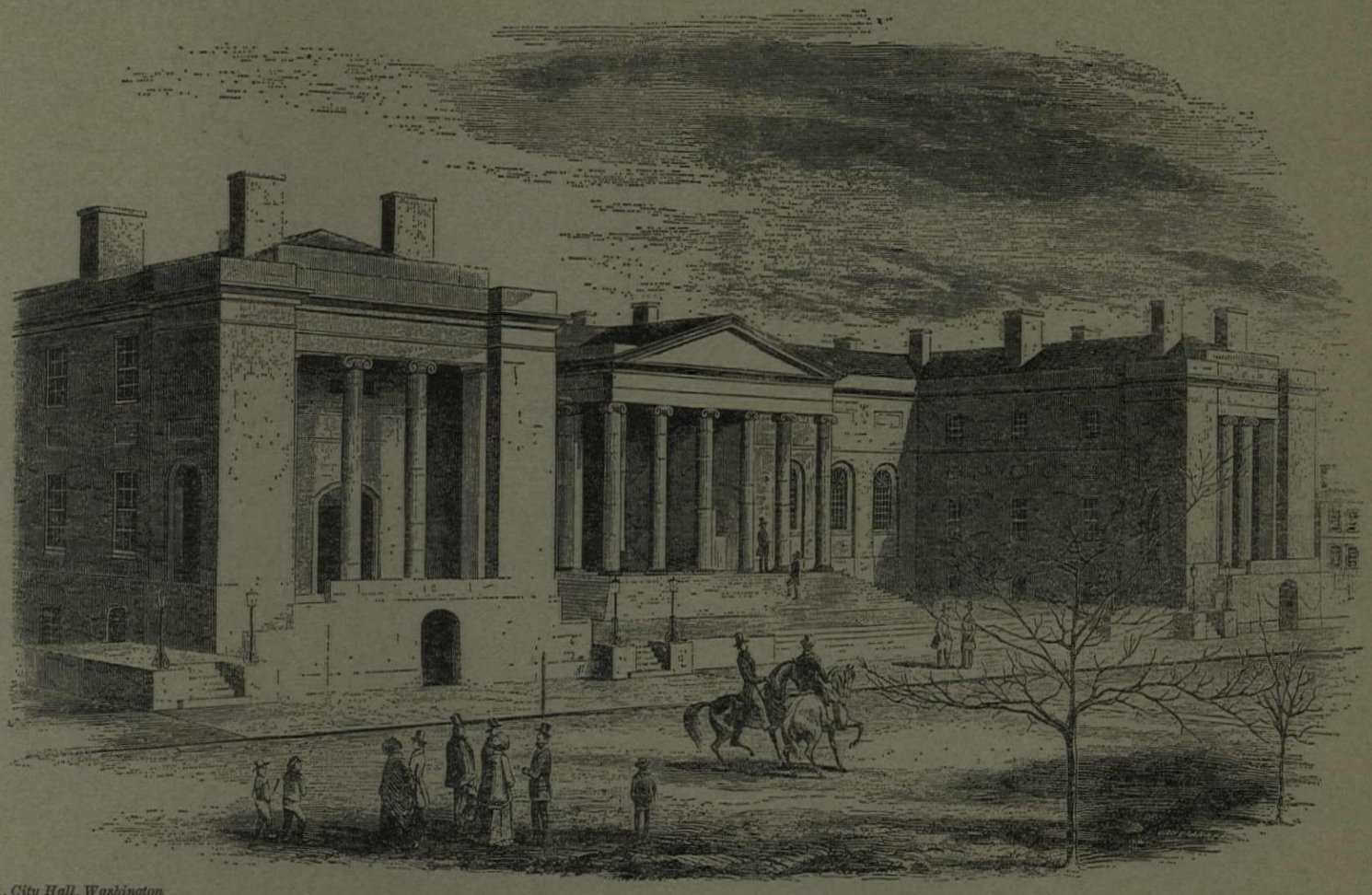


9

8, view along the connecting bridge, looking towards the squash courts. 9, the western staircase tower linking all levels of the sports hall with other floors.

GEORGE HADFIELD

G. L. M. GOODFELLOW



1, *City Hall, Washington*

George Hadfield was born at Leghorn in Italy about two hundred years ago (the exact year is not certain)[1]. His father, Charles Hadfield, who was either English or Irish, kept an hotel in that city. His mother was called Isobella. There were seven children altogether but four of them were murdered in infancy by a lunatic nurse. In 1779, after her husband's death, Isobella Hadfield went to England with her three children George, Maria Cecilia and Charlotte. Maria Cecilia quickly caught the attention of society with her good looks and her talent for miniature painting. In 1781 she married the famous miniaturist, Richard Cosway. Charlotte married William Coombe, the comic poet who had written *Dr. Syntax*.

George entered the Royal Academy Schools as a student of architecture in 1781. He was an immediate success, winning the Silver Medal in his first year and the Gold Medal in 1784[2]. In four successive years (1781–84) he contributed drawings[3] to the Royal Academy exhibition. It was probably at this time that he made engravings of certain miniatures[4] by his brother-in-law, Cosway. In 1784 Hadfield became a pupil of the fashionable architect, James Wyatt, with whom he appears to have stayed six years. No doubt he worked on the drawings for Wyatt's buildings of this period[5]. In 1790 Hadfield received the Royal Academy's first Travelling Scholarship in Architecture. He set out for Italy accompanied by Mrs. Cosway but, as she was unable to complete the journey through illness, he arrived in Rome alone.

Hadfield seems to have stayed four years in Italy. In 1791, with the assistance of Colonna[6], an architect, he made measured drawings[7] of the Sanctuary of the Fortuna Primigeria at Praeneste (Palestrina) twenty miles from Rome. Colonna may have helped Hadfield with other drawings which were executed at this time, and which were shown at the RA exhibition of 1795[8], namely, 'The Temple of Mars' and 'The Temple of Jupiter Tonans.' Hadfield's drawing of the interior of St. Peter's was much admired when he later showed it in London.

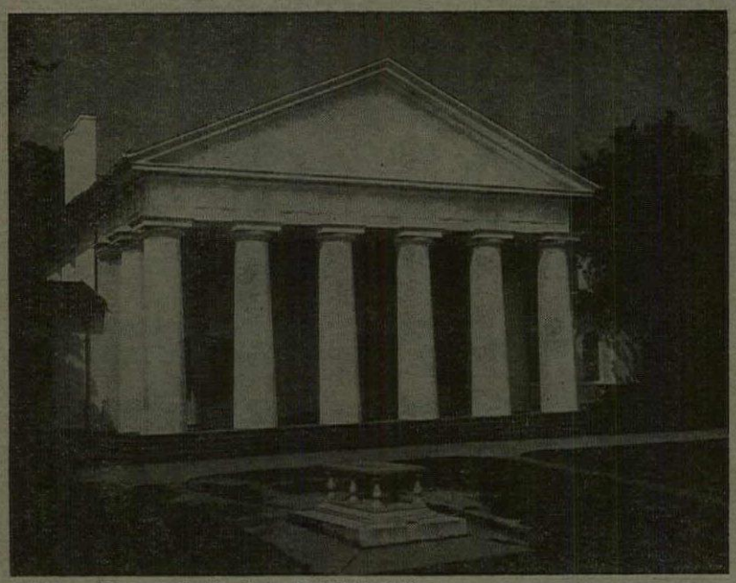
When Hadfield returned to England it was expected that he would achieve a prominent place in his profession. Benjamin West, PRA, thought that he possessed a knowledge of the theory of architecture superior to that of any other young man. He was the protégé of the Queen Consort and Lady Chesterfield. But when he was proposed by Henry Holland and James Wyatt as a candidate for membership of the Architects' Club he was black-balled. The balloting is recorded in an entry dated January 2, 1795, in Joseph Farington's diary[9]: 'Wyatt told me that He dined yesterday at the Architects' Club when Hadfield was balloted for. There appears one black ball against Hadfield which excluded him.—Wyatt said it is certain that either Soane or Brettingham put in the black ball.—He speaks highly of Hadfield's manners and promising abilities—Wyatt was mortified at the rejection and told the members that He would black ball any candidates that should hereafter be proposed, as He found a *recommended* person was rejected without a reason being assigned. Holland proposed Hadfield, and Wyatt recommended him.'

It was very probably as a result of this snub that Hadfield resolved to take up an offer to become superintendent of the building of the United States Capitol in Washington[10] in succession to Etienne Sulpice Hallett. This offer had its origins in the previous year when John Trumbull, the well known history painter who had been a fellow student of Hadfield at the Royal Academy and was now envoy extraordinary to Great Britain, received a letter from the commissioners in charge of the Capitol requesting him 'to select, contract with and send out a young architect qualified to superintend the work.' Trumbull consulted his friends Benjamin West and James Wyatt and they recommended Hadfield. On September 13 Trumbull replied to the commissioners suggesting Hadfield as an architect of great merit.

On January 2—by coincidence the very day of Hadfield's defeat at the Architects' Club—the commissioners, through Trumbull, wrote to Hadfield offering him £300 with travelling expenses if he would accept the post of superintendent. Hadfield accepted, although he had no experience of supervising the erection of any building, public or private. On March 9 Trumbull wrote for Hadfield a letter of introduction to Dr. Thornton, the architect of the Capitol, but it was not until October 1 that he took up his appointment in Washington.

Hadfield's period as superin-

tendent of the Capitol was an unhappy one for all parties. The situation was difficult; for the foundations laid by Hallett were on a plan different from Thornton's design. Hadfield objected both to the part already executed and to Thornton's scheme. He recommended numerous alterations including the giant order (with or without an attic storey) instead of a high basement. Thornton who, although he had designed the Capitol, had not been allowed to superintend its construction, and James Hoban, architect and superintendent of the President's Mansion (the White House), opposed these suggestions as impracticable. On November 18, the matter was referred to President Washington who received the suggestions with such little favour that Hadfield resigned. Hadfield soon reconsidered his resignation and he was reappointed on the special stipulation that he was 'engaged to superintend the execution of the plan without alteration.' Henceforth Hadfield merely carried out Thornton's design for the North (or Senate) Wing.



2, *Arlington House, designed by George Hadfield in* 1820.

Another public works commission came to Hadfield. This was to design the Treasury and Executive Offices. This building was completed, but was set on fire by British troops in 1814 and had to be rebuilt. Eventually it was demolished to make way for new buildings for the Treasury, State, War and Navy Departments. Hadfield's employment by the commission was suddenly terminated. On May 10, 1798, he was given three months' notice. He was in fact discharged in June and succeeded by Hoban. The commissioners claimed that Hadfield had been careless and inefficient, but Latrobe gives a more sympathetic account of Hadfield in his *Journal*:

'George Hadfield, once a promising young artist, sent hither by the English Society of Dilettanti at the requisition of George Washington, and employed to direct the public buildings, was too young to possess experience and education. Proficient more in the room of design than in the practical execution of great work he was no match for the rogues then employed in the construction of the public buildings or for the Charlatans in architecture who had designed them. All that he proposed, however, proved him a man of correct tastes, of perfect theoretical knowledge and of bold integrity. He waged a long war against the ignorance and the dishonesty of the commissioners and of the workmen. But the latter prevailed, for George Washington, led by his feelings and possessing no knowledge of the subject, sided against him. Thus has Hadfield lost the most precious period of his life, that of the practical study of his profession in the first works that he might have executed.'[11]

About this time Hadfield designed the Mason House on Analostan (Theodore Roosevelt) Island on the Potomac and it was followed by the Washington County Gaol (1802) and the Arsenal (1803). All have been demolished. In 1803 Hadfield was honoured by election to the City Council of Washington but this seems to have given him no advantages. The next dozen years were lean indeed. Writing in 1806 Latrobe says 'He loiters here, ruined in fortune in temper and reputation nor will his irritated health and neglected study ever permit him to take the station in the art which his elegant talent ought to have obtained.'[12]

But Hadfield's fortunes did recover. In 1816 he began work on Commodore David Porter's residence (Meridian House) in Washington and in the next few years he designed two major works of the Classical Revival, which fortunately still survive, the City Hall of Washington, 1, and Arlington House, 2. The City Hall (now the District of Columbia Courthouse) was begun in 1820. It has a portico of six unfluted Ionic columns approached by steps. Flanking the main block are advanced wings each terminating in two Ionic columns *in antis*. The wings of Arlington House (the Custis-Lee Mansion) had been built for Washington's step-grandson, G. W. P. Custis, in 1803–4 but the central block was not inserted until 1817. The six sturdy unfluted Doric columns of the portico, modelled on those of the great Greek temple of Paestum, bestow an almost monumental grandeur on this mansion.

Other commissions followed: the Assembly Rooms in 1822 and the United States Bank in 1824. Both are gone. But the loveliest of Hadfield's designs has survived. This is the mausoleum, 3, which was built in 1826 for John Peter Van Ness, who as Mayor of Washington was a colleague of his on the City Council. It was originally erected in the burial ground of David Burns, the father-in-law of Van Ness, but it was later transferred to Oak Hill Cemetery in Georgetown, DC. It is a circular building of brick and stone, with a peristyle of unfluted columns. Inspired by the Temple of Vesta in Rome, it has been considered one of the most satisfactory mortuary structures in America.

Hadfield died on February 5 of the same year, 1826, as Van Ness. His grave, marked by a tombstone of his own design, is in Arlington National Cemetery just north of the Custis-Lee mansion, and across the river from the city with which almost by accident he had become connected and in which he had worked for thirty years. The promise of Hadfield's brilliant career as a student was only partly fulfilled by his professional achievements in America. If he had stayed in London he might have rivalled Nash himself. Trumbull took the blame for Hadfield's misfortunes, saying 'I have always felt as if I had been instrumental in causing the ruin of this most admirable artist and excellent friend; for if I had not been the means of inducing him to leave London, his connections there who had some influence with the late King George IV might have procured him the execution of the extensive and splendid works which were committed to Mr. Nash.'[13]

3, *the Van Ness mausoleum* (1826), *now in the Oak Hill Cemetery, Georgetown.*

REFERENCES

[1] *Dictionary of American Biography*, article by Fiske Kimball.
[2] Hadfield won the Gold Medal with his 'Design for a national prison.'
[3] 'Design for a temple' (1781); 'Design for a public library' (1782); 'Design for a family vault' (1783); 'Design for a greenhouse and observatory' (1784).
[4] See F. B. Donnell *'A Catalogue Raisonné of the Engraved Works of Richard Cosway*, R.A.'
[5] The County Bridewell at Petworth, Sussex, and the Library and Common Room of Oriel College, Oxford, for example.
[6] Probably the Neapolitan, Enrico Colonna, who published *'Archi trionfali ed altre antiche architetture,'* illustrated with his own engravings in 1799.
[7] Now in the RIBA Library.
[8] Hadfield's 'Design for a national mausoleum' also was shown at the RA exhibition of 1795.
[9] *The Farington Diary*, ed. by J. Greig, Vol. 1, p. 85.
[10] For an account of Hadfield's share in the building of the Capitol see Glenn Brown, *The United States Capitol*, 1900.
[11] The *Journal of Latrobe*, 1905, p. 133.
[12] Ibid.
[13] *Autobiography of Colonel John Trumbull*, ed. by Theodore Sizer, 1953, pp. 177–8.
[14] Obituary in *The National Journal* of Washington, February 6, 1826.

Church, Norwood, London

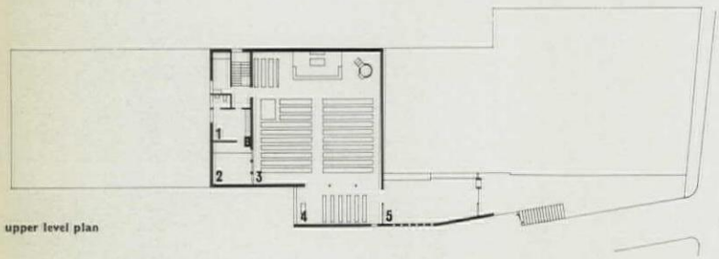
architects: Edward D. Mills & Partners

photographs by H. de Burgh Galwey and Colin Westwood

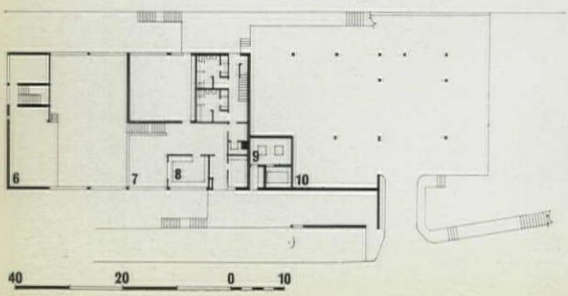
Interior Design

1, *detail of mahogany pew with pulpit and lectern in the background.*

2. *communion table and cross in the church sanctuary. The table is mahogany and beech with ebonized rails. The cross, designed by Michael Edmunds, is of yew with red polyester inserts.*



upper level plan



lower level plan

key
1. minister
2. organ
3. church, main area
4. chapel
5. vestibule
6. clubroom with stage
7. coffee bar
8. kitchen
9. heating
10. car park

This Methodist church occupies a steeply sloping site in the main shopping street of Upper Norwood, replacing a Victorian church which was unsuitable for modern requirements and lacked the space needed for youth work.

To raise money for rebuilding, part of the site was sold to be developed as a supermarket with flats above it, the architects being responsible for designing both this and the church.

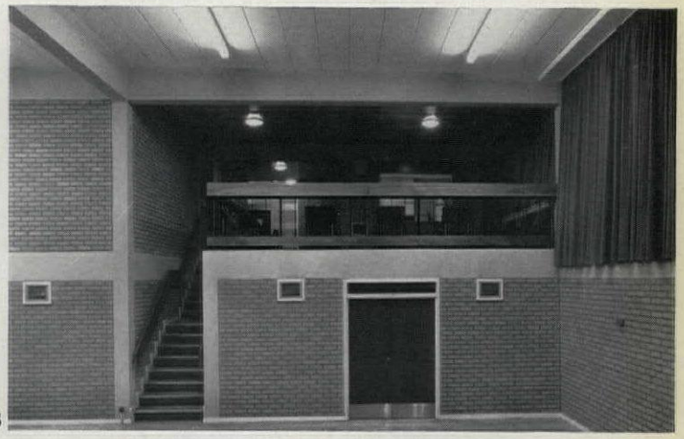
The church, which therefore has virtually no exterior, provides seating for 250 in the main area, while below it is accommodation for a youth club and a car park providing parking space for the supermarket as well as for the church.

Construction is of reinforced concrete framing and brick infill, with a timber box-beam roof. Internal surfaces are mostly of natural materials to facilitate easy maintenance. All furnishings and equipment were designed or chosen by the architects.

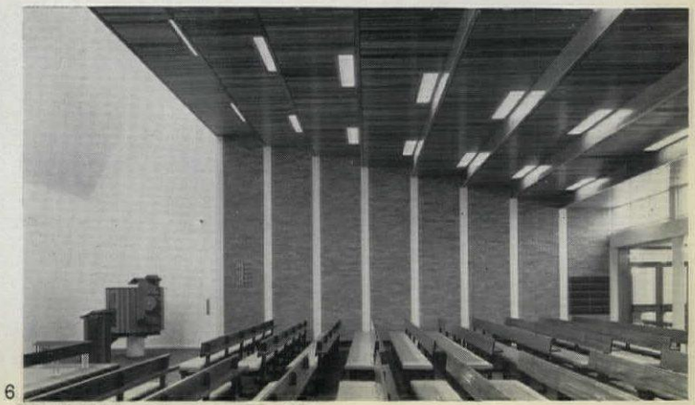
3

3, the main area of the church, looking towards the sanctuary. 4, memorial chapel, showing one of the stained glass windows by Gillian Rees Thomas. The communion rail, table and lectern are black square steel tube and polished beech. 5, looking towards the mezzanine coffee bar from the lower level clubroom. 6, looking across the church; main entrance doors on right.

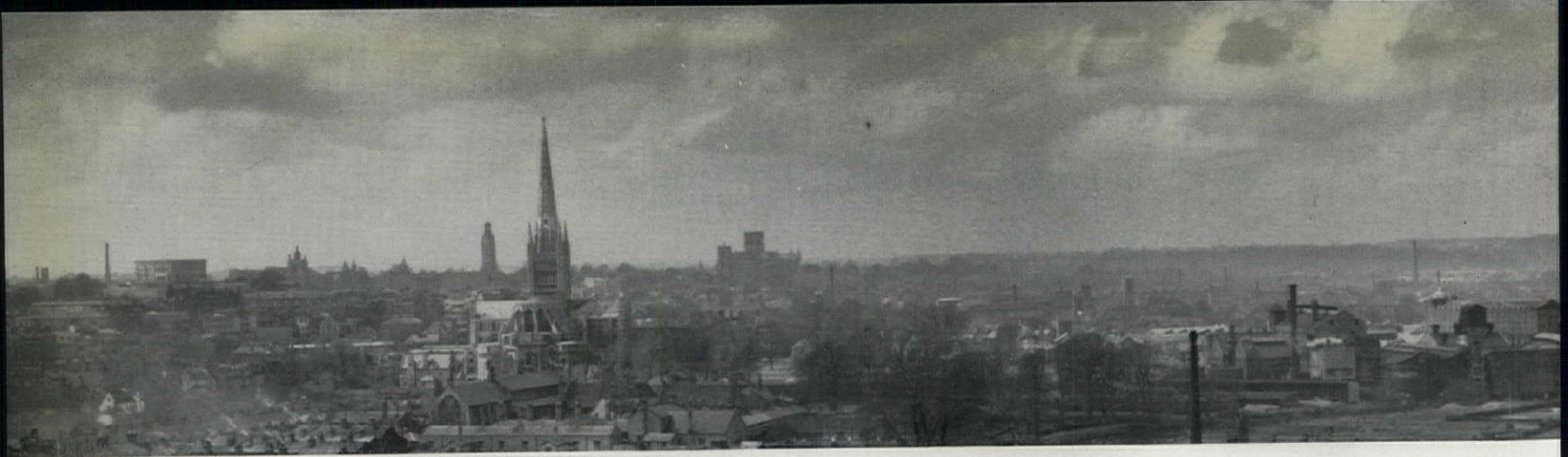
4



5



6



1

2

Photograph by Aerofilms and Aero Pictorial Ltd.

Facing page  *1, the famous skyline of the city as seen from Mousehold. 2, air view looking north-east, with the market place and City Hall in the foreground, the Castle on the right and the Cathedral centre background.*

NORWICH RING AND LOOP

Foreword by Kenneth Browne

In Traffic in Towns Professor Buchanan used Norwich as one of his guinea-pigs, taking it as an example of an ancient town with a central core, which would be wrecked by major reconstruction. His solution was to draw a circle round it, protecting the soft centre; or more literally to institute a ring and loop system: a fast ring road following the line of the old wall with loops off it towards the centre and barriers to prevent cross movement of traffic. The centre itself was then to be treated as primarily pedestrian territory.

Now, two years later, it is interesting to see what has been done to follow up this idea, and also what has happened to the fabric of the city. Taking the latter first, much that has happened at Norwich is enough to make you weep.* Immediately you leave Thorpe Station you are confronted by a wasteland of unrelated shapes, one of which neatly blocks out the cathedral spire—the city's signature tune. Near the centre a lot of the new development is a disgrace. Outstandingly bad are the brutish chunk of the Norwich Union offices in All Saints Green, 5, and a nearby high-rise office block known as 'the glass tower,' 6. Already shabby, the latter makes nonsense of All Saints Church and the other small-scale buildings around it, besides damaging the skyline of the city as seen from Mousehold.

Most horrifying of all, and summing up the dangers of uncontrolled traffic engineering, is St. Stephen Street. A real shock this if you have not seen it before: a great swathe of dual carriageway striking to the very heart of the city and demolishing everything in its path. Now, having done the damage, it is obsolete and ends in a bottleneck. On either side are dreadful buildings which could be anywhere or nowhere, 8, and the whole palsied scene reaches its climax, if that is the word, where it joins Queens Road (on the line of the old city wall). Here pathetic chunks of Roman wall, 7, project like rotten molars from the paving, backed by the sightless eyesockets of a multi-storey garage (surely not finished, you say; then you find it is) decorated by a vertical strip of oriental lettering. Is this Norwich or Nagasaki? What is certain is that this is one of the worst examples of fragmented environment in the whole country.

Turning to planning, the City Engineer (until recently the Planning Officer) has produced a scheme much on the lines of Buchanan but with several ominous differences; for instance in his scheme the inner ring road, instead of following the line of the walls north of the city, cuts right across Magdalen Street, scene of the Civic Trust's first face-lifting scheme, 9, 10. (An enquiry into this proposal has recently been held) and makes Tombland (see page 46) a traffic route threatened with widening. Also it brings large numbers of car-parks into the centre, a thing Buchanan expressly warned against, including keeping the cattle market car-park below the castle, which is already such an eyesore, 11.

One of the few bright spots appears to be the activities of the Norwich Society which ably assisted Buchanan in his report. The Society has now produced maps and sketches showing how the ring and loop system he advocated might apply.

There are three main pedestrian areas, and in them and the interconnecting streets all vehicles are excluded except for public and service transport and small motorized service trolleys.

On the question of the perimeter car-parks proposed by Buchanan along the ring road, it would be worth considering whether these could be designed to form a new town wall with gateways into the city. First rate architecture and landscaping would be needed, but the result could be splendid.

The river has not been mentioned so far, yet potentially it is a most important asset to the city and at present quite wasted. Here again the Norwich Society has been active. Having investigated the possibilities of riverside walks and boat access to the centre of the city, it has recently submitted definite proposals to the corporation, backed by a public exhibition and a report for general circulation. If Norwich is to be saved, all these ideas need to be brought into an official plan without delay. Now, much will depend on the new Planning Officer and on his ability not only to guide his council but also to encourage and absorb the local civic pride and talent.

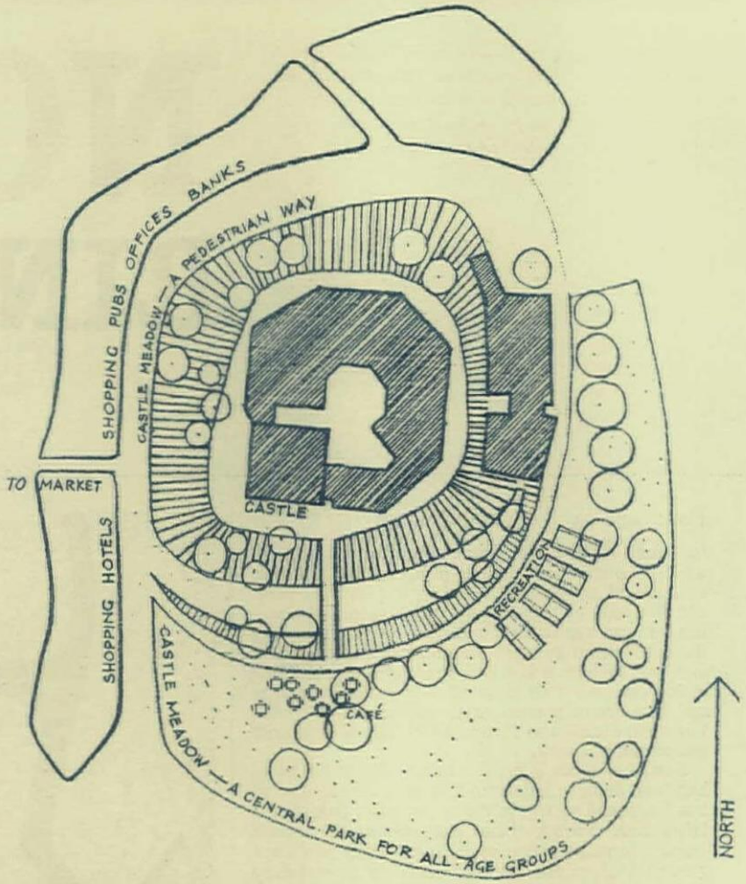
* See Stop Press, AR Nov. 1964, pages 389–390.

Map A: plan of the centre of Norwich showing the Norwich Society's traffic proposals, based on the Buchanan report. Fast ring road and loops shown blue, pedestrian spaces brown, castle park tinted.

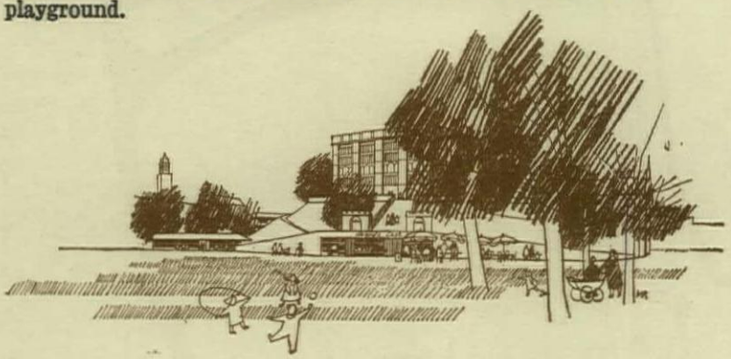
The Norwich Society's suggestions for the city are illustrated on the following pages and show a pedestrian network linking the areas of major pedestrian activity between City Hall, Castle and Cathedral:

Castle Area

The castle mound is now virtually cut off from the city by a dual carriageway on one side, Castle Meadow, and a sea of parked cars on the other side, 11 (on the site of the old cattle market). In the Buchanan Report, this dual carriageway area would become mainly pedestrian, with the Castle linked via Davey Place to the market place 100 yards away. The dual carriageway itself would be replaced by a curving paved space into which the castle mound sloped naturally (see 4) instead of being cut short by a retaining wall as at present, 12. In places the grass-covered slope would come quite close up to the shops.
Today the old cattle market is an absolute eyesore and it is obvious that cars should not be parked here; anyway not at ground level though an underground car-park might be constructed, served by the adjoining loop road. Freed of cars, this valuable land in the centre of the city could become a park enhancing the setting of the Castle as well as being used for recreation. The whole of the present tarmac area could be grassed over and trees planted, 3, with formal and informal spaces. There could also be an open-air cafe and children's playground.

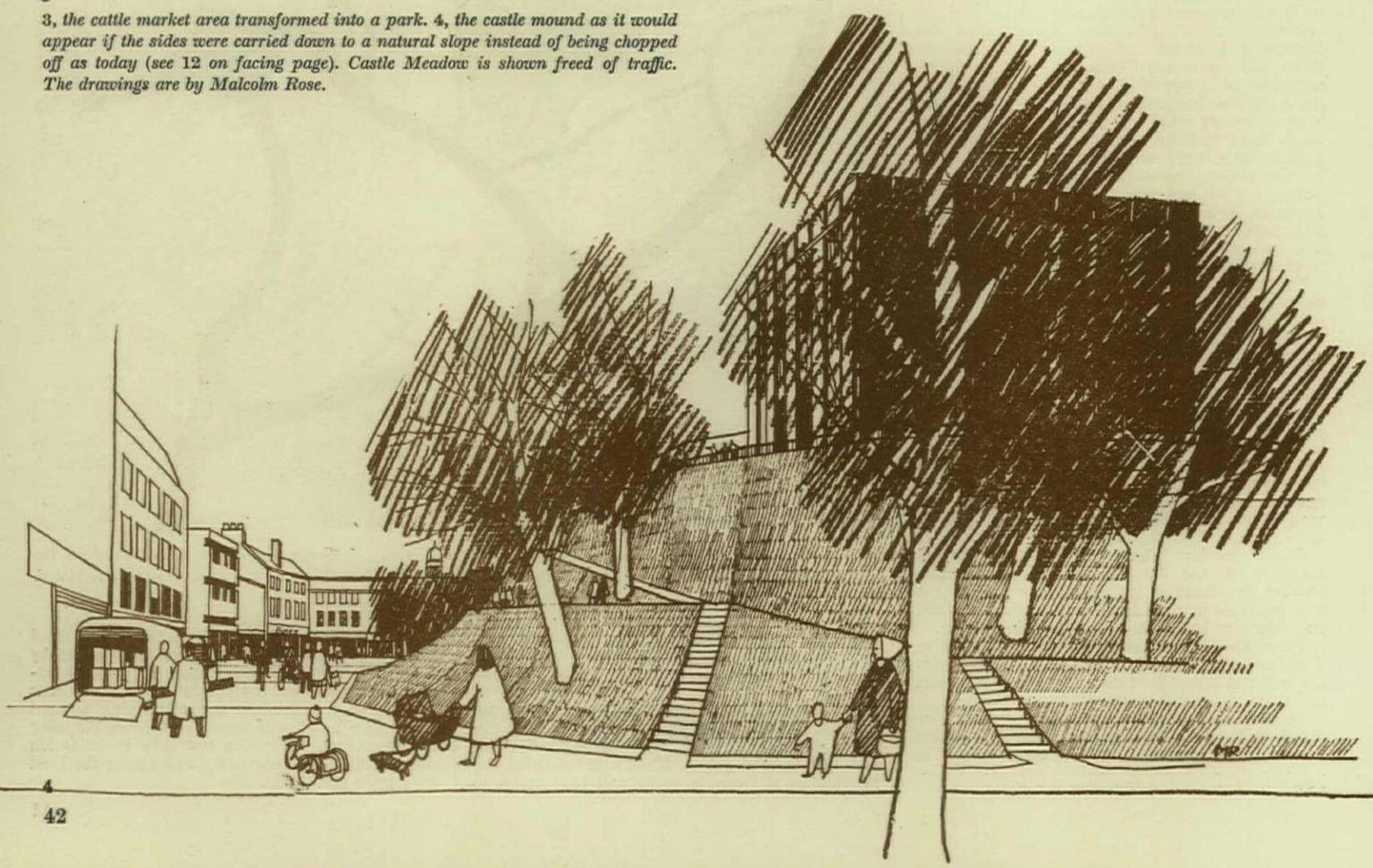


Map B: the Castle Area as it could be with Castle Meadow a pedestrian way and the cattle market (now a scrum of parked cars) turned into a central green space.



3

3, the cattle market area transformed into a park. 4, the castle mound as it would appear if the sides were carried down to a natural slope instead of being chopped off as today (see 12 on facing page). Castle Meadow is shown freed of traffic. The drawings are by Malcolm Rose.



4

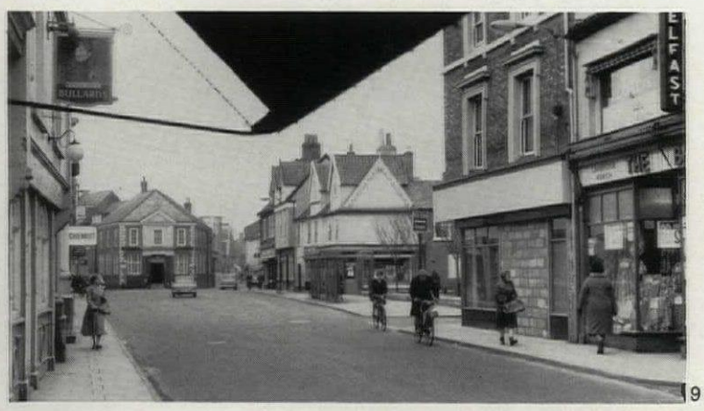
5

6

7

Glaring examples of how Norwich should not be redeveloped: 5, *the block-busting Norwich Union offices in All Saints' Green.* 6, *the 'glass tower' outfacing All Saints' Church.* 7, *a chunk of Roman wall ludicrously stranded in Queens Road.* 8, *The brutal swathe cut by St. Stephen Street.*

8



9

10

Magdalen Street: *as it is,* 9, *and how it would be if the City Engineer's road plan were carried out,* 10.

12

11

Castle Area: 11, *the cattle market is used today as a car park (compare with* 3 *on facing page).* 12, *Castle Meadow as it is now—a main traffic route, the mound half hidden by retaining walls (compare with* 4*).*

13

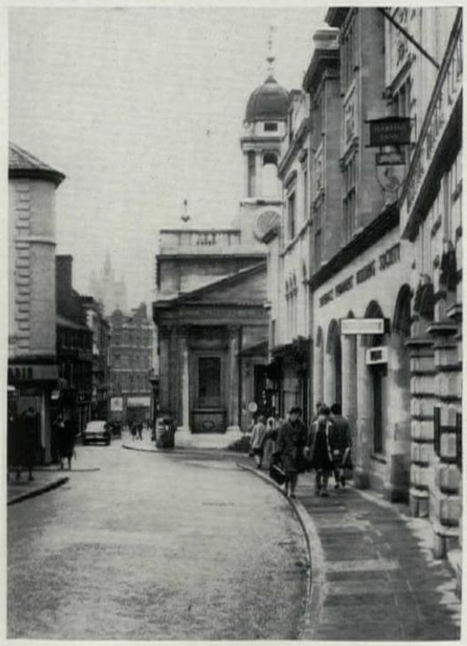
14

15

16

17

18

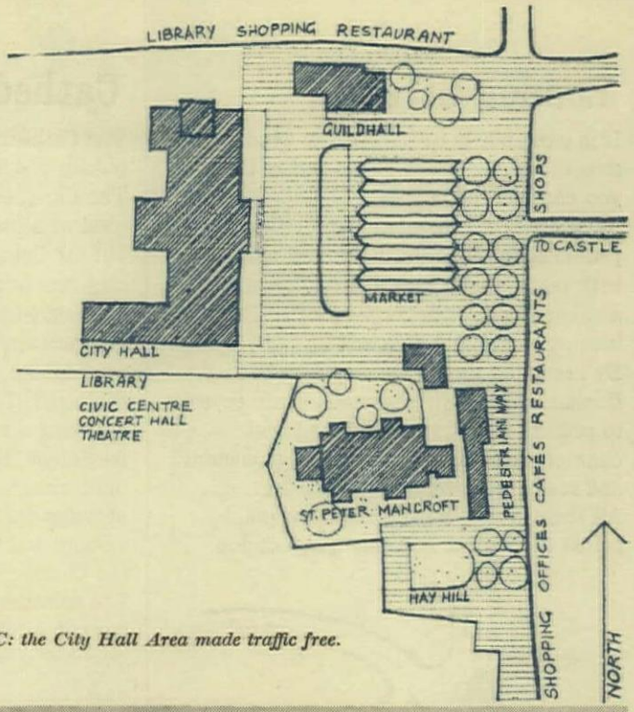


19

Townscape in Norwich: *typical pedestrian alleyways —*13, *Bridewell Alley;* 14, *Davey Place. The market place seen from the tower of the City Hall,* 15, *and from Gentleman's Walk,* 16. 17-19, *sequence along London Street showing how the curve of the road introduces the National Provincial Bank, which projects as a wing into the street and in its turn introduces the distant tower of St. Peter Mancroft.*

City Hall Area

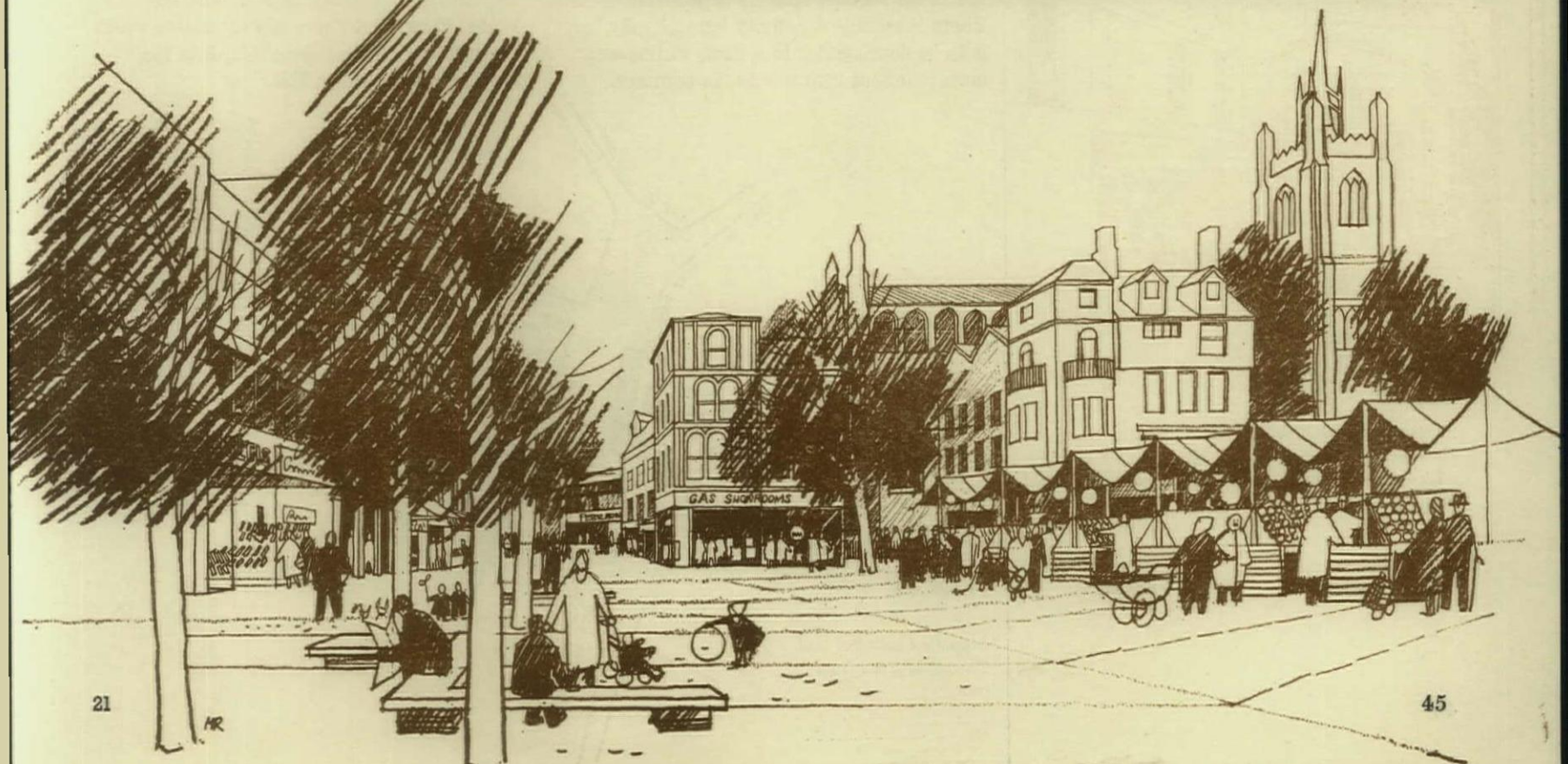
This includes the Market Place, Gentleman's Walk and Hay Hill, with shopping the main activity. Every day, except when the market and shops are closed, this area is packed with people of all ages and is particularly crowded at lunch-time with office workers.
Traffic along The Walk even at speeds much less than the regulation 30 m.p.h. is a constant source of danger with shoppers forced repeatedly to cross the traffic stream to get to market stalls and shops. With Buchanan's 'ring and loop' system, The Walk could be trafficfree as also could the other roads in this area.
With no traffic the road, as such, would become unnecessary and could be replaced by paving or setts giving an uninterrupted floor surface from City Hall to Davey Place and from the Guildhall to Hay Hill. With this extra space the shopper would be given greater freedom of movement and the whole place would be safer, especially for young children. Trees could be planted with seats for shoppers to rest—also perhaps free-standing display cases and fountains. In principle these proposals could apply equally to London Street, Castle Meadow, Red Lion Street, Orford Hill, St. Stephens and Tombland.



Map C: the City Hall Area made traffic free.

20

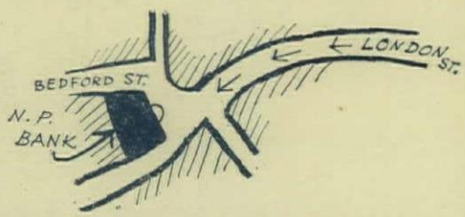
20, the market place as it was in the eighteenth century (from a painting by John Sell Cotman). 21, the market place as it would look if the traffic were removed from The Walk (see 16 on facing page).



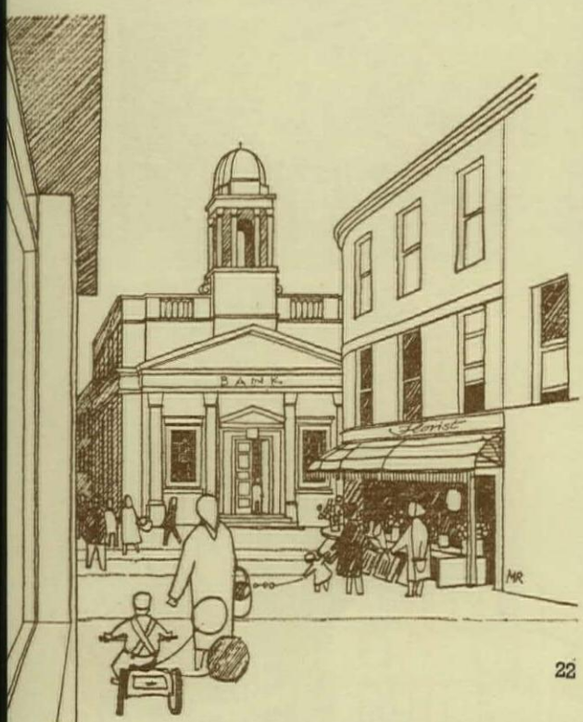
21

London Street

It is particularly in the narrow winding streets and alleyways of the centre that you can feel the medieval character of Norwich. Some, like Bridewell Alley, are pedestrian already but many are used as both major and minor distribution roads and car-parks, with consequent inconvenience and danger.
By accepting the traffic proposals of Buchanan these streets would again revert to pedestrian ways and the medieval character would be safeguarded, pavement and roads being replaced by paving.
All these streets have their individual points of interest. For example, London



Street, long, narrow, winding, intimate, suddenly opens out, at its junction with Bedford Street, into a larger space. This is prefaced by the cupola of the National Provincial Bank, 22. If traffic were eliminated this charming effect would be greatly enhanced.

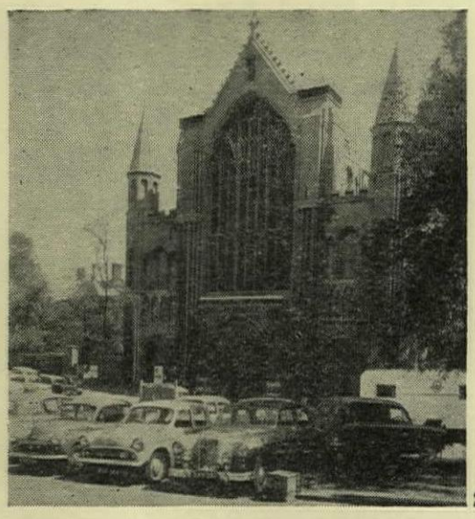


22

22, the National Provincial Bank in London Street shoulders out to form a small square at the junction with Bedford Street, its cupola acting like the raised hand of a policeman.

Cathedral and Tombland

The Cathedral Close and Tombland just outside it are separate but related areas. The Close, like the cattle market, is now used as a car-park not only for residents but for Cathedral visitors, office workers, shoppers and commuters. This intrusion detracts considerably from the character and amenity and its quiet, contemplative atmosphere, so valuable in a busy city, is shattered. The Dean and Chapter have prepared a separate scheme for landscape treatment here which excludes all indiscriminate non-residential parking, but provides carefully sited car-parks for visitors and workers in the offices around the Close.
The solution to the problems of Tombland are not so clear cut. At present it is

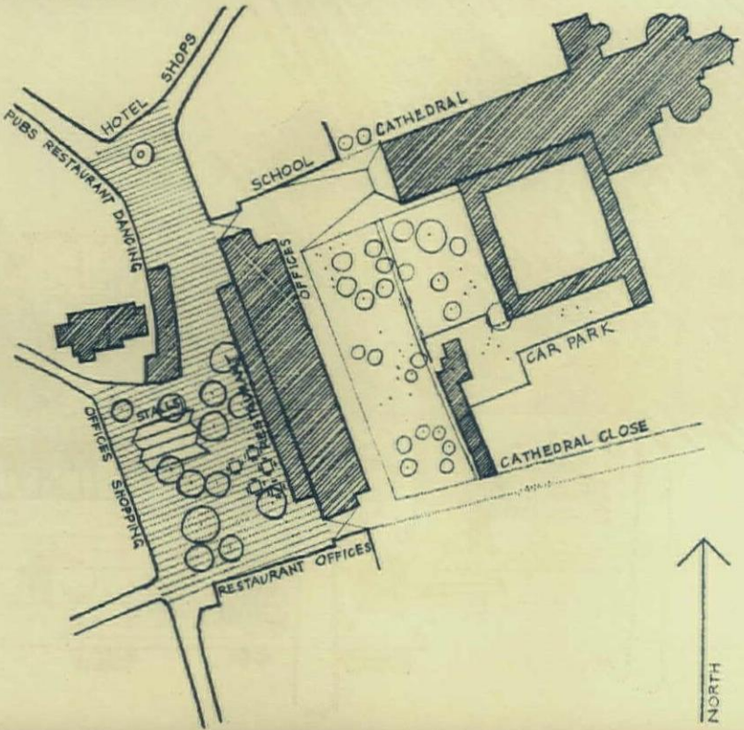


23

23, today the forecourt of the Cathedral is a sea of parked cars; it could again be like **24**.

24

jammed with cars every day and late into the evening. Also it has a major distributor road running diagonally through it.
Following the Buchanan report this space too could become entirely pedestrian.
There is sufficient activity here already for it to be developed into a lively dining-out, entertainment centre with, in summer, open-air cafes under the trees, wind-screened by glass shields. The existing market stalls could be improved and a bandstand built for dancing in the square on Saturday evenings as at Tunbridge Wells. From here there are attractive walks down to the river at Quayside, into the the Close and to Elm Hill.



Map D: Cathedral and Tombland freed from cars.

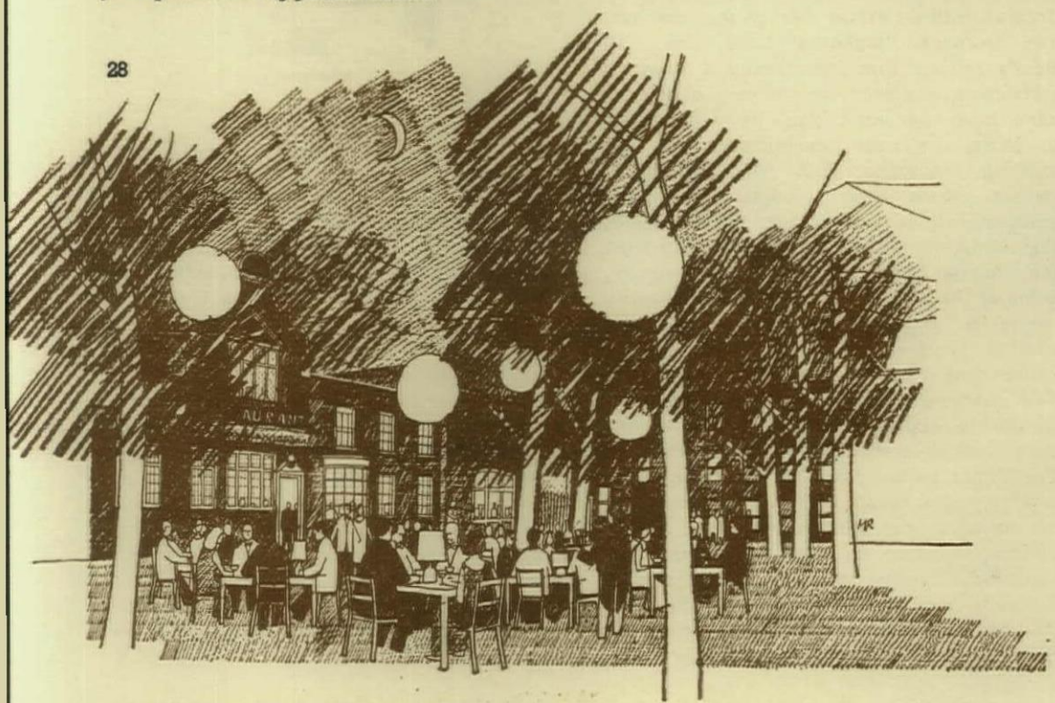
25

26

27

25, 28, Tombland as it would look if the present traffic route were taken out of it and the space liberated for people to enjoy. 26, 27, as it is today; sliced by a major distributor traffic road running through it and the floor space covered by parked vehicles.

28



Car parking and transport

The Buchanan report stated that in order to reduce traffic in the city centre to a minimum, car-parks should be restricted to fringe areas served direct from the ring road. To make this feasible bus services would need to be made much more attractive and the public be encouraged to use them as much as possible. At present the traditionally designed buses add to the hazards of city life and would be inappropriate to the kind of environment visualized here.

A new bus system would need to be developed, perhaps like that at the 1958 Brussels Exhibition, 29, where slow

29

passenger-carrying vehicles moved through pedestrian spaces without detriment to either safety or environment. The vehicles would be limited to 10 m.p.h. and be electrically driven to cut out noise and smell. They would connect all car-parks to the city centre, including railway stations and existing bus stations.

Service vehicles would have to be of a similar pattern and be restricted to certain hours, avoiding the main periods of pedestrian movement.

SIGN OF THE TIMES

NEWSPAPER OFFICES, PRINTING HOUSE SQUARE, LONDON *photographs by H de Burgh Galwey*

consultant architects **LLEWELYN-DAVIES, WEEKS AND PARTNERS**

executive architects **ELLIS, CLARKE AND GALLANAUGH**

criticism

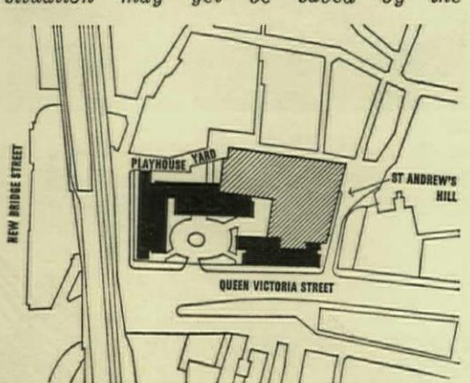
A newspaper, even one intended for a 'quality' readership, is principally the result of an industrial production process, but apart from the Express *and the* Mirror, *the aesthetics of Fleet Street have usually been a veneer to disguise this: Graeco-Egyptian at the* Telegraph, *Lutyens Baroque for Reuter's, and the recent outbreak of gold anodizing at Thomson House.* The Times *building fully expresses its industrial character. The relationship of reporting to printing is so complicated that two or three firms of architects have specialized almost entirely in newspaper work. Ellis, Clarke and Gallanaugh, one of these specialists, before the war prepared for* The Times *a scheme, veneered in neo-Georgian brick and stone, of which only the printing house was carried out. It is greatly to* The Times's *credit* that the apparently conflicting demands of expert technical knowledge and prestige aesthetics were finally resolved in 1958 by confirming Ellis, Clarke and Gallanaugh in the position of executive architects, while appointing as consultants Richard Llewelyn-Davies and John Weeks, on the strength of their reputation for handling highly technical problems for the Nuffield Foundation, for whom they were then still working. Apart from Rushbrooke village, this is their first major work outside hospital building to be completed, and it will be looked at with particular interest because of the 'plum jobs' since entrusted to them (Basingstoke town centre, Tate Gallery extension, Stock Exchange new building and Washington New Town, as well as their continuing hospital work.*

The heart of the job—the resolution of the production process into a workable plan form—is an unqualified success. Lighting, air-conditioning, modular partitioning (which has already proved its ease of rearrangement), acoustics, double-glazing, and the relationship of the different departments to each other, have all been studied with such thoroughness that the visitor to the building is lulled into forgetting the makeshift conditions still tolerated in many new 'luxury' office blocks in this country. Particularly satisfactory is the use of quiet, restful colours—grey, green, yellow, brown —which give the public spaces especially an air of calmness and cool decision-making which fits in with the image of the newspaper itself.

A characteristic quirk, equivalent to the front page of the paper, is the way in which the advertising department is placed next to the main entrance with semi-transparent glass screens between it and the public. Throughout the building there is a pleasing sense of continuity without the imposition of any self-conscious patterning; one feels that Llewelyn-Davies and Weeks were concerned primarily that their building should be used—and this means a constant fluidity, a process of biological change in which the building grows with its occupants.

This concern with growth and change has had a fundamental effect on the overall massing of the building. The adoption of the 'slip-slab' arrangement, with the offices stacked irregularly on each side of a central corridor, forms part of a whole philosophy of city building: that a universal office block should be able to latch on to existing buildings and to reproduce itself without the appalling muddle of broken joints which can be seen in such places as Victoria Street. The corner of St. Andrew's Hill is deftly managed, and the bulk of the printing house is cleverly suppressed behind its curtain wall between The Times *and* The Observer's *separate building. Besides the neat inclusion of plant and services in the Rushbrooke-type half-gables, the 'broken' ends rear up dramatically on either side of the forecourt and towards Playhouse Yard. The 'St. Paul's ceiling,' far from being a negative restriction, has been proved here a positive advantage, by exploiting its irregularity to build the new development into the existing landscape. Both from within, in rooftop views from windows, and from without, in glimpses up steep cobbled lanes, the character of the City rising steeply from the wharves beside the river to the crowning dome of the cathedral has been triumphantly reasserted, and with an ampleness and complexity of space and skyline which nowhere seems contrived.*

The subtlety of an open-ended system is inevitably expressed most forcibly at the open ends themselves. It is at the centre of The Times *building that something appears lacking, as a result of the architects' concentration on the universal solution. In any building housing an organization with its own individuality, there must be certain places where local patriotism must be given its head, where corporate ambitions and/or fantasies must find expression. The principal success of the buildings for the* Daily Express *and the* Daily Mirror *is that they forcibly convey to the spectator the controversial personality of those newspapers. It is true that the cool greys and greens of* The Times *exterior have the same quiet dignity as the typography and layout of a typical issue. By themselves, however, they could equally well express the character of a state welfare organization or a scientific institute. There is a lack of special accents. In* The Times, *the places for these are the forecourt, the entrance hall and the boardroom suite. The first has been handled clumsily by the architects. The circular 'dish' is ill-related to buildings which are otherwise entirely organic, and the 'butterfly' walls in front, with their historical inscriptions, cause confusion to the areas behind and alongside (particularly the bookshop's separate forecourt to the west). The gap between the walls, the centre of the circle and the main entrance are all slightly off axis with each other, but not sufficiently to justify their asymmetry. The situation may yet be saved by the monumental piece of sculpture which is to be commissioned for the central pedestal.*



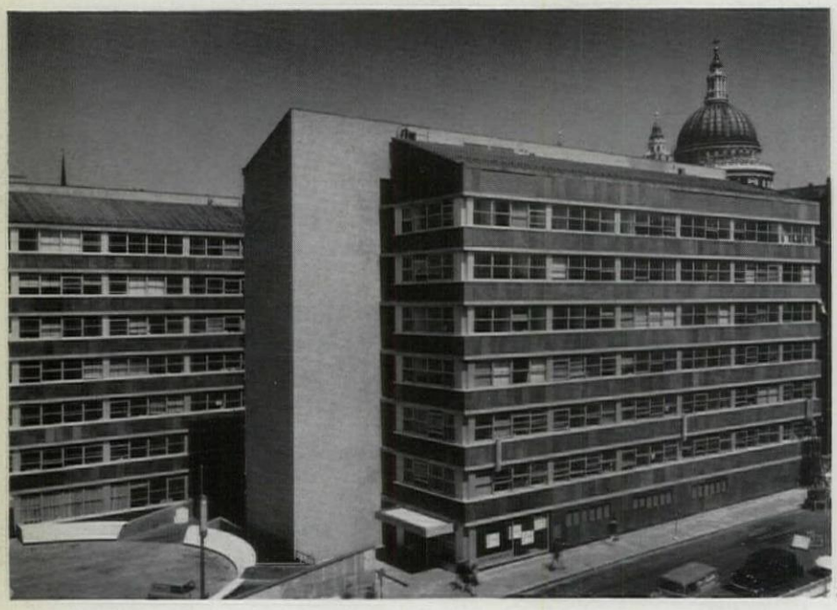
site plan (printing house hatched)

The entrance hall and boardroom suite were handed over to Design Research Unit. The hall is acceptable if chilly, with its coal-black columns and Barcelona chairs. The boardroom suite, however, for which neither architects nor interior designers can be held responsible, is a disastrous confusion of genuine antiques, pseudo antiques, cool modern furniture and even some chairs of prewar smoking room type. In the best American office buildings the architects are supported consistently by their clients throughout the project. The Times *is such a thoroughly professional success in its principal production areas that any sign of the old amateurism stands out painfully. N.T.*

* The Astor family have commissioned good architecture before, notably their former estate office by J. L. Pearson a little further along the Thames river front.

1 (opposite), *The Observer* wing seen from the forecourt, with the printing house beyond.

2, *The Times* building seen from the Unilever Building, with Queen Victoria Street and The Black Friar (see AR, November 1964) in the foreground. In the background is St. Paul's Faraday House is on the right. 3, 4, two views from across Queen Victoria Street. Facing page: 5, 6, two views from the forecourt, showing details of the elevations in slate, mosaic and aluminium.



3

4

The rebuilding of *The Times* on its site to the north of Queen Victoria Street has taken five years from the letting of the main contract. There have been three separate phases. The printing house in the north-eastern corner, built in 1935-7 as part of an abortive prewar rebuilding scheme, has been kept, with the addition in 1960 of a new top floor of canteens and works offices. The second phase consisted of the demolition of the low buildings on the Kings Printing House site between Printing House Square and Playhouse Yard (some staff were temporarily housed in another office block nearby) and their replacement by the main T-shaped building housing the editorial, business and administrative departments. In the final phase, the old front buildings of 1868-74, with the famous pediment, were demolished, Printing House Square was opened up as a forecourt towards Queen Victoria Street, and a second new block was built in the south-eastern corner. This is now occupied by *The Observer*, which is printed on the same plant.

Given the fixed point of the prewar printing house, the ampleness of the site would normally have allowed a variety of possible multi-storey solutions without infringing LCC plot ratio standards. However the so-called 'St. Paul's ceiling'—the height-limits imposed by the City Corporation to avoid any repetition of the obstruction of views of the cathedral from the river by the Unilever and Faraday buildings—fixed the maximum building height at between 108 and 127 ft., varying from point to point. These restrictions in fact fitted in with the results of a time and motion survey instituted by *The Times* into its production process. The intake of news by telephone and teleprinter, its editing and checking and its transmission to the composing room seemed to be best organized as a horizontal flow. The composing room is situated above the machine room in the earlier building, and the editorial departments are therefore arranged on the second and third floors of the new building, slightly above and slightly below the composing room level, using the maximum permitted office width of 50 ft. The west block contains, at the same levels, the offices of special correspondents and leader writers. In the centre of the north block, a broad open stair well forms an easy physical and visual connection between the editors on the third floor, and the sub-editors and news editors on the second floor. The intelligence department, which has the important function of reference and checking, has been laid out as an open area forming a gallery to the well, so that space is continuous with the open area below for the sub-editors, which seats 50. Copy is carried to the composing room on mechanical conveyor belts. *The Observer* is likewise easily placed with a view to feeding in copy to the printing house.

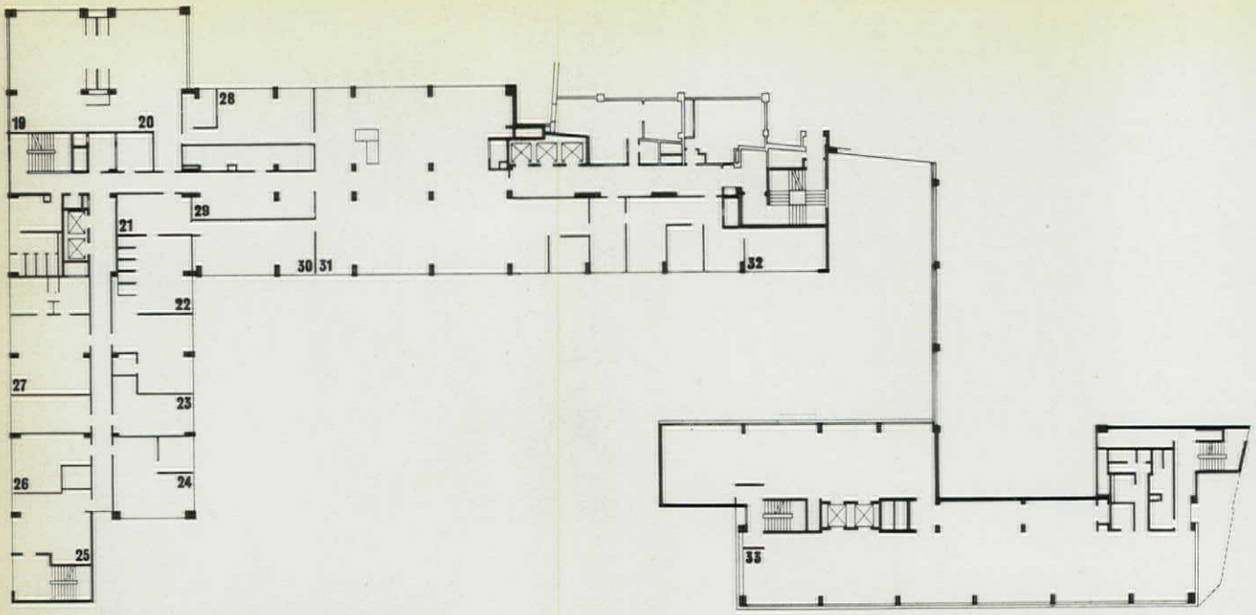
The layout of the rest of *The Times* building is clearly defined floor by floor. Below the forecourt there is a basement car park and a sub-basement reel store. The main entrance is on the north side of the forecourt and leads into a long entrance hall separated by glass screens from the advertising department. The next floor incorporates the business side—subscriptions, circulation, cashiers—and, because of the slope in ground level, it can be entered direct from the rear entrance in Playhouse Yard. Above the editorial levels, the fourth floor contains the offices of the educational, literary and other supplements and also a number

5

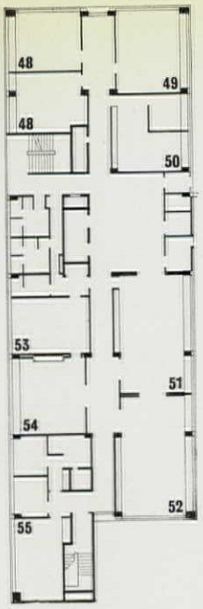
NEWSPAPER OFFICES, PRINTING HOUSE SQUARE, LONDON

6

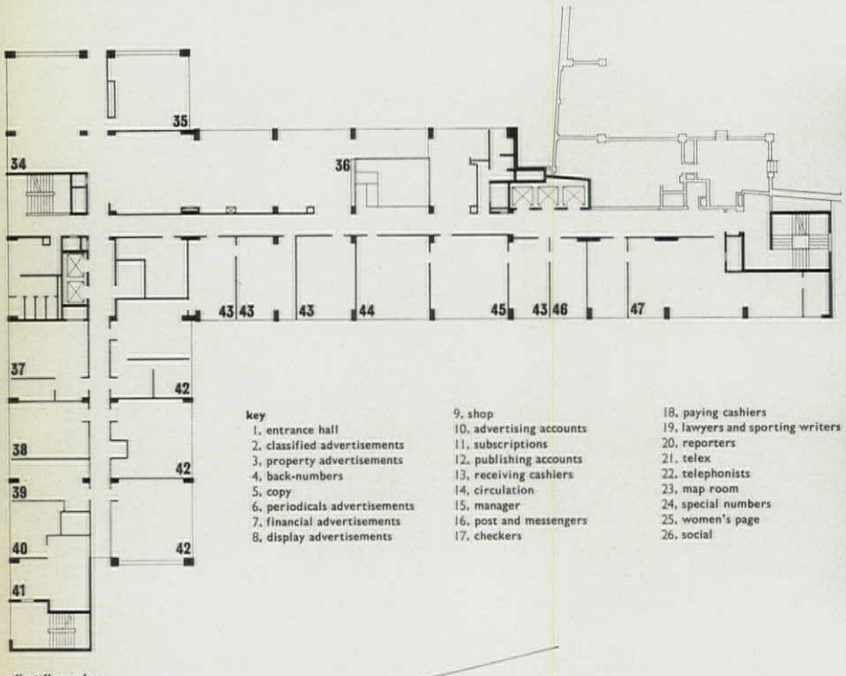
of offices occupied by the London correspondents of foreign newspapers. On the fifth floor, besides administrative offices—publicity, personnel, purchasing, stationery—an area of 3,000 sq. ft. is let to the *New York Times*. The sixth floor contains the managerial and accounts departments. Finally, in the west block, there is a seventh floor containing the board room and the offices of the chairman and deputy chairman. The horizontal layout is clearly expressed structurally: the reinforced concrete frame, which has a 21 ft. bay width, is contained within the facade, the ducting, which is exposed outside the frame, being in anodized aluminium. External walls are clad in grey mosaic and the infill panels beneath the continuous rows of aluminium windows in green Westmoreland slate. These few materials are carried through consistently, except for the aluminium curtain wall with dark blue panels that screens the side of the printing house, and forms therefore the eastern side of the forecourt. Complexity is given to the gable walls of each block by the adoption of a 'slip-slab' arrangement; each side of the central corridor in each block is treated as a separate stack of offices and can be higher or longer than the other side. This arrangement lends itself to the accommodation of plant and



second floor plan, showing typical open floor space in 'The Observer' wing



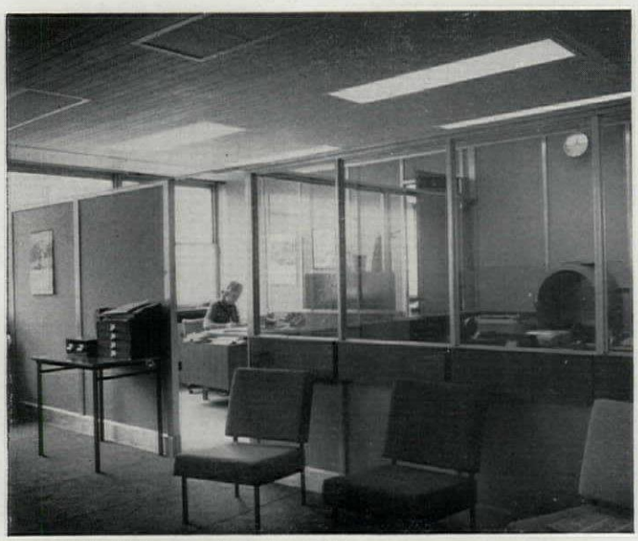
seventh floor plan



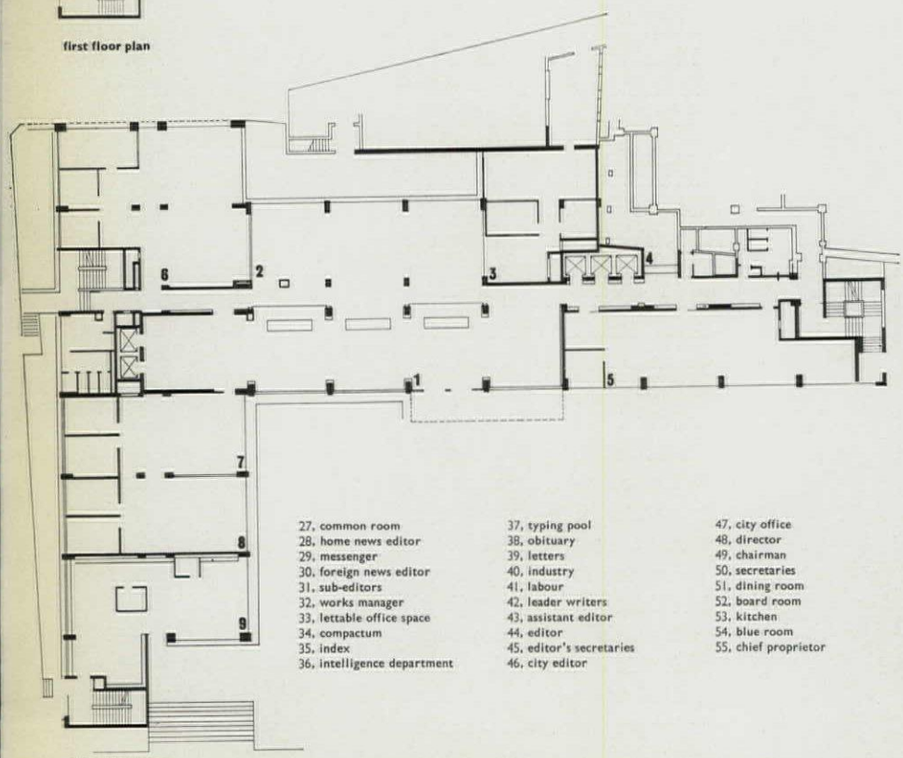
key

1. entrance hall
2. classified advertisements
3. property advertisements
4. back-numbers
5. copy
6. periodicals advertisements
7. financial advertisements
8. display advertisements
9. shop
10. advertising accounts
11. subscriptions
12. publishing accounts
13. receiving cashiers
14. circulation
15. manager
16. post and messengers
17. checkers
18. paying cashiers
19. lawyers and sporting writers
20. reporters
21. telex
22. telephonists
23. map room
24. special numbers
25. women's page
26. social

first floor plan



7. typical offices seen from a corridor.



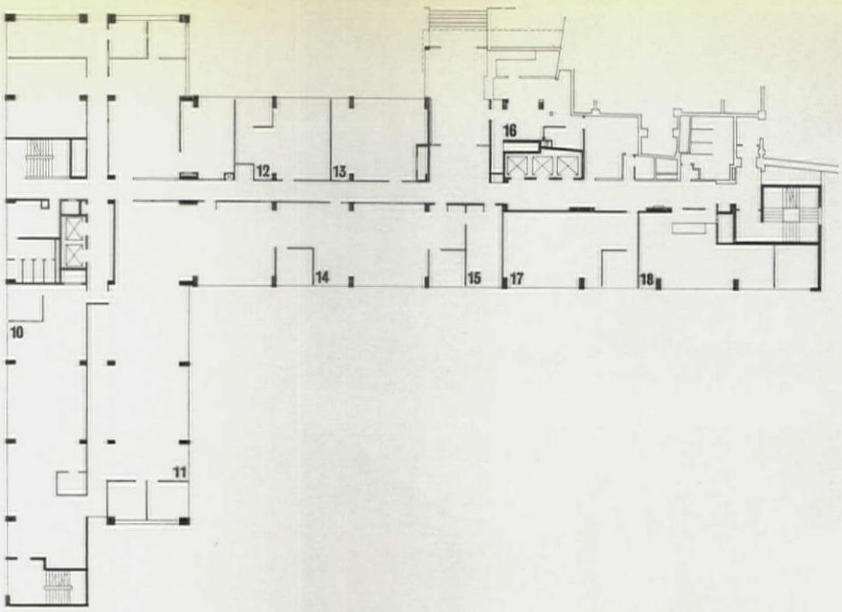
27. common room
28. home news editor
29. messenger
30. foreign news editor
31. sub-editors
32. works manager
33. lettable office space
34. compactum
35. index
36. intelligence department
37. typing pool
38. obituary
39. letters
40. industry
41. labour
42. leader writers
43. assistant editor
44. editor
45. editor's secretaries
46. city editor
47. city office
48. director
49. chairman
50. secretaries
51. dining room
52. board room
53. kitchen
54. blue room
55. chief proprietor

ground floor plan

services within the formal system and it also enables the maximum accommodation to be obtained within the varying heights of the 'St. Paul's ceiling.' The central forecourt consists of a freestanding circular 'dish' paved with granite setts, flanked by precast units and supported on columns above the car park. The two sloping walls in front are clad in slate, with incised lettering giving an account of the history of Printing House Square.

Internally the building has been designed for maximum flexibility with standard demountable aluminium partitions on a 5 ft. module. Emphasis has been laid on lighting, which was designed with the advice of Professor R. G. Hopkinson. Lights at the back of the rooms, for use on dull days, were designed to blend naturally with the daylight. Nowhere in the building has anyone found the need for table or desk lights.

Because of traffic noise all windows on the Blackfriars



third floor plan

NEWSPAPER OFFICES, PRINTING HOUSE SQUARE, LONDON

8

8 a typical open office area, occupied by the *New York Times*.
9. the heart of the building: the staircase linking the upper editorial floor (with the intelligence department in the background) to the lower floor where the sub-editors sit. Between the banisters of the upper flight can be seen the teleprinters which feed news into the building.

9

Lane side and towards Queen Victoria Street are double-glazed. The whole building is artificially ventilated. Newspaper offices are noisy places, with telephones, tapes and typewriters working simultaneously; particular attention was therefore given to dampening internal noise with absorbent ceilings and floor surfaces.

The entrance hall and boardroom suite were detailed by Design Research Unit, acting as interior design consultants. They also selected the furniture for some of the offices and for the waiting areas in the corridors. The boardroom, however, also incorporated antique and modern furniture from the previous premises. Associate architects in charge, Peter Corkery (Llewelyn-Davies, Weeks and Partners) and G. West (Ellis, Clarke and Gallanaugh). Structural engineers, Ove Arup and Partners. Quantity surveyors, Sydney C. Gordon and Partners.

10

11

10, a corridor on the sixth floor, top lit by means of the 'slip-slab' arrangement. 11, 12, two views of the main entrance hall.

12

NEWSPAPER OFFICES, PRINTING HOUSE SQUARE, LONDON

THE AMAZING CONTINUITY

Robert Melville

When Leo takes charge of the summer sky in July, an exhibition devoted to the lion in Asia, which opened at the British Museum at the beginning of May, will still have two or three months to run. Afterwards, the books, paintings, carvings and ceramics will return to their different departments and perhaps never meet again. It is one of those entrancing little 'subject' exhibitions, staged with an unobtrusiveness amounting to diffidence, which scarcely any other museum in the world could put on without borrowing.

The Asiatic lion, now only to be found in a small forest area of Western India, was a native of the Near East and all of Northern India from remote antiquity until recent times, but was not seen in the Far East before some 'tribute' lions were presented to the Chinese Court in the seventh and eighth centuries.

It seems always to have been treated as the noblest of beasts, and the symbolic combat between king and lion and the no less symbolic struggle between lion and bull (regal power triumphant over brute force) appear in the art of many different cultures. On the silver dish from Persia which is one of the great treasures of the Museum, the ruler of the Sasanian empire in the fifth century AD is depicted slaying lions on horseback, 1. In this work, and in the Assyrian reliefs and Mughal drawings, it is evident that the living animal has been carefully observed, but the delightful ivory from Nepal, which functioned as a support of some kind, 2, is already highly stylized, and a pair of metal guardian lions from the same area have acquired symbolic attributes which fantasticate the lion's physiology. They acquire what appear to be female human breasts, wings sprouting from the top of the forelegs and elaborate leg-guards. (But I may be wide of the mark here. There is no catalogue, and the otherwise excellent handout gives no iconographical details.

There is fantastication of a more imaginative order in the combat between a lion and a buffalo in the facsimile of a superb fragment of a T'ang scroll painting from The Caves of the Thousand Buddhas. The buffalo, beautifully observed, is a plain, everyday animal, but the lion, with its gorgeous curling green mane, and its marvellous red, green and yellow tail, arched over its back like a great fan or a dragon's wing, has become a symbol of the Buddha, not simply the king of beasts but ruler of the world. It looks every inch the part. The T'ang pottery lion in green and cream, 3, is hysterically fierce, but not very highly stylized, and as an animal is still in the realm of possibility, but there couldn't have been many opportunities in China for direct observation of lions, and it gradually became a creature of fantasy, with no fixed attributes beyond an emphasis on claws and fangs. In Hokusai, 4, it has become wildly and wonderfully preposterous. It was Hokusai who drew

1

2

the 'spiritual form' of the lion every morning as a daily exorcism, and two of these astonishing drawings are in the exhibition. Their introspective convolutions have a very modern flavour, as if the agitated specks in a Michaux

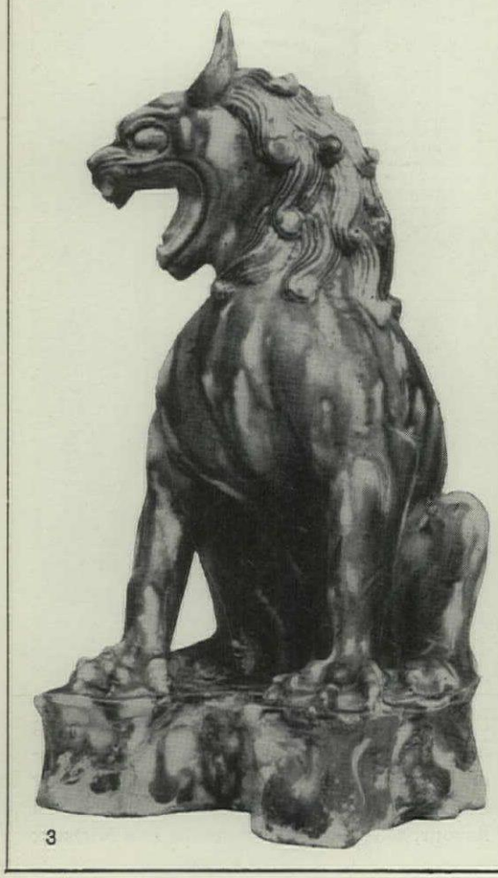
drawing were suddenly flung together to form one turning, twisting form.

The Venetians had no more opportunity of studying real lions than the Chinese, but the lion is their patron beast, and as James Morris has pointed out in three packed pages of vivid itemizing in his book on Venice, 'the city crawls with lions,' including 'one real lion, drawn from the life' by Pietro Longhi. Some of Longhi's admirable working drawings—*A Lady Spinning*, with a separate study of a hand pointing a ghostly finger at her, 5, is typical—are in the fascinating selection of eighteenth-century Venetian Drawings from the Correr Museum, which the Arts Council is sending to the municipal galleries at Birmingham, Manchester and Southampton. But his lion study is in another museum, and there are none of his studies of women in dominoes, that macabre emblem of erotic promise which was one of the most stunning creations of Venetian decadence. It is, however, a distinguished exhibition, haunted by the sense of the glory ebbing away but charged by Francesco Guardi's genius with the last marvellous flashes of Venetian greatness.

The title given to this article—'The Amazing Continuity'—is intended for the lions, but it comes from a picture by the American painter Stuart Davis. It's not very decipherable in the painting because it's also intended as a 'form,' but Davis himself has said that it refers to the 'mysterious common factor' which unites paintings of different periods and styles, and he probably had in mind the same kind of thing as the people in the Art Appreciation field who try to teach the public to look at all sorts of paintings as arrangements of coloured shapes. The tendency of the modern painter is to provide nothing else.

Davis, now seventy-one years old, is one of the latest grand old men of twentieth-century American painting. Another is Josef Albers. Their relevance to the contemporary scene—Davis as a forerunner of pop, Albers as a direct influence on an important aspect of American abstraction—is evident enough, and it's perhaps a sign of the active educational role assumed by the museums that almost every public collection of modern art which I visited on a recent trip to the US had one painting by Davis and three or four by Albers on view. The persistance of this ratio is curious, but it seems to reflect a general attitude to the relative merits of abstraction and pop. Davis

4



3

5

Baco*
ALUMINIUM BUILDING PRODUCTS

Rigidal Trough Type C is a deeply profiled aluminium building sheet suitable for wide spans, high loadings, long roof slopes and self-supporting arches.

Deep strong profile?

RIGIDAL* TROUGH TYPE C!

	Cover width	Max Length	Gauge (swg)	Roof Pitch
C5	30 in	40′	16, 18 or 19	15° min.
C6	36 in			
C7	42 in			

Finish—C5: stucco embossed. Also available in semi-matt. C6 and C7: bright rolled finish only. All widths are available in Alocrom 100.

Fixing—conventional methods.

*Regd. Trade Marks

THE BRITISH ALUMINIUM CO LTD
Norfolk House, St James's Square, London SW1
Telephone: TRAfalgar 8888

It's better built with Baco Aluminium

Full details are given in a British Aluminium Building Service (BABS) Data Sheet. If you would like a copy complete and return this coupon:

NAME .....

.....

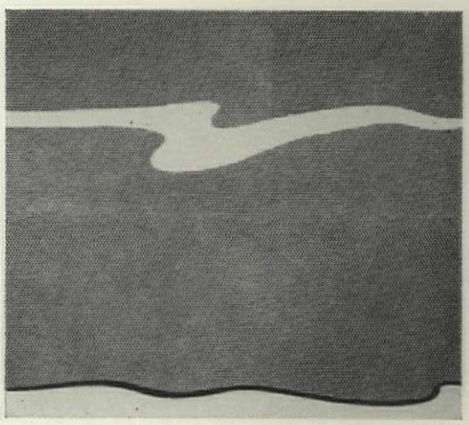
ADDRESS .....

.....

..... AR3

PROFESSION .....

is revered as the outstanding American avant-garde painter of the late 'thirties. His paintings are certainly arrangements of coloured shapes, but their purity is a little compromised by the fact that some of them make evocative words, such as 'Champion' or 'Garage.' Albers, an old Bauhaus man, is less naïve; he has no truck with the values of contingency, and his formula for paying homage to the square, which he himself has endlessly exploited in smallish, tasteful arrangements of colour bands, has been brilliantly adapted to the large-scale needs of America's flat-colour abstractionists. If, to adapt a phrase of Harold Rosenberg's, the Abstract Expressionists brushed the apples off the table, the flat-colour painters have smoothed out the signs of the brush-off. It is a weakness of the pop artists that they are itching to prove that their pictures are as nakedly arrangements of coloured shapes as the work of the abstractionists. The recent

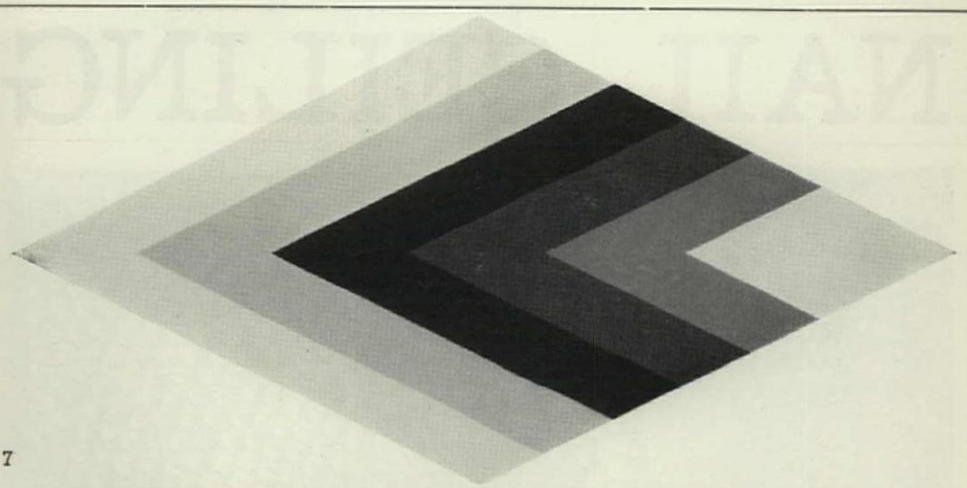


6

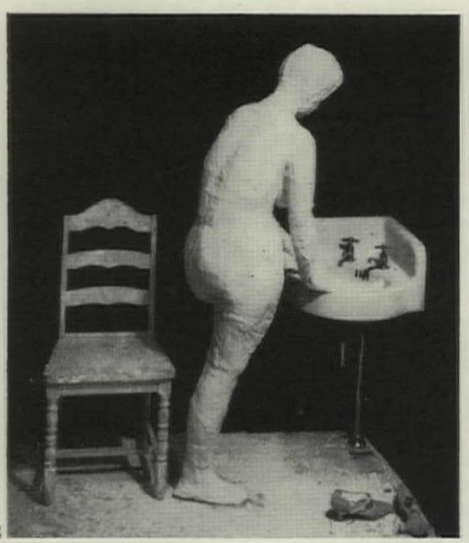
landscapes of Lichtenstein, for instance, provide obvious evidence of such a preoccupation, and the result is no less evidently as almost total devaluation of the visible world, 6. He would do better to leave no trace of it at all, for these landscapes look flimsily and trivially negative beside the work of, say, Kenneth Noland, whose recent exhibition at the Kasmin Gallery included two large, diamond-shaped paintings, composed, like an Albers, of colour bands, which were extremely impressive, 7.

To my mind, the work of George Segal presents a more interesting side of American pop art. He arranges tableaux of actual objects around human effigies, and although they appear to have little connection with anything that's ever been called art, something about them, perhaps the spectral quality of the plaster, takes them beyond their own banality. I saw *Girl Washing her Feet*, 8, at the Sidney Janis Gallery in New York. The figure is a plaster cast of an actual girl, and she stands, along with the washbasin, the chair and the pair of slippers, on a shallow base. It pleases me that the washbasin and the chair have been, so to speak, reclaimed from the paintings of Dine and Rauschenberg for their proper functions, and it pleases me that I am not asked to consider the washbasin as a work of art in its own right: it is not an heir of Duchamp's urinal, and the tableau is not the tag-end of Dadaism. It's possible, I think, that Segal is giving a new lease of life to Tolstoy's concept of significant stillness.

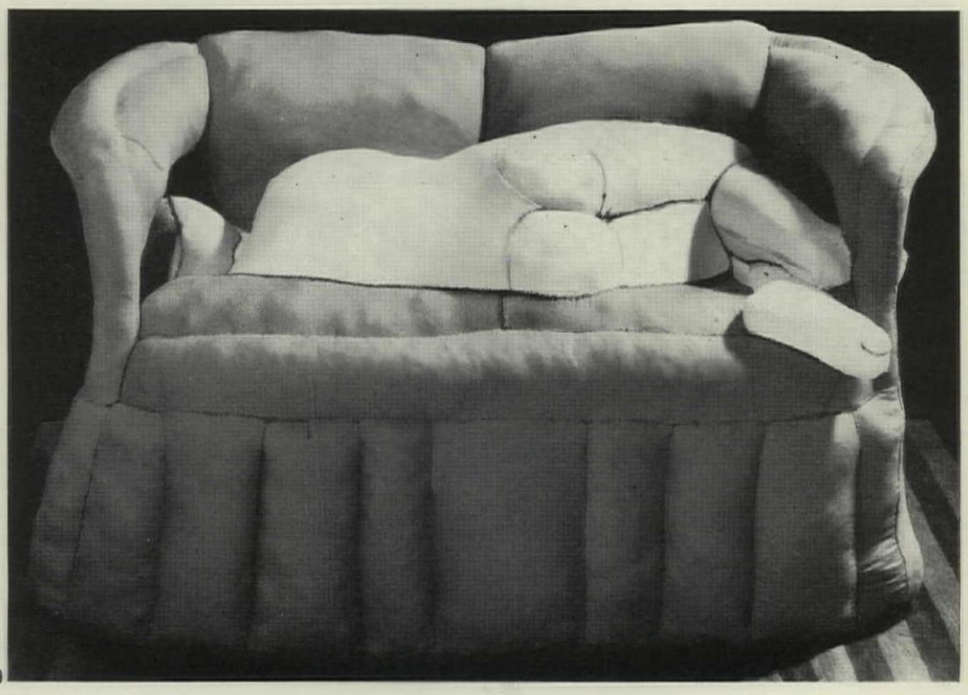
A younger artist, Paul Harris, exhibiting at the Lanyon Gallery in Palo Alto, is working on somewhat similar lines. His *Dream on a Red Couch*, 9, made of wood and cloth, has more charm than a Segal, but the shapes and the broad stitches of the stuffed figure bring too readily to mind the collages of Marca-Relli, and already his work is too deliberately poetic and tasteful. But I wouldn't know how one recovers from chronic aestheticism.



7

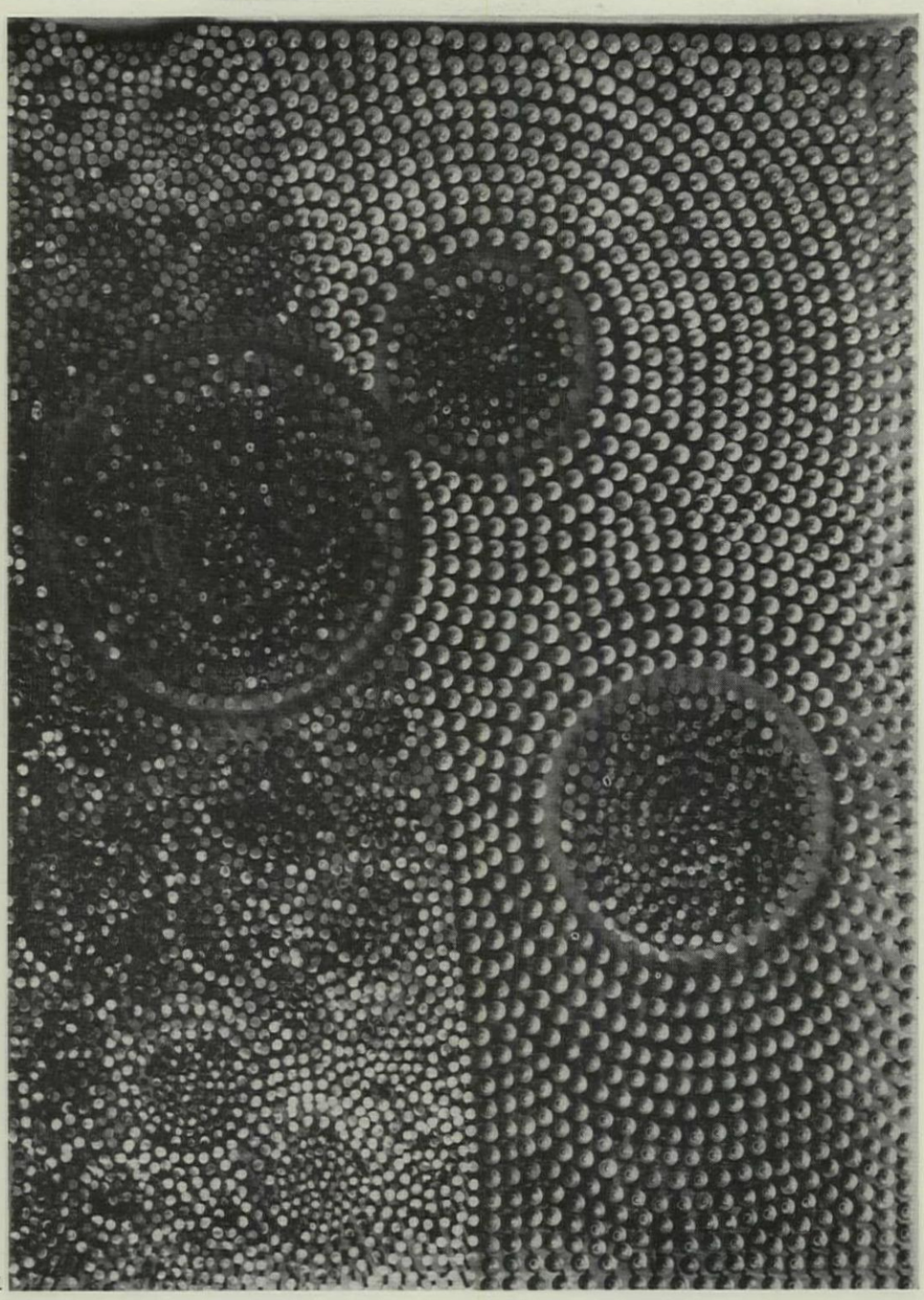


8



9

NAIL CEILING



1

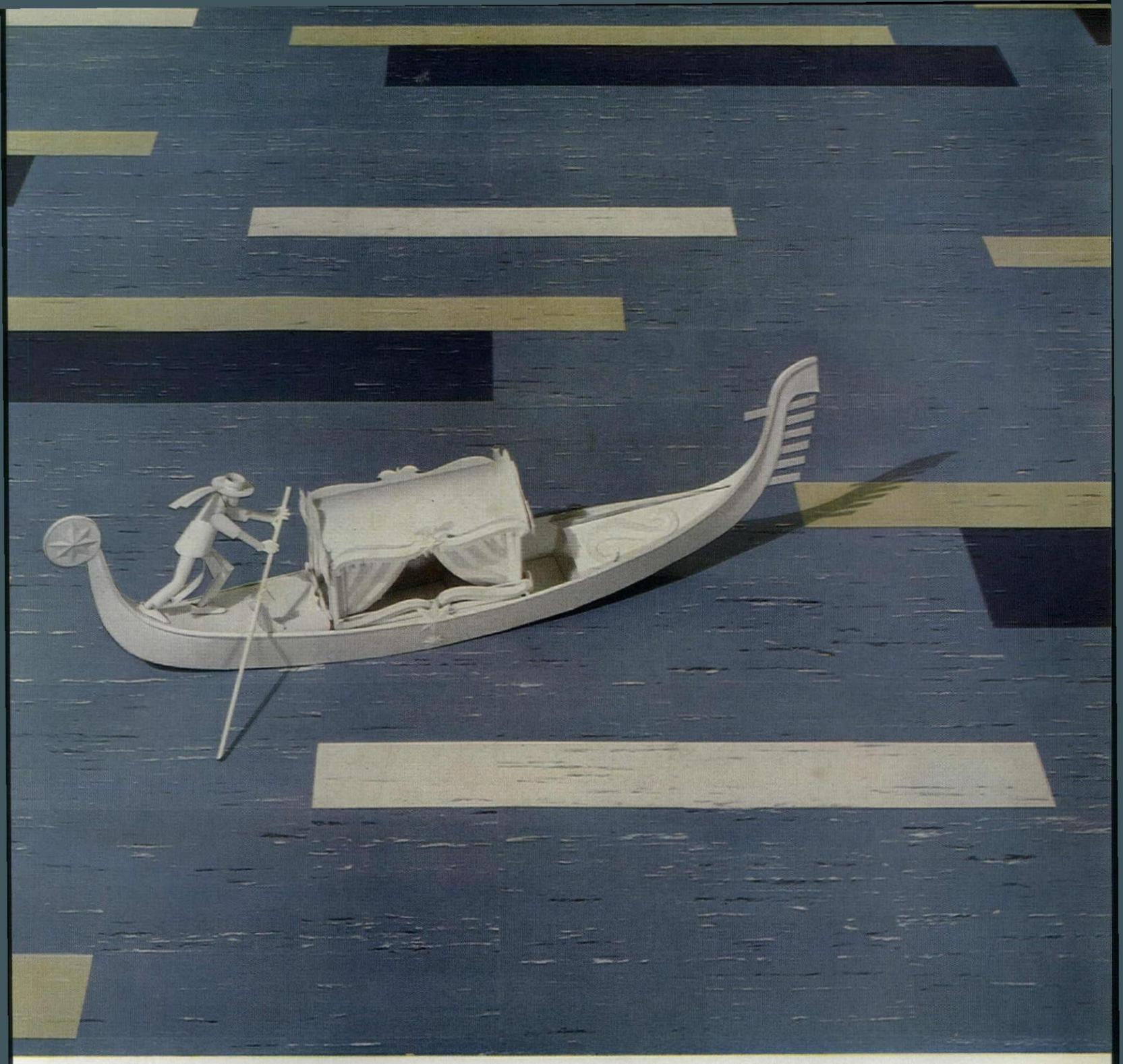
Among the decorations for the new Royal Garden Hotel, overlooking Kensington Gardens, which will open in August, is a remarkable nail ceiling in the roof restaurant, made by the Canadian artist David Partridge. The ceiling, entitled *Galaxy*, measures 14 ft. by 9 ft. 3½ in., is made up of eight panels and contains thousands of nails of different sizes and metals. It was whilst studying under Hayter in Paris that Partridge first saw the metal reliefs of Zoltan Kemeny which were later to inspire his experiments with nails. Before that he had been a traditional painter and graphic artist. What he calls his 'Configurations' began in 1958, in Canada, and their success led to his absorption in the new technique. He has employed it in architectural commissions in Ottawa, London, the Isle of Wight and Beirut, but this Kensington decoration is his most ambitious to date. Whilst he has recently begun to incorporate other ready-made aluminium parts in his panels, for the most part he restricts himself to nails. These vary in length, in the size of the nail head and in material—galvanised steel, zinc, copper—which in turn add colour and texture to the finished designs. The shapes and rhythms in these designs relate directly to his early painting, to landscape and particularly to a life-long fascination with fossils and the structure of plants and rocks. Whilst for architectural commissions he works to agreed dimensions, based on a preliminary sketch, the forms and rhythms are usually unplanned. The first nail determines the shape, height and distance of the next.

Born in Ohio, USA in 1919, Partridge lived in England as a boy and then went to Canada. He returned to England to study at the Slade School (1950–51) and finally settled in England in 1962. A one-man exhibition of his work is being held at the Commonwealth Institute, Kensington, from July 15 until August 15.

CHARLES S. SPENCER

2

3



Creative . . . Marley tiles. Marvellous.

A pattern of dark blue, light blue, and white tiles takes you to Venice—perhaps. The choice is yours. A delicate selection of colours capable of a thousand and one variations in design. Yet one thing is constant. The supreme quality of Marley flooring. Good looking. Long lasting. Ever fresh.

Marleyflex vinyl asbestos tiles shown here, are outstanding for strength, resilience, quietness, and resistance to abrasion, oils, grease, and most chemicals. Available in an unequalled range of colours and tones.

BY APPOINTMENT
TO HER MAJESTY THE QUEEN
SUPPLIERS OF FLOOR TILES
THE MARLEY TILE COMPANY LIMITED

MARLEY FLOORS

MARLEY · SEVENOAKS · KENT · TEL: SEVENOAKS 55255 · London Showrooms, 251 Tottenham Court Road, W.1 · Tel: MUSeum 2324

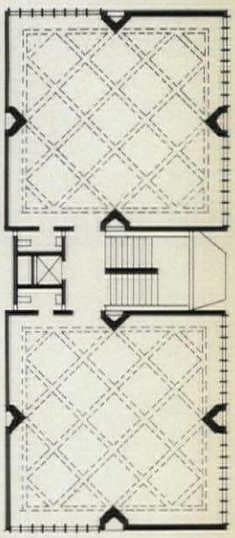
Barbour Index File No. 372 Gorco Bureau No. 17/6

GUN HOUSE

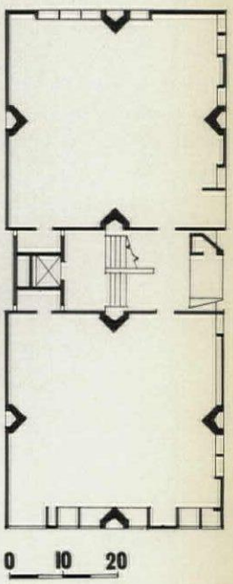
OFFICES AND CLUB, AHMEDABAD, INDIA

architect **CHARLES CORREA**

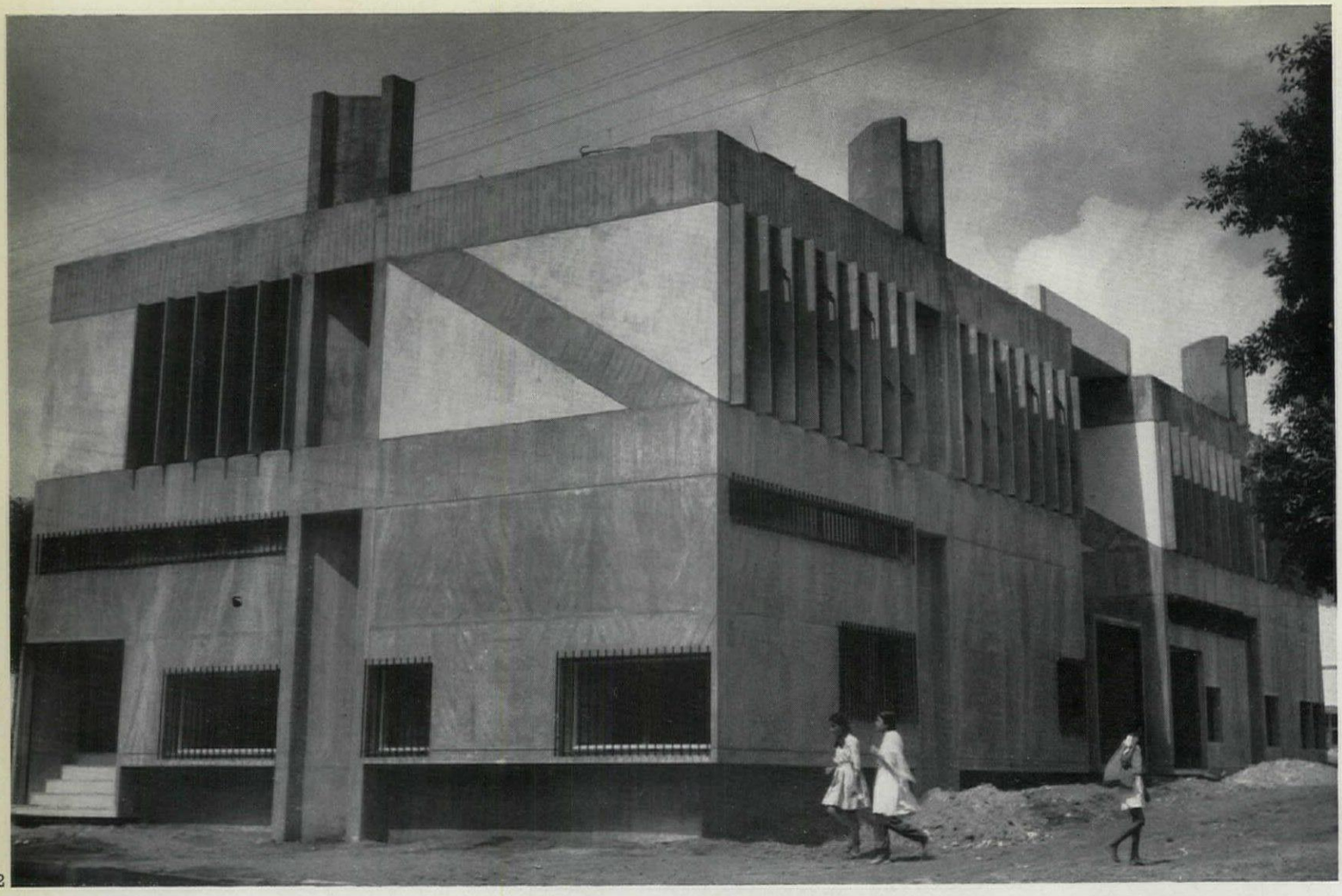
1. the main entrance, with the gun shop on the left.



first floor plan

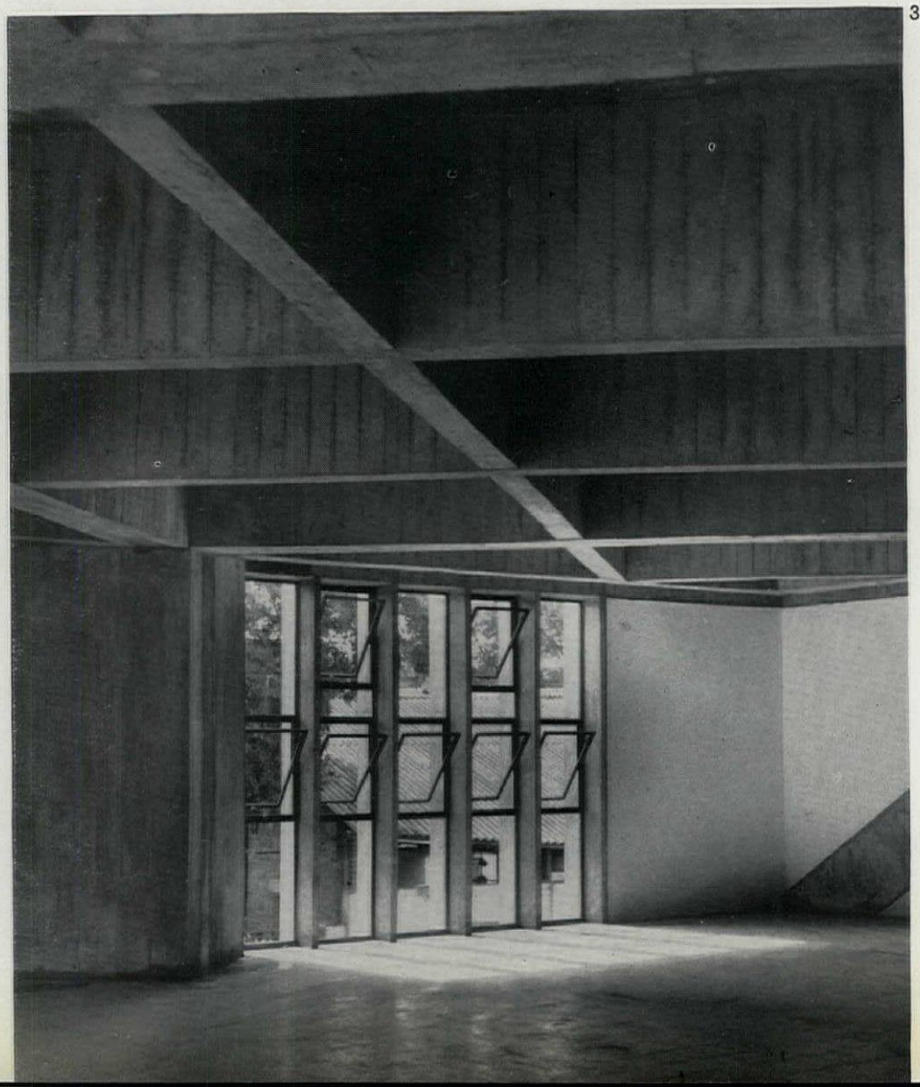


ground floor plan: the bottom room is the gun shop, the top a meeting room



2

2, the gun shop end of the building. 3, a first floor office.



3

This was intended as a three-storey building, but owing to a local shortage of cement, work had temporarily to be stopped after two storeys had been completed—hence the structural columns seen in the photographs protruding above the roof. The building is for the Ahmedabad Rifle Club and has a meeting-room and a shop for selling guns and ammunition on the ground floor and offices on the two floors above. Since the office space is to be let to small companies, it has been planned as two self-contained areas at each level, separated by the staircase, lift and lavatories.

In view of the purpose of the shop, police regulations required concrete walls and special security iron window and entrance grilles. The structure is reinforced concrete with a diagrid pattern of floor and roof beams, allowing a clear span across the interior spaces.

OFFICES AND CLUB, AHMEDABAD, INDIA

Baco*
ALUMINIUM BUILDING PRODUCTS

Fural is one of the lowest priced concealed-fixing roofing systems available today. The system consists of a pre-formed aluminium sheet which is unrolled in horizontal bands across the roof and secured by the dovetail principle. No nails, screws or bolts are needed, so there is no perforation of the sheet. It is suitable for both roofing and wall cladding.

Working on a budget? FURAL!

Cover Width	Roll length	Gauge swg	Min. roof Pitch
24 in. 42 in.	67½ ft. 40 ft.	22	9°

Finish—stucco embossed. Semi-matt also available.

Fixing methods—Fural is unrolled horizontally, the higher course overlapping the joggled lower course. The special dovetail shaped rib fits over, and securely locks into, the matching retaining strips which are nailed or screwed to the roof timbers.

*Regd. Trade Mark

THE BRITISH ALUMINIUM CO LTD
Norfolk House, St James's Square, London SW1
Telephone: TRAfalgar 8888

It's better built with Baco Aluminium

Full details are given in a British Aluminium Building Service (BABS) Data Sheet. If you would like a copy complete and return this coupon:

NAME .....

.....

ADDRESS .....

.....

..... AR4

PROFESSION .....

CONTEMPORARY DRAUGHTSMEN: 8 IVOR KAMLISH

Above, Venice. Below, hotel at Portofino.

Ivor Kamlish studied at the Leeds College of Art and the Central School of Arts and Crafts, London. During his national service he was assistant curator of an army museum. Afterwards he joined Carter Tiles, where he became chief designer—working on murals, patterns and publicity material. He recently started his own design office (though still retained as a consultant by Carters) and current work includes exhibition stands, catalogue design and packaging. He would like to do more architectural drawings, which up to now have been confined (like those reproduced here) to holiday sketches.

CONTEMPORARY DRAUGHTSMEN: 8 IVOR KAMLISH

Above, the harbour at Portofino. Below, Mousehole, Cornwall.

for Ecclesiastical

DC1 Interlocking/Stacking chairs have been chosen by Edward D. Mills & Partners for the new Methodist Church at Upper Norwood (featured on pages 33/35)
Modern architects specify Design Furnishing Contracts. Do you know about our furniture? If not, write or phone for details. We supply direct, although the DC1 chair may also be obtained through contract furnishers.

DESIGN FURNISHING CONTRACTS LIMITED

14A Marylebone High Street W.1. WEL 2568. Shortly moving to new showroom at 48 Lexington Street W.1.

outrage

THE BARBARIANS NEARER HOME

1

2

In the May AR were some pictures of the barbarous destruction of roadside trees at Compiègne, north-east of Paris, but it would be a mistake to imagine that this sort of thing happens only abroad. The equally brutal West Sussex scene illustrated, 1-3, shows the total devastation of trees now taking place along the Petworth—Horsham road, on land belonging to the Leconfield Estate, presided over by the present Lord Egremont.

Presumably someone thinks there is

3

The Barbarians Nearer Home

good reason for such destruction, and orders it to be done, but it is difficult to know what valid reason there could be. Soon it will be too late to safeguard for the nation what little is left of this most beautiful of countrysides.

ambience

DO-IT-YOURSELF PLAY-GROUND

Whatever they may lack in constructional logic and finish, home-built impromptu structures are often endowed with a compensating vigour and expressiveness—witness this children's playground, 1, at Notting Hill, off the lower end of Porto-

1

Logically simple in design and construction, the Ventura series provides at low cost, efficient and glare-free lighting.

Ceiling and pendant types are available in two sizes—9″ dia. 100 watt and 12″ dia. 150-200 watt.

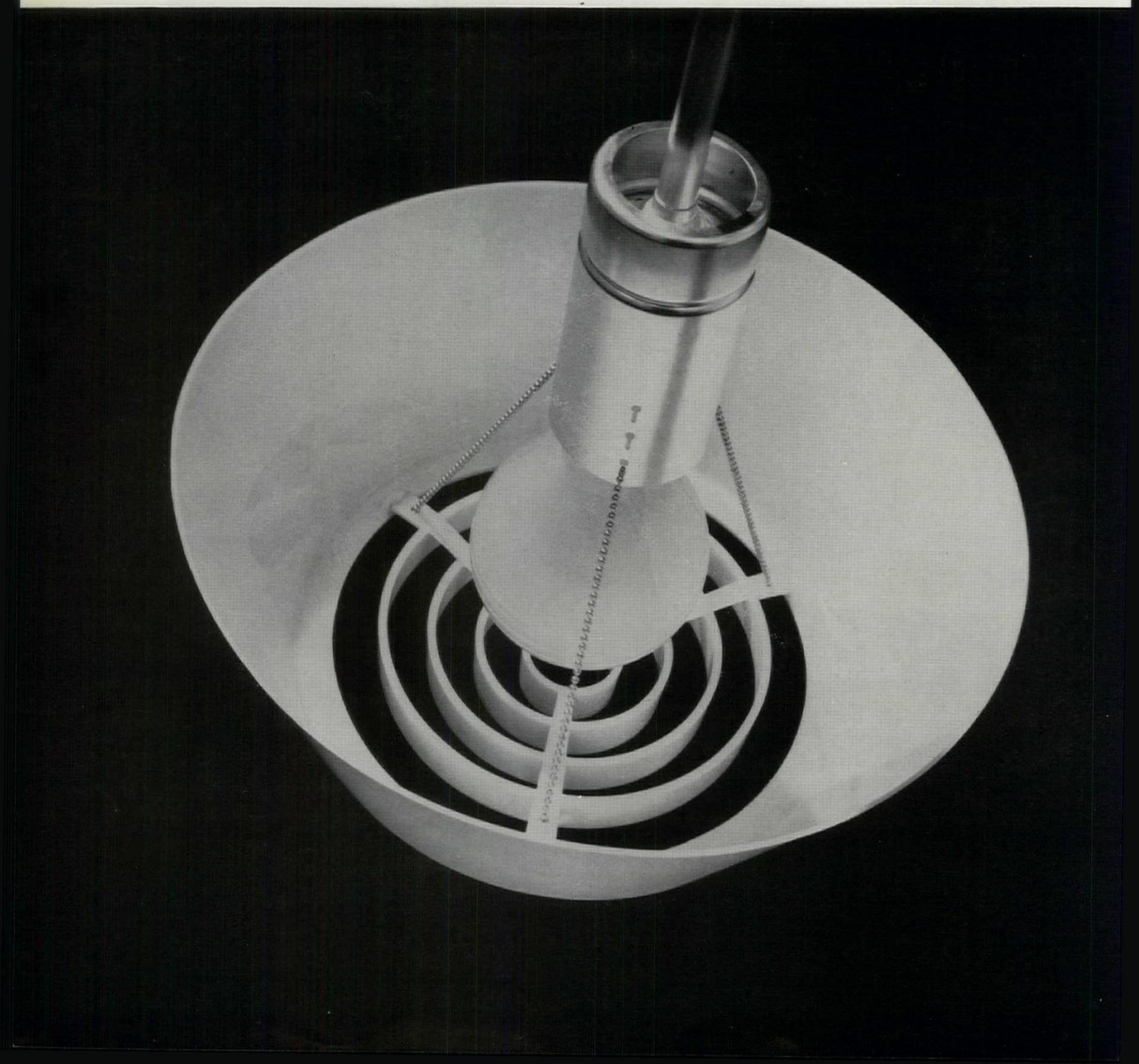
Ask for publication BTV/3

Merchant Adventurers Limited

Feltham Middlesex (FEL 3686)

London Showrooms:
231 Tottenham Court Road, W1

MA LIGHTING



2

3

4

Do-it-yourself Playground

bello Road. It is one of four such playgrounds in London sponsored by an organization called Adventure Playgrounds, the other three being at the Oval, Archway and St. John's Wood.

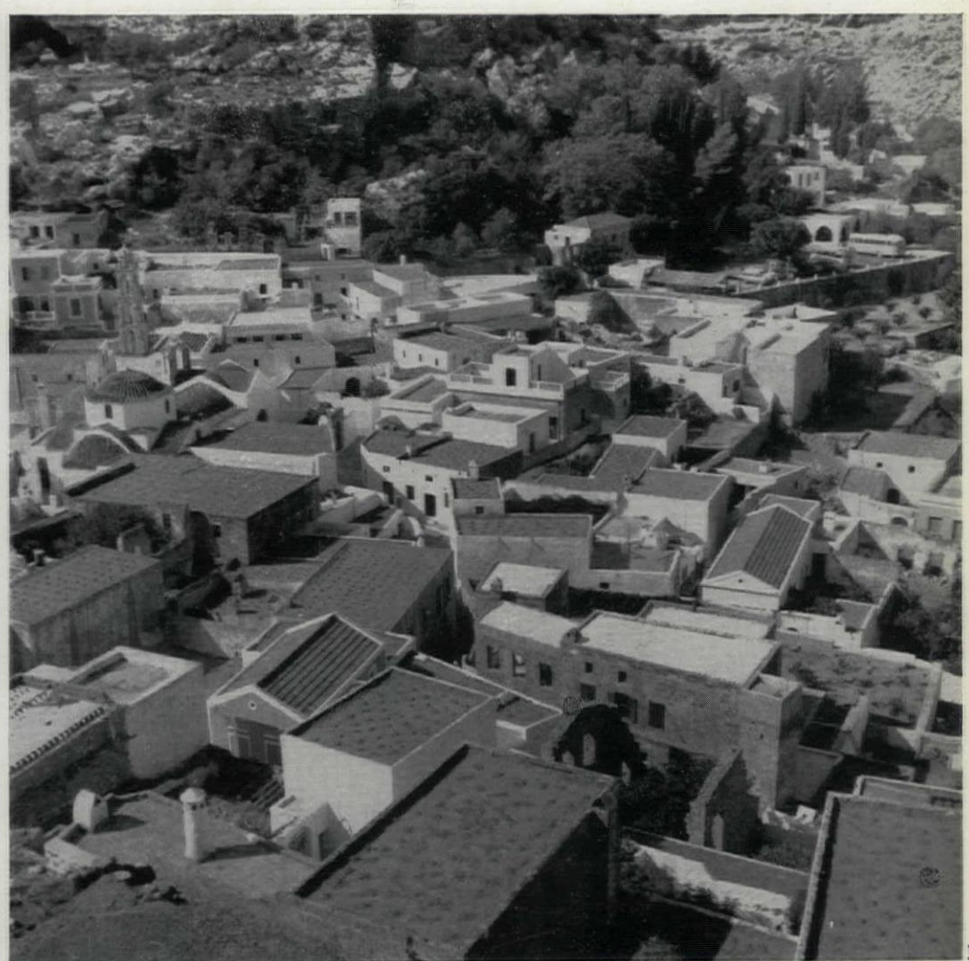
Their form is always changing, reports Nicholas Harper, who took these photographs; the one at Notting Hill seems to stay up for about six weeks at a time before being burnt down or otherwise caused to disintegrate by the children, 2-4, or transformed by the addition of more material found handy. On his last visit he found incorporated in it a 20 ft. lamp-post.

architecture

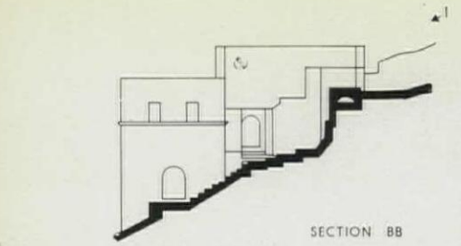
LIVING ON A SHELF

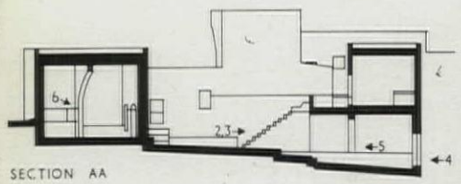
The history of the house at Lindos, on the island of Rhodes, of which this is an account, begins in effect with the signing of the treaty of 1522 between the Turkish Sultan Suleiman the Magnificent and the departing Knights of St. John. Under the treaty the Christians who wished to remain were allowed to do so, but not to inhabit the walled city of Rhodes. They could live in its suburbs under the eye of the Turks or retire to the entirely Christian town of Lindos.

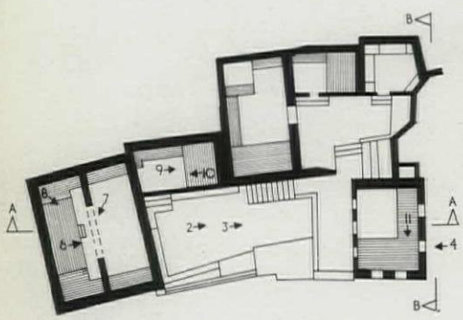
There Christian merchants and sea captains flourished through their control of a share of the carrying trade between Constantinople and Egypt, and by the early seventeenth century they were rich enough to build their own houses, of which this is an example. Their prosperity lasted until the end of the eighteenth century, when it was destroyed by the competition of steamships and the troubled state of the Turkish Empire at the time of the Greek war of independence. It revived with the opening of the Suez Canal and the settlement of Lindiots in East and North



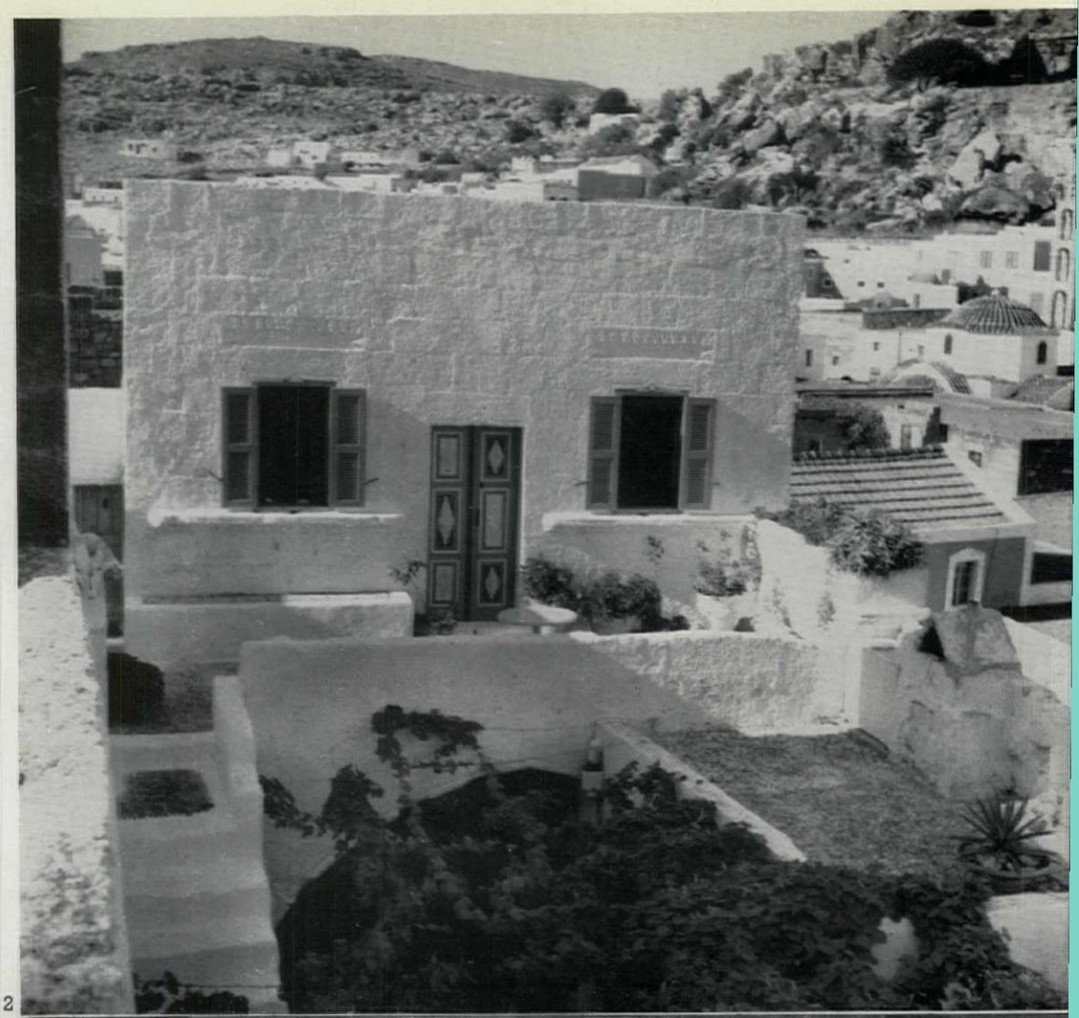
1



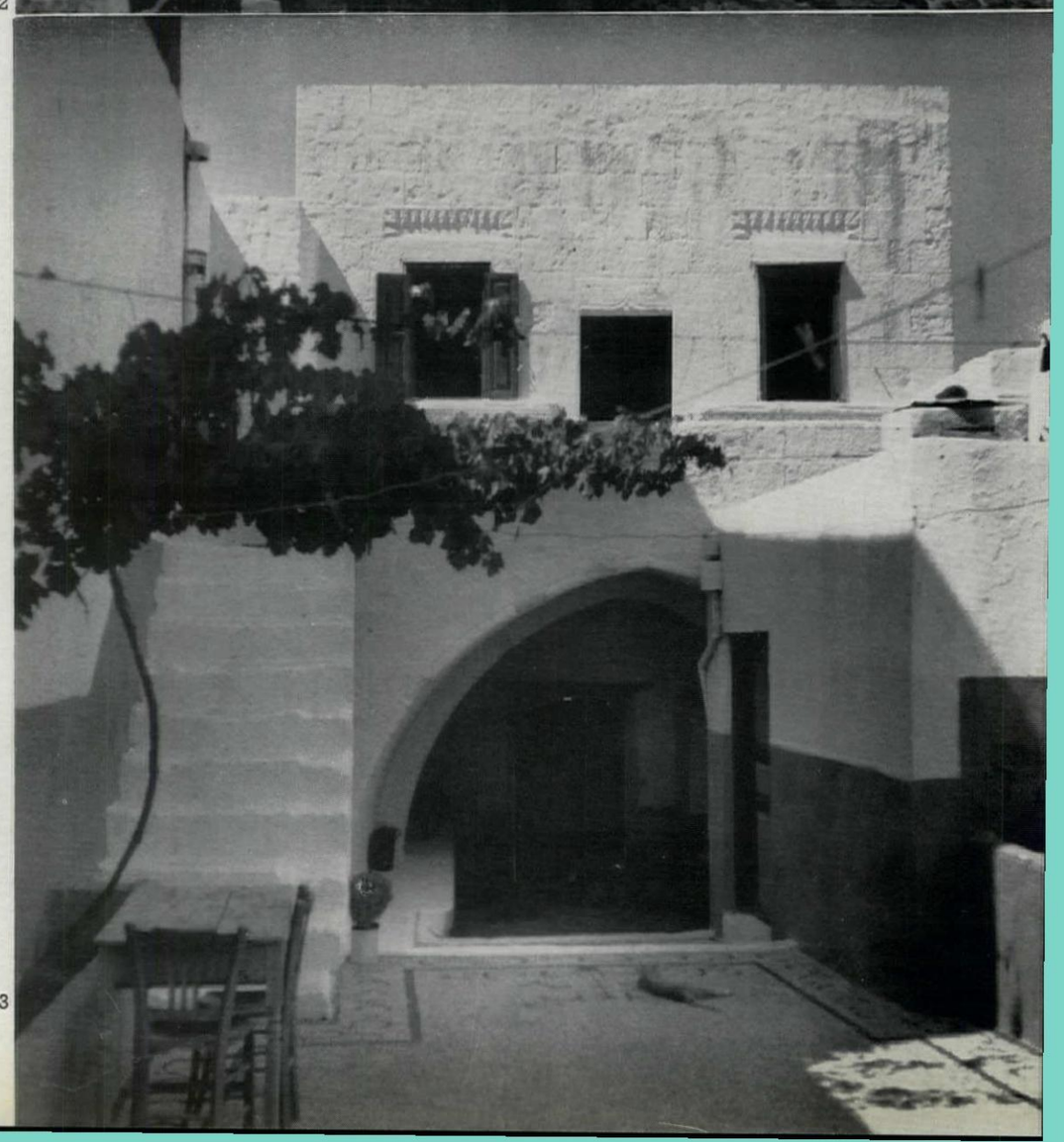




numbered arrows indicate illustration viewpoints



2



3

Living on a Shelf

Africa, which led to a fresh wave of building. At this time Lindos had the island's only harbour apart from Rhodes itself, and was the port of shipment for the produce of the middle of the island, but the building of motor-roads down the island in the 1930s led to a second depression. Today the town is again reviving under the impact of the tourist trade.

The chief problems of Lindos are the frequent earthquakes, the barren surroundings and the tremendous summer heat. Its inhabitants must build well if their houses are to survive and protect them, and they must gain their living from outside sources since the land around the town will support only a few hundred of the population of several thousand which lived there in prosperous times. All this has led to the formation of a basically non-peasant community, rich by the standards of the rest of the island, and to the building of houses of considerable pretension. Available local materials have been timber brought from the interior of the island and later from the Turkish mainland opposite, pebbles for flooring from the beaches between Lindos and Rhodes and a very soft building stone, easily dressed and carved when freshly quarried, but weathering eventually to a hard surface. On the other hand the hardness of the underlying rock is sufficient to discourage excavation for foundations or reduce it to the barest minimum.

In the early seventeenth century the largely Gothic building traditions inherited from the Knights of St. John were still

UNISTUC Liquid Stone

Liquid Stone

A solidifying stone coating with the finish and appearance of natural stone

Preserving and decorating for 10 years.

Unequalled for durability. Resistant to atmospheric and sea air conditions when applied to both old and new concrete, cement, stucco, stone, brick and asbestos.

* ***Tested and proved for over 25 years***

THE UNITED PAINT COMPANY LTD.

170 Bishopsgate, London E.C.2.

Tel. No: AVEnue 4556/8.

Masonry Finish

The modern flat and semi-gloss coating for application to all exterior surfaces. Produced from a scientific combination of special synthetic rubber and pigments, having up to 10 years durability.

Has excellent decorative and protective properties.

Resistant to fumes and acids. Can be applied direct to cement, brick, stone and asbestos, also to previous coatings of cement paint, emulsion, gloss paints and distemper.

Economical in use.

★ **UNISTUC Surface Coatings have been applied to many noted buildings**

UNISTUC Masonry Finish

Architectural Pres

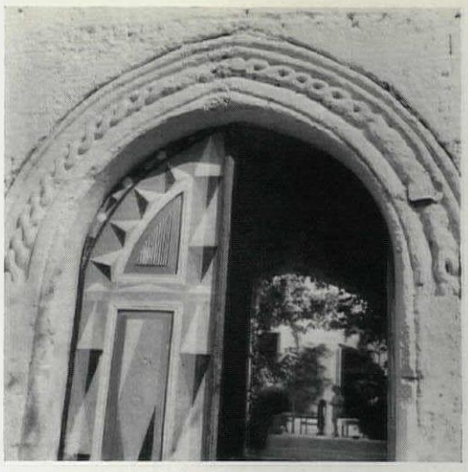
MOWLEM

This is the new Elephant House at the London Zoo. It was designed by Casson, Conder and Partners. The builders were John Mowlem and Company Limited.

John MOWLEM & Co. Ltd Builders and Civil Engineering Contractors

91 Ebury Bridge Road, London S.W.1. Tel: SLOane 4500

EDINBURGH CAMBRIDGE DONCASTER BATH FALMOUTH EAST AFRICA HONG KONG YUGOSLAVIA CYPRUS GREECE BRITISH GUIANA MALAYSIA



4

strong. The Knights had been the greatest masters of military architecture, and their knowledge of stone dressing and architecture survived. The local sea captains, though widely travelled within the Turkish Empire, had not been exposed to Renaissance influences and proceeded to perpetuate a building tradition almost abandoned elsewhere in Europe. They built their new houses of carefully dressed mortarless stone, making extensive use of the pointed arch and of low relief carving round doors and windows, using a mixed Gothic-Byzantine style. Of their houses twenty or thirty survive in varying states of habitability or ruin. Their plans and dimensions are remarkably consistent. An arched entrance hall with a room above leads through a walled courtyard to one large room, usually about 28 ft. long by 24 ft. wide and divided lengthwise by a huge arch supporting an elaborately painted wooden ceiling. Roofs are of pounded clay, and rooms and courtyards alike are floored with pebbles laid in patterns of circles, pentagons or of stylized birds, ships, trees or even coffee-pots. Originally the houses were not whitewashed, as many (but not all) are today. The big room was the living area for the whole family, which slept on low galleries made private by hangings.

Standards of building gradually declined in the eighteenth century and the houses constructed in the nineteenth century are much inferior. The second building period saw the addition of many smaller rooms to the original ones, the building of elaborate high wooden galleries to replace the low ones of the previous period, the relaying of the old pebble pavements where necessary (in much less robust patterns) and the construction of round relieving arches over doors and windows instead of the older pointed arches.

The first impression created by these houses is of their extremely spatial and almost sculptural character together with their lack of interest in symmetry or façades in the Renaissance sense. The occupant soon comes to discover also their

5

functional quality and flexibility. All the space in both rooms and courtyards is usable and little is wasted on display. The galleries provide enormous storage space underneath and sleeping (or sitting) platforms above. Almost no freestanding furniture is necessary, and indeed, little is available on the island. The thick walls, clay roofs and small windows keep the rooms cool in summer; efforts to replace the roofs with concrete have been a failure so far as weight and insulation are concerned. The cobbled floors are carefully sloped so that they can easily be washed clean, and the

6

later rooms are equipped with efficient open fireplaces, surprisingly for somewhere so relatively warm in winter. Courtyards are carefully sheltered from the high winds and are designed to be almost completely private.

As can be seen from the plan and sections of the house illustrated here, it has been fitted on to the steeply sloping hillside in the form of a series of individual units, and each new room, courtyard or even flowerbed has been fitted on to the previous building. As a result almost no two rooms are on the same level, and the plan has acquired an extreme irregularity, which it owes to the hazards of its successive owners' tastes and their responses to earthquakes or changes in standards of living. Symmetry is of small importance and exact requirements of use all important. Such is the continuity of craftsmanship that even today alterations can be made which merge almost invisibly into the structure as a whole, and but for a habit of dating carving and pavements it would be almost impossible to decide when anything had actually been built, so uniform is the aesthetic behind the styles.

The house is below the slope of a hill, almost lost in the close-knit pattern of Lindos, foreground of 1. A closer view, 2, shows the square tower-like form of the main room above the entrance arch, with the upper and lower courtyard and the steps connecting them on the left. 3 is the lower courtyard (with the same steps on the left) and 4 the approach to it from the other side, through the entrance façade, with seventeenth-century carving round the archway. This archway leads into an entrance hall beneath the main room, from which the lower courtyard, 5, is reached in its turn.

In accordance with the practice described above, the floors of the main rooms are paved with pebbles, 6. 7 shows one end of the main room (dating from 1620) with, on the left, part of the central supporting arch that divides the room in two and, on the right, a shelf or gallery added in the nineteenth century. 8 shows the lower part of the same room, looking down towards another type of box gallery—used, like the first, for sleeping on. The adjoining room shown in 9—one of the nineteenth-century additions—has its own gallery with an arched fireplace. 10 is the view looking back from the same gallery and 11 shows a corner of the sleeping shelf in the room over the entrance hall—the one shown externally in 2.

JOHN HOPE

7

8

9

10

11

Sunshine and Radiation Calculation for Buildings: 1

Windows are a key factor in the development of an architecture of function. Unfortunately our methods for computing the environmental effects of glazing are often unsatisfactory; and as most are very laborious, are seldom used. But recent technical advances and the prospect of applying computers to problems of this sort have given a new twist and impetus to the subject. In this and in a subsequent article Tom Markus describes the techniques now available for computing the passage of heat and light through glazed openings and discusses their use in design.

skill

The need for computational methods

A family of problems arises in building design for which it is necessary to be able to predict, quickly and accurately, the position of the sun in the sky at any time, on any date, and at any latitude. The problem may be one of the following:

(*a*) *Natural illumination:* The level of illumination from an overcast sky is a function of the sun's altitude. For any time this must therefore be known. Where sunlight itself, either direct or reflected, is to be used for illumination its intensity is a function of altitude and its position in the sky will determine which surfaces will be sunlit (and at what intensity), which in shade and where the shadows will fall.

(*b*) *Heating and air-conditioning design:* Solar heat enters into the computation of both heating and cooling requirements of buildings. The amount of direct (sun) radiation available depends not only on the state of the atmosphere and on the height above sea level of the place in question, but also on the sun's altitude; and the intensity of radiation falling on a particular surface depends on the slope and orientation of that surface. For any calculation involving direct solar heat gain at a given moment it is necessary to know the geometric relationship of the surface to the sun's position in the sky. The angles made on section and plan (the vertical and horizontal shadow angles respectively) enable the performance of overhangs, louvres and similar devices to be examined.

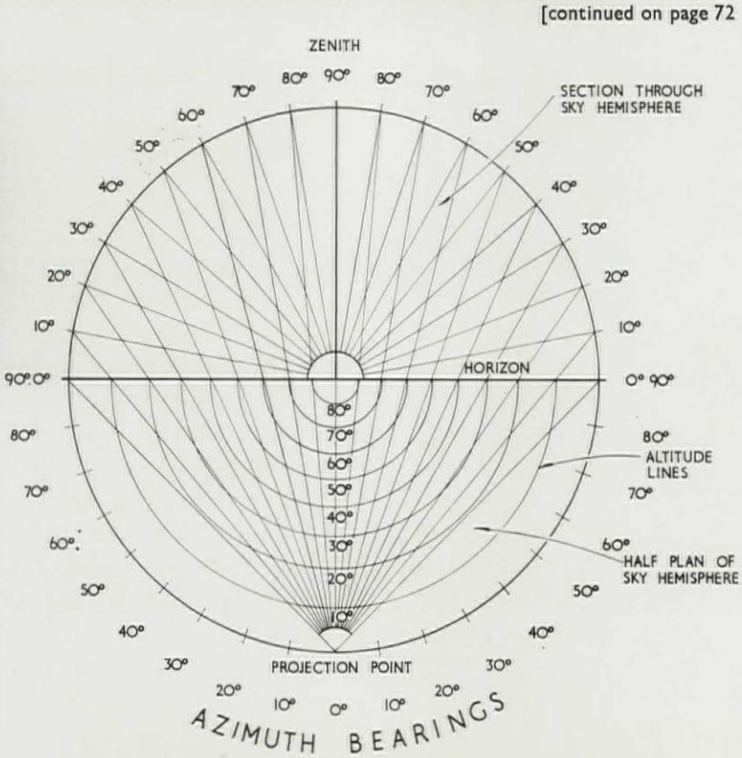
(*c*) *Sun penetration:* For many purposes within and around buildings, it is necessary to predict the pattern of sunlight and shadow at different times of the year and day. In some instances sunshine on a surface has to be avoided—for instance, a piece of scientific apparatus in a laboratory. In other instances a minimum depth of penetration or quantity of sunshine is specified—for instance, sun penetration into dwelling rooms in winter. In other cases it is necessary to ensure minimum hours of sunshine on areas between buildings for healthy plant life, or perhaps for safeguarding of sunshine on such areas as children's play spaces, old people's benches and sports areas. For all these situations the movement of the sun in the sky and its effect on the surfaces in question has to be easily predictable.

Prediction techniques

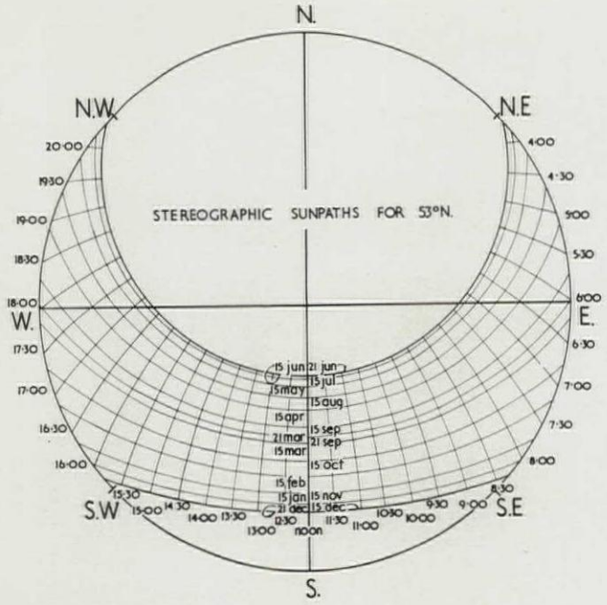
(*a*) *Graphical techniques:* Although it is possible to tabulate solar altitudes and azimuth positions for all places, times and dates, and such tables are available, the use of these in architectural design is generally unsatisfactory and laborious. Because of this a host of graphical and photographic techniques have been developed in which the sky vault is projected on to a two-dimensional surface, upon which lines, either straight or curved (depending on the method of projection), mark the apparent path of the sun in the sky for each selected date. Amongst such projection techniques are the equidistant projection, the stereographic projection and gnomonic projection (which is in fact true perspective). The second of these, stereographic, has become the most widely accepted in various parts of the world and in this, the sky vault is represented by a circle (a plan looking up) whose circumference represents the horizon and whose centre represents the zenith, 1. On this projection concentric circles marking lines of equal altitude can be drawn and the circumference can be scaled uniformly from 0 to 360 deg. for azimuth angles. In addition, the orientation is marked on the circumference, and curved lines (actually segments of circles) are drawn across the diagram representing the path of the sun on fixed dates at a given latitude. On these lines the hours can be marked and connecting the same hours on each date gives a series of hour lines at right angles to the date lines, 2.

The times on the diagram are solar times and, whilst it is necessary to

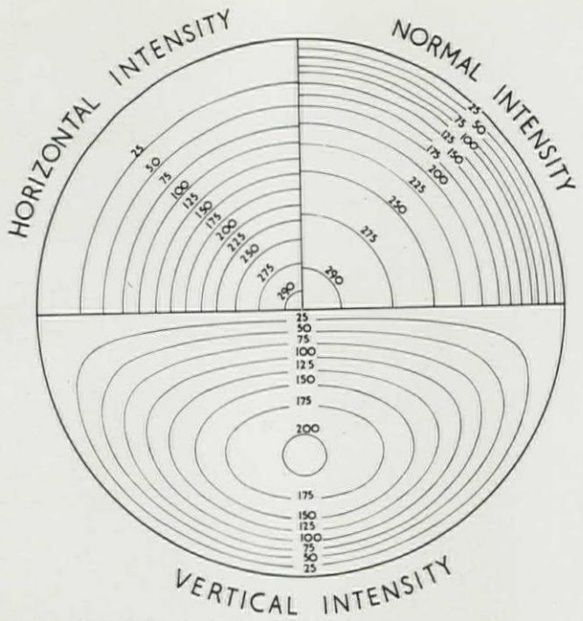
[continued on page 72



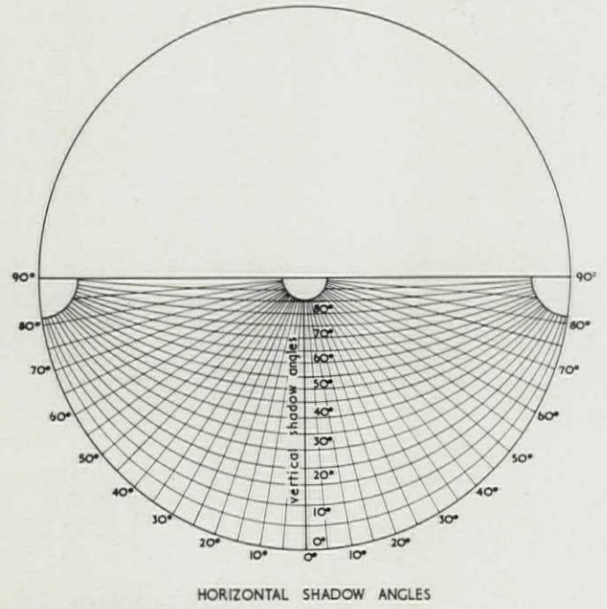
1, *stereographic projection. Readings on the upper hemisphere represent altitude angles.*



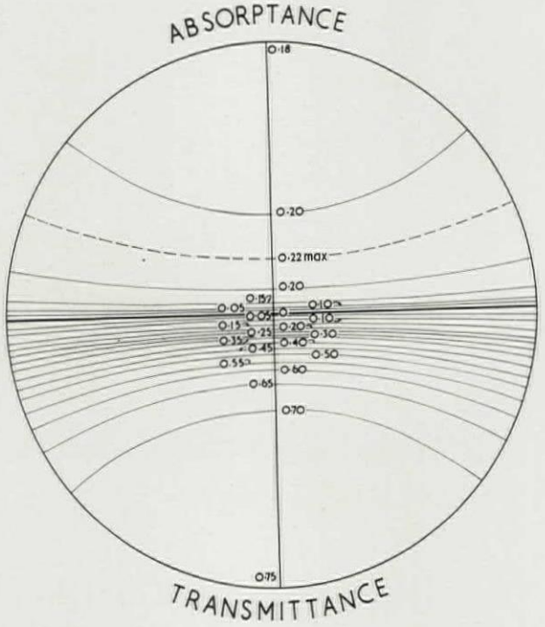
2, *stereographic sunpaths for 53 deg. N.*



4, *solar intensity on horizontal and vertical surfaces, etc.*



3, *vertical and horizontal shadow angles.*



5, *stereographic sunpath overlay, etc.*

continued from page 70]
correct for differences between this and clock time (e.g. by adding on one hour for British Summer Time), it is not usually necessary to make the two further corrections, one accounting for changes in longitude and one accounting for changes in the length of the solar day with date.

(*b*) *Shading masks:* The stereographic projection together with the overlay giving vertical and horizontal shadow angles, 3, known as the Shadow Angle Protractor, enables one to construct for any geometry of window design a shading mask upon which the limits of insolation, both in terms of vertical and horizontal angles can be marked. These limits can be for a point within the room—in which case they are absolute and the shading mask shows whether the point is insolated or not—or they can be for the whole window, in which case they can show the area of a window which is insolated. Details of the construction of these proportional shading masks are given below, since the BRS publication limits their use to the question 'Is the window insolated or not?' without reference to the area insolated at a given moment.

BRS publication

The Building Research Station has just published a paper in the Current Research Series (No. 39) together with a Supplement giving sunpath diagrams on stereographic projection for 51 deg. north to 59 deg. north at 2-degree intervals, thus covering the whole of the British Isles. Together with these are a series of translucent overlays which can be placed over the sunpath diagrams for a given latitude, to give the geometrical or radiation data which are required for shading and solar heat gain calculations.

One can obtain, for instance, the azimuth and altitude angles of sun; the horizontal and vertical shadow angles (i.e. the angles made by the sun on plan and section with the normal to the plane of the window); the true angle of incidence for direct solar radiation on horizontal and vertical surfaces as well as sloping ones at 15, 30, 45 and 60 degrees; the intensities of direct solar radiation on horizontal and vertical surfaces as well as on any of the four above slopes, 4; the intensities of diffuse sky and reflected ground radiation; the transmittance and absorptance characteristics of normal single, 5, and double glass as well as of venetian blinds with 15 per cent, 40 per cent and 96 per cent absorptivity and with slat angles of 0 deg. and 45 deg. Information is also given on the way the radiation data can be used for other types of shading materials with known transmittance and absorptance properties. In addition, guidance is given on the quantity of the absorbed heat which is released to the building interior from the glass and shading device in a variety of combinations.

The architect or engineer is therefore in a position to determine rapidly for any place, time and date the geometry of the sun's position in relationship to a particular surface on his building, the amount of radiation falling upon it at that time and the amount transmitted to the building interior through a variety of selected glass/shade combinations. There is no point in this article in giving detailed instructions for the use of the various diagrams since these are clearly set out in the paper itself. It is more useful to examine the types of problems which architects and engineers have to solve, and to see how the graphical techniques now published enable the work to be simplified and

[continued on page 74

continued from page 72]
speeded up, and what their limitations are.

Starting point for design

(*a*) *Existing buildings:* Where there is a solar heat gain or shading problem in an existing building the size of windows, their orientation and obstruction and the type of glazing is usually determined and the only freedom left to the designer for remedial measures is the choice of a suitable external or internal shading device to reduce heat gains. Whether the building is air-conditioned or not, the designer has first of all to determine the portion of the total heat gain to the building, at critical times, which is due to solar heat gain through the windows. The charts and overlays in the publication enable him to do this and other published work enables him to determine the effect on room temperatures (in buildings without air-conditioning) or air-conditioning loads, with reference to the building structure and general shape. He is then in a position to decide by how much the solar heat gain has to be reduced to limit the rise in room temperature to an acceptable level, or to reduce the load on the air-conditioning plant to one that it can handle. By testing the efficacy of alternative shading devices and the reduction they offer, he can select one that will meet the specification. The charts in the BRS publication enable this to be done.

(*b*) *New buildings:* In this case one or both of two independent variables are open to decision by the designer. They are orientation and window design. Window design can be considered under three main headings; shape, size and the nature of the window/shading device within it. Since, under these headings, a large number of alternatives is possible, the total number of combinations can be very large. The designer will, therefore, have to apply a good deal of experience and knowledge of the general pattern of radiation incidence on different building surfaces at different latitudes in order to carry out his examination in the near optimum region only, without having to discard dozens or perhaps hundreds of useless alternatives.

The more difficult decision is how to select the best combination even when working within the optimal region, when clearly some other criteria than solar heat gain have to be applied. From the point of view of solar heat gain alone, the best window would be a heavy, insolated opaque wall! Let us therefore examine these criteria.

Criteria for glass/shading device combinations

(*a*) *Thermal:* Clearly the first criterion is the thermal one—what effect do the various alternative combinations have on thermal conditions within the building and on the cost of installing and running any air-conditioning plant. The first quantity involved is the total heat gain—i.e. directly transmitted together with release by reradiation and convection from the glass/shading device combination. This in itself, however, is not a very useful figure since it can be identical for two devices in which the proportions of the two quantities are significantly different.

It is, therefore, more useful to subdivide the solar heat gain into the total radiant (short wave) transmitted and the reradiated and convected heat gain. The former has no effect on the building interior—apart from the possibility of discomfort to people sitting in the path of direct radiation—until it has been absorbed by the surfaces of the building structure, e.g. the floor or walls, and by the building contents, and is released by long wave radiation and convection. Of course, the physical picture of interreflection between surfaces and radiation exchange between surfaces within the room is highly complex, but suitable simplification techniques are now available* which take into account the absorptance of the various surfaces and their thermal mass, and which show the extent to which the heat released to the interior is decreased in peak value and the peaks delayed in time relative to the incident heat.

In general, the more massive the building structure and contents the more the diurnal variations externally will be smoothed out internally and, conversely, the lighter the structure the more nearly will the internal conditions follow the external cycle, both in magnitude and location of the peaks. Any decrement factors to allow for the thermal mass of a building can only be properly applied to the transmitted short wave component of the heat gain.

The component reradiated and convected from the glass/shade registers immediately as a sensible heat gain—i.e. as a rise in air temperature or cooling load. It is most important, therefore, that the glass/shading device should not convert much of the incident radiant energy upon it into sensible heat released to the building interior, as the natural advantages of a heavy building structure are thus wasted and large peak loads and fluctuations will occur on the interior. Any shading devices inside glass which are not highly reflective and thus able to reflect back out through the glass much incident energy without change in wave length will, in fact, have this undesirable effect. It can be demonstrated by experiment that the drawing of a dark blind across a sunlit window can within minutes substantially raise the air temperature in a room.

(*b*) *Cost:* The cost of a glass/shade combination includes, of course, the capital cost of all the elements, the capital cost of heating and cooling plant (which changes according to the thermal insulation and solar radiation transmission characteristics of the combination) and the capital cost of cleaning and maintenance apparatus which is, in part, determined by the nature of the devices. (E.g. in the case of external louvres, overhead cleaning cradles for tall buildings may have to be especially designed to clear them, or the louvre systems themselves may have to be temporarily removable in order to give access to the outside surface of the glass.)

These annual costs are, of course, amortized on well-known accountancy principles and added to the true annual costs and to the amortized recurring costs, such as for instance, repainting or periodic renewal of certain elements. Amongst the annual and recurring items to be considered are winter heat loss (translated into fuel costs); summer heat gains (translated into total energy requirements during the cooling period); and cleaning and maintenance.

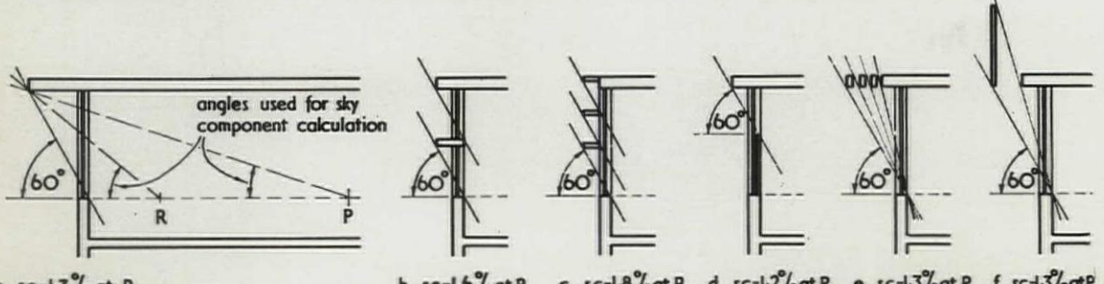
(*c*) *Natural illumination:* Shading devices, whether fixed or movable, significantly affect the quantity and distribution of daylight within the room. In temperate climates such as Britain where fixed devices are rare since they obstruct too much daylight for a large part of the year, this question is not quite so critical; the reduction in illumination caused by removable blinds on sunny days can usually be tolerated, and on overcast days does not take place. Where fixed devices are used, however, a first analysis in terms of the sky component alone is quite revealing, 6.

In climates with predominantly clear-sky conditions where much of the interior illumination is gained from reflected sunlight, it is necessary to calculate the reduction caused by both fixed and movable devices. The difficulty here, however, is to select suitable design dates and times (with their appropriate sun positions) upon which to base the calculation.

Apart from the question of daylight quantity and distribution, glare can also form a suitable criterion. It can be evaluated in terms of direct glare from the sun, or reflected glare from work surfaces (e.g. desk or drawing paper). To be quantifiable the index has not only to take into account the intensity of the glare sensation itself (for direct sun glare, this figure is meaningless, it is so high), but also the total time that this is experienced and the number of people who experience it in an interior.

The three remaining criteria: vision through, appearance and sunshine penetration will be considered in the second article.

*Loudon, A. G. and Danter, E.: "Investigations of summer overheating at the Building Research Station", *Building Science* 1 (1), 1965, pp. 89-94.



6, *diagrams showing sky components resulting from different types of sun-breaker giving equal vertical cut-off angles.*

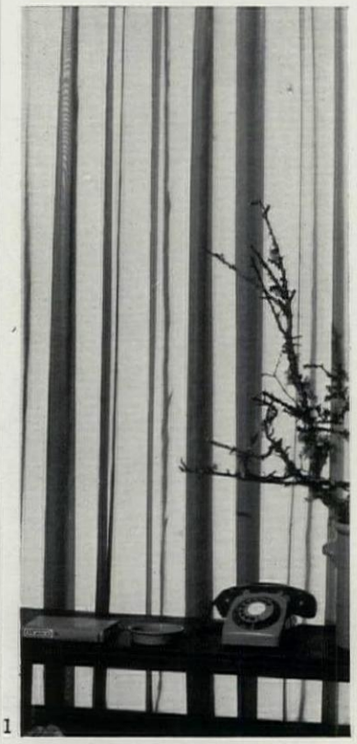
The Industry

Curtain fabric

A material for curtaining is now available to the building industry which is claimed to be replacing venetian blinds in the United States. Metalon fabric is made from polyester yarns and is metallized with aluminium on the outer face; this prevents people from seeing in and also reflects from 40 to 70 per cent of solar heat while allowing the entry of 18 to 44 per cent of light depending on the grade. Visibility from within is good except with the heaviest grade.

The material has been used for other purposes such as tent fabric and sleeping bag covers and the aluminium film will obviously reduce heat losses in cold weather. Washing is only necessary infrequently as the material is anti-static.

Although the curtaining cannot be considered simply as having equal



1

qualities to venetian blinds it is an interesting alternative. It is available in a width of 48 in. as net, taffeta and crepe at wholesale prices of 31, 34 and 39 shillings a yard respectively. *Bernard Wardle Fabrics Ltd., Chinley, Stockport, Cheshire.*

Glass reinforced plastic flooring

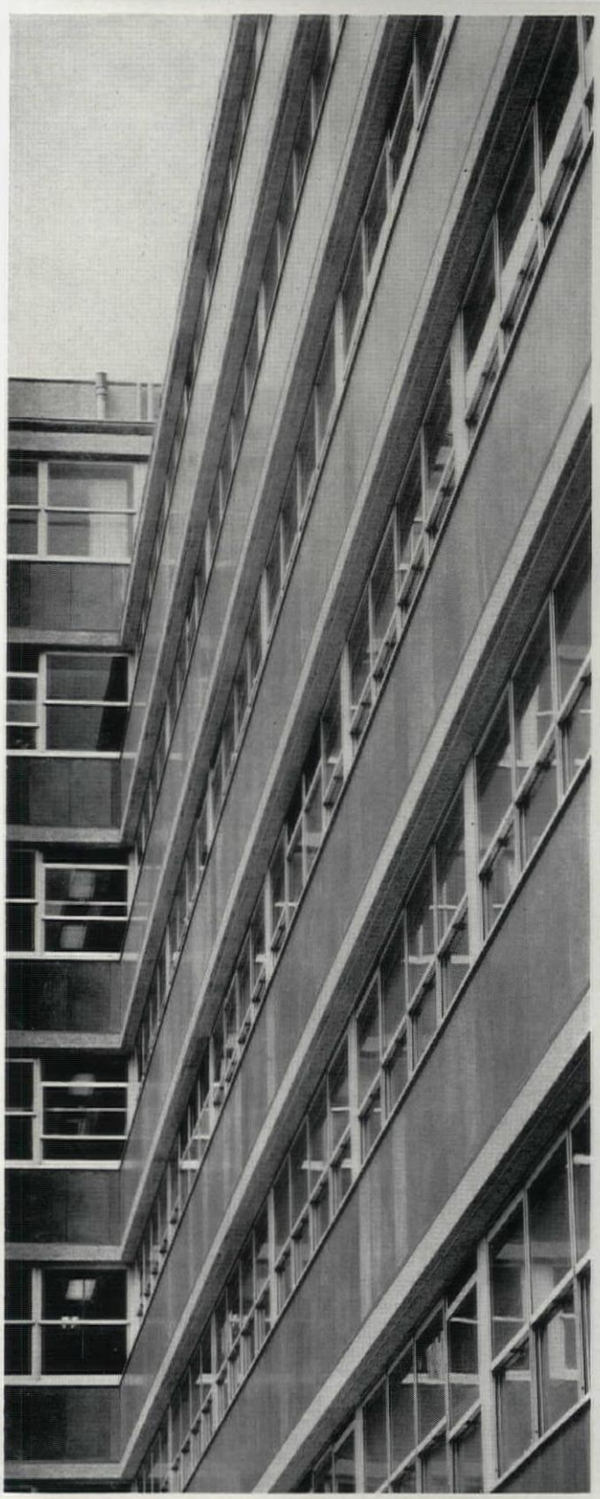
'Plasik' is a form of plastic flooring with distinctive qualities which may not be widely known in this country although it was introduced here seven years ago. It was originally developed and extensively used in Switzerland and has been used widely in hospitals by the Ministry of Health.

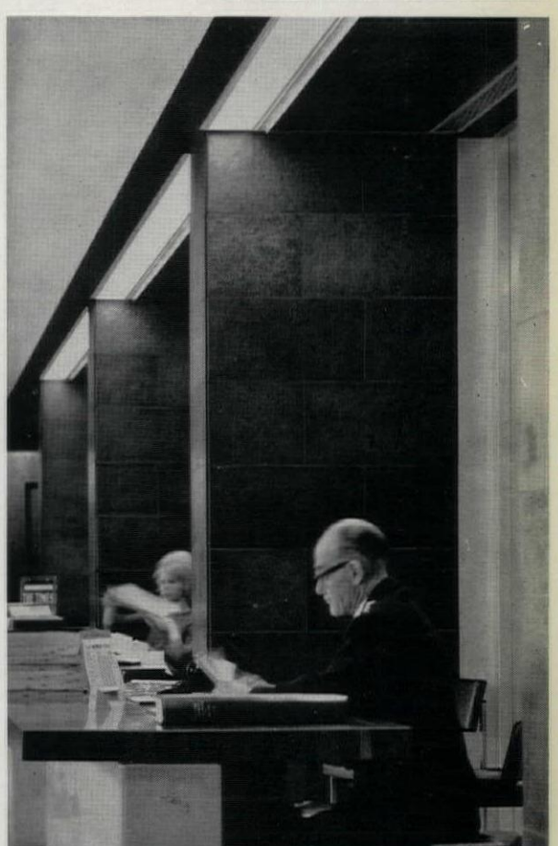
The signal advantages of 'Plasik' are that it can be laid without seams; sub-floor imperfections are concealed since it is laid as a liquid; and it has high resistance to impact. Most plastic floors rely solely on resins for strength but 'Plasik' is manufactured from polyester resins with glass fibre reinforcement. It is claimed to be non-slip, chemically resistant and non-dusting with a high resistance to

[continued on page 76

SURFACES

at THE TIMES

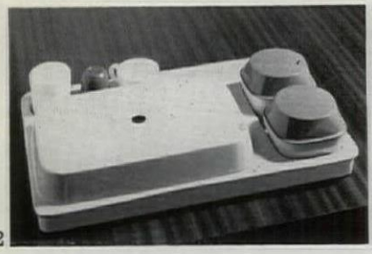




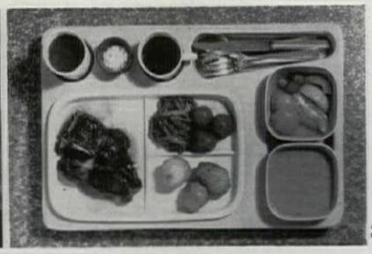
Working surfaces.... pleasant to live and work with. Attractive surfaces both horizontal and vertical. Westmorland Green slate for external cladding, gleaming black Norwegian Quartzite bringing out the delicate colour of Afrormosia for internal walls; the patterning effect of granite setts for the piazza contrasting with the fine honed marble floors of the reception hall. Wandsworth Stonemasonry was source, knowledge, skill and workmanship for these pleasurable finishes at The Times Building. If you would like to know more about the techniques used or discuss any aspect of stonemasonry and the wide range of materials available we are just a telephone call away.

WANDSWORTH STONEMASONRY WORKS LIMITED

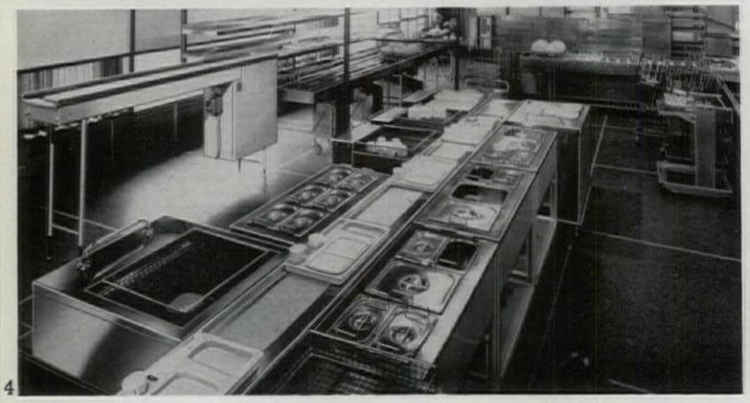
78 WANDSWORTH ROAD · LONDON S W 8 · TELEPHONE: MACAULAY 1262



2



3

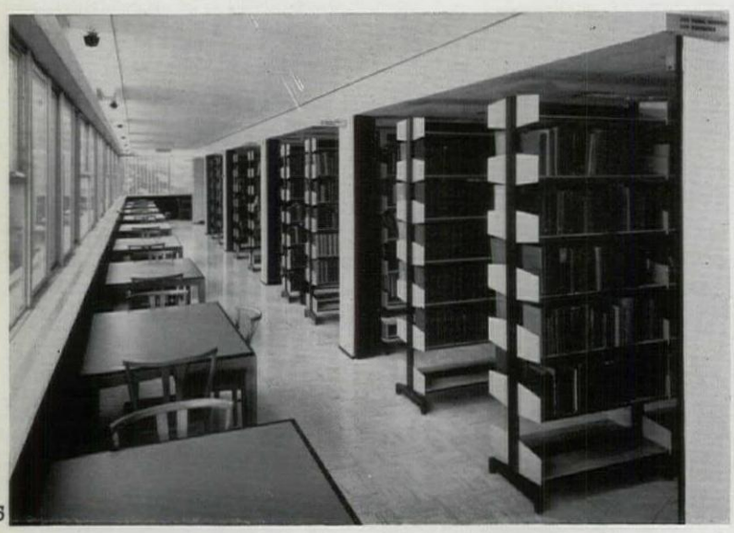


4

continued from page 74]
abrasion. It is recommended for heavy duty applications, except where steel-wheeled trucking is used. Repairs are easily made and a skim coat laid without difficulty. Normally it is maintained by washing and polishing, an easy process since there are no seams or joints. It is available in nine colours and white, and an approximate cost in London for a minimum area of 1,000 square yards is 34s. 6d. per square yard.
*Vigers, Stevens & Adams Ltd., Leadale Works, Craven Walk, Stamford Hill, N.*16.

Hospital catering system

For maximum efficiency in planning and the use of staff there are strong arguments for the tray system in hospital catering. Such a system simplifies the circulation of food and containers: planned food distribution and central washing are more easily provided since there is only one unit to transport for each patient. A basic objection to the use of the tray is prejudice against the serving of a meal in toto and ready acceptance of the system is unlikely. In fact, the system, used intelligently where appropriate, could make an important contribution to rational catering in hospitals. However, although it provides for varying diets there would still be a case for individual service in hospitals whose use and form justify more personal methods. The Helitherm system, 2, 3, is based on a tray with recesses for a lidded plate, two lidded bowls, a cup, a beaker and a covered container which can be used as an egg-cup. It is intended that several variations are possible in the use of the different containers. The tray is made of glass reinforced polyester resin; the plate, cup and beaker of porcelain; and the bowls and container of polycarbonate plastic. It is claimed that food is kept hot for thirty minutes and the tray is designed for easy washing by machine and stability of the contents during transport.
The tray is for use with a distribution system consisting of conveyor belt, dispensers, bains-marie and trolleys, 4. Normally one tray conveyor belt and meal assembly line can provide meals for up to 600 patients.
Helimatic (a member of the Electrolux group of companies), 419, *Oxford Street, London, W.*1.



5

Library shelving

The library shelving system, 5, designed by Rud. Koreska, which was originally marketed in Denmark, is now used in Europe, North America and the United Kingdom. It is simple and adaptable, consisting of three fundamental elements: upright supports, shelves and shelf brackets. Wall units are supported by strips screwed to wall plugs, and there are island units and trolleys. Periodical shelves, desk plates, book supports are available and the system includes issue counters, card index cabinets, storage cabinets, etc. The wide choice of standard components is available in wood or metal or in a combination of both. It is impossible to give a comprehensive idea of costs; however, as an example the basic 3 ft. wall unit is £11 7s. 10d. with add-on units at £9 10s. 5d.
*Terrapin Reska Ltd., Heron House, 19 Marylebone Road, London, NW*1.

Contractors etc

Elephant and Rhinoceros House, Zoological Gardens, London. *Architects:* Casson, Conder & Partners. *General contractor:* John Mowlem & Co. *Sub-contractors: Electrical:* Troughton & Young Ltd. *Heating and ventilating:* Richard James (Westminster) Ltd. *Paviours:* Cope & Co. *Copper roofing:* The Ruberoid Co. *Glazing:* Faulkner Greene & Co. *Balustrades:* Light Steelwork (1925) Ltd. *Metalwork:* Metal Engineering Services. *Animal doors:* Westland Engineers Ltd. *Mosaic:* W. B. Simpson & Sons. *Precast concrete stonework:* Atlas Stone Co. *Bricks:* Baggeridge Brick Co. *Timber:* Burts & Renton Ltd., Rainham Timber Engineering Co. *Patent glazing:* Henry Hope & Son. *Copper faced plywood panels:* Flexo Plywood Industries Ltd. *Mosaic:* Zach Cartwright Ltd. *Den Paving:* Haunchwood Brick & Tile Co. *Slate:* Bow Slate & Enamel Co.

Sports Buildings for the University of Hull. *Architect:* Peter Womersley. *General contractor:* George Houlton & Sons. *Sub-contractors: Heating:* Rosser & Russell Ltd. *Electrical:* The Humber Electrical Engineering Co. *Precast concrete:* Stepney Cast Stone Co. *Gymnastic equipment:* H. Hunt & Son. *Metal windows:* Crittall Manufacturing Co. *Ceiling tiles (Esse):* Smith & Wellstood Ltd. *Sprung flooring:* Buckley Flooring & Polish Co. *Vinyl flooring:* Semtex Ltd. *Sliding door assembly:* British Werno Ltd. *Sliding door gear:* E. Hill Aldam & Co. *Curtain track:* Silent Gliss Ltd. *Fire hose reels:* The Dunford Fire Protection. *Dri-Pla outdoor play area:* The En-Tout-Cas Co. *Gerflex Rib-floor:* J. A. Hewetson & Co. *Rubber flooring:* Pirelli Ltd. *Glydover doors:* Bolton Gate Co.

Church, Norwood, London. *Architects:* Edward D. Mills & Partners. *General contractor:* Holliday & Greenwood Ltd. *Sub-contractors: Rebuilding of existing church organ:* Colmer Bros. *Lightweight roofing units:* Thermalite Ytong Ltd. *Flooring (thermoplastic, vinyl, hardwood mosaic and strip floor):* Hollis Bros. *Fire-resisting door (for oil tank chamber):* Fireproof Shutter & Door Co. *Lighting fittings:* Atlas Lighting Co., C. M. Churchouse Ltd., Merchant Adventurers Ltd. *Metal windows:* Crittall Manufacturing Co. *Sanitary fittings:* Stitsons Sanitary Fittings Ltd. *Kitchen fittings:* Kandya Ltd. *Ventilators and domes:* Greenwood's & Airvac Ventilation Co. *Glazing:* Faulkner Greene & Co. *Balustrading, steel cross:* Ranalah Gates Ltd. *W.c. compartments:* Venesta Manufacturing Ltd. *Roller shutters:* Dennison, Kett & Co. *Ironmongery:* A. J. Binns (Hardware) Ltd. *Roof finishes:* Val De Travers Asphalte Ltd. *Timber windows, kitchen units:* Jayanbee Joinery Ltd. *External signs:* Pearce Signs Ltd. *Plastic louvres:* Elco Plastics. *Naco louvres:* N. V. Appleton (UK) Ltd. *Chapel chairs:* Design Furnishing Contract. *Communion table, stools, rail and lectern:* Russell Bros. (Paddington) Ltd. *Sound equipment:* Philips Electrical Ltd.

Newspaper Offices, Printing House Square, London. *Consultant architects:* Llewelyn-Davies, Weeks and Partners. *Executive architects:* Ellis, Clarke and Gallanaugh. *General contractor:* Trollope & Colls Ltd. *Sub-contractors: Run of balustrading:* H. H. Martyn & Co. *Dome lights:* T. & W. Ide Ltd. Haywards Ltd. *Fixing inserts:* Unistrut Div. of Sankey-Sheldon Ltd. *Woodblock:* Vigers Bros. *Linoleum:* Rowan & Boden Ltd. *Ironmongery:* G. & S. Allgood Ltd. *Lamson tubes:* Lamson Engineering Co. *Passenger lifts:* Otis Elevator Co. *Metal partitions:* Ayrshire Metal Products Ltd. *Slate facings:* Wandsworth Stonemasonry Works Ltd. *Sprinklers:* The Automatic Sprinkler Co. *Shutters, fire-resisting door:* Mather & Platt Ltd. *Suspended ceiling and lengths of trunking:* Panther Ceilings Ltd. *Windows (board room floor bronze):* Henry Hope & Sons. *Heating and ventilation:* Young, Austen & Young Ltd., Richard Crittall & Co. *Smoke extract area lights:* Lenscrete Ltd. *Leather panelling:* Connolly Bros. (Curriers) Ltd. *Clock for entrance hall:* The Synchronome Co. *Station tables:* Vanson Furniture Ltd. *Collapsible gate:* Haskins (E. Pollard & Co.). *Windows:* Crittall Mfg. Co. *Bore holes:* The Pressure Piling Co. *Curtain wall, Lunette windows:* Morris Singer Ltd. *Temporary floor in machine room:* Sanders & Forster Ltd. *Pump installation:* F. A. Pullen & Co. *Precast beams:* Pierhead Ltd. *Partitions (Phase B):* Unilock Partitions Ltd.

The new buildings which now enclose three sides of the new Printing House Square were constructed by Trollope and Colls.

Trollope and Colls were responsible also for the external facings of Westmorland slate, floor and wall coverings of marble and quartzite, the granite setts and precast balustrade of the piazza, the teak panelling and decorative fibrous plaster for the interiors. And all plumbing and drainage.

The Times project exemplifies to a nicety how the considerable resources of this famous builder can be applied under centralised control to speed the progress of work.

Consultant Architects: Llewelyn-Davies Weeks & Partners
Executive Architects: Ellis Clarke & Gallanaugh
Consulting Engineers: Ove Arup & Partners
Quantity Surveyors: Sydney C. Gordon & Partners

Trollope & Colls Limited

BUILDING & CIVIL ENGINEERING CONTRACTORS

Trocoll House, 30 Finsbury Square, London EC2

Plants and Offices at: ABERDEEN • CAMBERLEY • CAMBERWELL • GLASGOW • HOWICK • IRVINE • ISLEWORTH
LEEDS • PADGATE • PORTSMOUTH • WANDSWORTH

The Aglite Bestiary

No. 2

The Fireman

"Pull up the ladder, Jack", said he,
"I'm Aglite fire-resistant, see?
Up to four hours with four inch solid
Before the going gets too torrid"

Of course, you could join the Fire Brigade to find out about the high degree of fire resistance of Aglite building blocks. But it's probably quicker and easier to get the details from our new Technical Information Leaflet. Tells you all about compressive strength and stability, too, as well as the thermal and sound insulating properties and many other advantages which make Aglite blocks such a satisfactory choice.

Like a copy? Write or phone
AGLITE DIVISION THE BUTTERLEY COMPANY LTD DENBY DERBY Phone Ripley 3381

AGLITE

Ian Nairn

STOP PRESS

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

SOS

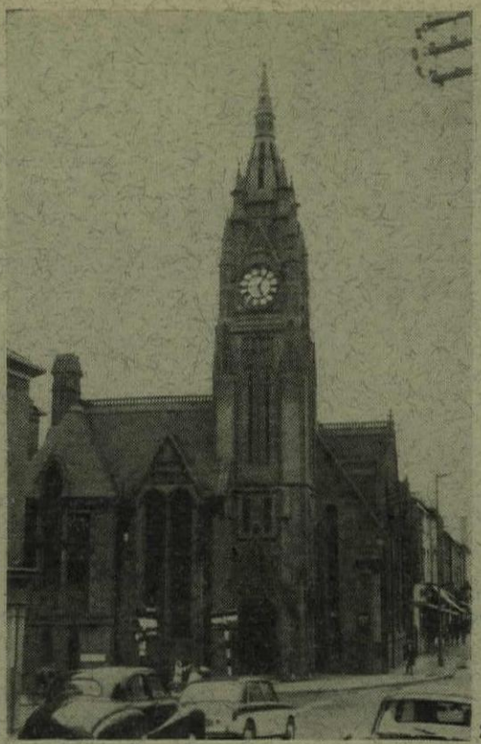
BIRMINGHAM
A Waterhousian library, 1, 2, by Martin & Chamberlain, in the way of the Inner Ring Road at Spring Hill, Birmingham. Birmingham's suburbs have so few good buildings that a special effort ought to be made to save this one.

OUTRAGE

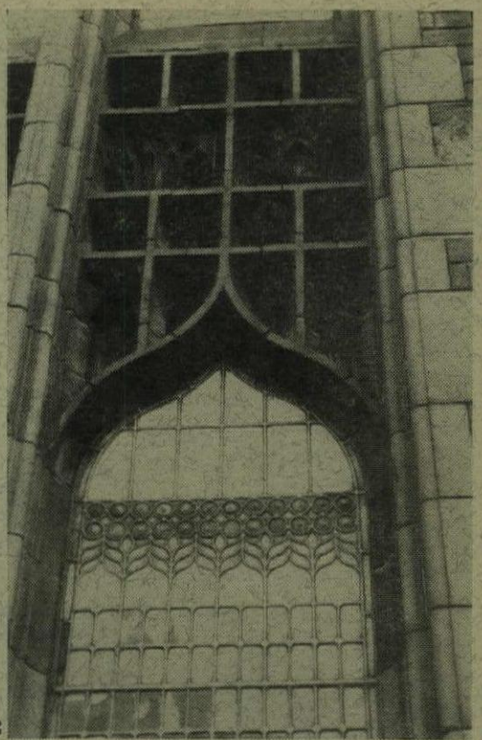
3

BRISTOL
The bad post-war Bristol fashions die hard: a new building in the centre, 3. Let's hope this is about the last of them . . . and let's hope that this new slab on Brandon Hill, 4, is not the first of a new kind of horror. It breaks the skyline and shuts out the view of one of Bristol's famous grassy slopes.

CHARLTON MARSHALL, DORSET
A new estate, 5, in open country between Blandford and Wimborne.



1



2

4

5

WORCESTER
One more slice of Worcester's heritage on the way out, 6. Most other cathedral cities would have been happy to keep it.

7

PETERBOROUGH
Uninspired rebuilding in another cathedral city, 7.

8

BOLLINGTON, CHESHIRE
New houses just outside the Peak National Park, 8. The scenery is just as good but there is a dismal drop in the standard of planning.

NORTHWICH, CHESHIRE
The new building, 9, that has replaced the Chapel shown in AR June 1963.

CREDIT

10

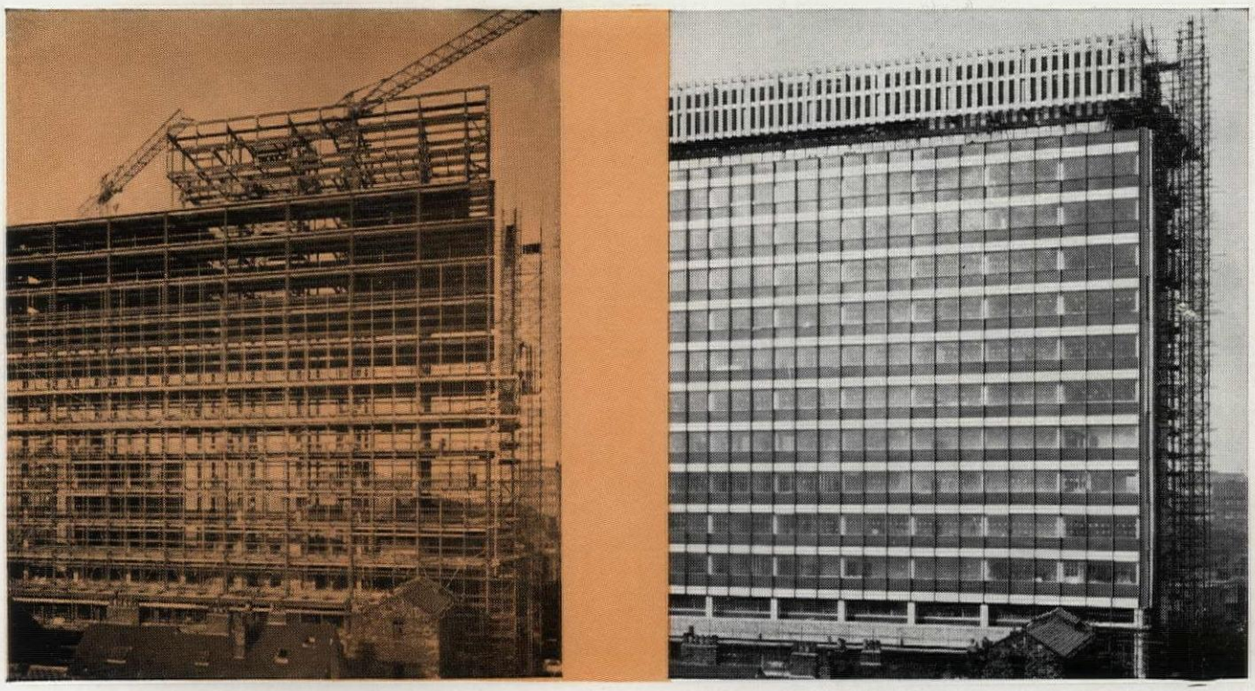
AMESBURY, WILTS
An ordinary new building made special simply by butting up against its neighbour, 10. One plus one has started to equal something more than two.

6

9

Why the Architects chose steelwork

Because with steel construction, the often conflicting demands of economic and engineering criteria and the aesthetics of architectural design are equally fulfilled: Steel is competitive in *real* costs; steel is fast—the fastest method of building; steel is versatile—future alterations are easy; and steel is a framework of slender beauty—does not obtrude upon aesthetic design.

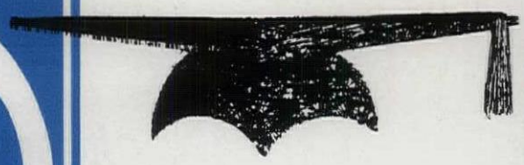


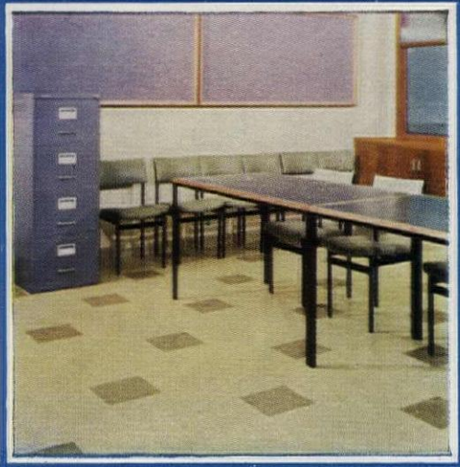
Illustrated: Littlewoods Mail Order Stores Ltd., 18 storey headquarters building, Liverpool.
Architects, Quantity Surveyors and Electrical Engineers: Littlewoods Department of Architecture & Planning (W. L. Stevenson, Esq., O.B.E., Manager).
Consulting Structural Engineers: Bingham, Blades & Partners, Liverpool.
General Contractors: Tysons (Contractors) Ltd., Liverpool.

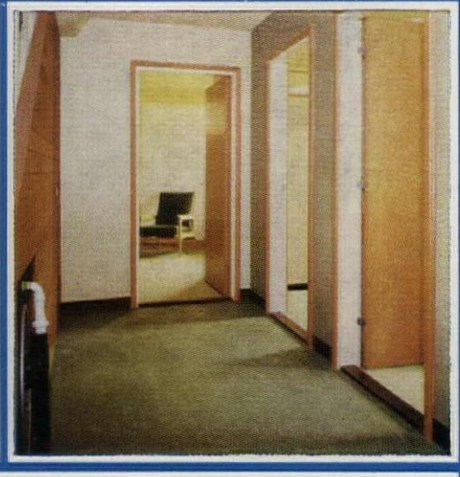
REDPATH BROWN

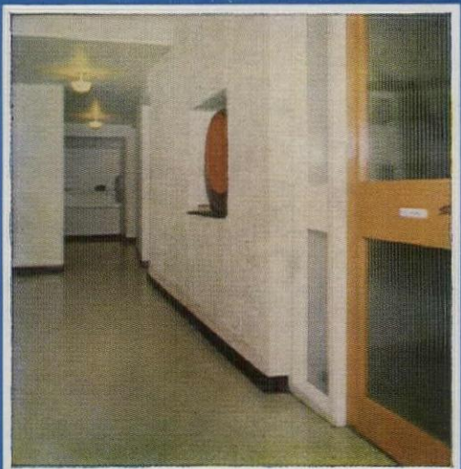
EDINBURGH · GLASGOW · LONDON · MANCHESTER

STRUCTURAL ENGINEERS SINCE 1802









Britain's new universities

ARE CHOOSING FLOORING BY

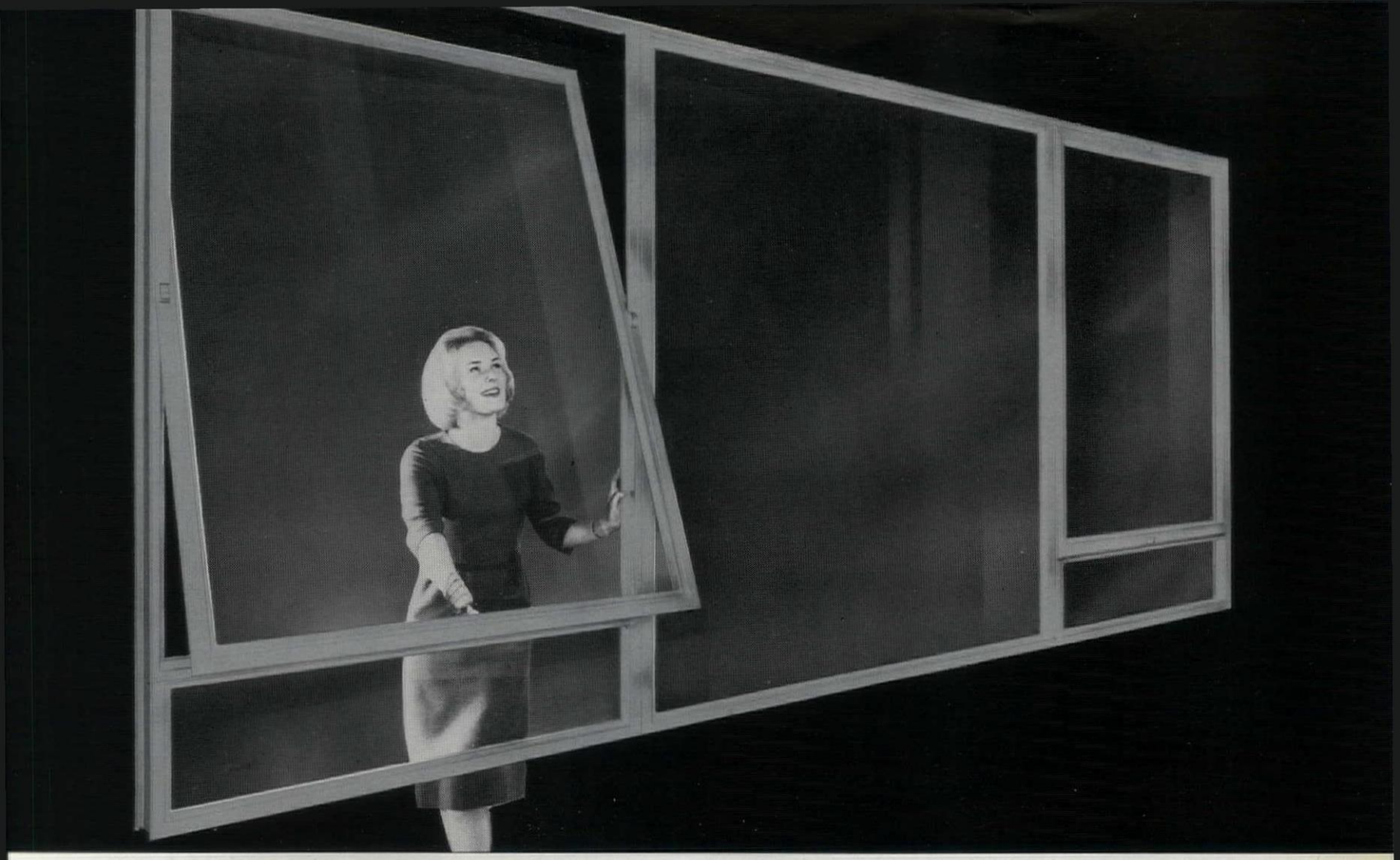
KROMMENIE

For Halls of Residence, lecture rooms, dining halls and corridors . . . wherever attractive and hard-wearing floors are needed . . . Universities are choosing from the wide range of Krommenie flooring. Colovinyl and Coloflor tiles give infinity of colour and style for decorative schemes with practical hard usage for many years. In addition Krommenie have vinyl sheet flooring in intriguing designs and with various resilient and insulating backings.

KROMMENIE FLOORING (U.K.) LTD.

PORTLAND HOUSE, STAG PLACE, LONDON, S.W.1.

Telephone: VICtoria 9547



Facade elegance begins with Boulton and Paul

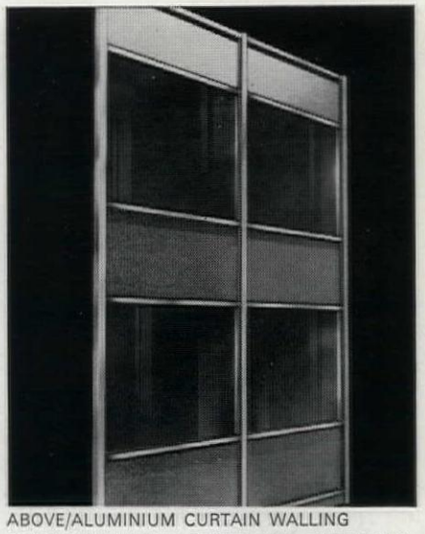
ALUMINIUM WINDOWS

Today's constructional trends demand the alliance of functional efficiency with impeccable appearance, enduring service and competitive cost.

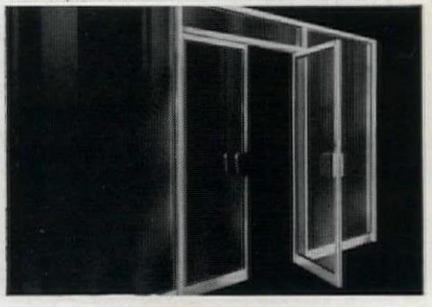
To achieve all these aims ideally, many architects are now specifying Boulton and Paul Aluminium Windows—using them independently or in harmonious conjunction with Boulton and Paul Aluminium Curtain Walling, Doors and Entrances.

Since all these modern building components are custom-built in a wide range of types and sizes, maximum design flexibility is assured—for commercial, industrial and residential applications.

Consider their possibilities and advantages when planning your next project. Write today for illustrated leaflets giving full particulars.



ABOVE/ALUMINIUM CURTAIN WALLING
BELOW/ALUMINIUM DOORS AND ENTRANCES



Boulton & Paul (Metal Windows) Limited

EVERSLEY ROAD · NORWICH · NORFOLK · NOR 54N · TELEPHONE 46275
14 STANHOPE GATE · LONDON W1 · TELEPHONE GROSVENOR 4521

BOULTON AND PAUL

The modern prestige of an "Armourplate" all-glass entrance is something which all the world can see, the first thing they see as they enter the last as they leave. They go with the right impression of you—modern, spacious, confident, looking to the future. On the practical side, an "Armourplate" entrance can be incorporated in plans for any office or showroom building—old or new. The design of "Armourplate" assemblies renders them safe, and well sealed against draught. For full information on the potentialities and design requirements of "Armourplate" All-Glass Entrances, consult Pilkingtons' Technical Sales and Service department.

Entrée to big business

'ARMOURPLATE'

All-glass entrances

PILKINGTON BROTHERS LTD. Head Office: St. Helens, Lancashire. Telephone: St. Helens 28882. London Office & Showrooms: Selwyn House, Cleveland Row, St. James's, S.W.1. Telephone: WHItehall 5672. "Armourplate" is a registered trade mark of Pilkington Brothers Limited in many countries. Supplies available through the glass trade.

COMposit 1141 Ext 1180....

A secretary's extension. One of the many permutations possible with COMPOSIT office furniture.

The COMPOSIT secretary's desk is a combination of any one of eight types of table or pedestal desk (such as the 1141 shown) with the 1180 typists' extension.

4'0" x 1'6" x 2'3" high, and with a willow grey 'Arborite' top, the 1180 extension can also be supplied with a 3 drawer pedestal or a drop-front stationery fitment.

The COMPOSIT range is veneered in Afrormosia/Teak with timber or square tube frames. There is also a selection of matching chairs.

COMPOSIT FURNITURE is designed by J. W. Leonard FSIA to satisfy all office needs - from board room to back room - with compatability, versatility ----- and economy.

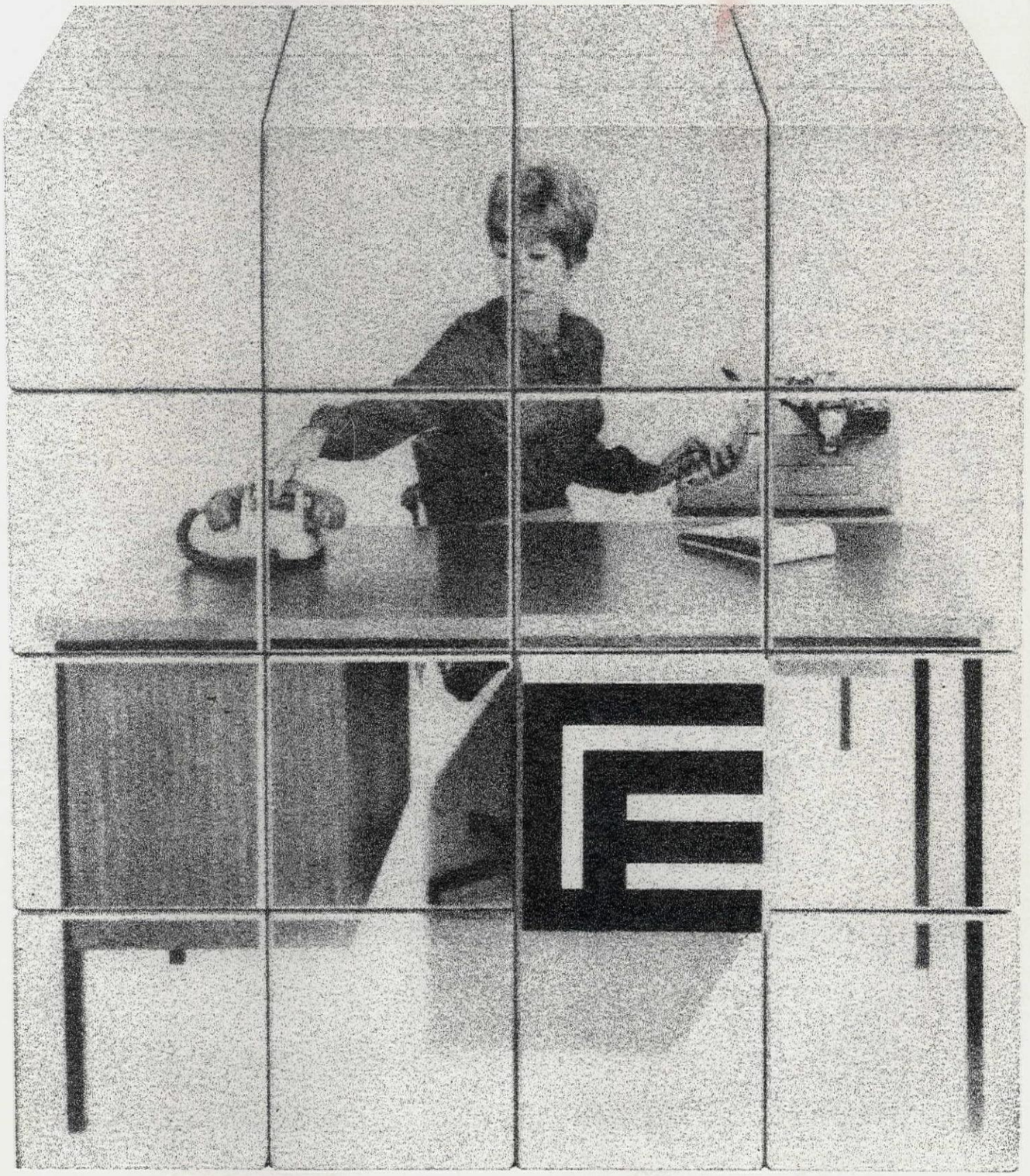
Leasing arrangements are available for orders exceeding £500.

Esavian Limited
Esavian Works
Stevenage Herts
Telephone Stevenage 500

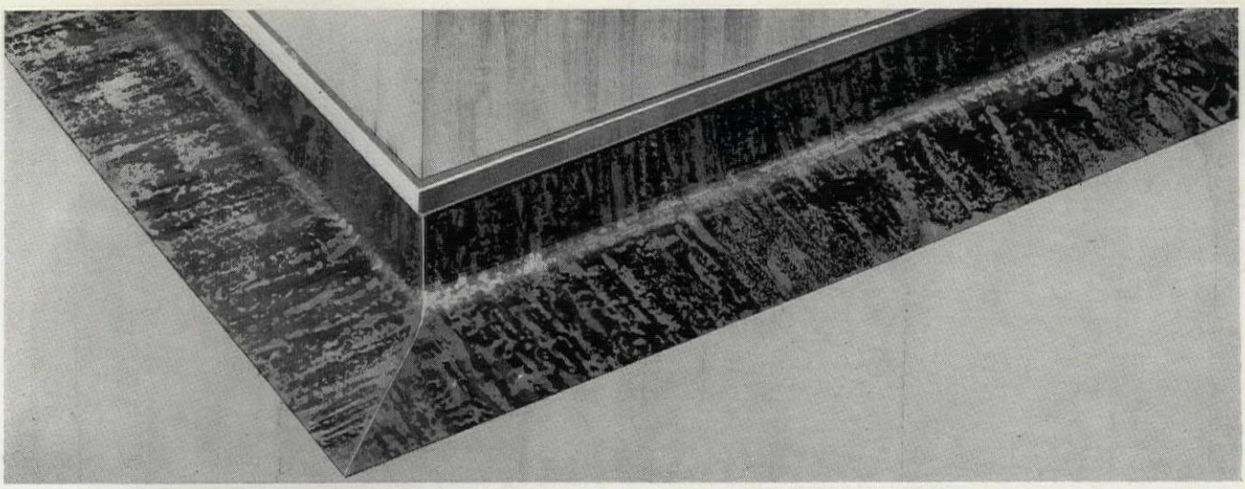
London Showrooms
185 Tottenham Court Road. W1
Telephone Langham 3436

Birmingham Showrooms
Charles St, West Bromwich
Telephone Tipton 1631

Glasgow Showrooms
101 Wellington Street C2
Telephone Central 2369

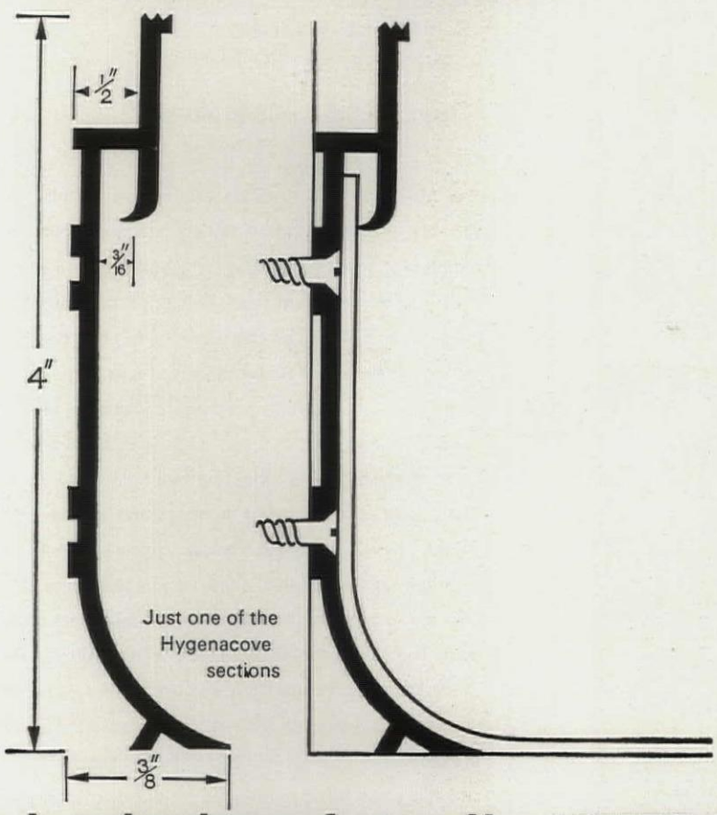


COMPOSIT FURNITURE is manufactured by ESAVIAN Ltd



Hygenacove eliminates dirt traps

Hygenacove moulds floor to wall



Designed and manufactured by JAMES BOOTH ALUMINIUM

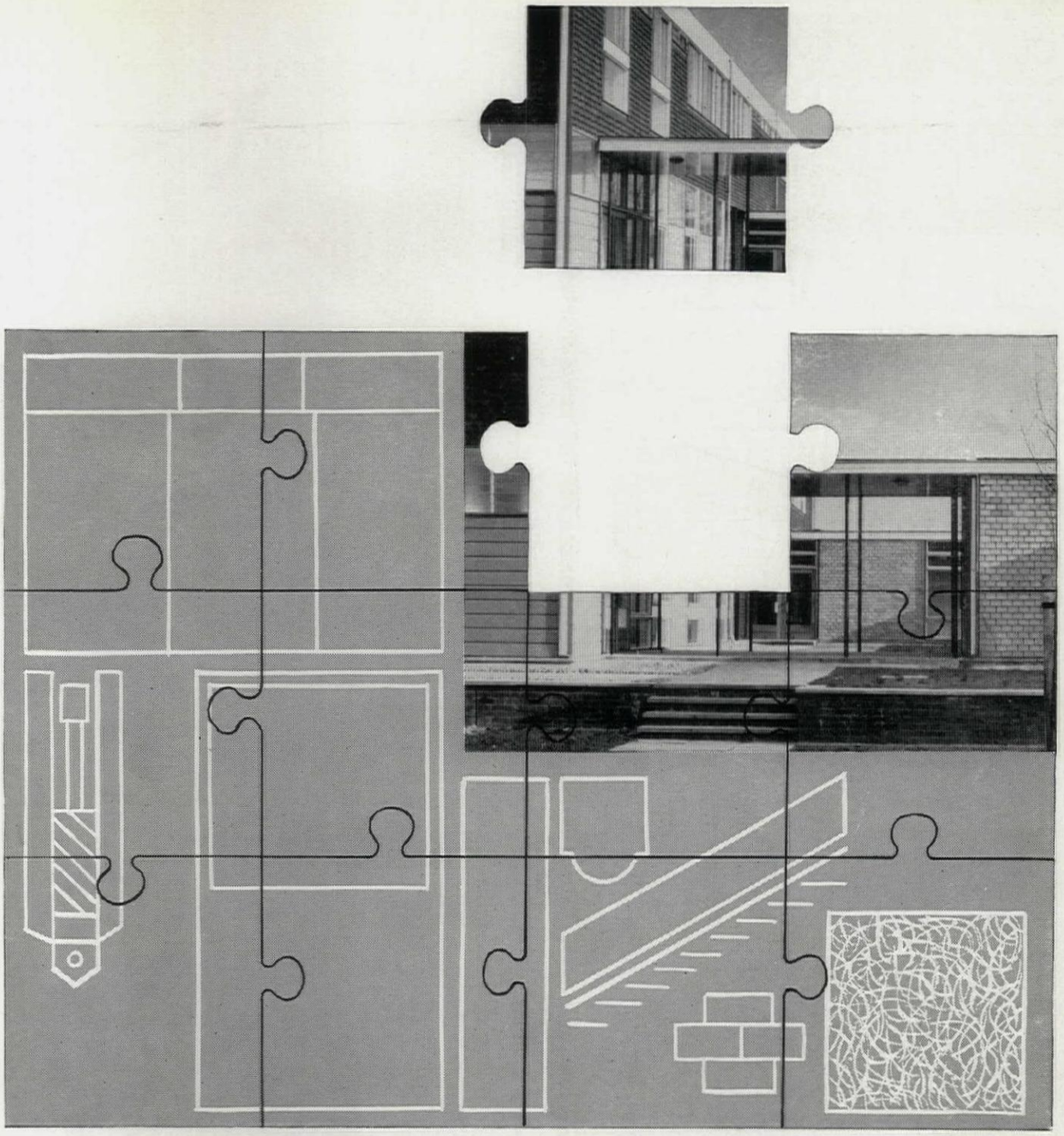
HYGENACOVE* is the system for a hygienic finish between walls and floors. It is an aluminium floor cove skirting designed to accept flexible floor coverings, and is available in forms suitable for fitting into existing buildings or for incorporating into new buildings. Smooth corners and joining surfaces ensure that a room is free from dust and dirt traps.

The system can be installed without special labour. Complete fixing details are available for architects, builders and floor finishing contractors on request from James Booth Aluminium Limited, Kitts Green, Birmingham 33. Telephone: Stechford 4020.

*Registered Trademark

Hygenacove is distributed by **RAPP METALS Ltd**

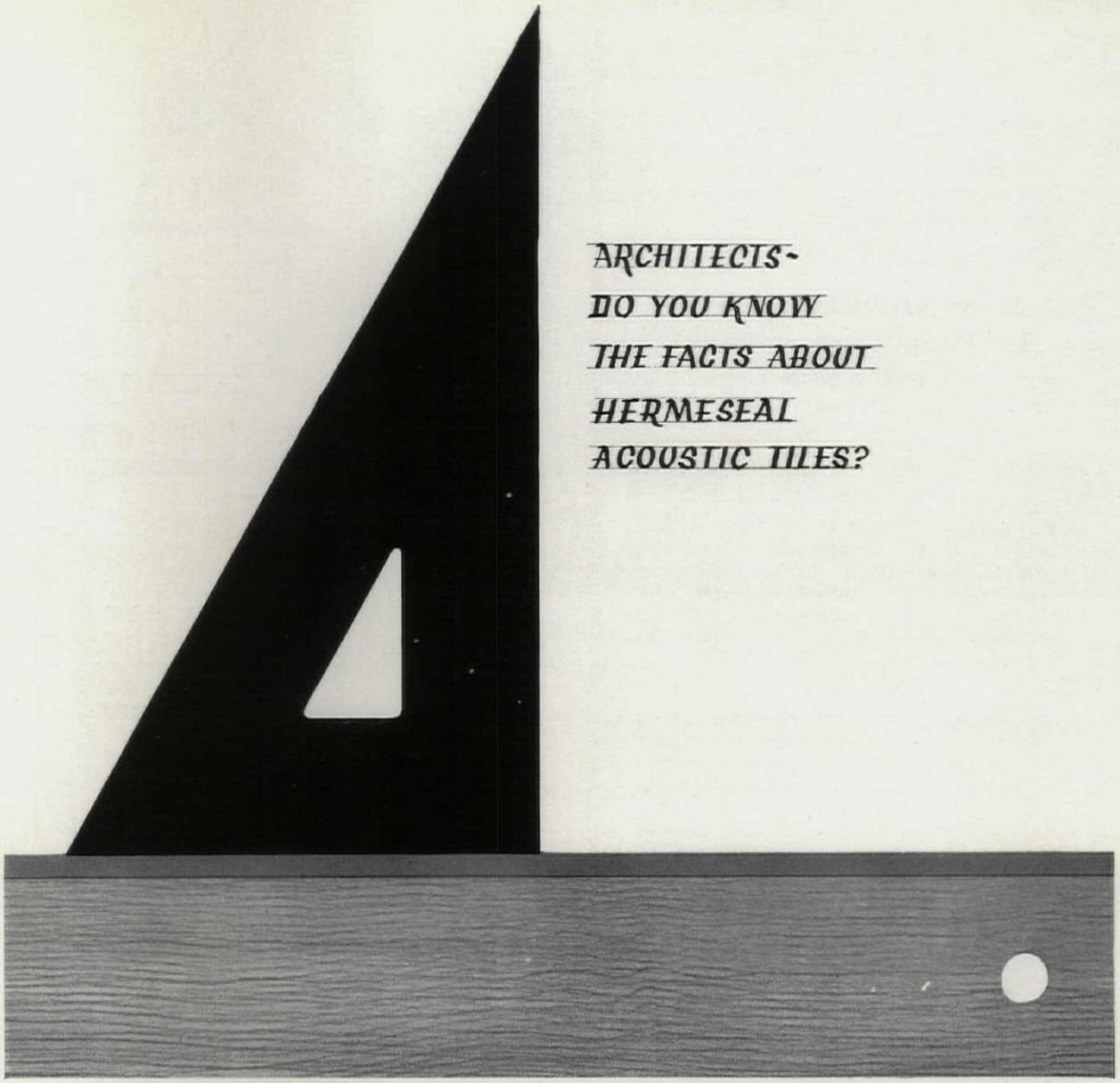
Southall, Middlesex. Telephone: Southall 2322



The light dry construction of CLASP enables components to link together using a minimum of skilled labour on site. CLASP is an architect-designed industrialised building system which has been tried and tested for civic building and is equally successful for other projects. Architects benefit from the development and research work continually being carried out to improve further the successful assembly operation. CLASP is suitable for buildings up to four storeys high and is especially suitable for office blocks, social and amenity centres, laboratory blocks, etc. Architects gain from economic cost, speed and high quality and above all from the flexibility of design which CLASP components allow.

CLASP

BROCKHOUSE STEEL STRUCTURES LTD. WEST BROMWICH, STAFFS. WEST BROMWICH 3561



ARCHITECTS- DO YOU KNOW THE FACTS ABOUT HERMESEAL ACOUSTIC TILES?

Q. What is the average cost of these materials supplied and fixed to a prepared surface?
A. For say ⅝" x 8' x 2' rilled boards from approx. 32/- per yard.

Q. Can the materials be suspended?
A. Yes.

Q. How do their sound absorbtion co-efficients work out?
A. They increase progressively over the frequency range of 250-4000 c.p.s. giving a balanced absorbtion.

Q. How about installations?
A. Our own skilled staff can carry out any type of installation, or if it is required the materials can be supplied for others to fit.

Q. If you are asked to supply only what is delivery like?
A. All materials are ex-stock, and despatch can be arranged within 7 days of an order being received.

Q. Do you carry out any other type of work?
A. Yes—sound proofing of doors, walls, machines etc., including manufacture of Acoustic Hoods.

Q. Do you erect only your own materials?
A. No, we erect a wide variety of materials to suit the requirements of the Architect.

Q. How can I find out all the details?
A. Prices, designs and surveys without obligation from *Hermeseal Acoustics Limited*
4 Park Lane, London W.1 or phone us at Grosvenor 4324

SPECIFY HERMESEAL

HER/3

Raymond McGrath, A. C. Frost & H. C. Beckett

Glass in Architecture and decoration

This is a well-documented, authoritative and up-to-date reference book for architects: it is also a commentary on design approached through a material which has profoundly influenced the development of architecture. The first section deals with the manufacture of glasses used in building. The second section deals with the application of glass to buildings, the third with decoration. The fourth is a technical section dealing with the nature and properties of glass. The final section is devoted to the practical problems of working, glazing and fixing glass, and an Appendix describes nearly all the British glasses manufactured for building.

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

12¾ × 9¾ ins. 712 pp. 500 illustrations. 126s. net, post 4s.

CLASSIFIED ADVERTISEMENTS

5s. per line, minimum 20s. Box Number, including forwarding replies, 2s. extra. Single column inch 60s. Advertisements should be addressed to the Advertisement Manager, THE ARCHITECTURAL REVIEW, 9 Queen Anne's Gate, London, S.W.1, and should reach there by the first post on the 14th of the month for publication on the 1st of the month following. Replies to Box Numbers should be addressed care of 'The Architectural Review' at the address given above.

Architectural Appointments Vacant

BASILDON DEVELOPMENT CORPORATION
Department of Architecture and Planning
Architects, Architect/Planners and Architectural Assistants are required to join teams engaged on a large programme of interesting and varied work in connection with the expanding New Town of Basildon. Many of the projects are at the very early design stage or awaiting commencement and an excellent opportunity exists for successful applicants with design ability to contribute to schemes included under the following headings:

Research into new forms of housing layout, dwelling types and new building methods, and their application to large housing projects.
Design and execution of comprehensive Town Centre development.
Industrial and related commercial and social development.
Development of a Neighbourhood Centre Complex.
Work in connection with a Master Plan for a possible increased population.

Salary within Grades A.P.T. III and VII (£1,055 to £2,025; ultimate maximum on 1 August, 1965, £2,110).
Housing accommodation may be available if required.
Applicants should send full details of qualifications, experience and the names and addresses of two referees to the General Manager, Basildon Development Corporation, Gifford House, Basildon, Essex.

Architectural Appointments Vacant—*continued*

Architectural Draughtsman required by Estate Developers. Must be fully conversant with preparation of building and road plans. The salary will be in excess of the union rate and will be determined by the experience and value to the Company of the applicant. Apply in writing to the Secretary, Chalford Property Co. Ltd., 145 London Road, Kingston-upon-Thames, Surrey.

Other Appointments Vacant

Sunderland Education Authority
SUNDERLAND TECHNICAL COLLEGE
Department of Civil Engineering
SENIOR LECTURER IN BUILDING
Applications are invited for a post of **Senior Lecturer** in the Burnham Technical Scale £1,895 × £45 to £2,115 (at present under review).
Applicants should have good academic and professional qualifications related to Building. Practical and teaching experience are essential.
The Department is widening its range of activities and the successful candidate will be given a large measure of responsibility for developing advanced courses in Building.
The Sunderland Education Authority is prepared to help successful candidates with removal expenses, house purchase and temporary lodging allowances.
Further particulars and forms of application may be obtained from the Registrar, The Technical College, Sunderland, Co. Durham. (Please quote Ref. No. 75/3/4.) Completed applications should be returned to the Director of Education, 15 John Street, Sunderland, Co. Durham, by 31 August, 1965.

Miscellaneous

Perspectives, Presentation Drawings, Site and Building Surveys and Levelling.
Park Place Building Design Services Limited, 29 King Street, Leeds 1.

Control of **Solar Gains** (and a facade-face-lift) with **Denorma Roll-up Sun Canopies.** Details from A. Levin Ltd., 21 Mackenzie Street, Slough. Phone: Slough 25431.

ALPHABETICAL LIST OF ADVERTISERS